



EMERSON™

MARSTON BURSTING DISC INDICATORS INSTALLATION AND MAINTENANCE INSTRUCTIONS

Before installation, these instructions must be carefully read and understood.



INTRODUCTION

These are electrical connection instructions for burst disc indicators and replacing the indicator loop.

IMPORTANT


Read before connecting the indicator loops to the electrical system.

GENERAL APPLICATION

The Marston Burst Disc Indicator (BDI) is designed to provide an electrical signal when a bursting disc ruptures. This signal can be interfaced with alarm or process systems. The indicator has been certified by SGS Fimko Oy / SGS Baseefa Ltd. in accordance with ATEX Directive 2014/34/EU and UKEX Directive UKSI 2016:1107 (as amended by UKSI 2019:696) – Schedule 3A Part 1 respectively. It has been assessed as being intrinsically safe for use in hazardous areas provided that a number of conditions have been satisfied.

1. The electrical supply to the loop must be limited to 100 mA maximum. This can be achieved by using a suitable switch barrier. These barriers must be certified by an EU approved notified body to Ex ia IIC.
2. Supply potential with respect to earth under normal or abnormal conditions must not exceed 253 V rms or 250 VDC.
3. When using a shunt zener diode barrier, the bursting disc holder assembly must be bonded to the safety barrier earthed bus bar so that they are at the same potential. A suitable bonding conductor of not less than 4 mm² is advised. See EN 60079-14 for any clarification.
4. It should be noted that the design of the BDI is such that it may not be capable of withstanding the 500 V insulation test normally required by EN 60079-11.

When the loop is connected as described it is certified by SGS Fimko Oy / SGS Baseefa Ltd. to:

- Ex ia IIC T6 Ga (-35°C ≤ Ta ≤ +75°C)
- Modules ATEX / UKEX:  II 1G 85°C
- The certificate numbers are:
SGS21ATEX0149X and BAS21UKEX0823X

MARSTON BURSTING DISC INDICATORS

INSTALLATION AND MAINTENANCE INSTRUCTIONS

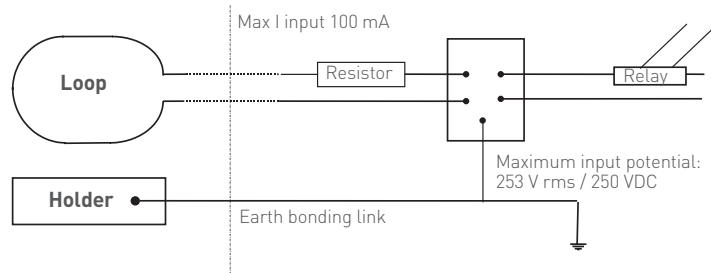
TYPICAL INSTALLATIONS

Where bursting discs are fitted with Burst Disc Indicators (BDI), the following instructions should be read in addition to the normal installation instructions provided. Note that care must be taken not to damage the indicator loop or lead wires. These are delicate and broken easily.

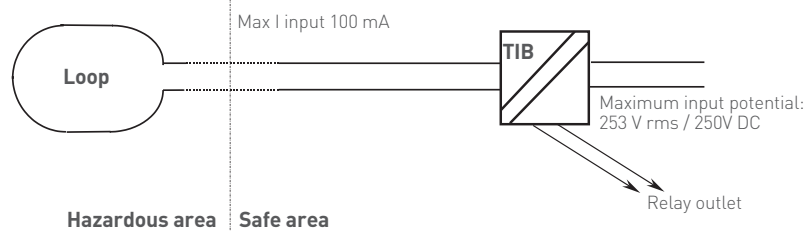
1. Where an assembly has the system with a 'feed through pressure seal' (Type B), when fitting the disc into the holder, carefully feed the indicator lead wires through the extension tube until they appear at the end.
2. After the disc has been assembled fully, connect the indicator wires to the feed pins, ensuring that the gasket is in place. Fit the locking plug and connection head carefully. Use the lock nut to fix the orientation of the connection head. Open the head and connect the lead wires to the terminals.
3. For the simple type (Type A), using the connectors, join the indicator wires to the wires protruding into the vent side of the holder.
4. Before installation onto the plant, check the circuit for continuity. After installation onto the plant, connect the plant instrumentation wires to the connection head terminals. Recheck for continuity and that no circuit is made between the wires and the holder. Close and secure the head cover.

FIGURE 1

1. Shunt Zener Diode Barrier



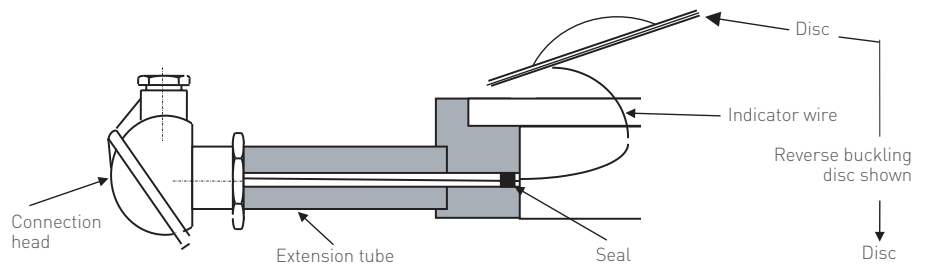
2. Transformer Isolated Barrier



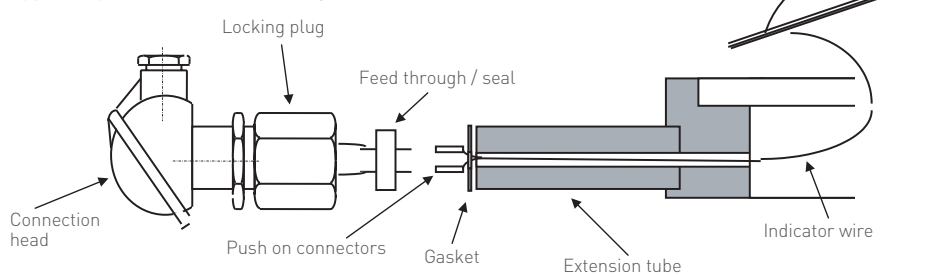
Hazardous area can be zone 0, zone 1 or zone 2.

FIGURE 2

Type A: Simple Type



Type B: System with Feed Through Pressure Seal



MARSTON BURSTING DISC INDICATORS

INSTALLATION AND MAINTENANCE INSTRUCTIONS

INSTALLATION OF REMOTE INDICATORS

Marston remote mounted burst disc indicators are used to provide an electrical signal when a bursting disc ruptures. This signal can be interfaced with alarm or process control systems. The remote mounted indicator comprises an insulated conductive loop bonded to a pre-weakened polyamide or similar film. When the disc bursts, the loop is broken interrupting the electrical circuit to initiate the signal. Remote mounted indicators can be supplied for the full range of Marston bursting discs, either as original equipment or for retrofitting to existing assemblies in the field. The BDI is installed between the vent side of the holder and its mating pipe flange. No other gaskets or seals should be used unless directed otherwise by the manufacturer. A flying lead is used to connect the loop to the electrical system.

TECHNICAL DATA

Nominal Bore ⁽¹⁾ , mm	PRESSURE RANGE AND TEMPERATURE	
	Minimum Burst Pressure, bar	Maximum Operating Temperature, °C
25	1.50	200
50	0.50	200
80	0.34	200
100	0.25	200

1. For larger sizes, please consult an Emerson representative.

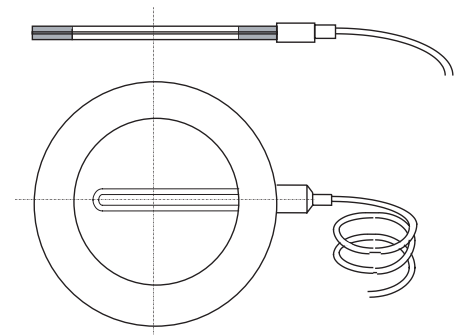
INTRINSIC SAFETY

The remote mounted BDI has been certified by SGS Fimko Oy / SGS Baseefa Ltd. in accordance with ATEX directive 2014/34/EU and UKEX directive UKSI 2016:1107 (as amended by UKSI 2019:696) – Schedule 3A Part 1 for use in hazardous areas. The product meets the requirements of code Ex ia IIC T6. To ensure that the system complies with the code requirements, the electrical supply must be limited to 100 mA or 0.63 W max.

DISPOSAL

Items should be disposed of in accordance with local and national regulations.

FIGURE 3
Remote Indicator Disc



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