

RUGGED ELECTRONIC PRESSURE CONVERTER TYPE 443

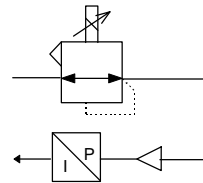
FEATURES

- 4-20mA feedback
- Failsafe or fail in position (failfreeze)
- High accuracy

GENERAL DESCRIPTION

The type 443 electro-pneumatic converter is designed for demanding process control applications in which stability, ruggedness and versatility are essential. It accepts a variety of analogue signal inputs, including 4-20mA, and has built-in auto/manual control facilities for raise/lower switch or potentiometer control.

This model is an improved version of the well-established 440 electropneumatic converter with increased flexibility, convenience and ruggedisation.



Functional Symbol

TECHNICAL DATA

PHYSICAL

•Casing	Diecast zinc alloy, grey stove enamel finish: hinged lid
•Mounting	Surface mount through integral fixing holes, any orientation
•Pneumatic connections	1/4" NPT
•Electrical connections	Via cable glands to 16mm Klippon terminal block
•Controls	
Trim pots	Span, zero (control and feedback), response rate
Switches	Signal failfreeze or instrument fail safe. Input signal selection. Auto/Manual select (biased Auto). Raise/lower switches. Remote/Manual switches or potentiometer select.
Relay	Power/signal/Auto isolated contact pair in relay. Contact rating -50VA. Indicates if converter is in auto condition, and valid control and power present
LED's	Indicates power control signal present, and out-of-balance signal difference between auto and manual signals.
•Vibration	No effect
•Weight	2.3Kg
•I.P. Rating	IP65
•Temperature Stability (span/zero)	-5°C to +45°C ±0.03%/°C FS change -10°C to +60°C ±0.05%/°C FS change
•Electromagnetic Compatibility	Compliant with the requirements of the EMC directive, assessed against BS EN50082-2: 1995, BS EN50081-2: 1994. ≤±4% FS susceptibility observed under all test conditions when screened cable is used connected both at source and instrument ends. CE marked.

ACCURACY

•Output Signal	Outlet pressure min: 3bar(0.2psig); max; less than 7bar (100psig)
•Air Supply	Up to 100psig (7bar). Dry, non corrosive air filtered to 5microns
•Flow Capacity	Up to 280NI/min
•Air Consumption	Low pressure - 0.2l/min typical High pressure - 0.4l/min typical
•Response Time (adjustable over approx 10:1 range)	10-90% or 90-10% FS step: 5 sec max ±10% change 2 sec max
•Linearity	± 0.5% FS
•Total Error	±0.5% of span typical, independent error (combined effect of hysteresis, deadzone and repeatability)
•Stability (6 months)	0.25%(span/zero)
•Failfreeze stability	<±2% setpoint/hour

Note: Instrument performance is guaranteed within the band 5 to 95% of range. Performance variations may exist outside this range.

ELECTRICAL

•Supply Voltage	24V ± 20%d.c.100mA
•Input Signal	4-20mA, 1-5V, 2-10V (selected by switch and connection)
•Input Common Mode Voltage Limit	0 to +5V max (control I/p -ve to supply -ve)
•Input impedance	4-20mA 250Ω; 1-5V, 2-10V: 10kΩ
•Feedback Signal	4-20mA (o/p voltage 12V max)
Note: Voltage feedback obtainable via load resistor.	
•LED signal	1-5V: 250Ω; 2-10V: 500Ω
•External potentiometer	Nominal 10mA drives for out-of-balance LEDs
•External raise/lower/auto manual switches	Nominally 1kΩ ± 50Ω
Volt free contacts, nominal switching levels 5mA, 12V.	

INSTALLATION DIAGRAM

Connector block 1 (T1)

- 1 4-20mA feedback +ve
 - 2 4-20mA feedback common
 - 3 2-10V control input +ve
 - 4 4-20mA/1-5V control input +ve
 - 5 4-20mA/1-5V control input -ve
 - 6 Power supply -ve (common)
 - 7 Power supply +ve
 - 8 Not in auto relay contact (isolated)
 - 9 Not in auto relay contact (isolated)
- Note: Terminals 2 & 6 are connected internally:
limited isolation available between control input
-ve(5) and supply -ve(6)

Connector block 2 (T2)

- 1 LED common (+ve)
- 2 LED 1 return (demand)
- 3 LED 2 return (feedback)
- 4 External pot top
- 5 External pot wiper
- 6 External pot bottom
- 7 External up switch
- 8 External down switch
- 9 External auto/manual switch
- 10 External switch common

Pots

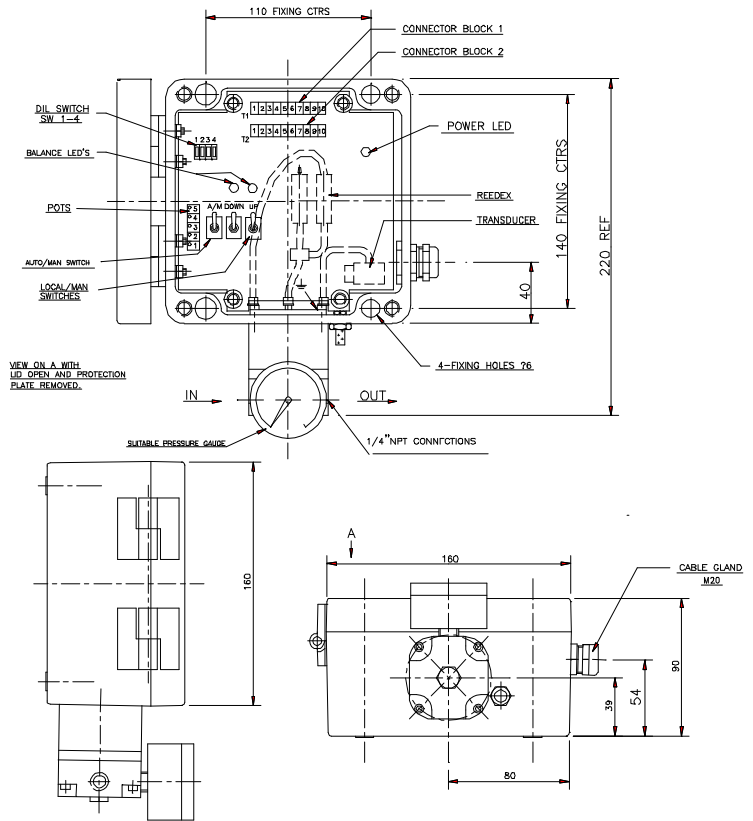
- 5 Control zero
- 4 Control span
- 3 Slew rate
- 2 Feedback span
- 1 Feedback zero

DIL switches

- 1 Failfreeze
- 2 2-20 select
- 3 A/M polarity
- 4 Pot switch

Pots

- 5 Control zero
- 4 Control span
- 3 Slew rate
- 2 Feedback span
- 1 Feedback zero



ORDERING INFORMATION

Pressure Range	Part number
3-15psi	53920100
0-100psi	53921600
0.2-1bar	53922100
0-7bar	53923600

Options to special order:

Other requirements available to special order.

If required a filter-regulator can be supplied separately, please ask for details.

CERTIFICATION

All instruments are fully tested and an individual test certificate is provided at no extra charge. Each unit is tested for linearity, hysteresis, total error, over pressure, calibration, drift and failfreeze.