

Product Guide



Level and Flow Measurement

Pulsar Guard 2010

Pulsar Guard 2010:

Non-invasive solids flow monitor

Features

- Non invasive and maintenance free
- Simple bolt on installation
- Low cost
- No moving parts and vibration resistant
- IP 68 Stainless Steel housing
- Highly reliable in low or high temperatures
- ATEX Flammable atmosphere approved '2011' option

The Pulsar Guard 2010 sensor detects structure borne acoustic signals caused by the movement of material. This movement causes impacts and frictional contact with a containing face, for example the inside of a pipe. The sensor is fastened to the outside of the structure, and its high frequency detection picks up these signals, which are often undetectable to the human ear. The high frequency detection allows use in environments where there is a high degree of machinery or process noise, without interference. Pulsar Guard's non-invasive nature allows easy fit to most pipes, chutes or feed mechanisms without stopping the process.

The Technology

The 2010 series of process protection units use patented state of art soundwave technology to detect changes in structure borne acoustic emissions from equipment and materials in motion. The sensor listens to noise caused by impacts, and friction within structures, on a wide frequency band width of 100 to 600kHz, making it sensitive to the slightest changes in process conditions but also immune to audible noise or vibration caused by plant machinery.

Instant reaction to flow changes provides protection to plant operation from abnormal flow conditions in pipes, supply lines, chutes and feed machines. Fine powder in flight, in minute quantities, can generate a large acoustic signal enabling flow or no flow alarms.

Easy To Use

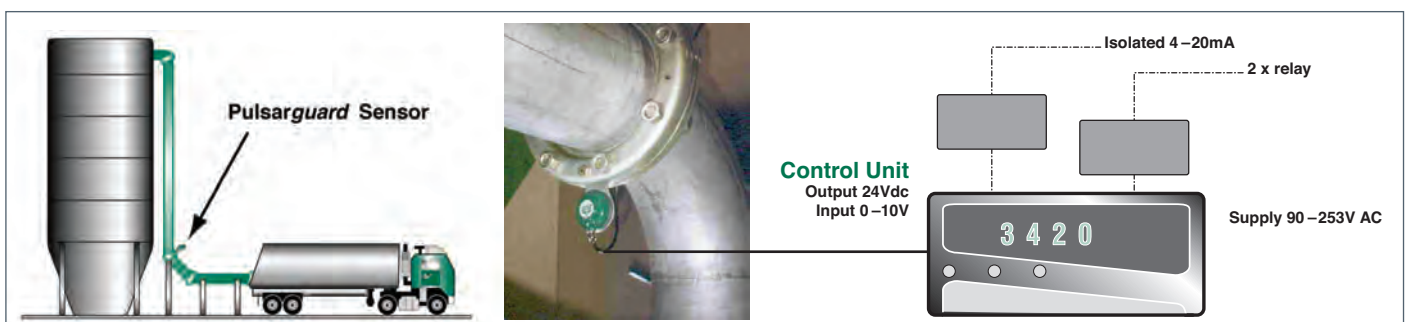
The 2010 sensor series is designed with the operator in mind. Powered with 23 to 30 V DC the sensor provides a 0 to 10 volt output, this signal may be fed directly to a PLC, or the optional control unit 2020.

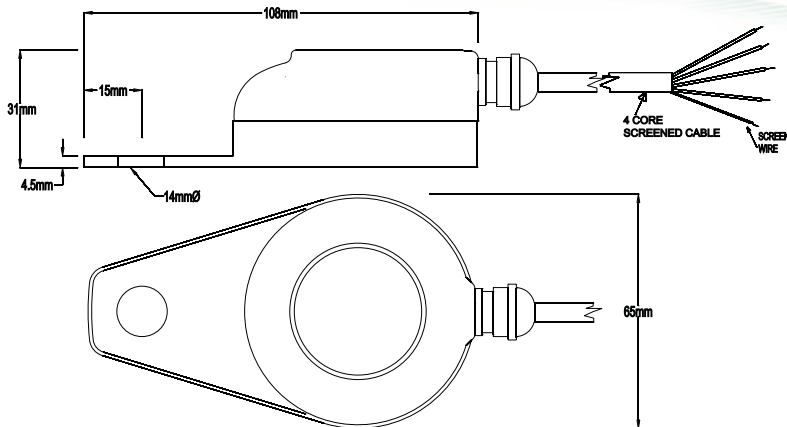
Simple Installation

As the sensor is completely non-invasive there is no need to shut down the process for installation. Installation takes minutes, and the compact design means that it can be fitted in the tightest of positions or environments.

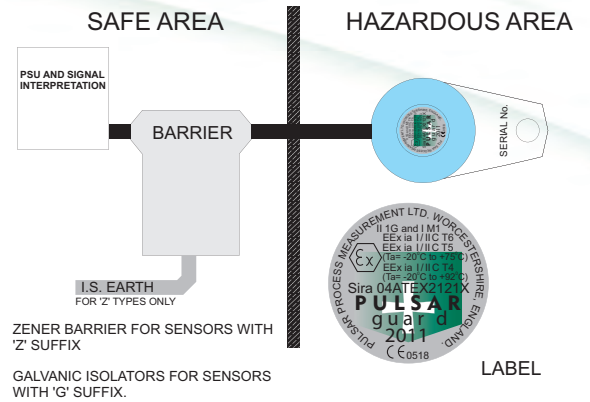
Typical Applications

- Burst filter bag detection
- Detects impending blockages
- Detects flow and no flow of solids
- Detects pump cavitation
- Valve leakage detection
- Detects 'Bridging' or 'Rat-holing' in silos
- Material flow/route verification
- Bearing failure





Flammable atmosphere versions are available.



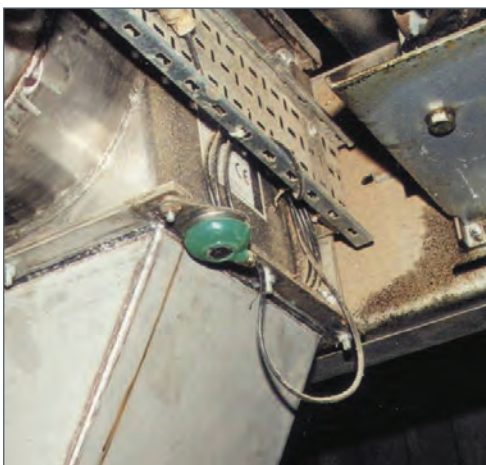
The standard sensor 2010 has a temperature range of -40°C to +85°C (-40°F to +185°F).

A higher temperature sensor version the 2015 unit which can operate up to +125°C (+257°F).

BARRIER PARAMETERS	SENSOR LABELLING
POWER SUPPLY U _o =28 V I _o = 93.3 mA P _o = 0.635 W	ZONE 0: CERT No. Sira 04ATEX2121X EEx ia I/IIC T6 (Tamb= -20°C to +40°C) EEx ia I/IIC T5 (Tamb= -20°C to +75°C) EEx ia I/IIC T4 (Tamb= -20°C to +92°C)
SIGNAL SUPPLY U _o =18 V I _o =15.3 mA P _o =0.07W	



2010 SENSORS FITTED TO ANIMAL FEED CHUTES



Technical Specification: 2010, 2015, 2011Z and 2011G Sensor

Detection frequency:	100 to 600 kHz
Power supply required:	23 to 30 V DC (except 2011Z = 24V to 26 V DC)
Analogue output:	0 to 10 V DC
Cable:	4m of 4 core shielded 24 AWG
Operating Temperatures:	Standard version (2010 unit): -40° to +85°C (-40°F to +185°F) High temperature version (2015 unit): -40° to +125°C (-40°F to +257°F)
Ingress protection:	IP 68 (NEMA 4)
Sensor mounting:	Tab with 14mm (0.55in) hole
Construction:	Cap and base housing in 316 stainless steel
Weight:	640 grams (1.41lbs) (includes cable)
Size:	120mm (4.72in) long
Electrical connection:	4 core screened cable
(I.S.) 2011Z	
Suitable for use with Zener barriers only. This system requires connection to an intrinsically safe earth. Identified by "Z" stamped on mounting tab. Approval to EEx ia IIC T6 (+40°C) (+104°F), or EEx ia IIC T4 (+92°C) (+197.6°F).	
(I.S.) 2011G	
Suitable for use with Galvanically isolating barriers only. This system does not require connection to an intrinsically safe earth. Identified by "G" stamped on mounting tab. Approvals as above.	

2020 Control unit

Pulsarguard 2020 panel mounted optional controller. Has LED display and AC supply (DC option) excitation for the 2010 sensor. Optional pods of functions (max 2 pods per controller)

Pod 02- Dual alarm relay pod, two mains rated user definable relay outputs.

Pod 03- Isolated 4 – 20mA retransmission pod.

Pod 05- Modbus RTU serial comms pod, 4 wire or 2 wire half duplex.

**Pulsar® Process
Measurement Ltd.**

Cardinal Building
Enigma Commercial Centre
Sandy's Road
Malvern
Worcestershire
WR14 1JJ
England

Tel: +44 (0) 1684 891 371
Fax: +44 (0) 1684 575 985
Email: info@pulsar-pm.com

www.pulsar-pm.com

Pulsar® is a registered trademark of Pulsar Process Measurement Ltd. in the UK and USA.

**Pulsar® Process
Measurement Inc.**

P.O. Box 5177
4565 Commercial Drive
Suite 105
Niceville
FL 32578
USA

Tel: +1 850 279 4882
Fax: + 1 850 279 4886
Email: info.usa@pulsar-pm.com

Pulsar operates a policy of constant development and improvement and reserves the right to amend technical details as necessary.

