MOFLASH SIGNALLING

INSTALLATION INFORMATION

PLEASE READ PRIOR TO INSTALLATION



IS-B Intrinsically Safe Series

VISUAL SIGNALLING DEVICE

S00609 - ISSUE 8 - 26/11/24

EN Translations & Documentation, scan **QR Code**
FR Traductions & Documentation, scannez le **QR Code**
DE Übersetzungen & Dokumentation, **QR-Code** scannen
IT Traduzioni & Documentazione, scansionare il **QR code**
ES Traducciones & Documentación, escanear **QR code**

APPROVALS AND CONFORMITIES

www.moflash.com

technical@moflash.co.uk

General Installation Notes

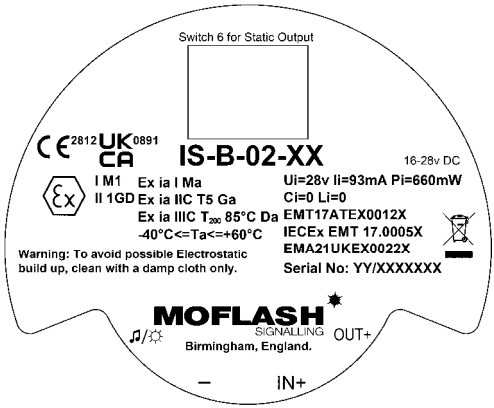
- The product must be installed in accordance with the latest EN60079-0 specification or the equivalent IEC specification, with consideration for any local installation requirements, and should only be carried out by appropriately competent and qualified personnel.
- The location of the unit should be chosen with due regard to the area over which the signalling device must be visible.
- Ensure power is disconnected prior to installation or maintenance to avoid danger of electrical shock.
- Environmental exposure conditions during installation should be dry. Moist or wet conditions should be avoided.
- The Lens of the product is Polycarbonate plastic. Do not clean with petroleum-based cleaners.
- Avoid mounting the Beacon where it will be subjected to excessive vibration.

1. Introduction

The Moflash Intrinsically Safe Beacon Range of products (IS-B-02-XX) are ATEX and IECEx certified. This range is approved to be installed in Groups I (Mining) and Group II (above ground), Zones 0, 1 or 2 with gas groups IIA, IIB, IIC and Zones 20, 21 and 22 for dust groups IIIC and carries a temperature classification of T5. The Beacon Range has a DIP switch that gives the option to change the 1Hz flash signal to a static (constantly on) signal. When powered via a suitable Galvanic Isolator or Zener Barrier the Beacon will draw a constant 33mA. The Beacon Range has diode reverse polarity protection and is also End of Line resistor compatible.

2. Intrisically Safe Labelling

All products will have an individual serial number printed onto the head base plate.
An example of the Beacon label is shown below:



Year of Manufacture can be found as the first 2 digits of the serial number on the product label.
These products have been tested by notified body **Element Materials Technology**, who are UKAS accredited to BS EN ISO/IEC 17025:2005 and ISO/IEC 17065:2012. It is also a Notified Body for the ATEX Directive, UKEX (UKCA), an IECEx Certification Body and an IECEx Testing Laboratory.

The suffix X at the end of the certificate numbers indicate that there are special clauses added for safe use of these units.

3. Types of Approval and Standards Applied

The Moflash IS product range all have been approved to the following standards:

- IEC 60079-0:2017 / EN IEC 60079-0:2018
- IEC 60079-11:2011 / EN 60079-11:2012

4. Zones, Gas Groups and Temperature Classifications

The Moflash Intrinsically Safe Beacon Range is certified to the following:

Group I : Mining	Group II : Above Ground
I M1 Ex ia I Ma	II 1 G D Ex ia IIC T5 Ga
	II 1 G D Ex ia IIIC T_{200}85°C Da

This means that the units can be installed in locations with the following conditions when connected to an approved system:

Zones

Zone 0 Explosive gas air mixture continuously present.
Zone 1 Explosive gas air mixture likely to occur in normal operation.
Zone 2 Explosive gas air mixture not likely to occur, and if it does, it will only exist for a short time.
Zone 20 Explosive dust air mixture is continuously present.
Zone 21 Explosive dust air mixture likely to occur in normal operation.
Zone 22 Explosive dust air mixture not likely to occur, and if it does, it will only exist for a short time.

Gas Groupings	Dust Groupings
M1 Methane, Carbon Dust	
IIA Propane Group	IIIA Fibres and Flying
IIB Ethylene Group	IIIB Flour and Grain
IIC Hydrogen and Acetylene	IIIC Coal Dust and Metal Dust

Equipment Category

1G D & M1 Temperature Range: -40°C < Ta <60°C

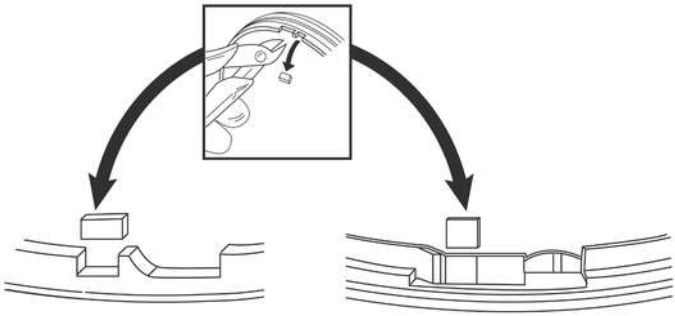
The maximum surface temperature of the product during operation will not exceed 85°C.

A Declaration of Conformity and the ATEX & IECEX certificates for the Beacon range are available on request. Alternatively, visit **www.moflash.com.**

5. Installation Instructions

The TimeSaver base enables quick and easy installation of these unit with no extra cabling to be made to the head of the unit. Connections are made to the base during the initial wiring phase which results in faster and more reliable installation. The Beacon head 'twists and clicks' into the base on commissioning, thus avoiding any wiring or connection problems associated with traditional installations.

If required, the mechanism for locking the Beacon to the base can be activated by removing the thin section of plastic shown in Fig. 1 with side cutters or a similar tool. To open a locked head remove the small rubber bung from the hole on the side of the beacon and insert a tool into the hole and depress the clip whilst twisting the head. The O-ring and bung must be re-fitted to maintain weatherproofing



To Mount the Unit

- Remove the head from the base by rotating anticlockwise until it comes free.
- Remove the appropriate fixing hole and conduit knockouts from the back box.
- The back box provides IP66 protection. For this to be maintained, suitable seals must be used around the mounting screws. Suitably rated (minimum IP66) M20 cable glands must also be used for cable entry/exit.
- Insert cable glands and attach to surface
- Select required wiring option for required operation (see wiring section 6)
- Select static or flashing output using DIP switch, see setting table below:

Light Output	Switch 6 Position
Flashing	OFF
Static	ON

- Relocate head onto mounted base unit & rotate clockwise until locked in place.

6. Wiring

Table below indicates markings inside the base of the unit for wiring connections.

Line	Terminal Marking
Common Positive Supply IN	(3) IN +
Sounder Negative Supply	(2) −
Beacon Negative Supply	(1) ♫/☼

Each unit must be powered via a suitably approved Zener Barrier or Galvanic Isolator that ensure the entity parameters for the Beacon shall not exceed:

Table of Entity Parameter	
Parameter	**Barrier Supply**
Ui	28v
Ii	93mA
Pi	660mW
Li	0
Ci	0

A minimum value of Uo should not drop below **16v**, and Io should not be below 50mA

Operation of the Beacon unit (IS-B-02-xx) can be taken from the table below:

Line	Terminal Marking	Beacon (IS-B-02-XX)
Common Positive Supply IN	(3) IN +	+
Sounder Negative Supply	(2) −	
Beacon Negative Supply	(1) ♫/☼	−

End of line monitoring is applicable to the Intrinsically Safe Beacon Product Range.

For this to function correctly the resistor must be connected between the IN+ terminal and the Beacon Negative Supply.

7. Maintenance

Little or no maintenance is required during the normal working life of the product. The Moflash Intrinsically Safe enclosures are resistant to most acids, alkalis and chemicals and have been designed to withstand severe weather conditions. However it is suggested that continuous supervision and periodic inspections may be required in relation to the requirements of the installation as per IEC 60079-17. To avoid the possibility of a potential electrostatic charge build up, it is recommended that the exterior of the product is periodically wiped down with a clean damp cloth.
At this point a visual inspection is recommended to ensure that the product is in good working order and no damage has been sustained during its normal operation. In the case of dust fibres or flyings, the level of supervision may influence the inspection and maintenance requirements.

8. Conditions for use

The Moflash Intrinsically Safe Signalling Range uses an enclosure rated at IP66. To ensure that this rating is maintained once installed, a suitable cable gland must be used which matches this level of protection. The base of the units contains 3x M20 knockouts for wiring in purposes, and only those required should be used. Any that are removed must have at least an IP66 rated gland fitted with cable passing through it or suitable plug.
The enclosure is non-conducting and may generate an ignition-capable level of electrostatic charge under certain extreme conditions. It is the responsibility of the user to ensure that the equipment is installed in a location where it will not be subjected to external conditions that might cause a build-up of electrostatic charge on the surface of the unit. Additionally, cleaning of the equipment should be done only with a damp cloth.

The Intrinsically safe Beacon range of products is only to be powered via a correctly rated Zener Barrier or Galvanic Isolator. **To power these units up without the correctly rated barrier could damage these products and so void any protection ratings.**

The equipment is not intended for repair by the user. Repair of this equipment shall be carried out by the manufacturer or manufacturer's authorised agent.
It is the responsibility of the end user to take suitable precautions to prevent exposure to aggressive chemicals that may attack metals or the polymeric materials used in the construction of this equipment.

Specific Conditions of Use:

1. Clean equipment regularly to prevent dust build-up with a damp or anti-static cloth only.
2. Equipment only suitable for fixed installation.
3. Installation shall be carried out in accordance with the relevant, local code of practice for Ex equipment, e.g. EN & IEC 60079-14, EN 50628 and IEC 60079-25 and that capacitance and inductance limits are not exceeded by distributed capacitance (Cc) or distributed inductance (Ic) due to cable length.

Moflash Signalling Limited accepts no liability for any consequences following use of this document. Any technical specifications and products referred to within this document are subject to change without notice due to continual improvement and product development policies. All dB(A) figures are subject to environmental conditions. The units are sold under Moflash standard conditions of sale, available on request. Additional resources, including installation sheet translations, certificates and DoCs are available from the website **www.moflash.co.uk website.**