PRESSURE TRANSDUCER

Setra 276

KINTECH ENGINEERING

BAROMETRIC PRESSURE TRANSDUCER | Setra 276

PRESSURE RANGE	ELECTRICAL SUPPLY	SIGNAL OUTPUT	MODEL IN EOL MANAGER
800-1100 mbar	12 VDC (9.0...14.5 V)	0.1...5.1 VDC	**SETRA276 800-1100 12V**
600-1100 mbar			

APPLICATION

- Environmental monitoring systems
- Weather measurement systems
- Weather and environmental data logging
- Barometric pressure compensation for internal combustion engine performance
- Cleanroom barometric pressure compensation
- Automotive emisions test equipment

CONSTRUCTION AND MODE OF OPERATION

The Setra 276 model is an extremely accurate and stable transducer based on the proven Setraceram™ sensing element. The glass fused ceramic capacitive sensing capsule is the heart of Setra's environmental pressure transducers because of its inherent thermal stability, low hysteresis and fundamentally simple design. Another major feature of the Setra 276 is Setra's custom Application Specific Integrated Circuit (ASIC). The ASIC works hand-in-hand with the Setraceram™ sensor to achieve long-term stability and high accuracy. The ASIC circuit allows the Setra 276 to operate with an excitation as low as 5 VDC for remote battery or solar powered applications.

The Setra 276 is designed specifically to give maximum flexibility to system integrators and OEM's (Original Equipament Manufacturer). The standard unit has a convenient mounting bracket and simple 0.32 cm tube fitting for quick installations. Its low cost, small size and available options make it application configurable.

TECHNICAL DATA

PERFORMANCE DATA	
CHARACTERISTIC	**DESCRIPTION / VALUE**
Accuracy RSS (at constant temp)	Of non-linearity hysteresis and non-repeatability ±0.25% FS
Compensated range Zero shift (over compensated range) Span shift (over compensated range)	0…+55°C 1% FS 1% FS
Resolution	Infinite, limited only by output noise level (0.0005% FS)
Time constant	10 ms to reach 90% final output with step function pressure input
Long term stability	0.25% FS/6 months

ENVIRONMENTAL DATA	
CHARACTERISTIC	**DESCRIPTION / VALUE**
Operating temperature	-18…+79 °C
Storage temperature	-55…+121 °C
Vibration	2 g (5...500 Hz)
Shock	50 g (Operating, ½ sine 10 ms)
Acceleration	10 g

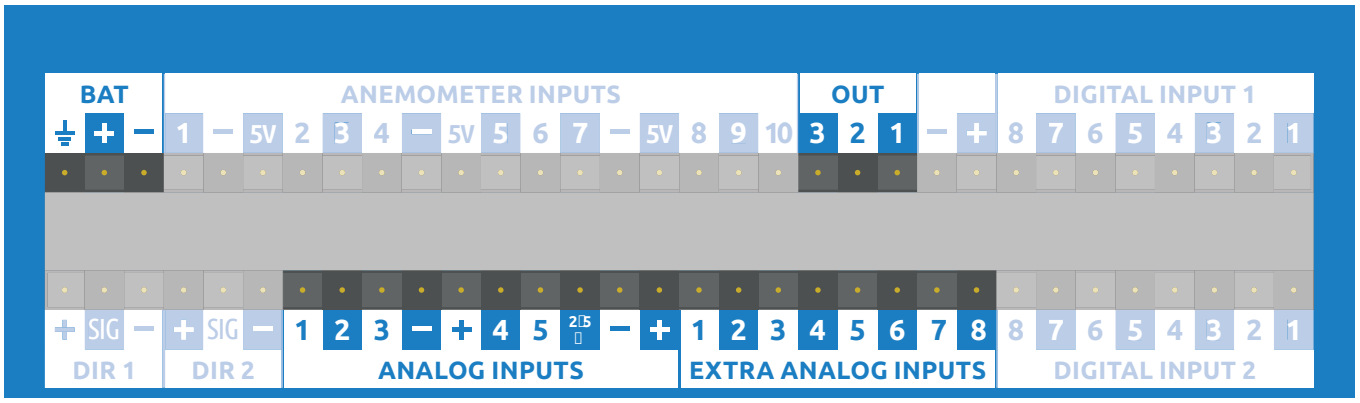
ELECTRICAL DATA	
CHARACTERISTIC	**DESCRIPTION / VALUE**
Excitation → Output	12 VDC (9.0...14.5 V) → 0.1...5.1 VDC
Power consumption	0.2 W (24 VDC)
Output impedance	5 Ω
Output noise	<200 µV RMS (0...100 Hz)

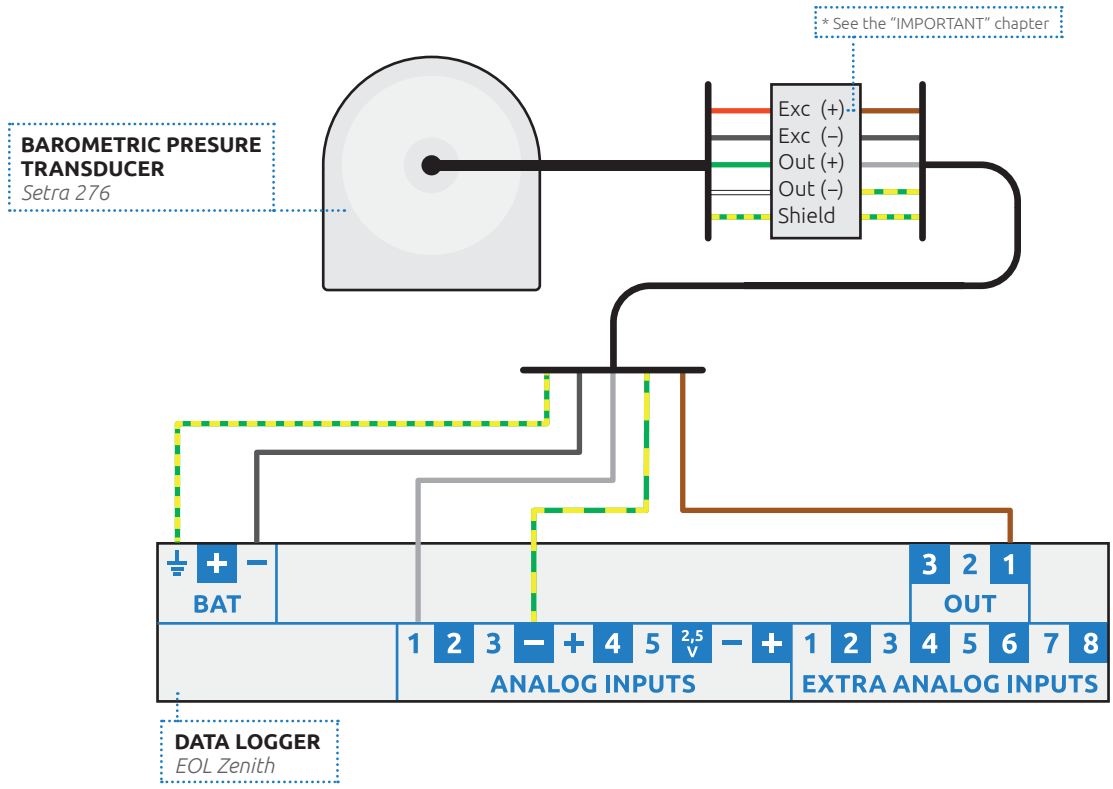
PHYSICAL DESCRIPTION	
CHARACTERISTIC	**DESCRIPTION / VALUE**
Case	Stainless steel
Electrical connection	0.61 m Multi conductor cable
Pressure fitting	0.32 mm tube fitting

PRESSURE RANGE	FS VALUE
800 - 1100 mbar	300 mbar
600 - 1100 mbar	500 mbar

INSTRUCTIONS

Use the following input channels on the logger to connect this sensor. See highligted input channels marked here below. The wire colors used in the connection diagram below only applies in case the cable is supplied by Kintech Engineering.
For additional wiring & shielding information see the chapter "IMPORTANT" at the end of this dataheet.

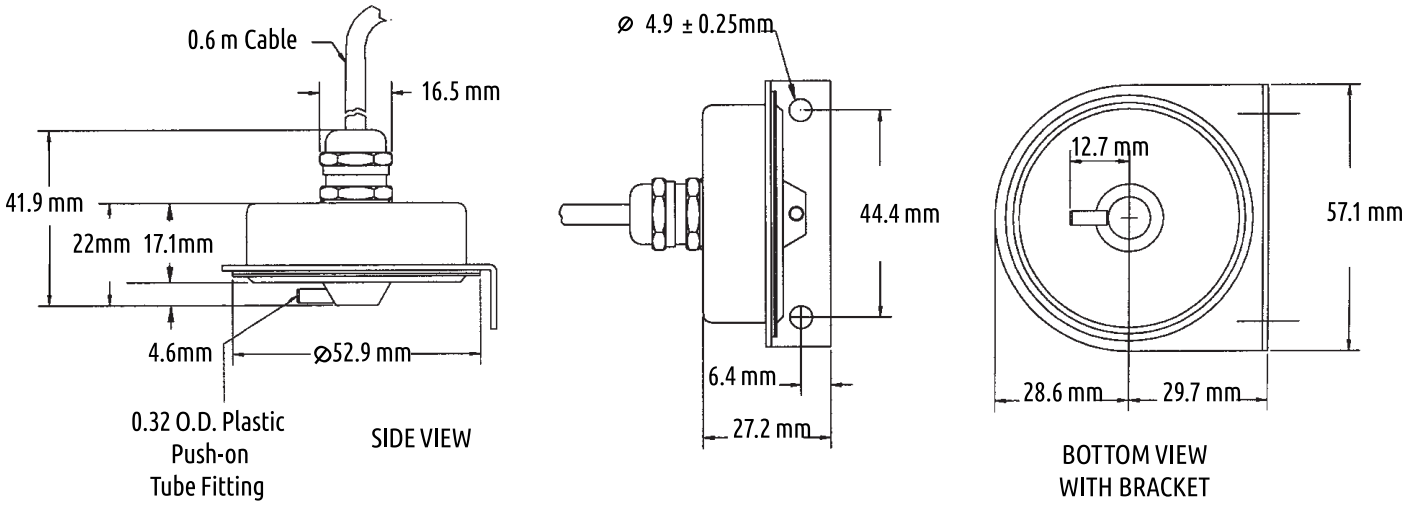




SENSOR PIN DESCRIPTION		DATA LOGGER INPUT CHANNEL	
Exc (+)	Excitation (+)	OUT	1
Exc (–)	Excitation (-)	BAT	(-)
Out (+)	Output (+)	ANALOG INPUTS	1
Out (–)	Output (-)	ANALOG INPUTS	(-)
Shield	Shield	BAT	GND

KINTECH COLOR CODES		MANUFACTURER COLOR CODES	
Brown		Red	
Black		Black	
Grey		Green	
Yellow - Green / *2.5 mm²*		White	
Yellow - Green / *0.5 mm²*		Yellow - Green	

SENSOR DIMENSIONS

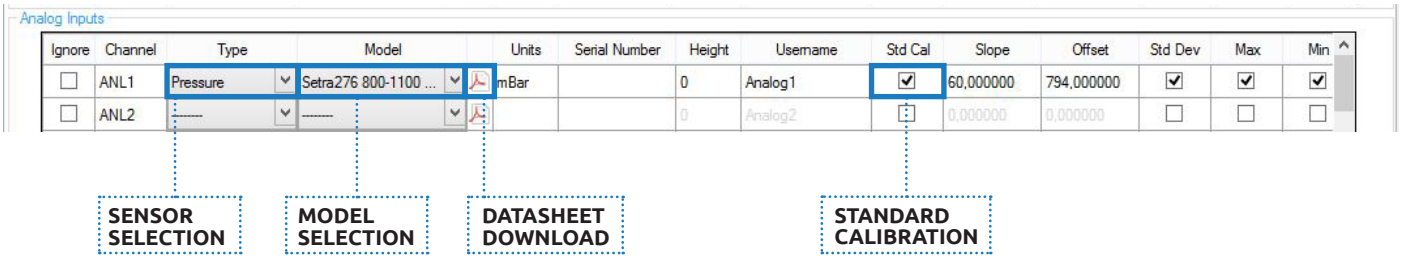


HOW TO CONFIGURE THIS SENSOR IN EOL MANAGER

Open EOL Manager and go to the data logger you are working on. Open the "inputs" tab and select the following type and model:

- **Section**: Analog Inputs
- **Type**: Analog Inputs
- **Model**: Setra276 800-1100 12V

Calibration values: Tick the "Std Cal" to use this sensors standard slope and offset. If you have an independent calibration certificate for this sensor insert the slope and offset values from this certificate.



IMPORTANT

- After configuring the sensor in EOL Manager make sure to upload the configuration file to your EOL Zenith data logger. See the "Quick User Guide" how to upload configuration files to the data logger.
- All sensor wire shields must be connected to the data logger GND terminal.
- The data logger should always be connected to a separated ground rod. **Not** to the lightning rod of the tower.
- If the sensor is installed at 10 meters or more from the data logger use a wire section of at least 2.5 mm² for the "Out(-)" and "Out (+)".
- Kintech Engineering supplies a 4 wire 2.5mm² cable. This cable can be used for distances up to 150 meters.
- Power description:

SENSOR PIN	DATA LOGGER INPUT	POWER CONSUMPTION	
Exc (+)	OUT 1	12 V pulsating	power saving
	BAT (+)	12 VDC	higher power consumption

- In case you power the Setra sensor from the pulsating outputs on the logger, each pressure sensor should be connected exclusively to the "OUT1, OUT2, OUT3". The terminals (OUT1, OUT2, OUT3) can consequently **not** be shared between Setra pressure sensors.
- In case you power the Setra pressure directly from the 12V BAT (+) terminal on the logger you **can** share the BAT (+) terminal between several Setra sensors.
- To store data such as Std Dev, Max and Min you should tick the corresponding boxes next to each anemometer channel when setting up your site file. Otherwise these parameters will not be stored.
- In the example diagram shown before, the "Out (+)" wire from the sensor is connected to the "ANALOG INPUT 1". It can however be distributed on all "ANALOG" and "EXTRA ANALOG" channels according to needs.
- Beware that different pressure ranges (see models here below) is basis for different slopes and offsets in EOL Manager.

SENSOR (mbar)	ELECTRICAL SUPPLY (VDC)	SLOPE (mbar/V)	OFFSET (mbar)
800-1100	9-14	60	794
600-1100	9-14	100	590
800-1100	5	75	762.5
600-1100	5	125	537.5

- Please configure the sensor "**Model**" in EOL Manager according to the pressure range of the sensor you connect to the logger.
- For sensors connected to 5 V power supply, apply the slope & offset manually in EOL Manager as refered to in the table above. For sensors connected to 9-14 V power supply, tick the standard calibration in EOL Manager.
- Cable recommendation:

Less than 10 m from logger	Signal cable 4x0.5 mm²
More than 10 m from logger	Signal cable 4x2.5 mm²

Last modified: 19.05.2017

KINTECH ENGINEERING
www.kintech-engineering.com
support@kintech-engineering.com
Tel. +34 976 221 789