

OPERATION MANUAL

M10

Pneumatic Precision Regulator



*** VERSION 1.0 ***

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GENERAL INFORMATION

- Pneumatic Precision Regulator for Overpressure
- Pressure Control Ranges from 0,15 to 28 Bar
- Response Sensitivity Better 0,2 % F.S.
- Input Pressure Dependency Better 0,1 % F.S./bar
- Open Pressure Regulator with Relief Valve

OPERATING PRINCIPLE

The M10 precision pressure regulator is a direct acting proportional regulator with regulation range limits from 0,15 to 28 bar overpressure. A spring-diaphragm-system transfers the manually selected set point pressure to the valve, which controls the flow. Between the spring-diaphragm-system and the counteracting output pressure arises a force balance, which keeps the outlet pressure almost constant for large input pressure changes. This is supported by the continuous bleeding of a small amount of air through a relief valve, which prevents the regulator from friction caused pausing. In addition to small pressure dependency the regulator therefore shows high control sensitivity and fast response behaviour.

SPECIFICATIONS

Pressure Control Ranges

Upper Limits of Output or	0,15 / 0,7 / 1,5 / 2,0 /
Set Point Pressure:	4,0 / 10,0 / 14 / 21 / 28 bar
Input or Primary Pressure	> 150 % F.S. (max. 34 bar)

Response Behaviour

Response Sensitivity:	< 0,2 % F.S.
Input Pressure Dependency:	< 0,1 % F.S./bar

Operating Conditions

Input Pressure:	0 ...34 bar overpressure
Temperature:	-40 ... +93 °C
Humidity:	0 ... 90 % r.H. (non-condensing)
Medium:	Air

Media Compatibility

Clean, dry, oil-free air; humidity non-condensing.

Flow Behaviour

Air Mass Flow at 7 bar Primary Pressure and 1,4 bar Set Point Pressure:	1100 Sl/min
Exhaust Capacity with Output Pressure 0,35 bar over Set Point Pressure (1,4 bar):	150 Sl/min
Air Consumption (Constant Bleed):	< 5,5 Sl/min
Approximated flows with fully opened valve for standard cond. (1013 mbar abs., 0 °C, 0 % r.H.).	

Enclosure

Dimensions	Knob high:	76 x 170 mm (ØxH)
Material	Housing:	Aluminium, anodised
	Control knob:	Plastic
	Valve	Stainless steel, brass
	Assembly:	and zinc-plated steel
Weight	Diaphragm:	Buna-N on Dacron
	Total:	≈ 640 g

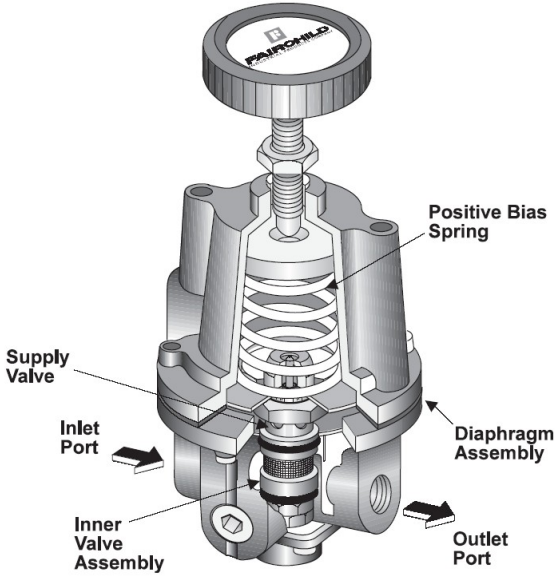
Process Connections:

Pressure	Standard:	1/4" f NPT (2 x)
	Optional:	3/8" f NPT (2 x) or 1/2" f NPT (2 x)
Manometer:	Standard:	1/4" f BSPT (2 x)

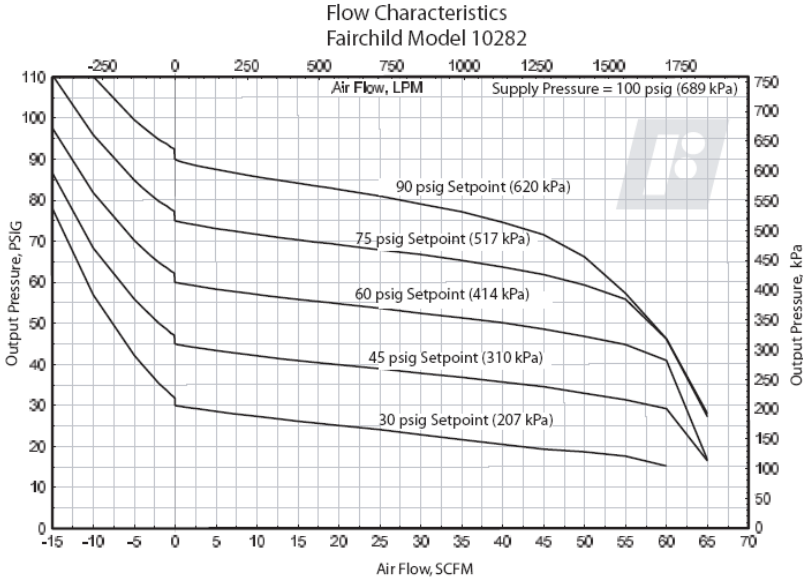
Options:

c,d,e	<i>Respectively single chooseable options</i>
A	Silicone Elastomers
B	Controller with low bleed
C	Built-in check valve
E	Tapped exhaust with thread
H	BSPP (Parallel) thread instead NPT inline
J	Fluorocarbon elastomers
L	Controller with low flow
N	Controller with non-relieving
R	Plunger Operated
T	Tamper proof
U	BSPT (Tapered) thread instead NPT inline

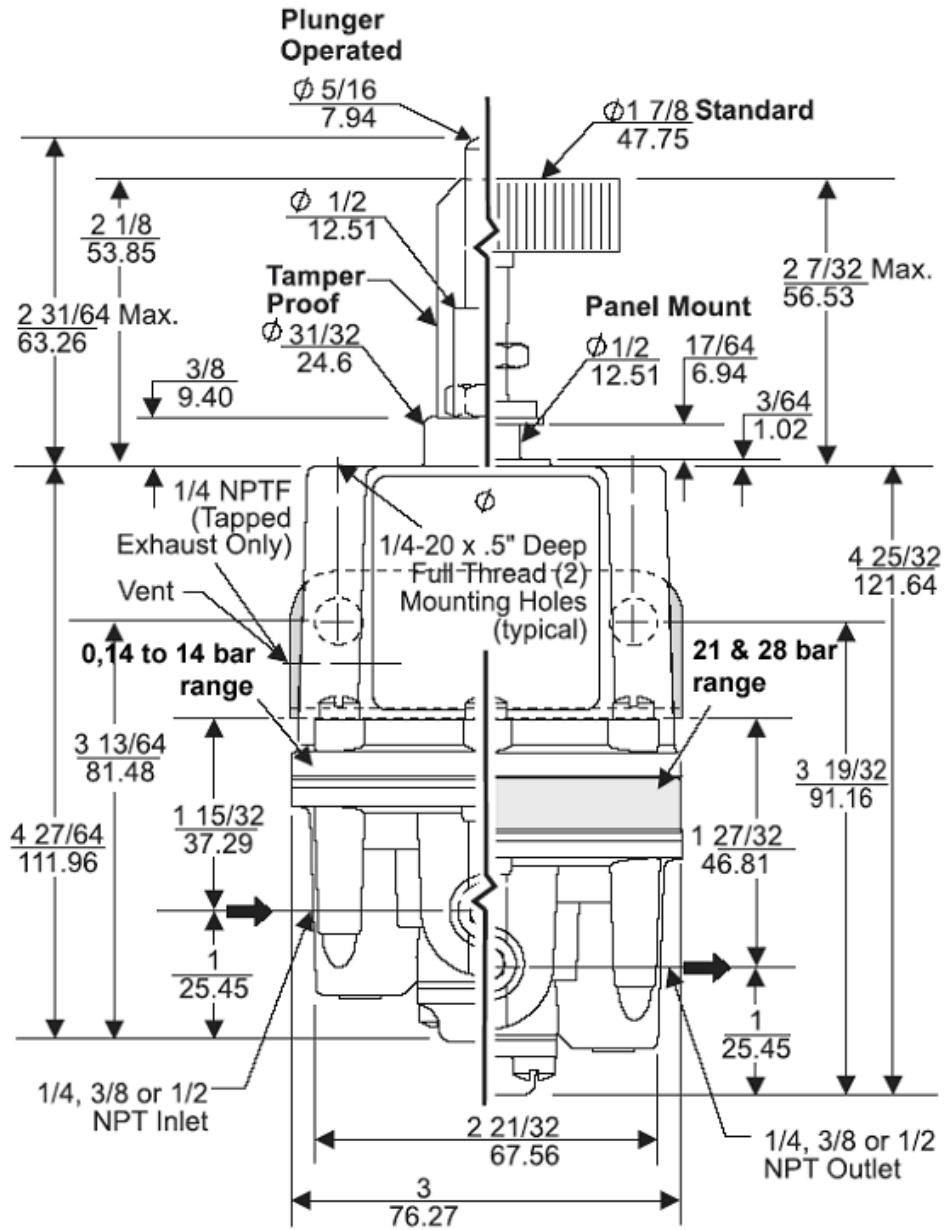
FUNCTIONAL DRAWING



Model 10 Series Regulator Detail Drawing



OUTLINE DIMENSIONS



MOUNTING BRACKET

Zinc plated steel (sold separately)
316 Stainless steel (sold separately)

