Medium Voltage Frequency Inverter

MVW3000

Programming Manual

Programming Manual

Series: MVW3000

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Summary of reviews

Version	Revision	Description
1.0X	00	First edition
	01	New parameters, faults and alarms New voltage and current models
	02	Addition of the Ride-through function for scalar control mode
1.2X	03	Cell parallelism support Redundant cell support
1.3X	04	Monitoring and protection of multiple transformers Output contactor for operation with sinusoidal filter Inclusion of the synchronous motor line

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1 QUICK REFERENCE OF PARAMETERS AND FAULTS

Software: V1.3X
Application:
Model:
Serial number:
Responsible:
Date: / / .

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Param.	Description	Adjustable range	Factory setting	Page
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Param.	Description	Adjustable range	Factory setting	Page
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Param.	Description	Adjustable range	Factory setting	Page
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Param.	Description	Adjustable range	Factory setting	Page
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Param.	Description	Adjustable range	Factory setting	Page
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Param.	Description	Adjustable range	Factory setting	Page
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Param.	Description	Adjustable range	Factory setting	Page
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Param.	Description	Adjustable range	Factory setting	Page
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Param.	Description	Adjustable range	Factory setting	Page
P0275(1)	DO1 Function	0 = Not Used 1 = N* > Nx 2 = N > Nx 3 = N < Ny 4 = N = N* 5 = Zero Speed 6 = Is > Ix 7 = Is < Ix 8 = Reserved 9 = Reserved 10 = Remote 11 = Run 12 = Ready 13 = No Fault 14 = No E70 15 = Reserved 16 = Reserved 17 = No E72 18 = 4 to 20 mA OK 19 = Fieldbus 20 = Forward 21 = Process Variable > VPx 22 = Process Variable < VPy 23 = Reserved 24 = Pre-charge OK 25 = Fault 26 = N > Nx and Nt > Nx 27 = Without error with delay 28 = No Alarm 29 = Reserved 30 = Redundant ventilation 31 = Reserved 32 = Circuit break ON (Input Circuit Breaker ON) 33 = Transference OK 34 = Synchronism OK 35 = Serial	0	5-60
P0276(1)	DO2 Function	0 = Not Used 1 = N* > Nx 2 = N > Nx 3 = N < Ny 4 = N = N* 5 = Zero Speed 6 = Is > Ix 7 = Is < Ix 8 = Reserved 9 = Reserved 10 = Remote 11 = Run 12 = Ready 13 = No Fault 14 = No E70 15 = Reserved 16 = Reserved 17 = No E72 18 = 4 to 20 mA OK 19 = Fieldbus 20 = Forward 21 = Process Variable > VPx 22 = Process Variable < VPy 23 = Reserved 24 = Pre-charge OK 25 = Fault 26 = N > Nx and Nt > Nx 27 = Without error with delay 28 = No Alarm 29 = Reserved 30 = Redundant ventilation 31 = Reserved 32 = Circuit break ON (Input Circuit Breaker ON) 33 = Transference OK 34 = Synchronism OK 35 = Serial	0	5-60

Param.	Description	Adjustable range	Factory setting	Page
P0277(1)	RL1 Function	0 = Not Used 1 = N* > Nx 2 = N > Nx 3 = N < Ny 4 = N = N* 5 = Zero Speed 6 = Is > Ix 7 = Is < Ix 8 = Not Used 9 = Reserved 10 = Remote 11 = Run 12 = Ready 13 = No Fault 14 = No E70 15 = Reserved 16 = Reserved 17 = No E72 18 = 4 to 20 mA OK 19 = Fieldbus 20 = Forward 21 = Process Variable > VPx 22 = Process Variable < VPy 23 = Reserved 24 = Pre-charge OK 25 = Fault 26 = N > Nx and Nt > Nx 27 = Without error with delay 28 = No Alarm 29 = Reserved 30 = Redundant ventilation 31 = PLC 32 = Circuit Break ON (Input Circuit Breaker ON) 33 = Transference OK 34 = Synchronism OK 35 = Serial	13	5-60
P0279(1)	RL2 Function	0 = Not Used 1 = N* > Nx 2 = N > Nx 3 = N < Ny 4 = N = N* 5 = Zero Speed 6 = Is > Ix 7 = Is < Ix 8 = Reserved 9 = Reserved 10 = Remote 11 = Run 12 = Ready 13 = No Fault 14 = No E70 15 = Reserved 16 = Reserved 17 = No E72 18 = 4 to 20 mA OK 19 = Fieldbus 20 = Forward 21 = Process Variable < VPx 22 = Process Variable < VPy 23 = Reserved 24 = Pre-charge OK 25 = Fault 26 = N > Nx and Nt > Nx 27 = Without error with delay 28 = No Alarm 29 = Timer 30 = Redundant ventilation 31 = PLC 32 = Circuit Break ON (Input Circuit Breaker ON) 33 = Transference OK 34 = Synchronism OK 35 = Serial	2	5-60

Param.	Description	Adjustable range	Factory setting	Page
P0280(1)	RL3 Function	0 = Not Used 1 = N* > Nx 2 = N > Nx 3 = N < Ny 4 = N = N* 5 = Zero Speed 6 = Is > Ix 7 = Is < Ix 8 = Reserved 9 = Reserved 10 = Remote 11 = Run 12 = Ready 13 = No Fault 14 = No E70 15 = Reserved 16 = Reserved 17 = No E72 18 = 4 to 20 mA OK 19 = Fieldbus 20 = Forward 21 = Process Variable < VPx 22 = Process Variable < VPy 23 = Reserved 24 = Pre-charge OK 25 = Fault 26 = N > Nx and Nt > Nx 27 = Without error with delay 28 = No Alarm 29 = Timer 30 = Redundant ventilation 31 = PLC 32 = Circuit Break ON (Input Circuit Breaker ON) 33 = Transference OK 34 = Synchronism OK 35 = Serial	1	5-60
P0281(1)	RL4 Function	0 = Not Used 1 = N* > Nx 2 = N > Nx 3 = N < Ny 4 = N = N* 5 = Zero Speed 6 = Is > Ix 7 = Is < Ix 8 = Reserved 9 = Reserved 10 = Remote 11 = Run 12 = Ready 13 = No Fault 14 = No E70 15 = Reserved 16 = Reserved 17 = No E72 18 = 4 to 20 mA OK 19 = Fieldbus 20 = Forward 21 = Process Variable > VPx 22 = Process Variable < VPy 23 = Reserved 24 = Pre-charge OK 25 = Fault 26 = N > Nx and Nt > Nx 27 = Without error with delay 28 = No Alarm 29 = Reserved 30 = Redundant ventilation 31 = Reserved 32 = Circuit break ON (Input Circuit Breaker ON) 33 = Transference OK 34 = Synchronism OK 35 = Serial	0	5-60

Param.	Description	Adjustable range	Factory setting	Page
P0282[1]	RL5 Function	0 = Not Used 1 = N* > Nx 2 = N > Nx 3 = N < Ny 4 = N = N* 5 = Zero Speed 6 = Is > Ix 7 = Is < Ix 8 = Reserved 9 = Reserved 10 = Remote 11 = Run 12 = Ready 13 = No Fault 14 = No E70 15 = Reserved 16 = Reserved 17 = No E72 18 = 4 to 20 mA OK 19 = Fieldbus 20 = Forward 21 = Process Variable > VPx 22 = Process Variable < VPy 23 = Reserved 24 = Pre-charge OK 25 = Fault 26 = N > Nx and Nt > Nx 27 = Without error with delay 28 = No Alarm 29 = Reserved 30 = Redundant ventilation 31 = Reserved 32 = Circuit break ON (Input Circuit Breaker ON) 33 = Transference OK 34 = Synchronism OK 35 = Serial	0	5-60
P0283	RL2 ON time	0.0 to 300.0 s	0.0 s	5-64
P0284	RL2 OFF time	0.0 to 300.0 s	0.0 s	5-64
P0285	RL3 ON time	0.0 to 300.0 s	0.0 s	5-64
P0286	RL3 OFF time	0.0 to 300.0 s	0.0 s	5-64
P0288[2]	Nx Speed	0 to 4095 rpm	120 rpm	5-64
P0289[2]	Ny Speed	0 to 4095 rpm	1800 rpm	5-64
P0290[5]	Ix Current	0.0 to 3276.7 A	300.0 A	5-64
P0291	Zero Speed Zone	1 to 100 %	1 %	5-64
P0292	N=N* Band	1 to 100 %	1 %	5-65

Param.	Description	Adjustable range	Factory setting	Page
P0295[1]	Inverter rated current	0 = 24 A 1 = 40 A 2 = 50 A 3 = 60 A 4 = 70 A 5 = 80 A 6 = 90 A 7 = 100 A 8 = 110 A 9 = 125 A 10 = 140 A 11 = 160 A 12 = 180 A 13 = 200 A 14 = 225 A 15 = 265 A 16 = 310 A 17 = 340 A 18 = 400 A 19 = 450 A 20 = 500 A 21 = 550 A 22 = 600 A 23 = 650 A 24 = 700 A 25 = 750 A 26 = 800 A 27 = 850 A 28 = 900 A	10	5-65
P0296[7]	Inverter rated voltage	0 = 1150 V 1 = 2300 V 2 = 3300 V 3 = 4160 V 4 = 5500 V 5 = 6300 V 6 = 6900 V 7 = 7200 V 8 = 8000 V 9 = 9000 V 10 = 10000 V 11 = 11000 V 12 = 12000 V 13 = 13200 V 14 = 13800 V	14	5-66
P0303	Skipped Speed 1	0 to 4095 rpm	600 rpm	5-66
P0304	Skipped Speed 2	0 to 4095 rpm	900 rpm	5-66
P0305	Skipped Speed 3	0 to 4095 rpm	1200 rpm	5-66
P0306	Skipped Range	0 to 750 rpm	0 rpm	5-66
P0308[1]	Serial address	1 to 30	1	5-67
P0309[1]	Fieldbus	0 = Inactive 1 = Profibus-DP 2 I/O 2 = Profibus-DP 4 I/O 3 = Profibus-DP 6 I/O 4 = DeviceNet 2 I/O 5 = DeviceNet 4 I/O 6 = DeviceNet 6 I/O 7 = Modbus-RTU 2 I/O 8 = Modbus-RTU 4 I/O 9 = Modbus-RTU 6 I/O 10 = DeviceNet Drive Profile 11 = Ethernet 2 I/O 12 = Ethernet 4 I/O 13 = Ethernet 6 I/O	0	5-67

Param.	Description	Adjustable range	Factory setting	Page
P0312(1)	Type of serial protocol	0 = Not Used 1 = Modbus-RTU, 9600 bps, no parity 2 = Modbus-RTU, 9600 bps, odd parity 3 = Modbus-RTU, 9600 bps, even parity 4 = Modbus-RTU, 19200 bps, no parity 5 = Modbus-RTU, 19200 bps, odd parity 6 = Modbus-RTU, 19200 bps, even parity 7 = Modbus-RTU, 38400 bps, no parity 8 = Modbus-RTU, 38400 bps, odd parity 9 = Modbus-RTU, 38400 bps, even parity	7	5-68
P0313	Disabling with alarm A128, A129 and A130	0 = Disable via Run/Stop 1 = Disable via General Enable 2 = Inactive 3 = Go to LOCAL 4 = Not Used 5 = Fatal Failure	0	5-68
P0314(1)	Time for serial watchdog action	0.0 to 999.0 s	0.0 s	5-69
P0315	Function of the MVC3 SCI1 serial channel	0 = Service HMI 1 = Modbus serial for Tecsystem module 2 = Modbus Serial for Pextron module	0	5-69
P0320(1)	Flying Start/Ride-Through	0 = Inactive 1 = Flying Start 2 = Flying Start and Ride-Through 3 = Ride-Through	0	5-70
P0331	Voltage ramp time	0.2 to 50.0 s	8.0 s	5-70
P0332	Dead time	1.0 to 40.0 s	10.0 s	5-70
P0333	Ride-through time	0.0 to 20.0 s	10.0 s	5-70
P0400(1)(4)	Motor rated voltage	1 to 19999 V	6600 V	5-71
P0401(1)	Motor rated current	0.1 to 3705.0 A	140.0 A	5-72
P0402(1)	Motor rated speed	1 to 7200 rpm	1796 rpm	5-72
P0403(1)	Motor Rated Freq	1 to 120 Hz	60 Hz	5-72
P0405(1)	Speed sensor data (encoder)	100 to 9999 PPR	1024 PPR	5-72
P0406(1)(2)	Ventilation Type	0 = Self-ventilated 1 = Separated ventilation	0	5-73
P0408(1)	Run Self-tuning	0 = No 1 = Self Gain	1	5-73
P0409	Motor stator resistance Rs	0.000 to 9.999 Ω	0.000 Ω	5-73
P0410	Motor magnetization current (Imr)	0.0 to 1024.0 A	0.0 A	5-74
P0411	Motor Flux Leakage Inductance	0.00 to 99.99 mH	0.00 mH	5-74
P0412	Lr/Rr Constant	0.000 to 9.999 s	0.000 s	5-74
P0413	Tm Time Constant	0.00 to 99.99 s	0.00 s	5-74
P0414	Magnetizing voltage	0.0 to 20.0 %	0.0 %	5-75
P0427	Inductance LD sigma	0.00 to 99.99 mH	4.85 mH	5-75
P0428	Inductance LQ sigma	0.00 to 99.99 mH	4.41 mH	5-76
P0429	Resistence RD	0.000 to 9.999 Ω	1.139 Ω	5-76
P0430	Resistance RQ	0.000 to 9.999 Ω	0.831 Ω	5-76
P0431	Number of motor poles	2 to 64	4	5-76
P0436	Lf inductance	0.0 to 999.9 mH	88.0 mH	5-77

Param.	Description	Adjustable range	Factory setting	Page
P0437	Resistence Rf	0.000 to 9.999 Ω	0.047 Ω	5-77
P0438	Proportional gain of the current regulator IQ	0.000 to 9.999	0.034	5-77
P0439	Integration constant of the current regulator IQ	0.1 to 999.9	9.0	5-78
P0440	Proportional gain of the current regulator ID	0.000 to 9.999	0.074	5-78
P0441	Integration constant of the current regulator ID	0.1 to 999.9	19.6	5-78
P0446	Base field current	0.1 to 999.9 A	33.3 A	5-79
P0449	Maximum field current (Brushless)	0.01 to 5.00 PU	0.70 PU	5-79
P0450	Minimum field current (Brushless)	0.01 to 5.00 PU	0.01 PU	5-79
P0451	Minimum field for soft-start function	0.01 to 5.00 PU	0.15 PU	5-79
P0452	Field input frequency	0.0 to 60.0 Hz	0.0 Hz	5-80
P0453	Field ramp time	0.00 to 30.00 s	1.00 s	5-80
P0454	Coefficient A1 of the Polynomial of the magnetic saturation curve	0.000 to 9.999	0.000	5-81
P0455	Coefficient B1 of the Polynomial of the magnetic saturation curve	0.000 to 9.999	0.174	5-81
P0456	Coefficient C1 of the Polynomial of the magnetic saturation curve	0.000 to 9.999	1.059	5-82
P0464	Maximum compensation current of PF	0.00 to 1.00 PU	0.80 PU	5-82
P0490	Graphic HMI LCD contrast adjustment	50 to 150	110	5-83
P0491[(1)]	HMI commands configuration	0 = Inactive 1 = Local HMI 2 = Remote HMI	0	5-83
P0493	Sampling time of the online graphic	1 to 100 x 10 ms	10 x 10 ms	5-83
P0500	Read-only parameter 1 selection	0 = Inactive 1 = Motor speed reference 2 = Motor speed 3 = Motor Current 4 = Reserved 5 = Motor Frequency 6 = Output voltage 7 = Motor Torque 8 = Inverter output power 9 = Value of process variable (PID)	2	5-83
P0501	Read-only parameter 2 selection	0 = Inactive 1 = Motor speed reference 2 = Motor speed 3 = Motor Current 4 = Reserved 5 = Motor Frequency 6 = Output voltage 7 = Motor Torque 8 = Inverter output power 9 = Value of process variable (PID)	0	5-83

Param.	Description	Adjustable range	Factory setting	Page
P0502	Read-only parameter 3 selection	0 = Inactive 1 = Motor speed reference 2 = Motor speed 3 = Motor Current 4 = Reserved 5 = Motor Frequency 6 = Output voltage 7 = Motor Torque 8 = Inverter output power 9 = Value of process variable (PID)	0	5-83
P0503	Read-only parameter 4 selection	0 = Inactive 1 = Motor speed reference 2 = Motor speed 3 = Motor Current 4 = Reserved 5 = Motor Frequency 6 = Output voltage 7 = Motor Torque 8 = Inverter output power 9 = Value of process variable (PID)	0	5-83
P0504	Read-only parameter 5 selection	0 = Inactive 1 = Motor speed reference 2 = Motor speed 3 = Motor Current 4 = Reserved 5 = Motor Frequency 6 = Output voltage 7 = Motor Torque 8 = Inverter output power 9 = Value of process variable (PID)	0	5-83
P0505	Read-only parameter 6 selection	0 = Inactive 1 = Motor speed reference 2 = Motor speed 3 = Motor Current 4 = Reserved 5 = Motor Frequency 6 = Output voltage 7 = Motor Torque 8 = Inverter output power 9 = Value of process variable (PID)	0	5-83
P0512	On-line Graphic Function Parameter 1 Selection	0 = Inactive 1 = Motor speed reference 2 = Motor speed 3 = Motor Current 4 = Reserved 5 = Motor Frequency 6 = Output voltage 7 = Motor Torque 8 = Inverter output power 9 = Value of process variable (PID)	2	5-84
P0513	On-line Graphic Function Parameter 2 Selection	0 = Inactive 1 = Motor speed reference 2 = Motor speed 3 = Motor Current 4 = Reserved 5 = Motor Frequency 6 = Output voltage 7 = Motor Torque 8 = Inverter output power 9 = Value of process variable (PID)	3	5-84

Param.	Description	Adjustable range	Factory setting	Page
P0514	On-line Graphic Function Parameter 3 Selection	0 = Inactive 1 = Motor speed reference 2 = Motor speed 3 = Motor Current 4 = Reserved 5 = Motor Frequency 6 = Output voltage 7 = Motor Torque 8 = Inverter output power 9 = Value of process variable (PID)	0	5-84
P0515	On-line Graphic Function Parameter 4 Selection	0 = Inactive 1 = Motor speed reference 2 = Motor speed 3 = Motor Current 4 = Reserved 5 = Motor Frequency 6 = Output voltage 7 = Motor Torque 8 = Inverter output power 9 = Value of process variable (PID)	0	5-84
P0516	Full scale of online graphic 1	0 to 200 %	100 %	5-84
P0517	Full scale of online graphic 2	0 to 200 %	100 %	5-84
P0518	Full scale of online graphic 3	0 to 200 %	100 %	5-84
P0519	Full scale of online graphic 4	0 to 200 %	100 %	5-84
P0520	PID proportional gain	0.000 to 7.999	1.000	5-85
P0521	PID integral gain	0.000 to 9.999	1.000	5-85
P0522	PID differential gain	0.000 to 9.999	0.000	5-85
P0523	PID ramp time	0.0 to 999.0 s	3.0 s	5-85
P0524[(1)]	PID feedback selection	0 = P0237 - AI2 signal function 1 = P0241 - AI3 signal function	0	5-86
P0525	PID regulator setpoint	0.0 to 100.0 %	0.0 %	5-86
P0526	Process variable filter	0.0 to 16.0 s	0.1 s	5-87
P0527	Error Value Inv	0 = No 1 = Yes	0	5-87
P0528	Process variable scale factor	0 to 9999	1000	5-88
P0529	Process Variable Decimal Point	0 to 3	1	5-88
P0533	Process variable X value	0.0 to 100.0 %	90.0 %	5-88
P0534	Process variable Y value	0.0 to 100.0 %	10.0 %	5-88
P0535	Output N = 0 PID	0 to 100 %	0 %	5-88
P0536	P0525 Automatic Setting	0 = Inactive 1 = Active	0	5-89
P0622	End frequency of boost I x R	0 to 9999	4095	5-89
P0629	Synchronism time	1.0 to 20.0 s	1.0 s	5-90
P0630	Synchronism timeout	20 to 240 s	60 s	5-90
P0631	DI13 delay	0 to 3000 ms	170 ms	5-90
P0632	Maximum phase error	0 to 9999	1966	5-90
P0636	Phase adjustment synchronous transfer	-32768 to 32767	0	5-90
P0652	MVC3 AO1 Funct.	0 to 511	2	5-91

Param.	Description	Adjustable range	Factory setting	Page
P0653	Analog output gain AO1 MVC3	0.000 to 9.999	1.000	5-91
P0654	MVC3 AO2 Funct.	0 to 511	5	5-92
P0655	Analog output gain AO2 MVC3	0.000 to 9.999	1.000	5-92
P0656	MVC3 AO3 Funct.	0 to 511	2	5-92
P0657	Analog output gain AO3 MVC3	0.000 to 9.999	1.000	5-93
P0658	MVC3 AO4 Funct.	0 to 511	5	5-93
P0659	Analog output gain AO4 MVC3	0.000 to 9.999	1.000	5-94
P0663	Analog output offset AO1 MVC3	-32768 to 32767	-90	5-94
P0664	Analog output offset AO2 MVC3	-32768 to 32767	-90	5-94
P0665	Analog output offset AO3 MVC3	-32768 to 32767	-90	5-94
P0666	Analog output offset AO4 MVC3	-32768 to 32767	-90	5-94
P0721(1)	Analog input AI5 function	0 = P221/P222	0	5-95
P0722	Analog input AI5 gain (bipolar isolated MVC4 board)	0.000 to 9.999	1.000	5-95
P0723(1)	Analog input AI5 signal type	0 = 0-10V/20mA 1 = 4 - 20 mA 2 = 10V/20mA-0 3 = 20 - 4 mA	0	5-95
P0724	Analog input AI5 offset (bipolar isolated MVC4 board)	0.0 to 100.0 %	0.0 %	5-95
P0725	Minimum coasting time	0 to 300 s	0 s	5-96
P0740	Function of analog input AI1 MVC3	0 = Not Used 1 = Torque reference 2 = Limit current	0	5-96
P0741	Analog input AI1 gain (bipolar MVC3 board)	0.000 to 9.999	1.000	5-96
P0742	Analog input AI1 offset (bipolar MVC3 board)	-100.0 to 100.0 %	0.0 %	5-96
P0744	Function of analog input AI2 MVC3	0 = Not Used 1 = Field current	0	5-96
P0745	Analog input AI2 gain (bipolar MVC3 board)	0.000 to 9.999	1.000	5-97
P0746	Analog input AI2 offset (bipolar MVC3 board)	-100.0 to 100.0 %	0.0 %	5-97
P0950(1)	Motor Type	0 = Induction motor 1 = Reserved 2 = Brushless synchronous motor	0	5-97
P0957	Direction of rotation of the speed sensor	0 = Reverse 1 = Direct	1	5-97
P1000	DC link voltage of cell U1	Read-only parameter (V)	-	5-98
P1001	DC link voltage of cell U2	Read-only parameter (V)	-	5-98
P1002	DC link voltage of cell U3	Read-only parameter (V)	-	5-98
P1003	DC link voltage of cell U4	Read-only parameter (V)	-	5-98
P1004	DC link voltage of cell U5	Read-only parameter (V)	-	5-98

Param.	Description	Adjustable range	Factory setting	Page
P1005	DC link voltage of cell U6	Read-only parameter (V)	-	5-98
P1006	DC link voltage of cell U7	Read-only parameter (V)	-	5-98
P1007	DC link voltage of cell U8	Read-only parameter (V)	-	5-98
P1008	DC link voltage of cell U9	Read-only parameter (V)	-	5-98
P1009	DC link voltage of cell U10	Read-only parameter (V)	-	5-98
P1010	DC link voltage of cell U11	Read-only parameter (V)	-	5-98
P1011	DC link voltage of cell U12	Read-only parameter (V)	-	5-98
P1012	DC link voltage of cell V1	Read-only parameter (V)	-	5-98
P1013	DC link voltage of cell V2	Read-only parameter (V)	-	5-98
P1014	DC link voltage of cell V3	Read-only parameter (V)	-	5-98
P1015	DC link voltage of cell V4	Read-only parameter (V)	-	5-98
P1016	DC link voltage of cell V5	Read-only parameter (V)	-	5-98
P1017	DC link voltage of cell V6	Read-only parameter (V)	-	5-98
P1018	DC link voltage of cell V7	Read-only parameter (V)	-	5-98
P1019	DC link voltage of cell V8	Read-only parameter (V)	-	5-98
P1020	DC link voltage of cell V9	Read-only parameter (V)	-	5-98
P1021	DC link voltage of cell V10	Read-only parameter (V)	-	5-98
P1022	DC link voltage of cell V11	Read-only parameter (V)	-	5-98
P1023	DC link voltage of cell V12	Read-only parameter (V)	-	5-98
P1024	DC link voltage of cell W1	Read-only parameter (V)	-	5-99
P1025	DC link voltage of cell W2	Read-only parameter (V)	-	5-99
P1026	DC link voltage of cell W3	Read-only parameter (V)	-	5-99
P1027	DC link voltage of cell W4	Read-only parameter (V)	-	5-99
P1028	DC link voltage of cell W5	Read-only parameter (V)	-	5-99
P1029	DC link voltage of cell W6	Read-only parameter (V)	-	5-99
P1030	DC link voltage of cell W7	Read-only parameter (V)	-	5-99
P1031	DC link voltage of cell W8	Read-only parameter (V)	-	5-99
P1032	DC link voltage of cell W9	Read-only parameter (V)	-	5-99
P1033	DC link voltage of cell W10	Read-only parameter (V)	-	5-99
P1034	DC link voltage of cell W11	Read-only parameter (V)	-	5-99
P1035	DC link voltage of cell W12	Read-only parameter (V)	-	5-99
P1050	Temperature on the power module of cell U1	Read-only parameter (°C)	-	5-99
P1051	Temperature on the power module of cell U2	Read-only parameter (°C)	-	5-99
P1052	Temperature on the power module of cell U3	Read-only parameter (°C)	-	5-99
P1053	Temperature on the power module of cell U4	Read-only parameter (°C)	-	5-99

Param.	Description	Adjustable range	Factory setting	Page
P1054	Temperature on the power module of cell U5	Read-only parameter (°C)	-	5-99
P1055	Temperature on the power module of cell U6	Read-only parameter (°C)	-	5-99
P1056	Temperature on the power module of cell U7	Read-only parameter (°C)	-	5-99
P1057	Temperature on the power module of cell U8	Read-only parameter (°C)	-	5-99
P1058	Temperature on the power module of cell U9	Read-only parameter (°C)	-	5-99
P1059	Temperature on the power module of cell U10	Read-only parameter (°C)	-	5-99
P1060	Temperature on the power module of cell U11	Read-only parameter (°C)	-	5-99
P1061	Temperature on the power module of cell U12	Read-only parameter (°C)	-	5-99
P1062	Temperature on the power module of cell V1	Read-only parameter (°C)	-	5-99
P1063	Temperature on the power module of cell V2	Read-only parameter (°C)	-	5-99
P1064	Temperature on the power module of cell V3	Read-only parameter (°C)	-	5-99
P1065	Temperature on the power module of cell V4	Read-only parameter (°C)	-	5-99
P1066	Temperature on the power module of cell V5	Read-only parameter (°C)	-	5-99
P1067	Temperature on the power module of cell V6	Read-only parameter (°C)	-	5-99
P1068	Temperature on the power module of cell V7	Read-only parameter (°C)	-	5-99
P1069	Temperature on the power module of cell V8	Read-only parameter (°C)	-	5-99
P1070	Temperature on the power module of cell V9	Read-only parameter (°C)	-	5-99
P1071	Temperature on the power module of cell V10	Read-only parameter (°C)	-	5-99
P1072	Temperature on the power module of cell V11	Read-only parameter (°C)	-	5-99
P1073	Temperature on the power module of cell V12	Read-only parameter (°C)	-	5-99
P1074	Temperature on the power module of cell W1	Read-only parameter (°C)	-	5-100
P1075	Temperature on the power module of cell W2	Read-only parameter (°C)	-	5-100
P1076	Temperature on the power module of cell W3	Read-only parameter (°C)	-	5-100
P1077	Temperature on the power module of cell W4	Read-only parameter (°C)	-	5-100
P1078	Temperature on the power module of cell W5	Read-only parameter (°C)	-	5-100

Param.	Description	Adjustable range	Factory setting	Page
P1079	Temperature on the power module of cell W6	Read-only parameter (°C)	-	5-100
P1080	Temperature on the power module of cell W7	Read-only parameter (°C)	-	5-100
P1081	Temperature on the power module of cell W8	Read-only parameter (°C)	-	5-100
P1082	Temperature on the power module of cell W9	Read-only parameter (°C)	-	5-100
P1083	Temperature on the power module of cell W10	Read-only parameter (°C)	-	5-100
P1084	Temperature on the power module of cell W11	Read-only parameter (°C)	-	5-100
P1085	Temperature on the power module of cell W12	Read-only parameter (°C)	-	5-100
P1136	Inverter input current	Read-only parameter (A)	-	5-100
P1137	Inverter input line voltage	Read-only parameter (kV)	-	5-100
P1138	PF at the inverter input	-	-	5-100
P1139	Apparent power at the inverter input	Read-only parameter (kVA)	-	5-101
P1140	Active power at the inverter input	Read-only parameter (kW)	-	5-101
P1141	Reactive power at the inverter input	Read-only parameter (kVAr)	-	5-101
P1143	Measured inverter output voltage	Read-only parameter (kV)	-	5-102
P1144	Voltage between the virtual neutral of the motor and the ground of the system	Read-only parameter (%)	-	5-102
P1155	Phase U cell status U1 ... Un	-	-	5-102
P1156	Phase V cell status V1...Vn	-	-	5-102
P1157	Phase W cell status W1...Wn	-	-	5-102
P1350	Temperature on the board of cell U1	Read-only parameter (°C)	-	5-102
P1351	Temperature on the board of cell U2	Read-only parameter (°C)	-	5-102
P1352	Temperature on the board of cell U3	Read-only parameter (°C)	-	5-102
P1353	Temperature on the board of cell U4	Read-only parameter (°C)	-	5-102
P1354	Temperature on the board of cell U5	Read-only parameter (°C)	-	5-102
P1355	Temperature on the board of cell U6	Read-only parameter (°C)	-	5-102
P1356	Temperature on the board of cell U7	Read-only parameter (°C)	-	5-102
P1357	Temperature on the board of cell U8	Read-only parameter (°C)	-	5-102
P1358	Temperature on the board of cell U9	Read-only parameter (°C)	-	5-102
P1359	Temperature on the board of cell U10	Read-only parameter (°C)	-	5-102
P1360	Temperature on the board of cell U11	Read-only parameter (°C)	-	5-102
P1361	Temperature on the board of cell U12	Read-only parameter (°C)	-	5-102
P1362	Temperature on the board of cell V1	Read-only parameter (°C)	-	5-103
P1363	Temperature on the board of cell V2	Read-only parameter (°C)	-	5-103
P1364	Temperature on the board of cell V3	Read-only parameter (°C)	-	5-103

Param.	Description	Adjustable range	Factory setting	Page
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P1366	Temperature on the board of cell V5	Read-only parameter (°C)	-	5-103
P1367	Temperature on the board of cell V6	Read-only parameter (°C)	-	5-103
P1368	Temperature on the board of cell V7	Read-only parameter (°C)	-	5-103
P1369	Temperature on the board of cell V8	Read-only parameter (°C)	-	5-103
P1370	Temperature on the board of cell V9	Read-only parameter (°C)	-	5-103
P1371	Temperature on the board of cell V10	Read-only parameter (°C)	-	5-103
P1372	Temperature on the board of cell V11	Read-only parameter (°C)	-	5-103
P1373	Temperature on the board of cell V12	Read-only parameter (°C)	-	5-103
P1374	Temperature on the board of cell W1	Read-only parameter (°C)	-	5-103
P1375	Temperature on the board of cell W2	Read-only parameter (°C)	-	5-103
P1376	Temperature on the board of cell W3	Read-only parameter (°C)	-	5-103
P1377	Temperature on the board of cell W4	Read-only parameter (°C)	-	5-103
P1378	Temperature on the board of cell W5	Read-only parameter (°C)	-	5-103
P1379	Temperature on the board of cell W6	Read-only parameter (°C)	-	5-103
P1380	Temperature on the board of cell W7	Read-only parameter (°C)	-	5-103
P1381	Temperature on the board of cell W8	Read-only parameter (°C)	-	5-103
P1382	Temperature on the board of cell W9	Read-only parameter (°C)	-	5-103
P1383	Temperature on the board of cell W10	Read-only parameter (°C)	-	5-103
P1384	Temperature on the board of cell W11	Read-only parameter (°C)	-	5-103
P1385	Temperature on the board of cell W12	Read-only parameter (°C)	-	5-103
P1500(7)	Automatic Bypass	0 = Inactive 1 = Active with Flying Start	0	5-103
P1501(1)	Line tension balancing method	0 = Amplitude adjustment of the phase voltages 1 = Angle adjustment of the phase voltages	0	5-104
P1502(1)	Limit of bypassed cells per phase	0 to 12	1	5-104
P1550(7)	Transformer 1 CT Ratio	1 to 3000	200	5-105
P1551(7)	Ratio between the voltage of the primary and the auxiliary output of the transformer 1	1.00 to 50.00	18.14	5-105
P1552(7)	Taps of transformer 1	-5.00 to 5.00 %	0.00 %	5-105
P1553(7)	Transformers rated voltage	0.00 to 99.99 kV	6.60 kV	5-106
P1554(7)	Transformer 1 rated power	0 to 10000 kVA	1500 kVA	5-106
P1555(7)	Transformers rated frequency	0 to 100 Hz	60 Hz	5-106
P1556(7)	Transformer 2 CT Ratio	50 to 3000	200	5-106
P1557(7)	Taps of transformer 2	-5.00 to 5.00 %	0.00 %	5-107
P1558(7)	Transformer 2 rated power	0 to 10000 kVA	1500 kVA	5-107
P1559(7)	Transformer 3 CT Ratio	50 to 3000	200	5-107
P1560(7)	Taps of transformer 3	-5.00 to 5.00 %	0.00 %	5-108

Param.	Description	Adjustable range	Factory setting	Page
P1561(7)	Transformer 3 rated power	0 to 10000 kVA	1500 kVA	5-108
P1565(7)	Number of redundant cells per phase	0 to 11	0	5-109
P1700(7)	Bypass of the cell U1	0 = Disable 1 = Mechanical bypass cell 2 = Manual activation of the bypass relay 3 = Automatic bypass after a manageable fault 4 = Automatic bypass by parallel association	0	5-109
P1701(7)	Bypass of the cell U2	0 = Disable 1 = Mechanical bypass cell 2 = Manual activation of the bypass relay 3 = Automatic bypass after a manageable fault 4 = Automatic bypass by parallel association	0	5-109
P1702(7)	Bypass of the cell U3	0 = Disable 1 = Mechanical bypass cell 2 = Manual activation of the bypass relay 3 = Automatic bypass after a manageable fault 4 = Automatic bypass by parallel association	0	5-109
P1703(7)	Bypass of the cell U4	0 = Disable 1 = Mechanical bypass cell 2 = Manual activation of the bypass relay 3 = Automatic bypass after a manageable fault 4 = Automatic bypass by parallel association	0	5-109
P1704(7)	Bypass of the cell U5	0 = Disable 1 = Mechanical bypass cell 2 = Manual activation of the bypass relay 3 = Automatic bypass after a manageable fault 4 = Automatic bypass by parallel association	0	5-109
P1705(7)	Bypass of the cell U6	0 = Disable 1 = Mechanical bypass cell 2 = Manual activation of the bypass relay 3 = Automatic bypass after a manageable fault 4 = Automatic bypass by parallel association	0	5-109
P1706(7)	Bypass of the cell U7	0 = Disable 1 = Mechanical bypass cell 2 = Manual activation of the bypass relay 3 = Automatic bypass after a manageable fault 4 = Automatic bypass by parallel association	0	5-109
P1707(7)	Bypass of the cell U8	0 = Disable 1 = Mechanical bypass cell 2 = Manual activation of the bypass relay 3 = Automatic bypass after a manageable fault 4 = Automatic bypass by parallel association	0	5-109
P1708(7)	Bypass of the cell U9	0 = Disable 1 = Mechanical bypass cell 2 = Manual activation of the bypass relay 3 = Automatic bypass after a manageable fault 4 = Automatic bypass by parallel association	0	5-109
P1709(7)	Bypass of the cell U10	0 = Disable 1 = Mechanical bypass cell 2 = Manual activation of the bypass relay 3 = Automatic bypass after a manageable fault 4 = Automatic bypass by parallel association	0	5-109
P1710(7)	Bypass of the cell U11	0 = Disable 1 = Mechanical bypass cell 2 = Manual activation of the bypass relay 3 = Automatic bypass after a manageable fault 4 = Automatic bypass by parallel association	0	5-109

Param.	Description	Adjustable range	Factory setting	Page
P1711(7)	Bypass of the cell U12	0 = Disable 1 = Mechanical bypass cell 2 = Manual activation of the bypass relay 3 = Automatic bypass after a manageable fault 4 = Automatic bypass by parallel association	0	5-109
P1712(7)	Bypass of the cell V1	0 = Disable 1 = Mechanical bypass cell 2 = Manual activation of the bypass relay 3 = Automatic bypass after a manageable fault 4 = Automatic bypass by parallel association	0	5-110
P1713(7)	Bypass of the cell V2	0 = Disable 1 = Mechanical bypass cell 2 = Manual activation of the bypass relay 3 = Automatic bypass after a manageable fault 4 = Automatic bypass by parallel association	0	5-110
P1714(7)	Bypass of the cell V3	0 = Disable 1 = Mechanical bypass cell 2 = Manual activation of the bypass relay 3 = Automatic bypass after a manageable fault 4 = Automatic bypass by parallel association	0	5-110
P1715(7)	Bypass of the cell V4	0 = Disable 1 = Mechanical bypass cell 2 = Manual activation of the bypass relay 3 = Automatic bypass after a manageable fault 4 = Automatic bypass by parallel association	0	5-110
P1716(7)	Bypass of the cell V5	0 = Disable 1 = Mechanical bypass cell 2 = Manual activation of the bypass relay 3 = Automatic bypass after a manageable fault 4 = Automatic bypass by parallel association	0	5-110
P1717(7)	Bypass of the cell V6	0 = Disable 1 = Mechanical bypass cell 2 = Manual activation of the bypass relay 3 = Automatic bypass after a manageable fault 4 = Automatic bypass by parallel association	0	5-110
P1718(7)	Bypass of the cell V7	0 = Disable 1 = Mechanical bypass cell 2 = Manual activation of the bypass relay 3 = Automatic bypass after a manageable fault 4 = Automatic bypass by parallel association	0	5-110
P1719(7)	Bypass of the cell V8	0 = Disable 1 = Mechanical bypass cell 2 = Manual activation of the bypass relay 3 = Automatic bypass after a manageable fault 4 = Automatic bypass by parallel association	0	5-110
P1720(7)	Bypass of the cell V9	0 = Disable 1 = Mechanical bypass cell 2 = Manual activation of the bypass relay 3 = Automatic bypass after a manageable fault 4 = Automatic bypass by parallel association	0	5-110
P1721(7)	Bypass of the cell V10	0 = Disable 1 = Mechanical bypass cell 2 = Manual activation of the bypass relay 3 = Automatic bypass after a manageable fault 4 = Automatic bypass by parallel association	0	5-110
P1722(7)	Bypass of the cell V11	0 = Disable 1 = Mechanical bypass cell 2 = Manual activation of the bypass relay 3 = Automatic bypass after a manageable fault 4 = Automatic bypass by parallel association	0	5-110

Param.	Description	Adjustable range	Factory setting	Page
P1723(7)	Bypass of the cell V12	0 = Disable 1 = Mechanical bypass cell 2 = Manual activation of the bypass relay 3 = Automatic bypass after a manageable fault 4 = Automatic bypass by parallel association	0	5-110
P1724(7)	Bypass of the cell W1	0 = Disable 1 = Mechanical bypass cell 2 = Manual activation of the bypass relay 3 = Automatic bypass after a manageable fault 4 = Automatic bypass by parallel association	0	5-111
P1725(7)	Bypass of the cell W2	0 = Disable 1 = Mechanical bypass cell 2 = Manual activation of the bypass relay 3 = Automatic bypass after a manageable fault 4 = Automatic bypass by parallel association	0	5-111
P1726(7)	Bypass of the cell W3	0 = Disable 1 = Mechanical bypass cell 2 = Manual activation of the bypass relay 3 = Automatic bypass after a manageable fault 4 = Automatic bypass by parallel association	0	5-111
P1727(7)	Bypass of the cell W4	0 = Disable 1 = Mechanical bypass cell 2 = Manual activation of the bypass relay 3 = Automatic bypass after a manageable fault 4 = Automatic bypass by parallel association	0	5-111
P1728(7)	Bypass of the cell W5	0 = Disable 1 = Mechanical bypass cell 2 = Manual activation of the bypass relay 3 = Automatic bypass after a manageable fault 4 = Automatic bypass by parallel association	0	5-111
P1729(7)	Bypass of the cell W6	0 = Disable 1 = Mechanical bypass cell 2 = Manual activation of the bypass relay 3 = Automatic bypass after a manageable fault 4 = Automatic bypass by parallel association	0	5-111
P1730(7)	Bypass of the cell W7	0 = Disable 1 = Mechanical bypass cell 2 = Manual activation of the bypass relay 3 = Automatic bypass after a manageable fault 4 = Automatic bypass by parallel association	0	5-111
P1731(7)	Bypass of the cell W8	0 = Disable 1 = Mechanical bypass cell 2 = Manual activation of the bypass relay 3 = Automatic bypass after a manageable fault 4 = Automatic bypass by parallel association	0	5-111
P1732(7)	Bypass of the cell W9	0 = Disable 1 = Mechanical bypass cell 2 = Manual activation of the bypass relay 3 = Automatic bypass after a manageable fault 4 = Automatic bypass by parallel association	0	5-111
P1733(7)	Bypass of the cell W10	0 = Disable 1 = Mechanical bypass cell 2 = Manual activation of the bypass relay 3 = Automatic bypass after a manageable fault 4 = Automatic bypass by parallel association	0	5-111
P1734(7)	Bypass of the cell W11	0 = Disable 1 = Mechanical bypass cell 2 = Manual activation of the bypass relay 3 = Automatic bypass after a manageable fault 4 = Automatic bypass by parallel association	0	5-111

Param.	Description	Adjustable range	Factory setting	Page
P1735(7)	Bypass of the cell W12	0 = Disable 1 = Mechanical bypass cell 2 = Manual activation of the bypass relay 3 = Automatic bypass after a manageable fault 4 = Automatic bypass by parallel association	0	5-111
P1739(1)	RL8 Function MVC3	0 = Not used 1 = Output contactor drive for operation with filter type 2 2 = Output contactor drive for operation with permanent magnet machine	0	5-111
P1892(7)	Cells in parallel	0 = No parallelism 1 = 2 cells in parallel 2 = 3 cells in parallel	0	5-112
P1893(7)	Transformer at the input	0 = 1 transformer 1 = 2 transformers 2 = 3 transformers	2	5-112

NOTE!
Quick parameter reference notes:
(1) Parameter can be changed only with the inverter disabled (motor stopped).
(2) Values may change as a function of the ”Motor Parameters”.
(3) Values may change as a function of the parameter P0412 (Lr/Rr Constant).
(4) Values may change as a function of the parameter P0296 (Inverter rated voltage).
(5) Values may change as a function of the parameter P0295 (Inverter rated current).
(6) Values may change as a function of the parameter P0320 (Flying Start/Ride-Through).
(7) Parameter can only be changed with input cubicle opened.

1.2 MESSAGES OF ALARMS AND FAULTS

The faults of the MVW3000 can be subdivided into Alarms (Axxxx) and Faults (Fxxxx). In general, the alarms serve to indicate a situation that, if not corrected, can lead the inverter to a stop by fault. A signalized fault indicates a situation that caused the inverter to be disabled (the main circuit breaker may open or not, depending on the type of fault).

Fault/Alarm	Description	Page
F0003	Under Voltage / Phase Loss	7-1
F0006	Mains Unbalance/ Phase Loss	7-1
A0008	Timeout in the synchronism with the input line during synchronous transfer	7-1
F0009	Incorrect status of the input cubicle	7-2
F0013	Output contactor feedback	7-2
F0014	Input cubicle closing failure	7-2
F0015	Input cubicle opening failure	7-2
F0016	Shutdown by input cubicle protection	7-2
F0017	Inverter not ready to energize	7-2
A0018	Inverter main transformer alarm	7-2
F0019	Inverter main transformer fault	7-2
F0020	Pre-charge fault	7-2
F0025	Inverter door locking fault	7-2
F0026	Input cubicle not ready fault	7-3
F0027	Improper opening of the input cubicle	7-3
F0044	Electrical arcing detection fault	7-3
A0046	Motor Ixt function overload	7-3
F0048(1)	Forced ventilation fault	7-3
F0069	Calibration fault	7-3
F0070	Overcurrent/short circuit	7-3
F0071	Overcurrent at output	7-3
F0072(1)	Output over load Ixt function	7-3
F0076	Output current unbalanced	7-3
F0078(1)	Motor Over Temperature	7-4
F0079(1)	Signals of the motor speed sensor defective	7-4
F0080	CPU watchdog error	7-4
F0082(1)	Copy function not allowed	7-4
F0083(1)	Inverter Setup Fault	7-4
A0084	Incorrect programming of inverter model	7-4
F0085	Electronic power supply fault	7-4
F0087	Control boards communication fault	7-4
F0090(1)	External DIx open fault	7-4
F0092	Pre-charge supply fault	7-4

Fault/Alarm	Description	Page
A0094	Cooling system supply fault	7-4
A0096	Alarm 4 to 20 mA (current < 3 mA)	7-5
A0098	Help not recorded/Incompatible HMI version	7-5
F0099	Invalid output current offset	7-5
F0100	MVC3 fatal fault	7-5
F0101[1]	Incompatible software version between control boards	7-5
F0102	Unknown failure in EPLD of MVC3	7-5
F0103	MVC3 RAM fault	7-5
F0105	MVC3 EEPROM failure	7-5
F0106	MVC4 fatal fault	7-5
A0108	Inverter Not Initialized	7-5
F0109	General Disable MVC3	7-5
A0110	Motor overtemperature alarm	7-5
A0111	DIx open external alarm	7-5
F0112	Motor Over Speed	7-5
A0114	Inverter ventilation alarm - set B	7-5
A0123	Programming alarm	7-6
A0124	Parameter alteration with enabled inverter	7-6
A0125	Reading/writing in inexistent parameter	7-6
A0126	Parameter Value Out of Range	7-6
A0127	Function not configured for Fieldbus	7-6
A0129	Fieldbus Connec. Inactive	7-6
A0130	Fieldbus Card Inactive	7-6
A0301	Input undervoltage	7-6
A0302	Input overvoltage	7-6
F0303	Input undervoltage	7-6
F0304	Input overvoltage	7-6
F0305	Input unbalance/phase loss	7-6
F0309	Timeout in Ride-through state Waiting Line	7-6
F0310	Short circuit on the transformer 1 secondary	7-7
A0315	Ground fault for neutral shift	7-7
F0316	Ground fault for neutral shift	7-7
F0317	Ground fault for current leak	7-7
F0320	Vab measurement feedback fault	7-7
F0321	Vbc measurement feedback fault	7-7
F0323	Ib_1 measurement feedback fault	7-7
F0324	Ic_1 measurement feedback fault	7-7

Fault/Alarm	Description	Page
F0325	Vuv measurement feedback fault	7-7
F0326	Vvw measurement feedback fault	7-7
F0327	Vn_gnd measurement feedback fault	7-8
F0328	Ib_2 measurement feedback fault	7-8
F0329	Ic_2 measurement feedback fault	7-8
F0330	Ib_3 measurement feedback fault	7-8
F0331	Falha de realimentação na medição Ic_3	7-8
F0343	Curto-circuito no secundário do transformador 2	7-8
F0346	Curto-circuito no secundário do transformador 3	7-8
F0350	Invalid setting for the Bypass	7-8
F0351	Number of programmed cells exceeds the inverter capacity	7-9
F0359(1)	Timeout in the communication with the thermal protection relay	7-9
A0360	Fault in the temperature sensor of the thermal protection relay CH1	7-9
A0361	Fault in the temperature sensor of the thermal protection relay CH2	7-9
A0362	Fault in the temperature sensor of the thermal protection relay CH3	7-9
A0363	Fault in the temperature sensor of the thermal protection relay CH4	7-9
A0364	Fault in the temperature sensor of the thermal protection relay CH5	7-9
A0365	Fault in the temperature sensor of the thermal protection relay CH6	7-9
A0366	Fault in the temperature sensor of the thermal protection relay CH7	7-10
A0367	Fault in the temperature sensor of the thermal protection relay CH8	7-10
F0368(1)	Overtemperature detected by the thermal protection relay CH1	7-10
F0369(1)	Overtemperature detected by the thermal protection relay CH2	7-10
F0370(1)	Overtemperature detected by the thermal protection relay CH3	7-10
F0371(1)	Overtemperature detected by the thermal protection relay CH4	7-10
F0372(1)	Overtemperature detected by the thermal protection relay CH5	7-10
F0373(1)	Overtemperature detected by the thermal protection relay CH6	7-10
F0374(1)	Overtemperature detected by the thermal protection relay CH7	7-10
F0375(1)	Overtemperature detected by the thermal protection relay CH8	7-10
A0376	Overtemperature detected by the thermal protection relay CH1	7-11
A0377	Overtemperature detected by the thermal protection relay CH2	7-11
A0378	Overtemperature detected by the thermal protection relay CH3	7-11
A0379	Overtemperature detected by the thermal protection relay CH4	7-11
A0380	Overtemperature detected by the thermal protection relay CH5	7-11
A0381	Overtemperature detected by the thermal protection relay CH6	7-11
A0382	Overtemperature detected by the thermal protection relay CH7	7-11
A0383	Overtemperature detected by the thermal protection relay CH8	7-11
F0400	Cell U1 DC link overvoltage	7-12

Fault/Alarm	Description	Page
F0401	Cell U1 DC link undervoltage	7-12
A0402	Overtemperature on cell U1 IGBT module	7-12
F0403	Overtemperature on cell U1 IGBT module	7-12
F0404	Defective temperature sensor or undertemperature on cell U1 IGBT	7-12
F0405	Cell U1 phase IGBT	7-12
F0406	Cell U1 neutral IGBT	7-12
F0408	Cell U1 phase pulse feedback	7-12
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F0411	Cell U1 electronics power supply	7-13
F0416	Cell U1 modulation synchronism	7-13
F0417	Cell U1 bypass system	7-13
F0418	Communication with cell U1	7-13
F0420	Incompatible cell U1 firmware	7-13
F0421	Incompatible cell U1 model	7-13
F0422	Cell U1 insulation defective	7-13
F0423	Firmware update or PLD cell U1	7-13
F0425	Cell U2 DC link overvoltage	7-13
F0426	Cell U2 DC link undervoltage	7-13
A0427	Overtemperature on cell U2 IGBT module	7-13
F0428	Overtemperature on cell U2 IGBT module	7-13
F0429	Defective temperature sensor or undertemperature on cell U2 IGBT	7-13
F0430	Cell U2 phase IGBT	7-14
F0431	Cell U2 neutral IGBT	7-14
F0433	Cell U2 phase pulse feedback	7-14
F0435	Cell U2 neutral pulse feedback	7-14
F0436	Cell U2 electronics power supply	7-14
F0441	Cell U2 modulation synchronism	7-14
F0442	Cell U2 bypass system	7-14
F0443	Communication with cell U2	7-14
F0445	Incompatible cell U2 firmware	7-14
F0446	Incompatible cell U2 model	7-14
F0447	Cell U2 insulation defective	7-14
F0448	Firmware update or PLD cell U2	7-14
F0450	Cell U3 DC link overvoltage	7-15
F0451	Cell U3 DC link undervoltage	7-15
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Fault/Alarm	Description	Page
F0454	Defective temperature sensor or undertemperature on cell U3 IGBT	7-15
F0455	Cell U3 phase IGBT	7-15
F0456	Cell U3 neutral IGBT	7-15
F0458	Cell U3 phase pulse feedback	7-15
F0460	Cell U3 neutral pulse feedback	7-15
F0461	Cell U3 electronics power supply	7-16
F0466	Cell U3 modulation synchronism	7-16
F0467	Cell U3 bypass system	7-16
F0468	Communication with cell U3	7-16
F0470	Incompatible cell U3 firmware	7-16
F0471	Incompatible cell U3 model	7-16
F0472	Cell U3 insulation defective	7-16
F0473	Firmware update or PLD cell U3	7-16
F0475	Cell U4 DC link overvoltage	7-16
F0476	Cell U4 DC link undervoltage	7-16
A0477	Overtemperature on cell U4 IGBT module	7-16
F0478	Overtemperature on cell U4 IGBT module	7-16
F0479	Defective temperature sensor or undertemperature on cell U4 IGBT	7-16
F0480	Cell U4 phase IGBT	7-17
F0481	Cell U4 neutral IGBT	7-17
F0483	Cell U4 phase pulse feedback	7-17
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F0486	Cell U4 electronics power supply	7-17
F0491	Cell U4 modulation synchronism	7-17
F0492	Cell U4 bypass system	7-17
F0493	Communication with cell U4	7-17
F0495	Incompatible cell U4 firmware	7-17
F0496	Incompatible cell U4 model	7-17
F0497	Cell U4 insulation defective	7-17
F0498	Firmware update or PLD cell U4	7-17
F0500	Cell U5 DC link overvoltage	7-18
F0501	Cell U5 DC link undervoltage	7-18
A0502	Overtemperature on cell U5 IGBT module	7-18
F0503	Overtemperature on cell U5 IGBT module	7-18
F0504	Defective temperature sensor or undertemperature on cell U5 IGBT	7-18
F0505	Cell U5 phase IGBT	7-18
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Fault/Alarm	Description	Page
F0508	Cell U5 phase pulse feedback	7-18
F0510	Cell U5 neutral pulse feedback	7-18
F0511	Cell U5 electronics power supply	7-19
F0516	Cell U5 modulation synchronism	7-19
F0517	Cell U5 bypass system	7-19
F0518	Communication with cell U5	7-19
F0520	Incompatible cell U5 firmware	7-19
F0521	Incompatible cell U5 model	7-19
F0522	Cell U5 insulation defective	7-19
F0523	Firmware update or PLD cell U5	7-19
F0525	Cell U6 DC link overvoltage	7-19
F0526	Cell U6 DC link undervoltage	7-19
A0527	Overtemperature on cell U6 IGBT module	7-19
F0528	Overtemperature on cell U6 IGBT module	7-19
F0529	Defective temperature sensor or undertemperature on cell U6 IGBT	7-19
F0530	Cell U6 phase IGBT	7-20
F0531	Cell U6 neutral IGBT	7-20
F0533	Cell U6 phase pulse feedback	7-20
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F0536	Cell U6 electronics power supply	7-20
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F0543	Communication with cell U6	7-20
F0545	Incompatible cell U6 firmware	7-20
F0546	Incompatible cell U6 model	7-20
F0547	Cell U6 insulation defective	7-20
F0548	Firmware update or PLD cell U6	7-20
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F0553	Overtemperature on cell U7 IGBT module	7-21
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F0555	Cell U7 phase IGBT	7-21
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Fault/Alarm	Description	Page
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F0567	Cell U7 bypass system	7-22
F0568	Communication with cell U7	7-22
F0570	Incompatible cell U7 firmware	7-22
F0571	Incompatible cell U7 model	7-22
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F0573	Firmware update or PLD cell U7	7-22
F0575	Cell U8 DC link overvoltage	7-22
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A0577	Overtemperature on cell U8 IGBT module	7-22
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F1270	Incompatible cell W11 firmware	7-64
F1271	Incompatible cell W11 model	7-64

Fault/Alarm	Description	Page
F1272	Cell W11 insulation defective	7-64
F1273	Firmware update or PLD cell W11	7-64
F1275	Cell W12 DC link overvoltage	7-64
F1276	Cell W12 DC link undervoltage	7-64
A1277	Overtemperature on cell W12 IGBT module	7-64
F1278	Overtemperature on cell W12 IGBT module	7-64
F1279	Defective temperature sensor or undertemperature on cell W12 IGBT	7-64
F1280	Cell W12 phase IGBT	7-65
F1281	Cell W12 neutral IGBT	7-65
F1283	Cell W12 phase pulse feedback	7-65
F1285	Cell W12 neutral pulse feedback	7-65
F1286	Cell W12 electronics power supply	7-65
F1291	Cell W12 modulation synchronism	7-65
F1292	Cell W12 bypass system	7-65
F1293	Communication with cell W12	7-65
F1295	Incompatible cell W12 firmware	7-65
F1296	Incompatible cell W12 model	7-65
F1297	Cell W12 insulation defective	7-65
F1298	Firmware update or PLD cell W12	7-65

NOTE!
Note found in the alarm and fault quick reference:
(1) It does not open the circuit breaker.

2 SAFETY INSTRUCTIONS

This manual contains the necessary information for the correct use of the MVW3000 frequency inverter.

It was written to be used by people with proper technical training or qualification to operate this kind of equipment.

This manual presents all the functions and parameters of the MVW3000, but it is not intended to explain every possible application of the MVW3000. WEG will not take any liabilities for applications not described in this manual.

This product neither intended for applications whose purpose is to ensure physical integrity and/or life of people, nor for any other application in which a fault of the MVW3000 may create a situation of risk to the physical integrity and/or life of people. The designer who applies the MVW3000 must provide ways to ensure the safety of the installation even in case of a failure of the servo drive.

2.1 SAFETY WARNINGS IN THE MANUAL

The following safety notices are used in this manual:

DANGER!
Not following the procedures recommended in this warning can lead to death, serious injuries and considerable material damages.

WARNING!
Not following the procedures recommended in this warning can lead to material damages.

NOTE!
The text aims at providing important information for the complete understanding and proper operation of the product.

2.2 SAFETY WARNINGS ON THE PRODUCT

The following symbols are attached to the product as safety warnings:

High voltages are present.

Components sensitive to electrostatic discharge. Do not touch them.

Mandatory connection to the protective earth (PE).

Connection of the shield to the ground.

2.3 IDENTIFICATION LABEL OF THE MVW3000

The identification label of the MVW3000 is located inside the product Control Panel. The label contains important information on the inverter.

AUTOMATION UNIT SWITCHGEAR AND CONTROLGEAR	
TYPE: MVW3000 MANUFACTURING YEAR: DOCUMENT : 10004545394 SERIAL No: MATERIAL: 13777913 WEIGHT: 1560 kg IP: 41	Ur: 7.2 kV fr: 50 Hz Up: 45 kV Ud: 15 kV COMMAND Ua: 220 Vca Ir (GENERAL BUSBAR): 200 A Ik: 15.7 kA Ip: 40.8 kA
INSTRUCTION MANUAL	

Figure 2.1: *MVW3000 identification label (example)*

2.4 PRELIMINARY RECOMMENDATIONS

DANGER!
Only qualified personnel, familiar with the MVW3000 inverter and related equipment must plan or perform the installation, commissioning, operation and maintenance of this equipment.
Such personnel must follow the safety instructions described in this manual and/or defined by local standards.
Failure to comply with the safety instructions may cause risk of death and/or equipment damage.

NOTE!
For the purposes of this manual, qualified personnel are those trained in order to be able to:
1. Install, ground, power up and operate the MVW3000 in accordance with this manual and the safety legal procedures in force.
2. Wear/use protective equipment according to the standards in force.
3. Give first aid.

DANGER!
Always turn off the main power supply before touching any electrical component associated to the inverter.
Many components may remain charged with high voltages and/or moving parts (fans) even after the AC power supply input is disconnected or turned off.
Wait for at least ten minutes in order to guarantee the full discharge of the capacitors.
Always connect the equipment frame to the protective earth (PE) at the proper terminal.

WARNING!
Electronic boards have components sensitive to electrostatic discharges. Do not touch directly the component parts or connectors. If necessary, first touch the grounded metallic frame or use a proper grounding strap.

Do not execute any applied potential test on the inverter!
If necessary, contact WEG.

NOTE!
Frequency inverters may interfere with other electronic equipment. Follow the recommended procedures to minimize those effects.

NOTE!
Read the User's Manual completely before installing or operating this inverter.

3 GENERAL INFORMATION

This manual presents the necessary information for the configuration of all of the functions and parameters of of the MVW3000. This manual must be used together with the User's Manual.

3.1 ABOUT THE MANUAL

This manual contains 7 chapters, which have a logical sequence for the user to program and operate the MVW3000:

This manual contains information about the setting and programming of WEG / MVW3000 Medium Voltage Inverter. This document is arranged in dedicated and specific chapters that explain the proper setting, troubleshooting and functionalities of the equipment.

The characteristics and recommendations contained in this manual were based on models of the standard MVW3000. It is worth of notice that, in addition to supplying standard products, WEG technical team - composed of distinct departments: Technical Sales, Contract Management, Engineering, Technical Assistance, among others - is qualified to develop and provide customized solutions according to the customers' needs and their specific applications.

The MVW3000 may be engineered to meet the needs and technical specifications of our customers. Sizes, technical recommendations, performance data and optional items can be changed in relation to the information contained in this document.

In addition to the manual, the inverter detailed design is part of the documentation delivered to the customer. This design contains all the electrical, mechanical and setting information, as well as instructions for the interface/installation with other equipment.

The MVW3000, as well as other WEG products, is in constant evolution in relation to both internal parts (hardware) and programming (software/firmware). Any further explanation about the equipment and its documentation can be obtained by means of WEG communication channels.

WEG is not liable for the improper use of the information contained in this manual.

3.2 SOFTWARE VERSION

The software version used on the MVW3000 is important, since the software defines the functions and programming parameters. This manual refers to the software version as indicated on the back cover. For instance, the version 1.3X means from 1.30 to 1.39, where "X" are the evolutions in the software that do not affect the content of this manual.

3.2.1 Available Models

The MVW3000 line of Medium Voltage inverters offers different models, classified according to their power cell rated voltage and current levels. Different models of the MVW3000 may have different frames and codes. For constructive aspects of the available frames, check in chapter 4 TECHNICAL SPECIFICATIONS of the User's

Manual, Figure 4.3, page 4-3 and tables 4.1 to 4.12 on pages 4-3 and 4-4. For models with rated voltage above 8000 V, contact WEG.

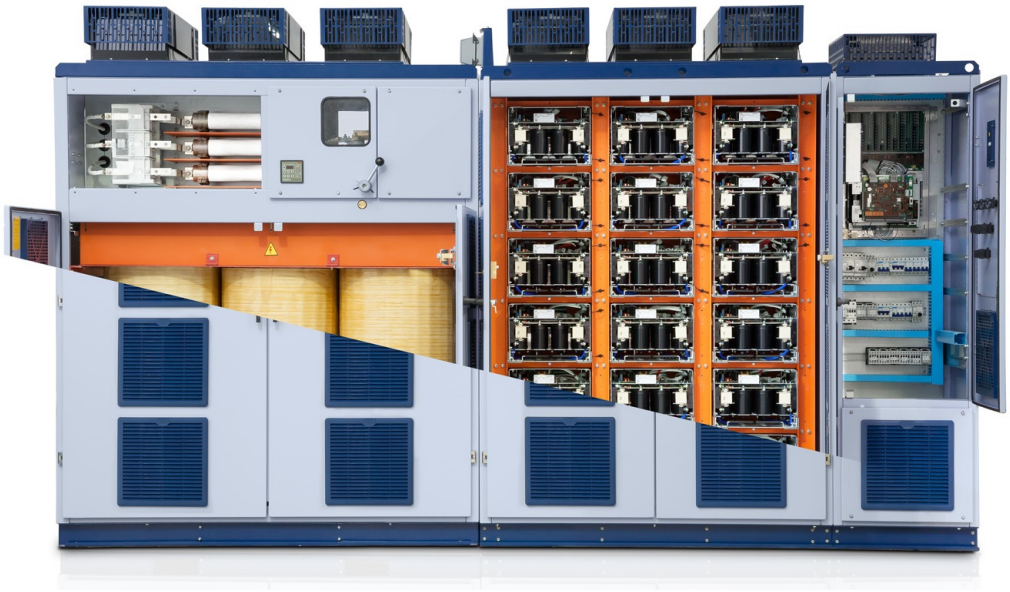

Figure 3.1: *General illustration of the MVW3000 panel (Frame B6)*

WARNING!
It is very important to check that the inverter software version is the same as indicated on the first page of this manual.

4 HMI OPERATION

The HMI Interface (HMI - Human Machine Interface) provides a series of new resources to the medium voltage frequency inverter MVW3000. They are:

- Visualization: text and graphic visualization mode.
- Monitoring: up to 6 parameters can be monitored simultaneously on the screen.
- Navigation: navigation system via menus, with the addition of scrollbars and new keys.
- On-line help function: help in the HMI itself.
- Edition: new keys to speed up the parameter edition.

The HMI design, improvements and new functions present operation, navigation and programming similar with WEG product line.

Figure 4.1: *MVW3000 inverter HMI*

4.1 INSTALLATION OF THE HMI IN THE CABINET

The installation of the HMI in the cabinet does not require the frame, and the fastening is done directly with the screws placed on the movable fins positioned at the HMI back cover, according to the Figure 4.2 on page 4-2.

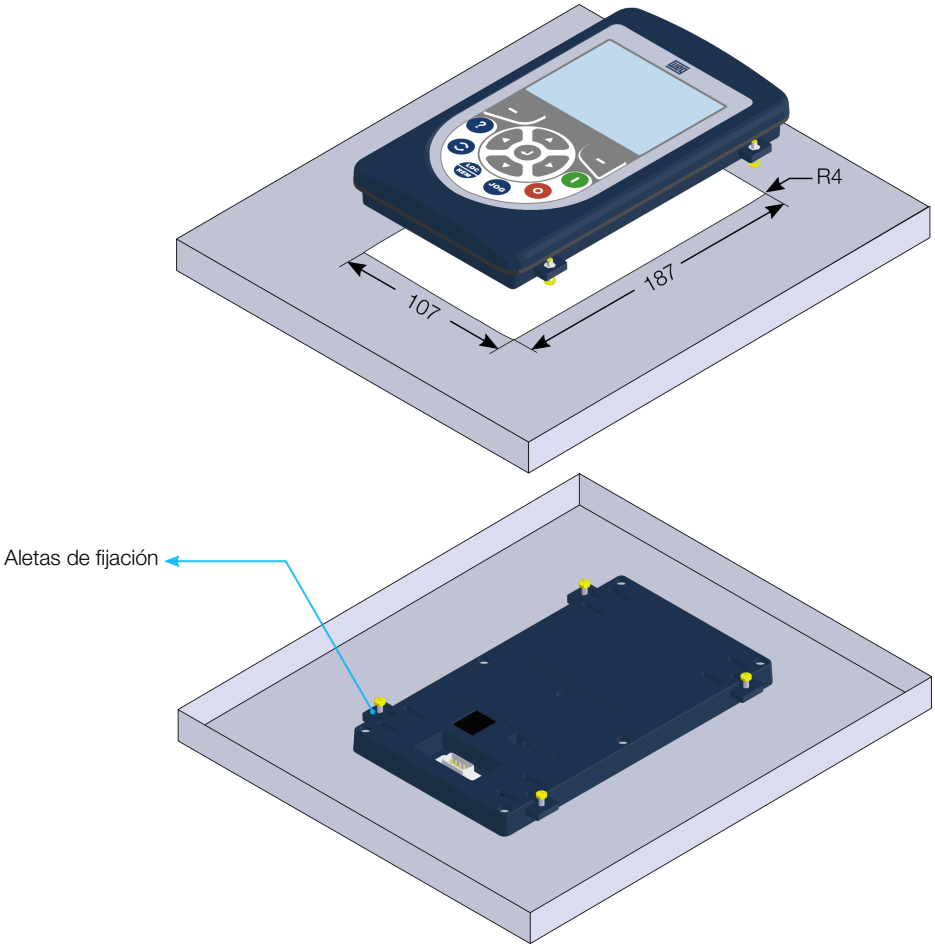

Figure 4.2: *Size of the panel cut-out for fixing the HMI (in millimeters)*

The HMI is connected to the MVC4 board via connector XC8.3.

WARNING!
It is not recommended to connect the HMI to the MVC4 board with power applied to the control rack.

4.2 STARTING THE USE OF THE HMI

The HMI works as the communication master. When the panel is energized, the HMI performs a parameter initialization with the MVC4 board. During this process the firmware versions of the HMI and of the MVW3000 control boards are exhibited.

The information of the parameters being transferred and a progress bar are exhibited during the initialization process (refer to Figure 4.3 on page 4-3).

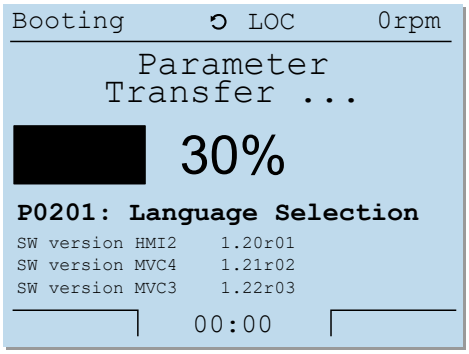

Figure 4.3: *HMI Initialization*

NOTE!

- In order to be able to start using the HMI (navigation and parameter edition) it is only necessary that the initialization be successfully concluded; no additional programming is necessary.
- The parameter values remain stored in the MVC4 board. If a communication problem occurs and the initialization is not successfully concluded, the HMI notifies an initialization failure and releases the keypad use, however, any modification in the parameter programming becomes useless because data will not be sent to the MVC4 board.
- If the HMI is disconnected while the panel is powered up, when reconnecting it a new initialization procedure occurs.

4.2.1 HMI Basic Visualization Modes

In any HMI use situation (visualization mode or active screen) there are standard indications that always will be presented:

Header:

- Inverter status.
- Speed direction.
- Help availability.
- Local or remote mode.
- Motor speed (rpm).

Footer:

- Time.
- Function of the 2 softkeys.

The various modules or visualization screens of the HMI can be classified in 6 different basic types:

- 1 parameter.
- 2 or 3 parameters.
- 4 to 6 parameters.

Navigation:

- Parameter menu.
- Parameters.
- Error log.

Parameter edition:

- Numerical Parameters.
- Alphanumerical Parameters.
- Indication of occurred fault, alarm or notification.

Help function:

- Parameters, alarms and faults.

4 Graphic Functions:

- Graphic Function.

When the initialization is finished the display enters the parameter monitoring mode. The number of presented parameters can be programmed through the read-only and selection parameters (Menu → Configurations → HMI → Main screen), and the font size varies according to the number of parameters programmed for monitoring, according to Figure 4.4 on page 4-4.

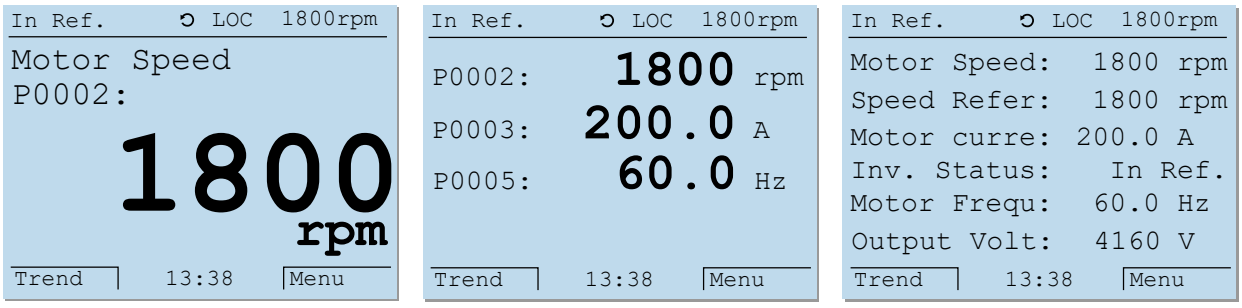

Figure 4.4: *Parameter monitoring modes.*

4.2.2 Structure of the menu

Selecting the [Menu] option from the monitoring mode displays the navigation menu (Table 4.2 on page 4-6.)

Level 1		Level 2		Level 3	
S	Status	S1	Measurements	S1.1	Speed
				S1.2	Current
				S1.3	Voltage
				S1.4	Power
				S1.5	Frequency
				S1.6	Torque
				S1.7	Temperature
				S1.8	Position
		S2	I/O	S2.1	Digital
				S2.2	Analog
		S3	Inverter	S3.1	References
				S3.2	Status
				S3.3	Software version
				S3.4	Model
		S4	PLC		
D	Diagnostics	D1	Alarms and faults		
		D2	Hours control		
C	Configurations	C1	HMI	C1.1	Language
				C1.2	Password
				C1.3	Main screen
				C1.4	Graphic
				C1.5	Settings
		C2	Ramps		
		C3	Control		
		C4	Nominal data	C4.1	Inverter
				C4.2	Motor
		C5	LOC/REM Selection	C5.1	Local
				C5.2	Remote
		C6	I/O	C6.1	Digital inputs
				C6.2	Digital outputs
				C6.3	Analog inputs
				C6.4	Analog outputs
		C7	Protections		
		C8	Functions	C8.1	Bypass
				C8.2	Flying Start
				C8.3	Ride-Through
				C8.4	PID
				C8.5	Trace
		C9	PLC		
		C10	Communications		
		C11	Backup		

The Menu is composed by several access levels. The navigation through these levels is done by means of the softkeys [Exit] and [Select]. In order to select one group the ↵ key or the softkey [Select] can be used.

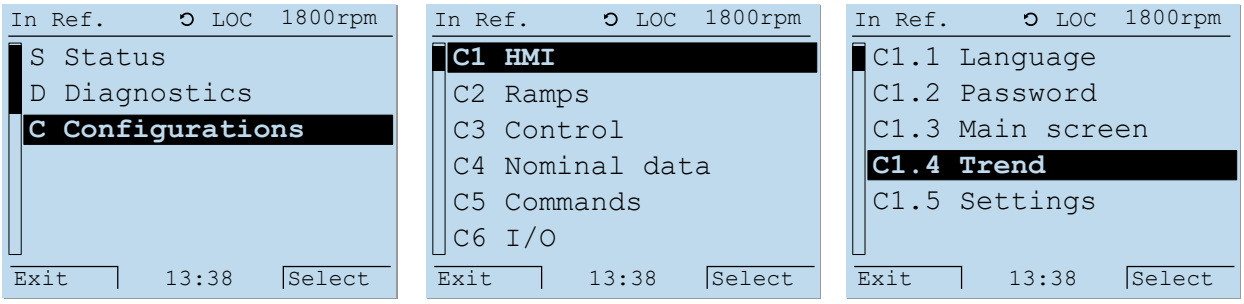

Figure 4.5: *Menu, submenu and subsubmenu (level 1, 2 and 3)*

Table 4.2: *Groups accessed through the main menu*

Menu	Parameters or Submenu to which access is given
Status	Allows viewing of the MVW3000 reading variables.
Diagnostics	It allows viewing variables and events that may help diagnose problems or improve the MVW3000 operation.
Configurations	This menu allows the programming of all MVW3000 configuration parameters.

In the navigation modes, a scrollbar appears at the HMI left side, with the purpose of helping the navigation by signalizing the relative position of the cursor regarding the total of possible groups/parameters.

4.3 PARAMETER EDITION

The activation of the edition or parameter changing is executed by pressing the key or the softkey associated to the parameter navigation.

Once in edition mode, if the softkey [Exit] is used, the modifications are not stored in the parameter memory and the value prior to the edition is restored. In a similar way, using the softkey [Save], the new parameter content is stored in inverter parameter memory.

4.3.1 Numerical edition

The numerical parameters are changed with the and keys to increment and decrement their contents. It is possible changing the parameter contents with a ten times faster (x10) rate; the and keys are used to increment/decrement the tens.

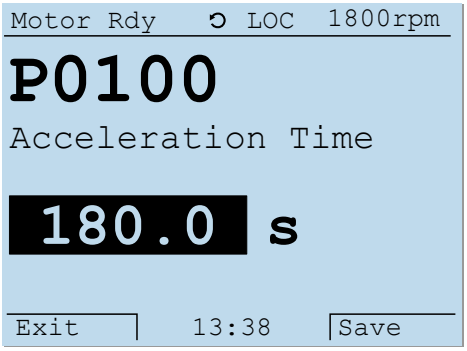

Figure 4.6: *Numerical edition*

4.3.2 Alphanumerical edition

In the edition of message type parameters, the cursor can be moved by using the ▲ and ▼ keys.

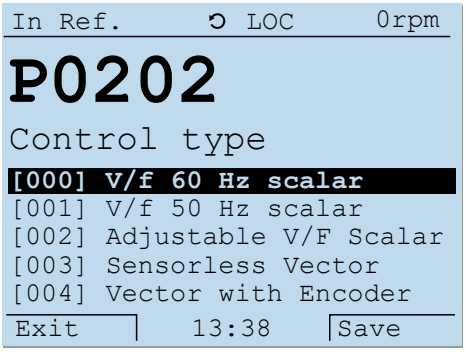

Figure 4.7: *Alphanumerical edition*

4.4 CONFIGURING THE HMI

4.4.1 LCD contrast

The HMI LCD contrast is set by the parameter P0490 (Menu → Configurations → HMI → Settings). Typical contrast values are between 50 and 100.

NOTE!
After the power on, approximately 60 seconds are necessary for the stabilization of the contrast at the level adjusted in P0490. In certain climatic conditions (temperature/humidity), contrast stabilization times longer than 60 may occur.

4.4.2 Configuring the HMI Commands

For the HMI commands to work properly, it is necessary to program the local or remote (LOC/REM) inverter commands to be of the “Graphic HMI” type.

Example of LOCAL configuration:
P0220 = 11 (Graphic HMI LOC/REM key (LOCAL Default)).
P0221 = 13 (Graphic HMI ▲ and ▼ key).
P0223 = 12 (Graphic HMI ↻ key (Forward)).
P0224 = 5 (Graphic HMI I and O key).
P0225 = 6 (Graphic HMI JOG key).

Example of REMOTE configuration::
P0220 = 12 (Graphic HMI LOC/REM key (REMOTE Default)).
P0222 = 13 (Graphic HMI ▲ and ▼ key).
P0226 = 12 (Graphic HMI ↻ key (Forward)).
P0227 = 5 (Graphic HMI I and O key).
P0228 = 6 (Graphic HMI JOG key).

The automatic programming of the parameters described above may be done through the parameter P0491 “HMI commands configuration” (Menu → Configurations → HMI → Settings).

Table 4.3: HMI commands selection

Option	Description
000	Inactive
001	Local HMI
002	Remote HMI

In [Local HMI] and [Remote HMI] modes, the parameters P0220...P0228 are programmed according to the examples of configurations previously described.

4.4.3 Configuring the Monitoring Mode Read-Only Parameters

In the monitoring mode, the HMI is able to present from 1 to 6 read-only parameters simultaneously. The parameters P0500...P0505 select which read-only parameters will be presented Refer to Table 4.4 on page 4-8 in order to identify the possible programmable parameters.

The number of read-only parameters presented depends on how many parameters P0500...P0505 are programmed different from '0 = Inactive'.

Table 4.4: Possible read-only parameters in the monitoring mode

Description	Full Scale
Motor speed reference	P0208
Motor speed	P0208
Motor Current	P0295
Motor Frequency	P0403
Output voltage	P0296
Motor Torque	(P0295/P0401) * 100 %
Inverter output power	1,732 * (P0295 * P0296)
Value of process variable (PID)	100 %

4.4.4 Configuring the On-line Graphic

In the on-line graphic visualization mode, the user is able to program up to two read-only parameters (refer to P0512) for real time graphic monitoring on the HMI. This programming is done in a similar form to the programming of the monitoring mode (Menu → Configurations → HMI → Graphic). The variable updating (sampling) is slow, and the objective is of monitoring in real time the inverter situation. Data is not saved in any memory device, i.e., it is only for real time monitoring.

The graphic function is accessed through the [Graphic] softkey, from the parameter monitoring mode.

NOTE!
For the [Graphic] softkey to be available, it is necessary that at least one read-only parameter be programmed for Graphic (Menu → Configurations → HMI → Graphic).

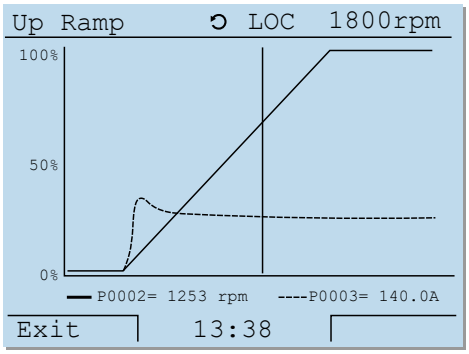

Figure 4.8: *Graphic function visualization example*

In the graphic mode, it is possible to pause the sampling and then navigate through the graphic with the help of a cursor (use arrows and). The parameter values corresponding to the cursor location are presented near the parameter numbers below the graphic.

By means of the parameter P0493 (Sampling time of the online graphic) it is also possible to adjust the horizontal graphic scale, by adjusting the sampling time between points.

The default full scale of the graphic is always 100 % of the programmed parameter full scale. Through the parameters P0516 and P0517 it is possible to modify the full scale of the parameters programmed for the graphic function.

NOTE!
Table 4.4 on page 4-8 presents the full scale for the read-only parameters that can be programmed for both, monitoring and graphic function.

4.5 ALARMS AND FAULTS

4.5.1 Alarms/Faults Screen

When fault or alarm occurs in the MVW3000, HMI enters the error warning mode (refer to Figure 4.9 on page 4-10). The HMI stays in this error warning mode until the user selects [Exit]or error [Reset], through the correspondent softkeys.

The [Exit] option deactivates the notification and allows the user to continue using the HMI; however, the inverter stays in the fault status and it is not possible to enable it.

The [Reset] option causes a general inverter reset and, if the fault persists (the fault cause has not been solved), it is indicated again. If the fault cause has been eliminated, the inverter operates normally again and the fault is stored in the error record.

Alarms are showed in the inverter status field with the Axxx indication. In this case the HMI and the inverter remain operating normally and the alarm is stored in the error record. If one chooses the alarm reset, the procedure is similar to the fault reset (corresponding softkey).

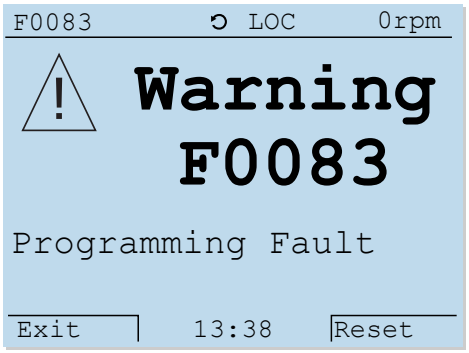

Figure 4.9: *Inverter error visualization mode*

In case of incorrect inverter programming (see table 4.5 on page 4-10), F0083 will be displayed.

Table 4.5: *Incompatibility between parameters - F0083*

1	Two or more parameters among P0264, P0265, P0266, P0267, P0268, P0269 and P0270 equal to 1 (LOC/REM)
2	Two or more parameters among P0265, P0266, P0267, P0268, P0269 and P0270 equal to 6 (2nd ramp)
3	P0265 equal to 8 and P0266 different from 8 or vice-versa (Forward Run / Reverse Run)
4	P0221 or P0222 equal to 8 (Multispeed) and P0266 ≠ 7 and P0267 ≠ 7 and P0268 ≠ 7
5	[P0221 = 7 and P0222 = 7] and [(P0265 ≠ 5 or P0267 ≠ 5) or (P0266 ≠ 5 or P0268 ≠ 5)] (with reference = E.P. and without DIx = accelerate E.P. ou without DIx = decelerate E.P.)
6	[P0221 ≠ 7 or P0222 ≠ 7] and [(P0265 = 5 and P0267 = 5 or P0266 = 5 and P0268 = 5)] (without reference = E.P. and with DIx = accelerate E.P. or with DIx = decelerate E.P.)
7	P0265 or P0267 or P0269 equal to 14 and P0266 and P0268 and P0270 different from 14 (with DIx = Start, without DIx = Stop)
8	P0266 or P0268 or P0270 equal to 14 and P0265 and P0267 and P0269 different from 14 (without Start, with Stop)
9	P0220 > 1 and P0224 = P0227 = 1 and without DIx = Start/Stop or DIx = Fast Stop and without DIx = General Enable
10	P0220 = 0 and P0224 = 1 and without DIx = Start/Stop or Fast Stop and without DIx = General Enable
11	P0220 = 1 and P0227 = 1 and without DIx = Start/Stop or Fast Stop and without DIx = General Enable
12	DIx = Start and DIx = Stop, but P0224 ≠ 1 and P0227 ≠ 1
13	Two or more parameters among P0265, P0266, P0267, P0268, P0269 and P0270 equal to 15 (Man/Aut)
14	Two or more parameters among P0265, P0266, P0267, P0268, P0269 and P0270 equal to 17 (disables Flying Start)
15	Two or more parameters among P0265, P0266, P0267, P0268, P0269 and P0270 equal to 18 (DC voltage regulator)
16	P0264 = 1 (DI2 = LOC/REM) and P0226 = 4 (Selection of Fwd / Rev, Remote Situation by DI2)

4.5.2 Note Screen

Notes are warnings that only notify the user that some situation did not occur in the expected form; therefore they are neither considered errors nor stored in the error log.

Notes usually occur because of configuration errors of the HMI commands (generating Modbus errors) or because of attempts to command the inverter in not allowed situations (general enabling with the inverter in undervoltage or error).

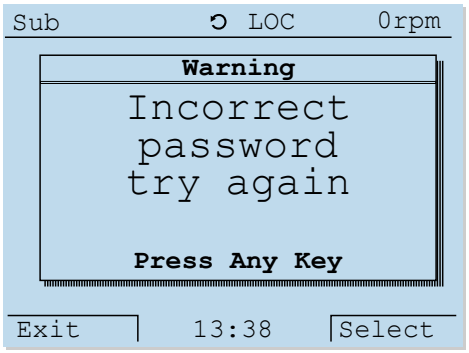

Figure 4.10: *Inverter alarm visualization mode*

NOTE!
Notes do not generate events such as inverter stopping.

4.5.3 Error Log

The parameter P0067 keeps the information on the inverter last 100 occurred errors, according to Figure 4.10 on page 4-11.

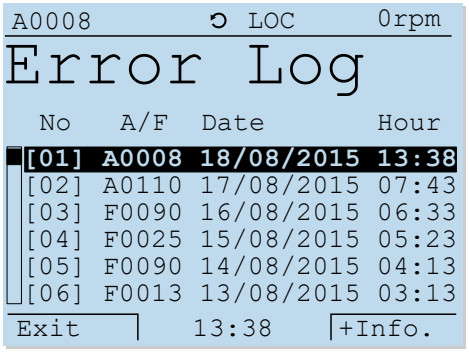

Figure 4.11: *Error log P0067*

In order to visualize more information regarding the error, such as its description and the status of the inverter at the moment it occurred, it is necessary to select the [+Info] option through the corresponding softkey (refer to Figure 4.11 on page 4-11).

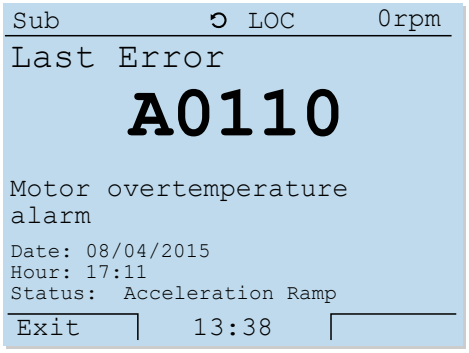

Figure 4.12: *More information about the error*

4.6 HELP FUNCTION

The HMI has an on-line help function. For the parameters and situations where the help is available, an indication in form of a question mark is presented at the top strip of the HMI display (refer to Figure 4.1 on page 4-1). By means of the help key ? the user gets access to the explanatory text of the corresponding parameter or function, as shown in the Figure 4.13 on page 4-12.

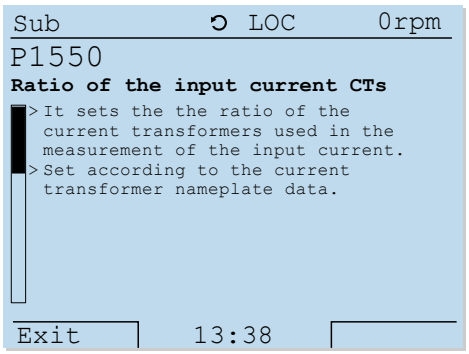

Figure 4.13: *Help function visualization mode*

5 DETAILED PARAMETER DESCRIPTION

This chapter describes in detail all the parameters of the inverter.

Level 1		Level 2		Level 3	
S	Status	S1	Measurements	S1.1	Speed
				S1.2	Current
				S1.3	Voltage
				S1.4	Power
				S1.5	Frequency
				S1.6	Torque
				S1.7	Temperature
				S1.8	Position
		S2	I/O	S2.1	Digital
				S2.2	Analog
		S3	Inverter	S3.1	References
				S3.2	Status
				S3.3	Software version
				S3.4	Model
		S4	PLC		
D	Diagnostics	D1	Alarms and faults		
		D2	Hours control		
C	Configurations	C1	HMI	C1.1	Language
				C1.2	Password
				C1.3	Main screen
				C1.4	Graphic
				C1.5	Settings
		C2	Ramps		
		C3	Control		
		C4	Nominal data	C4.1	Inverter
				C4.2	Motor
		C5	LOC/REM Selection	C5.1	Local
				C5.2	Remote
		C6	I/O	C6.1	Digital inputs
				C6.2	Digital outputs
				C6.3	Analog inputs
				C6.4	Analog outputs
		C7	Protections		
		C8	Functions	C8.1	Bypass
				C8.2	Flying Start
				C8.3	Ride-Through
				C8.4	PID
				C8.5	Trace
		C9	PLC		
		C10	Communications		
		C11	Backup		

P0000 - Parameter access password			
Adjustable range:	0 to 999	Factory setting:	0
Acesso:	Menu → Configurations → HMI → Password		

Description:

- It releases access to change the parameter contents.
- The access to change the parameter contents is only released when P0000 = current password. The default password of the inverter is 5; to change the password, see P0200 (Password).

P0001 - Motor speed reference	
Acesso:	Menu → Status → Inverter → References

Description:

- It indicates the speed reference value in rpm (factory setting).
- Independent from the reference source origin (HMI, serial communication, analog input, among others).
- The indication scale can be changed via P0208 (Reference scale factor).

P0002 - Motor speed	
Acesso:	Menu → Status → Measurements → Speed

Description:

- It indicates the real motor speed value in rpm (with filter with time constant of 0.5 s).
- The indication scale can be changed via P0208 (Reference scale factor).

P0003 - Motor Current	
Acesso:	Menu → Status → Measurements → Current

Description:

- It indicates the motor current value in Amperes (A).
- The value is a result of the filter output with time constant defined in P0139 (Output current filter), default value P0139 = 0.2 s.

P0005 - Motor Frequency	
Acesso:	Menu → Status → Measurements → Frequency

Description:

- It indicates the inverter output frequency value in Hertz (Hz).

P0006 - VFD Status	
Acesso:	Menu → Status → Inverter → Status

Description:

- It indicates the actual inverter status.

Inverter possible states:

0 = 'Booting' indicates that the control board is waiting for the initialization end.

1 = 'Sub' indicates that the inverter has insufficient voltage for operation (undervoltage), and it does not accept the enabling command (inverter waiting for the pre-charge/power energization command).

2 = ‘Inv. Ready’ It indicates the inverter is ready to be enabled.

3 = ‘Motor Mag.’ indicates that the motor is being magnetized by DC current. This state lasts for twice the motor rotoric constant time (P0412).

4 = ‘Motor Rdy.’ indicates that the motor is magnetized and the inverter is waiting for the run command.

5 = ‘Up Ramp’ indicates the motor is in the speed acceleration ramp.

6 = ‘Down Ramp’ indicates that the motor is in the speed deceleration ramp.

7 = ‘In Ref.’ indicates that the motor is rotating at the adjusted speed reference.

8 = Not implanted in this software version.

9 = ‘Coast’ indicates that the motor is coasting, without being driven by the inverter.

10 = ‘Ride Thro.’ indicates that the inverter is operating during momentary line faults.

11 = ‘Flying St.’ indicates that the inverter has received a command to start a spinning motor. This state persists until the inverter reaches the motor speed.

12 = ‘Test Mode’ indicates that the inverter is in a transitory state to test mode or to self-tuning.

13 = ‘Inv. Test’ indicates that the inverter is in a general test state.

14 = Not implanted in this software version.

15 = Not implanted in this software version.

16 = ‘Fault’ indicates the inverter is in a fault state.

17 = ‘Alarm’ indicates the inverter is in an alarm state.

18 = ‘Calibrat.’ indicates that the inverter is in the feedback signal calibration process.

19 = ‘Hold’ indicates that the inverter is in DC link regulation mode. Refer to the parameter P0151 description.

20 = ‘I Limit’ indicates that the inverter is in current limitation. Refer to the parameter P0169 description.

21 = ‘I Fast Limit’ indicates that the inverter is in fast current limitation.

22 = ‘Ride Thr 2’ indicates Ride-Through without interruption.

23 = ‘Hold 2’.

24 = ‘Sync Run’ indicates that the inverter is trying to synchronize with the line.

25 = ‘Fast Disab’ indicates fast disable (HG = off) mode (MVC3).

26 = ‘Sync OK’ indicates that the inverter is synchronized with the line.

27 = Not implanted in this software version.

28 = Not implanted in this software version.

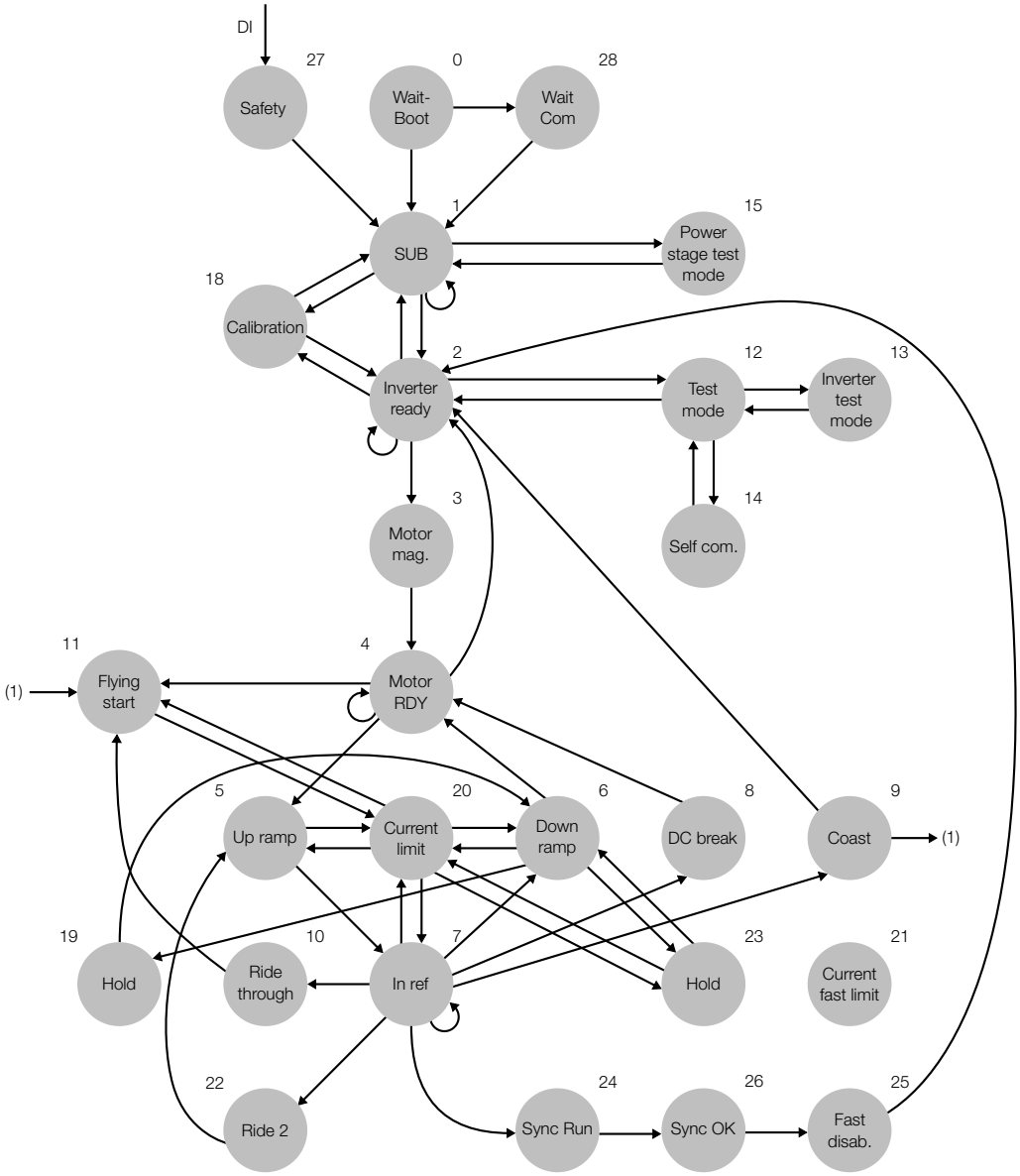

Figure 5.1: *State machine*

P0009 - Motor Torque

Acesso:	Menu → Status → Measurements → Torque

Description:

- It indicates the torque value produced by the motor.

It is calculated as follows:

$$P0009 = \frac{I_{tm} \times 100}{I_{tm_{rated}}}$$

Being:

I_{tm} = Present motor torque current.

Vector control mode:

$I_{tm_{rated}}$ = Rated motor torque current.

Scalar control mode:

$I_{tm_{rated}}$ = Rated inverter torque current.

P0010 - Inverter output power

Acesso: Menu → Status → Measurements → Power

Description:

- It indicates the calculated value of the inverter output power in kW.

P0012 - Digital inputs DI1 to DI10 status

Acesso: Menu → Status → I/O → Digital

Description:

- It indicates, on the Graphic HMI, the status of the 8 digital inputs of the MVC4 control board (DI1 to DI6, DI9, DI10) and of the 2 digital inputs of the optional board (DI7, DI8) through the letters A (Active) and I (Inactive), in the following order:

DI1, DI2, ... ,DI7, DI8, DI9, DI10

Table 5.2: *Digital inputs DI1 to DI10 status*

Description	Bit
DI8	Bit 0
DI7	Bit 1
DI6	Bit 2
DI5	Bit 3
DI4	Bit 4
DI3	Bit 5
DI2	Bit 6
DI1	Bit 7
DI9	Bit 8
DI10	Bit 9

P0013 - Digital outputs DO1 to RL5 status

Acesso: Menu → Status → I/O → Digital

Description:

- It indicates, on the Graphic HMI, the status of the 2 digital outputs of the optional board (DO1, DO2) and of the 5 relay outputs of the MVC4 control board through the letters A (Active) and I (Inactive), in the following order:

DO1, DO2, RL1, RL2, RL3, RL4, RL5

Table 5.3: *Digital outputs DO1 to RL5 status*

Description	Bit
RL5	Bit 1
RL4	Bit 2
RL3	Bit 3
RL2	Bit 4
RL1	Bit 5
DO2	Bit 6
DO1	Bit 7

P0018 - Value of analog input AI1 (single-pole, MVC4 board)
P0019 - Value of analog input AI2 (two-pole, MVC4 board)
P0020 - Value of analog input AI3 (two-pole, EBB board)
P0021 - Value of analog input AI4 (two-pole, EBA board)

Acesso: Menu → Status → I/O → Analog

Description:

- They indicate the values of analog inputs AI1 and AI2 of the MVC4 control board, AI3 of the EBB board and AI4 of the EBA board in percentage of the full scale.
- The indicated values are obtained after addition of the offset and multiplication by the gain.
- See the description of parameters P0234 (Analog input AI1 gain (unipolar MVC4 board)) to P0247 (Analog input AI4 offset (bipolar EBA board)).
- Analog input AI2 has a filter that distinguishes it from others (see P0248 (Analog input AI2 filter (bipolar MVC4 board))).

P0022 - Temperature on MVC3 board

Acesso: Menu → Status → Measurements → Temperature

Description:

- It indicates the temperature value on the MVC3 control board in degrees Celsius (°C).

P0023 - MVC4 board software version

Acesso: Menu → Status → Inverter → Software version

Description:

- It indicates the software version contained in the microcontroller memory located on the MVC4 control board.

P0025 - Iv
P0026 - Iw
P0027 - Iu

Acesso: Menu → Status → I/O → Analog

Description:

- Indicate the result of the A/D conversion, in module, of the phase current.

P0028 - Value of analog input AI5 (isolated single-pole, MVC4 board)

Acesso: Menu → Status → I/O → Analog

Description:

- It indicates the value of analog input AI5 of the MVC4 control board in percentage of full scale. The indicated values are obtained by means of addition of the offset and multiplication by the gain.
- See description of parameters P0721 to P0724.

P0030 - Temperature register channel 1
P0031 - Temperature register channel 2
P0032 - Temperature register channel 3
P0033 - Temperature register channel 4
P0034 - Temperature register channel 5
P0035 - Temperature register channel 6
P0036 - Temperature register channel 7
P0037 - Temperature register channel 8

Acesso: Menu → Status → Measurements → Temperature

Description:

- For these parameters indicate the motor temperature properly, the temperature control module (Tecsystem, Pextron) must be installed observing the recommendations contained in its manual.
- The overtemperature alarm and fault levels are configured directly on the temperature control module according to its manual.

The module serial configuration must be set as follows:

- Baudrate: 2400 bps
- Slave address: 1
- Parity: even
- Stop bit: 1

NOTE!
This parameter is only visible on the HMI when: the Temperature Register function is active, P0315 = 1 (Modbus serial for Tecsystem module) or P0315 = 2 (Modbus Serial for Pextron module).

P0038 - Encoder speed

Acesso: Menu → Status → Measurements → Speed

Description:

- It indicates the encoder actual speed, in revolutions per minute (rpm), through a 0.1 second filter.

P0040 - Value of process variable (PID)

Acesso: Menu → Status → Inverter → Status

Description:

- It indicates the value of the process variable in % (factory setting) used as the PID feedback.
- The scale can be changed through P0528 and P0529.
- See the detailed description in Section 6.1 PID REGULATOR on page 6-1.

NOTE!
This parameter is only visible on the HMI when: the PID function is active, P0203 = 1 (PID regulator).

P0041 - Active redundant ventilation set

Acesso: Menu → Status → Inverter → Status

Description:

- It indicates the status of the redundant ventilation.
- The states 4 and 5 occur when both the sets have failed. In this case the inverter must be powered off and the defective fans must be repaired or replaced. After such procedure, the redundant ventilation function must be reset - refer to P0140.

Table 5.4: *Active redundant ventilation set*

P0041	Description
0	Set A is active
1	Set B is active
2	Set A is active - Set B has failed
3	Set B is active - Set A has failed
4	Set A is active - Sets A and B have failed
5	Set B is active - Sets A and B have failed
6	Set A automatic test
7	Set B automatic test

NOTE!
This parameter is only visible on the HMI when the redundant ventilation function is actived, P0140 > 0.

P0042 - Time powered counter

Acesso: Menu → Diagnostics → Hours control

Description:

- It indicates the total hours the inverter remained powered.
- This value is kept even when the inverter is powered down.

P0043 - Time enabled counter

Acesso: Menu → Diagnostics → Hours control

Description:

- It indicates the total hours the inverter remained enabled.
- It indicates up to 6553 hours; after this value, it returns to zero.
- Setting P0204 = 3 (Reset P0043: It resets the enabled time counter.), the value of parameter P0043 goes to zero.
- This value is kept even when the inverter is powered down.

P0045 - HMI software version

Acesso: Menu → Status → Inverter → Software version

Description:

- It indicates the software version contained in the microcontroller memory located in the HMI .

P0066 - MVC3 board software version	
Acesso:	Menu → Status → Inverter → Software version

Description:

- It indicates the software version contained in the microcontroller memory of the MVC3 control board.

P0067 - Error Register			
Adjustable range:	1 to 100	Factory setting:	1
Acesso:	Menu → Diagnostics → Alarms n' faults		

Description:

- It keeps the record of the last 100 errors (alarms/faults) occurred in the inverter.

P0068 - Present Error	
Acesso:	Menu → Diagnostics → Alarms n' faults

Description:

- It indicates the code of the current fault on the inverter.

P0070 - Status of the MVC3 board digital inputs DI1, DI2, ..., DI16	
Acesso:	Menu → Status → I/O → Digital

Description:

- It indicates, on the Graphic HMI, the status of 16 digital inputs of the MVC3 control board (DI1 to DI16), by means of the letters A (Active) and I (Inactive), in the following order:

DI1, DI2, ... , DI15, DI16

Table 5.5: *Status of the MVC3 board digital inputs DI1, DI2, ..., DI16*

Description	Bit
DI16 - State of mechanically locked doors	Bit 0
DI15 - Not used	Bit 1
DI14 - Not used	Bit 2
DI13 - General enable	Bit 3
DI12 - Inverter main transformer fault	Bit 4
DI11 - Inverter main transformer alarm	Bit 5
DI10 - Cooling system supply fault	Bit 6
DI9 - Not used	Bit 7
DI8 - Not used	Bit 8
DI7 - Pre-charge supply fault	Bit 9
DI6 - See P1739 (RL8 Function MVC3)	Bit 10
DI5 - Enabling of the input protection	Bit 11
DI4 - Circuit breaker OFF state	Bit 12
DI3 - Circuit breaker ON state	Bit 13
DI2 - Circuit breaker Ready	Bit 14
DI1 - Power ON (Starts pre-charge)	Bit 15

P0071 - Status of MVC3 board relay digital outputs RL1 to RL8

Acesso: Menu → Status → I/O → Digital

Description:

- It indicates, on the Graphic HMI, the status of the 8 relay outputs of the MVC3 control board, by means of the letters A (Active) and I (Inactive), in the following order:

RL1, RL2, ... , RL7, RL8

Table 5.6: *Status of MVC3 board relay digital outputs RL1 to RL8*

Description	Bit
RL8 - Refer to P1739 (RL8 Function MVC3)	Bit 0
RL7 - Turns on the inverter ventilation	Bit 1
RL6 - Circuit break ON	Bit 2
RL5 - 2nd stage pre-charge	Bit 3
RL4 - Turns off input circuit breaker	Bit 4
RL3 - Closes input circuit breaker	Bit 5
RL2 - 1st stage pre-charge	Bit 6
RL1 - Inverter Ready	Bit 7

P0076 - i x t Overload

Acesso: Menu → Status → Inverter → Status

Description:

- It indicates the overload percentage value given by parameters P0156, P0157 and P0158.
- The actuation of the overload fault (F0072) occurs when P0076 reaches 100 %.

P0077 - Motor field current

Acesso: Menu → Status → Measurements → Current

Description:

- It indicates the field current value of the synchronous motor.

NOTE!
This parameter is only visible on the HMI when: P0950 = 1 (Synchronous motor with brushes).

P0079 - Synchronous motor shaft position

Acesso: Menu → Status → Measurements → Position

Description:

- It indicates the shaft position of the synchronous motor.
- The Graphic HMI shows the position in degrees between 0° and 360°.
- Resolution = 1.4°.

NOTE!
8 most significant bits = number of turns.
8 least significant bits = position within the same turn.

NOTE!
This parameter is only visible on HMI when: P0950 = 1 (Synchronous motor with brushes) or P0950 = 2 (Brushless synchronous motor).

P0080 - Date (dd/mm/yy)	
Acesso:	Menu → Configurations → HMI → Settings

Description:

- It indicates, on the Graphic HMI, the current dated in the format “dd/mm/yy”.

P0081 - Hour (24hs)	
Acesso:	Menu → Configurations → HMI → Settings

Description:

- It indicates the actual time in the format “hh:mm:ss”.
- The hours are indicated with values between 0 and 24 h.

P0100 - Acceleration time P0101 - Deceleration time P0102 - Acceleration time 2nd ramp P0103 - Deceleration time 2nd ramp			
Adjustable range:	0.0 to 999.0 s	Factory setting:	P0100 = 100.0 s P0101 = 180.0 s P0102 = 100.0 s P0103 = 180.0 s
Acesso:	Menu → Configurations → Ramps		

Description:

- Setting 0.0 means without use of ramp. In this case a voltage step will be applied to the motor proportional to the programmed speed reference.
- It defines the times to accelerate linearly from 0 to Maximum speed reference (P0134) or decelerate linearly from the Maximum speed reference to 0.
- The switching to the second ramp is done through one of the digital inputs DI3 to DI10 if it is programmed for the 2nd ramp function. Refer to parameters from P0265 to P0272.

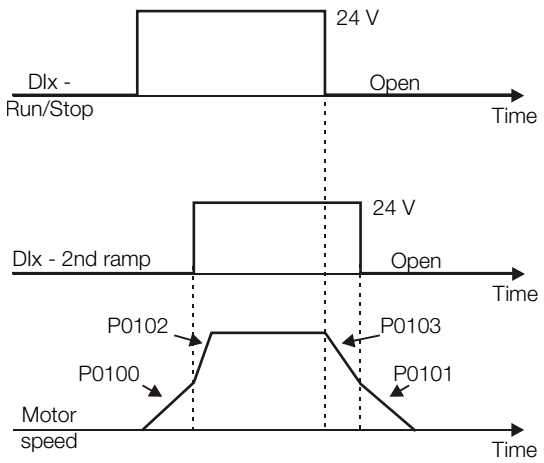

Figure 5.2: *2nd ramp*

P0104 - S Ramp			
Adjustable range:	0.0 to 100.0 %	Factory setting:	0.0 %
Acesso:	Menu → Configurations → Ramps		

Description:

- This parameter allows the acceleration and deceleration ramps to have a non-linear profile, similar to an “S”.
- See Figure 5.3 on page 5-12.

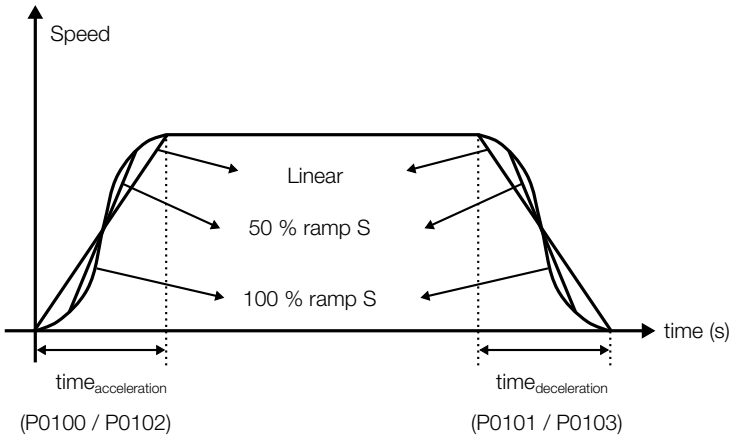

Figure 5.3: *S or Linear Ramp*

$$P0104 = \frac{t_{ramps}}{t_{acel}} \times 100\ \% = \frac{(t_{acel} - t_{linear})}{t_{acel}}, \text{ in the accelerations, or}$$

$$P0104 = \frac{t_{ramps}}{t_{decel}} \times 100\ \% = \frac{(t_{decel} - t_{linear})}{t_{decel}}, \text{ in the decelerations.}$$

Being:

t_{acel} = acceleration time, defined by P0100 or P0102.
t_{decel} = deceleration time, defined by P0101 or P0103.
t_{ramps} = S ramp time.
t_{linear} = linear ramp time.

- Setting 0.0 % means inactive function. In this case, only the linear ramp will be used.
- S ramp reduces mechanical shocks during accelerations or decelerations.

P0119 - Reactive power reference for the power factor control			
Adjustable range:	-99.99 to 99.99 %	Factory setting:	0.00 %
Acesso:	Menu → Configurations → Control		

Description:

- It defines the external reference for the reactive current of the synchronous motor.
- For negative values, the reference of the reactive current will be capacitive. For positive values, it will be inductive.

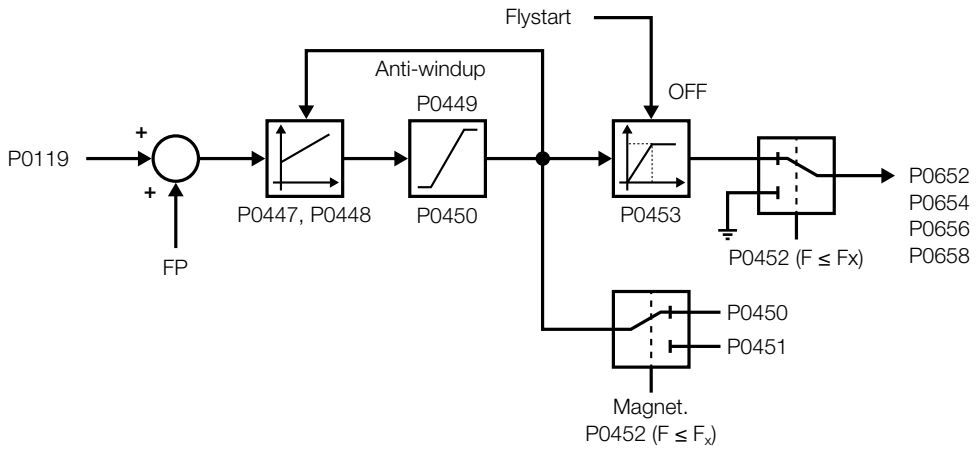

Figure 5.4: *Analog signal of the field current to be used on the motor*

NOTE!
This parameter is only visible on HMI when: P0950 = 1 (Synchronous motor with brushes) or P0950 = 2 (Brushless synchronous motor).

P0120 - Reference Backup			
Adjustable range:	0 to 1	Factory setting:	1
Acesso:	Menu → Configurations → Control		

Description:

- It defines whether the Speed Reference Backup function is Active (1) or Inactive (0).
- Se P0120 = Inactive, then the inverter will not save the reference value when it is disabled, i.e., when the inverter is enabled again, the speed reference will be the minimum speed.
- This backup function is applied only to the reference via HMI.

Table 5.7: *Reference Backup*

P0120	Function
0	Inactive
1	Active

P0121 - HMI speed reference P0122 - Speed reference for JOG or JOG+ P0123 - Speed reference for JOG-			
Adjustable range:	P0121 = 0 to 7200 rpm P0122 = 0 to 8192 rpm P0123 = 0 to 8192 rpm	Factory setting:	P0121 = 90 rpm P0122 = 150 rpm P0123 = 150 rpm
Acesso:	Menu → Configurations → Control		

Description:

- The motor speed reference will adopt the value set in P0121 if P0221 = 0 (Key ▲ and ▼ of service HMI) or P0222 = 0 (Key ▲ and ▼ of service HMI).
- When P0120 = 1 (Active), the value of P0121 is kept in the last value set even de-energizing the inverter.
- Activation of JOG function:

Table 5.8: Selection of JOG command via digital input

JOG key	Digital inputs DI1 to DI3 (P0255 = 2 and/or P0228 = 2)
P0225 = 1 and/or P0228 = 1	DI3 - P0265 = JOG or DI4 - P0266 = JOG or DI5 - P0267 = JOG or DI6 - P0268 = JOG or DI7 - P0269 = JOG or DI8 - P0270 = JOG or DI9 - P0271 = JOG or DI10 - P0272 = JOG

- When activating the JOG function, the motor will accelerate until reaching the value defined in P0122, following the adjusted ramp.
- The direction of rotation is defined by the direction of rotation function (P0223 or P0226).
- The JOG command is only effective with the motor stopped.
- Activation of JOG + function:

Table 5.9: Selection of JOG + command

Digital Inputs	Parameters
DI3 to DI10	P0265 to P0272 = JOG +

5

- Activation of JOG - function:

Table 5.10: Selection of JOG - command

Digital Inputs	Parameters
DI3 to DI10	P0265 to P0272 = JOG-

- When activating the JOG+/JOG- function, the speed reference in P0122/P0123 will be added (without ramp) to the other references to generate the total reference - see Figure 5.23 on page 5-39.

P0124 - Multispeed reference 1
P0125 - Multispeed reference 2
P0126 - Multispeed reference 3
P0127 - Multispeed reference 4
P0128 - Multispeed reference 5
P0129 - Multispeed reference 6
P0130 - Multispeed reference 7
P0131 - Multispeed reference 8

Adjustable range:	0 to 4095 rpm	Factory setting:	P0124 = 90 rpm P0125 = 300 rpm P0126 = 600 rpm P0127 = 900 rpm P0128 = 1200 rpm P0129 = 1500 rpm P0130 = 1800 rpm P0131 = 1650 rpm
Acesso:	Menu → Configurations → Control		

Description:

- These parameters (P0124 to P0131) will only be displayed when P0221 = 8 and/or P0222 = 8 (Multispeed (P0124 to P0131)).

- The Multispeed is used when up to 8 preset fixed speeds are desired.
- When only 2 or 4 speeds are to be used, any input combination among DI4, DI5 and DI6 may be used.
- Check the speed reference parameters, according to the DIs used.
- The Multispeed offers the advantages of stability of the preset fixed references and the immunity against electric noise (isolated digital inputs DIx).
- Multispeed function active when P0221 or P0222 = Multispeed.
- It allows the output speed control relating the values defined by parameters P0124 to P0131 through the logical combination of digital inputs (DIx).

Table 5.11: *Selection of the Multispeed function via digital inputs*

DIx enabled	Programming
4	P0266 = 7
5	P0267 = 7
6	P0268 = 7

Table 5.12: *Multispeed Reference*

8 speeds			Speed reference
	4 speeds		
		2 speeds	
DI6	DI5	DI4	
0	0	0	P0124
0	0	1	P0125
0	1	0	P0126
0	1	1	P0127
1	0	0	P0128
1	0	1	P0129
1	1	0	P0130
1	1	1	P0131

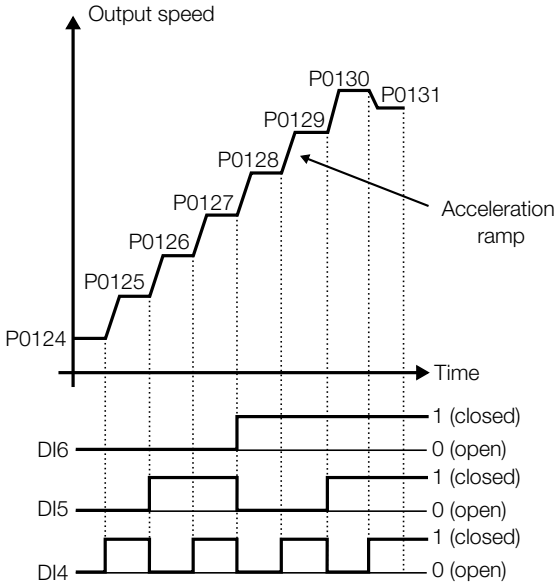

Figure 5.5: *Multispeed*

P0132 - Maximum overspeed level			
Adjustable range:	0 to 100 %	Factory setting:	10 %
Acesso:	Menu → Configurations → Control		

Description:

- When the actual speed exceeds the value of P0134 + P0132 for over 20 ms, the MVW3000 will disable the PWM pulses and indicate fault F0112 (Motor Over Speed).
- The setting of P0132 is a percentage value of P0134.
- When setting P0132 = 100 % the function will be disabled.

NOTE!
This parameter is only visible on the HMI when: the control type is vector, P0202 = 3 (Sensorless Vector) or P0202 = 4 (Vector with Encoder).

P0133 - Minimum speed reference			
P0134 - Maximum speed reference			
Adjustable range:	0 to 7200 rpm	Factory setting:	P0133 = 90 rpm P0134 = 1800 rpm
Acesso:	Menu → Configurations → Control		

Description:

- It defines the maximum/minimum values of speed reference for the motor when the inverter is enabled. Valid for any type of reference signal.
- For details on the actuation of P0133 see P0233 (Dead Zone).

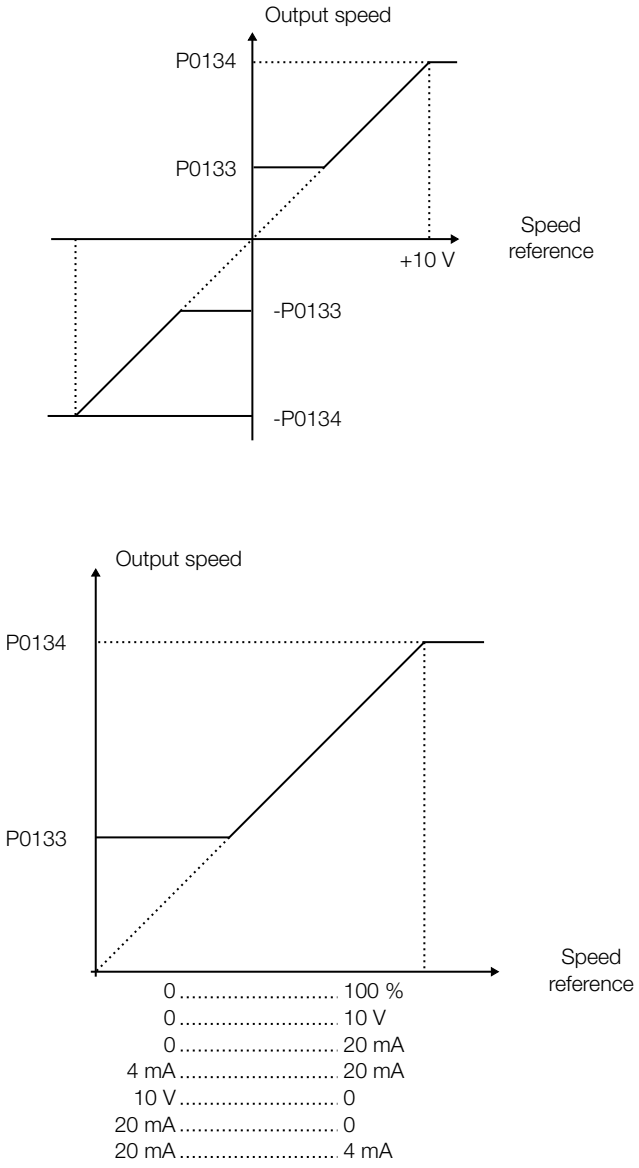

Figure 5.6: *Speed limits considering active dead zone (P0233 = 1)*

P0136 - Addition on the manual torque curve (IxR)			
Adjustable range:	0 to 100	Factory setting:	0
Acesso:	Menu → Configurations → Control		

Description:

- It compensates the voltage drop in the motor stator resistance.
- It actuates at low speeds, increasing the inverter output voltage in order to keep the torque constant at V/F operation.
- The optimal setting is the smallest value of P0136 that allows the satisfactory motor start.
- Value above the necessary will increment in excess the motor current at low speeds, which may force the inverter in an overcurrent condition (F0070, F0071 and F0072).
- The maximum value of increase for the output voltage is equal to 20 % of the rated voltage, in null frequency, when P0136 = 100.
- Setting 0 means inactive function.

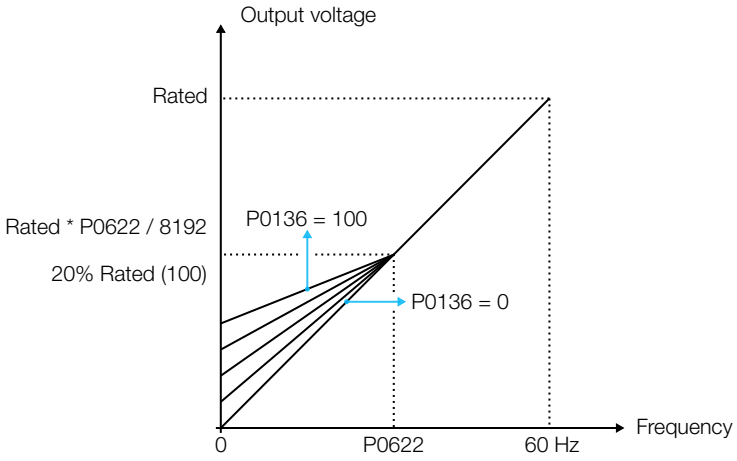

Figure 5.7: *P0202 = 0, V/F curve 60 Hz*

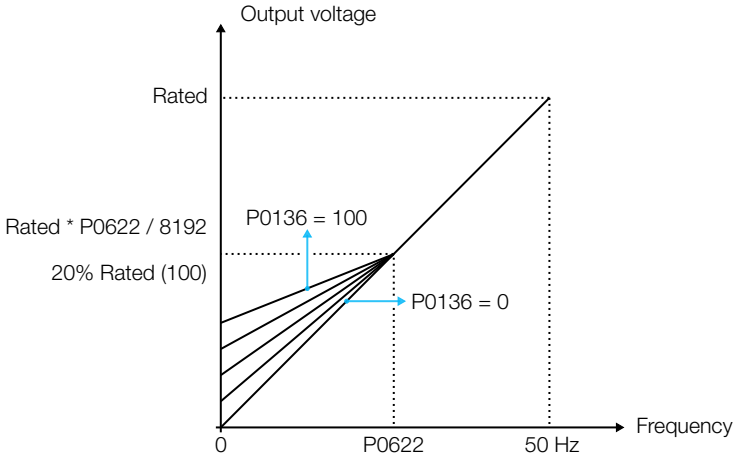

Figure 5.8: *P0202 = 1, V/F curve 50 Hz*

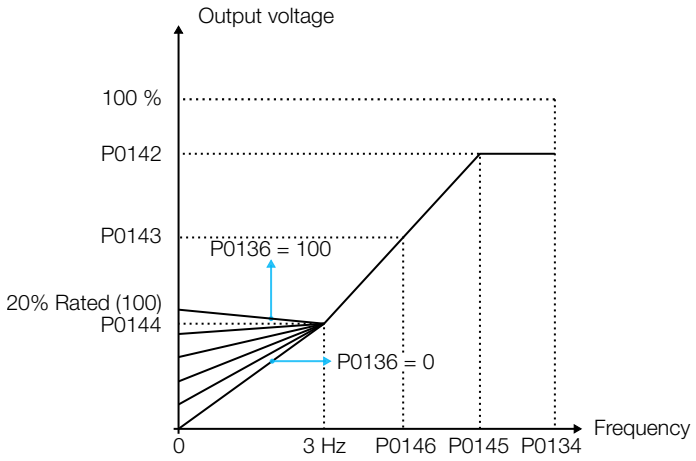

Figure 5.9: *P0202 = 2, V/F adjustable curve*

NOTE!
This parameter is only visible on the HMI when: the control type is scalar, P0202 = 0, 1 or 2 (V/F control).

P0137 - Addition on the automatic torque curve			
Adjustable range:	0 to 1000	Factory setting:	0
Acesso:	Menu → Configurations → Control		

Description:

- Addition on the automatic torque curve compensates the voltage drop in the stator resistance as a function of the motor active current.
- The criteria for the setting of P0137 are the same as those of parameter P0136.

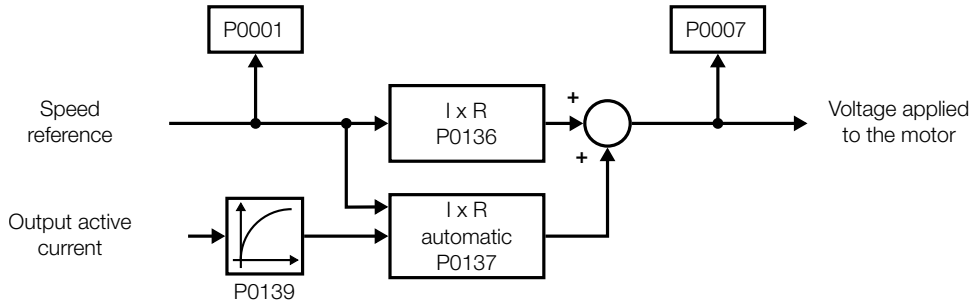

Figure 5.10: *Block diagram of P0137*

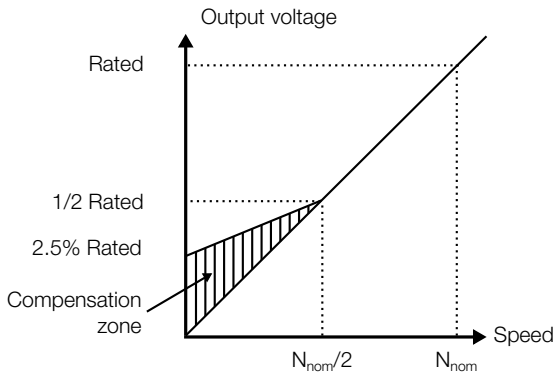

Figure 5.11: *V/F curve with automatic torque boost*

NOTE!
This parameter is only visible on the HMI when: the control type is scalar, P0202 = 0 (V/F 60 Hz) or P0202 = 1 (V/F 50 Hz).

P0138 - Rated slip			
Adjustable range:	-10.00 to 10.00 %	Factory setting:	0.00 %
Acesso:	Menu → Configurations → Control		

Description: Scalar mode:

- Parameter P0138 (for speeds between -10.00 % and +10.00 %) is used in the motor Slip Compensation function. It compensates the motor speed drop due to the application of load. It increments the output frequency as a function of the increase in the motor active current.
- P0138 allows the user to set precisely the slip compensation on the MVW3000. Once P0138 is set, the inverter will keep the speed constant even with load variations by means of the automatic setting of voltage and frequency.

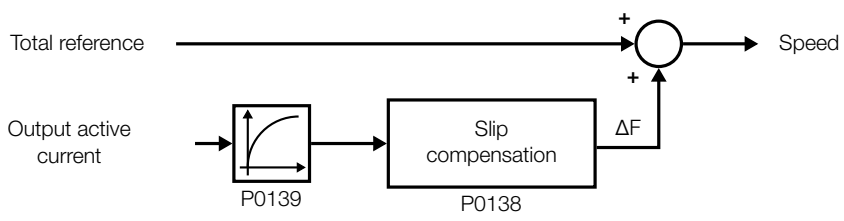

Figure 5.12: *Block diagram P0138 (scalar)*

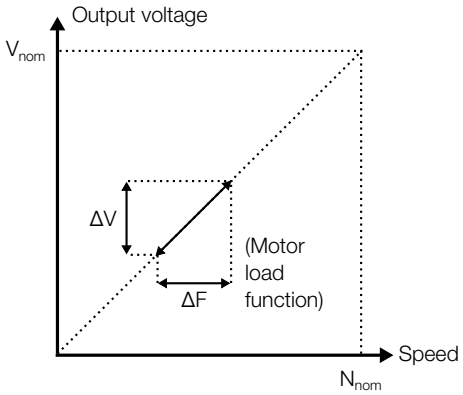

Figure 5.13: *V/F curve with slip compensation*

P0138 adjustment procedure:

1. Drive motor with no load, at approximately half the use speed range.
2. Measure the motor or equipment speed.
3. Apply rated load to the equipment.
4. Increment parameter P0138 until the speed reaches the value with no load.

5

- Values P0138 < 0.0 are used in special applications to reduce the output speed as a function of the increase in the motor current. Ex.: load distribution on motors driven in parallel.

Vector Mode (Droop Control):

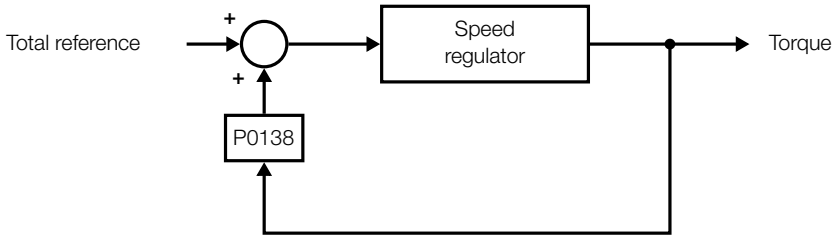

Figure 5.14: *Block diagram P0138 (vector)*

- In the vector mode (encoder or sensorless) parameter P0138 has the function described in Figure 5.13 on page 5-20.
- A value proportional to the motor load is added to the total speed reference is added.
- This parameter is used in the multimotor application.

P0139 - Output current filter			
Adjustable range:	0.0 to 16.0 s	Factory setting:	0.2 s
Acesso:	Menu → Configurations → Control		

Description:

- It sets the time constant of the active current filter.
- It sets the response time of the slip compensation and automatic torque boost.
- See Figure 5.10 on page 5-19 and Figure 5.12 on page 5-19 .

P0140 - Redundant ventilation selection			
Adjustable range:	0 to 4	Factory setting:	0
Acesso:	Menu → Configurations → Control		

Description:

- It selects the active ventilation set and the redundant ventilation operation mode.
- With P0140 = Inactive, the redundant ventilation function is deactivated and all the software internal records and timers are reset.
- With P0140 programmed for Set A or Set B, the redundant ventilation function operates with just one set of fans. The periodical set alternation must be done manually by changing P0140 between 1 and 2. In this operating mode, an automatic test of the second set is carried out after the time set in P0141 has elapsed.
- With P0140 programmed for Alternating A or Alternating B, the redundant ventilation function starts the operation of the selected set and begins alternating automatically between the two sets, according to the time programmed in P0141.
- The current status of the redundant ventilation function can be viewed in P0041.
- For redundant ventilation function operates properly, it is necessary to program a digital output (DO1 to DO2, or RL1 to RL5) for the selection of the active set, and two digital inputs (DI1 to DI10) for set A and set B operation failure.
- A ventilation failure alarm is activated when one of the sets fails (alarm A0094 or A0114 for set A or set B, respectively).
- The Redundant Ventilation function is only possible with the proper hardware installed (refer to the supplier specific project).

Table 5.13: *Redundant ventilation selection*

P0140	Function
0	Inactive
1	Set A
2	Set B
3	Alternating A
4	Alternating B

P0141 - Number of hours for alternating ventilation set			
Adjustable range:	1 to 9999 h	Factory setting:	720 h
Acesso:	Menu → Configurations → Control		

Description:

- It defines the number of hours between the change of the ventilation set.

NOTE!
This parameter is only visible on the HMI when the redundant ventilation function is actived, P0140 > 0.

P0142 - Maximum Voltage			
P0143 - Intermediate output voltage			
P0144 - Output voltage at 3 Hz			
P0145 - Field weakening speed			
P0146 - Intermediate speed			
Adjustable range:	P0142 = 0.0 to 100.0 % P0143 = 0.0 to 100.0 % P0144 = 0.0 to 100.0 % P0145 = 0 to 7200 rpm P0146 = 90 to 7200 rpm	Factory setting:	P0142 = 100.0 % P0143 = 50.0 % P0144 = 8.0 % P0145 = 1800 rpm P0146 = 900 rpm
Acesso:	Menu → Configurations → Control		

Description:

- It allows changing the standard V/F curves defined in P0202. It may be used to obtain approximately quadratic V/F curves or on motors with voltages/frequencies different from the conventional standards.
- This function allows changing the defined standard characteristic curves, which relate the inverter output voltage and frequency and consequently the motor magnetization flux. This characteristic can be used in special applications in which the motors need rated voltage or rated frequency different from the standards.
- Function activated with P0202 = 2 (Adjustable V/F (refer to P0142 to P0146)).
- The standard value of P0144 (8.0 %) is defined for standard motors 60 Hz. In case the motor rated frequency (set in P0403) is different from 60 Hz, the standard value of P0144 may become inadequate, and it may cause problems in the motor start.

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If it is necessary to increase the starting torque, increase the value of P0144 gradually.

- Procedure to parameterize the “Adjustable V/F” function:

1. Disable the inverter.
2. Check the inverter data (P0295 and P0296).
3. Set the motor data (P0400 to P0406).
4. Set the data for indication of P0001 and P0002 (P0208).
5. Set the speed limits (P0133 and P0134).
6. Set the parameters of the adjustable V/F function (P0142 to P0146).
7. Enable the adjustable V/F function (P0202 = 2).

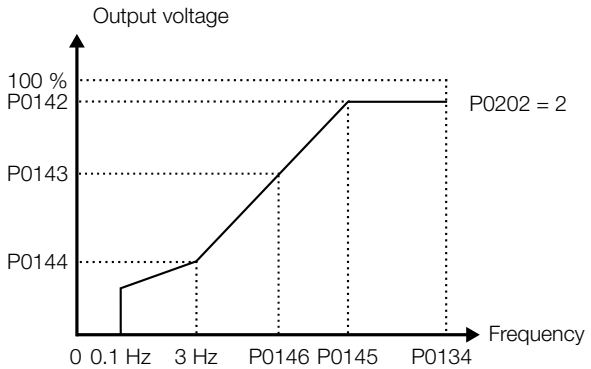

Figure 5.15: *Adjustable V/F curve*

NOTE!

- This parameter can be changed only with the motor stopped.
- This parameter is only visible on the HMI when: the control type is adjustable scalar, P0202 = 2 (Adjustable V/F (refer to P0142 to P0146)).

P0151 - DC Link voltage regulation actuation level			
Adjustable range:	106 to 1200 V	Factory setting:	1118 V
Acesso:	Menu → Configurations → Control		

Description: Scalar mode (P0202 = 0, 1 or 2):

- P0151 sets the voltage regulation level of the DC link to prevent overvoltage. This parameter, together with P0152, allows two operation types to regulate the DC link voltage.

Regulation type of the DC link when P0152 = 0.00 and P0151 different from the maximum value:

Ramp holding - When the voltage of the DC link reaches the regulation level during deceleration, the deceleration ramp time is extended and the speed is maintained at a constant value until the DC link voltage leaves the actuation level. See Figure 5.16 on page 5-23. This voltage regulation of the DC link (ramp holding) tries to avoid the locking of the inverter due to errors related to overvoltage on the DC link when the deceleration occurs with high inertia loads or with short deceleration times.

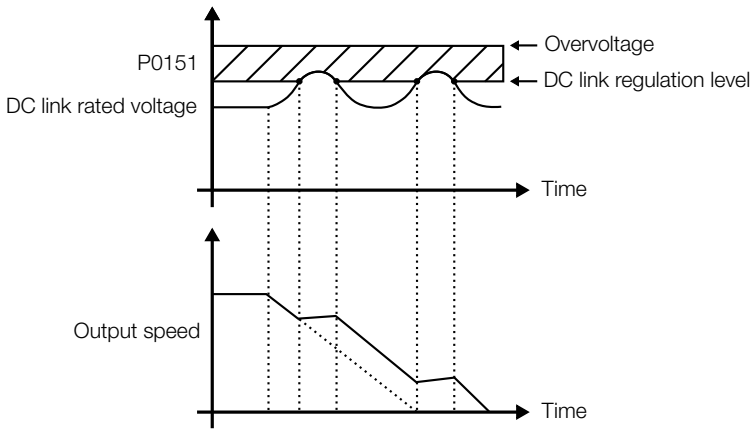

Figure 5.16: *Deceleration with ramp holding*

- With this function, an optimized (minimum) deceleration time is obtained for the driven load.
- This function is useful in medium inertia applications that require short deceleration ramps.
- In case the supply line is permanently with overvoltage (DC link voltag > P0151), the inverter may not decelerate. In this case, reduce the line voltage or increment P0151.

Regulation type of the DC link voltage when P0152 > 0.00 and P0151 different from the maximum value:

When the DC link voltage reaches the regulation level during deceleration, the deceleration time is extended and the motor is accelerate until the DC link leaves the actuation level. See Figure 5.16 on page 5-23 and Figure 5.17 on page 5-24.

NOTE!
In case locking for overvoltage still occurs during deceleration, the valu of parameter P0152 must be gradually increased or the deceleration ramp time (P0101 and/or P0103) must be increased. In case the line is permanently with overvoltage (DC link voltage > P0151) the inverter may not decelerate. Reduce the line voltage or increment P0151.

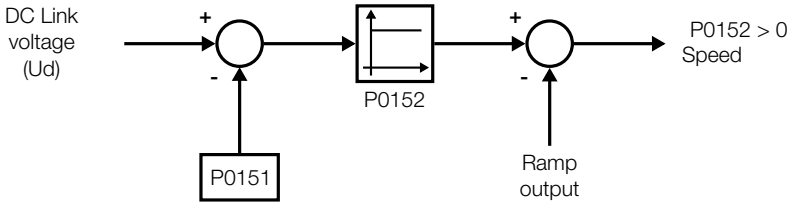

Figure 5.17: *Block diagram of the DC link voltage regulation*

Vector Mode (P0202 = 3 or 4):

- P0151 defines the DC link regulation level during braking. During the braking process, the deceleration ramp time is automatically extended, thus avoiding an overvoltage fault.

P0152 - Proportional gain of the DC link voltage regulator			
Adjustable range:	0.00 to 9.99	Factory setting:	0.00
Acesso:	Menu → Configurations → Control		

Description:

- Refer to P0151 (with V/F control) and Figure 5.17 on page 5-24.
- If P0152 = 0.00 and P0151 different from the maximum value, the ramp holding function is active. Refer to P0151 for V/F.
- P0152 multiplies the voltage error of the DC link, that is, error = present DC link-P0151. P0152 is typically used to prevent overvoltage in applications with eccentric loads.

NOTE!
This parameter is only visible on the HMI when: the control type is scalar, P0202 = 0, 1 or 2 (V/F control).

P0156 - Overload current at 100 %			
P0157 - Overload current at 50 %			
P0158 - Overload current at 5 %			
Adjustable range:	0.0 to 3420.0 A	Factory setting:	P0156 = 154.0 A P0157 = 126.0 A P0158 = 70.0 A
Acesso:	Menu → Configurations → Protections		

Description:

- It is for the motor and inverter overload protection.
- The motor overload current is the value above which the inverter considers that the motor is operating under overload. The higher the difference between the motor current and the overload level, the sooner the fault occurs.
- Parameter P0156 Motor Overload Current at Rated Speed) must be adjusted 10 % higher than the used motor rated current (P0401).
- The overload current is obtained as a function of the speed being applied to the motor, according to the overload curve.
- Parameters P0156, P0157 and P0158 are the three points used to form the motor overload curve, as shown in Figure 5.19 on page 5-25 for the factory setting. Refer to Item 6.3.2 Initial Power-up (Parameter Setting) on page 6-13 of the user's manual.
- With the overload current curve adjustment it is possible to program an overload value that varies according to the inverter operation speed (factory default), improving the protection for self-ventilated motors, or to use a constant overload level for any speed applied to the motor (motor with separated ventilation).

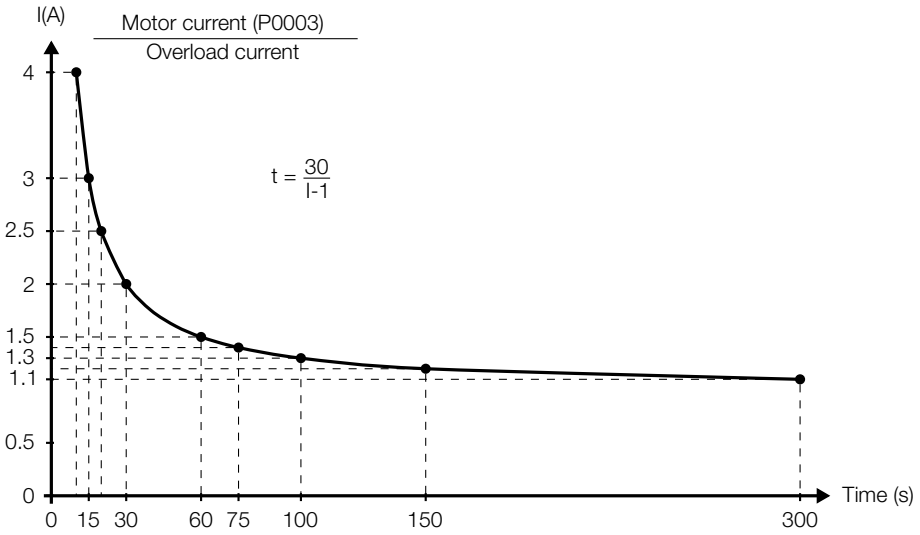

Figure 5.18: *Function I x t - overload detection*

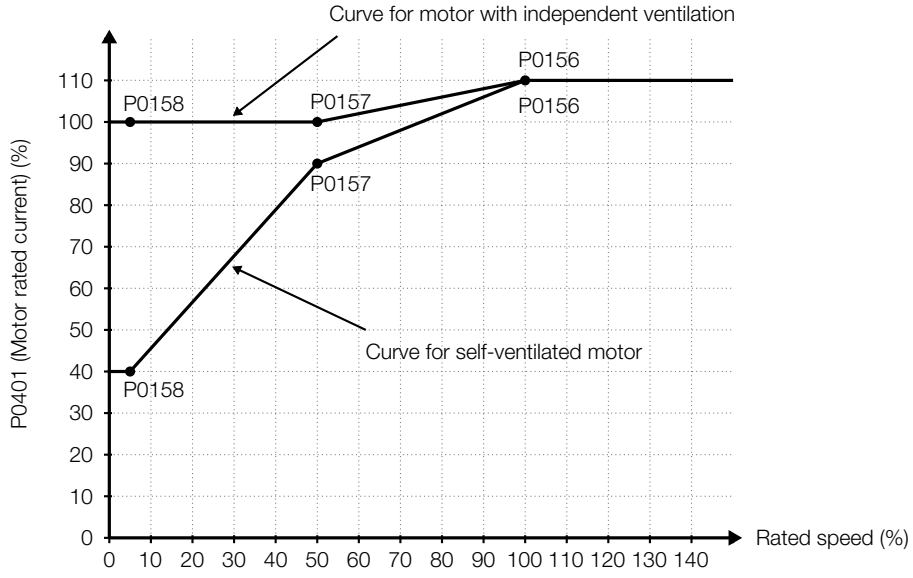

Figure 5.19: *Overload protection levels*

NOTE!
When P0295 or P0401 are changed, the values of P0156 to P0158 are changed according to the new current:
P0156 = 1.10 × (P0295 or P0401)
P0157 = 0.90 × (P0295 or P0401)
P0158 = 0.50 × (P0295 or P0401)

P0159 - Temperature alarm I x t			
Adjustable range:	0 to 100 %	Factory setting:	80 %
Acesso:	Menu → Configurations → Protections		

Description:

- When the value of P0076 reaches the value given in this parameter, alarm A0046 (Motor Ixt function overload) is indicated on the HMI.

P0161 - Speed regulator proportional gain			
P0162 - Integration constant of the speed regulator			
Adjustable range:	P0161 = 0.0 to 200.0 P0162 = 1 to 9999	Factory setting:	P0161 = 20.0 P0162 = 100
Acesso:	Menu → Configurations → Control		

Description:

- Gains set as a function of parameter P0413 (Tm Constant).
- These gains can also be manually adjusted to optimize the speed dynamic response. Increase those gains in order to obtain a faster response. If the speed starts oscillating, reduce the gains.
- See Figure 5.26 on page 5-42.

NOTE!
This parameter is only visible on the HMI when: the control type is vector, P0202 = 3 (Sensorless Vector) or P0202 = 4 (Vector with Encoder).

P0163 - Local reference offset			
P0164 - Remote reference offset			
Adjustable range:	-999 to 999	Factory setting:	0
Acesso:	Menu → Configurations → Control		

Description:

- When the speed reference comes through the analog inputs AI1 to AI4, P0163 or P0164 can be used to compensate undesired offsets in these signals.
- See Figure 5.24 on page 5-40.

NOTE!
This parameter is only visible on the HMI when: the control type is vector, P0202 = 3 (Sensorless Vector) or P0202 = 4 (Vector with Encoder).

P0165 - Time constant of the measured speed filter			
Adjustable range:	0.001 to 1.000 s	Factory setting:	0.012 s
Acesso:	Menu → Configurations → Control		

Description:

- It sets the time constant for the speed filter.
- See Figure 5.26 on page 5-42.

NOTE!
This parameter is only visible on the HMI when: the control type is vector, P0202 = 3 (Sensorless Vector) or P0202 = 4 (Vector with Encoder).

P0167 - Current regulator proportional gain			
P0168 - Current regulator Integral gain			
Adjustable range:	P0167 = 0.000 to 9.999 P0168 = 0.1 to 999.9	Factory setting:	P0167 = 0.080 P0168 = 12.3
Acesso:	Menu → Configurations → Control		

Description:

- P0167 and P0168 set as a function of parameters P0411 and P0409 respectively.

NOTE!
This parameter is only visible on the HMI when: the control type is vector, P0202 = 3 (Sensorless Vector) or P0202 = 4 (Vector with Encoder).

P0169 - Maximum output current			
Adjustable range:	0.0 to 510.0 A	Factory setting:	161.0 A
Acesso:	Menu → Configurations → Protections		

Description:

- It is intended to avoid the motor stalling (locking) during overloads. If the load on the motor increases, its current will increase.
- If the current exceeds the value set in P0169, the motor speed will be reduced following the deceleration ramp until the current is below the value set in P0169. When the overload disappears, the speed goes back to the normal value.

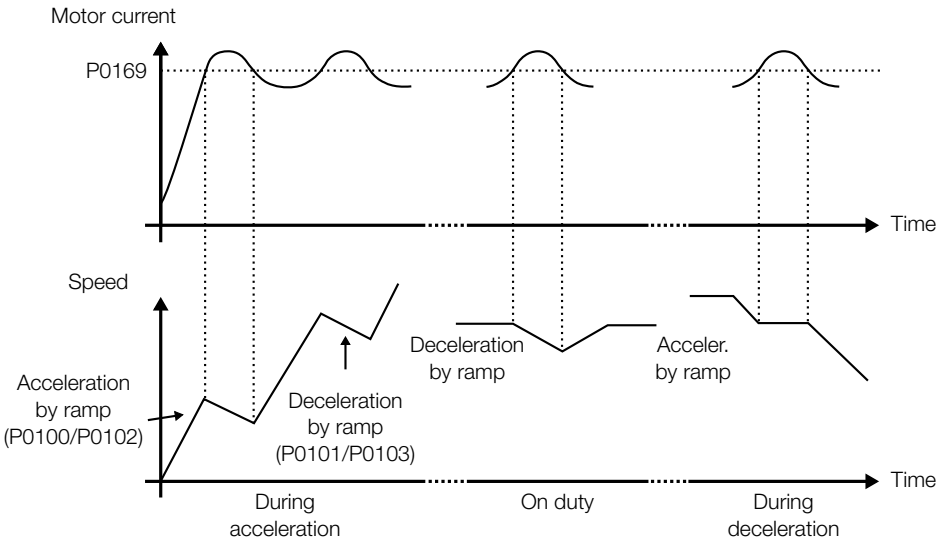

Figure 5.20: *Curves showing the current limitation actuation*

NOTE!
The default value P0169 is current in overload mode MX.

NOTE!
This parameter is only visible on the HMI when: the control type is scalar, P0202 = 0, 1 or 2 (V/F control).

P0170 - Maximum reverse torque current			
P0171 - Maximum current of forward torque			
Adjustable range:	0 to 250 %	Factory setting:	105 %
Acesso:	Menu → Configurations → Protections		

Description:

- It limits the value of the motor current component that produce torque. The adjustment is expressed in percentage of the inverter rated current (value of parameter P0295).
- During the current limitation process, the motor current can be calculated by:

$$I_{motor} = \sqrt{(P0170 \text{ or } P0171)^2 + (P0410)^2}$$

- During the optimal braking, P0171 acts as the limitation of the maximum output current to generate the forward braking torque (refer to P0151).
- Although the value of P0170 and P0171 depends on the relation between P0295 and P0401, its value is limited to 250 %.

NOTE!
This parameter is only visible on the HMI when: the control type is vector, P0202 = 3 (Sensorless Vector) or P0202 = 4 (Vector with Encoder).

P0175 - Flux regulator proportional gain on the motor			
P0176 - Integration constant of the flux regulator on the motor			
Adjustable range:	P0175 = 0.0 to 999.9 P0176 = 1 to 9999	Factory setting:	P0175 = 50.0 P0176 = 900
Acesso:	Menu → Configurations → Control		

Description:

- Gains set as a function of parameter P0412.
- See Figure 5.26 on page 5-42.

NOTE!
This parameter is only visible on the HMI when: the control type is vector, P0202 = 3 (Sensorless Vector) or P0202 = 4 (Vector with Encoder).

P0178 - Rated flux on the motor			
P0179 - Maximum flux on the motor			
Adjustable range:	P0178 = 0 to 120 % P0179 = 0 to 200 %	Factory setting:	P0178 = 100 % P0179 = 120 %
Acesso:	Menu → Configurations → Control		

Description:

- Flux conditions on the motor.
- See Figure 5.26 on page 5-42.

NOTE!
This parameter is only visible on the HMI when: the control type is vector, P0202 = 3 (Sensorless Vector) or P0202 = 4 (Vector with Encoder).

P0180 - Starting point of the field weakening			
Adjustable range:	0 to 120 %	Factory setting:	85 %
Acesso:	Menu → Configurations → Control		

Description:

- It expresses the percentage of the modulation index from which the motor field weakening occurs.

NOTE!
This parameter is only visible on the HMI when: the control type is vector, P0202 = 3 (Sensorless Vector) or P0202 = 4 (Vector with Encoder).

P0181 - Magnetization mode			
Adjustable range:	0 to 1	Factory setting:	0
Acesso:	Menu → Configurations → Control		

Description:

- It configures the magnetization mode of the machine to be driven.

Table 5.14: *Magnetization mode*

P0181	Function
0	General enable
1	Start/Stop

NOTE!
This parameter can be changed only with the motor stopped.

P0200 - Password			
Adjustable range:	0 to 1	Factory setting:	1
Acesso:	Menu → Configurations → HMI → Password		

Description:

- With the factory settings the password is 5.
- To change the password, set P0200 = 1 (active) and enter the new password.
- When this parameter is set to Inactive, it allows changing the content of the parameters independently of P0000.
- When set to Active, it allows changing the contents of the parameters when P0000 is equal to the value of the password.

Table 5.15: *Password*

P0200	Function
0	Inactive
1	Active

P0201 - Language selection			
Adjustable range:	0 to 4	Factory setting:	0
Acesso:	Menu → Configurations → HMI → Language		

Description:

- It defines the language of the Graphic HMI.

Table 5.16: Language selection

P0201	Function
0	Português
1	English
2	Español
3	Deutsch
4	Français

P0202 - Control Type			
Adjustable range:	0 to 4	Factory setting:	0
Acesso:	Menu → Configurations → Control		

Description:

- It defines the control type of the inverter.

Menu Autoguiado:

- When P0202 is programmed for sensorless vector (P0202 = 3) or vector with encoder (P0202 = 4), the inverter enters the guided start-up routine (refer to Figure 5.21 on page 5-30).
- In this mode, the user must adjust a series of motor parameters, so that the vector control operates properly.

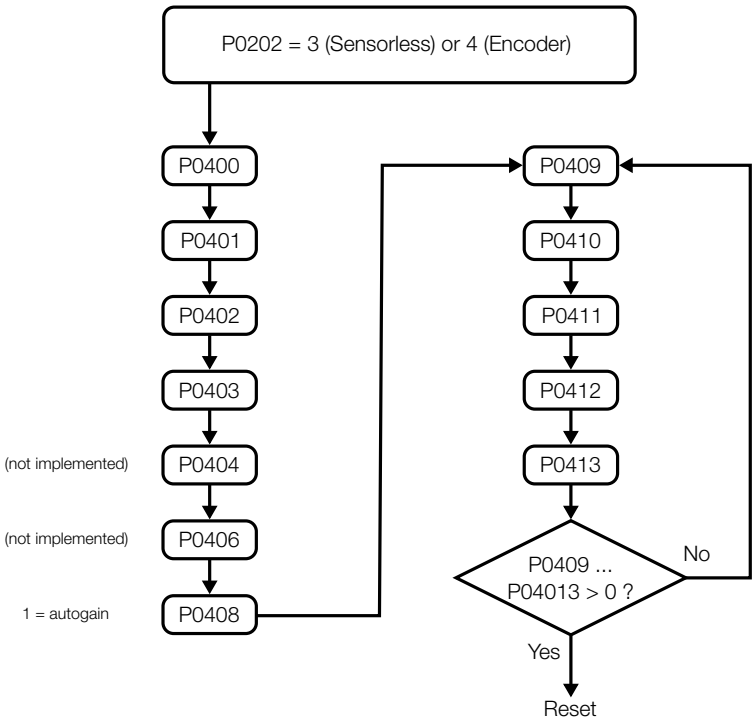

Figure 5.21: Guided start-up routine sequence

The Table 5.17 shows the summarized description of each parameter:

Table 5.17: Guided start-up routine

Parameter	Description
P0400	Motor rated voltage
P0401	Motor rated current
P0402	Motor rated speed
P0403	Motor Rated Freq
P0404	Not implanted in this software version
P0406	Not implanted in this software version
P0408	Run Self-tuning 0 = Inactive 1 = Autogain (automatic calculation of the gains of the controllers)
P0409	Motor stator resistance Rs
P0410	Motor magnetization current (Imr)
P0411	Motor Flux Leakage Inductance
P0412	Lr/Rr Constant
P0413	Tm Time Constant

- Refer to the specific description of each parameter for more details.
- Parameters from P0409 to P0413 correspond to motor internal parameters, and they must be programmed according to the motor nameplate data.
- The values programmed at P0409 to P0413 must be different from zero; otherwise, the inverter will not leave the guided start-up routine.
- The configuration of this parameter must be done under the orientation of WEG technical assistance.

Table 5.18: Control Type

P0202	Function
0	V/F 60 Hz
1	V/F 50 Hz
2	Adjustable V/F (refer to P0142 to P0146)
3	Sensorless Vector
4	Vector with Encoder

NOTE!
This parameter can be changed only with the motor stopped.

P0203 - Special function selection			
Adjustable range:	0 to 1	Factory setting:	0
Acesso:	Menu → Configurations → Functions → PID		

Description:

- It defines the special function selection.
- For the PID regulator special function, refer to the detailed description of the related parameters (P0520 to P0535).
- When P0203 is changed to 1, P0265 is automatically changed to 15 - Manual/Automatic.

Table 5.19: Special function selection

P0203	Function
0	None
1	PID regulator

NOTE!
This parameter can be changed only with the motor stopped.

P0204 - Load/Save Parameters			
Adjustable range:	0 to 5	Factory setting:	0
Acesso:	Menu → Configurations → Backup		

Description:

- Parameters P0295 (Inverter rated current), P0296 (Inverter rated voltage), P0308 (Serial address) and P0201 (Language selection) will not be changed when P0204 = 5 (Load WEG 60 Hz: It reset all the parameters to the 60 Hz factory default values.).

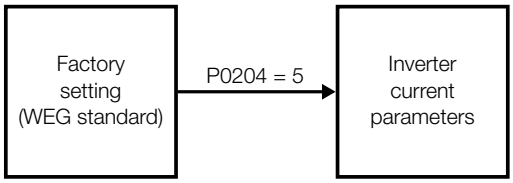

Figure 5.22: *Parameter transference*

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Table 5.20: *Load/Save Parameters*

P0204	Function
0	Not Used
1	Not Used
2	Not Used
3	Reset P0043: It resets the enabled time counter.
4	Reset P0044: It resets the MWh counter.
5	Load WEG 60 Hz: It reset all the parameters to the 60 Hz factory default values.

NOTE!
This parameter can be changed only with the motor stopped.

P0206 - Auto-reset time after fault			
Adjustable range:	0 to 255 s	Factory setting:	0 s
Acesso:	Menu → Configurations → Protections		

Description:

- In the event of a fault trip the inverter can initiate an automatic reset after the time given by P0206 has elapsed.
- If P0206 $\leq$ 2 auto-reset will not occur.
- After the auto-reset if the same fault is repeated three times consecutively, then the Auto-Reset function will be disable.
- A fault is considered consecutive if it happens again within 30 seconds after an auto-reset. Therefore, if an error occurs four consecutive times, it will be permanently indicated and the drive will be disabled (in such case a reset command becomes necessary. E.g.: HMI, DI, serial, etc).

P0208 - Reference scale factor			
Adjustable range:	1 to 18000	Factory setting:	1800
Acesso:	Menu → Configurations → Control		

Description:

- It defines how the Motor speed reference (P0001) and Motor speed (P0002) will be presented when it runs at synchronous speed.
- To indicate the values in rpm:
  Set P0208 to the synchronous speed according to Table 5.21.

Table 5.21: *Synchronous speed reference in rpm*

Frequency	Number of motor poles	Synchronous Speed
50 Hz	2	3000
	4	1500
	6	1000
	8	750
60 Hz	2	3600
	4	1800
	6	1200
	8	900

- The value shown can be calculated through the formulas:

$$P0002 = \frac{speed \times P0208}{sync.\ speed}$$

$$P0001 = \frac{reference \times P0208}{sync.\ speed}$$

Where:
Speed = present speed in rpm.
Sync. speed = 120 x P0403 / poles.
Poles = 120 x P0403 / P0402, it may be equal to 2, 4, 6, 8 or 10.
Reference = speed reference in rpm.

5

P0209 - Motor phase loss detection			
Adjustable range:	0 to 1	Factory setting:	0
Acesso:	Menu → Configurations → Protections		

Description:

- The Motor Phase Loss Detection trips indicating F0076 when the following conditions are simultaneously satisfied:

1. P0209 = Active.
2. Enabled inverter.
3. Speed reference higher than 3 %.
4. $I_{max} > 1.125 \times I_{min}$.

Where:
I_{max} is the highest current of the three phases.
I_{min} is the lowest current of the three phases.

Table 5.22: *Motor phase loss detection*

P0209	Function
0	Inactive
1	Active

NOTE!
This parameter can be changed only with the motor stopped.

P0211 - Disable by zero speed (Stop Logic)			
Adjustable range:	0 to 1	Factory setting:	1
Acesso:	Menu → Configurations → Control		

Description:

- When active it disables the inverter (general disable) when the speed reference and the actual speed become lower than the value adjusted in P0291 (Zero Speed Zone) and after the time adjusted in P0213 has elapsed.
- The inverter is enabled again when any of the conditions defined in P0212 is fulfilled.

Table 5.23: *Disable by zero speed (Stop Logic)*

P0211	Function
0	Inactive
1	Active

P0212 - Condition for disabable output by zero speed			
Adjustable range:	0 to 1	Factory setting:	0
Acesso:	Menu → Configurations → Control		

Description:

- When the PID Regulator is active (P0203 = 1 or 3) and in automatic mode, besides the condition programmed in P0212, it is also necessary that the PID error (the difference between the setpoint and the process variable) be more than the value programmed in P0535, so that the inverter will be able to leave the zero speed disable.

Table 5.24: *Condition for disabable output by zero speed*

P0212	Function
0	P0001 (N*) > P0291 or P0002 (N) > P0291
1	P0001 (N*) > 0

P0213 - Time delay for zero speed disable			
Adjustable range:	0 to 999 s	Factory setting:	0 s
Acesso:	Menu → Configurations → Control		

Description:

- P0213 = 0: stop logic without timing.
- P0213 > 0: stop logic with timing. After the speed reference and the motor speed become lower than the value set in P0291, count of the time set in P0213 begins. When the time count reaches this value, the inverter will be disabled. When the time programmed at P213 has elapsed the inverter will be disabled. If during that time count any of the conditions for the disable by stop logic no longer exists, the time count is reset and the inverter will be enabled again.

P0214 - Line phase loss detection			
Adjustable range:	0 to 1	Factory setting:	0
Acesso:	Menu → Configurations → Protections		

Description:

- Line phase loss detection.

- The parameter P0214, being active, controls the following faults and alarms:
  A0301: Input undervoltage.
  A0302: Input overvoltage.
  F0303: Input undervoltage.
  F0304: Input overvoltage.
  F0305: Input unbalance/phase loss.
- The phase-loss detector is enabled to act when:
  1. P0214 = Active.
  2. Inverter enabled.
  3. Pre-charge completed.
  4. No Ride-through.

Table 5.25: *Line phase loss detection*

P0214	Function
0	Inactive
1	Active

NOTE!
This parameter can be changed only with the motor stopped.

P0220 - LOCAL/REMOTE selection source			
Adjustable range:	0 to 12	Factory setting:	11
Acesso:	Menu → Configurations → Commands → Local		

Description:

- It defines the origin of the command that will select between the Local situation and the Remote situation.

Table 5.26: *LOCAL/REMOTE selection source*

P0220	Function
0	Always LOCAL
1	Always REMOTE
2	HMI LOC/REM key (LOCAL default)
3	HMI LOC/REM key (REMOTE default)
4	Digital Inputs DI2...DI10 (P0264...P0272)
5	Serial (LOCAL Default)
6	Serial (REMOTE Default)
7	Fieldbus (LOCAL Default)
8	Fieldbus (REMOTE Default)
9	LOCAL PLC
10	REMOTE PLC
11	Graphic HMI LOC/REM key (LOCAL Default)
12	Graphic HMI LOC/REM key (REMOTE Default)

NOTE!
This parameter can be changed only with the motor stopped.

P0221 - Speed reference selection LOCAL situation			
P0222 - Speed reference selection REMOTE situation			
Adjustable range:	0 to 13	Factory setting:	P0221 = 13 P0222 = 0
Acesso:	Menu → Configurations → Commands → Remote		

Description:

- The AIx' designation refers to the analog signal obtained after the addition of AIx to the OFFSET multiplied by the applied gain.
- See Figure 5.29 on page 5-45.
- The factory default for the Local speed reference is via HMI keys and and for Remote speed reference is via Analog Input AI1.
- The reference value adjusted with the and keys is contained in parameter P0121.
- Check the operation of the Electronic Potentiometer (P.E.) in Figure 5.36 on page 5-60.
- When selecting option 7 (P.E.), set P0265 or P0267 to 5 and P0266 or P0268 to 5.
- When selecting option 8, set P0266 and/or P0267 and/or P0268 to 7.

Table 5.27: *Speed reference selection REMOTE situation*

P0222	Function
0	Key and of service HMI
1	Analog Input AI1' (P0234 to P0236)
2	Analog Input AI2' (P0237 to P0240 and P0248)
3	Analog Input AI3' (P0241 to P0244).
4	Analog Input AI4' (P0245 to P0247)
5	Sum of Analog Inputs (AI1' + AI2') > 0 (Negative values are zeroed)
6	Sum of Analog Inputs (AI1' + AI2')
7	Electronic Potentiometer (E.P.)
8	Multispeed (P0124 to P0131)
9	Serial
10	Fieldbus
11	Analog Input AI5' (P0721 to P0724)
12	PLC
13	Graphic HMI and key

NOTE!
This parameter can be changed only with the motor stopped.

P0223 - Forward/Reverse Selection LOCAL Situation			
Adjustable range:	0 to 13	Factory setting:	12
Acesso:	Menu → Configurations → Commands → Local		

Description:

- It defines the origin of the forward/reverse command and the direction used in LOCAL situation.

Table 5.28: Forward/Reverse Selection LOCAL Situation

P0223	Function
0	Always forward
1	Always reverse
2	HMI key (Forward default)
3	HMI key (Reverse default)
4	Digital Input DI2 (P0264 = 0)
5	Serial (Forward default)
6	Serial (Reverse default)
7	Fieldbus (Forward default)
8	Fieldbus (Reverse default)
9	AI4 Polarity
10	Forward PLC
11	Reverse PLC
12	Graphic HMI key (Forward)
13	Graphic HMI key (Reverse)

NOTE!
This parameter can be changed only with the motor stopped.

5

P0224 - Start/Stop Selection LOCAL Situation			
Adjustable range:	0 to 5	Factory setting:	5
Acesso:	Menu → Configurations → Commands → Local		

Description:

- It defines the origin of the Start/Stop command in the LOCAL situation.
- When the DIx inputs have the FORWARD/REVERSE function, the HMI keys I and O will remain inactive regardless of the value set in P0224 (Start/Stop Selection LOCAL Situation).

Table 5.29: Start/Stop Selection LOCAL Situation

P0224	Function
0	HMI I and O keys
1	Digital input DIx
2	Serial
3	Fieldbus
4	PLC
5	Graphic HMI I and O key

NOTE!
This parameter can be changed only with the motor stopped.

P0225 - Selection of JOG Source LOCAL Situation			
Adjustable range:	0 to 6	Factory setting:	6
Acesso:	Menu → Configurations → Commands → Local		

Description:

- It defines the origin of the JOG command in the LOCAL situation.

- The speed reference value for JOG is provided by parameter P0122 (Speed reference for JOG or JOG+).

Table 5.30: *Selection of JOG Source LOCAL Situation*

P0225	Function
0	Disable
1	HMI JOG key
2	Digital inputs DI3 to DI10 (P0265 to P0272)
3	Serial
4	Fieldbus
5	PLC
6	Graphic HMI JOG key

NOTE!
This parameter can be changed only with the motor stopped.

P0226 - Selection of Direction of ROTATION REMOTE Situation

Adjustable range:	0 to 13	Factory setting:	2
Acesso:	Menu → Configurations → Commands → Remote		

5

Description:

- It defines the origin of the forward/reverse command and the direction used in REMOTE situation.

Table 5.31: *Selection of Direction of ROTATION REMOTE Situation*

P0226	Function
0	Always forward
1	Always reverse
2	HMI key (Forward default)
3	HMI key (Reverse default)
4	Digital Input DI2 (P0264 = 0)
5	Serial (Forward default)
6	Serial (Reverse default)
7	Fieldbus (Forward default)
8	Fieldbus (Reverse default)
9	AI4 Polarity
10	Forward PLC
11	Reverse PLC
12	Graphic HMI key (Forward)
13	Graphic HMI key (Reverse)

NOTE!
This parameter can be changed only with the motor stopped.

P0227 - Start/Stop Selection REMOTE Situation

Adjustable range:	0 to 5	Factory setting:	0
Acesso:	Menu → Configurations → Commands → Remote		

Description:

- It defines the origin of the Start/Stop command in the REMOTE situation.
- When the DIx inputs have the FORWARD/REVERSE function, the HMI keys I and O will remain inactive regardless of the value set in P0227.

Table 5.32: *Start/Stop Selection REMOTE Situation*

P0227	Function
0	HMI I and O keys
1	Digital input DIx
2	Serial
3	Fieldbus
4	PLC
5	Graphic HMI I and O key

NOTE!
This parameter can be changed only with the motor stopped.

P0228 - JOG Selection - REMOTE Situation

Adjustable range:	0 to 6	Factory setting:	1
Acesso:	Menu → Configurations → Commands → Remote		

Description:

- It defines the origin of the JOG command in the REMOTE situation.
- The speed reference value for JOG is provided by parameter P0122.

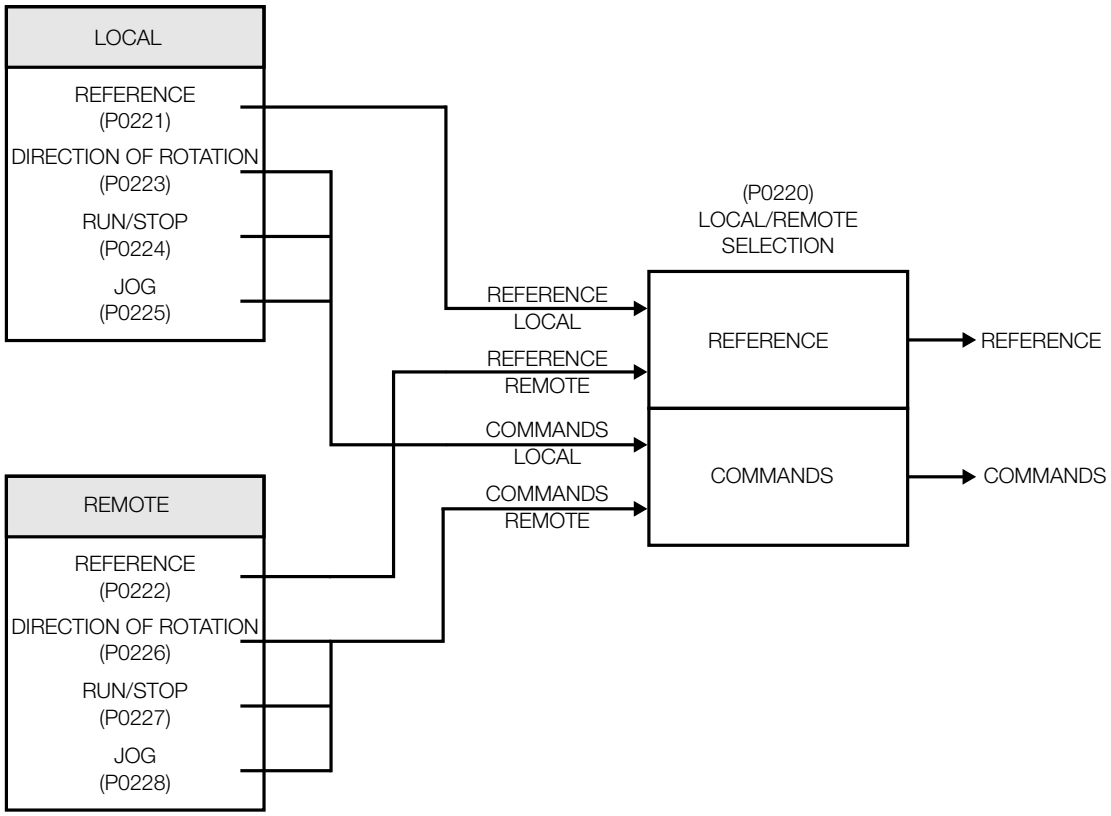

Figure 5.23: *LOCAL/REMOTE situation block diagram*

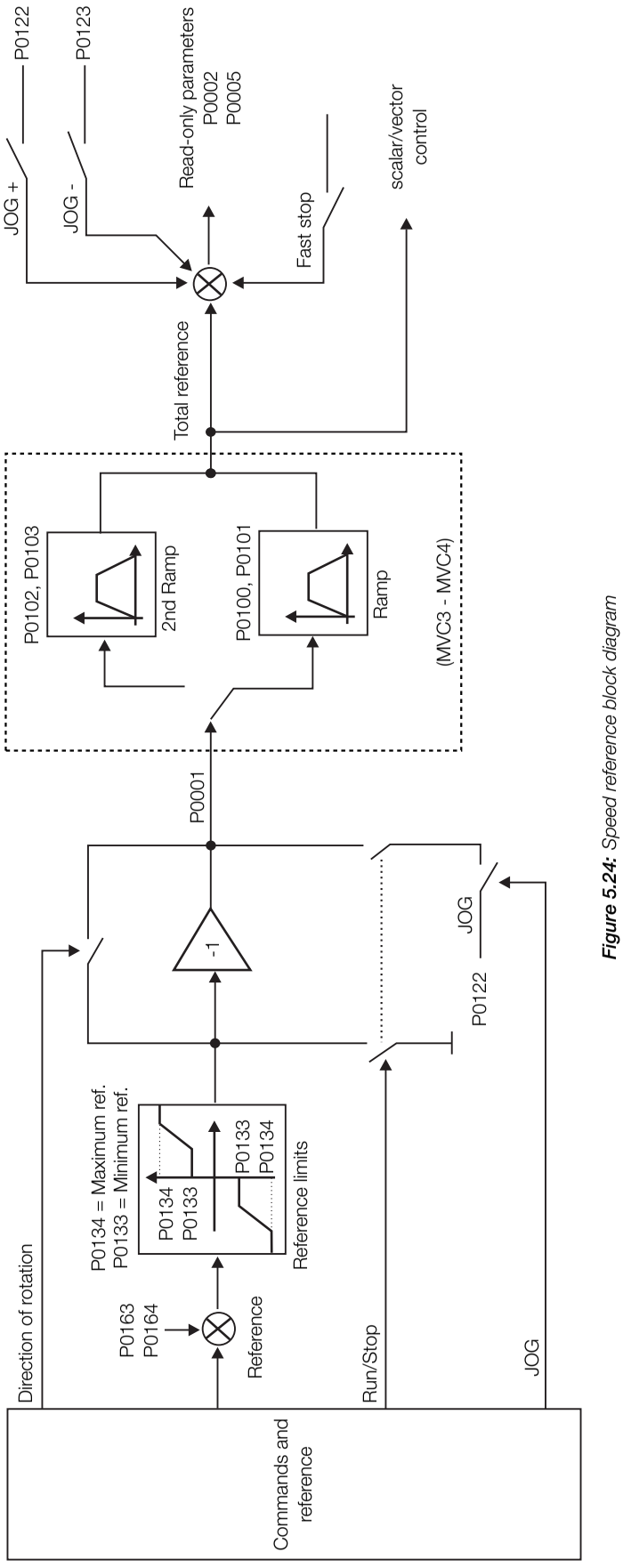

Figure 5.24: *Speed reference block diagram*

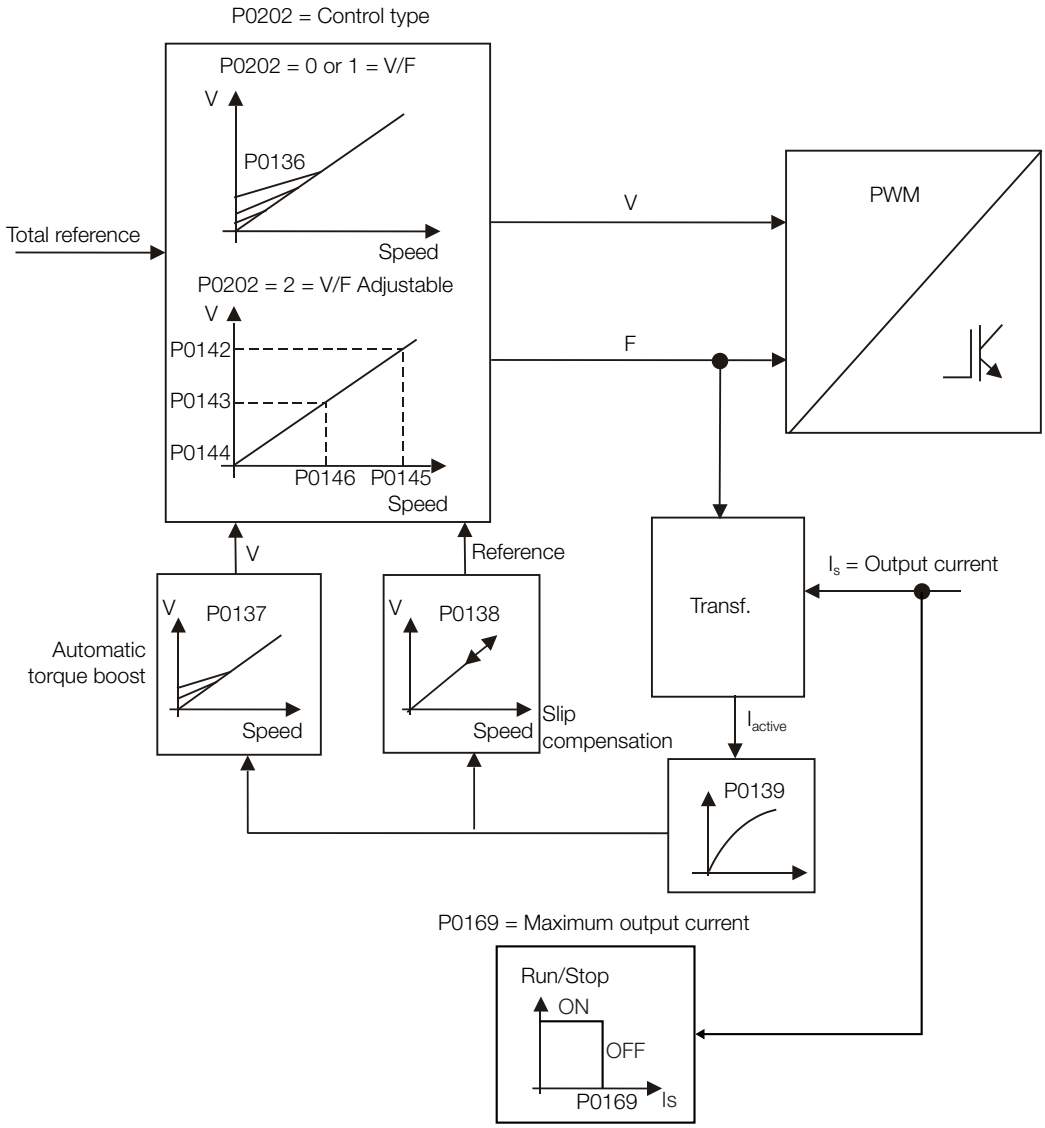

Figure 5.25: *Block diagram of scalar control with sinusoidal output filter*

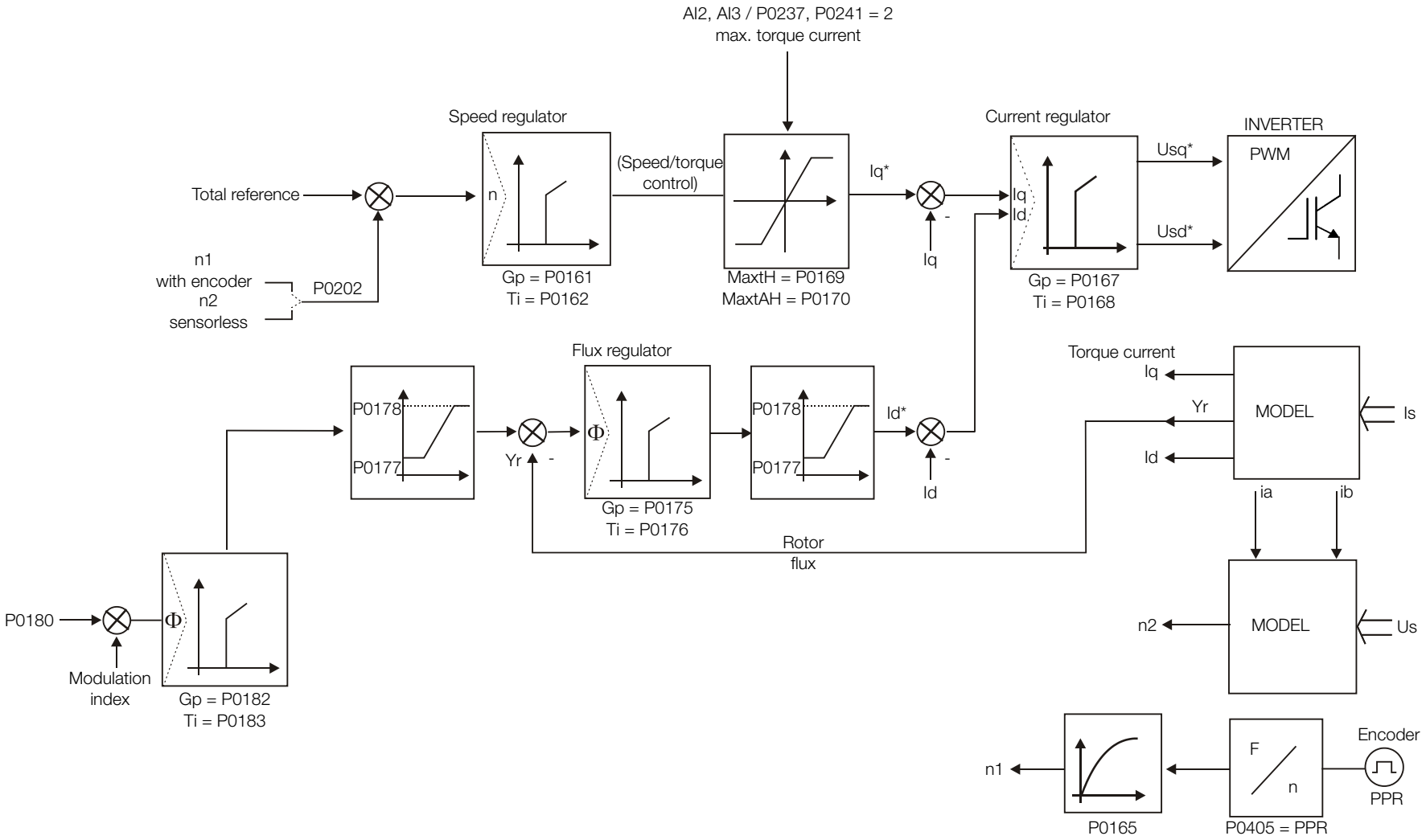

Figure 5.26: *Vector control block diagram*

Table 5.33: JOG Selection - REMOTE Situation

P0228	Function
0	Disable
1	HMI JOG key
2	Digital inputs DI3 to DI10 (P0265 to P0272)
3	Serial
4	Fieldbus
5	PLC
6	Graphic HMI JOG key

NOTE!
This parameter can be changed only with the motor stopped.

P0231 - Actuation in the transition between Local and Remote for the HMIG			
Adjustable range:	0 to 2	Factory setting:	0
Acesso:	Menu → Configurations → Commands → Local		

Description:

- P0231 defines the action to be taken by the inverter when the transition between LOCAL and REMOTE occurs for the Graphic HMI.
- This parameter only actuates when P0224 = 5 (Graphic HMI I and O key) or P0227 = 5 (Graphic HMI I and O key).

(*) In case the motor stops, it occurs according to the programming of P0232 (Stop Selection).

Table 5.34: Actuation in the transition between Local and Remote for the HMIG

P0231	Function
0	It keeps the motor state
1	It keeps the HMI state
2	It turns off the motor

P0232 - Stop Selection			
Adjustable range:	0 to 1	Factory setting:	0
Acesso:	Menu → Configurations → Commands → Local		

Description:

- With the P0232 setting, it is possible to select between the stop modes (Run/Stop and General disable) for the O key or for the STOP function (via DIx).

NOTE!
When the “DISABLE GENERAL” stop mode is programmed, only drive the motor if it is stopped or set the necessary time for which the inverter is disabled (COAST) in P0725 to ensure the motor stop, or enable the Flystart function.

Table 5.35: Stop Selection

P0232	Function
0	Run/Stop
1	General disable

P0233 - Dead Zone			
Adjustable range:	0 to 1	Factory setting:	1
Acesso:	Menu → Configurations → I/O → Analog inputs		

Description:

- It defines if the Dead Zone in the Analog Inputs is 0 = Inactive or 1 = Active
- If P0233 = 0 (Inactive), the signal in the Analog Inputs acts on the Speed Reference from the minimum point:
  - (0 to 10) V/(0 to 20) mA/(4 to 20) mA:0 V/0 mA/4 mA.
  - (10 to 0) V/(20 to 0) mA/(20 to 4) mA:10 V/20 mA/20 mA.
- If P0233 = 1 (Active), the signal in the Analog Inputs has a dead zone, where the Speed Reference remains at the value of the Minimum Value (P0133), even with the variation of the input signal.

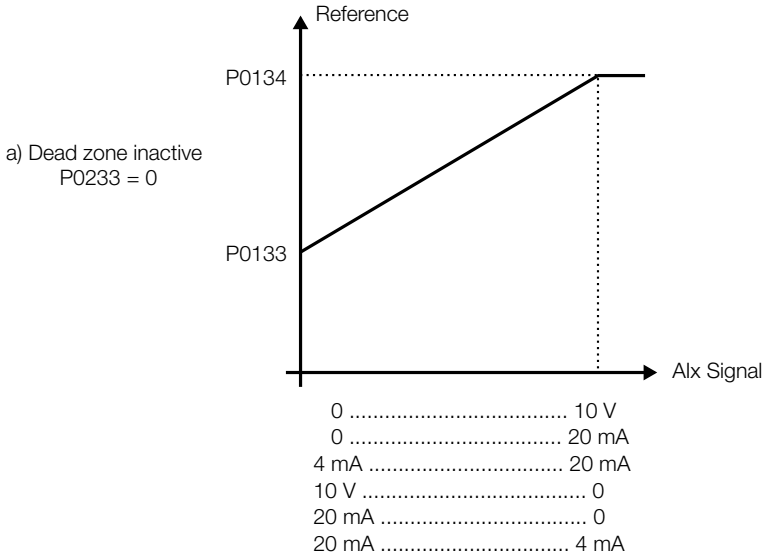

Figure 5.27: *Analog input dead zone inactive*

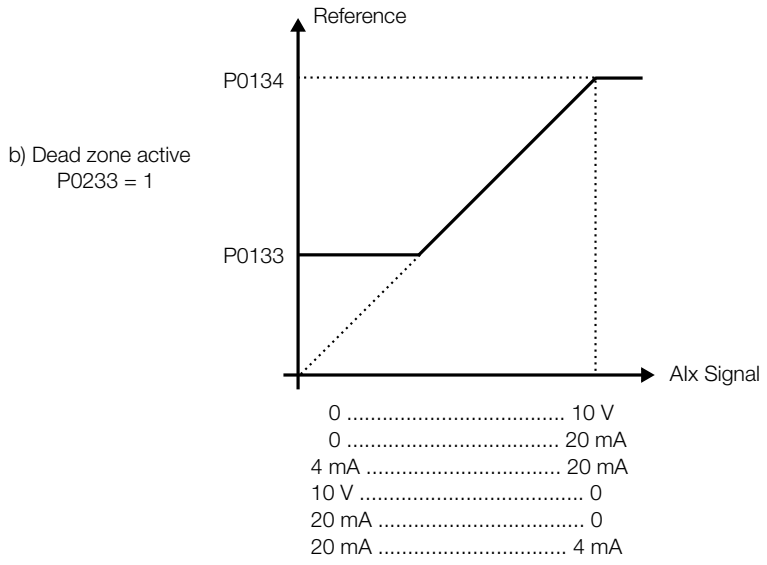

Figure 5.28: *Analog input dead zone active*

- If the analog input AI2 or AI4 is programmed for (-10 to +10) V (P0246 = 4), curves identical to those of the Figure 5.28 on page 5-44, only when AI2 or AI4 is negative will the direction of rotation be inverted.

Table 5.36: Dead Zone

P0233	Function
0	Inactive
1	Active

P0234 - Analog input AI1 gain (unipolar MVC4 board)			
Adjustable range:	0.000 to 9.999	Factory setting:	1.000
Acesso:	Menu → Configurations → I/O → Analog inputs		

Description: AI1' = -2 V, means the motor will spin in the opposite direction with a reference in module equal to 2 V.

- The internal values AI1', AI3', AI4' and AI5' are the result of the following equation:

$$AIx' = (AIx + \frac{OFFSET}{100} \times 10\ V) \times Gain$$

Example: AI1 = 5 V, OFFSET = -70 % and Gain = 1,00

$$AI1' = (5 + \frac{(-70)}{100} \times 10\ V) \times 1 = -2\ V$$

AI1' = -2 V, means the motor will spin in the opposite direction with a reference in module equal to 2 V.

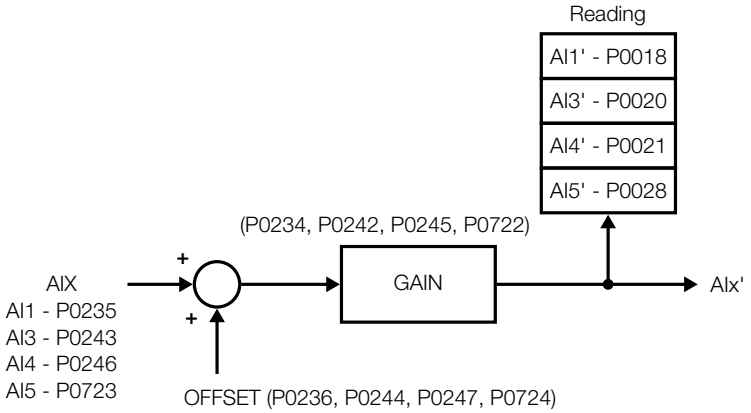

Figure 5.29: Block diagram of the analog inputs AI1, AI3, AI4 and AI5

P0235 - AI1 Signal Type			
Adjustable range:	0 to 3	Factory setting:	0
Acesso:	Menu → Configurations → I/O → Analog inputs		

Description:

- When current signals are used at AI1 input, put S2.A on the MVC4 control card in the "ON" position.
- For options 2 and 3 inverse reference is attained, that is, maximum speed is obtained with minimum reference.

Table 5.37: AI1 Signal Type

P0235	Function
0	(0 to 10) V/(0 to 20) mA
1	(4 to 20) mA
2	(10 to 0) V/(20 to 0) mA
3	(20 to 4) mA

NOTE!
This parameter can be changed only with the motor stopped.

P0236 - Analog input AI1 offset (unipolar MVC4 board)			
Adjustable range:	-100.0 to 100.0 %	Factory setting:	0.0 %
Acesso:	Menu → Configurations → I/O → Analog inputs		

Description:

- Refer to P0234.

P0237 - AI2 signal function			
Adjustable range:	0 to 3	Factory setting:	0
Acesso:	Menu → Configurations → I/O → Analog inputs		

Description:

- When the option 0 (P0221/P0222) is selected, AI2 is able to provide the reference (provided that programmed so in P0221/P0222), subject to the reference limits (P0133, P0134) and ramp action (P0100 to P0103).
- See Figure 5.24 on page 5-40.
- Option 3 (Process Variable) defines the AI2 input as the PID regulator feedback signal (e.g., pressure or temperature sensor, etc.), provided that P0524 = 0.

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Table 5.38: *AI2 signal function*

P0237	Function
0	P0221/P0222
1	Not Used
2	Maximum torque current
3	PID process variable

NOTE!
This parameter can be changed only with the motor stopped.

P0238 - Analog input AI2 gain (bipolar MVC4 board)			
Adjustable range:	0.000 to 9.999	Factory setting:	1.000
Acesso:	Menu → Configurations → I/O → Analog inputs		

Description:

- AI2' = -2 V, meaning that the motor will run in reverse direction with a speed reference absolute value equal to 2 V.
- The internal value of AI2' is the result of the following equation:

$$AI2' = (AI2 + \frac{OFFSET}{100} \times 10\ V) \times Gain$$

Example: AI2 = 5 V, OFFSET = -70 % and Gain = 1.00

$$AI2' = (5 + \frac{(-70)}{100} \times 10\ V) \times 1 = -2\ V$$

AI2' = -2 V, meaning that the motor will run in reverse direction with a speed reference absolute value equal to 2 V.

- AI2 has a variation range from -10 V to 10 V no matter if P0239 = 0 or 4, that is, an input voltage of 0 V corresponds in P0019 = 50 %. If it is necessary that 0 V correspond to P0019 = 0 %, the following setting must be done:

  P0238 = 2
  P0240 = -50 %

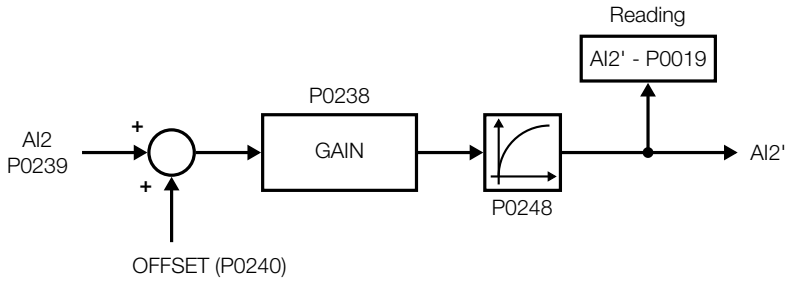


Figure 5.30: *Block diagram of analog input AI2*

P0239 - AI2 Signal Type			
Adjustable range:	0 to 4	Factory setting:	0
Acesso:	Menu → Configurations → I/O → Analog inputs		

Description:

- When current signals are used at AI2 input, put S2.B on the MVC4 control card in “ON” position.
- For options 2 and 3 inverse reference is attained, that is, maximum speed is obtained with minimum reference.

Table 5.39: *AI2 Signal Type*

P0239	Function
0	(0 to 10) V/(0 to 20) mA
1	(4 to 20) mA
2	(10 to 0) V/(20 to 0) mA
3	(20 to 4) mA
4	(-10 to +10) V

NOTE!
This parameter can be changed only with the motor stopped.

P0240 - Analog input AI2 offset (bipolar MVC4 board)			
Adjustable range:	-100.0 to 100.0 %	Factory setting:	0.0 %
Acesso:	Menu → Configurations → I/O → Analog inputs		

Description:

- Refer to P0238.

P0241 - AI3 signal function			
Adjustable range:	0 to 3	Factory setting:	0
Acesso:	Menu → Configurations → I/O → Analog inputs		

Description:

- When the option 0 (P0221/P0222) is selected, AI3 is able to receive the speed reference, which will be subjected to the speed limits(P0133 and P0134) and ramp action (P0100 to P0103).
- Refer to Figure 5.24 on page 5-40.
- The option 3, process variable, defines the AI3 input as the PID regulator feedback signal (e.g., pressure or temperature sensor, etc.), provided that P0524 = 1.

NOTE!
Isolated Analog Input located on the Optional Board EBB. Refer to the Chapter 7 OPTIONAL ACCESSORIES AND BOARDS on page 7-1 of the User's Manual.

Table 5.40: *AI3 signal function*

P0241	Function
0	P0221/P0222
1	Not Used
2	Maximum torque current
3	PID process variable

NOTE!
This parameter can be changed only with the motor stopped.

P0242 - Analog input AI3 gain (bipolar EBB board)			
Adjustable range:	0.000 to 9.999	Factory setting:	1.000
Acesso:	Menu → Configurations → I/O → Analog inputs		

Description:

- Refer to P0234.

P0243 - AI3 Signal Type			
Adjustable range:	0 to 3	Factory setting:	0
Acesso:	Menu → Configurations → I/O → Analog inputs		

Description:

- Set the S4.1 switch on the EBB optional board to "ON" position when a current signal is used at the analog input AI3.
- Inverse reference is obtained with the options 2 and 3, i.e., the maximum speed is obtained with the minimum reference.

Table 5.41: *AI3 Signal Type*

P0243	Function
0	(0 to 10) V/(0 to 20) mA
1	(4 to 20) mA
2	(10 to 0) V/(20 to 0) mA
3	(20 to 4) mA

NOTE!
This parameter can be changed only with the motor stopped.

P0244 - Analog input AI3 offset (bipolar EBB board)			
Adjustable range:	-100.0 to 100.0 %	Factory setting:	0.0 %
Acesso:	Menu → Configurations → I/O → Analog inputs		

Description:

- Refer to P0234.

P0245 - Analog input AI4 gain (bipolar EBA board)			
Adjustable range:	0.000 to 9.999	Factory setting:	1.000
Acesso:	Menu → Configurations → I/O → Analog inputs		

Description:

- Refer to P0234.

NOTE!
Analog Input located on the EBA Optional Board. Refer to the Chapter 7 OPTIONAL ACCESSORIES AND BOARDS on page 7-1 of the User's Manual.

P0246 - AI4 Signal Type			
Adjustable range:	0 to 4	Factory setting:	0
Acesso:	Menu → Configurations → I/O → Analog inputs		

Description:

- Set the S2.1 switch on the EBB optional board to "ON" position when a current signal is used at the analog input AI4.
- Inverse reference is obtained with the options 2 and 3, i.e., the maximum speed is obtained with the minimum reference.

Table 5.42: *AI4 Signal Type*

P0246	Function
0	(0 to 10) V/(0 to 20) mA
1	(4 to 20) mA
2	(10 to 0) V/(20 to 0) mA
3	(20 to 4) mA
4	(-10 to +10) V

NOTE!
This parameter can be changed only with the motor stopped.

P0247 - Analog input AI4 offset (bipolar EBA board)			
Adjustable range:	-100.0 to 100.0 %	Factory setting:	0.0 %
Acesso:	Menu → Configurations → I/O → Analog inputs		

Description:

- Refer to P0234.

P0248 - Analog input AI2 filter (bipolar MVC4 board)			
Adjustable range:	0.0 to 16.0 s	Factory setting:	0.0 s
Acesso:	Menu → Configurations → I/O → Analog inputs		

Description:

- It sets the time constant of the RC filter of input AI2.
- See Figure 5.30 on page 5-47.

P0251 - AO1 Function			
Adjustable range:	0 to 21	Factory setting:	2
Acesso:	Menu → Configurations → I/O → Analog outputs		

Description:

- See Table 5.43 on page 5-52 for further details related to the function of analog outputs.
- Refer to Chapter 7 OPTIONAL ACCESSORIES AND BOARDS on page 7-1 of the User's Manual.
- For values in the factory default (P0251 = 2 and P0252 = 1.000) AO1 = 10 V when Actual Speed = Maximum speed reference (P0134).
- AO1 output may be located on the MVC4 control board (0 to 10) V or on the EBB optional board [AO1', (0 to 20) mA/ (4 to 20) mA]. When EBB is used, the same signal is available for MVC4.

P0252 - Analog output AO1 gain (MVC4 or EBB board)			
Adjustable range:	0.000 to 9.999	Factory setting:	1.000
Acesso:	Menu → Configurations → I/O → Analog outputs		

Description:

- It sets the gain of analog output AO1. For P0252 = 1.000 the output value of AO1 is set according to the description "analog output indication scale" in P0262.

P0253 - AO2 Function			
Adjustable range:	0 to 21	Factory setting:	5
Acesso:	Menu → Configurations → I/O → Analog outputs		

Description:

- For values in the factory default (P0253 = 5 and P0254 = 1.000) AO1 = 10 V when Motor Current = 1.5 x P0295.
- Refer to Chapter 7 OPTIONAL ACCESSORIES AND BOARDS on page 7-1 of the User's Manual.
- For values in the factory default (P0253 = 5 and P0254 = 1.000) AO1 = 10 V when Motor Current = 1.5 x P0295.
- AO2 output may be located on the MVC4 control board (0 to 10) V or on the EBB optional board [AO2', (0 to 20) mA/ (4 to 20) mA]. When EBB is used, the same signal is available for MVC4.

P0254 - Analog output AO2 gain (MVC4 or EBB board)			
Adjustable range:	0.000 to 9.999	Factory setting:	1.000
Acesso:	Menu → Configurations → I/O → Analog outputs		

Description:

- It sets the gain of analog output AO2. For P0254 = 1.000 the output value of AO2 is set according to the description "analog output indication scale" in P0262.

P0255 - AO3 Function			
Adjustable range:	0 to 21	Factory setting:	2
Acesso:	Menu → Configurations → I/O → Analog outputs		

Description:

- With factory default values (P0255 = 2 and P0256 = 1.000) AO3 = 10 V when Actual Speed = Maximum speed reference (P0134).
- Refer to Table 5.43 on page 5-52 for further details regarding the functions of the analog outputs.
- For information on the AO3 output, refer to Chapter 7 OPTIONAL ACCESSORIES AND BOARDS on page 7-1 of the User's Manual.

P0256 - Analog output AO3 gain (EBA board)			
Adjustable range:	0.000 to 9.999	Factory setting:	1.000
Acesso:	Menu → Configurations → I/O → Analog outputs		

Description:

- It sets the gain of analog output AO3. For P0256 = 1.000 the output value of AO3 is set according to the description "analog output indication scale" in P0262.

P0257 - AO4 Function			
Adjustable range:	0 to 21	Factory setting:	5
Acesso:	Menu → Configurations → I/O → Analog outputs		

Description:

- For values in the factory default (P0257 = 5 and P0258 = 1.000) AO1 = 10 V when Motor Current = 1.5 x P0295.
- See Table 5.43 on page 5-52 for further details related to the function of analog outputs.
- For information on the AO4 output, refer to Chapter 7 OPTIONAL ACCESSORIES AND BOARDS on page 7-1 of the User's Manual.

P0258 - Analog output AO4 gain (EBA board)			
Adjustable range:	0.000 to 9.999	Factory setting:	1.000
Acesso:	Menu → Configurations → I/O → Analog outputs		

Description:

- It sets the gain of analog output AO4. For P0258 = 1.000 the output value of AO4 is set according to the description "analog output indication scale" in P0262.

P0259 - AO5 Function			
Adjustable range:	0 to 21	Factory setting:	2
Acesso:	Menu → Configurations → I/O → Analog outputs		

Description:

- For values in the factory default (P0259 = 2 and P0260 = 1.000) AO5 = 20 mA when Actual Speed = Maximum speed reference (P0134).
- See Table 5.43 on page 5-52 for further details related to the function of analog outputs.

P0260 - Analog output AO5 gain (unipolar isolated MVC4 board)			
Adjustable range:	0.000 to 9.999	Factory setting:	1.000
Acesso:	Menu → Configurations → I/O → Analog outputs		

Description:

- It sets the gain of analog output AO4. For P0260 = 1.000 the output value of AO5 is set according to the description “analog output indication scale” in P0262.

P0261 - AO6 Function			
Adjustable range:	0 to 21	Factory setting:	5
Acesso:	Menu → Configurations → I/O → Analog outputs		

Description:

- For values in the factory default (P0261 = 5 and P0262 = 1.000) AO5 = 20 mA when Motor Current = 1.5 x P0295.
- See Table 5.43 on page 5-52 for further details related to the function of analog outputs.

P0262 - Analog output AO6 gain (unipolar isolated MVC4 board)			
Adjustable range:	0.000 to 9.999	Factory setting:	1.000
Acesso:	Menu → Configurations → I/O → Analog outputs		

Description:

- It sets the gain of analog output AO6. For P0262 = 1.000 the output value of AO6 is set according to the description “analog output indication scale” in P0262.

Table 5.43: *Analog output functions*

Function	P0251 (AO1)	P0253 (AO2)	P0255 (AO3)	P0257 (AO4)	P0259 (AO5)	P0261 (AO6)	Full scale (10V)
Speed reference	0	0	0	0	0	0	1 x P0134
Total reference	1	1	1	1	1	1	1 x P0134
Actual speed	2	2	2	2	2	2	1 x P0134
Not used	3/4	3/4	3/4	3/4	3/4	3/4	
Output current (with filter 0.5 s)	5	5	5	5	5	5	1,5 x P0295
PID process variable	6	6	6	6	6	6	1 x P0528
Active output current	7	7	7	7	7	7	100 % P0295/P0401
Output power	8	8	8	8	8	8	2,0 x P0295 x P0296 x $\sqrt{3}$
PID reference	9	9	9	9	9	9	1 x P0528
Not used	10	10	10	10	10	10	
Trace channel 1 to 8	11 a 18	11 a 18	11 a 18	11 a 18	11 a 18	11 a 18	The same as the one of the chosen parameter
Inverter temperature	19	19	19	19	19	19	200 °C
PLC	20	20	20	20	20	20	
Output voltage	21	21	21	21	21	21	1 x P0296

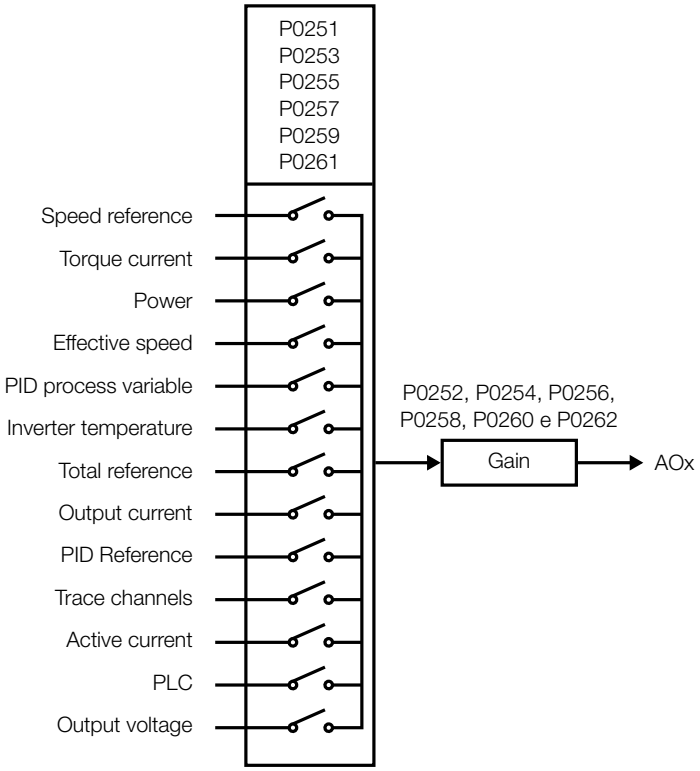


Figure 5.31: *Block diagram of the analog outputs*

- Analog output indication scale:
  - Full scale = 10 V: for outputs AO1, AO2 located on the MVC4 control board and AO3 and AO4 on the EBA optional board.
  - Full scale = 20 mA for outputs AO1' and AO2' located on the optional EBB board and AO5, AO6 located on the MVC4 control board.
  - Speed reference (P0001): full scale = P0134.
  - Total reference: full scale = P0134.
  - Actual speed (P0002): full scale = P0134.
  - Output current: full scale = 1,5 x P0295.
  - PID Process Variable: full scale = 1,0 x P0528.
  - PID reference: full scale = 1,0 x P0528.
  - Inverter temperature = 200 °C.
  - Output power: full scale = 2.0 x P0295 x P0296 x $\sqrt{3}$.

P0263 - DI1 Function			
P0264 - DI2 Function			
P0265 - DI3 Function			
P0266 - DI4 Function			
P0267 - DI5 Function			
P0268 - DI6 Function			
P0269 - DI7 Function			
P0270 - DI8 Function			
P0271 - DI9 Function			
P0272 - DI10 Function			
Adjustable range:	P0263 = 0 to 3 P0264 = 0 to 1 P0265 = 0 to 26 P0266 = 0 to 26 P0267 = 0 to 26 P0268 = 0 to 26 P0269 = 0 to 24 P0270 = 0 to 24 P0271 = 0 to 24 P0272 = 0 to 24	Factory setting:	P0263 = 1 P0264 = 0 P0265 = 0 P0266 = 0 P0267 = 3 P0268 = 6 P0269 = 0 P0270 = 0 P0271 = 0 P0272 = 0
Acesso:	Menu → Configurations → I/O → Digital inputs		

5

Description:

- The digital input status can be monitored at the parameter P0012 (Digital inputs DI1 to DI10 status).
- Refer to Table 5.44 on page 5-56 , the Figure 5.32 on page 5-55 and Figure 5.34 on page 5-55 for further details regarding the functions of the digital inputs.
  Notes:
  - The **'Electronic Potentiometer'** (E.P.) function allows the speed reference to be adjusted through 2 digital inputs (one to increment it and the other to decrease it). To enable this function, you must first configure the speed reference for E.P., setting P0221 = 7 and/or P0222 = 7. After enabling this function, simply program DI3 or DI5 (P0265 or P0267 = 5) and DI4 or DI6 (P0266 or P0268 = 5). The operation of this function can be seen in Figure 5.36 on page 5-60. It is important to note that the increase of the reference is made with the application of 24 V at the digital inputs, while the decrease is done with the application of level 0 V. To reset the reference to zero, apply 24 V at the "Increase EP" input and 0 V at the "Decrease EP" input simultaneously with the inverter disabled. Thus:
    'Increase E.P.' (Electronic Potentiometer) is active when DI3 or DI5 are closed = 0 V.
    'Decrease E.P.' (Electronic Potentiometer) is active when DI4 or DI6 are open = 0 V.
  - **'LOCAL/REMOTE'** = 0 V/24 V in the digital input respectively.
  - DI8 digital input is linked to the input for **'Motor Thermistor'** (PTC) present on the EBA/EBB optional cards, as described in Table 5.44 on page 5-56 :

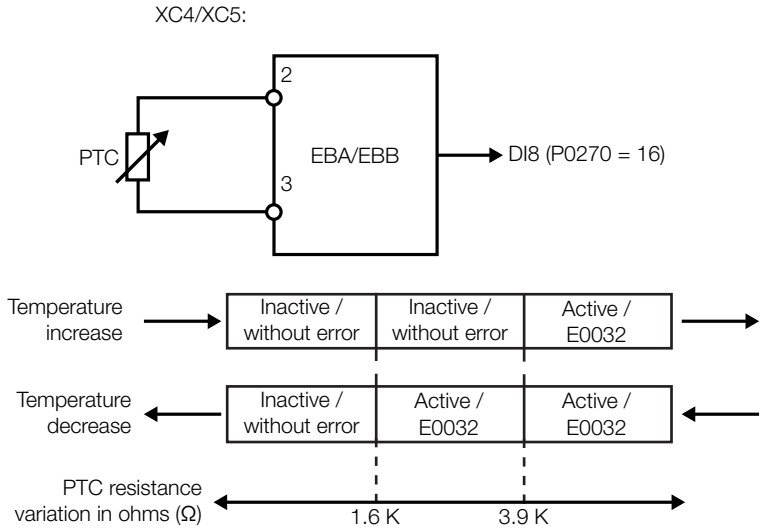
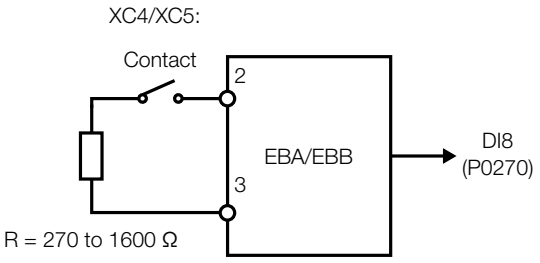


Figure 5.32: *DI8 as a PTC input*

- In order to use the DI8 as a normal digital input, program the designated function at P0270, and connect a resistor, ranging from 270 to 1600 Ω, in series with the contact (Figure 5.33 on page 5-55).



Contact	DI8
Open	Deactivated
Closed	Activated

Figure 5.33: *DI8 as a normal digital input*

- If the function **'Parameterization Disabling'** is programmed and the correspondent DIx in +24 V input is closed, then parameter changes are not allowed, regardless of P0000 and P0200 settings. When the DIx input is open, parameter changes are conditioned to P0000 and P0200 settings.
- **'RL2 and RL3 Timer'**: this function acts as a timer to activate and deactivate the relays 2 and 3 (RL2 and RL3). When the timer function for the relay 2 or 3 is programmed at any DIx, and a transition from open to closed occurs, the programmed relay will be activated with the delay set in P0283 (RL2) or P0285 (RL3). When a transition from closed to open occurs, the programmed relay will be deactivated with the delay adjusted in P0284 (RL2) or P0286 (RL3). After the transition of the DIx, either for activating or deactivating the programmed relay, it is necessary that the DIx remains closed or open during at least the time set in P0283/P0285 and P0284/P0286. Otherwise, the timer will be reset. Refer to the Figure 5.34 on page 5-55. **Note:** In order to enable that function it is also necessary to program P0279 and/or P0280 = 29 (Timer).
- The 'Ventilation OK' function generates an inverter ventilation fault (F0048).

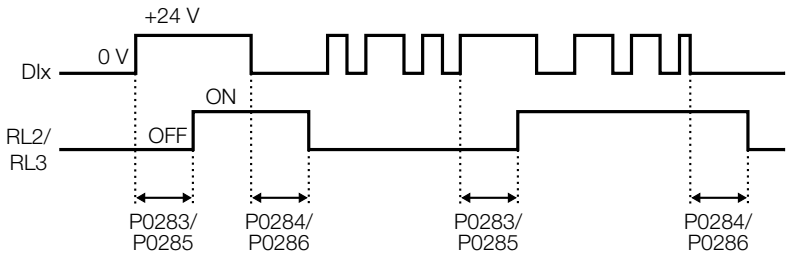


Figure 5.34: *RL2 and RL3 timer function operation*

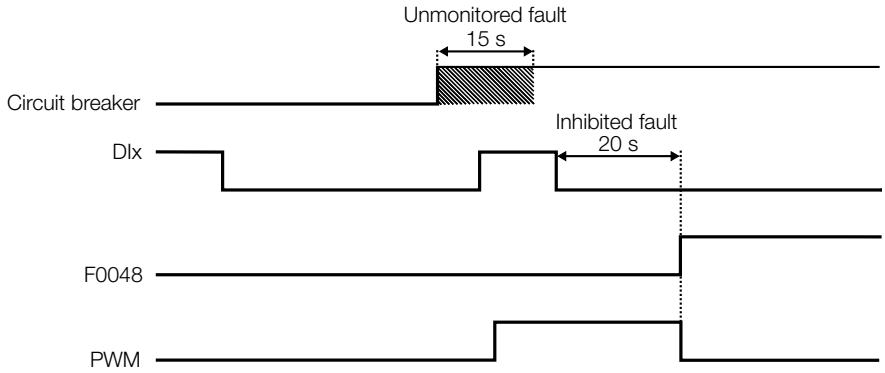


Figure 5.35: *'Ventilation OK' function operation*

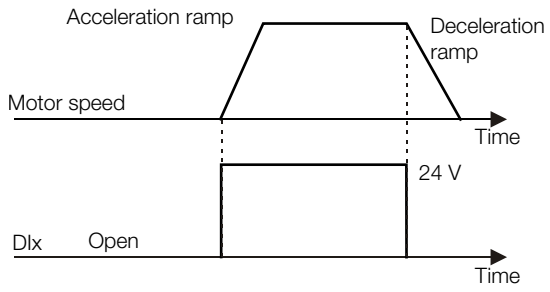
Table 5.44: *Digital input functions*

Parameter DIx / Function	P0263 (DI1)	P0264 (DI2)	P0265 (DI3)	P0266 (DI4)	P0267 (DI5)	P0268 (DI6)	P0269 (DI7)	P0270 (DI8)	P0271 (DI9)	P0272 (DI10)
Sem Função	0	-	0, 7, 17 and 18	0, 17 and 18	0, 17 and 18	0, 17 and 18	0, 5, 7, 9, 16, 17 and 18	0, 5, 7, 9, 17 and 18	0, 5, 7, 9, 17 and 18	0, 5, 7, 9, 17 and 18
Start/Stop	1	-	-	-	-	-	-	-	-	-
General Enable	2	-	2	2	2	2	2	2	2	2
Fast Stop	3	-	-	-	8	8	8	8	8	8
Forward/Reverse	-	0	-	-	-	-	-	-	-	-
Local/Remote	-	1	1	1	1	1	1	1	1	1
JOG	-	-	3	3	3	3	3	3	3	3
No external fault	-	-	4	4	4	4	4	4	4	4
Increase E.P.	-	-	5	-	5	-	-	-	-	-
Decrease E.P.	-	-	-	5	-	5	-	-	-	-
2nd ramp	-	-	6	6	6	6	6	6	6	6
Multispeed (MSx)	-	-	-	7	7	7	-	-	-	-
Forward run	-	-	8	-	-	-	-	-	-	-
Reverse run	-	-	-	8	-	-	-	-	-	-
Sinusoidal filter circuit breaker	-	-	9	9	9	9	-	-	-	-
JOG+	-	-	10	10	10	10	10	10	10	10
JOG-	-	-	11	11	11	11	11	11	11	11
Reset	-	-	12	12	12	12	12	12	12	12
Fieldbus	-	-	13	13	13	13	13	13	13	13
Start	-	-	14	-	14	-	14	-	-	-
Stop	-	-	-	14	-	14	-	14	14	14
Manual/Automatic	-	-	15	15	15	15	15	15	15	15
No external alarm	-	-	16	16	16	16	-	-	16	16
Motor thermistor	-	-	-	-	-	-	-	16	-	-
Parameterization disabling	-	-	19	19	19	19	19	19	-	-
Load user 1/2	-	-	20	20	20	20	20	20	-	-
RL2 timer	-	-	21	21	21	21	21	21	-	-
RL3 timer	-	-	22	22	22	22	22	22	-	-
No motor fault	-	-	-	-	-	-	-	-	19	19
No motor alarm	-	-	-	-	-	-	-	-	20	20
No alarm in the redundant ventilation set A	-	-	23	23	23	23	-	-	21	21
No alarm in the redundant ventilation set B	-	-	24	24	24	24	-	-	22	22
Initiates synchronous transfer	-	-	25	25	25	25	23	23	23	23
Ventilation OK	-	-	26	26	26	26	24	24	24	24

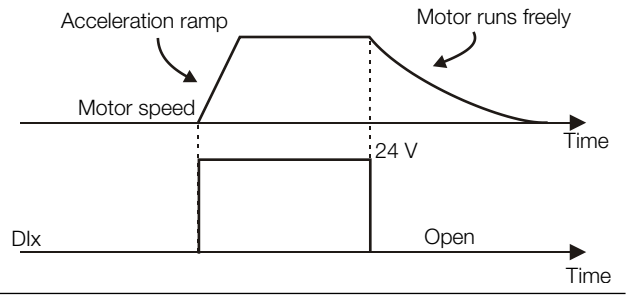
NOTE!
In order that Start/Stop works, configure also P0224 and/or P0227 = 1. The selection of P0265 or P0267 = 5, and P0266 or P0268 = 5, also requires the configuration of P0221 and/or P0222 = 7. The selection of P0266 and/or P0267 and/or P0268 = 7 also requires the configuration of P0221 and/or P0222 = 8.

NOTE!
The functions “No external alarm”, “No motor alarm”, “No alarm in the redundant ventilation set A” and “No alarm in the redundant ventilation set B”, occur by edge detection, as they are functions with low assets. That is, if the electronics are energized with the DI at low level, no alarm occurs.

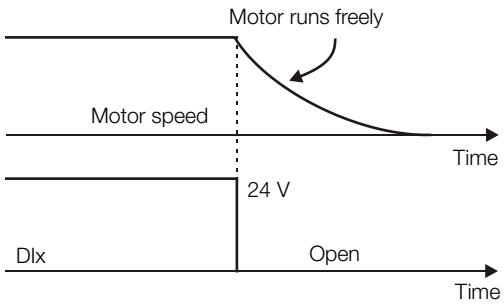
a) START/STOP



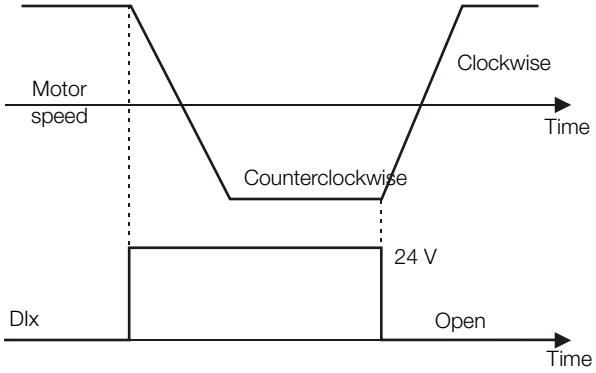
b) GENERAL ENABLE



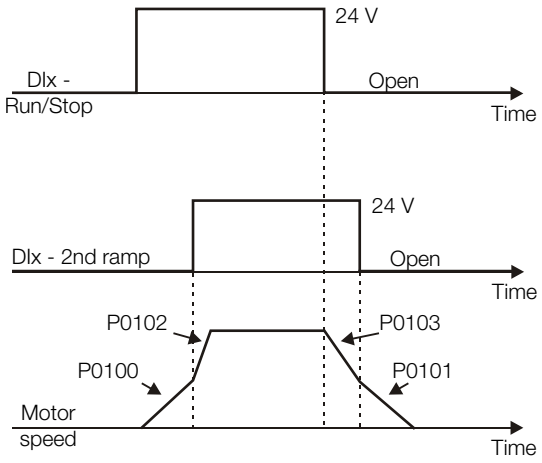
c) NO EXTERNAL FAULT



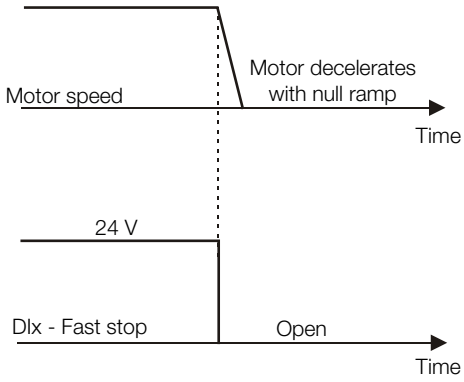
d) FORWARD/REVERSE



e) 2nd RAMP

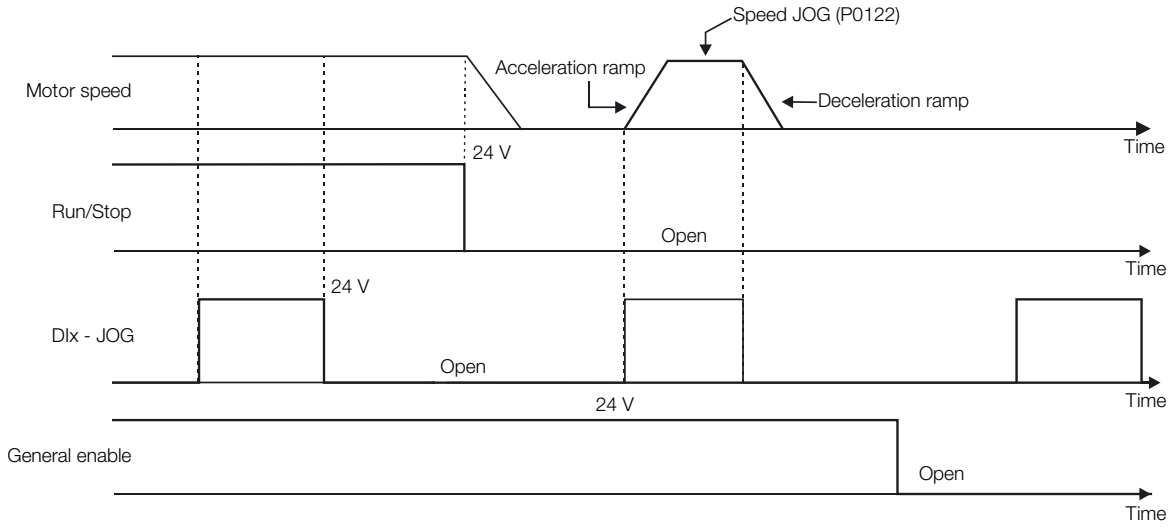


f) LOAD USER VIA DIx

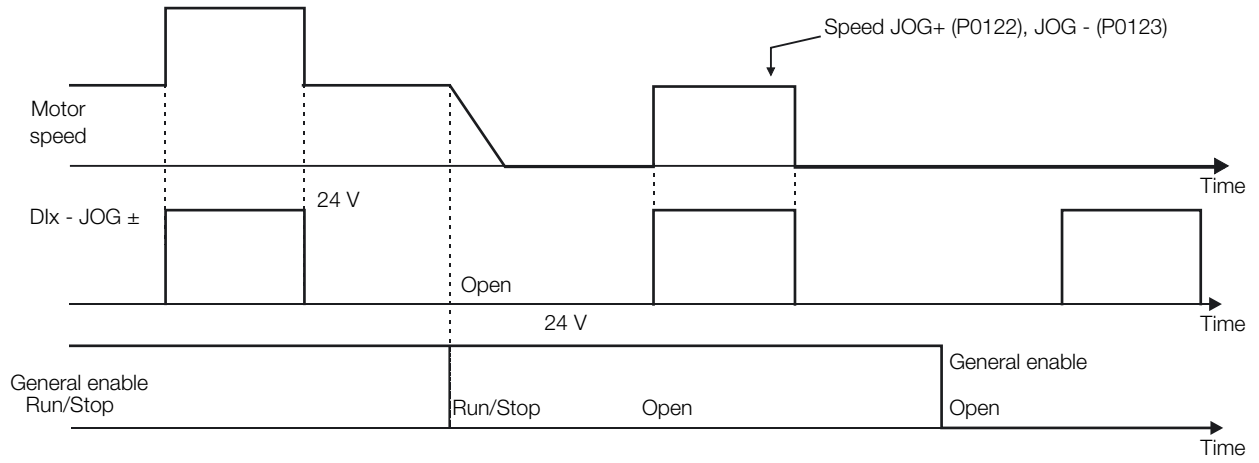


5

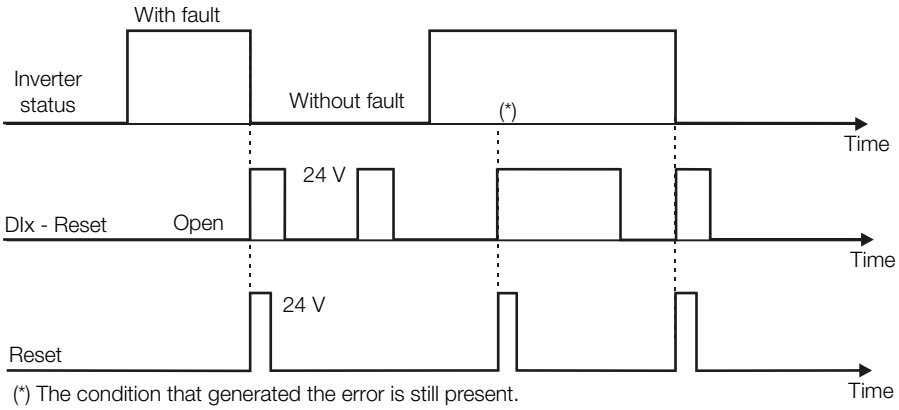
g) JOG


Speed JOG (P0122)
Acceleration ramp
Deceleration ramp
Motor speed
Time
24 V
Run/Stop
Open
Time
24 V
DIx - JOG
Open
Time
24 V
General enable
Open
Time

h) JOG + and JOG -

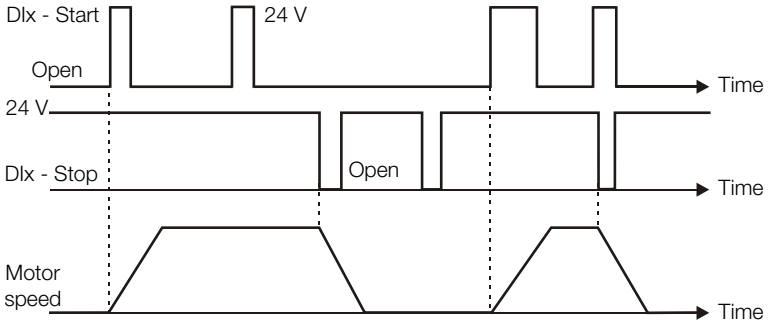


i) RESET

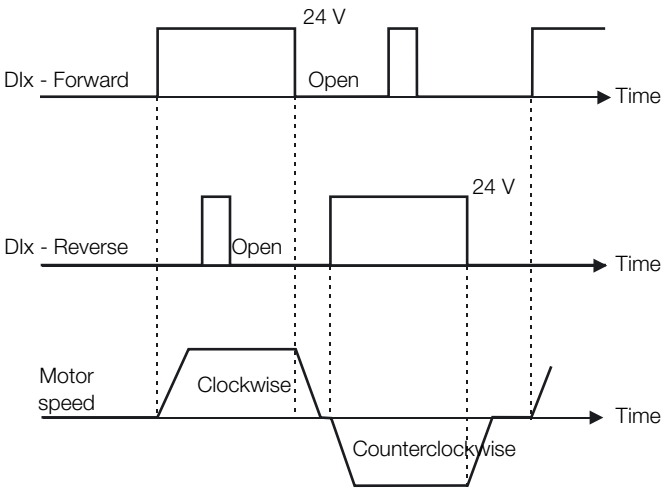


(*) The condition that generated the error is still present.

j) 3-WIRE START/STOP



k) FORWARD RUN/REVERSE RUN



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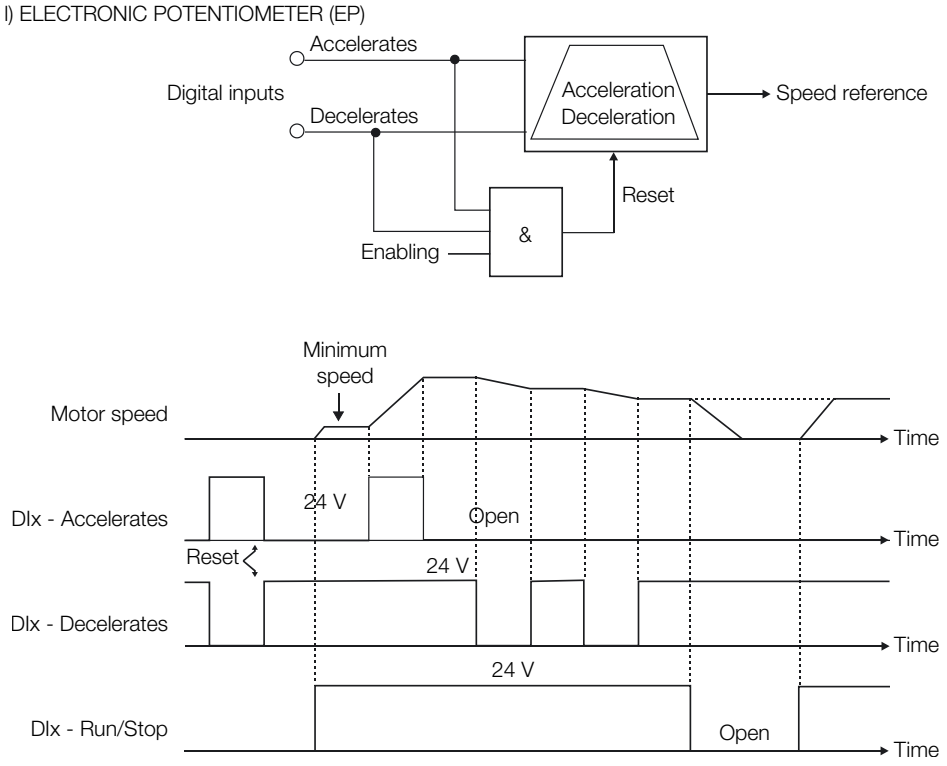


Figure 5.36: *(a) to (l) Details on the operation of the digital input functions*

NOTE!
This parameter can be changed only with the motor stopped.

P0275 - DO1 Function			
P0276 - DO2 Function			
P0277 - RL1 Function			
P0279 - RL2 Function			
P0280 - RL3 Function			
P0281 - RL4 Function			
P0282 - RL5 Function			
Adjustable range:	0 to 35	Factory setting:	P0275 = 0 P0276 = 0 P0277 = 13 P0279 = 2 P0280 = 1 P0281 = 0 P0282 = 0
Acesso:	Menu → Configurations → I/O → Digital outputs		

Description:

- The digital and relay output status can be monitored at the parameter P0013.
- Refer to Table 5.45 on page 5-62 and the Figure 5.37 on page 5-64 for more details regarding the digital outputs and relays.
- When the condition declared by the function is true, the digital output will be activated, i.e., a saturated transistor at a DOx output and/or a relay with energized coil for a RLx output
  Example: 'Is > Ix': when Is > Ix, then DOx = saturated transistor and/or RLx = relay with the coil energized. When Is = Ix then DOx = open transistor and/or RLx = relay with the coil not energized.

Notes:

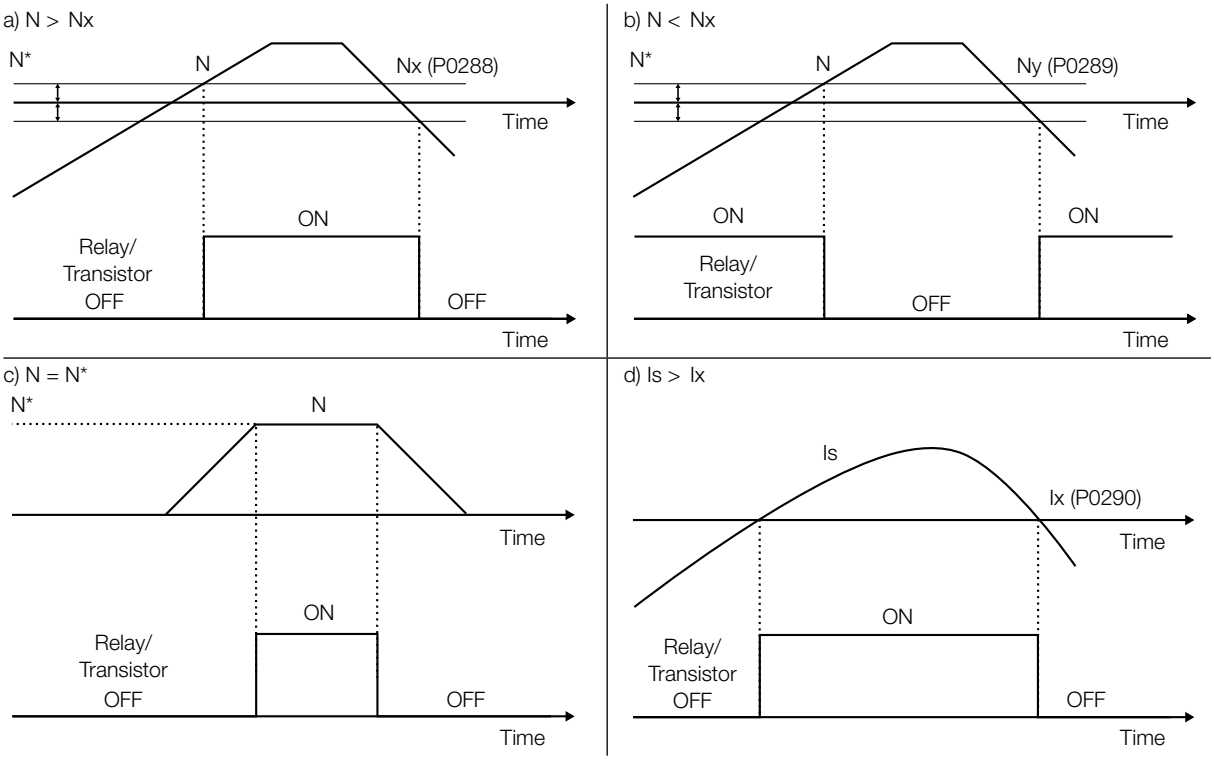
- **'Not Used'** it means that the digital outputs will remain always in a resting state, i.e., DOx = open transistor and/or RLx = relay with the coil not energized.
- **'N = 0'** it means that the motor speed is below the value adjusted in P0291 (Zero Speed Zone).
- **'Remote'** it means that the inverter is operating in Remote situation.
- **'Run'** it corresponds to enabled inverter. In this state, the IGBTs are commutating, and the motor may be at any speed, even zero speed.
- **'Ready'** it corresponds to the inverter without error and without undervoltage.
- **'No Fault'** it means that the inverter is not disabled by any type of fault.
- **'No F0070+F0071'** it means that the inverter is not disabled by faults F0070 or F0071.
- **'No F0072'** it means that the inverter is not disabled by faults F0072.
- **'4 to 20 mA Reference OK'** it means that the reference in current is within the 4 to 20 mA range.
- **'Forward'** it means that when the motor is rotating in the forward direction, the DOx = saturated transistor and/or RLx = relay with the coil energized. When the motor is rotating in the reverse direction, the DOx = open transistor and/or RLx = relay with the coil not energized.
- **'Pre-charge OK'** it means that the DC Link voltage is above the pre-charge voltage level.
- **'Fault'** it means that the inverter is disabled by a fault.
- **'N > Nx and Nt > Nx'** it means that both the conditions must be satisfied, so that DOx = saturated transistor and/or RLx = relay with the coil energized. In order that the digital outputs go back to the resting state, i.e., DOx = open transistor and/or RLx = relay with the coil not energized, it is necessary that only the condition N > Nx not be satisfied anymore (regardless of the Nt > Nx condition).

Definition of the symbols used with the functions:

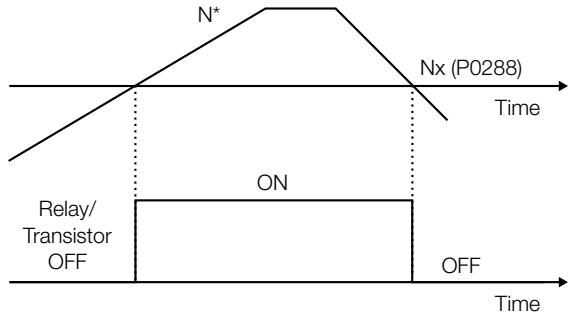
- N* = P0001 (Motor speed reference);
- N = P0002 (Motor speed);
- Nx = P0288 (Nx Speed) - It is a reference point of the speed selected by the user.
- Ny = P0289 (Ny Speed) - It is a reference point of the speed selected by the user.
- Ix = P0290 (Ix Current) - It is a reference point of the current selected by the user.
- Is = P0003 (Motor Current);
- Torque = P0009 (Motor Torque);
- VPx = P0533 (Process variable X value) - It is a reference point of the process variable selected by the user.
- VPy = P0534 (Process variable Y value) - It is a reference point of the process variable selected by the user.
- Nt = Total Reference (refer to Figure 5.24 on page 5-40).

Table 5.45: Digital and relay output functions

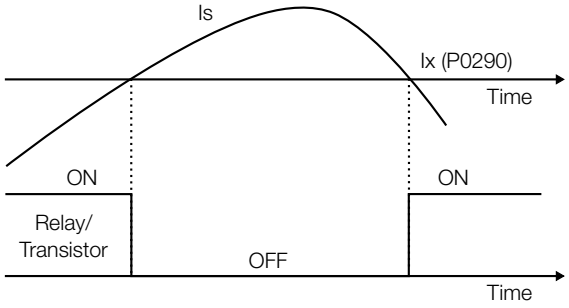
DOx Parameter / Function	P0275 (DO1)	P0276 (DO2)	P0277 (RL1)	P0279 (RL2)	P0280 (RL3)	P0281 (RL4)	P0282 (RL5)
Not Used	0, 8, 9, 23 and 29	0, 8, 9, 23 and 29	0, 8, 9, 23 and 29	0, 8, 9 and 23	0, 8, 9 and 23	0, 8, 9, 23 and 29	0, 8, 9, and 29
N* > Nx	1	1	1	1	1	1	1
N > Nx	2	2	2	2	2	2	2
N < Ny	3	3	3	3	3	3	3
N = N*	4	4	4	4	4	4	4
N = 0	5	5	5	5	5	5	5
Is > Ix	6	6	6	6	6	6	6
Is < Ix	7	7	7	7	7	7	7
Remote	10	10	10	10	10	10	10
Run	11	11	11	11	11	11	11
Ready	12	12	12	12	12	12	12
No Fault	13	13	13	13	13	13	13
No F0070 + F0071	14	14	14	14	14	14	14
No F0072	17	17	17	17	17	17	17
4 to 20 mA OK	18	18	18	18	18	18	18
Fieldbus	19	19	19	19	19	19	19
Forward	20	20	20	20	20	20	20
Process variable >VPx	21	21	21	21	21	21	21
Process variable <VPy	22	22	22	22	22	22	22
Pre-charge OK	24	24	24	24	24	24	24
Fault	25	25	25	25	25	25	25
N > Nx and Nt > Nx	26	26	26	26	26	26	26
Without Fault with delay	27	27	27	27	27	27	27
No Alarm	28	28	28	28	28	28	28
Timer	-	-	-	29	29	-	-
Redundant ventilation	30	30	30	30	30	30	30
PLC	-	-	31	31	31	-	-
Circuit Break ON (Input Circuit Breaker ON)	32	32	32	32	32	32	32
Transference OK	33	33	33	33	33	33	33
Synchronism OK	34	34	34	34	34	34	34
Serial	35	35	35	35	35	35	35



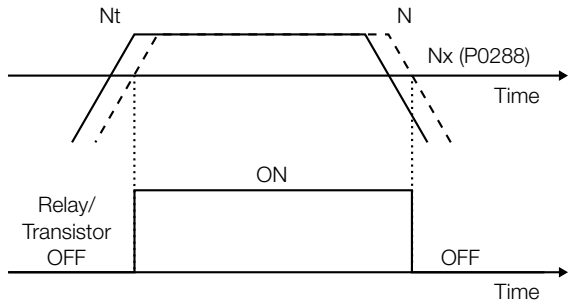
e) N* > Nx



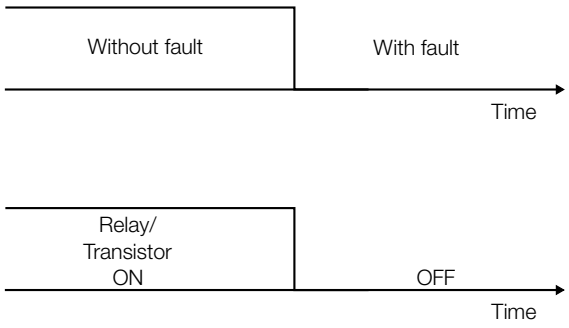
f) Is < Ix



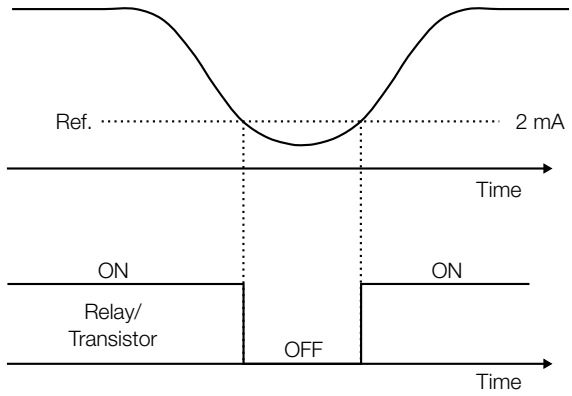
g) N > Nx and Nt > Nx



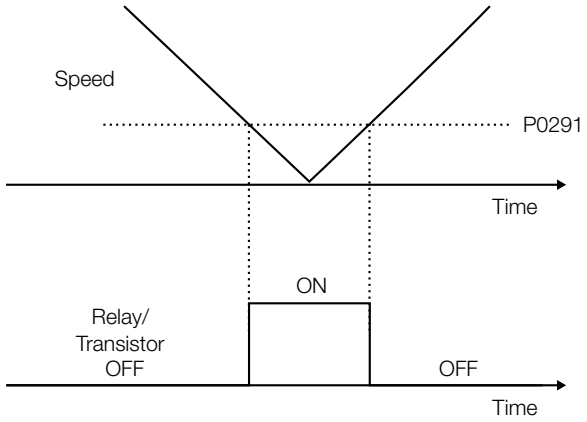
h) No external Fault



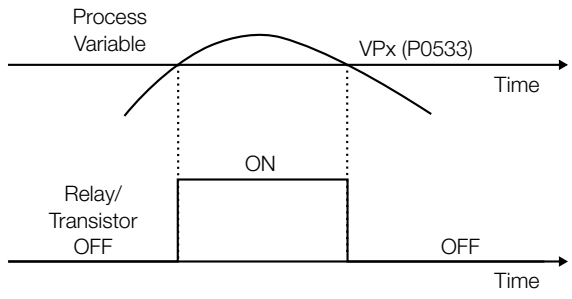
i) 4 to 20 mA reference



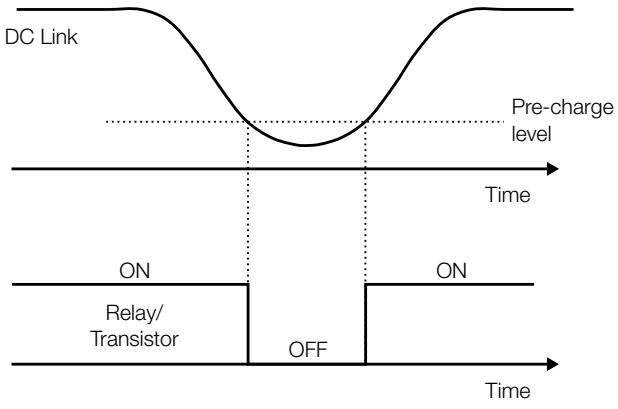
j) N = 0



k) Process variable X > VPx



l) Pre-charge OK



5

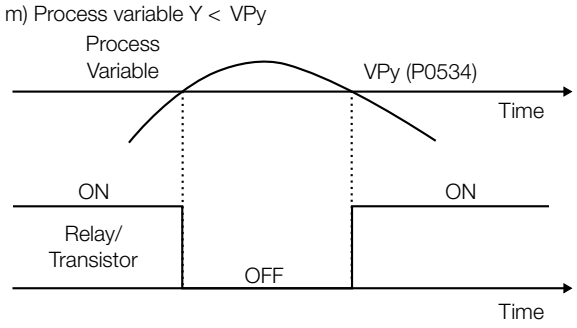


Figure 5.37: *(a) to (m) - Details on the operation of the digital output functions*

NOTE!
This parameter can be changed only with the motor stopped.

P0283 - RL2 ON time			
P0284 - RL2 OFF time			
P0285 - RL3 ON time			
P0286 - RL3 OFF time			
Adjustable range:	0.0 to 300.0 s	Factory setting:	0.0 s
Acesso:	Menu → Configurations → I/O → Digital outputs		

Description:

- Used in the relay output functions: Timers of relays 2 and 3.

P0288 - Nx Speed			
P0289 - Ny Speed			
Adjustable range:	0 to 4095 rpm	Factory setting:	P0288 = 120 rpm P0289 = 1800 rpm
Acesso:	Menu → Configurations → Control		

Description:

- Used in the digital and relay output functions: N* > Nx, N > Nx and N < Ny.

P0290 - Ix Current			
Adjustable range:	0.0 to 3276.7 A	Factory setting:	300.0 A
Acesso:	Menu → Configurations → Control		

Description:

- Used in the digital and relay output functions: Is > Ix and Is < Ix.

P0291 - Zero Speed Zone			
Adjustable range:	1 to 100 %	Factory setting:	1 %
Acesso:	Menu → Configurations → Control		

Description:

- Used in the digital and relay output functions: N = 0 and in the “Stop Logic” (Disable by N = 0; refer to P0211 and P0212).

P0292 - N=N* Band			
Adjustable range:	1 to 100 %	Factory setting:	1 %
Acesso:	Menu → Configurations → Control		

Description:

- Used in the digital and relay output functions: N = N*.

P0295 - Inverter rated current			
Adjustable range:	0 to 28	Factory setting:	10
Acesso:	Menu → Configurations → Nominal data → Inverter		

Description:

- It defines the inverter rated current according to the available models.

Table 5.46: *Inverter rated current*

P0295	Function
0	24 A
1	40 A
2	50 A
3	60 A
4	70 A
5	80 A
6	90 A
7	100 A
8	110 A
9	125 A
10	140 A
11	160 A
12	180 A
13	200 A
14	225 A
15	265 A
16	310 A
17	340 A
18	400 A
19	450 A
20	500 A
21	550 A
22	600 A
23	650 A
24	700 A
25	750 A
26	800 A
27	850 A
28	900 A

NOTE!
This parameter can be changed only with the motor stopped.

P0296 - Inverter rated voltage			
Adjustable range:	0 to 14	Factory setting:	14
Acesso:	Menu → Configurations → Nominal data → Inverter		

Description:

- It defines the inverter rated voltage according to the available models.

WARNING!
Adjust P0296 according to the output voltage to be used!

Table 5.47: Inverter rated voltage

P0296	Function
0	1150 V
1	2300 V
2	3300 V
3	4160 V
4	5500 V
5	6300 V
6	6900 V
7	7200 V
8	8000 V
9	9000 V
10	10000 V
11	11000 V
12	12000 V
13	13200 V
14	13800 V

NOTE!
This parameter can be changed only with the motor stopped.

P0303 - Skipped Speed 1			
P0304 - Skipped Speed 2			
P0305 - Skipped Speed 3			
P0306 - Skipped Range			
Adjustable range:	P0303 = 0 to 4095 rpm P0304 = 0 to 4095 rpm P0305 = 0 to 4095 rpm P0306 = 0 to 750 rpm	Factory setting:	P0303 = 600 rpm P0304 = 900 rpm P0305 = 1200 rpm P0306 = 0 rpm
Acesso:	Menu → Configurations → Protections		

Description:

- It avoids permanent motor operation at speeds in which, for instance, the mechanical system enters into resonance causing high vibration or noise levels.
- The passage through the skipped range (2 x P0306) occurs through the acceleration and deceleration ramps.
- The function does not operate properly if two bands of skipped speed overlap.

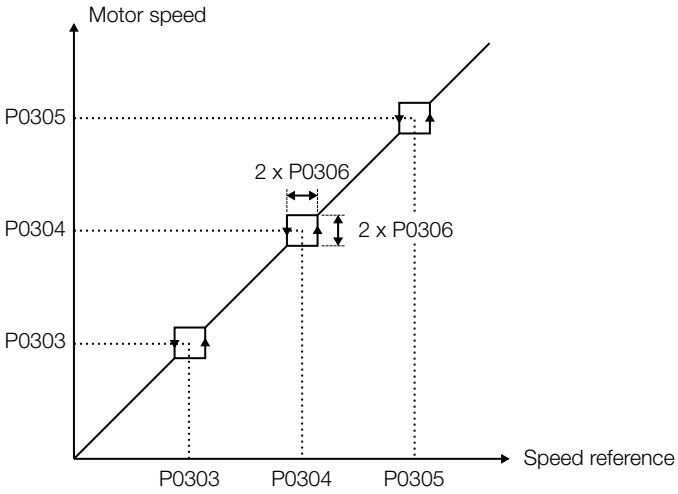


Figure 5.38: *Skipped speed curve*

P0308 - Serial address			
Adjustable range:	1 to 30	Factory setting:	1
Acesso:	Menu → Configurations → Communications		

Description:

- It sets the inverter address for serial communication.
- Refer to Section 9.2 SERIAL WEGBUS on page 9-12 of the User's Manual.

NOTE!
This parameter can be changed only with the motor stopped.

P0309 - Fieldbus			
Adjustable range:	0 to 13	Factory setting:	0
Acesso:	Menu → Configurations → Communications		

Description:

- 0 = Inactive Fieldbus.
- 1 to 6 = define the Fieldbus standard to be used (Profibus DP or DeviceNet) and the number of variables to be exchanged with the master.
- It is only applicable for the Profibus DP or DeviceNet optional kits.
- For P0309 = 10, refer to the DeviceNet Drive Profile Guide.

Table 5.48: Fieldbus

P0309	Function
0	Inactive
1	Profibus-DP 2 I/O
2	Profibus-DP 4 I/O
3	Profibus-DP 6 I/O
4	DeviceNet 2 I/O
5	DeviceNet 4 I/O
6	DeviceNet 6 I/O
7	Modbus-RTU 2 I/O
8	Modbus-RTU 4 I/O
9	Modbus-RTU 6 I/O
10	DeviceNet Drive Profile
11	Ethernet 2 I/O
12	Ethernet 4 I/O
13	Ethernet 6 I/O

NOTE!
This parameter can be changed only with the motor stopped.

P0312 - Type of serial protocol

Adjustable range:	0 to 9	Factory setting:	7
Acesso:	Menu → Configurations → Communications		

Description:

- It defines the type of protocol used for serial communication.

Table 5.49: Type of serial protocol

P0312	Function
0	Not Used
1	Modbus-RTU, 9600 bps, no parity
2	Modbus-RTU, 9600 bps, odd parity
3	Modbus-RTU, 9600 bps, even parity
4	Modbus-RTU, 19200 bps, no parity
5	Modbus-RTU, 19200 bps, odd parity
6	Modbus-RTU, 19200 bps, even parity
7	Modbus-RTU, 38400 bps, no parity
8	Modbus-RTU, 38400 bps, odd parity
9	Modbus-RTU, 38400 bps, even parity

NOTE!
This parameter can be changed only with the motor stopped.

P0313 - Disabling with alarm A128, A129 and A130

Adjustable range:	0 to 5	Factory setting:	0
Acesso:	Menu → Configurations → Communications		

Description:

- It defines the inverter behavior when the serial communication is inactive (causing A0128), when the physical connection with the Fieldbus network master is interrupted (causing error A0129), when the Fieldbus board is inactive (causing error A0130) or when the communication between MVC3 and MVC4 boards is interrupted.

Table 5.50: Disabling with alarm A128, A129 and A130

P0313	Function
0	Disable via Run/Stop
1	Disable via General Enable
2	Inactive
3	Go to LOCAL
4	Not Used
5	Fatal Failure

P0314 - Time for serial watchdog action

Adjustable range:	0.0 to 999.0 s	Factory setting:	0.0 s
Acesso:	Menu → Configurations → Communications		

Description:

- If the inverter does not receive any valid serial telegram after the time programmed in P0314, has elapsed, A0128 will be indicated on the HMI and the inverter will execute the action programmed in P0313 - Disabling with A0128/A0129/A0130.
- For the inverter to be able to execute that action, it is necessary that the commands be programmed for the “Serial” option in parameters P0220 to P0228.

Table 5.51: Time for serial watchdog action

P0314	Function
0.0	Disabled
0.1 a 999.0	Enabled

NOTE!
This parameter can be changed only with the motor stopped.

P0315 - Function of the MVC3 SCI1 serial channel

Adjustable range:	0 to 2	Factory setting:	0
Acesso:	Menu → Configurations → HMI → Settings		

Description:

- It selects the function of the SCI1 serial channel of the MVC3 control board.

The module serial configuration must be set as follows:

- Baudrate: 2400 bps
- Slave address: 1
- Parity: even
- Stop bit: 1

Table 5.52: Function of the MVC3 SCI1 serial channel

P0315	Function
0	Service HMI
1	Modbus serial for Tecsystem module
2	Modbus Serial for Pextron module

P0320 - Flying Start/Ride-Through			
Adjustable range:	0 to 3	Factory setting:	0
Acesso:	Menu → Configurations → Functions → Flying Start		

Description:

- It determines whether the Flying Start and Ride-Trought functions are active.

NOTE!
With the Ride-Through function active, disable function 27 of the protection relay of the input.

Table 5.53: Flying Start/Ride-Through

P0320	Function
0	Inactive
1	Flying Start
2	Flying Start and Ride-Through
3	Ride-Through

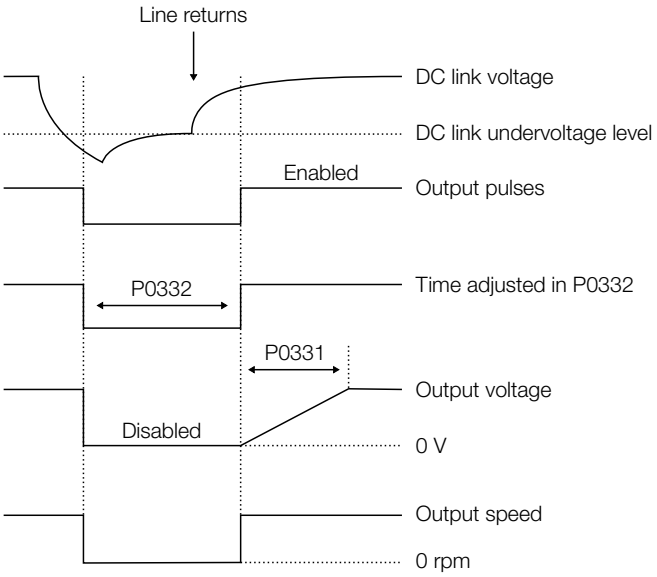
5

NOTE!
This parameter can be changed only with the motor stopped.

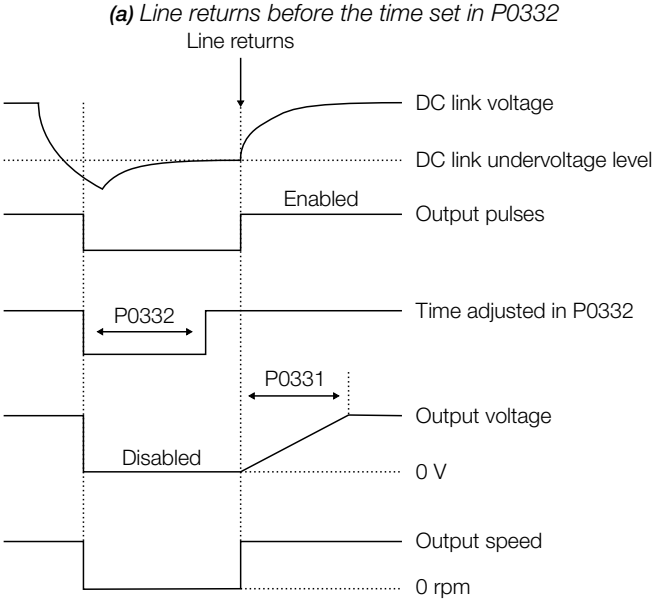
P0331 - Voltage ramp time P0332 - Dead time P0333 - Ride-through time			
Adjustable range:	P0331 = 0.2 to 50.0 s P0332 = 1.0 to 40.0 s P0333 = 0.0 to 20.0 s	Factory setting:	P0331 = 8.0 s P0332 = 10.0 s P0333 = 10.0 s
Acesso:	Menu → Configurations → Functions → Flying Start		

Description: **Actuation with P0202 = 0, 1 or 2 (V/F Control):**

- Parameter P0331 sets the time required for the output voltage, starting from 0 V, to reach the nominal voltage.
- The Flying Start function allows starting a spinning motor. This function only acts when the inverter is enabled. At the start, the inverter will impose the reference speed, creating a voltage ramp with time defined in P0331.
- The parameter P0332 sets the minimum time the inverter waits before restarting the motor after the line recovery in Ride-Through. This time is counted from the line voltage drop, and it is necessary for the motor de-magnetizing.
- P0332 is also used at the start with Flying Start, before the beginning of the Flying Start. Set this time (P0332) to twice the rotor constant of the motor.
- The Ride-Through function allows the inverter recovery without DC link undervoltage, when a voltage dip occurs in the supply line.
- The inverter will indicate F0309 (Timeout in Ride-through state Waiting Line) if the voltage dip lasts longer than P0332 + P0333 seconds. If the drive is performing the pre-charge procedure, this time will be extended until the completion of the process.
- If Ride-Through is enabled and a voltage dip occurs, causing the DC link to drop below the undervoltage level, the output pulses are disabled and the motor coasts. If the line supply returns to its normal value, the inverter enables the pulses again, imposing the speed of the reference instantaneously (as in the Flying Start function) and applying a voltage ramp with the time defined in P0331. Refer to the Figure 5.39 on page 5-71. The Flying Start function does not work when P0202 = 3 or 4.
- During the Ride-Through, the input cubicle is opened and the pre-charge system is activated.



(a) *Line returns before the time set in P0332*



(b) *Line returns after the time set in P0332, but before the time set P0332+P0333*

Figure 5.39: *(a) and (b) Actuation of the Ride-Through in V/F mode*

P0400 - Motor rated voltage			
Adjustable range:	1 to 19999 V	Factory setting:	6600 V
Acesso:	Menu → Configurations → Nominal data → Motor		

Description:

- Set according to the motor nameplate data and the connection diagram used in the terminal box.
- This parameter changes the inverter output voltage by applying a gain according to the relationship P0400/P0296 to the values defined by the V/f curves of the control mode chosen (P0202) and of the torque boost set (P0136 and P0137) This gain is added when P0202 = 0, 1 or 2.
- See Figure 5.7 on page 5-18 to Figure 5.9 on page 5-18 .

NOTE!
The motor output voltage (P0400) must be lower than or equal to the inverter voltage (P0296).

NOTE!
This parameter can be changed only with the motor stopped.

P0401 - Motor rated current			
Adjustable range:	0.1 to 3705.0 A	Factory setting:	140.0 A
Acesso:	Menu → Configurations → Nominal data → Motor		

Description:

- Set according to the motor nameplate data, taking into account the motor voltage.

NOTE!
This parameter can be changed only with the motor stopped.

P0402 - Motor rated speed			
Adjustable range:	1 to 7200 rpm	Factory setting:	1796 rpm
Acesso:	Menu → Configurations → Nominal data → Motor		

Description:

- Set this parameter according to the motor nameplate data.
- The range for V/F is from 0 to 7200 rpm.

NOTE!
This parameter can be changed only with the motor stopped.

P0403 - Motor Rated Freq			
Adjustable range:	1 to 120 Hz	Factory setting:	60 Hz
Acesso:	Menu → Configurations → Nominal data → Motor		

Description:

- Set this parameter according to the motor nameplate data.
- The range for V/F is from 1 to 120 Hz.

NOTE!
This parameter can be changed only with the motor stopped.

P0405 - Speed sensor data (encoder)			
Adjustable range:	100 to 9999 PPR	Factory setting:	1024 PPR
Acesso:	Menu → Configurations → Nominal data → Motor		

Description:

- Program the number of pulses per revolution (ppr) of the used incremental encoder when P0202 = 4 (Vector with Encoder).

NOTE!
This parameter can be changed only with the motor stopped.

P0406 - Ventilation Type			
Adjustable range:	0 to 1	Factory setting:	0
Acesso:	Menu → Configurations → Nominal data → Motor		

Description:

- It sets the overload protection level according to the description of parameters P0156, P0157 and P0158.

Table 5.54: *Ventilation Type*

P0406	Function
0	Self-ventilated
1	Separated ventilation

NOTE!
This parameter can be changed only with the motor stopped.

P0408 - Run Self-tuning			
Adjustable range:	0 to 1	Factory setting:	1
Acesso:	Menu → Configurations → Nominal data → Motor		

Description:

- With P0408 = 1 (autogain) the gains of the vector control regulators are automatically recalculated when the motor configuration parameters are changed.

Table 5.55: *Run Self-tuning*

P0408	Function
0	No
1	Self Gain

NOTE!
- This parameter can be changed only with the motor stopped.
- This parameter is only visible on the HMI when: the control type is vector, P0202 = 3 (Sensorless Vector) or P0202 = 4 (Vector with Encoder).

P0409 - Motor stator resistance Rs			
Adjustable range:	0.000 to 9.999 Ω	Factory setting:	0.000 Ω
Acesso:	Menu → Configurations → Nominal data → Motor		

Description:

- It is the value of the motor stator resistance.

NOTE!
This parameter is only visible on the HMI when: the control type is vector, P0202 = 3 (Sensorless Vector) or P0202 = 4 (Vector with Encoder).

P0410 - Motor magnetization current (Imr)			
Adjustable range:	0.0 to 1024.0 A	Factory setting:	0.0 A
Acesso:	Menu → Configurations → Nominal data → Motor		

Description:

- It is the value of the motor magnetization current.

NOTE!
This parameter is only visible on the HMI when: the control type is vector, P0202 = 3 (Sensorless Vector) or P0202 = 4 (Vector with Encoder).

P0411 - Motor Flux Leakage Inductance			
Adjustable range:	0.00 to 99.99 mH	Factory setting:	0.00 mH
Acesso:	Menu → Configurations → Nominal data → Motor		

Description:

- It is the value of the motor flux leakage inductance.

NOTE!
This parameter is only visible on the HMI when: the control type is vector, P0202 = 3 (Sensorless Vector) or P0202 = 4 (Vector with Encoder).

P0412 - Lr/Rr Constant			
Adjustable range:	0.000 to 9.999 s	Factory setting:	0.000 s
Acesso:	Menu → Configurations → Nominal data → Motor		

Description:

- It is the motor rotor time constant (Lr/Rr).

P0413 - Tm Time Constant			
Adjustable range:	0.00 to 99.99 s	Factory setting:	0.00 s
Acesso:	Menu → Configurations → Nominal data → Motor		

Description:

- It is the mechanical time constant.

NOTE!
This parameter is only visible on the HMI when: the control type is vector, P0202 = 3 (Sensorless Vector) or P0202 = 4 (Vector with Encoder).

P0414 - Magnetizing voltage			
Adjustable range:	0.0 to 20.0 %	Factory setting:	0.0 %
Acesso:	Menu → Configurations → Nominal data → Motor		

Description:

- It is a percentage of the nominal voltage applied for (2 x P0412) seconds to ensure the magnetization of the motor before the start.

NOTE!
This parameter is only visible on the HMI when: the control type is scalar, P0202 = 0, 1 or 2 (V/F control).

P0427 - Inductance LD sigma			
Adjustable range:	0.00 to 99.99 mH	Factory setting:	4.85 mH
Acesso:	Menu → Configurations → Nominal data → Motor		

Description:

- Motor parameter used on the stator flux observer.

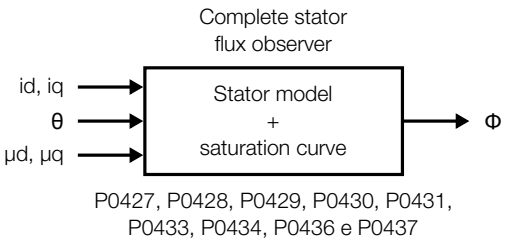


Figure 5.40: *Complete model of the stator flux*

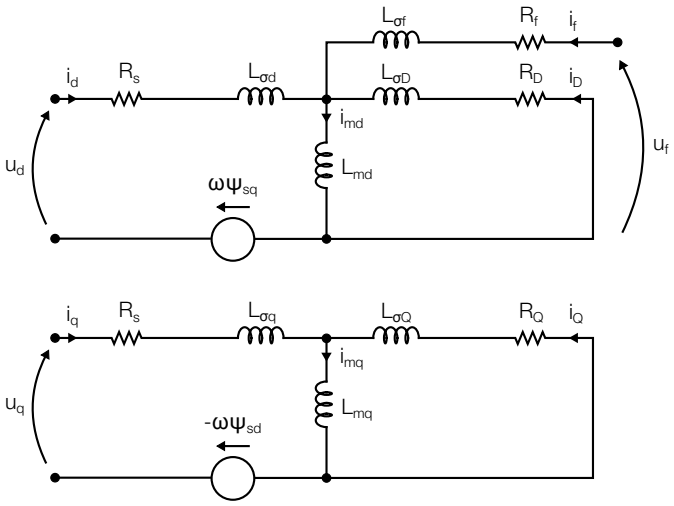


Figure 5.41: *Electrical model of a synchronous motor*

NOTE!

- This parameter is only visible on the HMI when: P0950 = 1 (Synchronous motor with brushes).
- This parameter is only visible on the HMI when: the control type is vector, P0202 = 3 (Sensorless Vector) or P0202 = 4 (Vector with Encoder).

P0428 - Inductance LQ sigma			
Adjustable range:	0.00 to 99.99 mH	Factory setting:	4.41 mH
Acesso:	Menu → Configurations → Nominal data → Motor		

Description:

- Motor parameter used in stator flux model.

NOTE!

- This parameter is only visible on the HMI when: P0950 = 1 (Synchronous motor with brushes).
- This parameter is only visible on the HMI when: the control type is vector, P0202 = 3 (Sensorless Vector) or P0202 = 4 (Vector with Encoder).

P0429 - Resistence RD			
Adjustable range:	0.000 to 9.999 Ω	Factory setting:	1.139 Ω
Acesso:	Menu → Configurations → Nominal data → Motor		

Description:

- Motor parameter used in the stator flux model.

NOTE!

- This parameter is only visible on the HMI when: P0950 = 1 (Synchronous motor with brushes).
- This parameter is only visible on the HMI when: the control type is vector, P0202 = 3 (Sensorless Vector) or P0202 = 4 (Vector with Encoder).

P0430 - Resistance RQ			
Adjustable range:	0.000 to 9.999 Ω	Factory setting:	0.831 Ω
Acesso:	Menu → Configurations → Nominal data → Motor		

Description:

- Motor parameter used in the stator flux model.

NOTE!

- This parameter is only visible on the HMI when: P0950 = 1 (Synchronous motor with brushes).
- This parameter is only visible on the HMI when: the control type is vector, P0202 = 3 (Sensorless Vector) or P0202 = 4 (Vector with Encoder).

P0431 - Number of motor poles			
Adjustable range:	2 to 64	Factory setting:	4
Acesso:	Menu → Configurations → Nominal data → Motor		

Description:

- Number of motor poles.

- Determined by:

$$\text{Number of poles} = \frac{120 \times \text{frequency}_{rated}}{\text{rpm}_{rated}}$$

NOTE!
This parameter is only visible on the HMI when: P0950 = 1 (Synchronous motor with brushes).

P0436 - Lf inductance			
Adjustable range:	0.0 to 999.9 mH	Factory setting:	88.0 mH
Acesso:	Menu → Configurations → Nominal data → Motor		

Description:

- LF field inductance of the synchronous motor.

NOTE!
- This parameter is only visible on the HMI when: P0950 = 1 (Synchronous motor with brushes).
- This parameter is only visible on the HMI when: the control type is vector, P0202 = 3 (Sensorless Vector) or P0202 = 4 (Vector with Encoder).

5

P0437 - Resistence Rf			
Adjustable range:	0.000 to 9.999 Ω	Factory setting:	0.047 Ω
Acesso:	Menu → Configurations → Nominal data → Motor		

Description:

- Field resistance of the synchronous motor.

NOTE!
- This parameter is only visible on the HMI when: P0950 = 1 (Synchronous motor with brushes).
- This parameter is only visible on the HMI when: the control type is vector, P0202 = 3 (Sensorless Vector) or P0202 = 4 (Vector with Encoder).

P0438 - Proportional gain of the current regulator IQ			
Adjustable range:	0.000 to 9.999	Factory setting:	0.034
Acesso:	Menu → Configurations → Control		

Description:

- Parameter used by the regulator to control the currents.

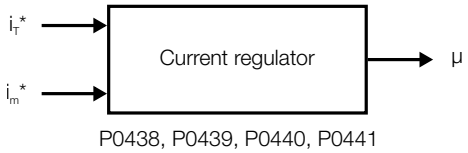


Figure 5.42: *Complete model of the stator flux*

NOTE!

- This parameter is only visible on the HMI when: P0950 = 1 (Synchronous motor with brushes).
- This parameter is only visible on the HMI when: the control type is vector, P0202 = 3 (Sensorless Vector) or P0202 = 4 (Vector with Encoder).

P0439 - Integration constant of the current regulator IQ			
Adjustable range:	0.1 to 999.9	Factory setting:	9.0
Acesso:	Menu → Configurations → Control		

Description:

- Parameter used by the regulator to control the currents.

NOTE!

- This parameter is only visible on the HMI when: P0950 = 1 (Synchronous motor with brushes).
- This parameter is only visible on the HMI when: the control type is vector, P0202 = 3 (Sensorless Vector) or P0202 = 4 (Vector with Encoder).

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P0440 - Proportional gain of the current regulator ID			
Adjustable range:	0.000 to 9.999	Factory setting:	0.074
Acesso:	Menu → Configurations → Control		

Description:

- Parameter used by the regulator to control the currents.

NOTE!

- This parameter is only visible on the HMI when: P0950 = 1 (Synchronous motor with brushes).
- This parameter is only visible on the HMI when: the control type is vector, P0202 = 3 (Sensorless Vector) or P0202 = 4 (Vector with Encoder).

P0441 - Integration constant of the current regulator ID			
Adjustable range:	0.1 to 999.9	Factory setting:	19.6
Acesso:	Menu → Configurations → Control		

Description:

- Parameter used by the regulator to control the currents.

NOTE!

- This parameter is only visible on the HMI when: P0950 = 1 (Synchronous motor with brushes).
- This parameter is only visible on the HMI when: the control type is vector, P0202 = 3 (Sensorless Vector) or P0202 = 4 (Vector with Encoder).

P0446 - Base field current			
Adjustable range:	0.1 to 999.9 A	Factory setting:	33.3 A
Acesso:	Menu → Configurations → Control		

Description:

- Current base used for the field current.

NOTE!

- This parameter is only visible on the HMI when: P0950 = 1 (Synchronous motor with brushes).
- This parameter is only visible on the HMI when: the control type is vector, P0202 = 3 (Sensorless Vector) or P0202 = 4 (Vector with Encoder).

P0449 - Maximum field current (Brushless)			
Adjustable range:	0.01 to 5.00 PU	Factory setting:	0.70 PU
Acesso:	Menu → Configurations → Protections		

Description:

- Maximum limit in PU of P0462 used in the control of the field current reference; see Section 5.2 FIELD EXCITATION SET (DC WITH BRUSHES) on page 5-3 of the User's Manual.
- Set according to the possible overload on the inverter/exciter.

NOTE!
This parameter is only visible on HMI when: P0950 = 1 (Synchronous motor with brushes) or P0950 = 2 (Brushless synchronous motor).

P0450 - Minimum field current (Brushless)			
Adjustable range:	0.01 to 5.00 PU	Factory setting:	0.01 PU
Acesso:	Menu → Configurations → Protections		

Description:

- Minimum limit in PU of P0462 used in the control of the field current reference, see Section 5.2 FIELD EXCITATION SET (DC WITH BRUSHES) on page 5-3 of the User's Manual.
- Minimum field for frequency higher than P0452.

NOTE!
This parameter is only visible on HMI when: P0950 = 1 (Synchronous motor with brushes) or P0950 = 2 (Brushless synchronous motor).

P0451 - Minimum field for soft-start function			
Adjustable range:	0.01 to 5.00 PU	Factory setting:	0.15 PU
Acesso:	Menu → Configurations → Protections		

Description:

- Minimum limit in PU of P0462 used in the control of the field current reference, see Section 5.2 FIELD EXCITATION SET (DC WITH BRUSHES) on page 5-3 of the User's Manual.

- Minimum field for frequency lower than or equal to P0452.
- Used in the soft-start function without rotor orientation in scalar mode.

NOTE!
Function used in motor without encoder.

NOTE!

- This parameter is only visible on HMI when: P0950 = 1 (Synchronous motor with brushes) or P0950 = 2 (Brushless synchronous motor).
- This parameter is only visible on the HMI when: the control type is scalar, P0202 = 0, 1 or 2 (V/F control).

P0452 - Field input frequency			
Adjustable range:	0.0 to 60.0 Hz	Factory setting:	0.0 Hz
Acesso:	Menu → Configurations → Control		

Description:

- Input frequency of the field excitation in scalar mode used in the soft-start function without rotor orientation.

NOTE!

- In scalar mode without encoder, the motor must “match” the inverter, and it is not possible to start motors with currents higher than the inverter current.
- When encoder is used, this parameter must be set to 0 Hz, disabling the soft-start without encoder function.
- For further information, contact WEG Technical Assistance.

WARNING!
For encoder setting:

- Set parameter P0452 (Field input frequency) to 0 Hz.
- Control Type (P0202) must be scalar and the direction of rotation forward; configure one of the analog outputs for the encoder setting (E.g.: P0656 = [018] (EncAdjMS).

NOTE!

- This parameter is only visible on HMI when: P0950 = 1 (Synchronous motor with brushes) or P0950 = 2 (Brushless synchronous motor).
- This parameter is only visible on the HMI when: the control type is scalar, P0202 = 0, 1 or 2 (V/F control).

P0453 - Field ramp time			
Adjustable range:	0.00 to 30.00 s	Factory setting:	1.00 s
Acesso:	Menu → Configurations → Control		

Description:

- Field ramp time in seconds, used in the field regulator reference.
- Used in the field soft-start.

NOTE!

- This parameter is only visible on HMI when: P0950 = 1 (Synchronous motor with brushes) or P0950 = 2 (Brushless synchronous motor).
- This parameter is only visible on the HMI when: the control type is scalar, P0202 = 0, 1 or 2 (V/F control).

P0454 - Coefficient A1 of the Polynomial of the magnetic saturation curve			
Adjustable range:	0.000 to 9.999	Factory setting:	0.000
Acesso:	Menu → Configurations → Control		

Description:

- Coefficient of the polynomial of the magnetic saturation curve.
- The machine operates with linear flux up to the point in which the linear curve follows the saturation curve; from this point the machine flux follows a mathematical model obtained from the data of the motor manufacturer.

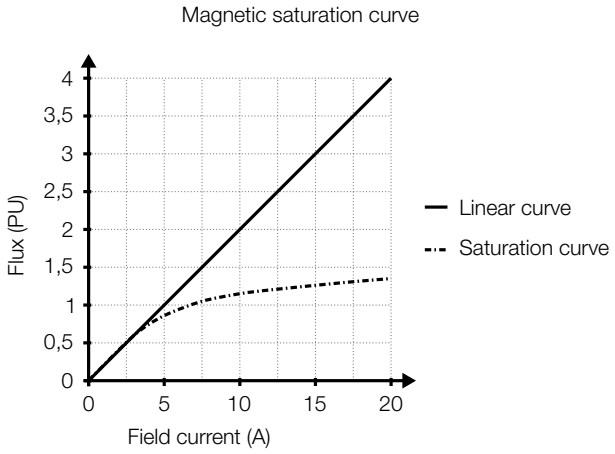

Figure 5.43: *Typical saturation curve and mathematical approximations used by the inverter for flux control*

NOTE!
For further information, contact WEG Technical Assistance.

NOTE!

- This parameter is only visible on the HMI when: P0950 = 1 (Synchronous motor with brushes).
- This parameter is only visible on the HMI when: the control type is vector, P0202 = 3 (Sensorless Vector) or P0202 = 4 (Vector with Encoder).

P0455 - Coefficient B1 of the Polynomial of the magnetic saturation curve			
Adjustable range:	0.000 to 9.999	Factory setting:	0.174
Acesso:	Menu → Configurations → Control		

Description:

- Coefficient of the polynomial of the magnetic saturation curve.

NOTE!

- This parameter is only visible on the HMI when: P0950 = 1 (Synchronous motor with brushes).
- This parameter is only visible on the HMI when: the control type is vector, P0202 = 3 (Sensorless Vector) or P0202 = 4 (Vector with Encoder).

P0456 - Coefficient C1 of the Polynomial of the magnetic saturation curve			
Adjustable range:	0.000 to 9.999	Factory setting:	1.059
Acesso:	Menu → Configurations → Control		

Description:

- Coefficient of the polynomial of the magnetic saturation curve.

NOTE!

- This parameter is only visible on the HMI when: P0950 = 1 (Synchronous motor with brushes).
- This parameter is only visible on the HMI when: the control type is vector, P0202 = 3 (Sensorless Vector) or P0202 = 4 (Vector with Encoder).

P0464 - Maximum compensation current of PF			
Adjustable range:	0.00 to 1.00 PU	Factory setting:	0.80 PU
Acesso:	Menu → Configurations → Control		

Description:

- Maximum compensation current, in PU, of the power factor.

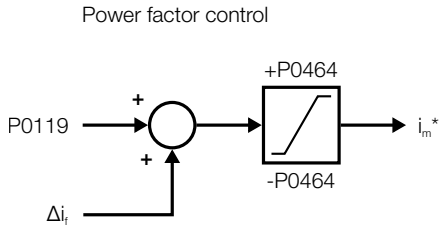

Figure 5.44: *Block diagram of the power factor control*

NOTE!

- This parameter is only visible on the HMI when: P0950 = 1 (Synchronous motor with brushes).
- This parameter is only visible on the HMI when: the control type is vector, P0202 = 3 (Sensorless Vector) or P0202 = 4 (Vector with Encoder).

P0490 - Graphic HMI LCD contrast adjustment			
Adjustable range:	50 to 150	Factory setting:	110
Acesso:	Menu → Configurations → HMI → Settings		

Description:

- It adjusts the Graphic LCD contrast percentage.

P0491 - HMI commands configuration			
Adjustable range:	0 to 2	Factory setting:	0
Acesso:	Menu → Configurations → HMI → Settings		

Description:

- It configures the origin of the inverter Local or Remote (LOC/REM) commands for 'Serial' type, so that the Graphic HMI will be able to operate properly (the Graphic HMI commands are of the Modbus RTU serial type).

Table 5.56: *HMI commands configuration*

P0491	Function
0	Inactive
1	Local HMI
2	Remote HMI

NOTE!
This parameter can be changed only with the motor stopped.

P0493 - Sampling time of the online graphic			
Adjustable range:	1 to 100 x 10 ms	Factory setting:	10 x 10 ms
Acesso:	Menu → Configurations → HMI → Graphic		

Description:

- It adjusts the time between the points presented in the online graphic function.

P0500 - Read-only parameter 1 selection P0501 - Read-only parameter 2 selection P0502 - Read-only parameter 3 selection P0503 - Read-only parameter 4 selection P0504 - Read-only parameter 5 selection P0505 - Read-only parameter 6 selection			
Adjustable range:	0 to 9	Factory setting:	P0500 = 2 P0501 = 0 P0502 = 0 P0503 = 0 P0504 = 0 P0505 = 0
Acesso:	Menu → Configurations → HMI → Main screen		

Description:

- It selects one of the monitoring parameters. From 1 to 6 read-only parameters can be programmed for simultaneous exhibition among the 9 available ones.

Table 5.57: *Read-only parameter 6 selection*

P0505	Function
0	Inactive
1	Motor speed reference
2	Motor speed
3	Motor Current
4	Reserved
5	Motor Frequency
6	Output voltage
7	Motor Torque
8	Inverter output power
9	Value of process variable (PID)

P0512 - On-line Graphic Function Parameter 1 Selection
P0513 - On-line Graphic Function Parameter 2 Selection
P0514 - On-line Graphic Function Parameter 3 Selection
P0515 - On-line Graphic Function Parameter 4 Selection

Adjustable range:	0 to 9	Factory setting:	P0512 = 2 P0513 = 3 P0514 = 0 P0515 = 0
Acesso:	Menu → Configurations → HMI → Graphic		

Description:

- It selects one of the parameters to be monitored by the On-line Graphic Function (Watch Function).

Table 5.58: *On-line Graphic Function Parameter 4 Selection*

P0515	Function
0	Inactive
1	Motor speed reference
2	Motor speed
3	Motor Current
4	Reserved
5	Motor Frequency
6	Output voltage
7	Motor Torque
8	Inverter output power
9	Value of process variable (PID)

P0516 - Full scale of online graphic 1
P0517 - Full scale of online graphic 2
P0518 - Full scale of online graphic 3
P0519 - Full scale of online graphic 4

Adjustable range:	0 to 200 %	Factory setting:	100 %
Acesso:	Menu → Configurations → HMI → Graphic		

Description:

- It adjusts the full scale of the corresponding parameter programmed for the online graphic function.

Table 5.59: *Adjust of the full scale of the on-line graphic function*

P0516 ... P0517	Full Scale
Motor speed reference	P0208
Motor speed	P0208
Motor Current	P0295
Motor Frequency	P0403
Output voltage	P0296
Motor Torque	(P0295 / P0401) x 100 %
Inverter output power	1,732 x (P0295 x P0296)
Value of process variable (PID)	100 %

P0520 - PID proportional gain
P0521 - PID integral gain
P0522 - PID differential gain
P0523 - PID ramp time

Adjustable range:	P0520 = 0.000 to 7.999 P0521 = 0.000 to 9.999 P0522 = 0.000 to 9.999 P0523 = 0.0 to 999.0 s	Factory setting:	P0520 = 1.000 P0521 = 1.000 P0522 = 0.000 P0523 = 3.0 s
Acesso:	Menu → Configurations → Functions → PID		

Description:

- Some examples of initial settings for the PID Regulator and Ramp Time for some applications mentioned in Section 6.1 PID REGULATOR on page 6-1, are shown in Table 5.59 on page 5-85.

Table 5.60: *PID initial gain setting suggestions*

Process Variable	Gains			Time PID Ramp P0523	Type of action P0527
	Proportional P0520	Integral P0521	Differential P0522		
Pneumatic system pressure	1	0.043	0.0	3	0 = No
Pneumatic system flow	1	0.037	0.0	3	0 = No
Hydraulic system pressure	1	0.043	0.0	3	0 = No
Hydraulic system flow	1	0.037	0.0	3	0 = No
Temperature	2	0.004	0.0	3	See Note
Level	1	See note	0.0	3	See note

Note:

- For temperature and level, the action type setting will depend on the process. For level control, for instance, if the inverter drives the motor that pumps fluid out of the reservoir, the action will be reverse because when the level increases the inverter must increase the motor speed in order to lower the level, otherwise, when the inverter drives a motor that pumps fluid into the reservoir, the action will be direct.
- In case of level control, the integral gain adjustment will depend on the time required for the reservoir to pass from the minimum acceptable to the desired level, in the following conditions:

1. For direct action, the time must be measured with maximum input flow and minimum output flow.
2. For reverse action, the time must be measured with minimum input flow and maximum output flow.

An equation to calculate an initial value for P0521 (PID integral gain) as a function of the system response time, is presented below:

$$P0521 = \frac{0.02}{t}$$

$$t = \text{time (seconds)}$$

NOTE!
This parameter is only visible on the HMI when: the PID function is active, P0203 = 1 (PID regulator).

P0524 - PID feedback selection			
Adjustable range:	0 to 1	Factory setting:	0
Acesso:	Menu → Configurations → Functions → PID		

5

Description:

- It selects the regulator feedback (Process Variable) input.
- After the feedback input has been chosen, the function of the selected input must be programmed at P0237 (for AI2) or P0241 (for AI3).
- Feedback type:
  - The PID action type described above considers that the process variable feedback signal increases when the process variable also increases (direct feedback). This is the most used feedback type.
  - If the process variable feedback decreases as the process variable increases (inverse feedback), then it is necessary to program the analog input selected for the PID feedback (AI2 or AI3) as inverse reference: P0239 = 2 (10 to 0 V/20 to 0 mA) or 3 (20 to 4 mA) for AI2 feedback and P0243 = 2 (10 to 0 V/20 to 0 mA) or 3 (20 to 4 mA) for AI3 feedback. Without this setting, the PID does not operate correctly.

Table 5.61: *PID feedback selection*

P0524	Function
0	P0237 - AI2 signal function
1	P0241 - AI3 signal function

NOTE!
- This parameter is only visible on the HMI when: the PID function is active, P0203 = 1 (PID regulator).
- This parameter can be changed only with the motor stopped.

P0525 - PID regulator setpoint			
Adjustable range:	0.0 to 100.0 %	Factory setting:	0.0 %
Acesso:	Menu → Configurations → Functions → PID		

Description:

- It provides the setpoint that is adjusted via the and keys for the PID regulator (P0203 = 1 or 3), provided that P0221 = 0 (Local) or P0222 = 0 (Remote) and in automatic mode. If the PID is in manual mode, then the reference by keys is given by P0121.
- When the PID regulator is operating in automatic mode, the setpoint is via reference adjusted with P0221 (Local) or P0222 (Remote). Most PID applications either use setpoint via analog input AI1 [P0221 = 1 (Local) or P0222 = 1 (Remote) ou via and keys [P0221 = 0 (Local) or P0222 = 0 (Remote).
- Refer to section 6.1 PID REGULATOR on page 6-1 .

NOTE!
This parameter is only visible on the HMI when: the PID function is active, P0203 = 1 (PID regulator).

P0526 - Process variable filter			
Adjustable range:	0.0 to 16.0 s	Factory setting:	0.1 s
Acesso:	Menu → Configurations → Functions → PID		

Description:

- It adjusts time constant of the process variable filter.
- The 0.1 s value is usually adequate, unless the process variable presents much noise. In such case, increase the value gradually, observing the result.

NOTE!
This parameter is only visible on the HMI when: the PID function is active, P0203 = 1 (PID regulator).

P0527 - Error Value Inv			
Adjustable range:	0 to 1	Factory setting:	0
Acesso:	Menu → Configurations → Functions → PID		

Description:

- It defines the type of control action.
- Select according to the process.

Table 5.62: *Selection of operation*

Motor speed	Process variable	Select
Increases	Increases	Direct
	Decreases	Reverse

- Process necessity:
  - PID action type: the PID action must be selected as “Direct” when it is necessary to increase the motor speed in order to increase the process variable. Otherwise, select “Reverse”.
    Example 1 - Direct: The inverter drives a pump responsible for filling a reservoir using the PID to control the level. For the level (process variable) to increase, it is necessary that the flow, and consequently the motor speed, also increases.
    Example 2 - Reverse: The inverter drives a fan responsible for cooling a cooling tower using the PID to control the temperature. In order to increase the temperature (process variable), it is necessary to decrease the ventilation by decreasing the motor speed.

Table 5.63: Error Value Inv

P0527	Function
0	No
1	Yes

NOTE!
This parameter is only visible on the HMI when: the PID function is active, P0203 = 1 (PID regulator).

P0528 - Process variable scale factor			
P0529 - Process Variable Decimal Point			
Adjustable range:	P0528 = 0 to 9999 P0529 = 0 to 3	Factory setting:	P0528 = 1000 P0529 = 1
Acesso:	Menu → Configurations → Functions → PID		

Description:

- P0528 and P0529 define how P0040 (Value of process variable (PID)) will be displayed.
- P0529 defines the number of digits after the decimal point.

5

- P0528 must be adjusted according to the equation below:

$$P0528 = \frac{\text{Process F.S.V. indication} \times (10)^{P0529}}{\text{Gain (AI2 or AI3)}}$$

Where:
Process F.S.V. indication: process variable full-scale value, corresponding to 10 V (20 mA) at the Analog Input (AI2 or AI3) used as feedback.

Example 1 (Bar Pressure Transducer 0 to 25 bar - output 4 to 20 mA):
- Desired indication: 0 to 25 bar (Process F.S.V).
- Feedback input: AI3.
- Gain AI3 = P0242 = 1.000.
- Signal AI3 = P0243 = 1 (4 to 20 mA).
- P0529 = 0 (no positions after the decimal point).

$$P0528 = \frac{25 \times (10)^{0}}{1.000} = 25$$

Example 2 (factory default settings):
- Desired indication: 0.0 % to 100 % (Process F.S.V).
- Feedback input: AI2.
- Gain AI2 = P0238 = 1.000.
- P0529 = 1 (one position after the decimal point).

$$P0528 = \frac{100.0 \times (10)^{1}}{1.000} = 1000$$

NOTE!
This parameter is only visible on the HMI when: the PID function is active, P0203 = 1 (PID regulator).

P0533 - Process variable X value			
P0534 - Process variable Y value			
P0535 - Output N = 0 PID			
Adjustable range:	P0533 = 0.0 to 100.0 % P0534 = 0.0 to 100.0 % P0535 = 0 to 100 %	Factory setting:	P0533 = 90.0 % P0534 = 10.0 % P0535 = 0 %
Acesso:	Menu → Configurations → Functions → PID		

Description:

- Used with the digital and relay output functions:
  V. Pr. > VPx and V. Pr. < VPy with the function of signal/alarm.

- The process variable full scale value in percentage is:

$$P0040 = \frac{(10)^{P0529}}{P0528} \times 100\ \%$$

- P0535 works together with P0212 (Condition for disabable output by zero speed), giving an additional condition to leave the disabled condition, that is, PID error > P0535. Refer to parameters P0211 to P0213.

NOTE!
This parameter is only visible on the HMI when: the PID function is active, P0203 = 1 (PID regulator).

P0536 - P0525 Automatic Setting			
Adjustable range:	0 to 1	Factory setting:	0
Acesso:	Menu → Configurations → Functions → PID		

Description:

- When PID regulator setpoint is via HMI (P0221/P0222 = 13) and P0536 is set to 1 (Active), when switching from manual to automatic the process variable value (P0040) will be loaded in P0525. This avoids PID oscillations in manual to automatic switching.

Table 5.64: *P0525 Automatic Setting*

P0536	Function
0	Inactive
1	Active

NOTE!
This parameter is only visible on the HMI when: the PID function is active, P0203 = 1 (PID regulator).

P0622 - End frequency of boost I x R			
Adjustable range:	0 to 9999	Factory setting:	4095
Acesso:	Menu → Configurations → Control		

Description:

- It determines the end actuation frequency of the manual torque boost.
- For further information, refer to parameter P0136 (Addition on the manual torque curve (IxR)).
- The frequency is determined by the equation below:

$$P0622\ (Hz) = \frac{P0622 \times P0403}{8192}$$

P0629 - Synchronism time			
Adjustable range:	1.0 to 20.0 s	Factory setting:	1.0 s
Acesso:	Menu → Configurations → Control		

Description:

- Minimum time the inverter must maintain the phase error between the line voltage and the inverter output voltage smaller than the setting in P0632 (Maximum phase error) so as to signal it as synchronism OK.

P0630 - Synchronism timeout			
Adjustable range:	20 to 240 s	Factory setting:	60 s
Acesso:	Menu → Configurations → Control		

Description:

- Time out of synchronism with the line.
- Time counted from the activation of the DI of the MVC4, which starts the search until the signaling of synchronism OK.
- If this time is exceeded, A0008 (Timeout in the synchronism with the input line during synchronous transfer) will be indicated.

P0631 - DI13 delay			
Adjustable range:	0 to 3000 ms	Factory setting:	170 ms
Acesso:	Menu → Configurations → Control		

Description:

- Delay of DI13 of the MVC3 board, used to disable the inverter after the transfer.
- This time is used to compensate the delay on the transfer circuit, preventing the motor from remaining for a time interval without voltage.

P0632 - Maximum phase error			
Adjustable range:	0 to 9999	Factory setting:	1966
Acesso:	Menu → Configurations → Control		

Description:

- Phase error between the line voltage and the inverter voltage used together with P0629 (Synchronism time) to indicate synchronism OK.

$$\text{Value in degrees} = \frac{\text{P0632}}{65535} \times 360°$$

P0636 - Phase adjustment synchronous transfer			
Adjustable range:	-32768 to 32767	Factory setting:	0
Acesso:	Menu → Configurations → Control		

Description:

- Parameter used to compensate the phase error between the voltage the inverter uses as reference for synchronism and the actual voltage in the point where the transfer will occur.

- Possible setting between (-180° and +180°).

$$\text{Value in degrees} = \frac{\text{P0632}}{65535} \times 360°$$

P0652 - MVC3 AO1 Funct.			
Adjustable range:	0 to 511	Factory setting:	2
Acesso:	Menu → Configurations → I/O → Analog outputs		

Description:

- It defines the function of the AO1 analog output of the MVC3.

Table 5.65: *Function of the analog outputs of the MVC3 board*

P0652, P0654, P0656 and P0658	Function	Full scale
0	Phase Current V	5 V = P0295
1	Phase Current W	5 V = P0295
2	Phase Current U	5 V = P0295
3	Output Frequency	10 V = 120 Hz
4	Angle of the Fundamental Output Voltage	10 V = +180º
5	Modulation Index	5 V = 255
17	Reference of Voltage and Field Current for Synchronous Machine	10 V = P0462 (A) 10 V = P0463 (V)
18	Position Adjustment of the Absolute Encoder	10 V = +180°
34	Value fixe at 0 V	-
35	Value fixe at 10 V	-
36	Value fixe at -10 V	-
37	Voltage between Phase A and B Measured on the Line ISOX Board	5 V = VAB Rated
38	Voltage between Phase B and C Measured on the Line ISOX Board	5 V = VBC Rated
66	Inverter Status	-
86	Indication of A0073	0 V = without A0073 10 V = with A0073
187	Value of Analog Input AI1 MVC3	-
188	Torque Reference of the Inverter	-10 = -200 % * 10 V = +200 % *

* Torque percentage regarding the motor torque.

NOTE!
For other options not described in Table 5.68 on page 5-94,contact WEG Technical Assistance.

P0653 - Analog output gain AO1 MVC3			
Adjustable range:	0.000 to 9.999	Factory setting:	1.000
Acesso:	Menu → Configurations → I/O → Analog outputs		

Description:

- It sets the gain of analog output.

P0654 - MVC3 AO2 Funct.			
Adjustable range:	0 to 511	Factory setting:	5
Acesso:	Menu → Configurations → I/O → Analog outputs		

Description:

- It defines the function of the AO1 analog output of the MVC3.

Table 5.66: *Function of the analog outputs of the MVC3 board*

P0652, P0654, P0656 and P0658	Function	Full scale
0	Phase Current V	5 V = P0295
1	Phase Current W	5 V = P0295
2	Phase Current U	5 V = P0295
3	Output Frequency	10 V = 120 Hz
4	Angle of the Fundamental Output Voltage	10 V = +180º
5	Modulation Index	5 V = 255
17	Reference of Voltage and Field Current for Synchronous Machine	10 V = P0462 (A) 10 V = P0463 (V)
18	Position Adjustment of the Absolute Encoder	10 V = +180°
34	Value fixe at 0 V	-
35	Value fixe at 10 V	-
36	Value fixe at -10 V	-
37	Voltage between Phase A and B Measured on the Line ISOX Board	5 V = VAB Rated
38	Voltage between Phase B and C Measured on the Line ISOX Board	5 V = VBC Rated
66	Inverter Status	-
86	Indication of A0073	0 V = without A0073 10 V = with A0073
187	Value of Analog Input AI1 MVC3	-
188	Torque Reference of the Inverter	-10 = -200 % * 10 V = +200 % *

* Torque percentage regarding the motor torque.

NOTE!
For other options not described in Table 5.68 on page 5-94,contact WEG Technical Assistance.

P0655 - Analog output gain AO2 MVC3			
Adjustable range:	0.000 to 9.999	Factory setting:	1.000
Acesso:	Menu → Configurations → I/O → Analog outputs		

Description:

- It sets the gain of analog output.

P0656 - MVC3 AO3 Funct.			
Adjustable range:	0 to 511	Factory setting:	2
Acesso:	Menu → Configurations → I/O → Analog outputs		

Description:

- It defines the function of the AO1 analog output of the MVC3.

Table 5.67: Function of the analog outputs of the MVC3 board

P0652, P0654, P0656 and P0658	Function	Full scale
0	Phase Current V	5 V = P0295
1	Phase Current W	5 V = P0295
2	Phase Current U	5 V = P0295
3	Output Frequency	10 V = 120 Hz
4	Angle of the Fundamental Output Voltage	10 V = +180º
5	Modulation Index	5 V = 255
17	Reference of Voltage and Field Current for Synchronous Machine	10 V = P0462 (A) 10 V = P0463 (V)
18	Position Adjustment of the Absolute Encoder	10 V = +180°
34	Value fixe at 0 V	-
35	Value fixe at 10 V	-
36	Value fixe at -10 V	-
37	Voltage between Phase A and B Measured on the Line ISOX Board	5 V = VAB Rated
38	Voltage between Phase B and C Measured on the Line ISOX Board	5 V = VBC Rated
66	Inverter Status	-
86	Indication of A0073	0 V = without A0073 10 V = with A0073
187	Value of Analog Input AI1 MVC3	-
188	Torque Reference of the Inverter	-10 = -200 % * 10 V = +200 % *

* Torque percentage regarding the motor torque.

NOTE!
For other options not described in Table 5.68 on page 5-94,contact WEG Technical Assistance.

P0657 - Analog output gain AO3 MVC3			
Adjustable range:	0.000 to 9.999	Factory setting:	1.000
Acesso:	Menu → Configurations → I/O → Analog outputs		

Description:

- It sets the gain of analog output.

P0658 - MVC3 AO4 Funct.			
Adjustable range:	0 to 511	Factory setting:	5
Acesso:	Menu → Configurations → I/O → Analog outputs		

Description:

- It defines the function of the AO1 analog output of the MVC3.

Table 5.68: Function of the analog outputs of the MVC3 board

P0652, P0654, P0656 and P0658	Function	Full scale
0	Phase Current V	5 V = P0295
1	Phase Current W	5 V = P0295
2	Phase Current U	5 V = P0295
3	Output Frequency	10 V = 120 Hz
4	Angle of the Fundamental Output Voltage	10 V = +180º
5	Modulation Index	5 V = 255
17	Reference of Voltage and Field Current for Synchronous Machine	10 V = P0462 (A) 10 V = P0463 (V)
18	Position Adjustment of the Absolute Encoder	10 V = +180°
34	Value fixe at 0 V	-
35	Value fixe at 10 V	-
36	Value fixe at -10 V	-
37	Voltage between Phase A and B Measured on the Line ISOX Board	5 V = VAB Rated
38	Voltage between Phase B and C Measured on the Line ISOX Board	5 V = VBC Rated
66	Inverter Status	-
86	Indication of A0073	0 V = without A0073 10 V = with A0073
187	Value of Analog Input AI1 MVC3	-
188	Torque Reference of the Inverter	-10 = -200 % * 10 V = +200 % *

* Torque percentage regarding the motor torque.

NOTE!
For other options not described in Table 5.68 on page 5-94,contact WEG Technical Assistance.

P0659 - Analog output gain AO4 MVC3			
Adjustable range:	0.000 to 9.999	Factory setting:	1.000
Acesso:	Menu → Configurations → I/O → Analog outputs		

Description:

- It sets the gain of analog output.

P0663 - Analog output offset AO1 MVC3
P0664 - Analog output offset AO2 MVC3
P0665 - Analog output offset AO3 MVC3
P0666 - Analog output offset AO4 MVC3

Adjustable range:	-32768 to 32767	Factory setting:	-90
Acesso:	Menu → Configurations → I/O → Analog outputs		

Description:

- It sets the offset of analog output.

-32768 = -100 %
32768 = 100 %

P0721 - Analog input AI5 function			
Adjustable range:	0 to 0	Factory setting:	0
Acesso:	Menu → Configurations → I/O → Analog inputs		

Description:

- When the option 0 (P0221/P0222) is selected, AI5 is able to provided the (if programmed so in P0221/P0222), subject to the reference limits (P0133, P0134) and the ramp action (P0100 to P0103).
- See Figure 5.24 on page 5-40.

Table 5.69: *Analog input AI5 function*

P0721	Function
0	P221/P222

NOTE!
This parameter can be changed only with the motor stopped.

P0722 - Analog input AI5 gain (bipolar isolated MVC4 board)			
Adjustable range:	0.000 to 9.999	Factory setting:	1.000
Acesso:	Menu → Configurations → I/O → Analog inputs		

Description:

- Refer to P0234 (Analog input AI1 gain (unipolar MVC4 board)).

P0723 - Analog input AI5 signal type			
Adjustable range:	0 to 3	Factory setting:	0
Acesso:	Menu → Configurations → I/O → Analog inputs		

Description:

- For options 2 and 3 inverse reference is attained, that is, maximum speed is obtained with minimum reference.
- When current signals are used at AI5 input, put S3.1 switch on the MVC4 control card in “ON” position.

Table 5.70: *Analog input AI5 signal type*

P0723	Function
0	0-10V/20mA
1	4 - 20 mA
2	10V/20mA-0
3	20 - 4 mA

NOTE!
This parameter can be changed only with the motor stopped.

P0724 - Analog input AI5 offset (bipolar isolated MVC4 board)			
Adjustable range:	0.0 to 100.0 %	Factory setting:	0.0 %
Acesso:	Menu → Configurations → I/O → Analog inputs		

Description:

- Refer to P0234 (Analog input AI1 gain (unipolar MVC4 board)).

P0725 - Minimum coasting time			
Adjustable range:	0 to 300 s	Factory setting:	0 s
Acesso:	Menu → Configurations → Control		

Description:

- The minimum coasting time determines for how long the inverter will not be accepting the General Enable or Start/Stop command after a coasting stop (P0232 = 1 (General disable)).
- By programming 0 at this parameter the function is deactivated.

P0740 - Function of analog input AI1 MVC3			
Adjustable range:	0 to 2	Factory setting:	0
Acesso:	Menu → Configurations → I/O → Analog inputs		

Description:

- It defines the function of the AI1 analog input of the MVC3 board.

Table 5.71: *Function of analog input AI1 MVC3*

P0740	Function
0	Not Used
1	Torque reference
2	Limit current

P0741 - Analog input AI1 gain (bipolar MVC3 board)			
Adjustable range:	0.000 to 9.999	Factory setting:	1.000
Acesso:	Menu → Configurations → I/O → Analog inputs		

Description:

- It sets the gain of analog input AI1 of the MVC3 board.
- Refer to P0234 (Analog input AI1 gain (unipolar MVC4 board)).

P0742 - Analog input AI1 offset (bipolar MVC3 board)			
Adjustable range:	-100.0 to 100.0 %	Factory setting:	0.0 %
Acesso:	Menu → Configurations → I/O → Analog inputs		

Description:

- It sets the offset of analog input AI1 of the MVC3 board.
- Refer to P0234 (Analog input AI1 gain (unipolar MVC4 board)).

P0744 - Function of analog input AI2 MVC3			
Adjustable range:	0 to 1	Factory setting:	0
Acesso:	Menu → Configurations → I/O → Analog inputs		

Description:

- It defines the function of the AI2 analog input of the MVC3 board.

Table 5.72: *Function of analog input AI2 MVC3*

P0744	Function
0	Not Used
1	Field current

P0745 - Analog input AI2 gain (bipolar MVC3 board)			
Adjustable range:	0.000 to 9.999	Factory setting:	1.000
Acesso:	Menu → Configurations → I/O → Analog inputs		

Description:

- It sets the gain of analog input AI2 of the MVC3 board.
- Refer to P0234 (Analog input AI1 gain (unipolar MVC4 board)).

P0746 - Analog input AI2 offset (bipolar MVC3 board)			
Adjustable range:	-100.0 to 100.0 %	Factory setting:	0.0 %
Acesso:	Menu → Configurations → I/O → Analog inputs		

Description:

- It sets the offset of analog input AI2 of the MVC3 board.
- Refer to P0234 (Analog input AI1 gain (unipolar MVC4 board)).

P0950 - Motor Type			
Adjustable range:	0 to 2	Factory setting:	0
Acesso:	Menu → Configurations → Control		

Description:

- It selects the type of the motor to be driven by the inverter, where each option presents specific configuration parameters.

Table 5.73: *Motor Type*

P0950	Function
0	Induction motor
1	Reserved
2	Brushless synchronous motor

NOTE!
This parameter can be changed only with the motor stopped.

P0957 - Direction of rotation of the speed sensor			
Adjustable range:	0 to 1	Factory setting:	1
Acesso:	Menu → Configurations → Control		

Description:

- It sets the direction of rotation of the speed sensor.
- Such configuration can be used in applications where the speed sensor is not mounted in the standard position, but installed in a location where it reads the speed in the reverse direction.

Examples:
Sensor installed in the rear of the motor: standard configuration P0957 = 1
Sensor installed in the rear of the load: special configuration P0957 = 0

Table 5.74: *Direction of rotation of the speed sensor*

P0957	Function
0	Reverse
1	Direct

P1000 - DC link voltage of cell U1
P1001 - DC link voltage of cell U2
P1002 - DC link voltage of cell U3
P1003 - DC link voltage of cell U4
P1004 - DC link voltage of cell U5
P1005 - DC link voltage of cell U6
P1006 - DC link voltage of cell U7
P1007 - DC link voltage of cell U8
P1008 - DC link voltage of cell U9
P1009 - DC link voltage of cell U10
P1010 - DC link voltage of cell U11
P1011 - DC link voltage of cell U12
Acesso: Menu → Status → Measurements → Voltage

Description:

- It indicates the DC link voltage, in volts, of the respective cell.

P1012 - DC link voltage of cell V1
P1013 - DC link voltage of cell V2
P1014 - DC link voltage of cell V3
P1015 - DC link voltage of cell V4
P1016 - DC link voltage of cell V5
P1017 - DC link voltage of cell V6
P1018 - DC link voltage of cell V7
P1019 - DC link voltage of cell V8
P1020 - DC link voltage of cell V9
P1021 - DC link voltage of cell V10
P1022 - DC link voltage of cell V11
P1023 - DC link voltage of cell V12
Acesso: Menu → Status → Measurements → Voltage

Description:

- It indicates the DC link voltage, in volts, of the respective cell.

P1024 - DC link voltage of cell W1
P1025 - DC link voltage of cell W2
P1026 - DC link voltage of cell W3
P1027 - DC link voltage of cell W4
P1028 - DC link voltage of cell W5
P1029 - DC link voltage of cell W6
P1030 - DC link voltage of cell W7
P1031 - DC link voltage of cell W8
P1032 - DC link voltage of cell W9
P1033 - DC link voltage of cell W10
P1034 - DC link voltage of cell W11
P1035 - DC link voltage of cell W12
Acesso: Menu → Status → Measurements → Voltage

Description:

- It indicates the DC link voltage, in volts, of the respective cell.

P1050 - Temperature on the power module of cell U1
P1051 - Temperature on the power module of cell U2
P1052 - Temperature on the power module of cell U3
P1053 - Temperature on the power module of cell U4
P1054 - Temperature on the power module of cell U5
P1055 - Temperature on the power module of cell U6
P1056 - Temperature on the power module of cell U7
P1057 - Temperature on the power module of cell U8
P1058 - Temperature on the power module of cell U9
P1059 - Temperature on the power module of cell U10
P1060 - Temperature on the power module of cell U11
P1061 - Temperature on the power module of cell U12
Acesso: Menu → Status → Measurements → Temperature

Description:

- It indicates the temperature of the IGBT module, in degrees Celsius (°C), of the respective cell.

P1062 - Temperature on the power module of cell V1
P1063 - Temperature on the power module of cell V2
P1064 - Temperature on the power module of cell V3
P1065 - Temperature on the power module of cell V4
P1066 - Temperature on the power module of cell V5
P1067 - Temperature on the power module of cell V6
P1068 - Temperature on the power module of cell V7
P1069 - Temperature on the power module of cell V8
P1070 - Temperature on the power module of cell V9
P1071 - Temperature on the power module of cell V10
P1072 - Temperature on the power module of cell V11
P1073 - Temperature on the power module of cell V12
Acesso: Menu → Status → Measurements → Temperature

Description:

- It indicates the temperature of the IGBT module, in degrees Celsius (°C), of the respective cell.

P1074 - Temperature on the power module of cell W1
P1075 - Temperature on the power module of cell W2
P1076 - Temperature on the power module of cell W3
P1077 - Temperature on the power module of cell W4
P1078 - Temperature on the power module of cell W5
P1079 - Temperature on the power module of cell W6
P1080 - Temperature on the power module of cell W7
P1081 - Temperature on the power module of cell W8
P1082 - Temperature on the power module of cell W9
P1083 - Temperature on the power module of cell W10
P1084 - Temperature on the power module of cell W11
P1085 - Temperature on the power module of cell W12
Acesso: Menu → Status → Measurements → Temperature

Description:

- It indicates the temperature of the IGBT module, in degrees Celsius (°C), of the respective cell.

P1136 - Inverter input current
Acesso: Menu → Status → Measurements → Current

Description:

- It indicates the current reading at the inverter input, in amperes (A) effective value.

P1137 - Inverter input line voltage
Acesso: Menu → Status → Measurements → Voltage

Description:

- It indicates the voltage effective value at the inverter input, in kV.

P1138 - PF at the inverter input
Acesso: Menu → Status → Measurements → Power

Description:

- It indicates the cosine of the angle between the voltage and current at the inverter input.

The input power factor is calculated according to the equation:

$$P1138 = \frac{P1140}{P1136}$$

P1139 - Apparent power at the inverter input

Acesso: Menu → Status → Measurements → Power

Description:

- Indicates the apparent power in the inverter input, in kVA.

The total power in the input is calculated according to the equation below:

$$P1139 = \sqrt{3} \times P1136 \times P1137$$

Being:

P1136 = Inverter input current;
P1137 = Inverter input line voltage.

P1140 - Active power at the inverter input

Acesso: Menu → Status → Measurements → Power

Description:

- Indicates the real power in the inverter input, in kW.
- Positive numbers indicate that the inverter is consuming power from the power grid.
- Negative numbers indicate that the inverter is regenerating power to the power grid.

The real power in the input is calculated according to the equation below:

$$P1140 = \sqrt{3} \times \text{active current} \times P1137$$

Being:

P1137 = Inverter input line voltage.

P1141 - Reactive power at the inverter input

Acesso: Menu → Status → Measurements → Power

Description:

- Indicates the reactive power in the inverter input, in kVAr.
- In P1137 you can see the angle between voltage and current in the inverter input.

The reactive power in the input is calculated according to the equation below:

$$P1141 = \sqrt{3} \times \text{reactive current} \times P1137$$

Being:

P1137 = Inverter input line voltage.

P1143 - Measured inverter output voltage

Acesso: Menu → Status → Measurements → Voltage

Description:

- It indicates the effective valueof the voltage at inverter output, in kV.

P1144 - Voltage between the virtual neutral of the motor and the ground of the system

Acesso: Menu → Status → Measurements → Voltage

Description:

- It indicates the value of the voltage between the virtual motor neutral and the ground (GND) of the inverter, as a percentage of the nominal effective phase voltage of the inverter.
- Refer to P0296 (To obtain the value in volts, multiply by P0296/$\sqrt{3}$).

P1155 - Phase U cell status U1 ... Un

P1156 - Phase V cell status V1...Vn

P1157 - Phase W cell status W1...Wn

Acesso: Menu → Status → Inverter → Status

Description:

- It indicates the state of the cells, by means of letters A (Active) and B (Bypass).
- It indicates the state in the following order:

U1, U2, ..., Un
V1, V2, ..., Vn
W1, W2, ..., Wn

- The number of cells is variable and depends of:
  - P0296 (Inverter rated voltage)
  - P1565 (Number of redundant cells per phase)
  - P1892 (Cells in parallel)
- Refer to P0296 (Inverter rated voltage) and the Table 3.1 of the user's manual.

P1350 - Temperature on the board of cell U1

P1351 - Temperature on the board of cell U2

P1352 - Temperature on the board of cell U3

P1353 - Temperature on the board of cell U4

P1354 - Temperature on the board of cell U5

P1355 - Temperature on the board of cell U6

P1356 - Temperature on the board of cell U7

P1357 - Temperature on the board of cell U8

P1358 - Temperature on the board of cell U9

P1359 - Temperature on the board of cell U10

P1360 - Temperature on the board of cell U11

P1361 - Temperature on the board of cell U12

Acesso: Menu → Status → Measurements → Temperature

Description:

- It indicates the temperature on the control board, in degrees Celsius (°C), of the respective cell.

P1362 - Temperature on the board of cell V1
P1363 - Temperature on the board of cell V2
P1364 - Temperature on the board of cell V3
P1365 - Temperature on the board of cell V4
P1366 - Temperature on the board of cell V5
P1367 - Temperature on the board of cell V6
P1368 - Temperature on the board of cell V7
P1369 - Temperature on the board of cell V8
P1370 - Temperature on the board of cell V9
P1371 - Temperature on the board of cell V10
P1372 - Temperature on the board of cell V11
P1373 - Temperature on the board of cell V12
Acesso: Menu → Status → Measurements → Temperature

Description:

- It indicates the temperature on the control board, in degrees Celsius (°C), of the respective cell.

P1374 - Temperature on the board of cell W1
P1375 - Temperature on the board of cell W2
P1376 - Temperature on the board of cell W3
P1377 - Temperature on the board of cell W4
P1378 - Temperature on the board of cell W5
P1379 - Temperature on the board of cell W6
P1380 - Temperature on the board of cell W7
P1381 - Temperature on the board of cell W8
P1382 - Temperature on the board of cell W9
P1383 - Temperature on the board of cell W10
P1384 - Temperature on the board of cell W11
P1385 - Temperature on the board of cell W12
Acesso: Menu → Status → Measurements → Temperature

Description:

- It indicates the temperature on the control board, in degrees Celsius (°C), of the respective cell.

P1500 - Automatic Bypass			
Adjustable range:	0 to 1	Factory setting:	0
Acesso:	Menu → Configurations → Functions → Bypass		

Description:

- It defines the action to be taken by the control board upon the need to remove one of the cells from operation.
- Depending on the fault type, the low voltage cells must be removed from the motor power supply circuit.
- If P1500 = 0, in any cell fault situation, the entire system is locked.
- If P1500 = 1, in situations that require the removal of the faulty cell, the Bypass function will automatically rearrange the set by removing the damaged cell and putting the system back to operation.
- If P1500 = 1, the Flying Start restart method is used.
- If P1500 = 1, the time to close the bypass relay is half the Flying Start dead time (P0332).
- The maximum number of bypassed cells after a manageable fault occurs is limited by parameter P1502.

Faults manageable by the automatic bypass function:

- Defective temperature sensor or undertemperature IGBT cell.
- Cell phase IGBT
- Cell neutral IGBT
- Cell phase pulse feedback
- Cell neutral pulse feedback
- Cell electronics power supply
- Defect in the cell insulation.

WARNING!
Only cells with the bypass system installed will be able to enter the bypass mode. For further details, contact WEG.

Table 5.75: Automatic Bypass

P1500	Function
0	Inactive
1	Active with Flying Start

NOTE!
This parameter can be changed only with the motor stopped.

P1501 - Line tension balancing method			
Adjustable range:	0 to 1	Factory setting:	0
Acesso:	Menu → Configurations → Functions → Bypass		

Description:

- Defines the balancing method of the line voltages when the inverter is operating with an uneven number of cells between phases.
- Option 0 makes the inverter keep the phase voltages always balanced, with the same amplitude and with a shift of 120°, having the phase with the smallest number of cells as the amplitude limit.
- Option 1 makes the inverter keep the line voltages balanced by adjusting the angles between phases to a value different from 120°.

Table 5.76: Line tension balancing method

P1501	Function
0	Amplitude adjustment of the phase voltages
1	Angle adjustment of the phase voltages

NOTE!
This parameter can be changed only with the motor stopped.

P1502 - Limit of bypassed cells per phase			
Adjustable range:	0 to 12	Factory setting:	1
Acesso:	Menu → Configurations → Functions → Bypass		

Description:

- It defines the maximum number of cells per phase may be placed in automatic bypass.

NOTE!
This parameter can be changed only with the motor stopped.

P1550 - Transformer 1 CT Ratio			
Adjustable range:	1 to 3000	Factory setting:	200
Acesso:	Menu → Configurations → Nominal data → Inverter		

Description:

- It sets the ratio of the current transformers used in the measurement of the inverter input current.
- Set it according to the current transformer nameplate data.

Notes:

- It is recommended that the CT primary current be greater than or equal to the transformer primary rated current.
- The CT primary current must be smaller than 1.95 times the transformer primary rated current.

WARNING!
In case the user sets a value in P1550 that is out of the mandatory range, programming error will occur.

NOTE!
This parameter can be changed only with the motor stopped.

P1551 - Ratio between the voltage of the primary and the auxiliary output of the transformer 1			
Adjustable range:	1.00 to 50.00	Factory setting:	18.14
Acesso:	Menu → Configurations → Nominal data → Inverter		

Description:

- It sets the voltage ratio between the primary and the auxiliary output of the input transformer.
- Set it according to the nameplate data of the transformer used.

NOTE!
This parameter can be changed only with the motor stopped.

P1552 - Taps of transformer 1			
Adjustable range:	-5.00 to 5.00 %	Factory setting:	0.00 %
Acesso:	Menu → Configurations → Nominal data → Inverter		

Description:

- It sets the modification occurred on the voltage supplied for the inverter cells.
- Set it according to the input transformer tap connections.

NOTE!
This parameter can be changed only with the motor stopped.

P1553 - Transformers rated voltage			
Adjustable range:	0.00 to 99.99 kV	Factory setting:	6.60 kV
Acesso:	Menu → Configurations → Nominal data → Inverter		

Description:

- It sets the rated line voltage of the input transformer, in kV effective value.
- Set it according to the nameplate data of the transformer used.

NOTE!
This parameter can be changed only with the motor stopped.

P1554 - Transformer 1 rated power			
Adjustable range:	0 to 10000 kVA	Factory setting:	1500 kVA
Acesso:	Menu → Configurations → Nominal data → Inverter		

Description:

- It sets the rated power of the input transformer, in kVA.
- Set it according to the nameplate data of the transformer used.

NOTE!
This parameter can be changed only with the motor stopped.

P1555 - Transformers rated frequency			
Adjustable range:	0 to 100 Hz	Factory setting:	60 Hz
Acesso:	Menu → Configurations → Nominal data → Inverter		

Description:

- It sets the rated frequency of the input transformer, in Hertz (Hz).
- Set it according to the nameplate data of the transformer used.

NOTE!
This parameter can be changed only with the motor stopped.

P1556 - Transformer 2 CT Ratio			
Adjustable range:	50 to 3000	Factory setting:	200
Acesso:	Menu → Configurations → Nominal data → Inverter		

Description:

- It sets the ratio of the current transformers used in the measurement of the inverter input current.
- Set it according to the current transformer nameplate data.

Notes:

- It is recommended that the CT primary current be greater than or equal to the transformer primary rated current.

- The CT primary current must be smaller than 1.95 times the transformer primary rated current.

WARNING!
In case the user sets a value in P1550 that is out of the mandatory range, programming error will occur.

NOTE!

- This parameter can be changed only with the motor stopped.
- This parameter is only visible on the HMI when: P1893 (Transformer at the input) = 2 or 3 transformers.

P1557 - Taps of transformer 2			
Adjustable range:	-5.00 to 5.00 %	Factory setting:	0.00 %
Acesso:	Menu → Configurations → Nominal data → Inverter		

Description:

- It sets the modification occurred on the voltage supplied for the inverter cells.
- Set it according to the input transformer tap connections.

NOTE!

- This parameter can be changed only with the motor stopped.
- This parameter is only visible on the HMI when: P1893 (Transformer at the input) = 2 or 3 transformers.

P1558 - Transformer 2 rated power			
Adjustable range:	0 to 10000 kVA	Factory setting:	1500 kVA
Acesso:	Menu → Configurations → Nominal data → Inverter		

Description:

- It sets the rated power of the input transformer, in kVA.
- Set it according to the nameplate data of the transformer used.

NOTE!

- This parameter can be changed only with the motor stopped.
- This parameter is only visible on the HMI when: P1893 (Transformer at the input) = 2 or 3 transformers.

P1559 - Transformer 3 CT Ratio			
Adjustable range:	50 to 3000	Factory setting:	200
Acesso:	Menu → Configurations → Nominal data → Inverter		

Description:

- It sets the ratio of the current transformers used in the measurement of the inverter input current.

- Set it according to the current transformer nameplate data.

Notes:

- It is recommended that the CT primary current be greater than or equal to the transformer primary rated current.
- The CT primary current must be smaller than 1.95 times the transformer primary rated current.

WARNING!
In case the user sets a value in P1550 that is out of the mandatory range, programming error will occur.

NOTE!

- This parameter can be changed only with the motor stopped.
- This parameter is only visible on the HMI when: P1893 (Transformer at the input) = 3 transformers.

P1560 - Taps of transformer 3			
Adjustable range:	-5.00 to 5.00 %	Factory setting:	0.00 %
Acesso:	Menu → Configurations → Nominal data → Inverter		

Description:

- It sets the modification occurred on the voltage supplied for the inverter cells.
- Set it according to the input transformer tap connections.

NOTE!

- This parameter can be changed only with the motor stopped.
- This parameter is only visible on the HMI when: P1893 (Transformer at the input) = 3 transformers.

P1561 - Transformer 3 rated power			
Adjustable range:	0 to 10000 kVA	Factory setting:	1500 kVA
Acesso:	Menu → Configurations → Nominal data → Inverter		

Description:

- It sets the rated power of the input transformer, in kVA.
- Set it according to the nameplate data of the transformer used.

NOTE!

- This parameter can be changed only with the motor stopped.
- This parameter is only visible on the HMI when: P1893 (Transformer at the input) = 3 transformers.

P1565 - Number of redundant cells per phase			
Adjustable range:	0 to 11	Factory setting:	0
Acesso:	Menu → Configurations → Nominal data → Inverter		

Description:

- This parameter specifies the amount of redundant cells in each phase of the inverter.

NOTE!
This parameter can be changed only with the motor stopped.

P1700 - Bypass of the cell U1			
P1701 - Bypass of the cell U2			
P1702 - Bypass of the cell U3			
P1703 - Bypass of the cell U4			
P1704 - Bypass of the cell U5			
P1705 - Bypass of the cell U6			
P1706 - Bypass of the cell U7			
P1707 - Bypass of the cell U8			
P1708 - Bypass of the cell U9			
P1709 - Bypass of the cell U10			
P1710 - Bypass of the cell U11			
P1711 - Bypass of the cell U12			
Adjustable range:	0 to 4	Factory setting:	0
Acesso:	Menu → Configurations → Functions → Bypass		

Description:

- It defines whether the respective cell should be removed from the system (option > 0).
- The option 1 should be used when the corresponding cell is replaced by a mechanical bypass cell.
- Option 2 must be used to manually actuate the automatic bypass relay of the cell.
- Option 3 is read-only. Indicates that the respective cell was automatically removed from operation due to a manageable fault.
- Option 4 is read-only. Indicates that the respective cell was automatically removed from operation, because it was linked in parallel (P1892) with another cell that was bypassed.
- Once the parameter is set to 1, 2, 3 or 4, the respective cell can operate again as soon as the user resets the parameter to 0 (Disable).
- Refer to P1500 (Automatic Bypass).

WARNING!
Option 1 must be used after the user has physically verified that the cell in question is assembled in the set and that it has the bypass system.

Table 5.77: *Bypass of the cell U12*

P1711	Function
0	Disable
1	Mechanical bypass cell
2	Manual activation of the bypass relay
3	Automatic bypass after a manageable fault
4	Automatic bypass by parallel association

NOTE!
This parameter can be changed only with the motor stopped.

P1712 - Bypass of the cell V1
P1713 - Bypass of the cell V2
P1714 - Bypass of the cell V3
P1715 - Bypass of the cell V4
P1716 - Bypass of the cell V5
P1717 - Bypass of the cell V6
P1718 - Bypass of the cell V7
P1719 - Bypass of the cell V8
P1720 - Bypass of the cell V9
P1721 - Bypass of the cell V10
P1722 - Bypass of the cell V11
P1723 - Bypass of the cell V12

Adjustable range:	0 to 4	Factory setting:	0
Acesso:	Menu → Configurations → Functions → Bypass		

Description:

- It defines whether the respective cell should be removed from the system (option > 0).
- The option 1 should be used when the corresponding cell is replaced by a mechanical bypass cell.
- Option 2 must be used to manually actuate the automatic bypass relay of the cell.
- Option 3 is read-only. Indicates that the respective cell was automatically removed from operation due to a manageable fault.
- Option 4 is read-only. Indicates that the respective cell was automatically removed from operation, because it was linked in parallel (P1892) with another cell that was bypassed.
- Once the parameter is set to 1, 2, 3 or 4, the respective cell can operate again as soon as the user resets the parameter to 0 (Disable).
- Refer to P1500 (Automatic Bypass).

WARNING!
Option 1 must be used after the user has physically verified that the cell in question is assembled in the set and that it has the bypass system.

Table 5.78: *Bypass of the cell V12*

P1723	Function
0	Disable
1	Mechanical bypass cell
2	Manual activation of the bypass relay
3	Automatic bypass after a manageable fault
4	Automatic bypass by parallel association

NOTE!
This parameter can be changed only with the motor stopped.

P1724 - Bypass of the cell W1			
P1725 - Bypass of the cell W2			
P1726 - Bypass of the cell W3			
P1727 - Bypass of the cell W4			
P1728 - Bypass of the cell W5			
P1729 - Bypass of the cell W6			
P1730 - Bypass of the cell W7			
P1731 - Bypass of the cell W8			
P1732 - Bypass of the cell W9			
P1733 - Bypass of the cell W10			
P1734 - Bypass of the cell W11			
P1735 - Bypass of the cell W12			
Adjustable range:	0 to 4	Factory setting:	0
Acesso:	Menu → Configurations → Functions → Bypass		

Description:

- It defines whether the respective cell should be removed from the system (option > 0).
- The option 1 should be used when the corresponding cell is replaced by a mechanical bypass cell.
- Option 2 must be used to manually actuate the automatic bypass relay of the cell.
- Option 3 is read-only. Indicates that the respective cell was automatically removed from operation due to a manageable fault.
- Option 4 is read-only. Indicates that the respective cell was automatically removed from operation, because it was linked in parallel (P1892) with another cell that was bypassed.
- Once the parameter is set to 1, 2, 3 or 4, the respective cell can operate again as soon as the user resets the parameter to 0 (Disable).
- Refer to P1500 (Automatic Bypass).

WARNING!
Option 1 must be used after the user has physically verified that the cell in question is assembled in the set and that it has the bypass system.

Table 5.79: *Bypass of the cell W12*

P1735	Function
0	Disable
1	Mechanical bypass cell
2	Manual activation of the bypass relay
3	Automatic bypass after a manageable fault
4	Automatic bypass by parallel association

NOTE!
This parameter can be changed only with the motor stopped.

P1739 - RL8 Function MVC3			
Adjustable range:	0 to 2	Factory setting:	0
Acesso:	Menu → Configurations → I/O → Digital outputs		

Description:

- Digital output state can be monitored on parameter P0071.

NOTE!
When selected options 1 and 2 for output contactor command, MVC3's DI6 is used to monitor the contactor, and it's state can be checked on parameter P0070.

Table 5.80: *RL8 Function MVC3*

P1739	Function
0	Not used
1	Output contactor drive for operation with filter type 2
2	Output contactor drive for operation with permanent magnet machine

NOTE!
This parameter can be changed only with the motor stopped.

P1892 - Cells in parallel			
Adjustable range:	0 to 2	Factory setting:	0
Acesso:	Menu → Configurations → Nominal data → Inverter		

Description:

- Sets the number of cells operating in parallel.

Table 5.81: *Cells in parallel*

P1892	Function
0	No parallelism
1	2 cells in parallel
2	3 cells in parallel

NOTE!
This parameter can be changed only with the motor stopped.

P1893 - Transformer at the input			
Adjustable range:	0 to 2	Factory setting:	2
Acesso:	Menu → Configurations → Nominal data → Inverter		

Description:

- Sets the number of transformers at the inverter input.

Table 5.82: *Transformer at the input*

P1893	Function
0	1 transformer
1	2 transformers
2	3 transformers

NOTE!
This parameter can be changed only with the motor stopped.

6 SPECIAL FUNCTIONS

6.1 PID REGULATOR

The MVW3000 has the PID regulator function, which can be used to control a closed loop process. That function consists of a controller with proportional, integral and derivative gain, superposed to the normal MVW3000 speed control.

In order to keep the process variable (the one to be controlled - water level in a reservoir, for instance) at the value adjusted with the setpoint, the speed will be varied automatically by the PID regulator.

That regulator is able, for instance, to control the flow in a pipeline by means of flow feedback applied to the analog input AI2 or AI3 (selected through P0524), and setpoint according to the P0221 or P0222 definition (e.g., AI1), with the inverter driving the pump that is responsible for the pipeline flow.

Other application examples are: Level or temperature control, dosage, etc.

The PID regulator function is activated by setting P0203 = 1 or 3. Figure 6.1 on page 6-3 presents a Academic PID Regulator block diagram. The Academic PID Regulator transference function in the frequency domain is:

$$y(s) = Kp\, e(s)\left(1 + \frac{1}{sTi} + sTd\right)$$

Replacing the integrator by a sum and the derivative by the incremental quotient, we will obtain an approximate value for the discrete (recursive) transfer equation shown next:

$$y(kTa) = y(k-1)Ta + Kp[(e(kTa) - e(k-1)Ta) + Ki\, e(k-1)Ta + Kd(e(kTa) - 2e(k-1)Ta + e(k-2)Ta)]$$

Where:
Kp (Proportional Gain): Kp = P0520 x 4096.
Ki (Integral Gain): Ki = P0521 x 4096 = [Ta/Ti x 4096].
Kd (Differential Gain): Kd = P0522 x 4096 = [Td/Ta x 4096].
Ta = 0.02 s (PID regulator sampling period).
SP*: reference, maximum 13 bits (0 a 8191).
X: process variable (or controlled), read through AI2 or AI3, maximum 13 bits.
e(kTa): current output.
y(kTa): current PID output, maximum 13 bits.
y(k-1)Ta: previous PID output.
e(kTa): current error [SP*(k) - X(k)].
e(k-1)Ta: previous error [SP*(k-1) - X(k-1)].
e(k-2)Ta: error at two previous samplings [SP*(k-2) - X(k-2)].

The feedback signal must be connected to the analog input AI2' and AI3' (see Figure 6.1 on page 6-3).

Setpoint can be defined via:

- Keypad: parameter P0525.
- Analog inputs AI1', AI2', AI3', AI4', AI5', (AI1' + AI2') > 0, (AI1' + AI2'), Multispeed, Serial, Fieldbus.

Note: When P0203 = 1 or 3, do not use the reference via P.E. at P0221/P0222 = 7.

When the PID function is enabled (P0203 = 1 or 3):

- One of the digital inputs from DI3 to DI10 can select between manual and automatic PID operation (P0265 a P0272).
- When the PID regulator function is activated (P0203 = 1 or 3), the digital input DI3 is automatically programmed for the Manual/Automatic function (P0265 = 15):

Table 6.1: *DIx operation mode*

DIx	Action type
0 (0 V)	Manual
1 (24 V)	Automatic

P0040 indicates the process variable value (feedback) in the selected scale and unit. In order to avoid the feedback analog input saturation during the regulation overshoot, the signal must vary between 0 and 9.0 V (0(4) to 18 mA). The adaptation between the setpoint and the feedback can be done changing the gain of the analog input selected as feedback (P0238 for AI2 or P0242 for AI3). The Process variable can also be visualized at the outputs AO1 to AO6, provided that programmed at P0251, P0253, P0255, P0257, P0259 and P0261. This is also valid for the PID setpoint.

The outputs DO1, DO2 and RL1 to RL5 can be programmed (P0275 to P0277, P0279 to P0282) for the functions Process Variable > VPx (P0533)" and Process Variable < VPy (P0534)".

The functions JOG and Forward/Reverse remain disabled. Enable and Start/Stop commands are defined at P0220, P0224 and P0227.

If the setpoint is defined by P0525 (P0221 or P0222 = 0), and the system is changed from manual to automatic, then P0525 is automatically adjusted with the P0040 value. In this case the transition from manual to automatic is smooth (there is no sudden speed variation).

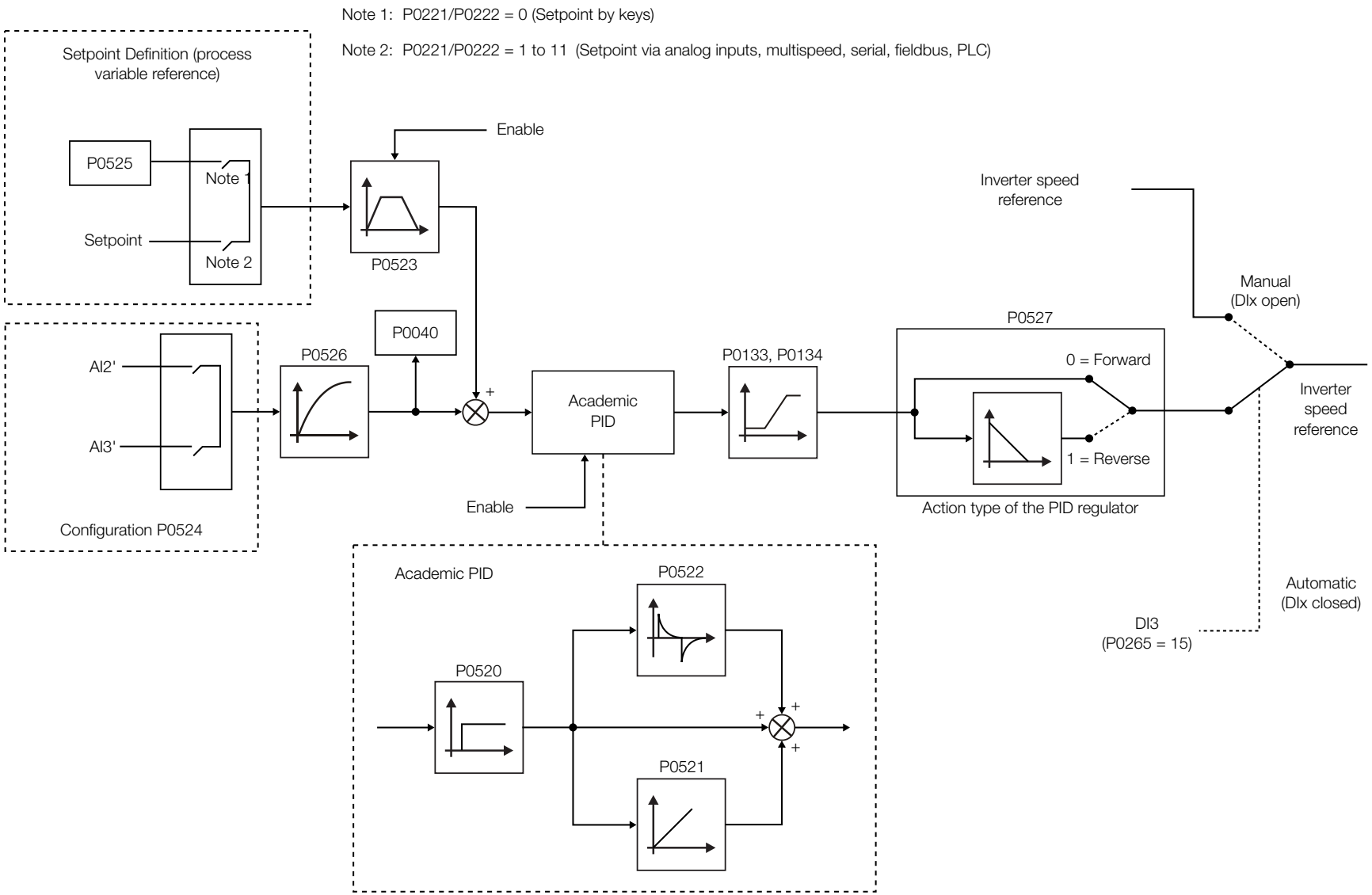

Figure 6.1: *Academic PID regulator block diagram*

7 DIAGNOSTICS AND TROUBLESHOOTING

This chapter assists the user in the identification and correction of possible faults that may occur during the inverter operation. Guidance on the necessary periodical inspections and cleaning of the inverter is also provided.

7.1 ALARMS, FAULTS AND POSSIBLE CAUSES

When faults or alarms are detected, the inverter indicates them on the HMI. Alarms and faults are displayed as AXXX (for alarms) and FXXX (for faults), and "XXX" is the code of the alarm or fault.

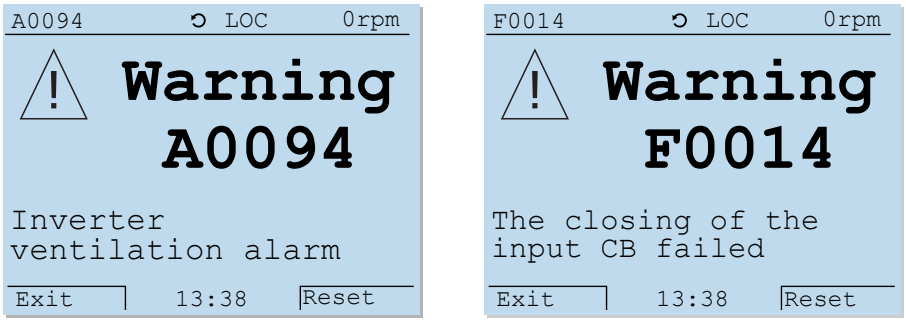

Figure 7.1: *Example of alarm and fault codes displayed on the HMI*

If a fault occurs the inverter is disabled, whereas in an alarm event it continues operating normally. In order to restart the inverter after a fault has occurred, it must be reset. The reset can normally be performed in the following manners:

- By pressing the key O (Manual Reset).
- Automatically through P0206 (Auto-reset).
- Via digital input: DI3 (P0265 = 12) or DI4 (P0266 = 12) or DI5 (P0267 = 12) or DI6 (P0268 = 12) or DI7 (P0269 = 12) or DI8 (P0270 = 12) or DI9 (P0271 = 12) or DI10 (P0272 = 12): DI Reset.
- Via networks.

The table below defines each alarm/fault code, explains how to reset the faults and shows the possible causes for each one.

Fault/alarm	Reset	Possible causes
F0003 Under Voltage / Phase Loss	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ It resets automatically after the cause is eliminated. ▪ DIx. ▪ Networks.	▪ Inverter input voltage below 70 %. ▪ Power supply undervoltage. ▪ Incorrect settings of the input transformer primary taps. ▪ See P0673 (Undervoltage level at the inverter input).
F0006 Mains Unbalance/ Phase Loss	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ It resets automatically after the cause is eliminated. ▪ DIx. ▪ Networks.	▪ Phase loss at the power supply. ▪ Voltage imbalance greater than 10 % of the rated value.
A0008 Timeout in the synchronism with the input line during synchronous transfer	▪ Manual (O /RESET key).	▪ Synchronism function could not synchronize successfully.

Fault/alarm	Reset	Possible causes
F0009 Incorrect status of the input cubicle	▪ Contact WEG Service Center.	▪ Incorrect operation of the input cubicle. ▪ Defective input cubicle. ▪ Wiring of the DI3 input (XC7:3) and/or action of the DI4 input (XC7:4) of PIC card defective.
F0013 Output contactor feedback	▪ Auto-reset. ▪ It resets automatically after the cause is eliminated.	▪ Fault on the closing or opening of the output contactor. ▪ Defect on the DI6/DO8 (MVC3) connections of the sinusoidal filter drive and feedback function.
F0014 Input cubicle closing failure	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ Dlx. ▪ Networks.	▪ Input circuit breaker will not close when commanded. ▪ Defective circuit breaker. ▪ Wiring of the DI3 input of PIC board (XC7:3) open (no feedback of +24 V) in the closing of the cubicle.
F0015 Input cubicle opening failure	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ Dlx. ▪ Networks.	▪ Input cubicle will not open when commanded. ▪ Defective circuit breaker. ▪ Wiring of DI4 input of PIC board (XC7:4) open (no feedback 24 V) in the opening of the cubicle.
F0016 Shutdown by input cubicle protection	▪ Manual (O /RESET key). ▪ Auto-reset. ▪ Dlx. ▪ Networks.	▪ Trip of the input cubicle protection related to the inverter main transformer. ▪ Wiring on DI5 input of PIC board (XC7:5) open (no feedback of +24 V).
F0017 Inverter not ready to energize	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ Dlx. ▪ Networks.	▪ Input circuit breaker not ready when commanded to close. ▪ Defective circuit breaker. ▪ Attempt to turn on the circuit breaker via DI1, while the inverter is indicating via DO1, which is not able to close the circuit breaker.
A0018 Inverter main transformer alarm	▪ Automatically eliminated when the transformer alarm stops actuating.	▪ Inverter main transformer alarm. ▪ Wiring of DI11 of PIC board (XC7:16) open (no feedback +24 V).
F0019 Inverter main transformer fault	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ Dlx.	▪ Inverter main transformer fault. ▪ Wiring of DI12 input of PIC board (XC8:1) open (no feedback +24 V).
F0020 Pre-charge fault	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ Dlx.	▪ DC link voltages have not risen to the necessary level to complete the pre-charge process within the established time. ▪ Wrong setting of the auxiliary transformer secondary tap. ▪ Low voltage or phase loss in the auxiliary power supply. ▪ Fault on contactors of pre-charging circuit. ▪ Defective pre-charge system capacitor. ▪ Communication optical fiber of one of the cells not connected, broken or defective.
F0025 Inverter door locking fault	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ Dlx. ▪ Networks.	▪ Attempt to energize the inverter with the panel doors unlocked. ▪ Unlocking of the doors with the inverter enabled or with the DC links energized. ▪ Wiring at DI16 input of PIC board (XC8:10) open (no feedback of +24 V with the doors closed).

Fault/alarm	Reset	Possible causes
F0026 Input cubicle not ready fault	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ DIx. ▪ Networks.	▪ Input cubicle indicating, via DI2, it is not available for operation. ▪ Defective input cubicle. ▪ Wiring of DI2 input of PIC board (XC7:2) open (no feedback of +24 V).
F0027 Improper opening of the input cubicle	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ DIx. ▪ Networks.	▪ Input cubicle opening command with inverter enabled. ▪ Wiring of DI1 input of PIC board (XC7:1) open (no feedback of +24 V).
F0044 Electrical arcing detection fault	▪ Contact WEG Service Center.	▪ Electrical arcing detection by the panel sensors.
A0046 Motor Ixt function overload	▪ Automatic eliminated when overload percentage value (P0076) is below P0159.	▪ Setting of P0156, P0157 and P0158 too low for the used motor. ▪ Setting of P0159 too low for the used motor. ▪ Load on the motor shaft too high. ▪ Setting of P0136 and P0137 too high (valid for operation at low speed).
F0048 Forced ventilation fault	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ DIx. ▪ Networks.	▪ Fans blocked. ▪ Input air filters blocked.
F0069 Calibration fault	▪ Contact WEG Service Center. ▪ For WEG use.	▪ For WEG use.
F0070 Overcurrent/short circuit	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ DIx. ▪ Networks.	▪ Inverter output instant current higher than twice the rated current (detection by Hardware). ▪ Short circuit between two motor phases or power cables (detection by hardware). ▪ Load inertia too high or acceleration ramp too fast. ▪ Incorrect regulation and/or configuration parameter(s). ▪ Setting of P0169, P0170 or P0171 too high. ▪ IGBTs modules of the cells in short circuit.
F0071 Overcurrent at output	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ DIx. ▪ Networks.	▪ Short circuit between two motor phases or power cables (detection by hardware). ▪ Load inertia too high or acceleration ramp too fast. ▪ Incorrect regulation and/or configuration parameter(s). ▪ Setting of P0169, P0170 or P0171 too high.
F0072 Output over load Ixt function	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ DIx. ▪ Networks.	▪ Setting of P0156, P0157 and P0158 too low for the used motor. ▪ Setting of P0136 and P0137 too high (valid for operation at load speed). ▪ Load on the motor shaft too high. ▪ The output overload fault does not cause the opening of the input cubicle.
F0076 Output current unbalanced	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ DIx. ▪ Networks.	▪ Motor cable disconnected or poor contact. ▪ Fault on the current feedback circuit. ▪ Difference between output currents above 12.5 % of the rated current for a period above the limit.

Fault/alarm	Reset	Possible causes
F0078 Motor Over Temperature	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ DIx. ▪ Networks.	▪ Motor temperature above the fault level set on the thermal protection relay. ▪ Digital input signal, coming from the thermal protection relay, set to "Fault on the motor" at low level.
F0079 Signals of the motor speed sensor defective	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ DIx. ▪ Networks.	▪ Wiring between the motor speed sensor and the inverter interface board defective. ▪ Speed sensor defective. ▪ Cable length longer than the specified limit. ▪ Speed sensor incorrectly installed on the motor.
F0080 CPU watchdog error	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ DIx. ▪ Networks.	▪ Electric noise on the control boards.
F0082 Copy function not allowed	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ DIx. ▪ Networks.	▪ Attempt to copy parameters from the HMI to the inverter with incompatible software versions.
F0083 Inverter Setup Fault	▪ Automatically eliminated when incompatible parameters are changed.	▪ Attempt to set a parameter incompatible with the others. ▪ See Table 4.5 on page 4-10.
A0084 Incorrect programming of inverter model	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ DIx. ▪ Networks.	▪ Incorrect programming of inverter model. ▪ Incompatibility between the inverter current (P0295) and voltage (P0296) parameters; see values in the product manual.
F0085 Electronic power supply fault	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ DIx. ▪ Networks.	▪ Power supply monitoring signal keeps indicating electronics power supplies not OK.
F0087 Control boards communication fault	▪ Automatically eliminated when the MVC3 and MVC4 control boards reestablish communication	▪ Fault on the serial communication circuit of the MVC3 board. ▪ Fault on the serial communication circuit of the MVC4 board. ▪ Fiber optic cables not connected or defective.
F0090 External DIx open fault	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ DIx. ▪ Networks.	▪ Digital input set to "No external fault" open (no feedback of +24 V). ▪ For further details on this DI function, refer to the inverter project.
F0092 Pre-charge supply fault	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ DIx. ▪ Networks.	▪ Short-circuit on the pre-charge system. ▪ Pre-charge capacitors defective. ▪ Pre-charge resistors defective. ▪ Pre-charge circuit breaker open. ▪ Wiring of DI7 input of PIC board (XC7:16) open (no feedback of +24 V).
A0094 Cooling system supply fault	▪ It resets automatically after the cause is eliminated.	▪ Short circuit in the ventilation system. ▪ Fan locked. ▪ Circuit breakers that feed the inverter ventilation system open. ▪ Wiring of DI10 input of PIC board (XC7:15) open (no feedback of +24 V).

Fault/alarm	Reset	Possible causes
A0096 Alarm 4 to 20 mA (current < 3 mA)	▪ It resets automatically after the cause is eliminated.	▪ Cable of one or more analog inputs set to signal 4 to 20 mA disconnected or broken. ▪ Current received at analog input below 3 mA.
A0098 Help not recorded/Incompatible HMI version	▪ It resets automatically after the cause is eliminated.	▪ No help saved or the version saved is incompatible with the current firmware version of the graphic HMI.
F0099 Invalid output current offset	▪ Contact WEG Service Center.	▪ Offset of the output current measurements out of the acceptable range. ▪ Defect on the output current measurement circuit.
F0100 MVC3 fatal fault	▪ Contact WEG Service Center.	▪ Invalid CPU addressing.
F0101 Incompatible software version between control boards	▪ Contact WEG Service Center.	▪ Firmware version of the MVC3 control board incompatible with the MVC4.
F0102 Unknown failure in EPLD of MVC3	▪ Contact WEG Service Center.	▪ Invalid data informed by the EPLD/FPGA of the MVC3 control board.
F0103 MVC3 RAM fault	▪ Contact WEG Service Center.	▪ Auto-diagnosis fault of the SRAM with battery.
F0105 MVC3 EEPROM failure	▪ Contact WEG Service Center.	▪ Auto-diagnosis fault on the EEPROM.
F0106 MVC4 fatal fault	▪ Contact WEG Service Center.	▪ Invalid CPU addressing.
A0108 Inverter Not Initialized	▪ It resets automatically after the cause is eliminated.	▪ Waiting for the boot conclusion.
F0109 General Disable MVC3	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ DIx. ▪ Networks.	▪ Wiring of DI13 input of PIC board (XC8:7) open (no feedback of +24 V). ▪ For further details on this DI function, refer to the inverter project.
A0110 Motor overtemperature alarm	▪ It resets automatically after the cause is eliminated.	▪ Motor temperature above the alarm level set on the thermal protection relay. ▪ Digital input signal, coming from the thermal protection relay, set to "Motor alarm" at low level.
A0111 DIx open external alarm	▪ It resets automatically after the cause is eliminated.	▪ Digital input set to "No external alarm" open (no feedback of +24 V). ▪ For further details on this DI function, refer to the inverter project.
F0112 Motor Over Speed	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ DIx. ▪ Networks.	▪ High acceleration mechanical torque on the load. ▪ Motor speed above the limit set. ▪ If P0002 > P0132 * P0134.
A0114 Inverter ventilation alarm - set B	▪ It resets automatically after the cause is eliminated.	▪ Short circuit on the ventilation system. ▪ Fan locked. ▪ Circuit breakers that feed the inverter ventilation set B are open. ▪ Digital input signal set to "No alarm on Redundant Fan B" at low level.

Fault/alarm	Reset	Possible causes
A0123 Programming alarm	▪ It resets automatically after the cause is eliminated.	▪ Alarm occurs when parameter P0169 is set to a value beyond the one accepted by the overload duty. ▪ P0169 above 15 % of the value of P0295 (Inverter rated current).
A0124 Parameter alteration with enabled inverter	▪ It resets automatically after the cause is eliminated.	▪ Specific Fieldbus/Serial fault.
A0125 Reading/writing in inexistent parameter	▪ It resets automatically after the cause is eliminated.	▪ Specific Fieldbus/Serial fault.
A0126 Parameter Value Out of Range	▪ It resets automatically after the cause is eliminated.	▪ Specific Fieldbus/Serial fault.
A0127 Function not configured for Fieldbus	▪ It resets automatically after the cause is eliminated.	▪ Specific Fieldbus/Serial fault.
A0129 Fieldbus Connec. Inactive	▪ It resets automatically after the cause is eliminated.	▪ Specific Fieldbus/Serial fault.
A0130 Fieldbus Card Inactive	▪ It resets automatically after the cause is eliminated.	▪ Specific Fieldbus/Serial fault.
A0301 Input undervoltage	▪ Eliminate automatically when the voltage at the inverter input exceeds 75.5 %.	▪ Voltage on the input transformer secondary is below 75.5 %. ▪ Undervoltge on the supply line. ▪ Wrong setting of the transformer primary taps.
A0302 Input overvoltage	▪ Eliminate automatically when the voltage at the inverter input is less than 113.5 %.	▪ Tensão na entrada do inversor superior a 114 %. ▪ Overvoltage on the supply line. ▪ Wrong setting of the transformer primary taps.
F0303 Input undervoltage	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ Dlx. ▪ Networks.	▪ The inverter input voltage less than 70 %. ▪ Undervoltage on the supply line. ▪ Wrong setting of the transformer primary taps.
F0304 Input overvoltage	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ Dlx. ▪ Networks.	▪ Inverter input voltage above 117 %. ▪ Overvoltage on the supply line. ▪ Wrong setting of the transformer primary taps.
F0305 Input unbalance/phase loss	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ Dlx. ▪ Networks.	▪ Phase loss on the supply line. ▪ Voltage difference between the phases above 40 % of the rated value. ▪ Voltage on any phase below 30 % of the rated value.
F0309 Timeout in Ride-through state Waiting Line	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ Dlx. ▪ Networks.	▪ Time for the return of the power longer than the time set at P0332 + P0333. ▪ Inverter input voltage below 80 %. ▪ Undervoltage in the mains supply. ▪ Incorrect setting of the transformer primary taps;

Fault/alarm	Reset	Possible causes
F0310 Short circuit on the transformer 1 secondary	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ Dlx. ▪ Networks.	▪ Short circuit on the cables of the input transformer secondaries. ▪ Short circuit on the coils of the input transformer secondaries. ▪ Defect on the transformer current measurement circuit. ▪ Defect on the input voltage measurement circuit. ▪ Incorrect setting of the input transformer parameters.
A0315 Ground fault for neutral shift	▪ Automatically eliminated when the voltage between the motor virtual neutral point and the ground presents a value below 20	▪ Fault in the insultation to the ground of the connecting cables or of the load driven by the inverter. ▪ Voltage between the virtual neutral of the motor and the ground of the system (P1144) above 25 % the voltage value of the motor phase. ▪ Only detected with the load running.
F0316 Ground fault for neutral shift	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ Dlx. ▪ Networks.	▪ Fault in the insultation to the ground of the connecting cables or of the load driven by the inverter. ▪ Voltage between the virtual neutral of the motor and the ground of the system (P1144) above 50 % the voltage value of the motor phase for more than 0.5 s. ▪ Only detected with the load running.
F0317 Ground fault for current leak	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ Dlx. ▪ Networks.	▪ Fault in the insultation to the ground of the connecting cables or of the load driven by the inverter with the presence of current leak. ▪ The sum of the three output currents is above 12.5 % of the inverter rated current. ▪ Sensors measuring the output current are defective.
F0320 Vab measurement feedback fault	▪ Contact WEG Service Center.	▪ Fault on the feedback circuit of the line voltage between phases A and B at the inverter input. ▪ Fiber optic Vab not connected, inverted or defective.
F0321 Vbc measurement feedback fault	▪ Contact WEG Service Center.	▪ Fault on the feedback circuit of the line voltage between phases A and B at the inverter input. ▪ Fiber optic Vbc not connected, inverted or defective.
F0323 Ib_1 measurement feedback fault	▪ Contact WEG Service Center.	▪ Fault on the feedback circuit of the current of phase B at the inverter input. ▪ Fiber optic Ib_x not connected, inverted or defective. ▪ Refer to the parameter P1893 description.
F0324 Ic_1 measurement feedback fault	▪ Contact WEG Service Center.	▪ Fault on the feedback circuit of the current of phase C at the inverter input. ▪ Fiber optic Ic_x not connected, inverted or defective. ▪ Refer to the parameter P1893 description.
F0325 Vuv measurement feedback fault	▪ Contact WEG Service Center.	▪ Fault on the feedback circuit of the line voltage measured between phases U and V at the inverter output. ▪ Fiber optic Vuv not connected, inverted or defective.
F0326 Vvw measurement feedback fault	▪ Contact WEG Service Center.	▪ Fault on the feedback circuit of the line voltage measured between phases U and V at the inverter output. ▪ Fiber optic Vvw not connected, inverted or defective.

Fault/alarm	Reset	Possible causes
F0327 Vn_gnd measurement feedback fault	▪ Contact WEG Service Center.	▪ Fault on the feedback circuit of the voltage between the motor virtual neutral and the system ground. ▪ Fiber optic N_GND not connected, inverted or defective.
F0328 Ib_2 measurement feedback fault	▪ Contact WEG Service Center.	▪ Fault on the feedback circuit of the current of phase B at the inverter input. ▪ Fiber optic Ib_x not connected, inverted or defective. ▪ Refer to the parameter P1893 description.
F0329 Ic_2 measurement feedback fault	▪ Contact WEG Service Center.	▪ Fault on the feedback circuit of the current of phase C at the inverter input. ▪ Fiber optic Ic_x not connected, inverted or defective. ▪ Refer to the parameter P1893 description.
F0330 Ib_3 measurement feedback fault	▪ Contact WEG Service Center.	▪ Fault on the feedback circuit of the current of phase B at the inverter input. ▪ Fiber optic Ib_x not connected, inverted or defective. ▪ Refer to the parameter P1893 description.
F0331 Falha de realimentação na medição Ic_3	▪ Contact WEG Service Center.	▪ Fault on the feedback circuit of the current of phase C at the inverter input. ▪ Fiber optic Ic_x not connected, inverted or defective. ▪ Refer to the parameter P1893 description.
F0343 Curto-circuito no secundário do transformador 2	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ Dlx. ▪ Networks.	▪ Short circuit on the cables of the input transformer secondaries. ▪ Short circuit on the coils of the input transformer secondaries. ▪ Defect on the transformer current measurement circuit. ▪ Defect on the input voltage measurement circuit. ▪ Incorrect setting of the input transformer parameters.
F0346 Curto-circuito no secundário do transformador 3	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ Dlx. ▪ Networks.	▪ Short circuit on the cables of the input transformer secondaries. ▪ Short circuit on the coils of the input transformer secondaries. ▪ Defect on the transformer current measurement circuit. ▪ Defect on the input voltage measurement circuit. ▪ Incorrect setting of the input transformer parameters.
F0350 Invalid setting for the Bypass	▪ Power-on. ▪ Manual (O /RESET key). ▪ Dlx. ▪ Networks.	▪ Bypass situation where the arrangement of the operating power arms represent an invalid combination for operation. ▪ With the operating power arms available in the system, it is not possible to obtain a confinement to provide balanced three-phase voltage for the motor. ▪ The invalid arrangement condition occurs when the selected bypass function is the neutral shift. ▪ See the settings of the power arms in parameters P1155, P1156 and P1157.

Fault/alarm	Reset	Possible causes
F0351 Number of programmed cells exceeds the inverter capacity	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ It resets automatically after the cause is eliminated. ▪ DIx. ▪ Networks.	▪ The total number of cells resulting from the inverter configuration exceeds the communication capacity of the control rack; such number should be fewer than 36 cells. ▪ Invalid inverter configuration considering the setting of parameters: Inverter rated voltage (P0296), Number of redundant cells per phase (P1565) and Cells in parallel (P1892).
F0359 Timeout in the communication with the thermal protection relay	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ DIx. ▪ Networks.	▪ P0315 > 0 and the cable for communication with the thermal protection relay disconnected or defective for more than 10 s.
A0360 Fault in the temperature sensor of the thermal protection relay CH1	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ It resets automatically after the cause is eliminated. ▪ DIx. ▪ Networks.	▪ Temperature sensor broken wire. ▪ PT100 accessory connectors disconnected. ▪ Temperature channel active without a sensor connected to the PT100 accessory.
A0361 Fault in the temperature sensor of the thermal protection relay CH2	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ It resets automatically after the cause is eliminated. ▪ DIx. ▪ Networks.	▪ Temperature sensor broken wire. ▪ PT100 accessory connectors disconnected. ▪ Temperature channel active without a sensor connected to the PT100 accessory.
A0362 Fault in the temperature sensor of the thermal protection relay CH3	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ It resets automatically after the cause is eliminated. ▪ DIx. ▪ Networks.	▪ Temperature sensor broken wire. ▪ PT100 accessory connectors disconnected. ▪ Temperature channel active without a sensor connected to the PT100 accessory.
A0363 Fault in the temperature sensor of the thermal protection relay CH4	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ It resets automatically after the cause is eliminated. ▪ DIx. ▪ Networks.	▪ Temperature sensor broken wire. ▪ PT100 accessory connectors disconnected. ▪ Temperature channel active without a sensor connected to the PT100 accessory.
A0364 Fault in the temperature sensor of the thermal protection relay CH5	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ It resets automatically after the cause is eliminated. ▪ DIx. ▪ Networks.	▪ Temperature sensor broken wire. ▪ PT100 accessory connectors disconnected. ▪ Temperature channel active without a sensor connected to the PT100 accessory.
A0365 Fault in the temperature sensor of the thermal protection relay CH6	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ It resets automatically after the cause is eliminated. ▪ DIx. ▪ Networks.	▪ Temperature sensor broken wire. ▪ PT100 accessory connectors disconnected. ▪ Temperature channel active without a sensor connected to the PT100 accessory.

Fault/alarm	Reset	Possible causes
A0366 Fault in the temperature sensor of the thermal protection relay CH7	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ It resets automatically after the cause is eliminated. ▪ DIx. ▪ Networks.	▪ Temperature sensor broken wire. ▪ PT100 accessory connectors disconnected. ▪ Temperature channel active without a sensor connected to the PT100 accessory.
A0367 Fault in the temperature sensor of the thermal protection relay CH8	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ It resets automatically after the cause is eliminated. ▪ DIx. ▪ Networks.	▪ Temperature sensor broken wire. ▪ PT100 accessory connectors disconnected. ▪ Temperature channel active without a sensor connected to the PT100 accessory.
F0368 Overtemperature detected by the thermal protection relay CH1	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ DIx. ▪ Networks.	▪ Temperature above the fault level set on the thermal protection relay and P0315 > 0.
F0369 Overtemperature detected by the thermal protection relay CH2	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ DIx. ▪ Networks.	▪ Temperature above the fault level set on the thermal protection relay and P0315 > 0.
F0370 Overtemperature detected by the thermal protection relay CH3	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ DIx. ▪ Networks.	▪ Temperature above the fault level set on the thermal protection relay and P0315 > 0.
F0371 Overtemperature detected by the thermal protection relay CH4	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ DIx. ▪ Networks.	▪ Temperature above the fault level set on the thermal protection relay and P0315 > 0.
F0372 Overtemperature detected by the thermal protection relay CH5	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ DIx. ▪ Networks.	▪ Temperature above the fault level set on the thermal protection relay and P0315 > 0.
F0373 Overtemperature detected by the thermal protection relay CH6	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ DIx. ▪ Networks.	▪ Temperature above the fault level set on the thermal protection relay and P0315 > 0.
F0374 Overtemperature detected by the thermal protection relay CH7	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ DIx. ▪ Networks.	▪ Temperature above the fault level set on the thermal protection relay and P0315 > 0.
F0375 Overtemperature detected by the thermal protection relay CH8	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ DIx. ▪ Networks.	▪ Temperature above the fault level set on the thermal protection relay and P0315 > 0.

Fault/alarm	Reset	Possible causes
A0376 Overtemperature detected by the thermal protection relay CH1	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ It resets automatically after the cause is eliminated. ▪ DIx. ▪ Networks.	▪ Temperature above the alarm level set on the thermal protection relay and P0315 > 0.
A0377 Overtemperature detected by the thermal protection relay CH2	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ It resets automatically after the cause is eliminated. ▪ DIx. ▪ Networks.	▪ Temperature above the alarm level set on the thermal protection relay and P0315 > 0.
A0378 Overtemperature detected by the thermal protection relay CH3	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ It resets automatically after the cause is eliminated. ▪ DIx. ▪ Networks.	▪ Temperature above the alarm level set on the thermal protection relay and P0315 > 0.
A0379 Overtemperature detected by the thermal protection relay CH4	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ It resets automatically after the cause is eliminated. ▪ DIx. ▪ Networks.	▪ Temperature above the alarm level set on the thermal protection relay and P0315 > 0.
A0380 Overtemperature detected by the thermal protection relay CH5	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ It resets automatically after the cause is eliminated. ▪ DIx. ▪ Networks.	▪ Temperature above the alarm level set on the thermal protection relay and P0315 > 0.
A0381 Overtemperature detected by the thermal protection relay CH6	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ It resets automatically after the cause is eliminated. ▪ DIx. ▪ Networks.	▪ Temperature above the alarm level set on the thermal protection relay and P0315 > 0.
A0382 Overtemperature detected by the thermal protection relay CH7	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ It resets automatically after the cause is eliminated. ▪ DIx. ▪ Networks.	▪ Temperature above the alarm level set on the thermal protection relay and P0315 > 0.
A0383 Overtemperature detected by the thermal protection relay CH8	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ It resets automatically after the cause is eliminated. ▪ DIx. ▪ Networks.	▪ Temperature above the alarm level set on the thermal protection relay and P0315 > 0.

Fault/alarm	Reset	Possible causes
F0400 Cell U1 DC link overvoltage	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ DIx. ▪ Networks.	▪ Inverter input supply voltage too high. ▪ Incorrect setting of the inverter main transformer taps. ▪ Cell DC link voltage above 1200 V. ▪ Load inertia too high or deceleration ramp too short. ▪ Setting of P0151 too high.
F0401 Cell U1 DC link undervoltage	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ DIx. ▪ Networks.	▪ Inverter input supply voltage too low. ▪ Incorrect setting of the inverter main transformer taps. ▪ Cell DC link voltage below 745 V below 652 V for operation in vector control.
A0402 Overtemperature on cell U1 IGBT module	▪ Automatically eliminated when the temperature at the cell heatsink presents a value below 80 °C.	▪ Temperature on the cell heatsink above 85 °C. ▪ Ambient temperature too high (> 40 °C) and high output current. ▪ Fans locked or defective. ▪ Air input filters blocked.
F0403 Overtemperature on cell U1 IGBT module	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ DIx. ▪ Networks.	▪ Temperature on the cell heatsink above 90 °C. ▪ Ambient temperature too high (> 40 °C) and high output current. ▪ Fans locked or defective. ▪ Air input filters blocked.
F0404 Defective temperature sensor or undertemperature on cell U1 IGBT	▪ Contact WEG Service Center.	▪ Cell temperature measurement sensor defective. ▪ Cell temperature sensor disconnected. ▪ Temperature on the cell heatsink below -10 °C.
F0405 Cell U1 phase IGBT	▪ Contact WEG Service Center.	▪ Short circuit at the inverter output. ▪ Trigger board of the IGBTs of the cell phase arm disconnected. ▪ IGBTs of the cell phase arm operating out of the saturation region. ▪ IGBTs or trigger board of the cell phase arm defective. ▪ Fault on the desaturation signal feedback or gate-driver supply.
F0406 Cell U1 neutral IGBT	▪ Contact WEG Service Center.	▪ Short circuit at the inverter output. ▪ Trigger board of the IGBTs of the cell neutral arm disconnected. ▪ IGBTs of the cell neutral arm operating out of the saturation region. ▪ IGBTs or trigger board of the cell neutral arm defective. ▪ Fault on the desaturation signal feedback or gate-driver supply.
F0408 Cell U1 phase pulse feedback	▪ Contact WEG Service Center.	▪ Fault on the commutation of the IGBTs of the cell phase arm. ▪ Measurement circuit of the confirmation signal of the commutation of the IGBTs of the phase arm disconnected or defective. ▪ IGBTs or trigger board of the cell phase arm defective.
F0410 Cell U1 neutral pulse feedback	▪ Contact WEG Service Center.	▪ Fault on the confirmation of the commutation of the IGBTs of the cell neutral arm. ▪ Measurement circuit of the confirmation signal of the commutation of the IGBTs of the neutral arm disconnected or defective. ▪ IGBTs or trigger board of the cell neutral arm defective.

Fault/alarm	Reset	Possible causes
F0411 Cell U1 electronics power supply	▪ Contact WEG Service Center.	▪ Voltages of the internal electronic circuits of the cell out of the operation level. ▪ Defect on the cell power supply.
F0416 Cell U1 modulation synchronism	▪ Contact WEG Service Center.	▪ Fault in the synchronism between the MCC1 control board of the cell and the MVC3 main control.
F0417 Cell U1 bypass system	▪ Contact WEG Service Center.	▪ Fault in the operation of the cell bypass system. ▪ Bypass system is not connected or defective.
F0418 Communication with cell U1	▪ Contact WEG Service Center.	▪ Fault on the communication between the MCC1 control board of the cell and the MVC3 main control. ▪ Break or defect on the cell communication optic cable.
F0420 Incompatible cell U1 firmware	▪ Contact WEG Service Center.	▪ Firmware version of the MCC1 control board of the cell incompatible with the MVC3 main control.
F0421 Incompatible cell U1 model	▪ Contact WEG Service Center.	▪ Cell model incompatible or invalid with the inverter model.
F0422 Cell U1 insulation defective	▪ Contact WEG Service Center.	▪ Fault in the internal insulation of the cell: Contact between some energized point of the circuit and the frame. ▪ Fault on the capacitor discharge resistors of the cell DC link.
F0423 Firmware update or PLD cell U1	▪ Contact WEG Service Center.	▪ Fault in the update process of the processor firmware or in the reconfiguration of the cell PLD.
F0425 Cell U2 DC link overvoltage	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ Dlx. ▪ Networks.	▪ Inverter input supply voltage too high. ▪ Incorrect setting of the inverter main transformer taps. ▪ Cell DC link voltage above 1200 V. ▪ Load inertia too high or deceleration ramp too short. ▪ Setting of P0151 too high.
F0426 Cell U2 DC link undervoltage	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ Dlx. ▪ Networks.	▪ Inverter input supply voltage too low. ▪ Incorrect setting of the inverter main transformer taps. ▪ Cell DC link voltage below 745 V below 652 V for operation in vector control.
A0427 Overtemperature on cell U2 IGBT module	▪ Automatically eliminated when the temperature at the cell heatsink presents a value below 80 °C.	▪ Temperature on the cell heatsink above 85 °C. ▪ Ambient temperature too high (> 40 °C) and high output current. ▪ Fans locked or defective. ▪ Air input filters blocked.
F0428 Overtemperature on cell U2 IGBT module	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ Dlx. ▪ Networks.	▪ Temperature on the cell heatsink above 90 °C. ▪ Ambient temperature too high (> 40 °C) and high output current. ▪ Fans locked or defective. ▪ Air input filters blocked.
F0429 Defective temperature sensor or undertemperature on cell U2 IGBT	▪ Contact WEG Service Center.	▪ Cell temperature measurement sensor defective. ▪ Cell temperature sensor disconnected. ▪ Temperature on the cell heatsink below -10 °C.

Fault/alarm	Reset	Possible causes
F0430 Cell U2 phase IGBT	▪ Contact WEG Service Center.	▪ Short circuit at the inverter output. ▪ Trigger board of the IGBTs of the cell phase arm disconnected. ▪ IGBTs of the cell phase arm operating out of the saturation region. ▪ IGBTs or trigger board of the cell phase arm defective. ▪ Fault on the desaturation signal feedback or gate-driver supply.
F0431 Cell U2 neutral IGBT	▪ Contact WEG Service Center.	▪ Short circuit at the inverter output. ▪ Trigger board of the IGBTs of the cell neutral arm disconnected. ▪ IGBTs of the cell neutral arm operating out of the saturation region. ▪ IGBTs or trigger board of the cell neutral arm defective. ▪ Fault on the desaturation signal feedback or gate-driver supply.
F0433 Cell U2 phase pulse feedback	▪ Contact WEG Service Center.	▪ Fault on the commutation of the IGBTs of the cell phase arm. ▪ Measurement circuit of the confirmation signal of the commutation of the IGBTs of the phase arm disconnected or defective. ▪ IGBTs or trigger board of the cell phase arm defective.
F0435 Cell U2 neutral pulse feedback	▪ Contact WEG Service Center.	▪ Fault on the confirmation of the commutation of the IGBTs of the cell neutral arm. ▪ Measurement circuit of the confirmation signal of the commutation of the IGBTs of the neutral arm disconnected or defective. ▪ IGBTs or trigger board of the cell neutral arm defective.
F0436 Cell U2 electronics power supply	▪ Contact WEG Service Center.	▪ Voltages of the internal electronic circuits of the cell out of the operation level. ▪ Defect on the cell power supply.
F0441 Cell U2 modulation synchronism	▪ Contact WEG Service Center.	▪ Fault in the synchronism between the MCC1 control board of the cell and the MVC3 main control.
F0442 Cell U2 bypass system	▪ Contact WEG Service Center.	▪ Fault in the operation of the cell bypass system. ▪ Bypass system is not connected or defective.
F0443 Communication with cell U2	▪ Contact WEG Service Center.	▪ Fault on the communication between the MCC1 control board of the cell and the MVC3 main control. ▪ Break or defect on the cell communication optic cable.
F0445 Incompatible cell U2 firmware	▪ Contact WEG Service Center.	▪ Firmware version of the MCC1 control board of the cell incompatible with the MVC3 main control.
F0446 Incompatible cell U2 model	▪ Contact WEG Service Center.	▪ Cell model incompatible or invalid with the inverter model.
F0447 Cell U2 insulation defective	▪ Contact WEG Service Center.	▪ Fault in the internal insulation of the cell: Contact between some energized point of the circuit and the frame. ▪ Fault on the capacitor discharge resistors of the cell DC link.
F0448 Firmware update or PLD cell U2	▪ Contact WEG Service Center.	▪ Fault in the update process of the processor firmware or in the reconfiguration of the cell PLD.

Fault/alarm	Reset	Possible causes
F0450 Cell U3 DC link overvoltage	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ DIx. ▪ Networks.	▪ Inverter input supply voltage too high. ▪ Incorrect setting of the inverter main transformer taps. ▪ Cell DC link voltage above 1200 V. ▪ Load inertia too high or deceleration ramp too short. ▪ Setting of P0151 too high.
F0451 Cell U3 DC link undervoltage	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ DIx. ▪ Networks.	▪ Inverter input supply voltage too low. ▪ Incorrect setting of the inverter main transformer taps. ▪ Cell DC link voltage below 745 V below 652 V for operation in vector control.
A0452 Overtemperature on cell U3 IGBT module	▪ Automatically eliminated when the temperature at the cell heatsink presents a value below 80 °C.	▪ Temperature on the cell heatsink above 85 °C. ▪ Ambient temperature too high (> 40 °C) and high output current. ▪ Fans locked or defective. ▪ Air input filters blocked.
F0453 Overtemperature on cell U3 IGBT module	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ DIx. ▪ Networks.	▪ Temperature on the cell heatsink above 90 °C. ▪ Ambient temperature too high (> 40 °C) and high output current. ▪ Fans locked or defective. ▪ Air input filters blocked.
F0454 Defective temperature sensor or undertemperature on cell U3 IGBT	▪ Contact WEG Service Center.	▪ Cell temperature measurement sensor defective. ▪ Cell temperature sensor disconnected. ▪ Temperature on the cell heatsink below -10 °C.
F0455 Cell U3 phase IGBT	▪ Contact WEG Service Center.	▪ Short circuit at the inverter output. ▪ Trigger board of the IGBTs of the cell phase arm disconnected. ▪ IGBTs of the cell phase arm operating out of the saturation region. ▪ IGBTs or trigger board of the cell phase arm defective. ▪ Fault on the desaturation signal feedback or gate-driver supply.
F0456 Cell U3 neutral IGBT	▪ Contact WEG Service Center.	▪ Short circuit at the inverter output. ▪ Trigger board of the IGBTs of the cell neutral arm disconnected. ▪ IGBTs of the cell neutral arm operating out of the saturation region. ▪ IGBTs or trigger board of the cell neutral arm defective. ▪ Fault on the desaturation signal feedback or gate-driver supply.
F0458 Cell U3 phase pulse feedback	▪ Contact WEG Service Center.	▪ Fault on the commutation of the IGBTs of the cell phase arm. ▪ Measurement circuit of the confirmation signal of the commutation of the IGBTs of the phase arm disconnected or defective. ▪ IGBTs or trigger board of the cell phase arm defective.
F0460 Cell U3 neutral pulse feedback	▪ Contact WEG Service Center.	▪ Fault on the confirmation of the commutation of the IGBTs of the cell neutral arm. ▪ Measurement circuit of the confirmation signal of the commutation of the IGBTs of the neutral arm disconnected or defective. ▪ IGBTs or trigger board of the cell neutral arm defective.

Fault/alarm	Reset	Possible causes
F0461 Cell U3 electronics power supply	▪ Contact WEG Service Center.	▪ Voltages of the internal electronic circuits of the cell out of the operation level. ▪ Defect on the cell power supply.
F0466 Cell U3 modulation synchronism	▪ Contact WEG Service Center.	▪ Fault in the synchronism between the MCC1 control board of the cell and the MVC3 main control.
F0467 Cell U3 bypass system	▪ Contact WEG Service Center.	▪ Fault in the operation of the cell bypass system. ▪ Bypass system is not connected or defective.
F0468 Communication with cell U3	▪ Contact WEG Service Center.	▪ Fault on the communication between the MCC1 control board of the cell and the MVC3 main control. ▪ Break or defect on the cell communication optic cable.
F0470 Incompatible cell U3 firmware	▪ Contact WEG Service Center.	▪ Firmware version of the MCC1 control board of the cell incompatible with the MVC3 main control.
F0471 Incompatible cell U3 model	▪ Contact WEG Service Center.	▪ Cell model incompatible or invalid with the inverter model.
F0472 Cell U3 insulation defective	▪ Contact WEG Service Center.	▪ Fault in the internal insulation of the cell: Contact between some energized point of the circuit and the frame. ▪ Fault on the capacitor discharge resistors of the cell DC link.
F0473 Firmware update or PLD cell U3	▪ Contact WEG Service Center.	▪ Fault in the update process of the processor firmware or in the reconfiguration of the cell PLD.
F0475 Cell U4 DC link overvoltage	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ Dlx. ▪ Networks.	▪ Inverter input supply voltage too high. ▪ Incorrect setting of the inverter main transformer taps. ▪ Cell DC link voltage above 1200 V. ▪ Load inertia too high or deceleration ramp too short. ▪ Setting of P0151 too high.
F0476 Cell U4 DC link undervoltage	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ Dlx. ▪ Networks.	▪ Inverter input supply voltage too low. ▪ Incorrect setting of the inverter main transformer taps. ▪ Cell DC link voltage below 745 V below 652 V for operation in vector control.
A0477 Overtemperature on cell U4 IGBT module	▪ Automatically eliminated when the temperature at the cell heatsink presents a value below 80 °C.	▪ Temperature on the cell heatsink above 85 °C. ▪ Ambient temperature too high (> 40 °C) and high output current. ▪ Fans locked or defective. ▪ Air input filters blocked.
F0478 Overtemperature on cell U4 IGBT module	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ Dlx. ▪ Networks.	▪ Temperature on the cell heatsink above 90 °C. ▪ Ambient temperature too high (> 40 °C) and high output current. ▪ Fans locked or defective. ▪ Air input filters blocked.
F0479 Defective temperature sensor or undertemperature on cell U4 IGBT	▪ Contact WEG Service Center.	▪ Cell temperature measurement sensor defective. ▪ Cell temperature sensor disconnected. ▪ Temperature on the cell heatsink below -10 °C.

Fault/alarm	Reset	Possible causes
F0480 Cell U4 phase IGBT	▪ Contact WEG Service Center.	▪ Short circuit at the inverter output. ▪ Trigger board of the IGBTs of the cell phase arm disconnected. ▪ IGBTs of the cell phase arm operating out of the saturation region. ▪ IGBTs or trigger board of the cell phase arm defective. ▪ Fault on the desaturation signal feedback or gate-driver supply.
F0481 Cell U4 neutral IGBT	▪ Contact WEG Service Center.	▪ Short circuit at the inverter output. ▪ Trigger board of the IGBTs of the cell neutral arm disconnected. ▪ IGBTs of the cell neutral arm operating out of the saturation region. ▪ IGBTs or trigger board of the cell neutral arm defective. ▪ Fault on the desaturation signal feedback or gate-driver supply.
F0483 Cell U4 phase pulse feedback	▪ Contact WEG Service Center.	▪ Fault on the commutation of the IGBTs of the cell phase arm. ▪ Measurement circuit of the confirmation signal of the commutation of the IGBTs of the phase arm disconnected or defective. ▪ IGBTs or trigger board of the cell phase arm defective.
F0485 Cell U4 neutral pulse feedback	▪ Contact WEG Service Center.	▪ Fault on the confirmation of the commutation of the IGBTs of the cell neutral arm. ▪ Measurement circuit of the confirmation signal of the commutation of the IGBTs of the neutral arm disconnected or defective. ▪ IGBTs or trigger board of the cell neutral arm defective.
F0486 Cell U4 electronics power supply	▪ Contact WEG Service Center.	▪ Voltages of the internal electronic circuits of the cell out of the operation level. ▪ Defect on the cell power supply.
F0491 Cell U4 modulation synchronism	▪ Contact WEG Service Center.	▪ Fault in the synchronism between the MCC1 control board of the cell and the MVC3 main control.
F0492 Cell U4 bypass system	▪ Contact WEG Service Center.	▪ Fault in the operation of the cell bypass system. ▪ Bypass system is not connected or defective.
F0493 Communication with cell U4	▪ Contact WEG Service Center.	▪ Fault on the communication between the MCC1 control board of the cell and the MVC3 main control. ▪ Break or defect on the cell communication optic cable.
F0495 Incompatible cell U4 firmware	▪ Contact WEG Service Center.	▪ Firmware version of the MCC1 control board of the cell incompatible with the MVC3 main control.
F0496 Incompatible cell U4 model	▪ Contact WEG Service Center.	▪ Cell model incompatible or invalid with the inverter model.
F0497 Cell U4 insulation defective	▪ Contact WEG Service Center.	▪ Fault in the internal insulation of the cell: Contact between some energized point of the circuit and the frame. ▪ Fault on the capacitor discharge resistors of the cell DC link.
F0498 Firmware update or PLD cell U4	▪ Contact WEG Service Center.	▪ Fault in the update process of the processor firmware or in the reconfiguration of the cell PLD.

Fault/alarm	Reset	Possible causes
F0500 Cell U5 DC link overvoltage	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ DIx. ▪ Networks.	▪ Inverter input supply voltage too high. ▪ Incorrect setting of the inverter main transformer taps. ▪ Cell DC link voltage above 1200 V. ▪ Load inertia too high or deceleration ramp too short. ▪ Setting of P0151 too high.
F0501 Cell U5 DC link undervoltage	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ DIx. ▪ Networks.	▪ Inverter input supply voltage too low. ▪ Incorrect setting of the inverter main transformer taps. ▪ Cell DC link voltage below 745 V below 652 V for operation in vector control.
A0502 Overtemperature on cell U5 IGBT module	▪ Automatically eliminated when the temperature at the cell heatsink presents a value below 80 °C.	▪ Temperature on the cell heatsink above 85 °C. ▪ Ambient temperature too high (> 40 °C) and high output current. ▪ Fans locked or defective. ▪ Air input filters blocked.
F0503 Overtemperature on cell U5 IGBT module	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ DIx. ▪ Networks.	▪ Temperature on the cell heatsink above 90 °C. ▪ Ambient temperature too high (> 40 °C) and high output current. ▪ Fans locked or defective. ▪ Air input filters blocked.
F0504 Defective temperature sensor or undertemperature on cell U5 IGBT	▪ Contact WEG Service Center.	▪ Cell temperature measurement sensor defective. ▪ Cell temperature sensor disconnected. ▪ Temperature on the cell heatsink below -10 °C.
F0505 Cell U5 phase IGBT	▪ Contact WEG Service Center.	▪ Short circuit at the inverter output. ▪ Trigger board of the IGBTs of the cell phase arm disconnected. ▪ IGBTs of the cell phase arm operating out of the saturation region. ▪ IGBTs or trigger board of the cell phase arm defective. ▪ Fault on the desaturation signal feedback or gate-driver supply.
F0506 Cell U5 neutral IGBT	▪ Contact WEG Service Center.	▪ Short circuit at the inverter output. ▪ Trigger board of the IGBTs of the cell neutral arm disconnected. ▪ IGBTs of the cell neutral arm operating out of the saturation region. ▪ IGBTs or trigger board of the cell neutral arm defective. ▪ Fault on the desaturation signal feedback or gate-driver supply.
F0508 Cell U5 phase pulse feedback	▪ Contact WEG Service Center.	▪ Fault on the commutation of the IGBTs of the cell phase arm. ▪ Measurement circuit of the confirmation signal of the commutation of the IGBTs of the phase arm disconnected or defective. ▪ IGBTs or trigger board of the cell phase arm defective.
F0510 Cell U5 neutral pulse feedback	▪ Contact WEG Service Center.	▪ Fault on the confirmation of the commutation of the IGBTs of the cell neutral arm. ▪ Measurement circuit of the confirmation signal of the commutation of the IGBTs of the neutral arm disconnected or defective. ▪ IGBTs or trigger board of the cell neutral arm defective.

Fault/alarm	Reset	Possible causes
F0511 Cell U5 electronics power supply	▪ Contact WEG Service Center.	▪ Voltages of the internal electronic circuits of the cell out of the operation level. ▪ Defect on the cell power supply.
F0516 Cell U5 modulation synchronism	▪ Contact WEG Service Center.	▪ Fault in the synchronism between the MCC1 control board of the cell and the MVC3 main control.
F0517 Cell U5 bypass system	▪ Contact WEG Service Center.	▪ Fault in the operation of the cell bypass system. ▪ Bypass system is not connected or defective.
F0518 Communication with cell U5	▪ Contact WEG Service Center.	▪ Fault on the communication between the MCC1 control board of the cell and the MVC3 main control. ▪ Break or defect on the cell communication optic cable.
F0520 Incompatible cell U5 firmware	▪ Contact WEG Service Center.	▪ Firmware version of the MCC1 control board of the cell incompatible with the MVC3 main control.
F0521 Incompatible cell U5 model	▪ Contact WEG Service Center.	▪ Cell model incompatible or invalid with the inverter model.
F0522 Cell U5 insulation defective	▪ Contact WEG Service Center.	▪ Fault in the internal insulation of the cell: Contact between some energized point of the circuit and the frame. ▪ Fault on the capacitor discharge resistors of the cell DC link.
F0523 Firmware update or PLD cell U5	▪ Contact WEG Service Center.	▪ Fault in the update process of the processor firmware or in the reconfiguration of the cell PLD.
F0525 Cell U6 DC link overvoltage	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ DIx. ▪ Networks.	▪ Inverter input supply voltage too high. ▪ Incorrect setting of the inverter main transformer taps. ▪ Cell DC link voltage above 1200 V. ▪ Load inertia too high or deceleration ramp too short. ▪ Setting of P0151 too high.
F0526 Cell U6 DC link undervoltage	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ DIx. ▪ Networks.	▪ Inverter input supply voltage too low. ▪ Incorrect setting of the inverter main transformer taps. ▪ Cell DC link voltage below 745 V below 652 V for operation in vector control.
A0527 Overtemperature on cell U6 IGBT module	▪ Automatically eliminated when the temperature at the cell heatsink presents a value below 80 °C.	▪ Temperature on the cell heatsink above 85 °C. ▪ Ambient temperature too high (> 40 °C) and high output current. ▪ Fans locked or defective. ▪ Air input filters blocked.
F0528 Overtemperature on cell U6 IGBT module	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ DIx. ▪ Networks.	▪ Temperature on the cell heatsink above 90 °C. ▪ Ambient temperature too high (> 40 °C) and high output current. ▪ Fans locked or defective. ▪ Air input filters blocked.
F0529 Defective temperature sensor or undertemperature on cell U6 IGBT	▪ Contact WEG Service Center.	▪ Cell temperature measurement sensor defective. ▪ Cell temperature sensor disconnected. ▪ Temperature on the cell heatsink below -10 °C.

Fault/alarm	Reset	Possible causes
F0530 Cell U6 phase IGBT	▪ Contact WEG Service Center.	▪ Short circuit at the inverter output. ▪ Trigger board of the IGBTs of the cell phase arm disconnected. ▪ IGBTs of the cell phase arm operating out of the saturation region. ▪ IGBTs or trigger board of the cell phase arm defective. ▪ Fault on the desaturation signal feedback or gate-driver supply.
F0531 Cell U6 neutral IGBT	▪ Contact WEG Service Center.	▪ Short circuit at the inverter output. ▪ Trigger board of the IGBTs of the cell neutral arm disconnected. ▪ IGBTs of the cell neutral arm operating out of the saturation region. ▪ IGBTs or trigger board of the cell neutral arm defective. ▪ Fault on the desaturation signal feedback or gate-driver supply.
F0533 Cell U6 phase pulse feedback	▪ Contact WEG Service Center.	▪ Fault on the commutation of the IGBTs of the cell phase arm. ▪ Measurement circuit of the confirmation signal of the commutation of the IGBTs of the phase arm disconnected or defective. ▪ IGBTs or trigger board of the cell phase arm defective.
F0535 Cell U6 neutral pulse feedback	▪ Contact WEG Service Center.	▪ Fault on the confirmation of the commutation of the IGBTs of the cell neutral arm. ▪ Measurement circuit of the confirmation signal of the commutation of the IGBTs of the neutral arm disconnected or defective. ▪ IGBTs or trigger board of the cell neutral arm defective.
F0536 Cell U6 electronics power supply	▪ Contact WEG Service Center.	▪ Voltages of the internal electronic circuits of the cell out of the operation level. ▪ Defect on the cell power supply.
F0541 Cell U6 modulation synchronism	▪ Contact WEG Service Center.	▪ Fault in the synchronism between the MCC1 control board of the cell and the MVC3 main control.
F0542 Cell U6 bypass system	▪ Contact WEG Service Center.	▪ Fault in the operation of the cell bypass system. ▪ Bypass system is not connected or defective.
F0543 Communication with cell U6	▪ Contact WEG Service Center.	▪ Fault on the communication between the MCC1 control board of the cell and the MVC3 main control. ▪ Break or defect on the cell communication optic cable.
F0545 Incompatible cell U6 firmware	▪ Contact WEG Service Center.	▪ Firmware version of the MCC1 control board of the cell incompatible with the MVC3 main control.
F0546 Incompatible cell U6 model	▪ Contact WEG Service Center.	▪ Cell model incompatible or invalid with the inverter model.
F0547 Cell U6 insulation defective	▪ Contact WEG Service Center.	▪ Fault in the internal insulation of the cell: Contact between some energized point of the circuit and the frame. ▪ Fault on the capacitor discharge resistors of the cell DC link.
F0548 Firmware update or PLD cell U6	▪ Contact WEG Service Center.	▪ Fault in the update process of the processor firmware or in the reconfiguration of the cell PLD.

Fault/alarm	Reset	Possible causes
F0550 Cell U7 DC link overvoltage	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ Dlx. ▪ Networks.	▪ Inverter input supply voltage too high. ▪ Incorrect setting of the inverter main transformer taps. ▪ Cell DC link voltage above 1200 V. ▪ Load inertia too high or deceleration ramp too short. ▪ Setting of P0151 too high.
F0551 Cell U7 DC link undervoltage	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ Dlx. ▪ Networks.	▪ Inverter input supply voltage too low. ▪ Incorrect setting of the inverter main transformer taps. ▪ Cell DC link voltage below 745 V below 652 V for operation in vector control.
A0552 Overtemperature on cell U7 IGBT module	▪ Automatically eliminated when the temperature at the cell heatsink presents a value below 80 °C.	▪ Temperature on the cell heatsink above 85 °C. ▪ Ambient temperature too high (> 40 °C) and high output current. ▪ Fans locked or defective. ▪ Air input filters blocked.
F0553 Overtemperature on cell U7 IGBT module	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ Dlx. ▪ Networks.	▪ Temperature on the cell heatsink above 90 °C. ▪ Ambient temperature too high (> 40 °C) and high output current. ▪ Fans locked or defective. ▪ Air input filters blocked.
F0554 Defective temperature sensor or undertemperature on cell U7 IGBT	▪ Contact WEG Service Center.	▪ Cell temperature measurement sensor defective. ▪ Cell temperature sensor disconnected. ▪ Temperature on the cell heatsink below -10 °C.
F0555 Cell U7 phase IGBT	▪ Contact WEG Service Center.	▪ Short circuit at the inverter output. ▪ Trigger board of the IGBTs of the cell phase arm disconnected. ▪ IGBTs of the cell phase arm operating out of the saturation region. ▪ IGBTs or trigger board of the cell phase arm defective. ▪ Fault on the desaturation signal feedback or gate-driver supply.
F0556 Cell U7 neutral IGBT	▪ Contact WEG Service Center.	▪ Short circuit at the inverter output. ▪ Trigger board of the IGBTs of the cell neutral arm disconnected. ▪ IGBTs of the cell neutral arm operating out of the saturation region. ▪ IGBTs or trigger board of the cell neutral arm defective. ▪ Fault on the desaturation signal feedback or gate-driver supply.
F0558 Cell U7 phase pulse feedback	▪ Contact WEG Service Center.	▪ Fault on the commutation of the IGBTs of the cell phase arm. ▪ Measurement circuit of the confirmation signal of the commutation of the IGBTs of the phase arm disconnected or defective. ▪ IGBTs or trigger board of the cell phase arm defective.
F0560 Cell U7 neutral pulse feedback	▪ Contact WEG Service Center.	▪ Fault on the confirmation of the commutation of the IGBTs of the cell neutral arm. ▪ Measurement circuit of the confirmation signal of the commutation of the IGBTs of the neutral arm disconnected or defective. ▪ IGBTs or trigger board of the cell neutral arm defective.

Fault/alarm	Reset	Possible causes
F0561 Cell U7 electronics power supply	▪ Contact WEG Service Center.	▪ Voltages of the internal electronic circuits of the cell out of the operation level. ▪ Defect on the cell power supply.
F0566 Cell U7 modulation synchronism	▪ Contact WEG Service Center.	▪ Fault in the synchronism between the MCC1 control board of the cell and the MVC3 main control.
F0567 Cell U7 bypass system	▪ Contact WEG Service Center.	▪ Fault in the operation of the cell bypass system. ▪ Bypass system is not connected or defective.
F0568 Communication with cell U7	▪ Contact WEG Service Center.	▪ Fault on the communication between the MCC1 control board of the cell and the MVC3 main control. ▪ Break or defect on the cell communication optic cable.
F0570 Incompatible cell U7 firmware	▪ Contact WEG Service Center.	▪ Firmware version of the MCC1 control board of the cell incompatible with the MVC3 main control.
F0571 Incompatible cell U7 model	▪ Contact WEG Service Center.	▪ Cell model incompatible or invalid with the inverter model.
F0572 Cell U7 insulation defective	▪ Contact WEG Service Center.	▪ Fault in the internal insulation of the cell: Contact between some energized point of the circuit and the frame. ▪ Fault on the capacitor discharge resistors of the cell DC link.
F0573 Firmware update or PLD cell U7	▪ Contact WEG Service Center.	▪ Fault in the update process of the processor firmware or in the reconfiguration of the cell PLD.
F0575 Cell U8 DC link overvoltage	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ DIx. ▪ Networks.	▪ Inverter input supply voltage too high. ▪ Incorrect setting of the inverter main transformer taps. ▪ Cell DC link voltage above 1200 V. ▪ Load inertia too high or deceleration ramp too short. ▪ Setting of P0151 too high.
F0576 Cell U8 DC link undervoltage	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ DIx. ▪ Networks.	▪ Inverter input supply voltage too low. ▪ Incorrect setting of the inverter main transformer taps. ▪ Cell DC link voltage below 745 V below 652 V for operation in vector control.
A0577 Overtemperature on cell U8 IGBT module	▪ Automatically eliminated when the temperature at the cell heatsink presents a value below 80 °C.	▪ Temperature on the cell heatsink above 85 °C. ▪ Ambient temperature too high (> 40 °C) and high output current. ▪ Fans locked or defective. ▪ Air input filters blocked.
F0578 Overtemperature on cell U8 IGBT module	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ DIx. ▪ Networks.	▪ Temperature on the cell heatsink above 90 °C. ▪ Ambient temperature too high (> 40 °C) and high output current. ▪ Fans locked or defective. ▪ Air input filters blocked.
F0579 Defective temperature sensor or undertemperature on cell U8 IGBT	▪ Contact WEG Service Center.	▪ Cell temperature measurement sensor defective. ▪ Cell temperature sensor disconnected. ▪ Temperature on the cell heatsink below -10 °C.

Fault/alarm	Reset	Possible causes
F0580 Cell U8 phase IGBT	▪ Contact WEG Service Center.	▪ Short circuit at the inverter output. ▪ Trigger board of the IGBTs of the cell phase arm disconnected. ▪ IGBTs of the cell phase arm operating out of the saturation region. ▪ IGBTs or trigger board of the cell phase arm defective. ▪ Fault on the desaturation signal feedback or gate-driver supply.
F0581 Cell U8 neutral IGBT	▪ Contact WEG Service Center.	▪ Short circuit at the inverter output. ▪ Trigger board of the IGBTs of the cell neutral arm disconnected. ▪ IGBTs of the cell neutral arm operating out of the saturation region. ▪ IGBTs or trigger board of the cell neutral arm defective. ▪ Fault on the desaturation signal feedback or gate-driver supply.
F0583 Cell U8 phase pulse feedback	▪ Contact WEG Service Center.	▪ Fault on the commutation of the IGBTs of the cell phase arm. ▪ Measurement circuit of the confirmation signal of the commutation of the IGBTs of the phase arm disconnected or defective. ▪ IGBTs or trigger board of the cell phase arm defective.
F0585 Cell U8 neutral pulse feedback	▪ Contact WEG Service Center.	▪ Fault on the confirmation of the commutation of the IGBTs of the cell neutral arm. ▪ Measurement circuit of the confirmation signal of the commutation of the IGBTs of the neutral arm disconnected or defective. ▪ IGBTs or trigger board of the cell neutral arm defective.
F0586 Cell U8 electronics power supply	▪ Contact WEG Service Center.	▪ Voltages of the internal electronic circuits of the cell out of the operation level. ▪ Defect on the cell power supply.
F0591 Cell U8 modulation synchronism	▪ Contact WEG Service Center.	▪ Fault in the synchronism between the MCC1 control board of the cell and the MVC3 main control.
F0592 Cell U8 bypass system	▪ Contact WEG Service Center.	▪ Fault in the operation of the cell bypass system. ▪ Bypass system is not connected or defective.
F0593 Communication with cell U8	▪ Contact WEG Service Center.	▪ Fault on the communication between the MCC1 control board of the cell and the MVC3 main control. ▪ Break or defect on the cell communication optic cable.
F0595 Incompatible cell U8 firmware	▪ Contact WEG Service Center.	▪ Firmware version of the MCC1 control board of the cell incompatible with the MVC3 main control.
F0596 Incompatible cell U8 model	▪ Contact WEG Service Center.	▪ Cell model incompatible or invalid with the inverter model.
F0597 Cell U8 insulation defective	▪ Contact WEG Service Center.	▪ Fault in the internal insulation of the cell: Contact between some energized point of the circuit and the frame. ▪ Fault on the capacitor discharge resistors of the cell DC link.
F0598 Firmware update or PLD cell U8	▪ Contact WEG Service Center.	▪ Fault in the update process of the processor firmware or in the reconfiguration of the cell PLD.

Fault/alarm	Reset	Possible causes
F0600 Cell V1 DC link overvoltage	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ DIx. ▪ Networks.	▪ Inverter input supply voltage too high. ▪ Incorrect setting of the inverter main transformer taps. ▪ Cell DC link voltage above 1200 V. ▪ Load inertia too high or deceleration ramp too short. ▪ Setting of P0151 too high.
F0601 Cell V1 DC link undervoltage	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ DIx. ▪ Networks.	▪ Inverter input supply voltage too low. ▪ Incorrect setting of the inverter main transformer taps. ▪ Cell DC link voltage below 745 V below 652 V for operation in vector control.
A0602 Overtemperature on cell V1 IGBT module	▪ Automatically eliminated when the temperature at the cell heatsink presents a value below 80 °C.	▪ Temperature on the cell heatsink above 85 °C. ▪ Ambient temperature too high (> 40 °C) and high output current. ▪ Fans locked or defective. ▪ Air input filters blocked.
F0603 Overtemperature on cell V1 IGBT module	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ DIx. ▪ Networks.	▪ Temperature on the cell heatsink above 90 °C. ▪ Ambient temperature too high (> 40 °C) and high output current. ▪ Fans locked or defective. ▪ Air input filters blocked.
F0604 Defective temperature sensor or undertemperature on cell V1 IGBT	▪ Contact WEG Service Center.	▪ Cell temperature measurement sensor defective. ▪ Cell temperature sensor disconnected. ▪ Temperature on the cell heatsink below -10 °C.
F0605 Cell V1 phase IGBT	▪ Contact WEG Service Center.	▪ Short circuit at the inverter output. ▪ Trigger board of the IGBTs of the cell phase arm disconnected. ▪ IGBTs of the cell phase arm operating out of the saturation region. ▪ IGBTs or trigger board of the cell phase arm defective. ▪ Fault on the desaturation signal feedback or gate-driver supply.
F0606 Cell V1 neutral IGBT	▪ Contact WEG Service Center.	▪ Short circuit at the inverter output. ▪ Trigger board of the IGBTs of the cell neutral arm disconnected. ▪ IGBTs of the cell neutral arm operating out of the saturation region. ▪ IGBTs or trigger board of the cell neutral arm defective. ▪ Fault on the desaturation signal feedback or gate-driver supply.
F0608 Cell V1 phase pulse feedback	▪ Contact WEG Service Center.	▪ Fault on the commutation of the IGBTs of the cell phase arm. ▪ Measurement circuit of the confirmation signal of the commutation of the IGBTs of the phase arm disconnected or defective. ▪ IGBTs or trigger board of the cell phase arm defective.
F0610 Cell V1 neutral pulse feedback	▪ Contact WEG Service Center.	▪ Fault on the confirmation of the commutation of the IGBTs of the cell neutral arm. ▪ Measurement circuit of the confirmation signal of the commutation of the IGBTs of the neutral arm disconnected or defective. ▪ IGBTs or trigger board of the cell neutral arm defective.

Fault/alarm	Reset	Possible causes
F0611 Cell V1 electronics power supply	▪ Contact WEG Service Center.	▪ Voltages of the internal electronic circuits of the cell out of the operation level. ▪ Defect on the cell power supply.
F0616 Cell V1 modulation synchronism	▪ Contact WEG Service Center.	▪ Fault in the synchronism between the MCC1 control board of the cell and the MVC3 main control.
F0617 Cell V1 bypass system	▪ Contact WEG Service Center.	▪ Fault in the operation of the cell bypass system. ▪ Bypass system is not connected or defective.
F0618 Communication with cell V1	▪ Contact WEG Service Center.	▪ Fault on the communication between the MCC1 control board of the cell and the MVC3 main control. ▪ Break or defect on the cell communication optic cable.
F0620 Incompatible cell V1 firmware	▪ Contact WEG Service Center.	▪ Firmware version of the MCC1 control board of the cell incompatible with the MVC3 main control.
F0621 Incompatible cell V1 model	▪ Contact WEG Service Center.	▪ Cell model incompatible or invalid with the inverter model.
F0622 Cell V1 insulation defective	▪ Contact WEG Service Center.	▪ Fault in the internal insulation of the cell: Contact between some energized point of the circuit and the frame. ▪ Fault on the capacitor discharge resistors of the cell DC link.
F0623 Firmware update or PLD cell V1	▪ Contact WEG Service Center.	▪ Fault in the update process of the processor firmware or in the reconfiguration of the cell PLD.
F0625 Cell V2 DC link overvoltage	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ Dlx. ▪ Networks.	▪ Inverter input supply voltage too high. ▪ Incorrect setting of the inverter main transformer taps. ▪ Cell DC link voltage above 1200 V. ▪ Load inertia too high or deceleration ramp too short. ▪ Setting of P0151 too high.
F0626 Cell V2 DC link undervoltage	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ Dlx. ▪ Networks.	▪ Inverter input supply voltage too low. ▪ Incorrect setting of the inverter main transformer taps. ▪ Cell DC link voltage below 745 V below 652 V for operation in vector control.
A0627 Overtemperature on cell V2 IGBT module	▪ Automatically eliminated when the temperature at the cell heatsink presents a value below 80 °C.	▪ Temperature on the cell heatsink above 85 °C. ▪ Ambient temperature too high (> 40 °C) and high output current. ▪ Fans locked or defective. ▪ Air input filters blocked.
F0628 Overtemperature on cell V2 IGBT module	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ Dlx. ▪ Networks.	▪ Temperature on the cell heatsink above 90 °C. ▪ Ambient temperature too high (> 40 °C) and high output current. ▪ Fans locked or defective. ▪ Air input filters blocked.
F0629 Defective temperature sensor or undertemperature on cell V2 IGBT	▪ Contact WEG Service Center.	▪ Cell temperature measurement sensor defective. ▪ Cell temperature sensor disconnected. ▪ Temperature on the cell heatsink below -10 °C.

Fault/alarm	Reset	Possible causes
F0630 Cell V2 phase IGBT	▪ Contact WEG Service Center.	▪ Short circuit at the inverter output. ▪ Trigger board of the IGBTs of the cell phase arm disconnected. ▪ IGBTs of the cell phase arm operating out of the saturation region. ▪ IGBTs or trigger board of the cell phase arm defective. ▪ Fault on the desaturation signal feedback or gate-driver supply.
F0631 Cell V2 neutral IGBT	▪ Contact WEG Service Center.	▪ Short circuit at the inverter output. ▪ Trigger board of the IGBTs of the cell neutral arm disconnected. ▪ IGBTs of the cell neutral arm operating out of the saturation region. ▪ IGBTs or trigger board of the cell neutral arm defective. ▪ Fault on the desaturation signal feedback or gate-driver supply.
F0633 Cell V2 phase pulse feedback	▪ Contact WEG Service Center.	▪ Fault on the commutation of the IGBTs of the cell phase arm. ▪ Measurement circuit of the confirmation signal of the commutation of the IGBTs of the phase arm disconnected or defective. ▪ IGBTs or trigger board of the cell phase arm defective.
F0635 Cell V2 neutral pulse feedback	▪ Contact WEG Service Center.	▪ Fault on the confirmation of the commutation of the IGBTs of the cell neutral arm. ▪ Measurement circuit of the confirmation signal of the commutation of the IGBTs of the neutral arm disconnected or defective. ▪ IGBTs or trigger board of the cell neutral arm defective.
F0636 Cell V2 electronics power supply	▪ Contact WEG Service Center.	▪ Voltages of the internal electronic circuits of the cell out of the operation level. ▪ Defect on the cell power supply.
F0641 Cell V2 modulation synchronism	▪ Contact WEG Service Center.	▪ Fault in the synchronism between the MCC1 control board of the cell and the MVC3 main control.
F0642 Cell V2 bypass system	▪ Contact WEG Service Center.	▪ Fault in the operation of the cell bypass system. ▪ Bypass system is not connected or defective.
F0643 Communication with cell V2	▪ Contact WEG Service Center.	▪ Fault on the communication between the MCC1 control board of the cell and the MVC3 main control. ▪ Break or defect on the cell communication optic cable.
F0645 Incompatible cell V2 firmware	▪ Contact WEG Service Center.	▪ Firmware version of the MCC1 control board of the cell incompatible with the MVC3 main control.
F0646 Incompatible cell V2 model	▪ Contact WEG Service Center.	▪ Cell model incompatible or invalid with the inverter model.
F0647 Cell V2 insulation defective	▪ Contact WEG Service Center.	▪ Fault in the internal insulation of the cell: Contact between some energized point of the circuit and the frame. ▪ Fault on the capacitor discharge resistors of the cell DC link.
F0648 Firmware update or PLD cell V2	▪ Contact WEG Service Center.	▪ Fault in the update process of the processor firmware or in the reconfiguration of the cell PLD.

Fault/alarm	Reset	Possible causes
F0650 Cell V3 DC link overvoltage	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ DIx. ▪ Networks.	▪ Inverter input supply voltage too high. ▪ Incorrect setting of the inverter main transformer taps. ▪ Cell DC link voltage above 1200 V. ▪ Load inertia too high or deceleration ramp too short. ▪ Setting of P0151 too high.
F0651 Cell V3 DC link undervoltage	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ DIx. ▪ Networks.	▪ Inverter input supply voltage too low. ▪ Incorrect setting of the inverter main transformer taps. ▪ Cell DC link voltage below 745 V below 652 V for operation in vector control.
A0652 Overtemperature on cell V3 IGBT module	▪ Automatically eliminated when the temperature at the cell heatsink presents a value below 80 °C.	▪ Temperature on the cell heatsink above 85 °C. ▪ Ambient temperature too high (> 40 °C) and high output current. ▪ Fans locked or defective. ▪ Air input filters blocked.
F0653 Overtemperature on cell V3 IGBT module	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ DIx. ▪ Networks.	▪ Temperature on the cell heatsink above 90 °C. ▪ Ambient temperature too high (> 40 °C) and high output current. ▪ Fans locked or defective. ▪ Air input filters blocked.
F0654 Defective temperature sensor or undertemperature on cell V3 IGBT	▪ Contact WEG Service Center.	▪ Cell temperature measurement sensor defective. ▪ Cell temperature sensor disconnected. ▪ Temperature on the cell heatsink below -10 °C.
F0655 Cell V3 phase IGBT	▪ Contact WEG Service Center.	▪ Short circuit at the inverter output. ▪ Trigger board of the IGBTs of the cell phase arm disconnected. ▪ IGBTs of the cell phase arm operating out of the saturation region. ▪ IGBTs or trigger board of the cell phase arm defective. ▪ Fault on the desaturation signal feedback or gate-driver supply.
F0656 Cell V3 neutral IGBT	▪ Contact WEG Service Center.	▪ Short circuit at the inverter output. ▪ Trigger board of the IGBTs of the cell neutral arm disconnected. ▪ IGBTs of the cell neutral arm operating out of the saturation region. ▪ IGBTs or trigger board of the cell neutral arm defective. ▪ Fault on the desaturation signal feedback or gate-driver supply.
F0658 Cell V3 phase pulse feedback	▪ Contact WEG Service Center.	▪ Fault on the commutation of the IGBTs of the cell phase arm. ▪ Measurement circuit of the confirmation signal of the commutation of the IGBTs of the phase arm disconnected or defective. ▪ IGBTs or trigger board of the cell phase arm defective.
F0660 Cell V3 neutral pulse feedback	▪ Contact WEG Service Center.	▪ Fault on the confirmation of the commutation of the IGBTs of the cell neutral arm. ▪ Measurement circuit of the confirmation signal of the commutation of the IGBTs of the neutral arm disconnected or defective. ▪ IGBTs or trigger board of the cell neutral arm defective.

Fault/alarm	Reset	Possible causes
F0661 Cell V3 electronics power supply	▪ Contact WEG Service Center.	▪ Voltages of the internal electronic circuits of the cell out of the operation level. ▪ Defect on the cell power supply.
F0666 Cell V3 modulation synchronism	▪ Contact WEG Service Center.	▪ Fault in the synchronism between the MCC1 control board of the cell and the MVC3 main control.
F0667 Cell V3 bypass system	▪ Contact WEG Service Center.	▪ Fault in the operation of the cell bypass system. ▪ Bypass system is not connected or defective.
F0668 Communication with cell V3	▪ Contact WEG Service Center.	▪ Fault on the communication between the MCC1 control board of the cell and the MVC3 main control. ▪ Break or defect on the cell communication optic cable.
F0670 Incompatible cell V3 firmware	▪ Contact WEG Service Center.	▪ Firmware version of the MCC1 control board of the cell incompatible with the MVC3 main control.
F0671 Incompatible cell V3 model	▪ Contact WEG Service Center.	▪ Cell model incompatible or invalid with the inverter model.
F0672 Cell V3 insulation defective	▪ Contact WEG Service Center.	▪ Fault in the internal insulation of the cell: Contact between some energized point of the circuit and the frame. ▪ Fault on the capacitor discharge resistors of the cell DC link.
F0673 Firmware update or PLD cell V3	▪ Contact WEG Service Center.	▪ Fault in the update process of the processor firmware or in the reconfiguration of the cell PLD.
F0675 Cell V4 DC link overvoltage	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ DIx. ▪ Networks.	▪ Inverter input supply voltage too high. ▪ Incorrect setting of the inverter main transformer taps. ▪ Cell DC link voltage above 1200 V. ▪ Load inertia too high or deceleration ramp too short. ▪ Setting of P0151 too high.
F0676 Cell V4 DC link undervoltage	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ DIx. ▪ Networks.	▪ Inverter input supply voltage too low. ▪ Incorrect setting of the inverter main transformer taps. ▪ Cell DC link voltage below 745 V below 652 V for operation in vector control.
A0677 Overtemperature on cell V4 IGBT module	▪ Automatically eliminated when the temperature at the cell heatsink presents a value below 80 °C.	▪ Temperature on the cell heatsink above 85 °C. ▪ Ambient temperature too high (> 40 °C) and high output current. ▪ Fans locked or defective. ▪ Air input filters blocked.
F0678 Overtemperature on cell V4 IGBT module	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ DIx. ▪ Networks.	▪ Temperature on the cell heatsink above 90 °C. ▪ Ambient temperature too high (> 40 °C) and high output current. ▪ Fans locked or defective. ▪ Air input filters blocked.
F0679 Defective temperature sensor or undertemperature on cell V4 IGBT	▪ Contact WEG Service Center.	▪ Cell temperature measurement sensor defective. ▪ Cell temperature sensor disconnected. ▪ Temperature on the cell heatsink below -10 °C.

Fault/alarm	Reset	Possible causes
F0680 Cell V4 phase IGBT	▪ Contact WEG Service Center.	▪ Short circuit at the inverter output. ▪ Trigger board of the IGBTs of the cell phase arm disconnected. ▪ IGBTs of the cell phase arm operating out of the saturation region. ▪ IGBTs or trigger board of the cell phase arm defective. ▪ Fault on the desaturation signal feedback or gate-driver supply.
F0681 Cell V4 neutral IGBT	▪ Contact WEG Service Center.	▪ Short circuit at the inverter output. ▪ Trigger board of the IGBTs of the cell neutral arm disconnected. ▪ IGBTs of the cell neutral arm operating out of the saturation region. ▪ IGBTs or trigger board of the cell neutral arm defective. ▪ Fault on the desaturation signal feedback or gate-driver supply.
F0683 Cell V4 phase pulse feedback	▪ Contact WEG Service Center.	▪ Fault on the commutation of the IGBTs of the cell phase arm. ▪ Measurement circuit of the confirmation signal of the commutation of the IGBTs of the phase arm disconnected or defective. ▪ IGBTs or trigger board of the cell phase arm defective.
F0685 Cell V4 neutral pulse feedback	▪ Contact WEG Service Center.	▪ Fault on the confirmation of the commutation of the IGBTs of the cell neutral arm. ▪ Measurement circuit of the confirmation signal of the commutation of the IGBTs of the neutral arm disconnected or defective. ▪ IGBTs or trigger board of the cell neutral arm defective.
F0686 Cell V4 electronics power supply	▪ Contact WEG Service Center.	▪ Voltages of the internal electronic circuits of the cell out of the operation level. ▪ Defect on the cell power supply.
F0691 Cell V4 modulation synchronism	▪ Contact WEG Service Center.	▪ Fault in the synchronism between the MCC1 control board of the cell and the MVC3 main control.
F0692 Cell V4 bypass system	▪ Contact WEG Service Center.	▪ Fault in the operation of the cell bypass system. ▪ Bypass system is not connected or defective.
F0693 Communication with cell V4	▪ Contact WEG Service Center.	▪ Fault on the communication between the MCC1 control board of the cell and the MVC3 main control. ▪ Break or defect on the cell communication optic cable.
F0695 Incompatible cell V4 firmware	▪ Contact WEG Service Center.	▪ Firmware version of the MCC1 control board of the cell incompatible with the MVC3 main control.
F0696 Incompatible cell V4 model	▪ Contact WEG Service Center.	▪ Cell model incompatible or invalid with the inverter model.
F0697 Cell V4 insulation defective	▪ Contact WEG Service Center.	▪ Fault in the internal insulation of the cell: Contact between some energized point of the circuit and the frame. ▪ Fault on the capacitor discharge resistors of the cell DC link.
F0698 Firmware update or PLD cell V4	▪ Contact WEG Service Center.	▪ Fault in the update process of the processor firmware or in the reconfiguration of the cell PLD.

Fault/alarm	Reset	Possible causes
F0700 Cell V5 DC link overvoltage	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ Dlx. ▪ Networks.	▪ Inverter input supply voltage too high. ▪ Incorrect setting of the inverter main transformer taps. ▪ Cell DC link voltage above 1200 V. ▪ Load inertia too high or deceleration ramp too short. ▪ Setting of P0151 too high.
F0701 Cell V5 DC link undervoltage	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ Dlx. ▪ Networks.	▪ Inverter input supply voltage too low. ▪ Incorrect setting of the inverter main transformer taps. ▪ Cell DC link voltage below 745 V below 652 V for operation in vector control.
A0702 Overtemperature on cell V5 IGBT module	▪ Automatically eliminated when the temperature at the cell heatsink presents a value below 80 °C.	▪ Temperature on the cell heatsink above 85 °C. ▪ Ambient temperature too high (> 40 °C) and high output current. ▪ Fans locked or defective. ▪ Air input filters blocked.
F0703 Overtemperature on cell V5 IGBT module	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ Dlx. ▪ Networks.	▪ Temperature on the cell heatsink above 90 °C. ▪ Ambient temperature too high (> 40 °C) and high output current. ▪ Fans locked or defective. ▪ Air input filters blocked.
F0704 Defective temperature sensor or undertemperature on cell V5 IGBT	▪ Contact WEG Service Center.	▪ Cell temperature measurement sensor defective. ▪ Cell temperature sensor disconnected. ▪ Temperature on the cell heatsink below -10 °C.
F0705 Cell V5 phase IGBT	▪ Contact WEG Service Center.	▪ Short circuit at the inverter output. ▪ Trigger board of the IGBTs of the cell phase arm disconnected. ▪ IGBTs of the cell phase arm operating out of the saturation region. ▪ IGBTs or trigger board of the cell phase arm defective. ▪ Fault on the desaturation signal feedback or gate-driver supply.
F0706 Cell V5 neutral IGBT	▪ Contact WEG Service Center.	▪ Short circuit at the inverter output. ▪ Trigger board of the IGBTs of the cell neutral arm disconnected. ▪ IGBTs of the cell neutral arm operating out of the saturation region. ▪ IGBTs or trigger board of the cell neutral arm defective. ▪ Fault on the desaturation signal feedback or gate-driver supply.
F0708 Cell V5 phase pulse feedback	▪ Contact WEG Service Center.	▪ Fault on the commutation of the IGBTs of the cell phase arm. ▪ Measurement circuit of the confirmation signal of the commutation of the IGBTs of the phase arm disconnected or defective. ▪ IGBTs or trigger board of the cell phase arm defective.
F0710 Cell V5 neutral pulse feedback	▪ Contact WEG Service Center.	▪ Fault on the confirmation of the commutation of the IGBTs of the cell neutral arm. ▪ Measurement circuit of the confirmation signal of the commutation of the IGBTs of the neutral arm disconnected or defective. ▪ IGBTs or trigger board of the cell neutral arm defective.

Fault/alarm	Reset	Possible causes
F0711 Cell V5 electronics power supply	▪ Contact WEG Service Center.	▪ Voltages of the internal electronic circuits of the cell out of the operation level. ▪ Defect on the cell power supply.
F0716 Cell V5 modulation synchronism	▪ Contact WEG Service Center.	▪ Fault in the synchronism between the MCC1 control board of the cell and the MVC3 main control.
F0717 Cell V5 bypass system	▪ Contact WEG Service Center.	▪ Fault in the operation of the cell bypass system. ▪ Bypass system is not connected or defective.
F0718 Communication with cell V5	▪ Contact WEG Service Center.	▪ Fault on the communication between the MCC1 control board of the cell and the MVC3 main control. ▪ Break or defect on the cell communication optic cable.
F0720 Incompatible cell V5 firmware	▪ Contact WEG Service Center.	▪ Firmware version of the MCC1 control board of the cell incompatible with the MVC3 main control.
F0721 Incompatible cell V5 model	▪ Contact WEG Service Center.	▪ Cell model incompatible or invalid with the inverter model.
F0722 Cell V5 insulation defective	▪ Contact WEG Service Center.	▪ Fault in the internal insulation of the cell: Contact between some energized point of the circuit and the frame. ▪ Fault on the capacitor discharge resistors of the cell DC link.
F0723 Firmware update or PLD cell V5	▪ Contact WEG Service Center.	▪ Fault in the update process of the processor firmware or in the reconfiguration of the cell PLD.
F0725 Cell V6 DC link overvoltage	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ DIx. ▪ Networks.	▪ Inverter input supply voltage too high. ▪ Incorrect setting of the inverter main transformer taps. ▪ Cell DC link voltage above 1200 V. ▪ Load inertia too high or deceleration ramp too short. ▪ Setting of P0151 too high.
F0726 Cell V6 DC link undervoltage	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ DIx. ▪ Networks.	▪ Inverter input supply voltage too low. ▪ Incorrect setting of the inverter main transformer taps. ▪ Cell DC link voltage below 745 V below 652 V for operation in vector control.
A0727 Overtemperature on cell V6 IGBT module	▪ Automatically eliminated when the temperature at the cell heatsink presents a value below 80 °C.	▪ Temperature on the cell heatsink above 85 °C. ▪ Ambient temperature too high (> 40 °C) and high output current. ▪ Fans locked or defective. ▪ Air input filters blocked.
F0728 Overtemperature on cell V6 IGBT module	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ DIx. ▪ Networks.	▪ Temperature on the cell heatsink above 90 °C. ▪ Ambient temperature too high (> 40 °C) and high output current. ▪ Fans locked or defective. ▪ Air input filters blocked.
F0729 Defective temperature sensor or undertemperature on cell V6 IGBT	▪ Contact WEG Service Center.	▪ Cell temperature measurement sensor defective. ▪ Cell temperature sensor disconnected. ▪ Temperature on the cell heatsink below -10 °C.

Fault/alarm	Reset	Possible causes
F0730 Cell V6 phase IGBT	▪ Contact WEG Service Center.	▪ Short circuit at the inverter output. ▪ Trigger board of the IGBTs of the cell phase arm disconnected. ▪ IGBTs of the cell phase arm operating out of the saturation region. ▪ IGBTs or trigger board of the cell phase arm defective. ▪ Fault on the desaturation signal feedback or gate-driver supply.
F0731 Cell V6 neutral IGBT	▪ Contact WEG Service Center.	▪ Short circuit at the inverter output. ▪ Trigger board of the IGBTs of the cell neutral arm disconnected. ▪ IGBTs of the cell neutral arm operating out of the saturation region. ▪ IGBTs or trigger board of the cell neutral arm defective. ▪ Fault on the desaturation signal feedback or gate-driver supply.
F0733 Cell V6 phase pulse feedback	▪ Contact WEG Service Center.	▪ Fault on the commutation of the IGBTs of the cell phase arm. ▪ Measurement circuit of the confirmation signal of the commutation of the IGBTs of the phase arm disconnected or defective. ▪ IGBTs or trigger board of the cell phase arm defective.
F0735 Cell V6 neutral pulse feedback	▪ Contact WEG Service Center.	▪ Fault on the confirmation of the commutation of the IGBTs of the cell neutral arm. ▪ Measurement circuit of the confirmation signal of the commutation of the IGBTs of the neutral arm disconnected or defective. ▪ IGBTs or trigger board of the cell neutral arm defective.
F0736 Cell V6 electronics power supply	▪ Contact WEG Service Center.	▪ Voltages of the internal electronic circuits of the cell out of the operation level. ▪ Defect on the cell power supply.
F0741 Cell V6 modulation synchronism	▪ Contact WEG Service Center.	▪ Fault in the synchronism between the MCC1 control board of the cell and the MVC3 main control.
F0742 Cell V6 bypass system	▪ Contact WEG Service Center.	▪ Fault in the operation of the cell bypass system. ▪ Bypass system is not connected or defective.
F0743 Communication with cell V6	▪ Contact WEG Service Center.	▪ Fault on the communication between the MCC1 control board of the cell and the MVC3 main control. ▪ Break or defect on the cell communication optic cable.
F0745 Incompatible cell V6 firmware	▪ Contact WEG Service Center.	▪ Firmware version of the MCC1 control board of the cell incompatible with the MVC3 main control.
F0746 Incompatible cell V6 model	▪ Contact WEG Service Center.	▪ Cell model incompatible or invalid with the inverter model.
F0747 Cell V6 insulation defective	▪ Contact WEG Service Center.	▪ Fault in the internal insulation of the cell: Contact between some energized point of the circuit and the frame. ▪ Fault on the capacitor discharge resistors of the cell DC link.
F0748 Firmware update or PLD cell V6	▪ Contact WEG Service Center.	▪ Fault in the update process of the processor firmware or in the reconfiguration of the cell PLD.

Fault/alarm	Reset	Possible causes
F0750 Cell V7 DC link overvoltage	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ DIx. ▪ Networks.	▪ Inverter input supply voltage too high. ▪ Incorrect setting of the inverter main transformer taps. ▪ Cell DC link voltage above 1200 V. ▪ Load inertia too high or deceleration ramp too short. ▪ Setting of P0151 too high.
F0751 Cell V7 DC link undervoltage	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ DIx. ▪ Networks.	▪ Inverter input supply voltage too low. ▪ Incorrect setting of the inverter main transformer taps. ▪ Cell DC link voltage below 745 V below 652 V for operation in vector control.
A0752 Overtemperature on cell V7 IGBT module	▪ Automatically eliminated when the temperature at the cell heatsink presents a value below 80 °C.	▪ Temperature on the cell heatsink above 85 °C. ▪ Ambient temperature too high (> 40 °C) and high output current. ▪ Fans locked or defective. ▪ Air input filters blocked.
F0753 Overtemperature on cell V7 IGBT module	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ DIx. ▪ Networks.	▪ Temperature on the cell heatsink above 90 °C. ▪ Ambient temperature too high (> 40 °C) and high output current. ▪ Fans locked or defective. ▪ Air input filters blocked.
F0754 Defective temperature sensor or undertemperature on cell V7 IGBT	▪ Contact WEG Service Center.	▪ Cell temperature measurement sensor defective. ▪ Cell temperature sensor disconnected. ▪ Temperature on the cell heatsink below -10 °C.
F0755 Cell V7 phase IGBT	▪ Contact WEG Service Center.	▪ Short circuit at the inverter output. ▪ Trigger board of the IGBTs of the cell phase arm disconnected. ▪ IGBTs of the cell phase arm operating out of the saturation region. ▪ IGBTs or trigger board of the cell phase arm defective. ▪ Fault on the desaturation signal feedback or gate-driver supply.
F0756 Cell V7 neutral IGBT	▪ Contact WEG Service Center.	▪ Short circuit at the inverter output. ▪ Trigger board of the IGBTs of the cell neutral arm disconnected. ▪ IGBTs of the cell neutral arm operating out of the saturation region. ▪ IGBTs or trigger board of the cell neutral arm defective. ▪ Fault on the desaturation signal feedback or gate-driver supply.
F0758 Cell V7 phase pulse feedback	▪ Contact WEG Service Center.	▪ Fault on the commutation of the IGBTs of the cell phase arm. ▪ Measurement circuit of the confirmation signal of the commutation of the IGBTs of the phase arm disconnected or defective. ▪ IGBTs or trigger board of the cell phase arm defective.
F0760 Cell V7 neutral pulse feedback	▪ Contact WEG Service Center.	▪ Fault on the confirmation of the commutation of the IGBTs of the cell neutral arm. ▪ Measurement circuit of the confirmation signal of the commutation of the IGBTs of the neutral arm disconnected or defective. ▪ IGBTs or trigger board of the cell neutral arm defective.

Fault/alarm	Reset	Possible causes
F0761 Cell V7 electronics power supply	▪ Contact WEG Service Center.	▪ Voltages of the internal electronic circuits of the cell out of the operation level. ▪ Defect on the cell power supply.
F0766 Cell V7 modulation synchronism	▪ Contact WEG Service Center.	▪ Fault in the synchronism between the MCC1 control board of the cell and the MVC3 main control.
F0767 Cell V7 bypass system	▪ Contact WEG Service Center.	▪ Fault in the operation of the cell bypass system. ▪ Bypass system is not connected or defective.
F0768 Communication with cell V7	▪ Contact WEG Service Center.	▪ Fault on the communication between the MCC1 control board of the cell and the MVC3 main control. ▪ Break or defect on the cell communication optic cable.
F0770 Incompatible cell V7 firmware	▪ Contact WEG Service Center.	▪ Firmware version of the MCC1 control board of the cell incompatible with the MVC3 main control.
F0771 Incompatible cell V7 model	▪ Contact WEG Service Center.	▪ Cell model incompatible or invalid with the inverter model.
F0772 Cell V7 insulation defective	▪ Contact WEG Service Center.	▪ Fault in the internal insulation of the cell: Contact between some energized point of the circuit and the frame. ▪ Fault on the capacitor discharge resistors of the cell DC link.
F0773 Firmware update or PLD cell V7	▪ Contact WEG Service Center.	▪ Fault in the update process of the processor firmware or in the reconfiguration of the cell PLD.
F0775 Cell V8 DC link overvoltage	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ Dlx. ▪ Networks.	▪ Inverter input supply voltage too high. ▪ Incorrect setting of the inverter main transformer taps. ▪ Cell DC link voltage above 1200 V. ▪ Load inertia too high or deceleration ramp too short. ▪ Setting of P0151 too high.
F0776 Cell V8 DC link undervoltage	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ Dlx. ▪ Networks.	▪ Inverter input supply voltage too low. ▪ Incorrect setting of the inverter main transformer taps. ▪ Cell DC link voltage below 745 V below 652 V for operation in vector control.
A0777 Overtemperature on cell V8 IGBT module	▪ Automatically eliminated when the temperature at the cell heatsink presents a value below 80 °C.	▪ Temperature on the cell heatsink above 85 °C. ▪ Ambient temperature too high (> 40 °C) and high output current. ▪ Fans locked or defective. ▪ Air input filters blocked.
F0778 Overtemperature on cell V8 IGBT module	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ Dlx. ▪ Networks.	▪ Temperature on the cell heatsink above 90 °C. ▪ Ambient temperature too high (> 40 °C) and high output current. ▪ Fans locked or defective. ▪ Air input filters blocked.
F0779 Defective temperature sensor or undertemperature on cell V8 IGBT	▪ Contact WEG Service Center.	▪ Cell temperature measurement sensor defective. ▪ Cell temperature sensor disconnected. ▪ Temperature on the cell heatsink below -10 °C.

Fault/alarm	Reset	Possible causes
F0780 Cell V8 phase IGBT	▪ Contact WEG Service Center.	▪ Short circuit at the inverter output. ▪ Trigger board of the IGBTs of the cell phase arm disconnected. ▪ IGBTs of the cell phase arm operating out of the saturation region. ▪ IGBTs or trigger board of the cell phase arm defective. ▪ Fault on the desaturation signal feedback or gate-driver supply.
F0781 Cell V8 neutral IGBT	▪ Contact WEG Service Center.	▪ Short circuit at the inverter output. ▪ Trigger board of the IGBTs of the cell neutral arm disconnected. ▪ IGBTs of the cell neutral arm operating out of the saturation region. ▪ IGBTs or trigger board of the cell neutral arm defective. ▪ Fault on the desaturation signal feedback or gate-driver supply.
F0783 Cell V8 phase pulse feedback	▪ Contact WEG Service Center.	▪ Fault on the commutation of the IGBTs of the cell phase arm. ▪ Measurement circuit of the confirmation signal of the commutation of the IGBTs of the phase arm disconnected or defective. ▪ IGBTs or trigger board of the cell phase arm defective.
F0785 Cell V8 neutral pulse feedback	▪ Contact WEG Service Center.	▪ Fault on the confirmation of the commutation of the IGBTs of the cell neutral arm. ▪ Measurement circuit of the confirmation signal of the commutation of the IGBTs of the neutral arm disconnected or defective. ▪ IGBTs or trigger board of the cell neutral arm defective.
F0786 Cell V8 electronics power supply	▪ Contact WEG Service Center.	▪ Voltages of the internal electronic circuits of the cell out of the operation level. ▪ Defect on the cell power supply.
F0791 Cell V8 modulation synchronism	▪ Contact WEG Service Center.	▪ Fault in the synchronism between the MCC1 control board of the cell and the MVC3 main control.
F0792 Cell V8 bypass system	▪ Contact WEG Service Center.	▪ Fault in the operation of the cell bypass system. ▪ Bypass system is not connected or defective.
F0793 Communication with cell V8	▪ Contact WEG Service Center.	▪ Fault on the communication between the MCC1 control board of the cell and the MVC3 main control. ▪ Break or defect on the cell communication optic cable.
F0795 Incompatible cell V8 firmware	▪ Contact WEG Service Center.	▪ Firmware version of the MCC1 control board of the cell incompatible with the MVC3 main control.
F0796 Incompatible cell V8 model	▪ Contact WEG Service Center.	▪ Cell model incompatible or invalid with the inverter model.
F0797 Cell V8 insulation defective	▪ Contact WEG Service Center.	▪ Fault in the internal insulation of the cell: Contact between some energized point of the circuit and the frame. ▪ Fault on the capacitor discharge resistors of the cell DC link.
F0798 Firmware update or PLD cell V8	▪ Contact WEG Service Center.	▪ Fault in the update process of the processor firmware or in the reconfiguration of the cell PLD.

Fault/alarm	Reset	Possible causes
F0800 Cell W1 DC link overvoltage	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ Dlx. ▪ Networks.	▪ Inverter input supply voltage too high. ▪ Incorrect setting of the inverter main transformer taps. ▪ Cell DC link voltage above 1200 V. ▪ Load inertia too high or deceleration ramp too short. ▪ Setting of P0151 too high.
F0801 Cell W1 DC link undervoltage	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ Dlx. ▪ Networks.	▪ Inverter input supply voltage too low. ▪ Incorrect setting of the inverter main transformer taps. ▪ Cell DC link voltage below 745 V below 652 V for operation in vector control.
A0802 Overtemperature on cell W1 IGBT module	▪ Automatically eliminated when the temperature at the cell heatsink presents a value below 80 °C.	▪ Temperature on the cell heatsink above 85 °C. ▪ Ambient temperature too high (> 40 °C) and high output current. ▪ Fans locked or defective. ▪ Air input filters blocked.
F0803 Overtemperature on cell W1 IGBT module	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ Dlx. ▪ Networks.	▪ Temperature on the cell heatsink above 90 °C. ▪ Ambient temperature too high (> 40 °C) and high output current. ▪ Fans locked or defective. ▪ Air input filters blocked.
F0804 Defective temperature sensor or undertemperature on cell W1 IGBT	▪ Contact WEG Service Center.	▪ Cell temperature measurement sensor defective. ▪ Cell temperature sensor disconnected. ▪ Temperature on the cell heatsink below -10 °C.
F0805 Cell W1 phase IGBT	▪ Contact WEG Service Center.	▪ Short circuit at the inverter output. ▪ Trigger board of the IGBTs of the cell phase arm disconnected. ▪ IGBTs of the cell phase arm operating out of the saturation region. ▪ IGBTs or trigger board of the cell phase arm defective. ▪ Fault on the desaturation signal feedback or gate-driver supply.
F0806 Cell W1 neutral IGBT	▪ Contact WEG Service Center.	▪ Short circuit at the inverter output. ▪ Trigger board of the IGBTs of the cell neutral arm disconnected. ▪ IGBTs of the cell neutral arm operating out of the saturation region. ▪ IGBTs or trigger board of the cell neutral arm defective. ▪ Fault on the desaturation signal feedback or gate-driver supply.
F0808 Cell W1 phase pulse feedback	▪ Contact WEG Service Center.	▪ Fault on the commutation of the IGBTs of the cell phase arm. ▪ Measurement circuit of the confirmation signal of the commutation of the IGBTs of the phase arm disconnected or defective. ▪ IGBTs or trigger board of the cell phase arm defective.
F0810 Cell W1 neutral pulse feedback	▪ Contact WEG Service Center.	▪ Fault on the confirmation of the commutation of the IGBTs of the cell neutral arm. ▪ Measurement circuit of the confirmation signal of the commutation of the IGBTs of the neutral arm disconnected or defective. ▪ IGBTs or trigger board of the cell neutral arm defective.

Fault/alarm	Reset	Possible causes
F0811 Cell W1 electronics power supply	▪ Contact WEG Service Center.	▪ Voltages of the internal electronic circuits of the cell out of the operation level. ▪ Defect on the cell power supply.
F0816 Cell W1 modulation synchronism	▪ Contact WEG Service Center.	▪ Fault in the synchronism between the MCC1 control board of the cell and the MVC3 main control.
F0817 Cell W1 bypass system	▪ Contact WEG Service Center.	▪ Fault in the operation of the cell bypass system. ▪ Bypass system is not connected or defective.
F0818 Communication with cell W1	▪ Contact WEG Service Center.	▪ Fault on the communication between the MCC1 control board of the cell and the MVC3 main control. ▪ Break or defect on the cell communication optic cable.
F0820 Incompatible cell W1 firmware	▪ Contact WEG Service Center.	▪ Firmware version of the MCC1 control board of the cell incompatible with the MVC3 main control.
F0821 Incompatible cell W1 model	▪ Contact WEG Service Center.	▪ Cell model incompatible or invalid with the inverter model.
F0822 Cell W1 insulation defective	▪ Contact WEG Service Center.	▪ Fault in the internal insulation of the cell: Contact between some energized point of the circuit and the frame. ▪ Fault on the capacitor discharge resistors of the cell DC link.
F0823 Firmware update or PLD cell W1	▪ Contact WEG Service Center.	▪ Fault in the update process of the processor firmware or in the reconfiguration of the cell PLD.
F0825 Cell W2 DC link overvoltage	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ Dlx. ▪ Networks.	▪ Inverter input supply voltage too high. ▪ Incorrect setting of the inverter main transformer taps. ▪ Cell DC link voltage above 1200 V. ▪ Load inertia too high or deceleration ramp too short. ▪ Setting of P0151 too high.
F0826 Cell W2 DC link undervoltage	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ Dlx. ▪ Networks.	▪ Inverter input supply voltage too low. ▪ Incorrect setting of the inverter main transformer taps. ▪ Cell DC link voltage below 745 V below 652 V for operation in vector control.
A0827 Overtemperature on cell W2 IGBT module	▪ Automatically eliminated when the temperature at the cell heatsink presents a value below 80 °C.	▪ Temperature on the cell heatsink above 85 °C. ▪ Ambient temperature too high (> 40 °C) and high output current. ▪ Fans locked or defective. ▪ Air input filters blocked.
F0828 Overtemperature on cell W2 IGBT module	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ Dlx. ▪ Networks.	▪ Temperature on the cell heatsink above 90 °C. ▪ Ambient temperature too high (> 40 °C) and high output current. ▪ Fans locked or defective. ▪ Air input filters blocked.
F0829 Defective temperature sensor or undertemperature on cell W2 IGBT	▪ Contact WEG Service Center.	▪ Cell temperature measurement sensor defective. ▪ Cell temperature sensor disconnected. ▪ Temperature on the cell heatsink below -10 °C.

Fault/alarm	Reset	Possible causes
F0830 Cell W2 phase IGBT	▪ Contact WEG Service Center.	▪ Short circuit at the inverter output. ▪ Trigger board of the IGBTs of the cell phase arm disconnected. ▪ IGBTs of the cell phase arm operating out of the saturation region. ▪ IGBTs or trigger board of the cell phase arm defective. ▪ Fault on the desaturation signal feedback or gate-driver supply.
F0831 Cell W2 neutral IGBT	▪ Contact WEG Service Center.	▪ Short circuit at the inverter output. ▪ Trigger board of the IGBTs of the cell neutral arm disconnected. ▪ IGBTs of the cell neutral arm operating out of the saturation region. ▪ IGBTs or trigger board of the cell neutral arm defective. ▪ Fault on the desaturation signal feedback or gate-driver supply.
F0833 Cell W2 phase pulse feedback	▪ Contact WEG Service Center.	▪ Fault on the commutation of the IGBTs of the cell phase arm. ▪ Measurement circuit of the confirmation signal of the commutation of the IGBTs of the phase arm disconnected or defective. ▪ IGBTs or trigger board of the cell phase arm defective.
F0835 Cell W2 neutral pulse feedback	▪ Contact WEG Service Center.	▪ Fault on the confirmation of the commutation of the IGBTs of the cell neutral arm. ▪ Measurement circuit of the confirmation signal of the commutation of the IGBTs of the neutral arm disconnected or defective. ▪ IGBTs or trigger board of the cell neutral arm defective.
F0836 Cell W2 electronics power supply	▪ Contact WEG Service Center.	▪ Voltages of the internal electronic circuits of the cell out of the operation level. ▪ Defect on the cell power supply.
F0841 Cell W2 modulation synchronism	▪ Contact WEG Service Center.	▪ Fault in the synchronism between the MCC1 control board of the cell and the MVC3 main control.
F0842 Cell W2 bypass system	▪ Contact WEG Service Center.	▪ Fault in the operation of the cell bypass system. ▪ Bypass system is not connected or defective.
F0843 Communication with cell W2	▪ Contact WEG Service Center.	▪ Fault on the communication between the MCC1 control board of the cell and the MVC3 main control. ▪ Break or defect on the cell communication optic cable.
F0845 Incompatible cell W2 firmware	▪ Contact WEG Service Center.	▪ Firmware version of the MCC1 control board of the cell incompatible with the MVC3 main control.
F0846 Incompatible cell W2 model	▪ Contact WEG Service Center.	▪ Cell model incompatible or invalid with the inverter model.
F0847 Cell W2 insulation defective	▪ Contact WEG Service Center.	▪ Fault in the internal insulation of the cell: Contact between some energized point of the circuit and the frame. ▪ Fault on the capacitor discharge resistors of the cell DC link.
F0848 Firmware update or PLD cell W2	▪ Contact WEG Service Center.	▪ Fault in the update process of the processor firmware or in the reconfiguration of the cell PLD.

Fault/alarm	Reset	Possible causes
F0850 Cell W3 DC link overvoltage	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ DIx. ▪ Networks.	▪ Inverter input supply voltage too high. ▪ Incorrect setting of the inverter main transformer taps. ▪ Cell DC link voltage above 1200 V. ▪ Load inertia too high or deceleration ramp too short. ▪ Setting of P0151 too high.
F0851 Cell W3 DC link undervoltage	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ DIx. ▪ Networks.	▪ Inverter input supply voltage too low. ▪ Incorrect setting of the inverter main transformer taps. ▪ Cell DC link voltage below 745 V below 652 V for operation in vector control.
A0852 Overtemperature on cell W3 IGBT module	▪ Automatically eliminated when the temperature at the cell heatsink presents a value below 80 °C.	▪ Temperature on the cell heatsink above 85 °C. ▪ Ambient temperature too high (> 40 °C) and high output current. ▪ Fans locked or defective. ▪ Air input filters blocked.
F0853 Overtemperature on cell W3 IGBT module	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ DIx. ▪ Networks.	▪ Temperature on the cell heatsink above 90 °C. ▪ Ambient temperature too high (> 40 °C) and high output current. ▪ Fans locked or defective. ▪ Air input filters blocked.
F0854 Defective temperature sensor or undertemperature on cell W3 IGBT	▪ Contact WEG Service Center.	▪ Cell temperature measurement sensor defective. ▪ Cell temperature sensor disconnected. ▪ Temperature on the cell heatsink below -10 °C.
F0855 Cell W3 phase IGBT	▪ Contact WEG Service Center.	▪ Short circuit at the inverter output. ▪ Trigger board of the IGBTs of the cell phase arm disconnected. ▪ IGBTs of the cell phase arm operating out of the saturation region. ▪ IGBTs or trigger board of the cell phase arm defective. ▪ Fault on the desaturation signal feedback or gate-driver supply.
F0856 Cell W3 neutral IGBT	▪ Contact WEG Service Center.	▪ Short circuit at the inverter output. ▪ Trigger board of the IGBTs of the cell neutral arm disconnected. ▪ IGBTs of the cell neutral arm operating out of the saturation region. ▪ IGBTs or trigger board of the cell neutral arm defective. ▪ Fault on the desaturation signal feedback or gate-driver supply.
F0858 Cell W3 phase pulse feedback	▪ Contact WEG Service Center.	▪ Fault on the commutation of the IGBTs of the cell phase arm. ▪ Measurement circuit of the confirmation signal of the commutation of the IGBTs of the phase arm disconnected or defective. ▪ IGBTs or trigger board of the cell phase arm defective.
F0860 Cell W3 neutral pulse feedback	▪ Contact WEG Service Center.	▪ Fault on the confirmation of the commutation of the IGBTs of the cell neutral arm. ▪ Measurement circuit of the confirmation signal of the commutation of the IGBTs of the neutral arm disconnected or defective. ▪ IGBTs or trigger board of the cell neutral arm defective.

Fault/alarm	Reset	Possible causes
F0861 Cell W3 electronics power supply	▪ Contact WEG Service Center.	▪ Voltages of the internal electronic circuits of the cell out of the operation level. ▪ Defect on the cell power supply.
F0866 Cell W3 modulation synchronism	▪ Contact WEG Service Center.	▪ Fault in the synchronism between the MCC1 control board of the cell and the MVC3 main control.
F0867 Cell W3 bypass system	▪ Contact WEG Service Center.	▪ Fault in the operation of the cell bypass system. ▪ Bypass system is not connected or defective.
F0868 Communication with cell W3	▪ Contact WEG Service Center.	▪ Fault on the communication between the MCC1 control board of the cell and the MVC3 main control. ▪ Break or defect on the cell communication optic cable.
F0870 Incompatible cell W3 firmware	▪ Contact WEG Service Center.	▪ Firmware version of the MCC1 control board of the cell incompatible with the MVC3 main control.
F0871 Incompatible cell W3 model	▪ Contact WEG Service Center.	▪ Cell model incompatible or invalid with the inverter model.
F0872 Cell W3 insulation defective	▪ Contact WEG Service Center.	▪ Fault in the internal insulation of the cell: Contact between some energized point of the circuit and the frame. ▪ Fault on the capacitor discharge resistors of the cell DC link.
F0873 Firmware update or PLD cell W3	▪ Contact WEG Service Center.	▪ Fault in the update process of the processor firmware or in the reconfiguration of the cell PLD.
F0875 Cell W4 DC link overvoltage	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ Dlx. ▪ Networks.	▪ Inverter input supply voltage too high. ▪ Incorrect setting of the inverter main transformer taps. ▪ Cell DC link voltage above 1200 V. ▪ Load inertia too high or deceleration ramp too short. ▪ Setting of P0151 too high.
F0876 Cell W4 DC link undervoltage	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ Dlx. ▪ Networks.	▪ Inverter input supply voltage too low. ▪ Incorrect setting of the inverter main transformer taps. ▪ Cell DC link voltage below 745 V below 652 V for operation in vector control.
A0877 Overtemperature on cell W4 IGBT module	▪ Automatically eliminated when the temperature at the cell heatsink presents a value below 80 °C.	▪ Temperature on the cell heatsink above 85 °C. ▪ Ambient temperature too high (> 40 °C) and high output current. ▪ Fans locked or defective. ▪ Air input filters blocked.
F0878 Overtemperature on cell W4 IGBT module	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ Dlx. ▪ Networks.	▪ Temperature on the cell heatsink above 90 °C. ▪ Ambient temperature too high (> 40 °C) and high output current. ▪ Fans locked or defective. ▪ Air input filters blocked.
F0879 Defective temperature sensor or undertemperature on cell W4 IGBT	▪ Contact WEG Service Center.	▪ Cell temperature measurement sensor defective. ▪ Cell temperature sensor disconnected. ▪ Temperature on the cell heatsink below -10 °C.

Fault/alarm	Reset	Possible causes
F0880 Cell W4 phase IGBT	▪ Contact WEG Service Center.	▪ Short circuit at the inverter output. ▪ Trigger board of the IGBTs of the cell phase arm disconnected. ▪ IGBTs of the cell phase arm operating out of the saturation region. ▪ IGBTs or trigger board of the cell phase arm defective. ▪ Fault on the desaturation signal feedback or gate-driver supply.
F0881 Cell W4 neutral IGBT	▪ Contact WEG Service Center.	▪ Short circuit at the inverter output. ▪ Trigger board of the IGBTs of the cell neutral arm disconnected. ▪ IGBTs of the cell neutral arm operating out of the saturation region. ▪ IGBTs or trigger board of the cell neutral arm defective. ▪ Fault on the desaturation signal feedback or gate-driver supply.
F0883 Cell W4 phase pulse feedback	▪ Contact WEG Service Center.	▪ Fault on the commutation of the IGBTs of the cell phase arm. ▪ Measurement circuit of the confirmation signal of the commutation of the IGBTs of the phase arm disconnected or defective. ▪ IGBTs or trigger board of the cell phase arm defective.
F0885 Cell W4 neutral pulse feedback	▪ Contact WEG Service Center.	▪ Fault on the confirmation of the commutation of the IGBTs of the cell neutral arm. ▪ Measurement circuit of the confirmation signal of the commutation of the IGBTs of the neutral arm disconnected or defective. ▪ IGBTs or trigger board of the cell neutral arm defective.
F0886 Cell W4 electronics power supply	▪ Contact WEG Service Center.	▪ Voltages of the internal electronic circuits of the cell out of the operation level. ▪ Defect on the cell power supply.
F0891 Cell W4 modulation synchronism	▪ Contact WEG Service Center.	▪ Fault in the synchronism between the MCC1 control board of the cell and the MVC3 main control.
F0892 Cell W4 bypass system	▪ Contact WEG Service Center.	▪ Fault in the operation of the cell bypass system. ▪ Bypass system is not connected or defective.
F0893 Communication with cell W4	▪ Contact WEG Service Center.	▪ Fault on the communication between the MCC1 control board of the cell and the MVC3 main control. ▪ Break or defect on the cell communication optic cable.
F0895 Incompatible cell W4 firmware	▪ Contact WEG Service Center.	▪ Firmware version of the MCC1 control board of the cell incompatible with the MVC3 main control.
F0896 Incompatible cell W4 model	▪ Contact WEG Service Center.	▪ Cell model incompatible or invalid with the inverter model.
F0897 Cell W4 insulation defective	▪ Contact WEG Service Center.	▪ Fault in the internal insulation of the cell: Contact between some energized point of the circuit and the frame. ▪ Fault on the capacitor discharge resistors of the cell DC link.
F0898 Firmware update or PLD cell W4	▪ Contact WEG Service Center.	▪ Fault in the update process of the processor firmware or in the reconfiguration of the cell PLD.

Fault/alarm	Reset	Possible causes
F0900 Cell W5 DC link overvoltage	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ Dlx. ▪ Networks.	▪ Inverter input supply voltage too high. ▪ Incorrect setting of the inverter main transformer taps. ▪ Cell DC link voltage above 1200 V. ▪ Load inertia too high or deceleration ramp too short. ▪ Setting of P0151 too high.
F0901 Cell W5 DC link undervoltage	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ Dlx. ▪ Networks.	▪ Inverter input supply voltage too low. ▪ Incorrect setting of the inverter main transformer taps. ▪ Cell DC link voltage below 745 V below 652 V for operation in vector control.
A0902 Overtemperature on cell W5 IGBT module	▪ Automatically eliminated when the temperature at the cell heatsink presents a value below 80 °C.	▪ Temperature on the cell heatsink above 85 °C. ▪ Ambient temperature too high (> 40 °C) and high output current. ▪ Fans locked or defective. ▪ Air input filters blocked.
F0903 Overtemperature on cell W5 IGBT module	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ Dlx. ▪ Networks.	▪ Temperature on the cell heatsink above 90 °C. ▪ Ambient temperature too high (> 40 °C) and high output current. ▪ Fans locked or defective. ▪ Air input filters blocked.
F0904 Defective temperature sensor or undertemperature on cell W5 IGBT	▪ Contact WEG Service Center.	▪ Cell temperature measurement sensor defective. ▪ Cell temperature sensor disconnected. ▪ Temperature on the cell heatsink below -10 °C.
F0905 Cell W5 phase IGBT	▪ Contact WEG Service Center.	▪ Short circuit at the inverter output. ▪ Trigger board of the IGBTs of the cell phase arm disconnected. ▪ IGBTs of the cell phase arm operating out of the saturation region. ▪ IGBTs or trigger board of the cell phase arm defective. ▪ Fault on the desaturation signal feedback or gate-driver supply.
F0906 Cell W5 neutral IGBT	▪ Contact WEG Service Center.	▪ Short circuit at the inverter output. ▪ Trigger board of the IGBTs of the cell neutral arm disconnected. ▪ IGBTs of the cell neutral arm operating out of the saturation region. ▪ IGBTs or trigger board of the cell neutral arm defective. ▪ Fault on the desaturation signal feedback or gate-driver supply.
F0908 Cell W5 phase pulse feedback	▪ Contact WEG Service Center.	▪ Fault on the commutation of the IGBTs of the cell phase arm. ▪ Measurement circuit of the confirmation signal of the commutation of the IGBTs of the phase arm disconnected or defective. ▪ IGBTs or trigger board of the cell phase arm defective.
F0910 Cell W5 neutral pulse feedback	▪ Contact WEG Service Center.	▪ Fault on the confirmation of the commutation of the IGBTs of the cell neutral arm. ▪ Measurement circuit of the confirmation signal of the commutation of the IGBTs of the neutral arm disconnected or defective. ▪ IGBTs or trigger board of the cell neutral arm defective.

Fault/alarm	Reset	Possible causes
F0911 Cell W5 electronics power supply	▪ Contact WEG Service Center.	▪ Voltages of the internal electronic circuits of the cell out of the operation level. ▪ Defect on the cell power supply.
F0916 Cell W5 modulation synchronism	▪ Contact WEG Service Center.	▪ Fault in the synchronism between the MCC1 control board of the cell and the MVC3 main control.
F0917 Cell W5 bypass system	▪ Contact WEG Service Center.	▪ Fault in the operation of the cell bypass system. ▪ Bypass system is not connected or defective.
F0918 Communication with cell W5	▪ Contact WEG Service Center.	▪ Fault on the communication between the MCC1 control board of the cell and the MVC3 main control. ▪ Break or defect on the cell communication optic cable.
F0920 Incompatible cell W5 firmware	▪ Contact WEG Service Center.	▪ Firmware version of the MCC1 control board of the cell incompatible with the MVC3 main control.
F0921 Incompatible cell W5 model	▪ Contact WEG Service Center.	▪ Cell model incompatible or invalid with the inverter model.
F0922 Cell W5 insulation defective	▪ Contact WEG Service Center.	▪ Fault in the internal insulation of the cell: Contact between some energized point of the circuit and the frame. ▪ Fault on the capacitor discharge resistors of the cell DC link.
F0923 Firmware update or PLD cell W5	▪ Contact WEG Service Center.	▪ Fault in the update process of the processor firmware or in the reconfiguration of the cell PLD.
F0925 Cell W6 DC link overvoltage	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ DIx. ▪ Networks.	▪ Inverter input supply voltage too high. ▪ Incorrect setting of the inverter main transformer taps. ▪ Cell DC link voltage above 1200 V. ▪ Load inertia too high or deceleration ramp too short. ▪ Setting of P0151 too high.
F0926 Cell W6 DC link undervoltage	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ DIx. ▪ Networks.	▪ Inverter input supply voltage too low. ▪ Incorrect setting of the inverter main transformer taps. ▪ Cell DC link voltage below 745 V below 652 V for operation in vector control.
A0927 Overtemperature on cell W6 IGBT module	▪ Automatically eliminated when the temperature at the cell heatsink presents a value below 80 °C.	▪ Temperature on the cell heatsink above 85 °C. ▪ Ambient temperature too high (> 40 °C) and high output current. ▪ Fans locked or defective. ▪ Air input filters blocked.
F0928 Overtemperature on cell W6 IGBT module	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ DIx. ▪ Networks.	▪ Temperature on the cell heatsink above 90 °C. ▪ Ambient temperature too high (> 40 °C) and high output current. ▪ Fans locked or defective. ▪ Air input filters blocked.
F0929 Defective temperature sensor or undertemperature on cell W6 IGBT	▪ Contact WEG Service Center.	▪ Cell temperature measurement sensor defective. ▪ Cell temperature sensor disconnected. ▪ Temperature on the cell heatsink below -10 °C.

Fault/alarm	Reset	Possible causes
F0930 Cell W6 phase IGBT	▪ Contact WEG Service Center.	▪ Short circuit at the inverter output. ▪ Trigger board of the IGBTs of the cell phase arm disconnected. ▪ IGBTs of the cell phase arm operating out of the saturation region. ▪ IGBTs or trigger board of the cell phase arm defective. ▪ Fault on the desaturation signal feedback or gate-driver supply.
F0931 Cell W6 neutral IGBT	▪ Contact WEG Service Center.	▪ Short circuit at the inverter output. ▪ Trigger board of the IGBTs of the cell neutral arm disconnected. ▪ IGBTs of the cell neutral arm operating out of the saturation region. ▪ IGBTs or trigger board of the cell neutral arm defective. ▪ Fault on the desaturation signal feedback or gate-driver supply.
F0933 Cell W6 phase pulse feedback	▪ Contact WEG Service Center.	▪ Fault on the commutation of the IGBTs of the cell phase arm. ▪ Measurement circuit of the confirmation signal of the commutation of the IGBTs of the phase arm disconnected or defective. ▪ IGBTs or trigger board of the cell phase arm defective.
F0935 Cell W6 neutral pulse feedback	▪ Contact WEG Service Center.	▪ Fault on the confirmation of the commutation of the IGBTs of the cell neutral arm. ▪ Measurement circuit of the confirmation signal of the commutation of the IGBTs of the neutral arm disconnected or defective. ▪ IGBTs or trigger board of the cell neutral arm defective.
F0936 Cell W6 electronics power supply	▪ Contact WEG Service Center.	▪ Voltages of the internal electronic circuits of the cell out of the operation level. ▪ Defect on the cell power supply.
F0941 Cell W6 modulation synchronism	▪ Contact WEG Service Center.	▪ Fault in the synchronism between the MCC1 control board of the cell and the MVC3 main control.
F0942 Cell W6 bypass system	▪ Contact WEG Service Center.	▪ Fault in the operation of the cell bypass system. ▪ Bypass system is not connected or defective.
F0943 Communication with cell W6	▪ Contact WEG Service Center.	▪ Fault on the communication between the MCC1 control board of the cell and the MVC3 main control. ▪ Break or defect on the cell communication optic cable.
F0945 Incompatible cell W6 firmware	▪ Contact WEG Service Center.	▪ Firmware version of the MCC1 control board of the cell incompatible with the MVC3 main control.
F0946 Incompatible cell W6 model	▪ Contact WEG Service Center.	▪ Cell model incompatible or invalid with the inverter model.
F0947 Cell W6 insulation defective	▪ Contact WEG Service Center.	▪ Fault in the internal insulation of the cell: Contact between some energized point of the circuit and the frame. ▪ Fault on the capacitor discharge resistors of the cell DC link.
F0948 Firmware update or PLD cell W6	▪ Contact WEG Service Center.	▪ Fault in the update process of the processor firmware or in the reconfiguration of the cell PLD.

Fault/alarm	Reset	Possible causes
F0950 Cell W7 DC link overvoltage	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ DIx. ▪ Networks.	▪ Inverter input supply voltage too high. ▪ Incorrect setting of the inverter main transformer taps. ▪ Cell DC link voltage above 1200 V. ▪ Load inertia too high or deceleration ramp too short. ▪ Setting of P0151 too high.
F0951 Cell W7 DC link undervoltage	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ DIx. ▪ Networks.	▪ Inverter input supply voltage too low. ▪ Incorrect setting of the inverter main transformer taps. ▪ Cell DC link voltage below 745 V below 652 V for operation in vector control.
A0952 Overtemperature on cell W7 IGBT module	▪ Automatically eliminated when the temperature at the cell heatsink presents a value below 80 °C.	▪ Temperature on the cell heatsink above 85 °C. ▪ Ambient temperature too high (> 40 °C) and high output current. ▪ Fans locked or defective. ▪ Air input filters blocked.
F0953 Overtemperature on cell W7 IGBT module	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ DIx. ▪ Networks.	▪ Temperature on the cell heatsink above 90 °C. ▪ Ambient temperature too high (> 40 °C) and high output current. ▪ Fans locked or defective. ▪ Air input filters blocked.
F0954 Defective temperature sensor or undertemperature on cell W7 IGBT	▪ Contact WEG Service Center.	▪ Cell temperature measurement sensor defective. ▪ Cell temperature sensor disconnected. ▪ Temperature on the cell heatsink below -10 °C.
F0955 Cell W7 phase IGBT	▪ Contact WEG Service Center.	▪ Short circuit at the inverter output. ▪ Trigger board of the IGBTs of the cell phase arm disconnected. ▪ IGBTs of the cell phase arm operating out of the saturation region. ▪ IGBTs or trigger board of the cell phase arm defective. ▪ Fault on the desaturation signal feedback or gate-driver supply.
F0956 Cell W7 neutral IGBT	▪ Contact WEG Service Center.	▪ Short circuit at the inverter output. ▪ Trigger board of the IGBTs of the cell neutral arm disconnected. ▪ IGBTs of the cell neutral arm operating out of the saturation region. ▪ IGBTs or trigger board of the cell neutral arm defective. ▪ Fault on the desaturation signal feedback or gate-driver supply.
F0958 Cell W7 phase pulse feedback	▪ Contact WEG Service Center.	▪ Fault on the commutation of the IGBTs of the cell phase arm. ▪ Measurement circuit of the confirmation signal of the commutation of the IGBTs of the phase arm disconnected or defective. ▪ IGBTs or trigger board of the cell phase arm defective.
F0960 Cell W7 neutral pulse feedback	▪ Contact WEG Service Center.	▪ Fault on the confirmation of the commutation of the IGBTs of the cell neutral arm. ▪ Measurement circuit of the confirmation signal of the commutation of the IGBTs of the neutral arm disconnected or defective. ▪ IGBTs or trigger board of the cell neutral arm defective.

Fault/alarm	Reset	Possible causes
F0961 Cell W7 electronics power supply	▪ Contact WEG Service Center.	▪ Voltages of the internal electronic circuits of the cell out of the operation level. ▪ Defect on the cell power supply.
F0966 Cell W7 modulation synchronism	▪ Contact WEG Service Center.	▪ Fault in the synchronism between the MCC1 control board of the cell and the MVC3 main control.
F0967 Cell W7 bypass system	▪ Contact WEG Service Center.	▪ Fault in the operation of the cell bypass system. ▪ Bypass system is not connected or defective.
F0968 Communication with cell W7	▪ Contact WEG Service Center.	▪ Fault on the communication between the MCC1 control board of the cell and the MVC3 main control. ▪ Break or defect on the cell communication optic cable.
F0970 Incompatible cell W7 firmware	▪ Contact WEG Service Center.	▪ Firmware version of the MCC1 control board of the cell incompatible with the MVC3 main control.
F0971 Incompatible cell W7 model	▪ Contact WEG Service Center.	▪ Cell model incompatible or invalid with the inverter model.
F0972 Cell W7 insulation defective	▪ Contact WEG Service Center.	▪ Fault in the internal insulation of the cell: Contact between some energized point of the circuit and the frame. ▪ Fault on the capacitor discharge resistors of the cell DC link.
F0973 Firmware update or PLD cell W7	▪ Contact WEG Service Center.	▪ Fault in the update process of the processor firmware or in the reconfiguration of the cell PLD.
F0975 Cell W8 DC link overvoltage	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ DIx. ▪ Networks.	▪ Inverter input supply voltage too high. ▪ Incorrect setting of the inverter main transformer taps. ▪ Cell DC link voltage above 1200 V. ▪ Load inertia too high or deceleration ramp too short. ▪ Setting of P0151 too high.
F0976 Cell W8 DC link undervoltage	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ DIx. ▪ Networks.	▪ Inverter input supply voltage too low. ▪ Incorrect setting of the inverter main transformer taps. ▪ Cell DC link voltage below 745 V below 652 V for operation in vector control.
A0977 Overtemperature on cell W8 IGBT module	▪ Automatically eliminated when the temperature at the cell heatsink presents a value below 80 °C.	▪ Temperature on the cell heatsink above 85 °C. ▪ Ambient temperature too high (> 40 °C) and high output current. ▪ Fans locked or defective. ▪ Air input filters blocked.
F0978 Overtemperature on cell W8 IGBT module	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ DIx. ▪ Networks.	▪ Temperature on the cell heatsink above 90 °C. ▪ Ambient temperature too high (> 40 °C) and high output current. ▪ Fans locked or defective. ▪ Air input filters blocked.
F0979 Defective temperature sensor or undertemperature on cell W8 IGBT	▪ Contact WEG Service Center.	▪ Cell temperature measurement sensor defective. ▪ Cell temperature sensor disconnected. ▪ Temperature on the cell heatsink below -10 °C.

Fault/alarm	Reset	Possible causes
F0980 Cell W8 phase IGBT	▪ Contact WEG Service Center.	▪ Short circuit at the inverter output. ▪ Trigger board of the IGBTs of the cell phase arm disconnected. ▪ IGBTs of the cell phase arm operating out of the saturation region. ▪ IGBTs or trigger board of the cell phase arm defective. ▪ Fault on the desaturation signal feedback or gate-driver supply.
F0981 Cell W8 neutral IGBT	▪ Contact WEG Service Center.	▪ Short circuit at the inverter output. ▪ Trigger board of the IGBTs of the cell neutral arm disconnected. ▪ IGBTs of the cell neutral arm operating out of the saturation region. ▪ IGBTs or trigger board of the cell neutral arm defective. ▪ Fault on the desaturation signal feedback or gate-driver supply.
F0983 Cell W8 phase pulse feedback	▪ Contact WEG Service Center.	▪ Fault on the commutation of the IGBTs of the cell phase arm. ▪ Measurement circuit of the confirmation signal of the commutation of the IGBTs of the phase arm disconnected or defective. ▪ IGBTs or trigger board of the cell phase arm defective.
F0985 Cell W8 neutral pulse feedback	▪ Contact WEG Service Center.	▪ Fault on the confirmation of the commutation of the IGBTs of the cell neutral arm. ▪ Measurement circuit of the confirmation signal of the commutation of the IGBTs of the neutral arm disconnected or defective. ▪ IGBTs or trigger board of the cell neutral arm defective.
F0986 Cell W8 electronics power supply	▪ Contact WEG Service Center.	▪ Voltages of the internal electronic circuits of the cell out of the operation level. ▪ Defect on the cell power supply.
F0991 Cell W8 modulation synchronism	▪ Contact WEG Service Center.	▪ Fault in the synchronism between the MCC1 control board of the cell and the MVC3 main control.
F0992 Cell W8 bypass system	▪ Contact WEG Service Center.	▪ Fault in the operation of the cell bypass system. ▪ Bypass system is not connected or defective.
F0993 Communication with cell W8	▪ Contact WEG Service Center.	▪ Fault on the communication between the MCC1 control board of the cell and the MVC3 main control. ▪ Break or defect on the cell communication optic cable.
F0995 Incompatible cell W8 firmware	▪ Contact WEG Service Center.	▪ Firmware version of the MCC1 control board of the cell incompatible with the MVC3 main control.
F0996 Incompatible cell W8 model	▪ Contact WEG Service Center.	▪ Cell model incompatible or invalid with the inverter model.
F0997 Cell W8 insulation defective	▪ Contact WEG Service Center.	▪ Fault in the internal insulation of the cell: Contact between some energized point of the circuit and the frame. ▪ Fault on the capacitor discharge resistors of the cell DC link.
F0998 Firmware update or PLD cell W8	▪ Contact WEG Service Center.	▪ Fault in the update process of the processor firmware or in the reconfiguration of the cell PLD.

Fault/alarm	Reset	Possible causes
F1000 Cell U9 DC link overvoltage	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ DIx. ▪ Networks.	▪ Inverter input supply voltage too high. ▪ Incorrect setting of the inverter main transformer taps. ▪ Cell DC link voltage above 1200 V. ▪ Load inertia too high or deceleration ramp too short. ▪ Setting of P0151 too high.
F1001 Cell U9 DC link undervoltage	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ DIx. ▪ Networks.	▪ Inverter input supply voltage too low. ▪ Incorrect setting of the inverter main transformer taps. ▪ Cell DC link voltage below 745 V below 652 V for operation in vector control.
A1002 Overtemperature on cell U9 IGBT module	▪ Automatically eliminated when the temperature at the cell heatsink presents a value below 80 °C.	▪ Temperature on the cell heatsink above 85 °C. ▪ Ambient temperature too high (> 40 °C) and high output current. ▪ Fans locked or defective. ▪ Air input filters blocked.
F1003 Overtemperature on cell U9 IGBT module	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ DIx. ▪ Networks.	▪ Temperature on the cell heatsink above 90 °C. ▪ Ambient temperature too high (> 40 °C) and high output current. ▪ Fans locked or defective. ▪ Air input filters blocked.
F1004 Defective temperature sensor or undertemperature on cell U9 IGBT	▪ Contact WEG Service Center.	▪ Cell temperature measurement sensor defective. ▪ Cell temperature sensor disconnected. ▪ Temperature on the cell heatsink below -10 °C.
F1005 Cell U9 phase IGBT	▪ Contact WEG Service Center.	▪ Short circuit at the inverter output. ▪ Trigger board of the IGBTs of the cell phase arm disconnected. ▪ IGBTs of the cell phase arm operating out of the saturation region. ▪ IGBTs or trigger board of the cell phase arm defective. ▪ Fault on the desaturation signal feedback or gate-driver supply.
F1006 Cell U9 neutral IGBT	▪ Contact WEG Service Center.	▪ Short circuit at the inverter output. ▪ Trigger board of the IGBTs of the cell neutral arm disconnected. ▪ IGBTs of the cell neutral arm operating out of the saturation region. ▪ IGBTs or trigger board of the cell neutral arm defective. ▪ Fault on the desaturation signal feedback or gate-driver supply.
F1008 Cell U9 phase pulse feedback	▪ Contact WEG Service Center.	▪ Fault on the commutation of the IGBTs of the cell phase arm. ▪ Measurement circuit of the confirmation signal of the commutation of the IGBTs of the phase arm disconnected or defective. ▪ IGBTs or trigger board of the cell phase arm defective.
F1010 Cell U9 neutral pulse feedback	▪ Contact WEG Service Center.	▪ Fault on the confirmation of the commutation of the IGBTs of the cell neutral arm. ▪ Measurement circuit of the confirmation signal of the commutation of the IGBTs of the neutral arm disconnected or defective. ▪ IGBTs or trigger board of the cell neutral arm defective.

Fault/alarm	Reset	Possible causes
F1011 Cell U9 electronics power supply	▪ Contact WEG Service Center.	▪ Voltages of the internal electronic circuits of the cell out of the operation level. ▪ Defect on the cell power supply.
F1016 Cell U9 modulation synchronism	▪ Contact WEG Service Center.	▪ Fault in the synchronism between the MCC1 control board of the cell and the MVC3 main control.
F1017 Cell U9 bypass system	▪ Contact WEG Service Center.	▪ Fault in the operation of the cell bypass system. ▪ Bypass system is not connected or defective.
F1018 Communication with cell U9	▪ Contact WEG Service Center.	▪ Fault on the communication between the MCC1 control board of the cell and the MVC3 main control. ▪ Break or defect on the cell communication optic cable.
F1020 Incompatible cell U9 firmware	▪ Contact WEG Service Center.	▪ Firmware version of the MCC1 control board of the cell incompatible with the MVC3 main control.
F1021 Incompatible cell U9 model	▪ Contact WEG Service Center.	▪ Cell model incompatible or invalid with the inverter model.
F1022 Cell U9 insulation defective	▪ Contact WEG Service Center.	▪ Fault in the internal insulation of the cell: Contact between some energized point of the circuit and the frame. ▪ Fault on the capacitor discharge resistors of the cell DC link.
F1023 Firmware update or PLD cell U9	▪ Contact WEG Service Center.	▪ Fault in the update process of the processor firmware or in the reconfiguration of the cell PLD.
F1025 Cell U10 DC link overvoltage	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ Dlx. ▪ Networks.	▪ Inverter input supply voltage too high. ▪ Incorrect setting of the inverter main transformer taps. ▪ Cell DC link voltage above 1200 V. ▪ Load inertia too high or deceleration ramp too short. ▪ Setting of P0151 too high.
F1026 Cell U10 DC link undervoltage	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ Dlx. ▪ Networks.	▪ Inverter input supply voltage too low. ▪ Incorrect setting of the inverter main transformer taps. ▪ Cell DC link voltage below 745 V below 652 V for operation in vector control.
A1027 Overtemperature on cell U10 IGBT module	▪ Automatically eliminated when the temperature at the cell heatsink presents a value below 80 °C.	▪ Temperature on the cell heatsink above 85 °C. ▪ Ambient temperature too high (> 40 °C) and high output current. ▪ Fans locked or defective. ▪ Air input filters blocked.
F1028 Overtemperature on cell U10 IGBT module	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ Dlx. ▪ Networks.	▪ Temperature on the cell heatsink above 90 °C. ▪ Ambient temperature too high (> 40 °C) and high output current. ▪ Fans locked or defective. ▪ Air input filters blocked.
F1029 Defective temperature sensor or undertemperature on cell U10 IGBT	▪ Contact WEG Service Center.	▪ Cell temperature measurement sensor defective. ▪ Cell temperature sensor disconnected. ▪ Temperature on the cell heatsink below -10 °C.

Fault/alarm	Reset	Possible causes
F1030 Cell U10 phase IGBT	▪ Contact WEG Service Center.	▪ Short circuit at the inverter output. ▪ Trigger board of the IGBTs of the cell phase arm disconnected. ▪ IGBTs of the cell phase arm operating out of the saturation region. ▪ IGBTs or trigger board of the cell phase arm defective. ▪ Fault on the desaturation signal feedback or gate-driver supply.
F1031 Cell U10 neutral IGBT	▪ Contact WEG Service Center.	▪ Short circuit at the inverter output. ▪ Trigger board of the IGBTs of the cell neutral arm disconnected. ▪ IGBTs of the cell neutral arm operating out of the saturation region. ▪ IGBTs or trigger board of the cell neutral arm defective. ▪ Fault on the desaturation signal feedback or gate-driver supply.
F1033 Cell U10 phase pulse feedback	▪ Contact WEG Service Center.	▪ Fault on the commutation of the IGBTs of the cell phase arm. ▪ Measurement circuit of the confirmation signal of the commutation of the IGBTs of the phase arm disconnected or defective. ▪ IGBTs or trigger board of the cell phase arm defective.
F1035 Cell U10 neutral pulse feedback	▪ Contact WEG Service Center.	▪ Fault on the confirmation of the commutation of the IGBTs of the cell neutral arm. ▪ Measurement circuit of the confirmation signal of the commutation of the IGBTs of the neutral arm disconnected or defective. ▪ IGBTs or trigger board of the cell neutral arm defective.
F1036 Cell U10 electronics power supply	▪ Contact WEG Service Center.	▪ Voltages of the internal electronic circuits of the cell out of the operation level. ▪ Defect on the cell power supply.
F1041 Cell U10 modulation synchronism	▪ Contact WEG Service Center.	▪ Fault in the synchronism between the MCC1 control board of the cell and the MVC3 main control.
F1042 Cell U10 bypass system	▪ Contact WEG Service Center.	▪ Fault in the operation of the cell bypass system. ▪ Bypass system is not connected or defective.
F1043 Communication with cell U10	▪ Contact WEG Service Center.	▪ Fault on the communication between the MCC1 control board of the cell and the MVC3 main control. ▪ Break or defect on the cell communication optic cable.
F1045 Incompatible cell U10 firmware	▪ Contact WEG Service Center.	▪ Firmware version of the MCC1 control board of the cell incompatible with the MVC3 main control.
F1046 Incompatible cell U10 model	▪ Contact WEG Service Center.	▪ Cell model incompatible or invalid with the inverter model.
F1047 Cell U10 insulation defective	▪ Contact WEG Service Center.	▪ Fault in the internal insulation of the cell: Contact between some energized point of the circuit and the frame. ▪ Fault on the capacitor discharge resistors of the cell DC link.
F1048 Firmware update or PLD cell U10	▪ Contact WEG Service Center.	▪ Fault in the update process of the processor firmware or in the reconfiguration of the cell PLD.

Fault/alarm	Reset	Possible causes
F1050 Cell U11 DC link overvoltage	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ DIx. ▪ Networks.	▪ Inverter input supply voltage too high. ▪ Incorrect setting of the inverter main transformer taps. ▪ Cell DC link voltage above 1200 V. ▪ Load inertia too high or deceleration ramp too short. ▪ Setting of P0151 too high.
F1051 Cell U11 DC link undervoltage	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ DIx. ▪ Networks.	▪ Inverter input supply voltage too low. ▪ Incorrect setting of the inverter main transformer taps. ▪ Cell DC link voltage below 745 V below 652 V for operation in vector control.
A1052 Overtemperature on cell U11 IGBT module	▪ Automatically eliminated when the temperature at the cell heatsink presents a value below 80 °C.	▪ Temperature on the cell heatsink above 85 °C. ▪ Ambient temperature too high (> 40 °C) and high output current. ▪ Fans locked or defective. ▪ Air input filters blocked.
F1053 Overtemperature on cell U11 IGBT module	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ DIx. ▪ Networks.	▪ Temperature on the cell heatsink above 90 °C. ▪ Ambient temperature too high (> 40 °C) and high output current. ▪ Fans locked or defective. ▪ Air input filters blocked.
F1054 Defective temperature sensor or undertemperature on cell U11 IGBT	▪ Contact WEG Service Center.	▪ Cell temperature measurement sensor defective. ▪ Cell temperature sensor disconnected. ▪ Temperature on the cell heatsink below -10 °C.
F1055 Cell U11 phase IGBT	▪ Contact WEG Service Center.	▪ Short circuit at the inverter output. ▪ Trigger board of the IGBTs of the cell phase arm disconnected. ▪ IGBTs of the cell phase arm operating out of the saturation region. ▪ IGBTs or trigger board of the cell phase arm defective. ▪ Fault on the desaturation signal feedback or gate-driver supply.
F1056 Cell U11 neutral IGBT	▪ Contact WEG Service Center.	▪ Short circuit at the inverter output. ▪ Trigger board of the IGBTs of the cell neutral arm disconnected. ▪ IGBTs of the cell neutral arm operating out of the saturation region. ▪ IGBTs or trigger board of the cell neutral arm defective. ▪ Fault on the desaturation signal feedback or gate-driver supply.
F1058 Cell U11 phase pulse feedback	▪ Contact WEG Service Center.	▪ Fault on the commutation of the IGBTs of the cell phase arm. ▪ Measurement circuit of the confirmation signal of the commutation of the IGBTs of the phase arm disconnected or defective. ▪ IGBTs or trigger board of the cell phase arm defective.
F1060 Cell U11 neutral pulse feedback	▪ Contact WEG Service Center.	▪ Fault on the confirmation of the commutation of the IGBTs of the cell neutral arm. ▪ Measurement circuit of the confirmation signal of the commutation of the IGBTs of the neutral arm disconnected or defective. ▪ IGBTs or trigger board of the cell neutral arm defective.

Fault/alarm	Reset	Possible causes
F1061 Cell U11 electronics power supply	▪ Contact WEG Service Center.	▪ Voltages of the internal electronic circuits of the cell out of the operation level. ▪ Defect on the cell power supply.
F1066 Cell U11 modulation synchronism	▪ Contact WEG Service Center.	▪ Fault in the synchronism between the MCC1 control board of the cell and the MVC3 main control.
F1067 Cell U11 bypass system	▪ Contact WEG Service Center.	▪ Fault in the operation of the cell bypass system. ▪ Bypass system is not connected or defective.
F1068 Communication with cell U11	▪ Contact WEG Service Center.	▪ Fault on the communication between the MCC1 control board of the cell and the MVC3 main control. ▪ Break or defect on the cell communication optic cable.
F1070 Incompatible cell U11 firmware	▪ Contact WEG Service Center.	▪ Firmware version of the MCC1 control board of the cell incompatible with the MVC3 main control.
F1071 Incompatible cell U11 model	▪ Contact WEG Service Center.	▪ Cell model incompatible or invalid with the inverter model.
F1072 Cell U11 insulation defective	▪ Contact WEG Service Center.	▪ Fault in the internal insulation of the cell: Contact between some energized point of the circuit and the frame. ▪ Fault on the capacitor discharge resistors of the cell DC link.
F1073 Firmware update or PLD cell U11	▪ Contact WEG Service Center.	▪ Fault in the update process of the processor firmware or in the reconfiguration of the cell PLD.
F1075 Cell U12 DC link overvoltage	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ Dlx. ▪ Networks.	▪ Inverter input supply voltage too high. ▪ Incorrect setting of the inverter main transformer taps. ▪ Cell DC link voltage above 1200 V. ▪ Load inertia too high or deceleration ramp too short. ▪ Setting of P0151 too high.
F1076 Cell U12 DC link undervoltage	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ Dlx. ▪ Networks.	▪ Inverter input supply voltage too low. ▪ Incorrect setting of the inverter main transformer taps. ▪ Cell DC link voltage below 745 V below 652 V for operation in vector control.
A1077 Overtemperature on cell U12 IGBT module	▪ Automatically eliminated when the temperature at the cell heatsink presents a value below 80 °C.	▪ Temperature on the cell heatsink above 85 °C. ▪ Ambient temperature too high (> 40 °C) and high output current. ▪ Fans locked or defective. ▪ Air input filters blocked.
F1078 Overtemperature on cell U12 IGBT module	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ Dlx. ▪ Networks.	▪ Temperature on the cell heatsink above 90 °C. ▪ Ambient temperature too high (> 40 °C) and high output current. ▪ Fans locked or defective. ▪ Air input filters blocked.
F1079 Defective temperature sensor or undertemperature on cell U12 IGBT	▪ Contact WEG Service Center.	▪ Cell temperature measurement sensor defective. ▪ Cell temperature sensor disconnected. ▪ Temperature on the cell heatsink below -10 °C.

Fault/alarm	Reset	Possible causes
F1080 Cell U12 phase IGBT	▪ Contact WEG Service Center.	▪ Short circuit at the inverter output. ▪ Trigger board of the IGBTs of the cell phase arm disconnected. ▪ IGBTs of the cell phase arm operating out of the saturation region. ▪ IGBTs or trigger board of the cell phase arm defective. ▪ Fault on the desaturation signal feedback or gate-driver supply.
F1081 Cell U12 neutral IGBT	▪ Contact WEG Service Center.	▪ Short circuit at the inverter output. ▪ Trigger board of the IGBTs of the cell neutral arm disconnected. ▪ IGBTs of the cell neutral arm operating out of the saturation region. ▪ IGBTs or trigger board of the cell neutral arm defective. ▪ Fault on the desaturation signal feedback or gate-driver supply.
F1083 Cell U12 phase pulse feedback	▪ Contact WEG Service Center.	▪ Fault on the commutation of the IGBTs of the cell phase arm. ▪ Measurement circuit of the confirmation signal of the commutation of the IGBTs of the phase arm disconnected or defective. ▪ IGBTs or trigger board of the cell phase arm defective.
F1085 Cell U12 neutral pulse feedback	▪ Contact WEG Service Center.	▪ Fault on the confirmation of the commutation of the IGBTs of the cell neutral arm. ▪ Measurement circuit of the confirmation signal of the commutation of the IGBTs of the neutral arm disconnected or defective. ▪ IGBTs or trigger board of the cell neutral arm defective.
F1086 Cell U12 electronics power supply	▪ Contact WEG Service Center.	▪ Voltages of the internal electronic circuits of the cell out of the operation level. ▪ Defect on the cell power supply.
F1091 Cell U12 modulation synchronism	▪ Contact WEG Service Center.	▪ Fault in the synchronism between the MCC1 control board of the cell and the MVC3 main control.
F1092 Cell U12 bypass system	▪ Contact WEG Service Center.	▪ Fault in the operation of the cell bypass system. ▪ Bypass system is not connected or defective.
F1093 Communication with cell U12	▪ Contact WEG Service Center.	▪ Fault on the communication between the MCC1 control board of the cell and the MVC3 main control. ▪ Break or defect on the cell communication optic cable.
F1095 Incompatible cell U12 firmware	▪ Contact WEG Service Center.	▪ Firmware version of the MCC1 control board of the cell incompatible with the MVC3 main control.
F1096 Incompatible cell U12 model	▪ Contact WEG Service Center.	▪ Cell model incompatible or invalid with the inverter model.
F1097 Cell U12 insulation defective	▪ Contact WEG Service Center.	▪ Fault in the internal insulation of the cell: Contact between some energized point of the circuit and the frame. ▪ Fault on the capacitor discharge resistors of the cell DC link.
F1098 Firmware update or PLD cell U12	▪ Contact WEG Service Center.	▪ Fault in the update process of the processor firmware or in the reconfiguration of the cell PLD.

Fault/alarm	Reset	Possible causes
F1100 Cell V9 DC link overvoltage	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ Dlx. ▪ Networks.	▪ Inverter input supply voltage too high. ▪ Incorrect setting of the inverter main transformer taps. ▪ Cell DC link voltage above 1200 V. ▪ Load inertia too high or deceleration ramp too short. ▪ Setting of P0151 too high.
F1101 Cell V9 DC link undervoltage	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ Dlx. ▪ Networks.	▪ Inverter input supply voltage too low. ▪ Incorrect setting of the inverter main transformer taps. ▪ Cell DC link voltage below 745 V below 652 V for operation in vector control.
A1102 Overtemperature on cell V9 IGBT module	▪ Automatically eliminated when the temperature at the cell heatsink presents a value below 80 °C.	▪ Temperature on the cell heatsink above 85 °C. ▪ Ambient temperature too high (> 40 °C) and high output current. ▪ Fans locked or defective. ▪ Air input filters blocked.
F1103 Overtemperature on cell V9 IGBT module	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ Dlx. ▪ Networks.	▪ Temperature on the cell heatsink above 90 °C. ▪ Ambient temperature too high (> 40 °C) and high output current. ▪ Fans locked or defective. ▪ Air input filters blocked.
F1104 Defective temperature sensor or undertemperature on cell V9 IGBT	▪ Contact WEG Service Center.	▪ Cell temperature measurement sensor defective. ▪ Cell temperature sensor disconnected. ▪ Temperature on the cell heatsink below -10 °C.
F1105 Cell V9 phase IGBT	▪ Contact WEG Service Center.	▪ Short circuit at the inverter output. ▪ Trigger board of the IGBTs of the cell phase arm disconnected. ▪ IGBTs of the cell phase arm operating out of the saturation region. ▪ IGBTs or trigger board of the cell phase arm defective. ▪ Fault on the desaturation signal feedback or gate-driver supply.
F1106 Cell V9 neutral IGBT	▪ Contact WEG Service Center.	▪ Short circuit at the inverter output. ▪ Trigger board of the IGBTs of the cell neutral arm disconnected. ▪ IGBTs of the cell neutral arm operating out of the saturation region. ▪ IGBTs or trigger board of the cell neutral arm defective. ▪ Fault on the desaturation signal feedback or gate-driver supply.
F1108 Cell V9 phase pulse feedback	▪ Contact WEG Service Center.	▪ Fault on the commutation of the IGBTs of the cell phase arm. ▪ Measurement circuit of the confirmation signal of the commutation of the IGBTs of the phase arm disconnected or defective. ▪ IGBTs or trigger board of the cell phase arm defective.
F1110 Cell V9 neutral pulse feedback	▪ Contact WEG Service Center.	▪ Fault on the confirmation of the commutation of the IGBTs of the cell neutral arm. ▪ Measurement circuit of the confirmation signal of the commutation of the IGBTs of the neutral arm disconnected or defective. ▪ IGBTs or trigger board of the cell neutral arm defective.

Fault/alarm	Reset	Possible causes
F1111 Cell V9 electronics power supply	▪ Contact WEG Service Center.	▪ Voltages of the internal electronic circuits of the cell out of the operation level. ▪ Defect on the cell power supply.
F1116 Cell V9 modulation synchronism	▪ Contact WEG Service Center.	▪ Fault in the synchronism between the MCC1 control board of the cell and the MVC3 main control.
F1117 Cell V9 bypass system	▪ Contact WEG Service Center.	▪ Fault in the operation of the cell bypass system. ▪ Bypass system is not connected or defective.
F1118 Communication with cell V9	▪ Contact WEG Service Center.	▪ Fault on the communication between the MCC1 control board of the cell and the MVC3 main control. ▪ Break or defect on the cell communication optic cable.
F1120 Incompatible cell V9 firmware	▪ Contact WEG Service Center.	▪ Firmware version of the MCC1 control board of the cell incompatible with the MVC3 main control.
F1121 Incompatible cell V9 model	▪ Contact WEG Service Center.	▪ Cell model incompatible or invalid with the inverter model.
F1122 Cell V9 insulation defective	▪ Contact WEG Service Center.	▪ Fault in the internal insulation of the cell: Contact between some energized point of the circuit and the frame. ▪ Fault on the capacitor discharge resistors of the cell DC link.
F1123 Firmware update or PLD cell V9	▪ Contact WEG Service Center.	▪ Fault in the update process of the processor firmware or in the reconfiguration of the cell PLD.
F1125 Cell V10 DC link overvoltage	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ Dlx. ▪ Networks.	▪ Inverter input supply voltage too high. ▪ Incorrect setting of the inverter main transformer taps. ▪ Cell DC link voltage above 1200 V. ▪ Load inertia too high or deceleration ramp too short. ▪ Setting of P0151 too high.
F1126 Cell V10 DC link undervoltage	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ Dlx. ▪ Networks.	▪ Inverter input supply voltage too low. ▪ Incorrect setting of the inverter main transformer taps. ▪ Cell DC link voltage below 745 V below 652 V for operation in vector control.
A1127 Overtemperature on cell V10 IGBT module	▪ Automatically eliminated when the temperature at the cell heatsink presents a value below 80 °C.	▪ Temperature on the cell heatsink above 85 °C. ▪ Ambient temperature too high (> 40 °C) and high output current. ▪ Fans locked or defective. ▪ Air input filters blocked.
F1128 Overtemperature on cell V10 IGBT module	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ Dlx. ▪ Networks.	▪ Temperature on the cell heatsink above 90 °C. ▪ Ambient temperature too high (> 40 °C) and high output current. ▪ Fans locked or defective. ▪ Air input filters blocked.
F1129 Defective temperature sensor or undertemperature on cell V10 IGBT	▪ Contact WEG Service Center.	▪ Cell temperature measurement sensor defective. ▪ Cell temperature sensor disconnected. ▪ Temperature on the cell heatsink below -10 °C.

Fault/alarm	Reset	Possible causes
F1130 Cell V10 phase IGBT	▪ Contact WEG Service Center.	▪ Short circuit at the inverter output. ▪ Trigger board of the IGBTs of the cell phase arm disconnected. ▪ IGBTs of the cell phase arm operating out of the saturation region. ▪ IGBTs or trigger board of the cell phase arm defective. ▪ Fault on the desaturation signal feedback or gate-driver supply.
F1131 Cell V10 neutral IGBT	▪ Contact WEG Service Center.	▪ Short circuit at the inverter output. ▪ Trigger board of the IGBTs of the cell neutral arm disconnected. ▪ IGBTs of the cell neutral arm operating out of the saturation region. ▪ IGBTs or trigger board of the cell neutral arm defective. ▪ Fault on the desaturation signal feedback or gate-driver supply.
F1133 Cell V10 phase pulse feedback	▪ Contact WEG Service Center.	▪ Fault on the commutation of the IGBTs of the cell phase arm. ▪ Measurement circuit of the confirmation signal of the commutation of the IGBTs of the phase arm disconnected or defective. ▪ IGBTs or trigger board of the cell phase arm defective.
F1135 Cell V10 neutral pulse feedback	▪ Contact WEG Service Center.	▪ Fault on the confirmation of the commutation of the IGBTs of the cell neutral arm. ▪ Measurement circuit of the confirmation signal of the commutation of the IGBTs of the neutral arm disconnected or defective. ▪ IGBTs or trigger board of the cell neutral arm defective.
F1136 Cell V10 electronics power supply	▪ Contact WEG Service Center.	▪ Voltages of the internal electronic circuits of the cell out of the operation level. ▪ Defect on the cell power supply.
F1141 Cell V10 modulation synchronism	▪ Contact WEG Service Center.	▪ Fault in the synchronism between the MCC1 control board of the cell and the MVC3 main control.
F1142 Cell V10 bypass system	▪ Contact WEG Service Center.	▪ Fault in the operation of the cell bypass system. ▪ Bypass system is not connected or defective.
F1143 Communication with cell V10	▪ Contact WEG Service Center.	▪ Fault on the communication between the MCC1 control board of the cell and the MVC3 main control. ▪ Break or defect on the cell communication optic cable.
F1145 Incompatible cell V10 firmware	▪ Contact WEG Service Center.	▪ Firmware version of the MCC1 control board of the cell incompatible with the MVC3 main control.
F1146 Incompatible cell V10 model	▪ Contact WEG Service Center.	▪ Cell model incompatible or invalid with the inverter model.
F1147 Cell V10 insulation defective	▪ Contact WEG Service Center.	▪ Fault in the internal insulation of the cell: Contact between some energized point of the circuit and the frame. ▪ Fault on the capacitor discharge resistors of the cell DC link.
F1148 Firmware update or PLD cell V10	▪ Contact WEG Service Center.	▪ Fault in the update process of the processor firmware or in the reconfiguration of the cell PLD.

Fault/alarm	Reset	Possible causes
F1150 Cell V11 DC link overvoltage	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ DIx. ▪ Networks.	▪ Inverter input supply voltage too high. ▪ Incorrect setting of the inverter main transformer taps. ▪ Cell DC link voltage above 1200 V. ▪ Load inertia too high or deceleration ramp too short. ▪ Setting of P0151 too high.
F1151 Cell V11 DC link undervoltage	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ DIx. ▪ Networks.	▪ Inverter input supply voltage too low. ▪ Incorrect setting of the inverter main transformer taps. ▪ Cell DC link voltage below 745 V below 652 V for operation in vector control.
A1152 Overtemperature on cell V11 IGBT module	▪ Automatically eliminated when the temperature at the cell heatsink presents a value below 80 °C.	▪ Temperature on the cell heatsink above 85 °C. ▪ Ambient temperature too high (> 40 °C) and high output current. ▪ Fans locked or defective. ▪ Air input filters blocked.
F1153 Overtemperature on cell V11 IGBT module	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ DIx. ▪ Networks.	▪ Temperature on the cell heatsink above 90 °C. ▪ Ambient temperature too high (> 40 °C) and high output current. ▪ Fans locked or defective. ▪ Air input filters blocked.
F1154 Defective temperature sensor or undertemperature on cell V11 IGBT	▪ Contact WEG Service Center.	▪ Cell temperature measurement sensor defective. ▪ Cell temperature sensor disconnected. ▪ Temperature on the cell heatsink below -10 °C.
F1155 Cell V11 phase IGBT	▪ Contact WEG Service Center.	▪ Short circuit at the inverter output. ▪ Trigger board of the IGBTs of the cell phase arm disconnected. ▪ IGBTs of the cell phase arm operating out of the saturation region. ▪ IGBTs or trigger board of the cell phase arm defective. ▪ Fault on the desaturation signal feedback or gate-driver supply.
F1156 Cell V11 neutral IGBT	▪ Contact WEG Service Center.	▪ Short circuit at the inverter output. ▪ Trigger board of the IGBTs of the cell neutral arm disconnected. ▪ IGBTs of the cell neutral arm operating out of the saturation region. ▪ IGBTs or trigger board of the cell neutral arm defective. ▪ Fault on the desaturation signal feedback or gate-driver supply.
F1158 Cell V11 phase pulse feedback	▪ Contact WEG Service Center.	▪ Fault on the commutation of the IGBTs of the cell phase arm. ▪ Measurement circuit of the confirmation signal of the commutation of the IGBTs of the phase arm disconnected or defective. ▪ IGBTs or trigger board of the cell phase arm defective.
F1160 Cell V11 neutral pulse feedback	▪ Contact WEG Service Center.	▪ Fault on the confirmation of the commutation of the IGBTs of the cell neutral arm. ▪ Measurement circuit of the confirmation signal of the commutation of the IGBTs of the neutral arm disconnected or defective. ▪ IGBTs or trigger board of the cell neutral arm defective.

Fault/alarm	Reset	Possible causes
F1161 Cell V11 electronics power supply	▪ Contact WEG Service Center.	▪ Voltages of the internal electronic circuits of the cell out of the operation level. ▪ Defect on the cell power supply.
F1166 Cell V11 modulation synchronism	▪ Contact WEG Service Center.	▪ Fault in the synchronism between the MCC1 control board of the cell and the MVC3 main control.
F1167 Cell V11 bypass system	▪ Contact WEG Service Center.	▪ Fault in the operation of the cell bypass system. ▪ Bypass system is not connected or defective.
F1168 Communication with cell V11	▪ Contact WEG Service Center.	▪ Fault on the communication between the MCC1 control board of the cell and the MVC3 main control. ▪ Break or defect on the cell communication optic cable.
F1170 Incompatible cell V11 firmware	▪ Contact WEG Service Center.	▪ Firmware version of the MCC1 control board of the cell incompatible with the MVC3 main control.
F1171 Incompatible cell V11 model	▪ Contact WEG Service Center.	▪ Cell model incompatible or invalid with the inverter model.
F1172 Cell V11 insulation defective	▪ Contact WEG Service Center.	▪ Fault in the internal insulation of the cell: Contact between some energized point of the circuit and the frame. ▪ Fault on the capacitor discharge resistors of the cell DC link.
F1173 Firmware update or PLD cell V11	▪ Contact WEG Service Center.	▪ Fault in the update process of the processor firmware or in the reconfiguration of the cell PLD.
F1175 Cell V12 DC link overvoltage	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ DIx. ▪ Networks.	▪ Inverter input supply voltage too high. ▪ Incorrect setting of the inverter main transformer taps. ▪ Cell DC link voltage above 1200 V. ▪ Load inertia too high or deceleration ramp too short. ▪ Setting of P0151 too high.
F1176 Cell V12 DC link undervoltage	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ DIx. ▪ Networks.	▪ Inverter input supply voltage too low. ▪ Incorrect setting of the inverter main transformer taps. ▪ Cell DC link voltage below 745 V below 652 V for operation in vector control.
A1177 Overtemperature on cell V12 IGBT module	▪ Automatically eliminated when the temperature at the cell heatsink presents a value below 80 °C.	▪ Temperature on the cell heatsink above 85 °C. ▪ Ambient temperature too high (> 40 °C) and high output current. ▪ Fans locked or defective. ▪ Air input filters blocked.
F1178 Overtemperature on cell V12 IGBT module	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ DIx. ▪ Networks.	▪ Temperature on the cell heatsink above 90 °C. ▪ Ambient temperature too high (> 40 °C) and high output current. ▪ Fans locked or defective. ▪ Air input filters blocked.
F1179 Defective temperature sensor or undertemperature on cell V12 IGBT	▪ Contact WEG Service Center.	▪ Cell temperature measurement sensor defective. ▪ Cell temperature sensor disconnected. ▪ Temperature on the cell heatsink below -10 °C.

Fault/alarm	Reset	Possible causes
F1180 Cell V12 phase IGBT	▪ Contact WEG Service Center.	▪ Short circuit at the inverter output. ▪ Trigger board of the IGBTs of the cell phase arm disconnected. ▪ IGBTs of the cell phase arm operating out of the saturation region. ▪ IGBTs or trigger board of the cell phase arm defective. ▪ Fault on the desaturation signal feedback or gate-driver supply.
F1181 Cell V12 neutral IGBT	▪ Contact WEG Service Center.	▪ Short circuit at the inverter output. ▪ Trigger board of the IGBTs of the cell neutral arm disconnected. ▪ IGBTs of the cell neutral arm operating out of the saturation region. ▪ IGBTs or trigger board of the cell neutral arm defective. ▪ Fault on the desaturation signal feedback or gate-driver supply.
F1183 Cell V12 phase pulse feedback	▪ Contact WEG Service Center.	▪ Fault on the commutation of the IGBTs of the cell phase arm. ▪ Measurement circuit of the confirmation signal of the commutation of the IGBTs of the phase arm disconnected or defective. ▪ IGBTs or trigger board of the cell phase arm defective.
F1185 Cell V12 neutral pulse feedback	▪ Contact WEG Service Center.	▪ Fault on the confirmation of the commutation of the IGBTs of the cell neutral arm. ▪ Measurement circuit of the confirmation signal of the commutation of the IGBTs of the neutral arm disconnected or defective. ▪ IGBTs or trigger board of the cell neutral arm defective.
F1186 Cell V12 electronics power supply	▪ Contact WEG Service Center.	▪ Voltages of the internal electronic circuits of the cell out of the operation level. ▪ Defect on the cell power supply.
F1191 Cell V12 modulation synchronism	▪ Contact WEG Service Center.	▪ Fault in the synchronism between the MCC1 control board of the cell and the MVC3 main control.
F1192 Cell V12 bypass system	▪ Contact WEG Service Center.	▪ Fault in the operation of the cell bypass system. ▪ Bypass system is not connected or defective.
F1193 Communication with cell V12	▪ Contact WEG Service Center.	▪ Fault on the communication between the MCC1 control board of the cell and the MVC3 main control. ▪ Break or defect on the cell communication optic cable.
F1195 Incompatible cell V12 firmware	▪ Contact WEG Service Center.	▪ Firmware version of the MCC1 control board of the cell incompatible with the MVC3 main control.
F1196 Incompatible cell V12 model	▪ Contact WEG Service Center.	▪ Cell model incompatible or invalid with the inverter model.
F1197 Cell V12 insulation defective	▪ Contact WEG Service Center.	▪ Fault in the internal insulation of the cell: Contact between some energized point of the circuit and the frame. ▪ Fault on the capacitor discharge resistors of the cell DC link.
F1198 Firmware update or PLD cell V12	▪ Contact WEG Service Center.	▪ Fault in the update process of the processor firmware or in the reconfiguration of the cell PLD.

Fault/alarm	Reset	Possible causes
F1200 Cell W9 DC link overvoltage	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ Dlx. ▪ Networks.	▪ Inverter input supply voltage too high. ▪ Incorrect setting of the inverter main transformer taps. ▪ Cell DC link voltage above 1200 V. ▪ Load inertia too high or deceleration ramp too short. ▪ Setting of P0151 too high.
F1201 Cell W9 DC link undervoltage	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ Dlx. ▪ Networks.	▪ Inverter input supply voltage too low. ▪ Incorrect setting of the inverter main transformer taps. ▪ Cell DC link voltage below 745 V below 652 V for operation in vector control.
A1202 Overtemperature on cell W9 IGBT module	▪ Automatically eliminated when the temperature at the cell heatsink presents a value below 80 °C.	▪ Temperature on the cell heatsink above 85 °C. ▪ Ambient temperature too high (> 40 °C) and high output current. ▪ Fans locked or defective. ▪ Air input filters blocked.
F1203 Overtemperature on cell W9 IGBT module	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ Dlx. ▪ Networks.	▪ Temperature on the cell heatsink above 90 °C. ▪ Ambient temperature too high (> 40 °C) and high output current. ▪ Fans locked or defective. ▪ Air input filters blocked.
F1204 Defective temperature sensor or undertemperature on cell W9 IGBT	▪ Contact WEG Service Center.	▪ Cell temperature measurement sensor defective. ▪ Cell temperature sensor disconnected. ▪ Temperature on the cell heatsink below -10 °C.
F1205 Cell W9 phase IGBT	▪ Contact WEG Service Center.	▪ Short circuit at the inverter output. ▪ Trigger board of the IGBTs of the cell phase arm disconnected. ▪ IGBTs of the cell phase arm operating out of the saturation region. ▪ IGBTs or trigger board of the cell phase arm defective. ▪ Fault on the desaturation signal feedback or gate-driver supply.
F1206 Cell W9 neutral IGBT	▪ Contact WEG Service Center.	▪ Short circuit at the inverter output. ▪ Trigger board of the IGBTs of the cell neutral arm disconnected. ▪ IGBTs of the cell neutral arm operating out of the saturation region. ▪ IGBTs or trigger board of the cell neutral arm defective. ▪ Fault on the desaturation signal feedback or gate-driver supply.
F1208 Cell W9 phase pulse feedback	▪ Contact WEG Service Center.	▪ Fault on the commutation of the IGBTs of the cell phase arm. ▪ Measurement circuit of the confirmation signal of the commutation of the IGBTs of the phase arm disconnected or defective. ▪ IGBTs or trigger board of the cell phase arm defective.
F1210 Cell W9 neutral pulse feedback	▪ Contact WEG Service Center.	▪ Fault on the confirmation of the commutation of the IGBTs of the cell neutral arm. ▪ Measurement circuit of the confirmation signal of the commutation of the IGBTs of the neutral arm disconnected or defective. ▪ IGBTs or trigger board of the cell neutral arm defective.

Fault/alarm	Reset	Possible causes
F1211 Cell W9 electronics power supply	▪ Contact WEG Service Center.	▪ Voltages of the internal electronic circuits of the cell out of the operation level. ▪ Defect on the cell power supply.
F1216 Cell W9 modulation synchronism	▪ Contact WEG Service Center.	▪ Fault in the synchronism between the MCC1 control board of the cell and the MVC3 main control.
F1217 Cell W9 bypass system	▪ Contact WEG Service Center.	▪ Fault in the operation of the cell bypass system. ▪ Bypass system is not connected or defective.
F1218 Communication with cell W9	▪ Contact WEG Service Center.	▪ Fault on the communication between the MCC1 control board of the cell and the MVC3 main control. ▪ Break or defect on the cell communication optic cable.
F1220 Incompatible cell W9 firmware	▪ Contact WEG Service Center.	▪ Firmware version of the MCC1 control board of the cell incompatible with the MVC3 main control.
F1221 Incompatible cell W9 model	▪ Contact WEG Service Center.	▪ Cell model incompatible or invalid with the inverter model.
F1222 Cell W9 insulation defective	▪ Contact WEG Service Center.	▪ Fault in the internal insulation of the cell: Contact between some energized point of the circuit and the frame. ▪ Fault on the capacitor discharge resistors of the cell DC link.
F1223 Firmware update or PLD cell W9	▪ Contact WEG Service Center.	▪ Fault in the update process of the processor firmware or in the reconfiguration of the cell PLD.
F1225 Cell W10 DC link overvoltage	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ DIx. ▪ Networks.	▪ Inverter input supply voltage too high. ▪ Incorrect setting of the inverter main transformer taps. ▪ Cell DC link voltage above 1200 V. ▪ Load inertia too high or deceleration ramp too short. ▪ Setting of P0151 too high.
F1226 Cell W10 DC link undervoltage	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ DIx. ▪ Networks.	▪ Inverter input supply voltage too low. ▪ Incorrect setting of the inverter main transformer taps. ▪ Cell DC link voltage below 745 V below 652 V for operation in vector control.
A1227 Overtemperature on cell W10 IGBT module	▪ Automatically eliminated when the temperature at the cell heatsink presents a value below 80 °C.	▪ Temperature on the cell heatsink above 85 °C. ▪ Ambient temperature too high (> 40 °C) and high output current. ▪ Fans locked or defective. ▪ Air input filters blocked.
F1228 Overtemperature on cell W10 IGBT module	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ DIx. ▪ Networks.	▪ Temperature on the cell heatsink above 90 °C. ▪ Ambient temperature too high (> 40 °C) and high output current. ▪ Fans locked or defective. ▪ Air input filters blocked.
F1229 Defective temperature sensor or undertemperature on cell W10 IGBT	▪ Contact WEG Service Center.	▪ Cell temperature measurement sensor defective. ▪ Cell temperature sensor disconnected. ▪ Temperature on the cell heatsink below -10 °C.

Fault/alarm	Reset	Possible causes
F1230 Cell W10 phase IGBT	▪ Contact WEG Service Center.	▪ Short circuit at the inverter output. ▪ Trigger board of the IGBTs of the cell phase arm disconnected. ▪ IGBTs of the cell phase arm operating out of the saturation region. ▪ IGBTs or trigger board of the cell phase arm defective. ▪ Fault on the desaturation signal feedback or gate-driver supply.
F1231 Cell W10 neutral IGBT	▪ Contact WEG Service Center.	▪ Short circuit at the inverter output. ▪ Trigger board of the IGBTs of the cell neutral arm disconnected. ▪ IGBTs of the cell neutral arm operating out of the saturation region. ▪ IGBTs or trigger board of the cell neutral arm defective. ▪ Fault on the desaturation signal feedback or gate-driver supply.
F1233 Cell W10 phase pulse feedback	▪ Contact WEG Service Center.	▪ Fault on the commutation of the IGBTs of the cell phase arm. ▪ Measurement circuit of the confirmation signal of the commutation of the IGBTs of the phase arm disconnected or defective. ▪ IGBTs or trigger board of the cell phase arm defective.
F1235 Cell W10 neutral pulse feedback	▪ Contact WEG Service Center.	▪ Fault on the confirmation of the commutation of the IGBTs of the cell neutral arm. ▪ Measurement circuit of the confirmation signal of the commutation of the IGBTs of the neutral arm disconnected or defective. ▪ IGBTs or trigger board of the cell neutral arm defective.
F1236 Cell W10 electronics power supply	▪ Contact WEG Service Center.	▪ Voltages of the internal electronic circuits of the cell out of the operation level. ▪ Defect on the cell power supply.
F1241 Cell W10 modulation synchronism	▪ Contact WEG Service Center.	▪ Fault in the synchronism between the MCC1 control board of the cell and the MVC3 main control.
F1242 Cell W10 bypass system	▪ Contact WEG Service Center.	▪ Fault in the operation of the cell bypass system. ▪ Bypass system is not connected or defective.
F1243 Communication with cell W10	▪ Contact WEG Service Center.	▪ Fault on the communication between the MCC1 control board of the cell and the MVC3 main control. ▪ Break or defect on the cell communication optic cable.
F1245 Incompatible cell W10 firmware	▪ Contact WEG Service Center.	▪ Firmware version of the MCC1 control board of the cell incompatible with the MVC3 main control.
F1246 Incompatible cell W10 model	▪ Contact WEG Service Center.	▪ Cell model incompatible or invalid with the inverter model.
F1247 Cell W10 insulation defective	▪ Contact WEG Service Center.	▪ Fault in the internal insulation of the cell: Contact between some energized point of the circuit and the frame. ▪ Fault on the capacitor discharge resistors of the cell DC link.
F1248 Firmware update or PLD cell W10	▪ Contact WEG Service Center.	▪ Fault in the update process of the processor firmware or in the reconfiguration of the cell PLD.

Fault/alarm	Reset	Possible causes
F1250 Cell W11 DC link overvoltage	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ DIx. ▪ Networks.	▪ Inverter input supply voltage too high. ▪ Incorrect setting of the inverter main transformer taps. ▪ Cell DC link voltage above 1200 V. ▪ Load inertia too high or deceleration ramp too short. ▪ Setting of P0151 too high.
F1251 Cell W11 DC link undervoltage	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ DIx. ▪ Networks.	▪ Inverter input supply voltage too low. ▪ Incorrect setting of the inverter main transformer taps. ▪ Cell DC link voltage below 745 V below 652 V for operation in vector control.
A1252 Overtemperature on cell W11 IGBT module	▪ Automatically eliminated when the temperature at the cell heatsink presents a value below 80 °C.	▪ Temperature on the cell heatsink above 85 °C. ▪ Ambient temperature too high (> 40 °C) and high output current. ▪ Fans locked or defective. ▪ Air input filters blocked.
F1253 Overtemperature on cell W11 IGBT module	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ DIx. ▪ Networks.	▪ Temperature on the cell heatsink above 90 °C. ▪ Ambient temperature too high (> 40 °C) and high output current. ▪ Fans locked or defective. ▪ Air input filters blocked.
F1254 Defective temperature sensor or undertemperature on cell W11 IGBT	▪ Contact WEG Service Center.	▪ Cell temperature measurement sensor defective. ▪ Cell temperature sensor disconnected. ▪ Temperature on the cell heatsink below -10 °C.
F1255 Cell W11 phase IGBT	▪ Contact WEG Service Center.	▪ Short circuit at the inverter output. ▪ Trigger board of the IGBTs of the cell phase arm disconnected. ▪ IGBTs of the cell phase arm operating out of the saturation region. ▪ IGBTs or trigger board of the cell phase arm defective. ▪ Fault on the desaturation signal feedback or gate-driver supply.
F1256 Cell W11 neutral IGBT	▪ Contact WEG Service Center.	▪ Short circuit at the inverter output. ▪ Trigger board of the IGBTs of the cell neutral arm disconnected. ▪ IGBTs of the cell neutral arm operating out of the saturation region. ▪ IGBTs or trigger board of the cell neutral arm defective. ▪ Fault on the desaturation signal feedback or gate-driver supply.
F1258 Cell W11 phase pulse feedback	▪ Contact WEG Service Center.	▪ Fault on the commutation of the IGBTs of the cell phase arm. ▪ Measurement circuit of the confirmation signal of the commutation of the IGBTs of the phase arm disconnected or defective. ▪ IGBTs or trigger board of the cell phase arm defective.
F1260 Cell W11 neutral pulse feedback	▪ Contact WEG Service Center.	▪ Fault on the confirmation of the commutation of the IGBTs of the cell neutral arm. ▪ Measurement circuit of the confirmation signal of the commutation of the IGBTs of the neutral arm disconnected or defective. ▪ IGBTs or trigger board of the cell neutral arm defective.

Fault/alarm	Reset	Possible causes
F1261 Cell W11 electronics power supply	▪ Contact WEG Service Center.	▪ Voltages of the internal electronic circuits of the cell out of the operation level. ▪ Defect on the cell power supply.
F1266 Cell W11 modulation synchronism	▪ Contact WEG Service Center.	▪ Fault in the synchronism between the MCC1 control board of the cell and the MVC3 main control.
F1267 Cell W11 bypass system	▪ Contact WEG Service Center.	▪ Fault in the operation of the cell bypass system. ▪ Bypass system is not connected or defective.
F1268 Communication with cell W11	▪ Contact WEG Service Center.	▪ Fault on the communication between the MCC1 control board of the cell and the MVC3 main control. ▪ Break or defect on the cell communication optic cable.
F1270 Incompatible cell W11 firmware	▪ Contact WEG Service Center.	▪ Firmware version of the MCC1 control board of the cell incompatible with the MVC3 main control.
F1271 Incompatible cell W11 model	▪ Contact WEG Service Center.	▪ Cell model incompatible or invalid with the inverter model.
F1272 Cell W11 insulation defective	▪ Contact WEG Service Center.	▪ Fault in the internal insulation of the cell: Contact between some energized point of the circuit and the frame. ▪ Fault on the capacitor discharge resistors of the cell DC link.
F1273 Firmware update or PLD cell W11	▪ Contact WEG Service Center.	▪ Fault in the update process of the processor firmware or in the reconfiguration of the cell PLD.
F1275 Cell W12 DC link overvoltage	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ Dlx. ▪ Networks.	▪ Inverter input supply voltage too high. ▪ Incorrect setting of the inverter main transformer taps. ▪ Cell DC link voltage above 1200 V. ▪ Load inertia too high or deceleration ramp too short. ▪ Setting of P0151 too high.
F1276 Cell W12 DC link undervoltage	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ Dlx. ▪ Networks.	▪ Inverter input supply voltage too low. ▪ Incorrect setting of the inverter main transformer taps. ▪ Cell DC link voltage below 745 V below 652 V for operation in vector control.
A1277 Overtemperature on cell W12 IGBT module	▪ Automatically eliminated when the temperature at the cell heatsink presents a value below 80 °C.	▪ Temperature on the cell heatsink above 85 °C. ▪ Ambient temperature too high (> 40 °C) and high output current. ▪ Fans locked or defective. ▪ Air input filters blocked.
F1278 Overtemperature on cell W12 IGBT module	▪ Power-on. ▪ Manual (O /RESET key). ▪ Auto-reset. ▪ Dlx. ▪ Networks.	▪ Temperature on the cell heatsink above 90 °C. ▪ Ambient temperature too high (> 40 °C) and high output current. ▪ Fans locked or defective. ▪ Air input filters blocked.
F1279 Defective temperature sensor or undertemperature on cell W12 IGBT	▪ Contact WEG Service Center.	▪ Cell temperature measurement sensor defective. ▪ Cell temperature sensor disconnected. ▪ Temperature on the cell heatsink below -10 °C.

Fault/alarm	Reset	Possible causes
F1280 Cell W12 phase IGBT	▪ Contact WEG Service Center.	▪ Short circuit at the inverter output. ▪ Trigger board of the IGBTs of the cell phase arm disconnected. ▪ IGBTs of the cell phase arm operating out of the saturation region. ▪ IGBTs or trigger board of the cell phase arm defective. ▪ Fault on the desaturation signal feedback or gate-driver supply.
F1281 Cell W12 neutral IGBT	▪ Contact WEG Service Center.	▪ Short circuit at the inverter output. ▪ Trigger board of the IGBTs of the cell neutral arm disconnected. ▪ IGBTs of the cell neutral arm operating out of the saturation region. ▪ IGBTs or trigger board of the cell neutral arm defective. ▪ Fault on the desaturation signal feedback or gate-driver supply.
F1283 Cell W12 phase pulse feedback	▪ Contact WEG Service Center.	▪ Fault on the commutation of the IGBTs of the cell phase arm. ▪ Measurement circuit of the confirmation signal of the commutation of the IGBTs of the phase arm disconnected or defective. ▪ IGBTs or trigger board of the cell phase arm defective.
F1285 Cell W12 neutral pulse feedback	▪ Contact WEG Service Center.	▪ Fault on the confirmation of the commutation of the IGBTs of the cell neutral arm. ▪ Measurement circuit of the confirmation signal of the commutation of the IGBTs of the neutral arm disconnected or defective. ▪ IGBTs or trigger board of the cell neutral arm defective.
F1286 Cell W12 electronics power supply	▪ Contact WEG Service Center.	▪ Voltages of the internal electronic circuits of the cell out of the operation level. ▪ Defect on the cell power supply.
F1291 Cell W12 modulation synchronism	▪ Contact WEG Service Center.	▪ Fault in the synchronism between the MCC1 control board of the cell and the MVC3 main control.
F1292 Cell W12 bypass system	▪ Contact WEG Service Center.	▪ Fault in the operation of the cell bypass system. ▪ Bypass system is not connected or defective.
F1293 Communication with cell W12	▪ Contact WEG Service Center.	▪ Fault on the communication between the MCC1 control board of the cell and the MVC3 main control. ▪ Break or defect on the cell communication optic cable.
F1295 Incompatible cell W12 firmware	▪ Contact WEG Service Center.	▪ Firmware version of the MCC1 control board of the cell incompatible with the MVC3 main control.
F1296 Incompatible cell W12 model	▪ Contact WEG Service Center.	▪ Cell model incompatible or invalid with the inverter model.
F1297 Cell W12 insulation defective	▪ Contact WEG Service Center.	▪ Fault in the internal insulation of the cell: Contact between some energized point of the circuit and the frame. ▪ Fault on the capacitor discharge resistors of the cell DC link.
F1298 Firmware update or PLD cell W12	▪ Contact WEG Service Center.	▪ Fault in the update process of the processor firmware or in the reconfiguration of the cell PLD.

7.2 INFORMATION FOR CONTACTING TECHNICAL SUPPORT

NOTE!
For technical support or servicing, it is important to have the following information at hand:

- Inverter model.
- Serial number, manufacturing date and hardware revision, which are available on the product identification label (refer to Section 2.3 IDENTIFICATION LABEL OF THE MVW3000 on page 2-2).
- Software version (refer to Section 3.2 SOFTWARE VERSION on page 3-1).
- Application and programming data.

For explanations, training or services, please, contact WEG Technical Assistance.

7.3 PREVENTIVE MAINTENANCE

DANGER!

- Only people with properly qualified and familiar with the MVW3000 Inverter and associated equipment must plan or service this equipment.
- Such personnel must follow the safety instructions described in this manual and/or defined by local standards.
- The noncompliance with the safety instructions may result in death risks and/or damages to the equipment.
- WEG Technical Assistance.

The MVW3000 inverter has been designed and tested to have a long, failure-free, operation life. The preventive maintenance helps early identification of possible future failures, extending the useful life of the equipment, increasing the mean time between failures and reducing the equipment downtime. It also helps identifying whether the equipment is being used within its mechanical, electrical and environmental limits. The periodical cleaning during preventive maintenance assures an adequate operation when the inverter is used within its rated conditions.

In order to produce the best benefits, the preventive maintenance must be performed periodically by a qualified technician. The interval depends on factors like the duty cycle and the environmental conditions (ambient temperature, ventilation, the existence of dust, etc.). It is recommended to begin with the preventive maintenance frequently and increase the interval as the obtained results indicate the possibility of reducing that frequency. A detailed record of the preventive maintenance is also recommended. These records serve as proof of the maintenance fulfillment and help identify the cause of possible faults and alarms.

Two types of preventive maintenance are described next: during the inverter operation and with the inverter completely stopped/de-energized.

7.3.1 Preventive Maintenance During Operation

This type of maintenance is performed with the inverter energized and in operation. It is just necessary to access the control cabinet where only low voltage power supply (< 480 V) is present, but which is potentially dangerous.

DANGER!

- This equipment has high voltages that may cause electric shocks. Only people with properly qualified and familiar with the MVW3000 Inverter and associated equipment must plan or service this equipment. In order to avoid the risk of shock, follow all the safety procedures required for servicing energized equipment.
- Do not touch any electrical circuit before ensuring it is de-energized.

Procedures:

1. Operation of the fans and exhausting fans:
Verify the proper operation of the exhausting fans at the top of the rectifier cabinet and the inverter cabinet. The fans must be running in the same direction and their exhausting action must be perceptible. Verify the proper operation of the fan at the control cabinet: it must be running and blowing air into the cabinet.

2. Cleaning of the air inlet filters:
Remove the protection grids from the air inlets at the doors of all the cabinets by unbolting them. Remove the filters and clean, wash or replace them. The amount of accumulated dirt on the filters helps defining the correct interval between preventing maintenances. Reinstall the filters and bolt the protection grids again.

3. Open the control cabinet and visually inspect the components inside it, verifying them to identify faults or the need of preventive maintenance with complete stop/de-energization for cleaning or replacement:

Components	Anomalies
Electronic boards	Excessive accumulation dust, oil, moisture, etc. Discolored or darker points due to excessive heat
Capacitors on electronic boards	Discoloration, smell, electrolyte leakage, case deformation
Resistors in general	Discoloration or smell

4. Read and write down the following parameters from the HMI:

- P0003 - Motor Current
- P0005 - Motor Frequency
- P0006 - VFD Status
- P0022 - Temperature on MVC3 board
- P0042 - Time powered counter
- P0043 - Time enabled counter
- P0067 - Error Register
- P0068 - Present Error
- P0080 - Date (dd/mm/yy)
- P0081 - Hour (24hs).

It may also be necessary the values of parameters related to the number of cells installed on the MVW3000, such as:

- P1000 - DC link voltage of cell U1 to P1035 - DC link voltage of cell W12
- P1050 - Temperature on the power module of cell U1 to P1085 - Temperature on the power module of cell W12
- P1155 - Phase U cell status U1 ... Un
- P1156 - Phase V cell status V1...Vn
- P1157 - Phase W cell status W1...Wn

7.3.2 Preventive Maintenance with Complete Stop/De-energization

DANGER!

- This equipment has high voltages that may cause electric shocks. Only people with properly qualified and familiar with the MVW3000 Inverter and associated equipment must plan or service this equipment. In order to avoid the risk of shock, follow all the safety procedures required for servicing energized equipment.
- Do not touch any electrical circuit before ensuring it is de-energized.

This type of maintenance is also intended for the cleaning and visual inspection of the high voltage cabinets; therefore, it requires the complete de-energization of the inverter. It can be less frequent than the preventive maintenance during operation.

Procedures:

1. Execute the procedures 1 and 4 of the Preventive Maintenance During Operation.

DANGER!
Although the inverter commands the opening of the input switchgear, there is no guarantee of its opening and neither that no voltages are present, because the capacitors remain charged for a long time, and they can also be charged through the auxiliary low voltage supply. Before opening and accessing the high voltage cabinets, follow all the safe de-energization procedures described next.

7.4 SAFE DE-ENERGIZATION INSTRUCTIONS

1. Decelerate the motor to a complete stop.

2. Check the DC link voltage values of the installed power cells at parameters P1000 to P1035 da HMI.

3. Press the “POWER OFF” pushbutton. The input transformer switchgear should open at this moment, which is indicated by the “INPUT ON” pilot light going off.

WARNING!
If the input transformer switchgear does not open with the “POWER OFF” command, then open it manually.

4. Follow the DC link voltage decrease through the respective parameters on the HMI. Even with the zero volt indication, you must wait for ten minutes so as to ensure the full discharge of the DC link capacitors.

5. Press the emergency pushbutton located on the control column door and remove its key.

6. On the circuit breaker cabinet (switchgear) of the input transformer, switch off the switch disconnector and grounding of the inverter circuit. It is necessary to confirm visually the opening of the switch through the inspection window. Lock the cabinet and/or add warning sign indicating “System in maintenance”.

7. Switch off the Q2 circuit breaker in the control column and lock it in the open position with a padlock and/or put a warning sign indicating “System in maintenance”.

8. Switch off the Q1 circuit breaker in the control column. Remove the auxiliary power supply.

It is only after the sequence of procedures described above that high voltage compartment doors can be opened.

DANGER!
Even after the DC link voltage indication parameters present 0 V on the HMI, 250 V may still be presented on the DC link of the power cells. Wait for ten minutes, and the cabinet doors may be opened.

9. Execute the procedures 2 and 3 of the Preventive Maintenance During Operation.

10. Clean the dust accumulated inside the control and high voltage cabinets as described next:

- Heatsink ventilation system (fans, rectifier and inverter arm heatsinks): remove the dust accumulated on the heatsink fins using compressed air.
- Electronic boards: remove the dust accumulated on the boards using an anti-static brush and/ or low pressure ionized compressed air. If necessary, remove the boards from the inverter.

WARNING!
Electronic boards have components sensitive to electrostatic discharges. Do not touch the components or connectors directly. If necessary, first touch the grounded metallic frame or wear a proper grounded wrist strap.

- Cabinet inner part and other components: remove the accumulated dust using a vacuum cleaner with a nonmetallic nozzle. Perform this cleaning especially on the insulating materials that support energized parts to avoid leakage currents during operation.

11. Connection retightening: inspect all the electrical and mechanical connections and retighten them if necessary.

12. Reinstall all the removed components and connections in their respective places and follow the start-up procedures described in section 6.3 ENERGIZATION, START-UP AND SAFE DE-ENERGIZATION on page 6-15 of the User's Manual.

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