

# Pneumatic Flanged Transmitter for Pressure



## Type 814

### Application

Pneumatic transmitter to measure pressure and liquid levels, with a flange for attachment to tanks or pipes, for operating pressures from 0 to 6 bar.

The instruments are used to measure pressure or liquid level and convert the measured value into a standardized pneumatic signal from 0.2 to 1 bar or 3 to 15 psi. The transmitter is suitable for liquids, gases and vapors with measuring spans between 0.016 and 6 bar. They are particularly suitable for:

- Liquid level measurement of open tanks
- Pressure measurement of media which readily crystallize or contain suspended matter, and particularly corrosive or highly viscous fluids
- Pressure measurement of food and beverages or pharmaceutical products which do not allow the use of connecting tubes for hygienic reasons.

The instrument is largely identical to the Type 804-1 Transmitter (see Data Sheet T 7540 EN). It has, however, an overloadable diaphragm measuring element (10). The measured pressure  $p$  acting on the stainless steel diaphragm (10.1) exerts a force which is converted into a proportional output signal  $p_A$  by the transmitter. The supply air pressure  $p_z$  is either 1.4 bar or 20 psi.

### Special features

- The process medium only comes into contact with the stainless steel parts of the diaphragm measuring element
- Permissible ambient temperature  $-10$  to  $+120^\circ\text{C}$
- Permissible operating temperature at the connection for the process medium  $-10$  to  $+150^\circ\text{C}$ .

### Versions

**Type 814** · Pneumatic Flanged Transmitter for Pressure with flange PN 10/40, DN 80 (Fig. 2) and measuring spans from 0.016 to 6 bar.

**Special versions** · with projecting diaphragm · with hygienic coupling DN 50 · with flange DN 50 · with flange DN 25/PN 40.

**Note** · Type 804-1 Transmitter with Pressure Transmitting Sealing Element is suitable for pressure or liquid level measurement and measuring spans up to 600 bar. See Data Sheet T 7550 EN for details.

1	Throttle	10.1	Metal diaphragm
2	Feedback bellows	10.2	Housing
4	Span rider with locking screw	14	Flapper
7	Balance beam	15	Nozzle
8	Zero adjustment screw	17	Booster
9	Balance beam	18	Spring for lower range value adjustment
10	Measuring element		

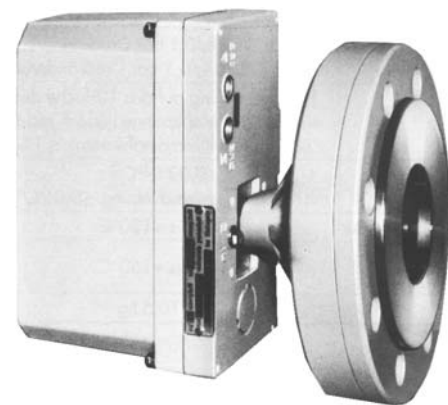


Fig. 1 · Type 814 Pneumatic Transmitter with flange PN 10/40, DN 80

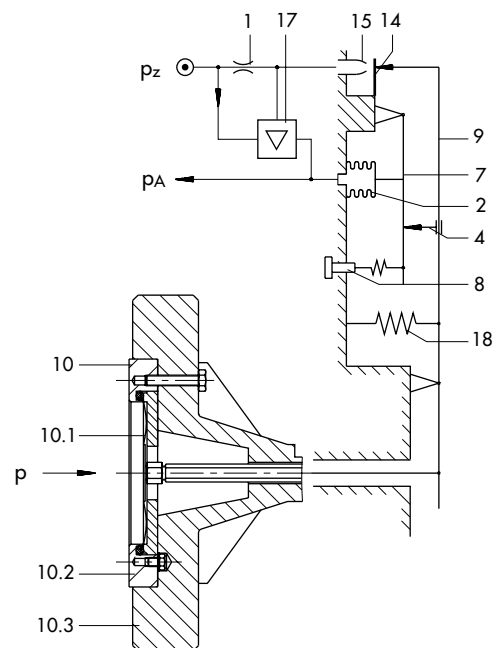


Fig. 2 · Type 814 Pneumatic Transmitter, with flange PN 10/40, DN 80

**Table 1 · Technical data** · All pressures are pressure values  $p_e$  in bar (gauge) unless specified otherwise.

<b>Process medium connection</b>		DN 80		
<b>Flange</b>		PN 10/40		
Measuring span	bar	0.016 to 0.16	0.1 to 1	0.6 to 6
Upper range limit	bar	0.3	1.9	11.4
Overloadable up to	bar	1.5	3	12
Lower range value adjustable from	bar	0 to 0.14	0 to 0.9	0 to 5.4
<b>Pressure measuring element</b>		Metal diaphragm		
<b>Supply</b>		1.4 ± 0.1 bar or 20 ± 1.5 psi		
<b>Output</b>		0.2 to 1 bar or 3 to 15 psi		
<b>Air consumption</b>		≤ 0.15 m <sup>3</sup> /h in steady-state condition		
<b>Max. air delivery</b>		1 m <sup>3</sup> /h		
<b>Load characteristic</b>		0.3 m <sup>3</sup> /h per 3% change in output signal		
<b>Deviation from linearity</b>		Terminal based non-conformity ≤ 0.5%		
<b>Hysteresis</b>		≤ 0.3%, with spans ≤ 0.04 bar: 0.4%		
<b>Dead band</b>		≤ 0.1%		
<b>Effects of supply air</b>		With spans marked on scale: 1 to 3: ≤ 0.4%/0.1 bar pressure change 4 to 8: ≤ 0.25%/0.1 bar pressure change		
<b>Overload effect</b>		Overloadable up to 10 times the adjusted measuring span (however not exceeding the permissible maximum value): ≤ 1%		
<b>Temperature effect</b>		≤ 0.03%/°C, w. adjustable lower range value: ≤ 0.05%/°C		
<b>Perm. ambient temperature</b>		-10 to +120°C		
<b>Perm. operating temperature at process med. connection</b>		-10 to +150°C		
<b>Weight, approx.</b>		10.5 kg		

**Table 2 · Materials** · Measuring element (material number acc. to DIN)

Housing/upper part	1.4571
Metal diaphragm	1.4571 (Hastelloy C on request)
Flange	GGG-40

Further technical data can be found in Data Sheets T 7540 EN and T 7550 EN

### Installation

The usual installation position - base and flange vertical - is shown in the dimensional diagrams.

**Air connections:** Two tapped holes 1/8 NPT (optional: two tapped holes ISO 228 G1/8).

### Special versions (only for measuring spans up to 6 bar)

Flanged transmitter with projected diaphragm and flange DN 100 (PN 10/16) and version for hygienic coupling DN 50 (PN 10) according to DIN 1158 correspond in their principle of operation and their technical data with Fig. 2.

### Dimensions in mm

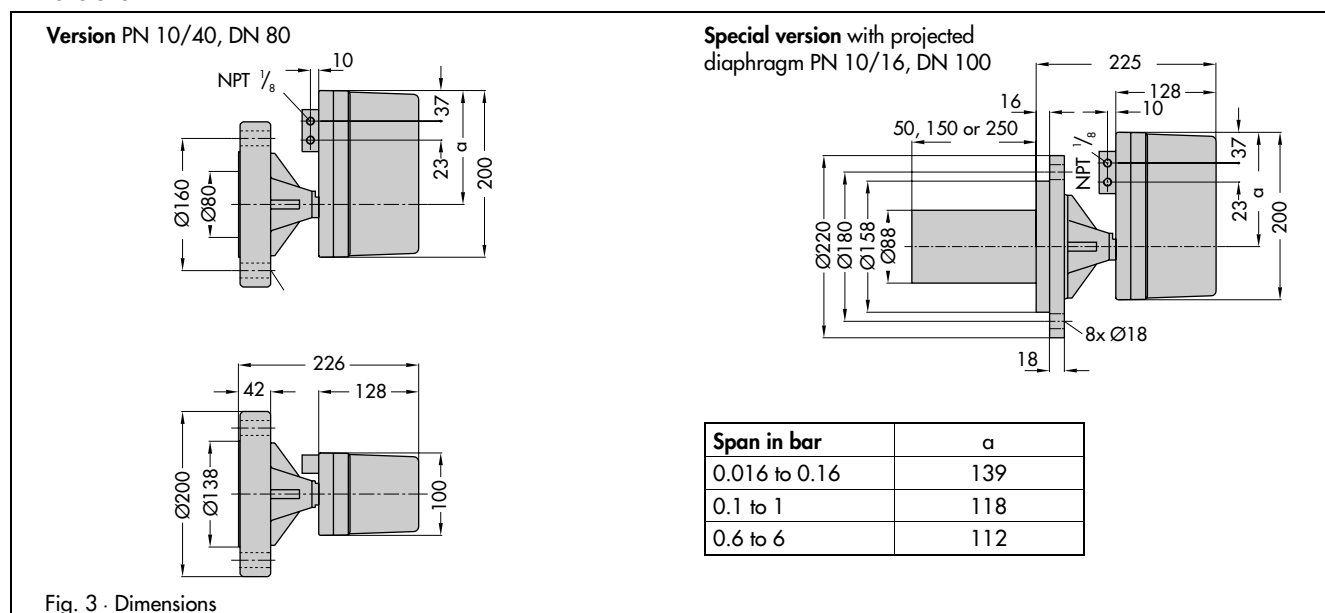


Fig. 3 · Dimensions

### Ordering text

Pneumatic Transmitter Type 814

Without/with adjustable lower range value

Free of non-ferrous metal/free of non-ferrous metal with adjustable lower range value

Measuring span ... to ... bar/adjusted from ... to ... bar

Output 0.2 to 1 bar/3 to 15 psi

Optional special version/accessories

Specifications subject to change without notice.

