



HIGH PRECISION SDI-12 PRESSURE TRANSMITTER

PRECISELINE SDI

SDI-12 OR RS485 DIGITAL OUTPUT PRESSURE TRANSMITTER

The Preciseline SDI by Keller America provides outstanding Total Error Band (TEB)₃ accuracy for reliable, accurate measurements in real-world conditions.

The Preciseline SDI combines two industry standard digital communication protocols, making it ideally suited for environmental monitoring bubbler applications such as surface water, streams, and reservoirs using existing SDI-12 monitoring equipment.

The Preciseline SDI is ideal for remote applications where battery-powered operation with minimal current draw and networking multiple sensors to a data recorder are required. And the included lightning protection makes it more robust for installation in areas prone to high current and voltage transients.

For more information on the Preciseline SDI, or any other Keller digital product, please contact Keller America. You may also see the complete line up of Keller products at <http://www.kelleramerica.com/datasheets.html>.

FEATURES

Standard $\pm 0.1\%$ FS TEB₃ or optional USGS OSW accuracies available

- $\pm 0.1\%$ FS TEB₃ on ranges up to 900 ft W.C.
- Meets OSW spec on ranges up to 70 ft W.C. from 0...40° C.

16-bit internal digital error correction for cost-effective low Total Error Band (TEB)

Selectable digital outputs (SDI-12 or RS485) for maximum versatility.

RS485 modified-MODBUS and SDI-12 V1.3 protocol compatibility.

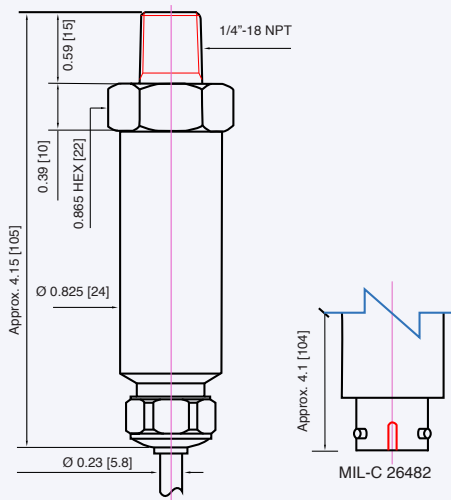
316L stainless steel construction.

2-year warranty covers defects in materials and workmanship.

Lightning protection included at no additional cost.

Built in the U.S.A. ARRA Section 1605 Compliant.

Standard 3-day lead time at no additional cost.



Connection	GND	SDI-12	+Vcc	RS485A	RS485B
Cable ₁	Black	White	Red	Blue	Yellow
MIL-C 26482	Pin C	Pin B	Pin A	Pin D	Pin F

1. The drain / shield is connected to the transmitter housing. For lightning protection to function properly, the shield wire must be connected to a good earth ground!



Pressure Ranges₂

Relative	Infinite between 0...5 thru 0...450 PSIG
Absolute	Available on request
Proof Pressure	2X Basic Range

2. Pressure range may be specified in units of bar, mbar, mH₂O, psi, ftWC, or inWC

Accuracy_{3,4}

Pressure	Standard $\pm 0.1\%$ FS TEB Optional Opt. ± 0.01 ft when reading ≤ 10 ftWC or $\pm 0.1\%$ of reading > 10 ftWC
Temperature	typ. ± 0.3 °C

3. Total Error Band (TEB) includes the combined effects of non-linearity, hysteresis, and non-repeatability as well as thermal dependencies, over the compensated temperature range.

4. Optional accuracy is written in compliance with USGS OSW specification mandates and limited to a maximum range of 70 ftWC and a compensated temperature range of 0...40° C.

Output₅

Digital	SDI-12 + RS485
Pressure Resolution	0.0005% FS
Temp. Resolution	< 0.01 °C
Comm. Protocol	SDI-12 V1.3, MODBUS RTU
Baud Rate	1200 bits/s

5. The Preciseline SDI can communicate in either SDI-12 or RS485 at any one time. By default, the Preciseline SDI will ship in SDI-12 mode. A USB Dongle is required to change to RS485 mode.

Connection

Process	1/4"-18NPT Male ₆
Electrical	10 ft. PE Cable Standard (Hytrel, Tefzel optional) ₇ MIL-C 26482 ₇

6. Other process connections available on request. Consult the factory.

7. Tefzel Cable and MIL-C available at additional cost. MIL-C mating connector included.

Electrical₈

Supply	6...32 VDC
Power Consumption	< 0.1 mA (Sleep) < 5.5 mA (active)
Startup Time	< 5 ms (interface ready)
Load Resistance (mA)	$< (\text{Supply}-6\text{V})/0.0055\text{A}$
Insulation GND-CASE	> 10 M Ω @ 300 V

8. Nominal values may be higher depending upon cable length. Cable resistance ($\sim 70\Omega / 1000\text{ft}$) adds to the supply requirement. In order to insure proper system operation, calculate the minimum required supply voltage (at the source) as follows:

$$\text{MINIMUM SUPPLY VOLTAGE} = 6 + 0.022 (\text{CABLE LENGTH} \times 0.07) \text{ VDC}$$

Environmental

Protection Rating	
Cable	IP68
Mil-C 26482	IP65
Operating Temp.	
Cable	-10...60° C
Mil-C 26482	-30...100° C
Compensated Temp.	Standard -10...80° C Optional 0...40° C ₉
Wetted Materials	316 L Stainless Steel Fluorocarbon

9. Optional compensated temperature range applies to transmitters built to USGS OSW accuracy specification.

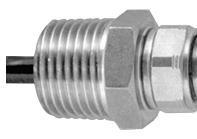
Certifications

CE	EN50081-1, EN50082-2
Shock	20g (11ms)
Vibration	20g (5-2KHz, max. amp ± 3 mm per IEC68-2-6)

Optional Accessories



Interface Converter (RS485)



1/2" NPT Conduit Fitting



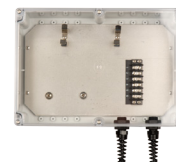
Drying Tube Assembly



Bellows Assembly



Cable Hanger



Termination Enclosure



USB Dongle (SDI-12)