

# PROPORTIONAL PRECISION PRESSURE REGULATOR SYNTRONIC SERIES



The proportional regulators in the SYNTRONIC series are used to precisely control the pressure in a system, with varying values depending on the input command. The regulators can be controlled remotely via a cable connection and an M12x1 connector accepting commands in Volts or mA. The main casing is made of techno-polymer, the display (when present) is the 3-digit type and the pneumatic connections are obtained with inset and easily replaceable metal bushings, as with other products in the Syntesi series.

The presence of two rolling diaphragms offers several advantages, including increased stroke, which provides greater valve opening and consequently increased flow rate, thereby reducing dynamic and inrush friction.

Syntronic is designed in such a way as to cause the downstream pressure to be relieved when the upstream pressure is set to zero. This makes it possible, for example, to arrange the regulator between a valve and a cylinder because air can flow in both directions, towards the cylinder with regulated pressure and back to the relieving valve.

The pressure value and a range of information and diagnostics are displayed at all times on the 7 segments display.

The user interface with the display and LEDs is entirely on one side.

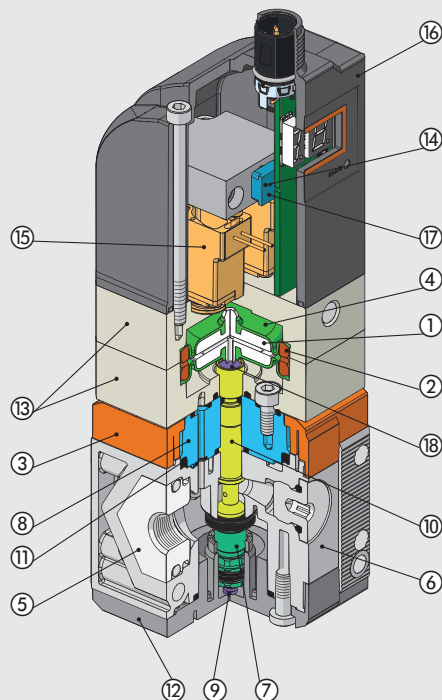
Pressure is controlled in a 'closed loop' via a precision electronic sensor that detects the downstream pressure value, a control system that matches it to the desired pressure and two miniature solenoid valves that adjust the pressure to the target value.



TECHNICAL DATA				
		1/8"	1/4"	3/8"
Threaded port		1/8"	1/4"	3/8"
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	0 ÷ 50		
Pressure regulation range	bar	0.2 ÷ 10		
Flow rate at 6.3 bar ΔP 0.5 inlet pressure 10 bar	Nl/min	1100	1800	2200
	scfm	39	64	78
Flow rate at 6.3 bar ΔP 1 inlet pressure 10 bar	Nl/min	1500	2200	2800
	scfm	53	78	99
Weight	g	378	373	364
Class of protection		IP65		
Full outflow with zero inlet pressure		Included		
Supply voltage range	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 a 12VDC		
Hysteresis		< ± 0.4% (Full scale)		
Repeatability		< ± 0.2% (Full scale)		
Sensitivity/Dead-band	bar	0.1		
Output pressure (display version)	Accuracy	< ± 0.1% (Full scale)		
	Unit of measurement	bar		
	Minimum resolution	0.01 bar		
Analog output accuracy		< ± 0.1% (Full scale)		
Temperature characteristics		max 2 mbar/°C		
Installation position		In any position		
Wall fixing screws		No. 2 M4 screws		
Notes		The features shown refer to the static condition only. With air consumption on the output side, the pressure may vary.		

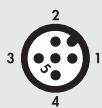
COMPONENTS

- ① Anodized aluminium plate
- ② Anodized aluminium diaphragm washer
- ③ Technopolymer flange
- ④ NBR rolling diaphragm
- ⑤ IN/OUT bushing made of OT58 nickel-plated brass
- ⑥ Technopolymer regulator body
- ⑦ OT58 brass valve, with NBR vulcanized gasket
- ⑧ Passivated aluminium upper cap
- ⑨ Stainless steel valve spring
- ⑩ OT58 brass rod
- ⑪ O-rings in NBR
- ⑫ Technopolymer cap
- ⑬ Painted aluminum bodies
- ⑭ Pressure sensor
- ⑮ 10 mm solenoid valves PLT-10 series
- ⑯ Technopolymer cover
- ⑰ Electronic board
- ⑱ Exhaust gasket in NBR



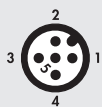
WIRING DIAGRAM

Analogue version 0-10 V



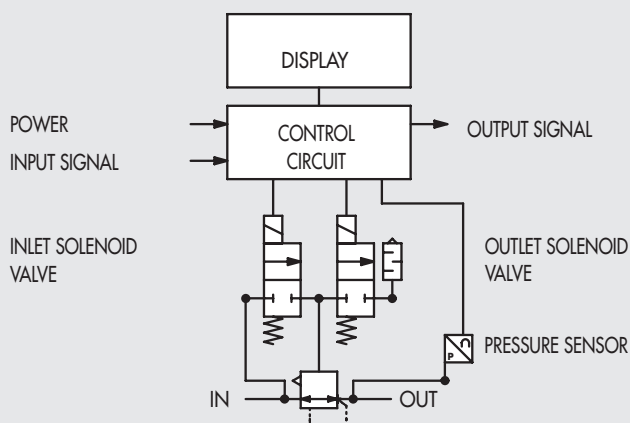
Pin	Function description	Lead colour
1	+12÷24 VDC power supply	Brown
2	IN + analogue input 0-10V	White
3	0VDC (GND) power supply	Blue
4	IN - analogue input 0-10V	Black
5	Analogue output 0-10V	Gray

Analogue version 4-20 mA



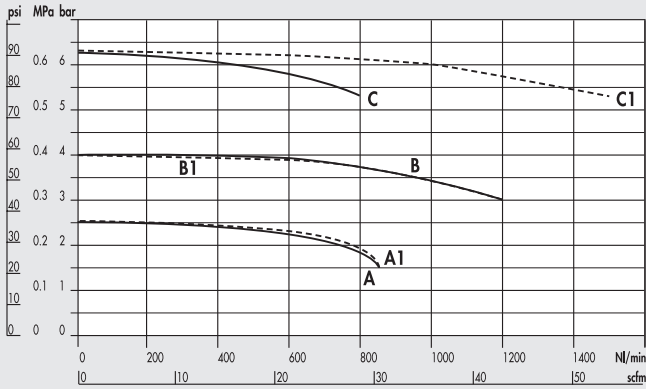
Pin	Function description	Lead colour
1	+12÷24 VDC power supply	Brown
2	IN + analogue input 4-20 mA	White
3	0VDC (GND) power supply	Blue
4	IN - analogue input 4-20 mA	Black
5	Analogue output 4-20 mA	Gray

FUNCTION DIAGRAM

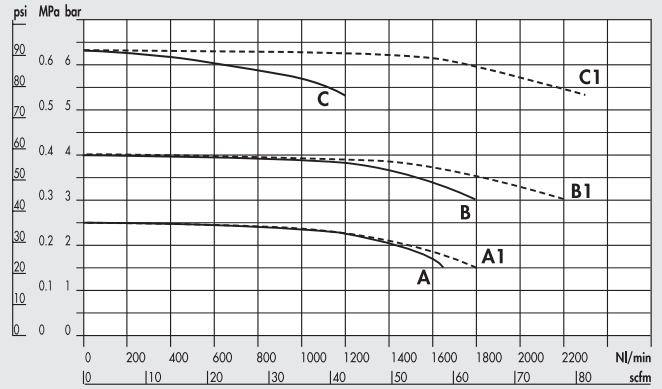


**FLOW CHARTS**

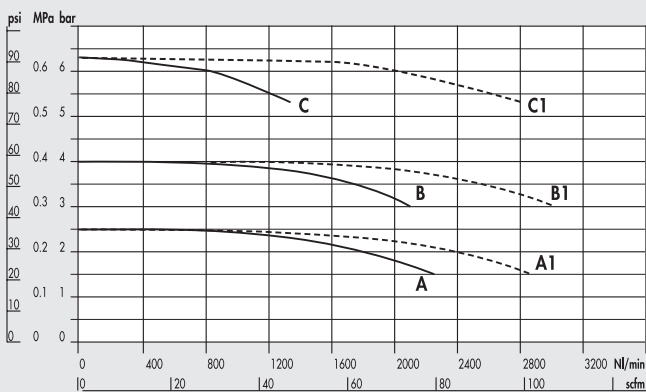
Syntronic SY1 1/8"



Syntronic SY1 1/4"



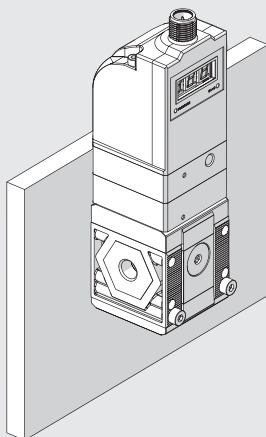
Syntronic SY1 3/8"



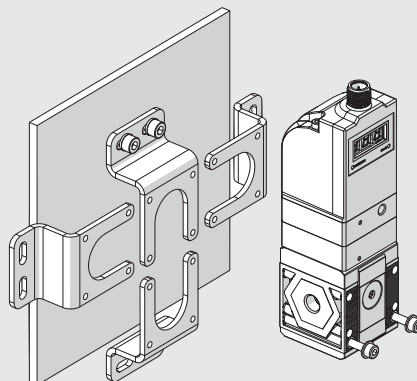
- A = P In 7 bar - P Out 2.5 bar
- B = P In 7 bar - P Out 4 bar
- C = P In 7 bar - P Out 6.3 bar
- A1 = P In 10 bar - P Out 2.5 bar
- B1 = P In 10 bar - P Out 4 bar
- C1 = P In 10 bar - P Out 6.3 bar

**MOUNTING OPTIONS**

On the wall, using two screws

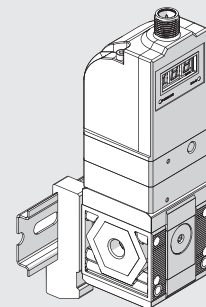


Using a bracket

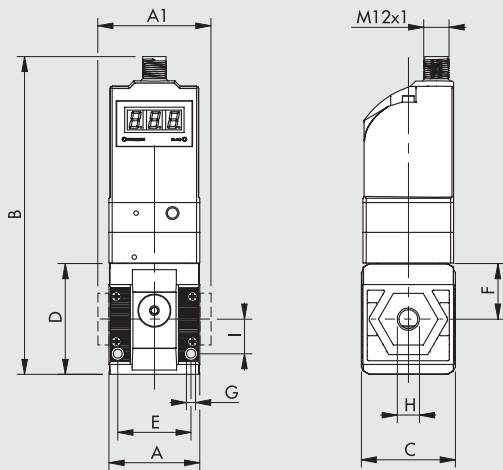


The bracket can be secured in any position

On a DIN EN50022 bar with the opposite adaptor



**DIMENSIONS**



	SIZE 1		
H (threaded port)	1/8"	1/4"	3/8"
A		42	
A1	-	-	44
B		147.5	
C		44	
D		51.5	
E		33.5	
F		25.8	
G	Hole for M4 screws		
I		16	

**KEY TO CODES**

56	1	1	G	00	1
SYNTESI	SIZE	THREADED INPUT CONNECTION	ELEMENT	TYPE	THREADED OUTPUT CONNECTION
56 Syntesi	1 Size 1	0 Without bushing 1 1/8" port 2 1/4" port 3 3/8" port	G Syntronic	00 Remote control 0-10V 01 Remote control 4-20 mA 10 With display 0-10V 11 With display 4-20 mA	0 Without bushing 1 1/8" port 2 1/4" port 3 3/8" port

**PURCHASE ORDER CODES HAVING A MORE FREQUENT USE**

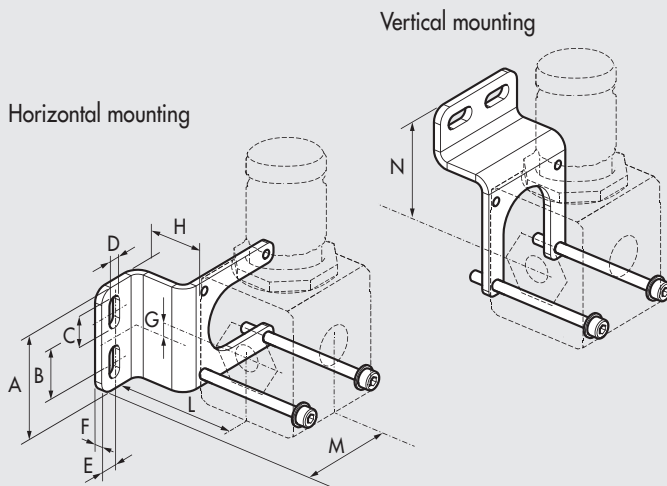
N.B. Besides the below mentioned codes, you can order elements composed at your will according to the key to codes.

Code	Description	Code	Description
5610G000	SYNTRONIC SY1 remote control 0-10V without bushings	5612G002	SYNTRONIC SY1 1/4 remote control 0-10V
5610G010	SYNTRONIC SY1 remote control 4-20 mA without bushings	5612G012	SYNTRONIC SY1 1/4 remote control 4-20 mA
5610G100	SYNTRONIC SY1 with display 0-10V without bushings	5612G102	SYNTRONIC SY1 1/4 with display 0-10V
5610G110	SYNTRONIC SY1 with display 4-20 mA without bushings	5612G112	SYNTRONIC SY1 1/4 with display 4-20 mA
5611G001	SYNTRONIC SY1 1/8 remote control 0-10V	5613G003	SYNTRONIC SY1 3/8 remote control 0-10V
5611G011	SYNTRONIC SY1 1/8 remote control 4-20 mA	5613G013	SYNTRONIC SY1 3/8 remote control 4-20 mA
5611G101	SYNTRONIC SY1 1/8 with display 0-10V	5613G103	SYNTRONIC SY1 3/8 with display 0-10V
5611G111	SYNTRONIC SY1 1/8 with display 4-20 mA	5613G113	SYNTRONIC SY1 3/8 with display 4-20 mA

**NOTES**

## ACCESSORIES

### MOUNTING BRACKET

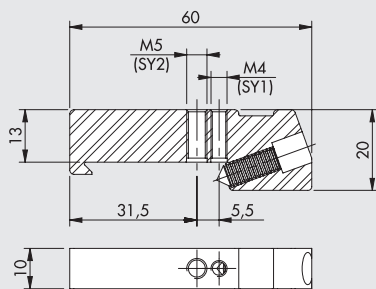


Code	Description
9200716X	Mounting bracket SY1

Note: Supplie complete with screws and washers.  
Max torque 0.8 Nm for SY1

Code	A	B	C	D	E	F	G	H	L	M	N
9200716X	41.5	20	12.7	5.5	7	3	0.8	25	43.8	46.5	47

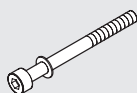
### CONNECTION BRACKETS ON THE BAR (DIN EN50022)



Code	Description
9200718X	Connection brackets on DIN bar, SY1 - SY2

Note: 2 pieces per pack complete with screws and washers.  
Max torque 0.8 Nm for SY1

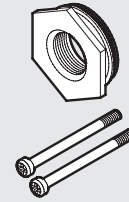
### WALL-FIXING SCREW



Code	Description
9210030	M4 x 55 fixing screw SY1

Max torque 0.8 Nm for SY1

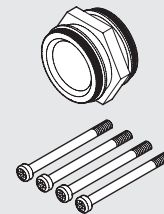
### THREADED PORT



Code	Description
9210001	Kit IN OUT 1/8 SY1
9210002	Kit IN OUT 1/4 SY1
9210003	Kit IN OUT 3/8 SY1

Max torque 0.4 Nm for SY1

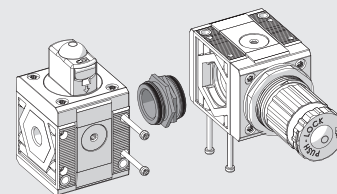
### CONNECTING NIPPLE KIT



Code	Description
9210000	Connecting nipple kit SY1

Max torque 0.4 Nm for SY1

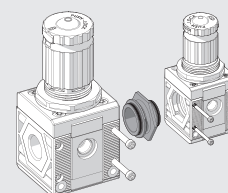
### 90° CONNECTING ELEMENT KIT



Code	Description
9210009	90° SY1 connection element kit

Max torque 0.4 Nm for SY1

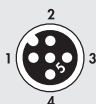
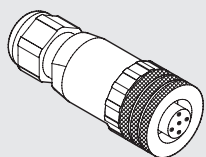
### SY1 - SY2 SIZE ADAPTER



Code	Description
9210006	SY1 - SY2 size adapter

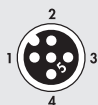
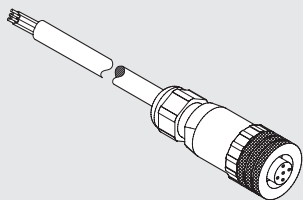
Max torque 0.4 Nm for SY1

**STRAIGHT CONNECTOR**



Code	Description
W0970513001	5-PIN M12x1 straight connector

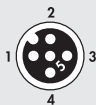
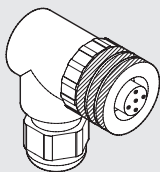
**STRAIGHT CONNECTOR WITH WIRE**



Pin	Cable color
1	Brown
2	White
3	Blue
4	Black
5	Grey

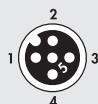
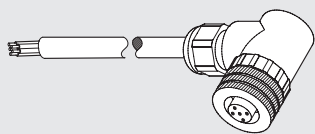
Code	Description
W0970513002	5-PIN M12x1 straight connector with wire L = 5 m

**90° CONNECTOR**



Code	Description
W0970513003	M12x1 5-PIN 90° connector

**90° CONNECTOR WITH WIRE**



Pin	Cable color
1	Brown
2	White
3	Blue
4	Black
5	Grey

Code	Description
W0970513004	M12x1 5-PIN 90° connector with wire L = 5 m

**NOTES**