Certificato No. LRC 180457
ISO 9001

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Electronic current to pressure transducers
Series IPC 4, IPC 4-EX CE Ex II 2 G

Series IPC 4 electro-pneumatic trasducers are designed to convert a standard 4-20mA current signal into a proportional pneumatic signal.
They are mainly used for linking electronic control equipment to pneumatic instruments giving an electro-pneumatic control loop.

The transducer is mounted within a small housing giving accurate control at low cost: the main features of this instrument are, performance, simplicity and reliability, combined with excellent accuracy.
The basic elements of the transducer are:

- moving coil system
- elastic equilibrium unit
- pneumatic feedback unit
- pneumatic flow amplification system.

The transducer operation is based on the "force/balance" principle. The pneumatic output signal is proportional to the current imput signal.
As the electronic signal varies this moves a coil within a permanent magnetic field causing the supply pressure to be applied to or diverted from the outlet nozzle proportionally, this variation gives the required pneumatic output control signal.
The pneumatic control unit is fitted with a highly sensitive amplifying relay which ensures maximum accuracy and repeatability.

During the design phase, both ease of operation and operational functionality was carefully considered: the relay calibrated orifice is self-cleaning and positioned at the front of the instrument to give immediate accessibility without the need for stripping the unit down.

The calibration, "zero" and "span" adjustments, are carried out by removing the front cover and even in the field of operation, there is no need for special tools.

The following variations of operation are offered:

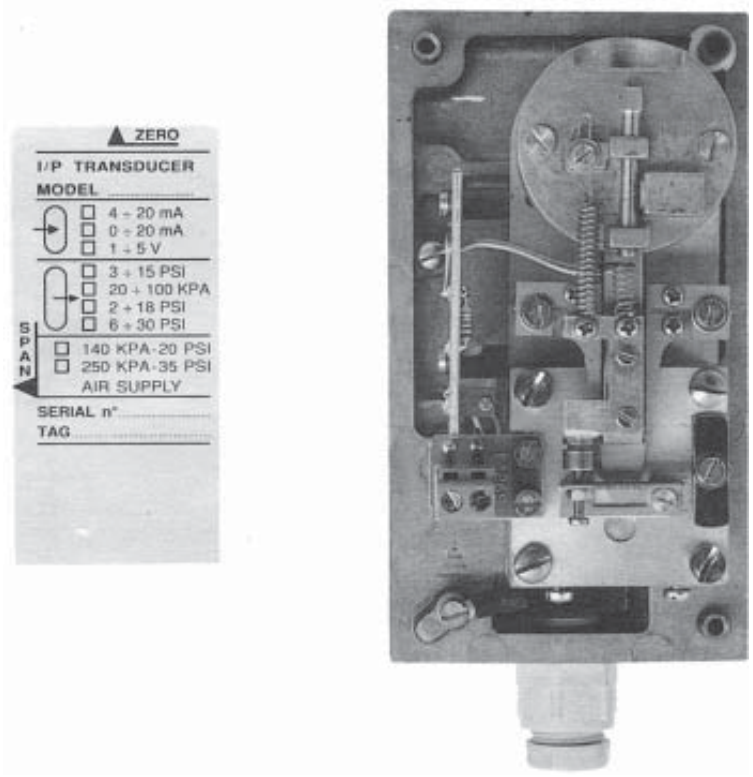
- Reduction of output signal:
  eg. 4 to 20 mA → 3 to 9 or 9 to 15 psi, etc.
- Amplification of output signal (particularly useful for controlling pneumatic valves):
  eg. 4 to 20 mA → 2 to 18 or 4 to 33 psi, etc.
- Inversion of the output signal
  eg. 4 to 20 mA → 15 to 3 (or other reduced or amplified output signal)
- Reduction, amplification and/or polarization of imput signal measurement.

The flexibility, typical of this instrument, plus the advantage of supplying it with compressed air at any pressure between 1.4 and 2.5 bar g, (20 and 30 psi g) allows the same basic version to be utilised for different applications.
The instrument case is manufactured from a passivated aluminium alloy base with a cover in reinforced techno-polymer (ABS); it is both dust and spray proof.
The transducers are supplied with a bracket for mounting to 35 mm omega guide rails according to the DIN standars.
If required the transducers can be supplied with the necessary bracketry for mounting to either a wall or to tubular supports.
For mounting to pipework, the brackets are suitable for diameters of between 20 and 35 mm inclusive.

Table 1 - Version available (measurement ranges and signals)

Version	Input signal		Output signal		Action
A	4 to 20 mA 0 to 20 mA	chokable	3 to 15 psi 20 to 100 kPa 2 to 18 psi	chokable	invertible *
B	1 to 5 V 1 to 10 V 0 to 10 V	chokable	3 to 15 psi 20 to 100 kPa 2 to 18 psi	chokable	invertible *
C	4 to 20mA 0 to 20mA	chokable	6 to 30 psi 40 to 200 kPa 4 to 33 psi	chokable	invertible *

* Action is fixed, direct or reverse, on model IPC 4-EX intrinsically safe against explosion.



General specifications

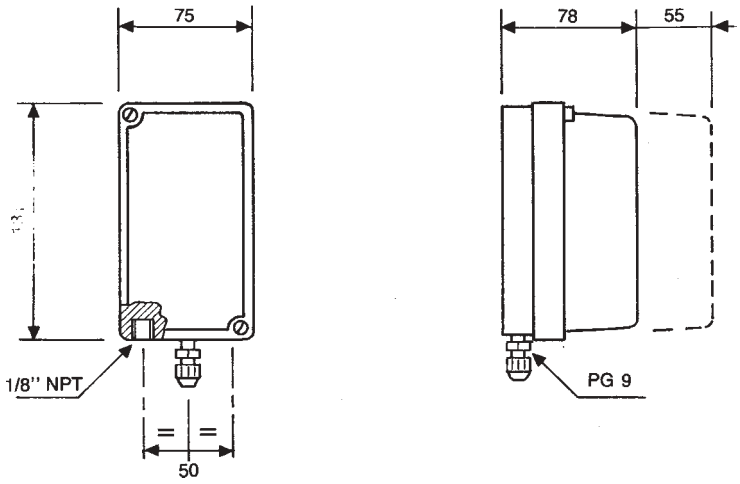
Type of instrument	electropneumatic transducer
Measurament ranges	• see table 1
Output signal	• see table 1
Input resistance	version A and C ≤ 220 Ω version B ≤ 1300 Ω
Accuracy	1% of range span
Sensitivity	0,2% of range span
Repeatability	0,5% of range span
Linearity	0,5% of range span
Action mode	direct action (the output signal increases on increasing the measured variable): action can be **inverted** even in the field (fixed on IPC 4-EX model)
Air supply	compressed air at 1.4 to 2.5 bar (140 to 250 kPa) Recommended: 1.4 bar for versions A and B 2.5 bar for version C
Air consumption	0.25 Nm^3/h (average value)
Pneumatic connections	1/8 NPT female for air supply and output signal
Electrical connection	PG9 cable grip - terminals inside for 0,5 to 2 mm^2 wires (2 wires for the signal and 1 to earth)
Enviroment temperature limits	maximum 80°C minimum -20°C
Humidity	90% relative humidity
Intrinsically safe	model IPC 4-EX is classified EEx ib IIC T4 II2G TÜV approval
Case	passivated and painted (epoxy) aluminium alloy base cover in reinforced techno-polymer (ABS) protection degree IP 65
Mounting	• on 35 mm guide according to DIN EN 50022 • wall or pipe support 20 to 35 mm dia. (on request)
Mounting position	• standard vertical, with connections at the bottom • horizontal, after zeroing procedure
Weight	approx. 0.7 kg
Overall dimensions	131x75x78 mm (see drawings on next page)

Data required for offers and when ordering

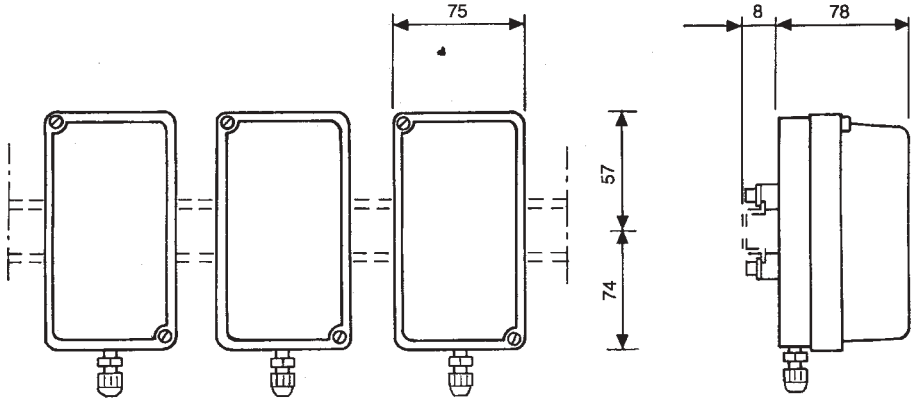
Required informations	Example
Type of instrument	eletctropneumatic transducer
Input signal (measurement range)	4 to 20 mA
Output signal	3 to 15 psi
Action	direct
Type of mounting	bracket for pipe support
Environmental temperature variation	from 10 to 30°C
Explosion protection	not required

Dimensions (mm)

Overall dimensions and connections



Board mounting (on DIN track)



Wall or pipe support mounting