TECHNICAL DATASHEET

IR2E Advanced Rupture Disc Indicator Ensuring Safety and Compliance

The DonadonSDD IR2E Rupture Indicator is a simple yet efficient instrument designed for detecting fractures in rupture discs. This detector is strategically installed between the discharge side of the disc or, when present, the holder, and the downstream flange of the safety device, effectively replacing a conventional gasket.
The assembly of the IR2E detector involves an actuator composed of several key components:

- A metal ring, usually in 316L
- A perforated PTFE membrane
- Gaskets, which are typically made from standard Aramid fiber but are also available in graphite and PTFE options.

The core of the IR2E sensor features a flexible copper track, securely encapsulated between two insulating layers of Kapton, complemented by an interface cable. This cable can be configured either with standard dual ferrules or with a specialized connector.
Connection to the plant's safety system is achieved through an alarm indicator cable, which is linked via an intrinsic safety barrier. This setup adheres to the sensor's electrical specifications (with a maximum voltage of 24V DC and a maximum current of 50mA) and is tailored to the zone classification requirements.
In the event of a disc rupture, the continuity of the IR2E indicator's copper circuit is broken, thereby halting the current flow. This interruption enables the connected devices to signal the rupture disc's activation effectively.
The IR2E sensor is fully compliant with the European Directive 2014/34/EU (ATEX), the UK's Statutory Instrument 2016 No. 1107 (UKCA), CU TR 012 (EAC), and is certified under the IECEx scheme. This adherence underscores its reliability and safety for use in hazardous environments.
The installation zone for the sensor is determined by the type of barrier used:

- For an Ex ia barrier, installation is permitted in zones 0, 20, 1, 21, 2, 22.
- For an Ex ib barrier, installation is permitted in zones 1, 21, 2, 22.

Installation procedures must be in accordance with EN 60079-14 and the latest national electrical standards to ensure safety and compliance.

TECHNICAL DATA

Model	IR2E
Operating temperature	Active part: from -196 °C to 260 °C Interface cable: from -40 °C to +70 °C
Membrane Encapsulation	Polyimide (Kapton®)
Printed Circuit Board	Copper
Cable	Standard, 2 m - available with two ferrules or with connector Max length 15 m
Electrical parameters of power supply (max)	Voltage: 24 V CC Current: 50 mA Power: 0.3 W Capacity: 780 pF Inductance: 7.2 µH
Process fluid	Gas, liquid, powder
IP degree	67
Compatibility with Holder / Rupture Discs	HIA, HRA, HIP, HRP DCD, DIF, SCD, SCR, Y90, KRD, GM, GA, GR
Interface Cable Configuration Options	Cable Terminated with Dual Ferrules Cable Equipped with Connector

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Minimum operating pressure depending on diameter

DN (MM)	32	40	50	65	80	100	125	150	200-350	400	>500
NPS (INCHES)	1 1/4	1 1/2	2	2 1/2	3	4	4 1/2	6	8-14	16	>20
MINIMUM PRESSURE (BAR G)	0,3	0,25	0,18	0,15	0,11	0,09	0,08	0,06	0,05	0,03	0,005

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