

Digital electro-pneumatic regulators Series ER200

Ports G1/4 and G3/8

2

CONTROL



- » Compact design
- » Digital display
- » Analog and digital input
- » Programmable
- » Zero/span adjustment function
- » Error display function, pressure display
- » Preset memory function 8-set points (3 bits).

GENERAL DATA ER2XX-5XXX

| | | |
|--|---|--|
| Model | ER204-5 0/1/2 X ER238-5 0/1/2 X Analog type | ER204-5P X ER238-5P X Parallel type |
| Fluid | Cleaned air | Cleaned air |
| Max. working pressure | 7 bar | 7 bar |
| Min. working pressure | Control pressure + max. control pressure + 1 bar | Control pressure + max. control pressure + 1 bar |
| Pressure control range | 0,3 ÷ 5 bar | 0,3 ÷ 5 bar |
| Class protection | IP40 | IP40 |
| Power supply voltage | DC24V ± 10% (stabilized power supply with a ripple rate of 1% or less) | DC24V ± 10% (stabilized power supply with a ripple rate of 1% or less) |
| Consumption current | 0.15 A (rush current 0.6 A or less) | 0.15 A (rush current 0.6 A or less) |
| Input signal(Input Impedance) | 0 to 10 VDC (6.7k Ω) 0 to 5 VDC (10k Ω) 4 to 20 mA DC (250 Ω) | 10 bit |
| Preset input | 8 points | N/A |
| Output signal Note 1 | Analog output 1-5 VDC (load to be connected impedance 500 kΩ or more) Switch output NPN or PNP, open collector output, 30 V, 50 mA, voltage drop 2.4 V, compatible for usage in PLC and Relay. | Analog output 1-5 VDC (load to be connected impedance 500 kΩ or more) Switch output NPN or PNP, open collector output, 30 V, 50 mA, voltage drop 2.4 V, compatible for usage in PLC and Relay. |
| Error output signal | NPN or PNP, open collector, 30 V, 50 mA, voltage drop 2.4 V, compatible for usage in PLC and Relay. | NPN or PNP, open collector, 30 V, 50 mA, voltage drop 2.4 V, compatible for usage in PLC and Relay. |
| Direct memory setting | 0,05 ÷ 5 bar minimum input width 0,01 bar | 0,05 ÷ 5 bar minimum input width 0,01 bar |
| Hysteresis Note 2 | 0.5% F.S. or less | 0.5% F.S. or less |
| Linearity Note 2 | ±0.3% F.S. or less | ±0.3% F.S. or less |
| Resolution Note 2 | 0.2% F.S. or less | 0.2% F.S. or less |
| Repeatability Note 2 | 0.3% F.S. or less | 0.3% F.S. or less |
| Temperature characteristics: zero point fluctuation | 0.15% F.S./°C or less | 0.15% F.S./°C or less |
| Temperature characteristics: span point fluctuation | 0.07% F.S./°C or less | 0.07% F.S./°C or less |
| Max. flow rate(ANR) Note 3 | 1500 l/min | 1500 l/min |
| Step response time: no load | 0.2 sec. or less | 0.2 sec. or less |
| Step response time: With load 1000 cm³ | 0.8 sec. or less | 0.8 sec. or less |
| Mechanical vibration proof | 98 m/s² or less | 98 m/s² or less |
| Ambient temperature | 5°C + 50 °C | 5°C + 50 °C |
| Fluid temperature | 5°C + 50 °C | 5°C + 50 °C |
| Connecting port size IN/OUT | G1/4 - G3/8 | G1/4 - G3/8 |
| Connecting port size EXHAUST | G3/8 | G3/8 |
| Mounting | Free | Free |
| Weight | 450g | 450g |
| Note 1: | Select either analog or switch output. | |
| Note 2: | This characteristic is guaranteed within a regulation range between 10 and 90% of the full scale, with a power voltage of 24V±10%, a supply pressure of 1 bar higher compared with the set pressure (ex. regulation of 3 bar, supply pressure of 3+1 = 4 bar) and a volume connected to the outlet without any loss. In applications with great air consumption, such as the blowing, the indicated tolerance may change. | |
| Note 3: | The above apply when working pressure and control pressure are maximum. | |
| Nota 4: | The above apply when working pressure is maximum and the step is as follows: 50% F.S. -> 100% F.S. 50% F.S. -> 60% F.S. 50% F.S. -> 40% F.S. | |

GENERAL DATA ER2XX-9XXX

| | | |
|--|---|--|
| Model | ER204-9 0/1/2 X ER238-9 0/1/2 X Analog type | ER238-9P X ER238-9P X Parallel type |
| Fluid | Cleaned air | Cleaned air |
| Max. working pressure | 10 bar | 10 bar |
| Min. working pressure | Control pressure + max. control pressure + 1 bar | Control pressure + max. control pressure + 1 bar |
| Pressure control range | 0,5 - 9 bar | 0,5 - 9 bar |
| Class protection | IP40 | IP40 |
| Power supply voltage | DC24V ± 10% (stabilized power supply with a ripple rate of 1% or less) | DC24V ± 10% (stabilized power supply with a ripple rate of 1% or less) |
| Consumption current | 0.15 A (rush current 0.6 A or less) | 0.15 A (rush current 0.6 A or less) |
| Input signal (Input impedance) | 0 to 10 VDC (6.7kΩ) 0 to 5 VDC (10kΩ) 4 to 20 mA DC (250Ω) | 10 bit |
| Preset input | 8 points | N/A |
| Output signal | Analog output 1-5 VDC (load to be connected impedance 500 kΩ) Switch output NPN or PNP, open collector, 30 V, 50 mA, voltage drop 2.4 V, compatible for usage in PLC and Relay | Analog output 1-5 VDC (load to be connected impedance 500 kΩ) Switch output NPN or PNP, open collector, 30 V, 50 mA, voltage drop 2.4 V, compatible for usage in PLC and Relay |
| Error output signal | NPN or PNP, open collector, 30 V, 50 mA, voltage drop 2.4 V, compatible for usage in PLC and Relay | NPN or PNP, open collector, 30 V, 50 mA, voltage drop 2.4 V, compatible for usage in PLC and Relay |
| Direct memory setting | 0,05 - 9 bar - min. input 0,01 bar max. error 0,02 bar | 0,05 - 9 bar - min. input 0,01 bar max. error 0,02 bar |
| Hysteresis Note 2 | 0.5% F.S. or less | 0.5% F.S. or less |
| Linearity Note 2 | ±0.3% F.S. or less | ±0.3% F.S. or less |
| Resolution Note 2 | 0.2% F.S. or less | 0.2% F.S. or less |
| Repeatability Note 2 | 0.3% F.S. or less | 0.3% F.S. or less |
| Temperature characteristics: Zero point fluctuation | 0.15% F.S./°C or less | 0.15% F.S./°C or less |
| Temperature characteristics: Span point fluctuation | 0.07% F.S./°C or less | 0.07% F.S./°C or less |
| Max. flow rate(ANR) Note 3 | 1500 l/min | 1500 l/min |
| Step response time No load | 0.2 sec. or less | 0.2 sec. or less |
| Step response time Load 1000 cm³ | 0.8 sec. or less | 0.8 sec. or less |
| Mechanical vibration proof | 98 m/s² | 98 m/s² |
| Ambient temperature | 5 to 50 °C | 5 to 50 °C |
| Fluid temperature | 5 to 50 °C | 5 to 50 °C |
| Connecting port size IN/OUT | G1/4 - G3/8 | G1/4 - G3/8 |
| Connecting port size EXHAUST | G3/8 | G3/8 |
| Mounting | Free | Free |
| Weight | 450g | 450g |
| Note 1: | Select either analog or switch output | |
| Note 2: | This characteristic is guaranteed within a regulation range between 10 and 90% of the full scale, with a power voltage of 24V±10%, a supply pressure of 1 bar higher compared with the set pressure (ex. regulation of 3 bar, supply pressure of 3+1 = 4 bar) and a volume connected to the outlet without any loss. In applications with great air consumption, such as the blowing, the indicated tolerance may change. | |
| Note 3: | The above apply when working pressure and control pressure are maximum. | |
| Note 4: | The above apply when working pressure is maximum and the step is as follows: 50% F.S. -> 100% F.S. 50% F.S. -> 60% F.S. 50% F.S. -> 40% F.S. | |

STANDARD CODES

Models

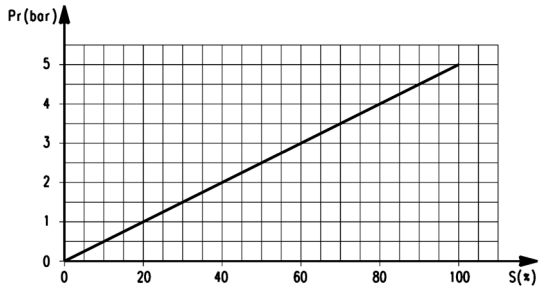
| | | | | |
|------------|------------|------------|------------|------------|
| ER238-50AP | ER238-52AP | ER238-5PSP | ER238-90SP | ER238-92SP |
| ER238-50SP | ER238-52SP | ER238-90AP | ER238-92AP | ER238-9PSP |

CODING EXAMPLE

| | | | | | | |
|-----------|----------|-----------|----------|----------|----------|-----------|
| ER | 2 | 04 | - | 5 | 0 | AN |
|-----------|----------|-----------|----------|----------|----------|-----------|

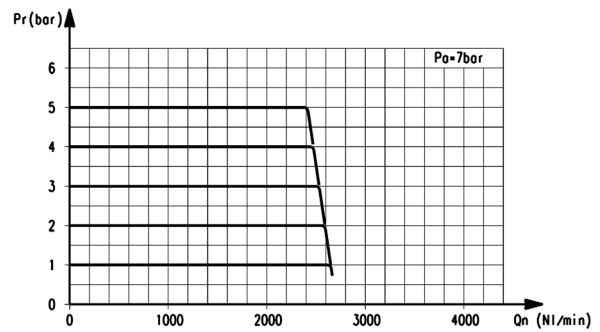
| | |
|-----------|--|
| ER | SERIES |
| 2 | SIZE: 2 = size 2 |
| 04 | PORT: 04 = G1/4 38 = G3/8 |
| 5 | WORKING PRESSURE: 5 = 0 ÷ 5 bar 9 = 0.5 ÷ 9 bar |
| 0 | INPUT: 0 = 0 - 10 V DC 1 = 0 - 5 V DC 2 = 4 - 20 mA P = Parallel 10 bit |
| AN | OUTPUT: AN = 1 - 5 V analog error (NPN) AP = 1 - 5 V analog, error (PNP) SN = switch(NPN), error(NPN) SP = switch (PNP), error (PNP) |

DIAGRAMS



ER2xx-5xxx
Input/Output characteristics

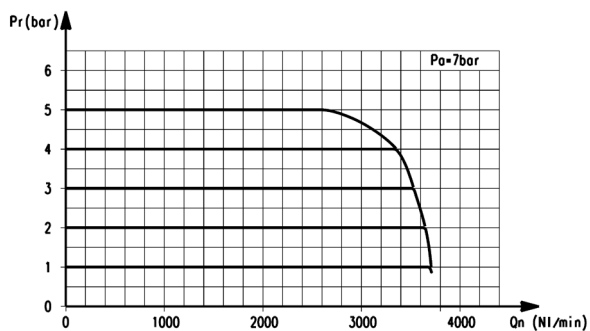
Pr = outlet pressure (bar)
S = input signal (%)



ER204-5xxx
Flow characteristics

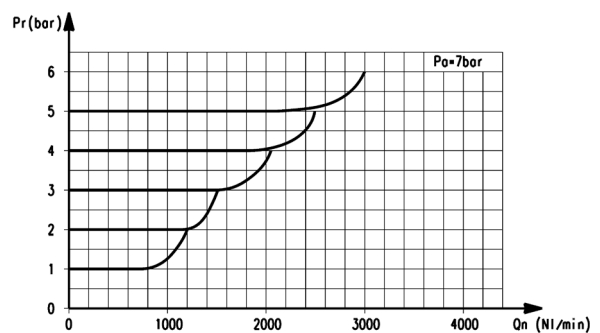
Pr = outlet pressure (bar)
Qn = flow (l/min)
Pa = working pressure (bar)

DIAGRAMS



ER238-5xxx
Flow characteristics

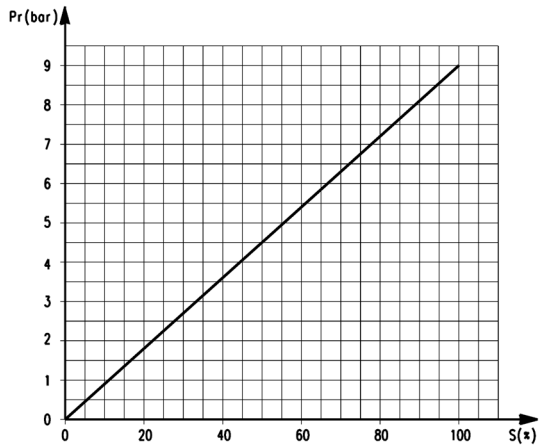
Pr = outlet pressure (bar)
Qn = flow (l/min)
Pa = working pressure (bar)



ER2xx-5xxx
Exhaust characteristics

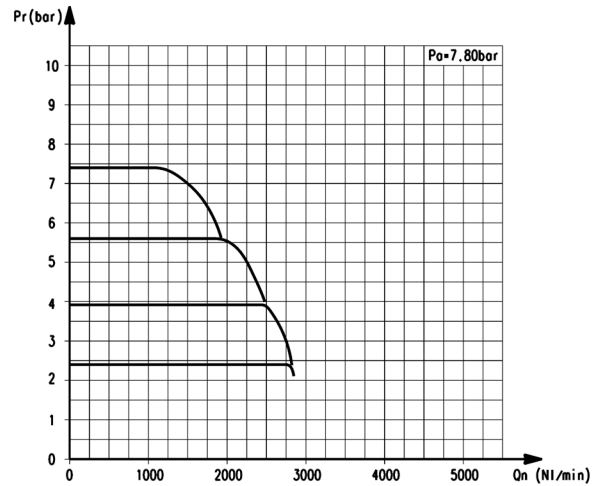
Pr = outlet pressure (bar)
Qn = flow (l/min)
Pa = working pressure (bar)

DIAGRAMS



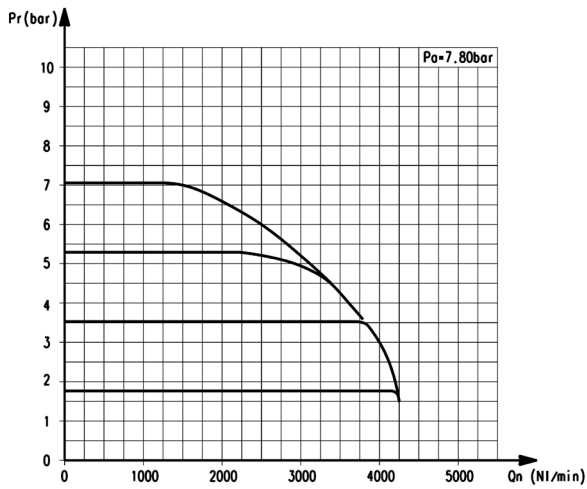
ER2xx-9xxx
Input/Output characteristics

Pr = output pressure (bar)
S = inlet signal (%)
Pa = working pressure (bar)



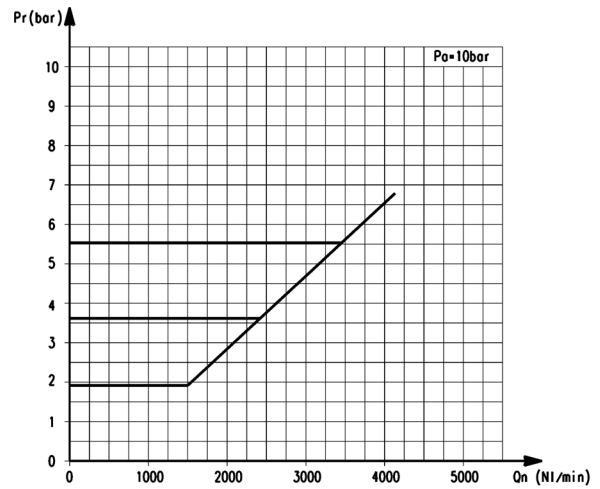
ER204-9xxx
Flow characteristics
Pr = output pressure (bar)
Qn = flow (l/min)
Pa = working pressure (bar)

DIAGRAMS



ER238-9xxx
Flow characteristics

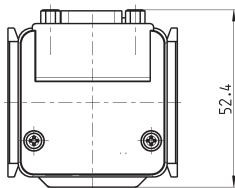
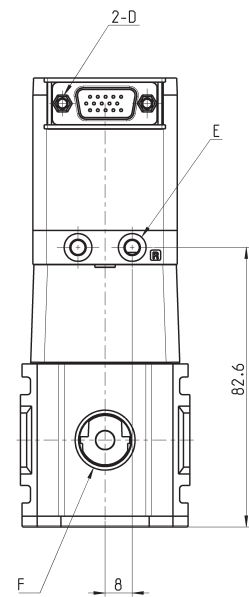
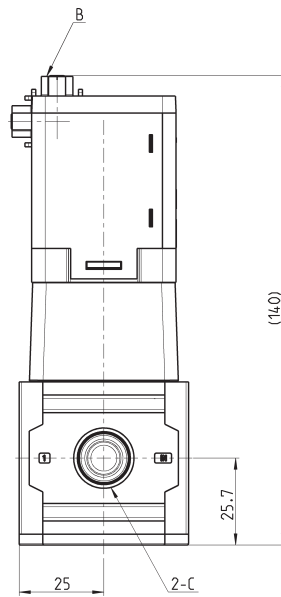
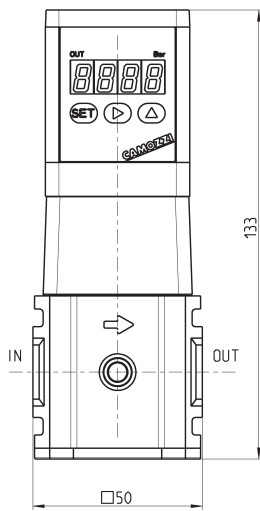
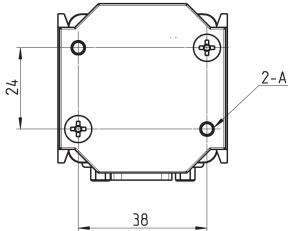
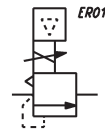
Pr = output pressure (bar)
Qn = flow (l/min)
Pa = working pressure (bar)



ER2xx-9xxx
Exhaust characteristics

Pr = output pressure (bar)
Qn = flow (l/min)
Pa = working pressure (bar)

Proportional regulators Series ER200



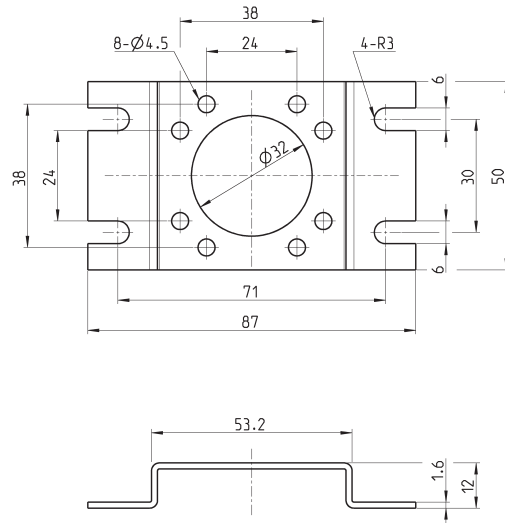
DIMENSIONS

| Mod. | A | B | C | D | E | F |
|--------------|-------------|-------------------------------|------|----------|--------------------------------------|---------------|
| ER204 | M4 depth 12 | D sub-connector 15 pins/plugs | G1/4 | 4-40 UNC | Ø4.2 Port R (pilot air exhaust port) | G3/8 EXH port |
| ER238 | M4 depth 12 | D sub-connector 15 pins/plugs | G3/8 | 4-40 UNC | Ø4.2 Port R (pilot air exhaust port) | G3/8 EXH port |

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Bracket ER2-B1

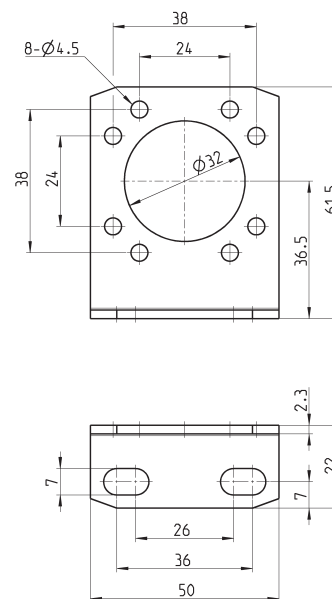
Floor installation type mounting



Mod.
ER2-B1

Bracket ER2-B2

Wall installation type mounting



Mod.
ER2-B2

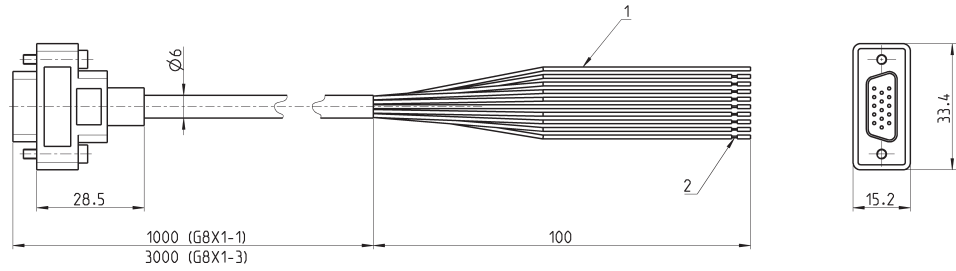
Cable and connector for regulator with analog Input

To check the correspondence between pin and cables' colour, please refer to the instruction sheet included in the packaging or to the user manual.



1 = shield wire*
2 = 9-AWG26

* Connect the shield wire to the power's minus (0 V) side.



Mod.
G8X1-1
G8X1-3

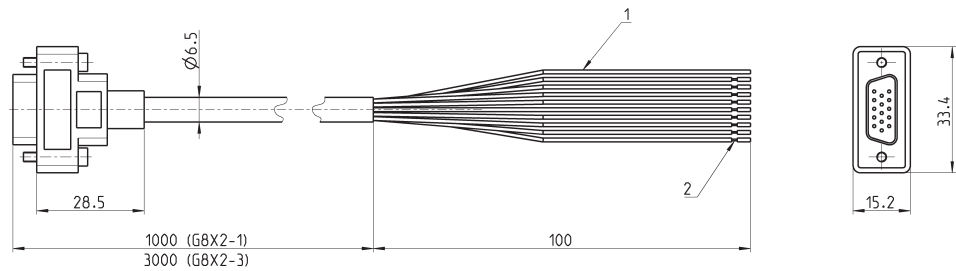
Cable and connector for regulator with parallel Input

To check the correspondence between pin and cables' colour, please refer to the instruction sheet included in the packaging or to the user manual.



1 = shield wire*
2 = 9-AWG26

* Connect the shield wire to the power's minus (0 V) side.



Mod.
G8X2-1
G8X2-3