

WatsonSmith

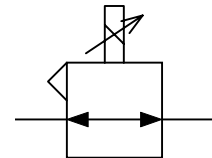
ELECTRO MECHANICAL CONVERTERS CURRENT TO PRESSURE (I/P) AND VOLTAGE TO PRESSURE (E/P) TYPE 100X/101X

FEATURES

- Reliable, rugged, open loop control
- ATEX certified units available
- Proportional I/P and E/P converters
- Minimum Vibration Effects
- IP65 environmental protection
- Mounting Bracket and Connector Included

GENERAL DESCRIPTION

The 100X series is an open-loop, highly accurate proportional control valve. A rugged and reliable unit which has been proven in application installations globally. The uncomplicated design of the 100X/101X enhances the reliability and reduces maintenance requirements, offering a cost effective accurate solution.



Functional Symbol

TECHNICAL DATA

PNEUMATIC

- Output Signal See product selector
- Air Supply Oil free, dry air, filtered to 5 microns; at least 0.5bar above maximum required output pressure range; maximum 80psig
- Flow Capacity Up to 300NI/min (10scfm)
- Air Consumption 1.4 l/min (0.06scfm) typical
- Response Time <2bar/30psig: less than 0.5 seconds (dependent on input for 10-90% step change in outlet pressures) into a 10cc load
- Hysteresis Maximum 0.35% of span for 100X
- Independent Linearity Maximum 0.5% of span for 100X
- Temperature Effect Average 0.1% span/°C for span and zero over operating range
- Supply Sensitivity Better than 0.075% span output change per % supply pressure change
- Connections 1/4" NPT standard (1/4" BSP available on request)

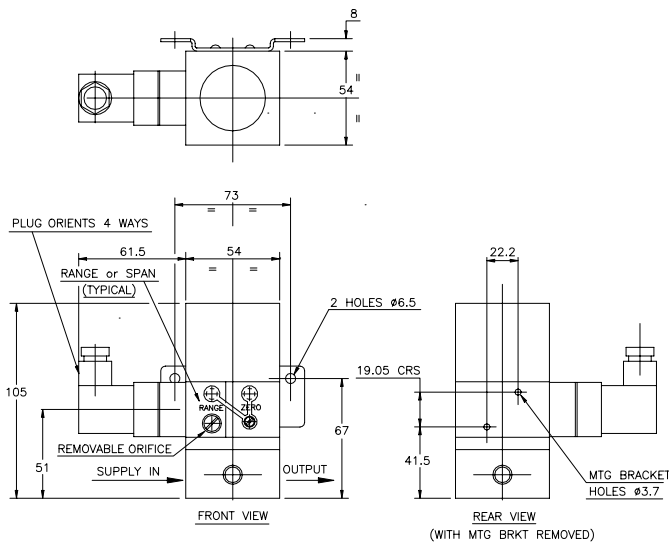
PHYSICAL

- Operating Temperature -40°C to +85°C
- I.P. Rating IP65 in normal operation
- Electromagnetic Compatibility This is a passive electromagnetic instrument and is unaffected by interfering high frequency signals
- Material of Construction Zinc diecasting passivated and epoxy paint, nitrile diaphragms, Be₂Cu flapper nozzle & supply valve
- Mass 825g
- Mounting Position Integral surface mounting bracket provided for preferred vertical mounting. Alternative mounting available with re-calibration. 50mm pipe mounting kit available
- Vibration Effect <5% of span : 4mm_{p-p} 5-15Hz & 2g sine 15-150Hz, vertical, horizontal & inverted, in accordance with ISA-S75.13-1996

ELECTRICAL

- Electrical Signal See product selector
- Failure Mode Signal falls to bleed pressure when electrical supply fails
- Connections 30mm square connector DIN 43650 provided, mountable in four directions

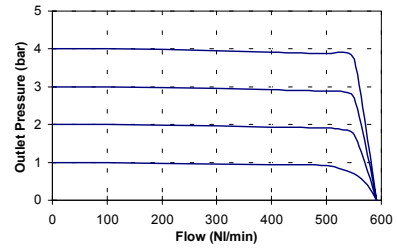
INSTALLATION DIAGRAM



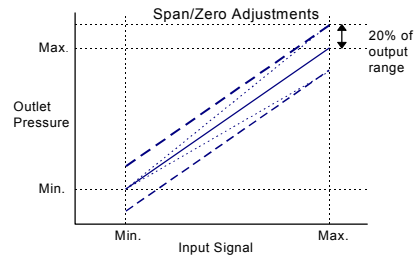
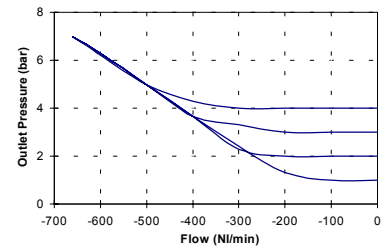
Pneumatic connections: 1/4" NPT female
 Electrical connections: 30mm square connector DIN 43650 (provided)

CHARACTERISTIC GRAPHS

Forward Flow Characteristics
 (Supply Pressure 7bar)



Relief Flow Characteristics
 (Supply Pressure 7bar)



PRODUCT SELECTOR

Standard models are 2 wire; 3 wire units require 12-24V supply

| OUTPUT PRESSURE | INPUT SIGNAL | |
|--------------------|--------------|-----------|
| | 4-20mA | 1-10V |
| 0.2-1bar | 53402100R | 53442100R |
| 0.2-2bar | 5340049XR | 5344013XR |
| 0.2-4bar | 5340064XR | t.b.a. |
| 0.14-8bar (3 wire) | 53572400R | 53562400R |
| 3-15psig | 53400100R | 53440100R |
| 3-30psig | 5340017XR | 5344014XR |
| 3-60psig | 5340005XR | 5344003XR |
| 3-120psig (3 wire) | 53570400R | 53560400R |

Options to special order:

- Alternative input signal ranges
- Alternative pressure ranges
- Conduit entry with flying leads
- Junction box
- Intrinsically safe certification
- 50mm pipe mounting bracket
- 1/8" NPT pneumatic connections
- Captured exhaust
- Reverse acting
- Split range

CERTIFICATION

An intrinsically safe 100X model certified to CENELEC EN50 020 (BS 5501 part 7) EEx ia IIC T4 is available. (Installations with these models must comply with the information given in BS 5345, parts 1 and 4).

All instruments are tested, soaked at 60°C, cycled for 1000 full scale electrical and 100 pneumatic operations and retested on the Watson Smith Automatic Testing System for linearity, hysteresis, total error, drift, supply sensitivity, response time, start up pressure, air consumption and resistance. An individual test certificate is provided at no extra charge.