

# Series ER200 digital electro-pneumatic regulators

Ports G1/4 and G3/8



- » 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**

<b>Model</b>	ER204-5 0/1/2 X ER238-5 0/1/2 X Analog type	ER204-5P X ER238-5P X Parallel type
<b>Fluid</b>	filtered compressed air, unlubricated, according to ISO 8573-1 class 3.4.3, inert gas	filtered compressed air, unlubricated, according to ISO 8573-1 class 3.4.3, inert gas
<b>Max. working pressure</b>	7 bar	7 bar
<b>Min. working pressure</b>	Control pressure + max. control pressure + 1 bar	Control pressure + max. control pressure + 1 bar
<b>Pressure control range</b>	0,3 ÷ 5 bar	0,3 ÷ 5 bar
<b>Class protection</b>	IP40	IP40
<b>Power supply voltage</b>	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)
<b>Consumption current</b>	0.15 A (rush current 0.6 A or less)	0.15 A (rush current 0.6 A or less)
<b>Input signal( Input Impedance )</b>	0 to 10 VDC (6.7k Ω) 0 to 5 VDC (10k Ω) 4 to 20 mA DC (250 Ω)	10 bit
<b>Preset input</b>	8 points	N/A
<b>Output signal Note 1</b>	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.
<b>Error output signal</b>	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.
<b>Direct memory setting</b>	0,05 ÷ 5 bar minimum input width 0,01 bar	0,05 ÷ 5 bar minimum input width 0,01 bar
<b>Hysteresis Note 2</b>	0.5% F.S. or less	0.5% F.S. or less
<b>Linearity Note 2</b>	±0.3% F.S. or less	±0.3% F.S. or less
<b>Resolution Note 2</b>	0.2% F.S. or less	0.2% F.S. or less
<b>Repeatability Note 2</b>	0.3% F.S. or less	0.3% F.S. or less
<b>Temperature characteristics: zero point fluctuation</b>	0.15% F.S./°C or less	0.15% F.S./°C or less
<b>Temperature characteristics: span point fluctuation</b>	0.07% F.S./°C or less	0.07% F.S./°C or less
<b>Max. flow rate( ANR ) Note 3</b>	1500 l/min	1500 l/min
<b>Step response time: no load</b>	0.2 sec. or less	0.2 sec. or less
<b>Step response time: With load 1000 cm<sup>3</sup></b>	0.8 sec. or less	0.8 sec. or less
<b>Mechanical vibration proof</b>	98 m/s <sup>2</sup> or less	98 m/s <sup>2</sup> or less
<b>Ambient temperature</b>	5°C ÷ 50 °C	5°C ÷ 50 °C
<b>Fluid temperature</b>	5°C ÷ 50 °C	5°C ÷ 50 °C
<b>Connecting port size IN/OUT</b>	G1/4 - G3/8	G1/4 - G3/8
<b>Connecting port size EXHAUST</b>	G3/8	G3/8
<b>Mounting</b>	Free	Free
<b>Weight</b>	450g	450g
<b>Note 1:</b>	Select either analog or switch output.	
<b>Note 2:</b>	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.	
<b>Note 3:</b>	The above apply when working pressure and control pressure are maximum.	
<b>Note 4:</b>	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**

<b>Model</b>	ER204-9 0/1/2 X ER238-9 0/1/2 X Analog type	ER238-9P X ER238-9P X Parallel type
<b>Fluid</b>	Cleaned air	Cleaned air
<b>Max. working pressure</b>	10 bar	10 bar
<b>Min. working pressure</b>	Control pressure + max. control pressure + 1 bar	Control pressure + max. control pressure + 1 bar
<b>Pressure control range</b>	0,5 - 9 bar	0,5 - 9 bar
<b>Class protection</b>	IP40	IP40
<b>Power supply voltage</b>	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 )
<b>Consumption current</b>	0.15 A (rush current 0.6 A or less)	0.15 A (rush current 0.6 A or less)
<b>Input signal ( Input impedance )</b>	0 to 10 VDC (6.7kΩ) 0 to 5 VDC (10kΩ) 4 to 20 mA DC (250Ω)	10 bit
<b>Preset input</b>	8 points	N/A
<b>Output signal</b>	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
<b>Error output signal</b>	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
<b>Direct memory setting</b>	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
<b>Hysteresis Note 2</b>	0.5% F.S. or less	0.5% F.S. or less
<b>Linearity Note 2</b>	±0.3% F.S. or less	±0.3% F.S. or less
<b>Resolution Note 2</b>	0.2% F.S. or less	0.2% F.S. or less
<b>Repeatability Note 2</b>	0.3% F.S. or less	0.3% F.S. or less
<b>Temperature characteristics: Zero point fluctuation</b>	0.15% F.S./°C or less	0.15% F.S./°C or less
<b>Temperature characteristics: Span point fluctuation</b>	0.07% F.S./°C or less	0.07% F.S./°C or less
<b>Max. flow rate(ANR) Note 3</b>	1500 l/min	1500 l/min
<b>Step response time No load</b>	0.2 sec. or less	0.2 sec. or less
<b>Step response time Load 1000 cm<sup>3</sup></b>	0.8 sec. or less	0.8 sec. or less
<b>Mechanical vibration proof</b>	98 m/s <sup>2</sup>	98 m/s <sup>2</sup>
<b>Ambient temperature</b>	5 to 50 °C	5 to 50 °C
<b>Fluid temperature</b>	5 to 50 °C	5 to 50 °C
<b>Connecting port size IN/OUT</b>	G1/4 - G3/8	G1/4 - G3/8
<b>Connecting port size EXHAUST</b>	G3/8	G3/8
<b>Mounting</b>	Free	Free
<b>Weight</b>	450g	450g
<b>Note 1:</b>	Select either analog or switch output	
<b>Note 2:</b>	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.	
<b>Note 3:</b>	The above apply when working pressure and control pressure are maximum.	
<b>Note 4:</b>	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**

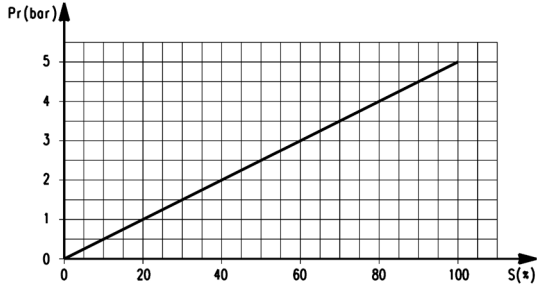
<b>ER</b>	<b>2</b>	<b>04</b>	<b>-</b>	<b>5</b>	<b>0</b>	<b>AN</b>
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<b>ER</b>	SERIES
<b>2</b>	SIZE: 2 = size 2
<b>04</b>	PORT: 04 = G1/4 38 = G3/8
<b>5</b>	WORKING PRESSURE: 5 = 0 ÷ 5 bar 9 = 0.5 ÷ 9 bar
<b>0</b>	INPUT: 0 = 0 - 10 V DC 1 = 0 - 5 V DC 2 = 4 - 20 mA P = Parallel 10 bit
<b>AN</b>	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)

SERIES ER200 DIGITAL ELECTRO-PNEUMATIC REGULATORS

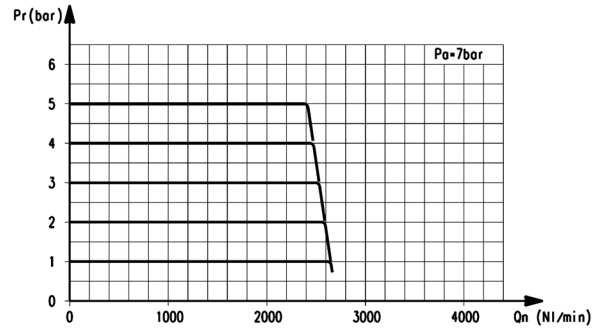
**DIAGRAMS**

SERIES ER200 DIGITAL ELECTRO-PNEUMATIC REGULATORS



ER2xx-5xxx  
Input/Output characteristics

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



ER204-5xxx  
Flow characteristics

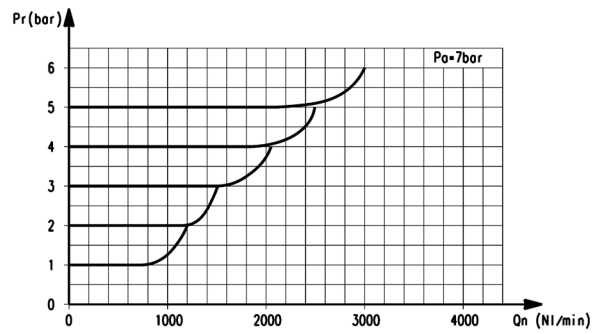
Pr = outlet pressure (bar)  
Qn = flow (l/min)  
Pa = working pressure (bar)

**DIAGRAMS**



ER238-5xxx  
Flow characteristics

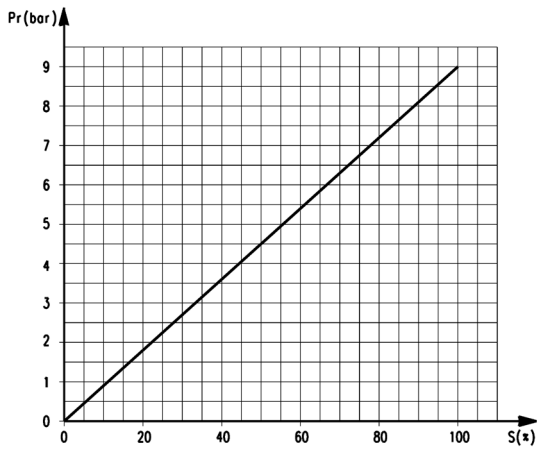
Pr = outlet pressure (bar)  
Qn = flow (l/min)  
Pa = working pressure (bar)



ER2xx-5xxx  
Exhaust characteristics

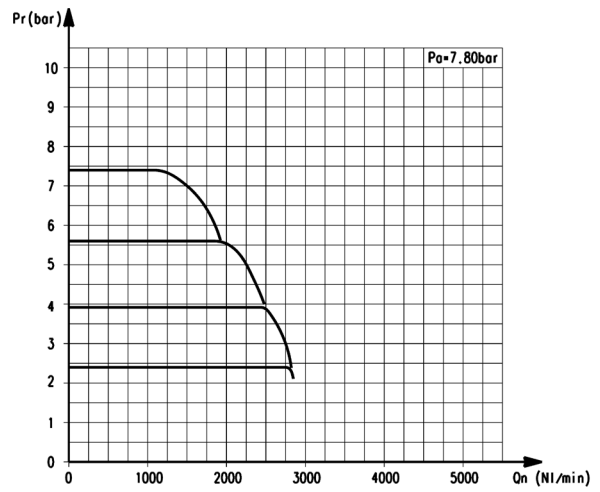
Pr = outlet pressure (bar)  
Qn = flow (l/min)  
Pa = working pressure (bar)

DIAGRAMS



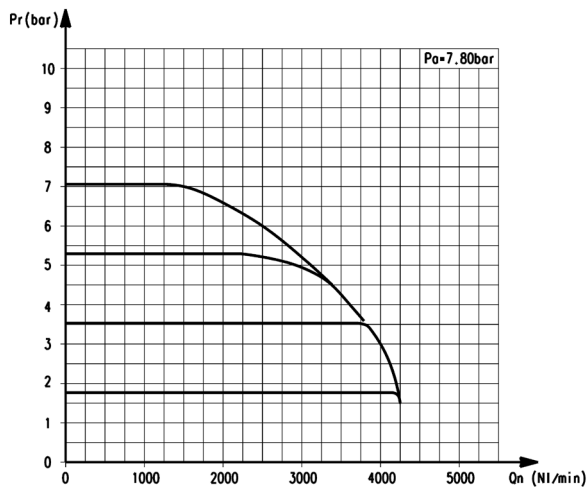
ER2xx-9xxx  
Input/Output characteristics

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



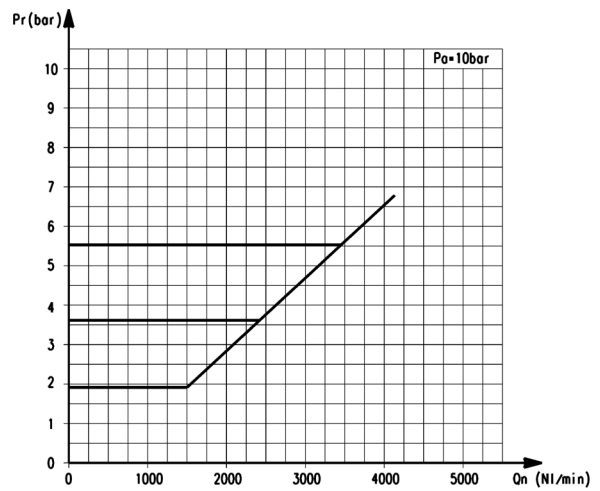
ER204-9xxx  
Flow characteristics  
Pr = output pressure (bar)  
Qn = flow (l/min)  
Pa = working pressure (bar)

DIAGRAMS



ER238-9xxx  
Flow characteristics

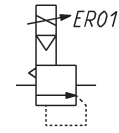
Pr = output pressure (bar)  
Qn = flow (l/min)  
Pa = working pressure (bar)



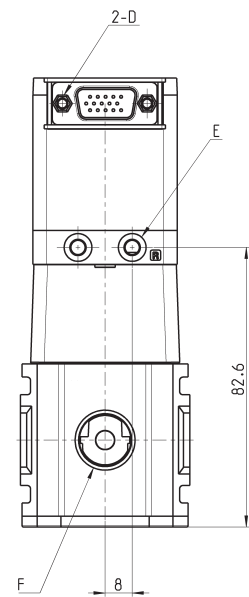
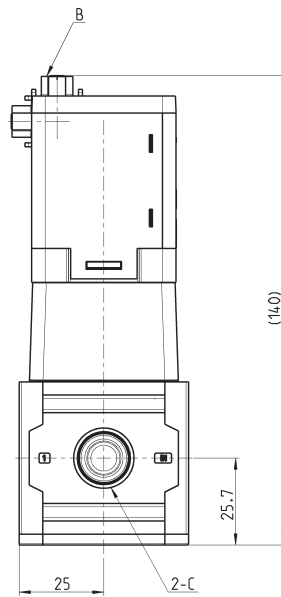
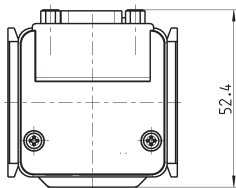
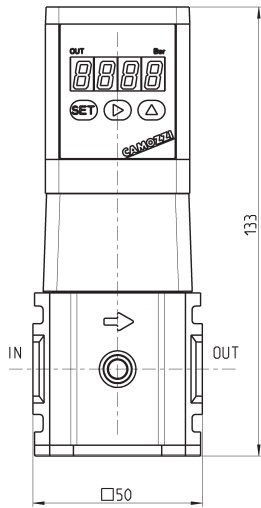
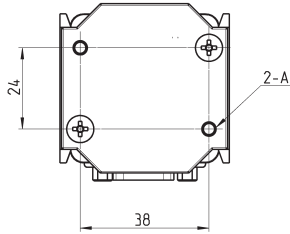
ER2xx-9xxx  
Exhaust characteristics

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

**Proportional regulators Series ER200**



SERIES ER200 DIGITAL ELECTRO-PNEUMATIC REGULATORS

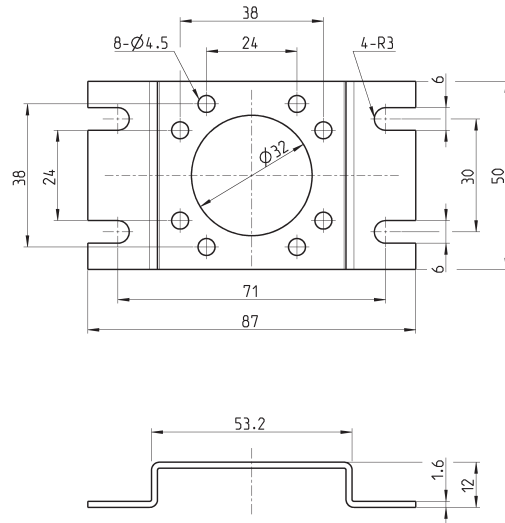


**DIMENSIONS**

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

**Bracket ER2-B1**

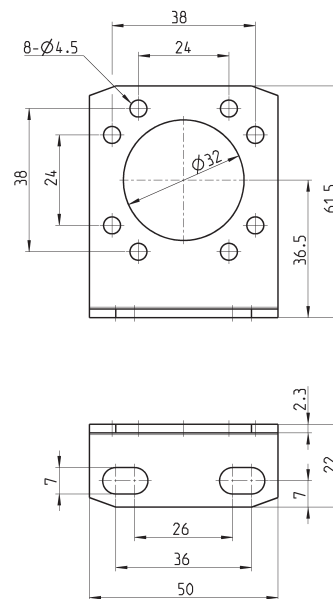
Floor installation type mounting



Mod.
ER2-B1

**Bracket ER2-B2**

Wall installation type mounting



Mod.
ER2-B2

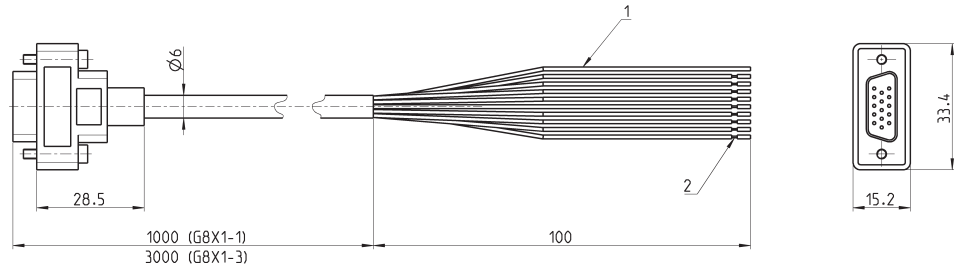


### Cable and connector for regulator with analog Input



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.



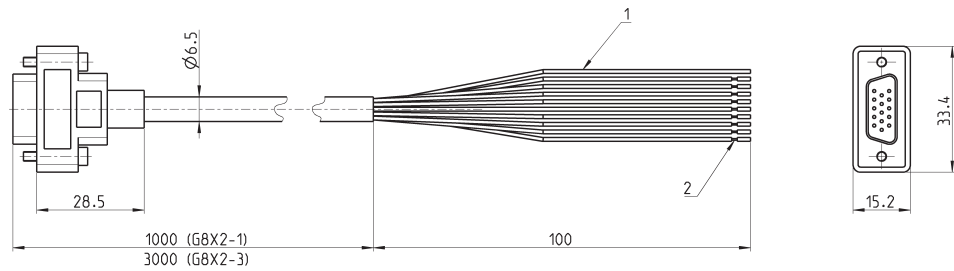
Mod.
G8X1-1
G8X1-3

### 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