

# Technical Datasheet



## D Series

### Compact Differential Pressure Transmitter

Model: DPRE-28

#### Key Features

- Accuracy  $\pm 0.25\%$ .
- 4-20mA output signal.
- Static pressure limit up to 420 bar.
- Gold plated diaphragm option.
- Hastelloy C276 wetted parts option.



#### Series Overview

- The D-Series pressure, differential pressure and temperature transmitters offer customers cost-effective and accurate solutions to their individual process requirements.
- Available with a wide range of process connections and easily configurable via the D-Soft software, the D-Series can be used for a variety of applications when pressure, differential pressure, temperature, level or flow measurements are needed.

Other products in the series include:

- DPCE-28 Pressure Transmitter



#### Product applications

The DPRE-28 D-Series is suitable for a wide range of applications for measuring:

- Differential Pressure
- Level
- Flow

The choice of models available ensures that the DPRE-28 D-Series is suitable for use in:

- Corrosive atmospheres
- Resistant to chemical attack

#### How can we help you?

Delta Controls' offers fast, efficient and knowledgeable support when and where you need it. Please visit our web site at [www.delta-controls.com](http://www.delta-controls.com) to find your local support centre or call us on:

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**D-Series**  
Model: DPRE-28

## Application & Construction

The DPRE-28 Differential Pressure Transmitters are suitable for measuring differential pressure of gases, vapours and liquids. The active sensing element is a piezoresistive silicon sensor separated from the medium by a diaphragm and by a specifically selected type of manometric liquid. The special design of the active sensing element ensures withstanding the pressure surges and overloads of up to 320bar. The electronics is placed in a casing with ingress protection rating of IP65, IP67, depending on the type of electrical connection applied.

## Calibration

Potentiometers can be used to shift the zero position and the range by up to ±10%, without altering the settings.

## Installation

The transmitter with P type process connection is not heavy, so it can be installed directly onto the impulse line without an additional mounting bracket. For fitting in any desired position we recommend a universal Delta mounting bracket for 2" pipe (AL mounting bracket). The version with C type process connections can be fitted directly to a 3 or 5 valve manifold. We recommend factory-mounted transmitters with VM type valve manifold. A transmitter without a valve manifold can be fitted in any position on a 2" pipe or on a wall using the C-2" mounting bracket.

When the special process connections are required for the measurement of specific media levels in closed tanks (e.g. in the sugar and chemical industries) the transmitter is fitted with a Delta diaphragm seal. The differential pressure transmitter with diaphragm seals are described in detail in the further part of the catalogue.

## Measuring Ranges

**Any measuring range** 0...16 mbar ÷ 0...25 bar

	Measuring range				
	25 mbar	100 mbar	1 bar	2 bar	25 bar
Overpressure Limit Static Pressure Limit (repeated, without hysteresis)	250 bar (option 420 bar) (40 bar for P type process connection)				
Accuracy	0,4%	0,4%	0,25%		
Long term stability	0,6% / year	0,2% / year	0,1% / year		
Thermal error	Typically 0,5% / 10°C Max 0,6% / 10°C	Typically 0,3% / 10°C Max 0,4% / 10°C	Typically 0,3% / 10°C Max 0,4% / 10°C		
Zero shift error for static pressure*	0,1% / 10 bar				

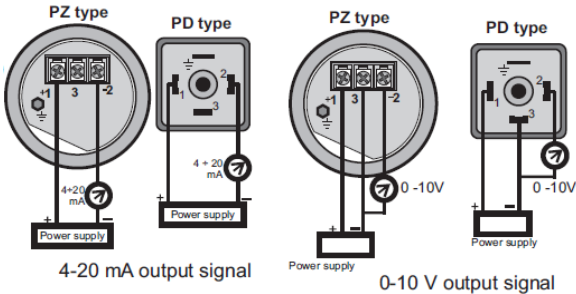
\* Zeroing the transmitter in conditions of static pressure can eliminate this error

## Technical Data

### Electrical parameters

<b>Output signal</b>	4...20 mA, two wire transmission 0...10 V, three wire transmission
<b>Power supply:</b>	
<b>Output 4...20 Ma:</b>	8...36 VDC (Ex 9...28VDC) Version TR: 10,5...36 VDC (Ex 12...28 VDC)
<b>Output 0...10 V:</b>	13...30 VDC
<b>Error due to supply voltage changes</b>	0.005% (FSO) / V 0.85
<b>Load resistance</b> (for current output)	$R[\Omega] \leq \frac{(U_{sup}[V]-8V)}{0,02A}$
<b>Load resistance</b> (for supply output)	$R \geq 20K\Omega$

### Electrical diagrams



## Technical Data (cont.)

### Materials

**Wetted parts:** type P process connection 316Lss  
type P(H) process connection 316Lss or Hastelloy C276  
type C process connection 316Lss

**Diaphragms:** SS316L, Hastelloy C 276, Au

**Casing :** 304ss  
Option : 316ss

### Operating conditions

**Hysteresis, repeatability:** 0,05%

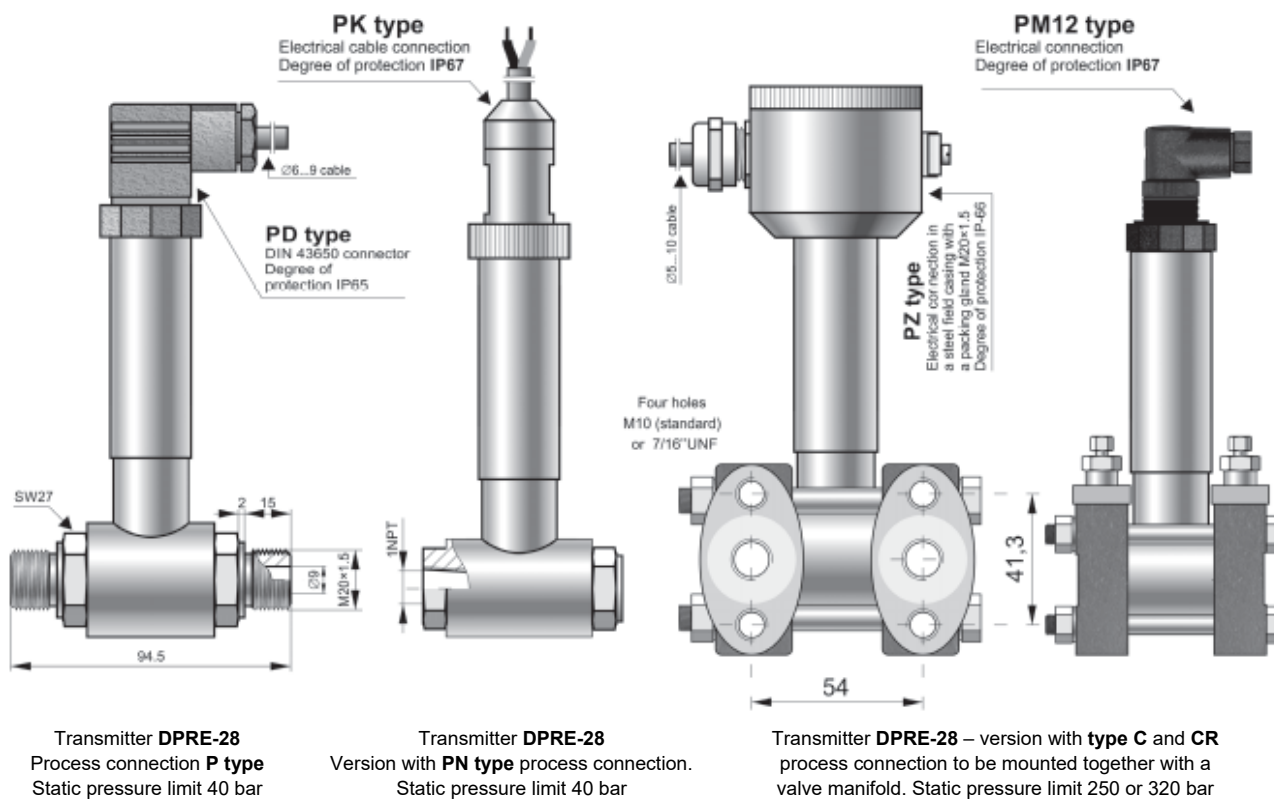
**Thermal compensation range:** 0...70°C

**Operating temperature range (ambient temp.):** -25...80°C

**Medium temperature range:** -25...120°C (direct measurement)  
Over 120°C - measurement with use  
an impulse line or diaphragm seals

**CAUTION:** The medium must not be allowed to freeze in the impulse line or close to the process connection of the transmitter.

## Dimensions



## How to Order

Model	Code	Description
<b>DPRE-28</b>		Differential pressure transmitter
Versions, certificates*  more than one option is available	/Tlen ..... /TR .....	For oxygen service (sensor filled with Fluorolube fluid), only M and G1/2 connection Response time <30ms; only 4...20mA output
Measuring range	/...+...(required units)	Measuring range in relation to 4mA and 20mA (or 0 and 10V) output.
Analogue output signal	(without marking) /0...10V .....	4...20mA / power supply 10,5...36VDC (Ex 12...28VDC) 0...10VDC / power supply 13...30VDC
Measuring set range	/...+...(required units)	Calibrated range in relation to 4mA and 20mA (or 0V and 10V) output
Casing, electrical connection	/PD..... /PZ..... /PZ316..... /PM12..... /PK12.....	Housing IP65 with DIN43650 connector 304SS housing, IP66, packing gland M20x1,5 316SS housing, IP66, packing gland M20x1,5 Housing IP67 with thread M12x1 and connector 304SS housing, IP67, cable electrical connection (3 m of cable in standard)
Process connections	/C .....  /CR ..... /P ..... /PN ..... /code of diaphragm seal.....	Thread 1/4"NPT F on the cover flanges. Cover flanges material SS316. Allows mounting with a valve manifold. Process connection of cover flange: M10 (option /C(7/16) - 7/16"UNF acc. to IEC 61518) C-type process connection rotated 90° Thread M20x1,5 (male) Thread 1/4"NPT (female) Diaphragm seal (see chapter of diaphragm seals) mounted on Hi side of transmitter, Lo side 1/4"NPT Female
Material of diaphragms (refers only to C, CR, P, PN process connection)	(without marking)..... /(H).....  /(Au).....	Diaphragms material SS316L Diaphragms material Hastelloy C276 (/P and /PN – all wetted parts in Hastelloy C276 on request) Gold plated diaphragms
Gasket (refers only to C, CR process connection)	(without marking)..... /NBR..... /PTFE.....	FPM Viton NBR (for oxygen service) PTFE
Accessories	/C-2" ..... /C-2"(SS)..... /FI25..... /RedSpaw P.....  /RedSpaw C.....  /Red d/P 1/2".....	Mounting bracket for 2" pipe (to C process conn.), mat. zinc steel Mounting bracket for 2" pipe (to C process conn.), mat. Stainless Steel Mounting bracket for 2" pipe (to P process conn.), mat. Stainless Steel Connector to weld impulse pipes dia. 12 and 14 mm, material 15HM(SO) or SS316(S). Only process connection P type Connector to weld impulse pipes dia. 12 and 14 mm, material 15HM. Only process connection C type. Adapter for differential pressure transmitters with C type process connection, output thread 1/2NPT F. Material SS316L
Other specification	/ .....	Description of required parameters

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