DPFLOW Q4 - LOW DIFFERENTIAL PRESSURE AND VELOCITY TRANSMITTERS

Compact instruments with temperature compensated piezoresistive sensor for the instantaneous measurement of low differential pressures in ambient air, ventilated or neutral fluids not corrosive or explosive gases.

Designed for connection with the primary velocity sensors such as quadratic Pitot, Darcy, Pitobar mediated, Prior, etc.

Conversion electronics for the calculation of the instantaneous velocity related to the dynamic pressure differential, with programmable flow coefficient. Normalized standard voltage and current analog output or on alternative RS485 MBus serial output.

Two full-scale range switchable in 2: 1 ratio.

Automatic Auto-zero function for offset compensation reading.

Vertical profile mounting position. Easy configuration of measurement parameters by PC via terminal emulation software (HyperTerminal and the like).

TECHNICAL SPECIFICATIONS

Range scale:	from 0…50 to 0…1000 Pa; dynamic / differential pressure
Working pressure:	0…25000 Pa max total pressure. Static pressure plus dynamic pressure / DP
Working temperature:	-5…+50°C, humidity 0…95%RH not condensing
Analog output:	voltage 0-10 Vdc (min <10 kOhm); current 4-20 mA (max> 500 Ohm @ 24VDC)
Display:	LCD 4 digits
Accuracy:	scale range depending +/- 1% …+/-3%, +/- 1 Pa
Resolution:	Pressure = 1 Pa; Velocity = 0.01 m/s
Stability:	< +/- 1 Pa
Responce time:	Fast (0.125 sec DP, 1 sec output); slow (1 ... 4 sec default 2 sec) selectable
Fluid:	clean air and non-aggressive, toxic or explosive gases
Power supply:	V24ac +/- 10% or 10…40 Vdc max > 1 W @ 24Vdc
Tap pulse:	2x flexible tube 6x4
Electrical connections:	internal terminal screw max 1,5 mm^2, external PG9 cable gland
Housing:	ABS IP67
Dimensions:	80x84x44 mm

Models:	Low range	High range	Accuracy	Standart full scale max velocity (@ K = 1, T=16°C, Patm = 1013.25 mbar, Ps = 0)		Programmable f.s. analog output
				LOW m/s	HIGH m/s	m/s
TPD4DP1AZSRD	50	100	+/-3%	9.06	12.82	10
TPD4DP2AZSRD	100	250	+/-1,5%	12.82	20.27	20
TPD4DP3AZSRD	250	500	+/-1%	20.27	28.67	25
TPD4DP4AZSRD	500	1000	+/-1%	28.67	40.55	40

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TECHNICAL SPECIFICATIONS

Simplified formula for calculating of theoretical velocity rated:

$$Vn = K * \sqrt{\frac{DeltaP * 2g}{\rho}} = m/s$$

$$\rho = \frac{P_{ass}\,[Pascal]}{287 * (273{,}15 + t\,[°C])} = kg/m^3$$

where

K =	Primary element coefficient = 1.0 for Ashrae Pitot
g =	Acceleration of gravity = 9.805 m/sec ^{2}
ρ =	kg/m^3 air density at standard barometric pressure s.l.p. = P $_{bar}$ 101.325 Pa
t =	Fluid temperature + 16.0 °C as standard air
DeltaP =	Differential or dynamic pressure measured in Pascal unit, measured on the pulse transmitter taps, equals to the difference between total pressure Pt+ minus the static pressure Ps- of fluid

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