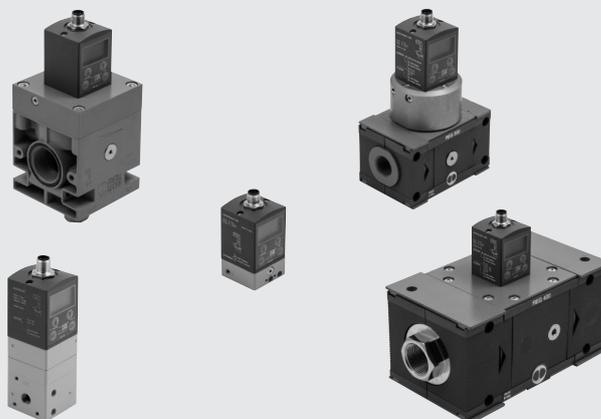# PROPORTIONAL PRECISION PRESSURE REGULATOR REGTRONIC SERIES

Proportional pressure regulators series REGTRONIC have the job of precisely regulating the pressure in a system, the variables depending on the input command. Remote control regulators are controlled by means of an M12x1 cable and connector and can have Volt, mA, RS232 control or via IO-Link. Regulators with a display can be controlled via a cable or directly using the keys below the display. The pressure value and a series of information and diagnostics are visible at all times on the graphic display. The user-display interface, LEDs and buttons are all on one side. The programming and reading software is comprehensive, simple and intuitive. Pressure control takes place in a "closed-loop" with an electronic precision pressure sensor that measures the downstream pressure, a control system that compares it with the desired pressure, and two mini solenoid valves that adjust the pressure to reach the target value. The Wireless versions are able to communicate with Ethernet networks (MQTT communication) and mobile devices, such as smartphones and tablets with Bluetooth® connection through a dedicated APP. With the Metal Work RegUp App, it is possible to set and view the regulated pressure in real time, set all operating parameters and view pressure trend graphs.

TECHNICAL DATA		REGTRONIC			REGTRONIC NEW DEAL		REGTRONIC 300			REGTRONIC 400			
Threaded port		M5	1/8"	1/4"	3/4"	1"	1/2"	3/4"	1"	1"	1 1/4"	1 1/2"	2"
Fluid		Filtered, unlubricated air. The air must be filtered at least 10 µm and without condensation.											
MIN inlet pressure	bar	Regulation pressure + 1 bar											
MAX inlet pressure	bar	11											
Temperature range	°C	from 0 to 50											
Pressure regulation range	bar	from 0.05 to 10 (settable full scale and minimum pressure)											
Flow rate at 6.3 bar ΔP 0.5	Nl/min	10	1300	1500	10000		4500			18000		20000	
Flow rate at 6.3 bar ΔP 1	Nl/min	10	1450	1700	13000		7000			-		-	
Exhaust flow rate at 6.3 bar with 0.1 bar overpressure	Nl/min	2	600	1300	1800		250			400		400	
Exhaust flow rate at 6.3 bar with 0.5 bar overpressure	Nl/min	9	1000	1500	2000		500			850		850	
Response time with ΔP =1 bar	Volume [cc]	100	100	1000	100	1000	1000	1000		1000		1000	
from 6 to 7 bar	s	0.5	0.1	0.15	0.1	0.15	0.27	0.25		0.2		0.2	
from 7 to 6 bar	s	0.55	0.1	0.15	0.1	0.15	0.27	0.33		0.35		0.35	
Weight	kg	0.2	0.38	0.38	1.3		1.5			5		5.8	
Class of protection		IP 65											
Supply voltage range IO-Link version	VDC	from 18 to 30											
Current absorption		Max 150 mA at 18VDC											
Supply voltage range analog version	VDC	12 -10% 24 +30%											
Minimum operating voltage	VDC	10.8											
Maximum operating voltage	VDC	31.2											
Maximum admissible voltage	VDC	32 *											
Current absorption		max 220 mA at 12VDC											
Input signal (input impedence)	Voltage	0 to 5 VDC, 0 to 10 VDC (approx. 6.3 KΩ)											
	Current	4 to 20 mA (approx. 100 Ω)											
	Serial ports	RS 232											
	Manual	Keypad											
Output signal	Analog version voltage	0 to 10 VDC (1 VDC = 1 bar) - 1 mA max											
	Analog version current	4 to 20 mA (4 mA = 0 bar, 20 mA = 10 bar)											
	Digital	PNP open collector output: max 24VDC 60 mA											
		NPN open collector output: max 24VDC 60 mA											
Hysteresis		± 0.2% (Full scale)											
Repeatability		± 0.2% (Full scale)											
Sensitivity/Dead-band		setting range 10 to 300 mbar											
Output pressure (display version)	Accuracy	± 0.3% (Full scale)											
	Unit of measurement	bar, MPa, psi											
	Minimum resolution	0.01 bar - 0.001 MPa - 0.01 psi											
Analog output accuracy		± 0.1% of the reading											
Temperature characteristics		max 2 mbar / °C											
Installation position		In any position											
Notes		The features shown refer to the static condition only. With air consumption on the output side, the pressure may vary.											
		On all anolog versions you can set the parameters using the software "MWRegtronic" downloadable from the website www.metalwork.eu; to connect the PC to Regtronic you can use the cable code W0970513019.											

* IMPORTANT! Voltage greater than 32VDC will damage the system irreparably.

METAL WORK ® PNEUMATIC

REMOTE-CONTROL VERSION

REGTRONIC

● PRESSURE   DIAG ●

Pmax 11 bar
Preg   0 - 10 bar
Temp. 0° +50°C   Made in Italy

DISPLAY VERSION

6.50 bar

▲ PRESSURE   DIAG ▼

ESC   OK

SET UP

PROGRAMMABLE AND FLEXIBLE

Setting options:
- **LANGUAGE**
- **UNIT OF MEASUREMENT**
- **TYPE OF INPUT**
- **TYPE OF DIGITAL OUTPUT**
- **DEAD-BAND**
- **FULL SCALE**
- **MINIMUM PRESSURE**

The remote-control version of the Regtronic has two diagnostic LEDs.

The display version also has buttons for entering the various parameters.

PRECISION

Linearity
± 0.5 % (full scale)

Hysteresis
± 0.2 % (full scale)

Repeatability
± 0.2 % (full scale)

Sensitivity
range **10 to 300** mbar

IO-Link CONNECTOR 5-PIN M12x1

◆ **IO**-Link
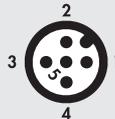
Pin	Signal	Description of Class A Port	Lead colour
1	L+	+24 VDC power supply	Brown
2	NC	/	White
3	L -	0 VDC power supply	Blue
4	C/Q	IO-Link communication	Black
5	NC	/	Gray

ANALOG CONNECTOR 8-PIN M12x1

Pin	Signal	Description	Lead colour
1	TX	RS232	White
2	RX	RS232	Brown
3	Pressure set	0 to 10 VDC / 0 to 5 VDC / 4 to 20 mA	Green
4	Digital out	NPN	Yellow
5	Analog out	Voltage version 0 to10 VDC	Gray
		Current version 4 to 20 mA	
6	Digital out	PNP	Pink
7	0 VDC	Power supply	Blue
8	+ VDC	Power supply	Red

FUNCTION DIAGRAM

REGTRONIC M5

DISPLAY

POWER
INPUT SIGNAL

CONTROL CIRCUIT

OUTPUT SIGNAL

INLET SOLENOID VALVE

IN

OUTLET SOLENOID VALVE

PRESSURE SENSOR

OUT
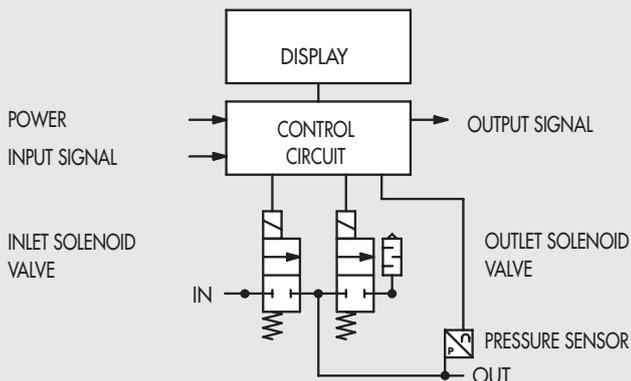
REGTRONIC 1/8" - 1/4" - SK300 - SK400 - NEW DEAL

DISPLAY

POWER
INPUT SIGNAL

CONTROL CIRCUIT

OUTPUT SIGNAL

INLET SOLENOID VALVE

OUTLET SOLENOID VALVE

PRESSURE SENSOR

IN   OUT
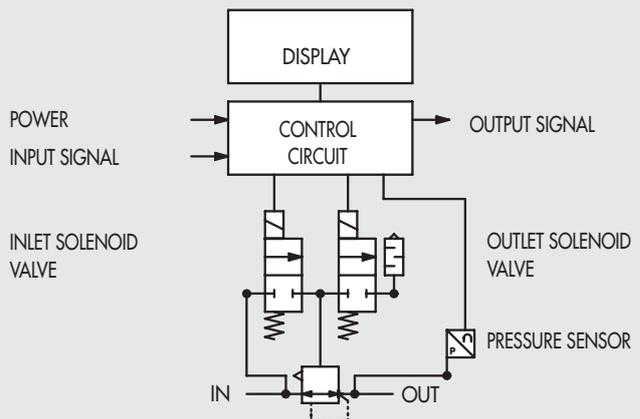
WIRELESS CONNECTION

With the Wireless version of Regtronic, you can establish a connection to a Wi-Fi network via an access point or gateway to monitor and collect all the measured gas values.

Connection to a MQTT Broker via an Access point

MQTT

Broker MQTT

Gathering data from the field makes it possible to:
- carry out a predictive diagnosis of the system;
- monitor the operating parameters at all times and optimize the operation of the machines and the pneumatic system.

The software can be implemented with analysis functions that provide:
- machine efficiency monitoring;
- to check the pressure trends and long-term forecasting (plant improvement evaluation).

The Metal Work RegUp App can be used for connection via Bluetooth to Metal Work proportional pressure regulators in the REGTRONIC series with a wireless interface, from Android smartphone and iOS.

With the Metal Work RegUp App, it is possible to set and view the regulated pressure in real time, set all operating parameters and view pressure trend graphs.
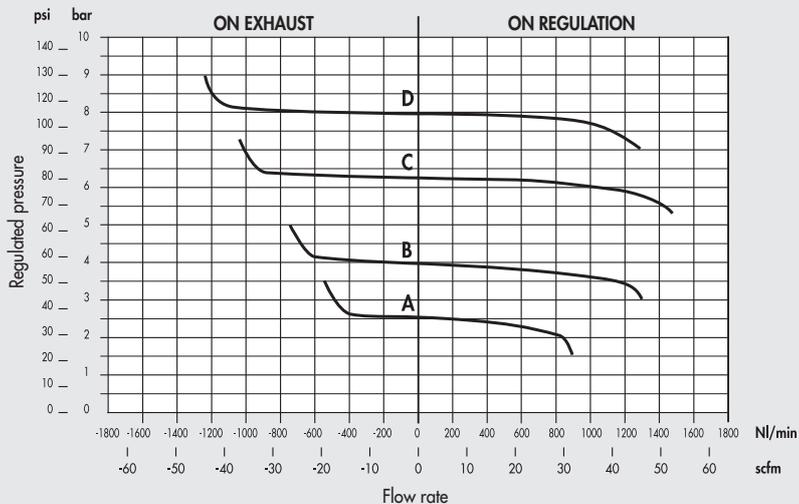
REGTRONIC 1/8''; 1/4''

COMPONENTS

① CARTRIDGES: nickel-plated brass
② RING: vulcanized NBR
③ ROD: steel
④ BODIES: painted aluminium
⑤ PRESSURE SENSOR
⑥ SOLENOID VALVE: 10 mm series PLT-10
⑦ SHELL: technopolymer
⑧ CONNECTOR M12
⑨ ELECTRONIC BOARDS
⑩ CONTROL DIAPHRAGM: anti-oil rubber
⑪ SPRING: stainless steel
⑫ POPPET: nickel-plated brass
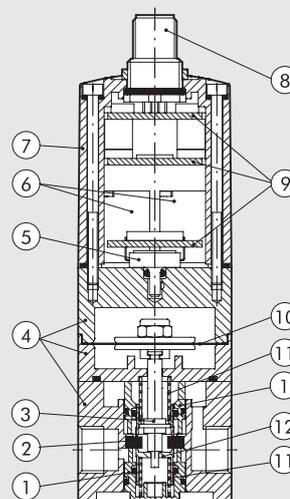
FLOW CHARTS
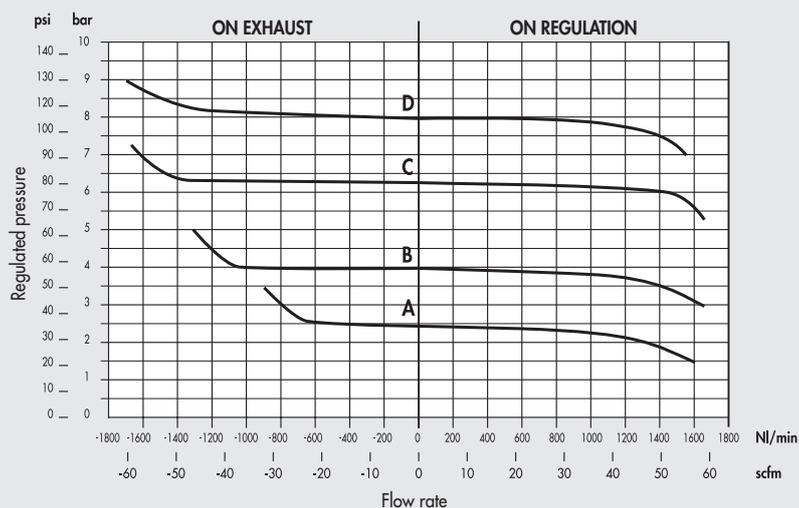
REGTRONIC 1/8''

ON EXHAUST — ON REGULATION

Regulated pressure / Flow rate

A = 2.5 bar
B = 4 bar
C = 6.3 bar
D = 8 bar
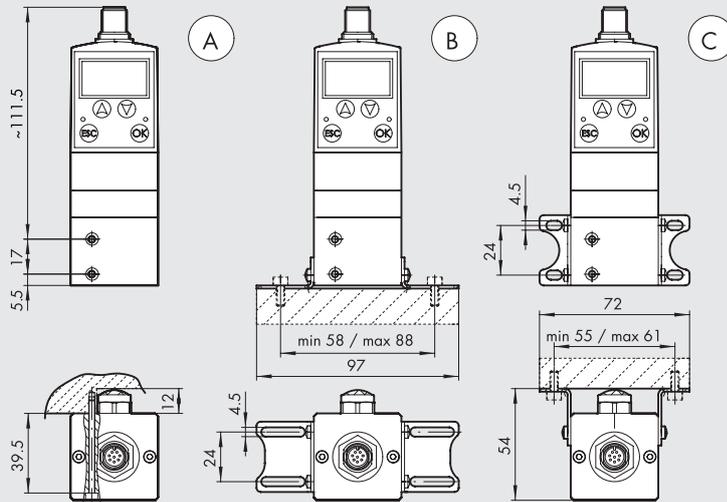Pm = 10 bar

REGTRONIC 1/4''

ON EXHAUST — ON REGULATION

Regulated pressure / Flow rate
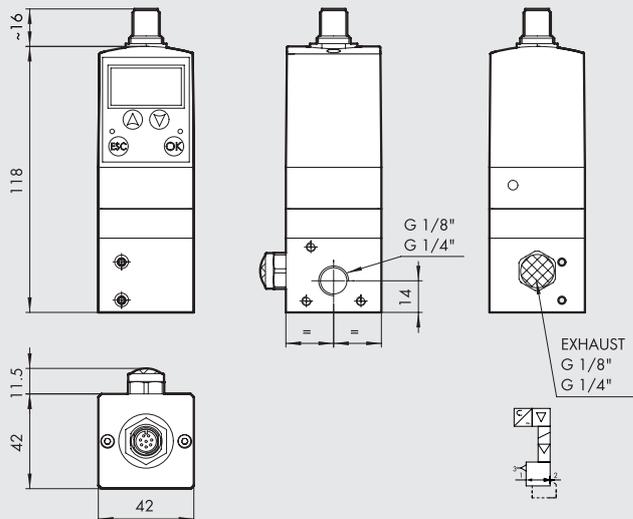
A = 2.5 bar
B = 4 bar
C = 6.3 bar
D = 8 bar
Pm = 10 bar

FIXING OPTIONS

A On the wall with 2 M3 screws
B On the base with legs code 9200710
C On the wall with legs code 9200710

DIMENSIONS AND ORDERING CODES

G 1/8"
G 1/4"

EXHAUST
G 1/8"
G 1/4"

Code	Description
5521500	REGTRONIC 1/8 with display OUT 0-10 V
5521502	REGTRONIC 1/8 remote control OUT 0-10 V
5522500	REGTRONIC 1/4 with display OUT 0-10 V
5522502	REGTRONIC 1/4 remote control OUT 0-10 V
5541500	REGTRONIC 1/8 with display OUT 4-20 mA
5541502	REGTRONIC 1/8 remote control OUT 4-20 mA
5542500	REGTRONIC 1/4 with display OUT 4-20 mA
5542502	REGTRONIC 1/4 remote control OUT 4-20 mA
5531500	REGTRONIC IO-Link 1/8 with display
5531502	REGTRONIC IO-Link 1/8 remote control
5531510	REGTRONIC IO-Link 1/8 with display and Wi-Fi
5532500	REGTRONIC IO-Link 1/4 with display
5532502	REGTRONIC IO-Link 1/4 remote control
5532510	REGTRONIC IO-Link 1/4 with display and Wi-Fi

ACCESSORIES

FIXING BRACKET KIT
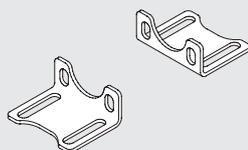
Code	Description
9200710	Fixing bracket kit

Note: supplied complete with four M4x6 screws

NOTES