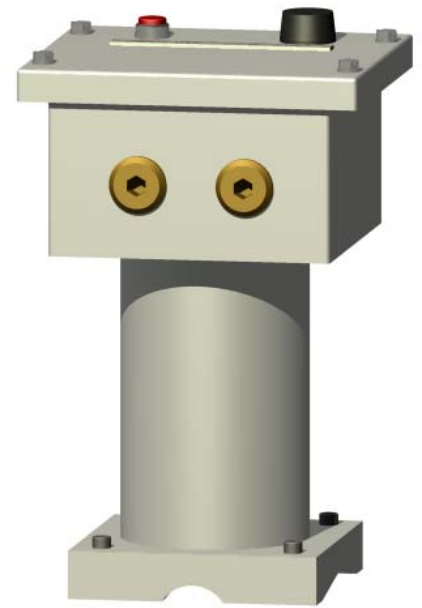


# Instrument Datasheet

## DSP PIG Detector Ex db eb mb

1 General			Note
1.1	Model description	DSP PIG Detector	
1.2	Explosion protection principle	Flameproof enclosure, Ex d Increased safety, Ex e Encapsulation, Ex m	
1.3	Part number	Various depending on model type and mechanical configuration	
1.4	Serial number	YY-MM-XXXXX, unique for each unit	1



2 Physical			
2.1	Dimensions (ø x h)	185 mm x 297 mm [7.3 in x 11.7 in]	
2.2	Enclosure material	Stainless steel 316L	
2.3	Enclosure protective coating	None, not certified with any type of coatings	
2.4	Weight	8 kg [17.6 lb]	
2.5	Ambient temperature	See "Approvals & certification"	
2.6	Ingress protection	IP66, tested in accordance with IEC 60529	
2.7	Equipment marking	Metallised polyester certification label Polyester product name label Stainless steel tag plate where applicable	
2.8	Cable entry configuration	Up to 4 off Ø25 clearance holes fitted with Ex certified blanking elements	2
2.9	Cable gland	None by default	2
2.10	Cable length and type	None by default	2
2.11	LED light type	Red LED. Bright illumination, visible 360° around the LED light	
2.12	Push button type	SPST momentary push-to-make (spring return)	

3 Electrical			Note
3.1	Power input	12 VDC to 26 VDC (electronics equipped with inverse polarity and transient protection)	
3.2	Power consumption (typical/maximum)	0.9 W @24 VDC/1.0 W @26 VDC (no alarm, light not illuminated) 1.0 W @24 VDC/1.2 W @26 VDC (alarm, light illuminated)	
3.3	Electronics platform/generation	ClampOn DSP	
3.4	Microprocessor	66 MIPS	
3.5	Non-volatile memory	512 KB	
3.6	Diagnostic features (with software)	Internal self-testing of analogue filters, amplifiers, and flash memory	

4 Operation			
4.1	Manner of operation	Real-time measurement	
4.2	Unit of measurement	Raw value	
4.3	Technology	Passive ultrasonic	
4.4	Processing	DSP in sensor unit	
4.5	Calibration	All sensors are calibrated to a master signal at factory	
4.6	MTBF calculation	>30 years @25 °C [77 °F]	
4.7	Detection mode	Acoustic	
4.8	Detection algorithm (acoustic)	Fixed over Background (FoB) with trigger level, fallback level, trigger time minimum and trigger time maximum. All parameters are configurable	3, 4
4.9	Operating limits	The pig has to be moving with a minimum velocity of 0.3 m/s [1 ft/s], depending on type of pig, pipe configuration and installation point	
4.10	Repeatability	Better than 1 %	
4.11	Flow conditions	Oil, water, gas, multiphase	

5 Signal			
5.1	RS-485 (half duplex) protocol	Modbus RTU or proprietary DSP	3
5.2	RS-485 baud rate	1.2 kbps to 115.2 kbps	3
5.3	4-20 mA (passive, sink), 4 wire	Configurable raw value range up to 5 000 000. Default 0 to 500 000. Sensor shows 3.5 mA during power up (first 10 seconds). 15 mA alarm level when pig detected	3, 4
5.4	Relay1 (for local indication)	SPST, programmed NO in operation (NC in alarm mode) by default	3, 4
5.5	Relay2 (for remote indication, VFC)	SPST, programmed NO in operation (NC in alarm mode) by default	3, 4
5.6	Reset	Manual reset by push button. Can also be programmed with automatic reset (duration configurable). When reset all alarms on 4-20 mA, relays return to operation mode	3

6 Installation			
6.1	Mounting	Mounting bracket clamped to pipe using clamping bands, or welded to pipe surface. Sensor screws into the mounting bracket	5
6.2	Conductor (stranded) wire cross section	0.25 mm² to 2.5 mm² [AWG 24 to AWG 14] with ferrule with plastic sleeve	

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## DSP PIG Detector Ex db eb mb



### 7 Approvals & certification

7.1	Hazardous area location approval	Zone 1, 2	
7.2	INMETRO marking	Ex db eb mb IIC T5 Gb IP66 -20 °C ≤ T <sub>amb</sub> ≤ +60 °C	6
7.3	INMETRO certificate	TÜV 11.0202	7
7.4	INMETRO ambient temperature range	-20 °C ≤ T <sub>amb</sub> ≤ +60 °C	

### Notes

1. Serial number breakdown: YY (year of manufacture), MM (month of manufacture), XXXXX (unique electronics ID).
2. Various mechanical solutions available.
3. Factory configurable software parameters. May also be configured in-field by ClampOn authorised personnel.
4. Parameters available for configuration by client/end user through RS-485 with "ClampOn PIG Configuration Tool" software.
5. Mounting bracket in stainless steel (standard), carbon steel or duplex. Clamping bands available in stainless steel or Inconel.
6. Temperature class is given at maximum ambient temperature (including any external source of heating, typically process temperature, where applicable).
7. See certificate and/or installation instructions for specific conditions of use.