Ex-tech SIGNALLING

Beacon

UK CA CE

Installation and Technical Information

IMPORTANT: Read carefully before use and keep for future reference



BC125 Series



BC150 Series

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Symbols

CAUTION/Requirement for safe use

EX Additional Hazardous Area requirement

Introduction

The BC125 and BC150 Beacons are designed to provide visual indication and/or warning to personnel working in areas where an explosive atmosphere could occur. Your particular signalling requirements can be met via a range of coloured lenses and light options. Beacons can either be cycled through a maximum of four alarm stages by remote switching or operated in a simple power on/power off mode.

When de-energised, the enclosure design permits easy access to DIP switches that can be adjusted in situ, allowing you to tailor settings to your needs. With Xenon and LED light sources offered, it is possible to produce continuously lit, flashing, rotary, or flash and rotary outputs of varying intensity.

Available in stainless steel (125) and UV-resistant GRP (150), the robust materials of construction enable your Beacon to resist corrosion and in combination with a versatile rating of IP66/IP67 makes the device suitable for use in a range of harsh environments.

Storage Information

Store between **-40°C and +85°C**

Explosion-Proof Labelling

All products have a rating label with the following important information:

Product order no:	eg BC150RL05ACNNNARDN (Refer to the datasheet for product order selection)
Input voltage:	
BC125/150 5W LED	12~48 Vdc 100~240V AC (50/60Hz) Ex db IIC T* Gb -40~+55°C T6/-40°C~+60°C T5/-40~+70°C T4 Ex tb IIIC T* Db -40~+55°C 85°C/-40°C~+60°C 100°C/ -40~+70°C 135°C
BC125/150 10W LED & 5J Xenon	12~48 Vdc 100~240V AC (50/60Hz) Ex db IIC T* Gb -40~+50°C T6/-40°C~+60°C T5/-40~+70°C T4 Ex tb IIIC T* Db -40~+50°C 85°C/-40°C~+60°C 100°C/ -40~+70°C 135°C
BC125/150 10, 15 & 21J Xenon	12~48 Vdc 100~240V AC (50/60Hz) Ex db IIC T* Gb -40~+40°C T6/-40°C~+55°C T5/-40~+70°C T4 Ex tb IIIC T* Db -40~+40°C 85°C/-40°C~+55°C 100°C/ -40~+70°C 135°C
ATEX Certification No 150 Series:	ExVeritas 25ATEX2275X
ATEX Certification No 125 Series:	ExVeritas 26ATEX2397X
EX Mark:	
IECEx Certificate:	IECEx-EXV 25.0071X
IECEx Certificate:	IECEx-EXV 26.0029X
CE Mark:	
UK CA Mark:	
Warning:	**DO NOT OPEN WHEN AN EXPLOSIVE GAS ATMOSPHERE IS PRESENT**
Finished product serial no:	YY-##### (e.g. 26-01234)

Example rating label



Type Approval Standard

The Ex-Tech Signalling product range all have an EC Type Examination Certificate issued by ExVeritas and have been approved to the following standards:

EN 60079-0:2018 (IEC 60079-0:2018)
EN 60079-1:2014 (IEC 60079-1:2014)
EN 60079-31:2024 (IEC 60079-31:2024)

Zones, Gas Group, Category and Temperature Classification

The BC125 and BC150 series products have been certified Ex d IIC T4~T6. This means that the units can be installed in locations with the following conditions:

Area Classification:

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.

Gas Groupings: IIA, IIB, IIC.

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.

Equipment Category: 2GD

Temperature Range: As per label per specific item.

Installation

General Requirement

Selection, Installation, Maintenance and repair of electrical apparatus for use in potentially explosive atmosphere should be done in accordance with IEC/EN 6079-14, IEC/EN 6079-17 and IEC/EN 6079-19.

Product installation must be carried out in accordance with any local codes that may apply and should only be carried out by a competent electrical engineer.

Location

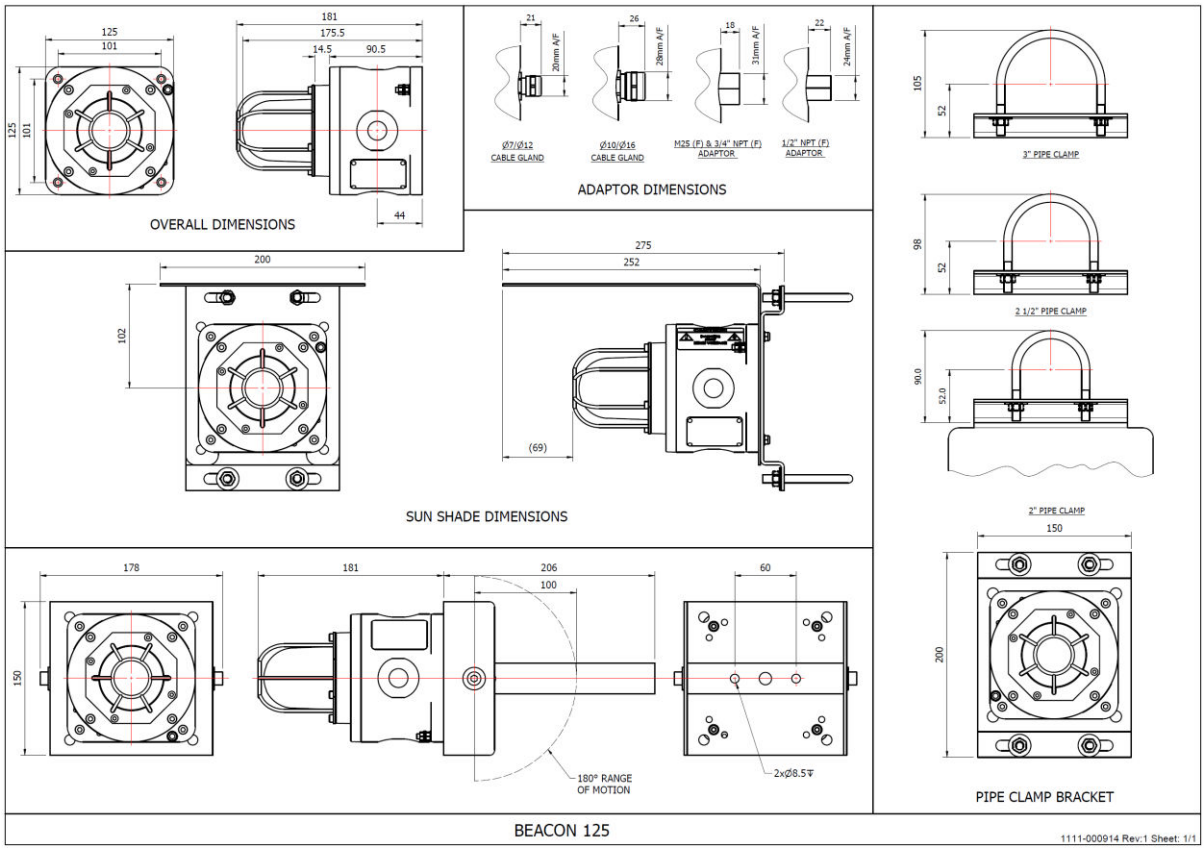
The location of the unit should be chosen with due regard to the area over which the beacon warning signal must be visible. The unit should only be fixed to services that can support the weight of the unit.

Mounting

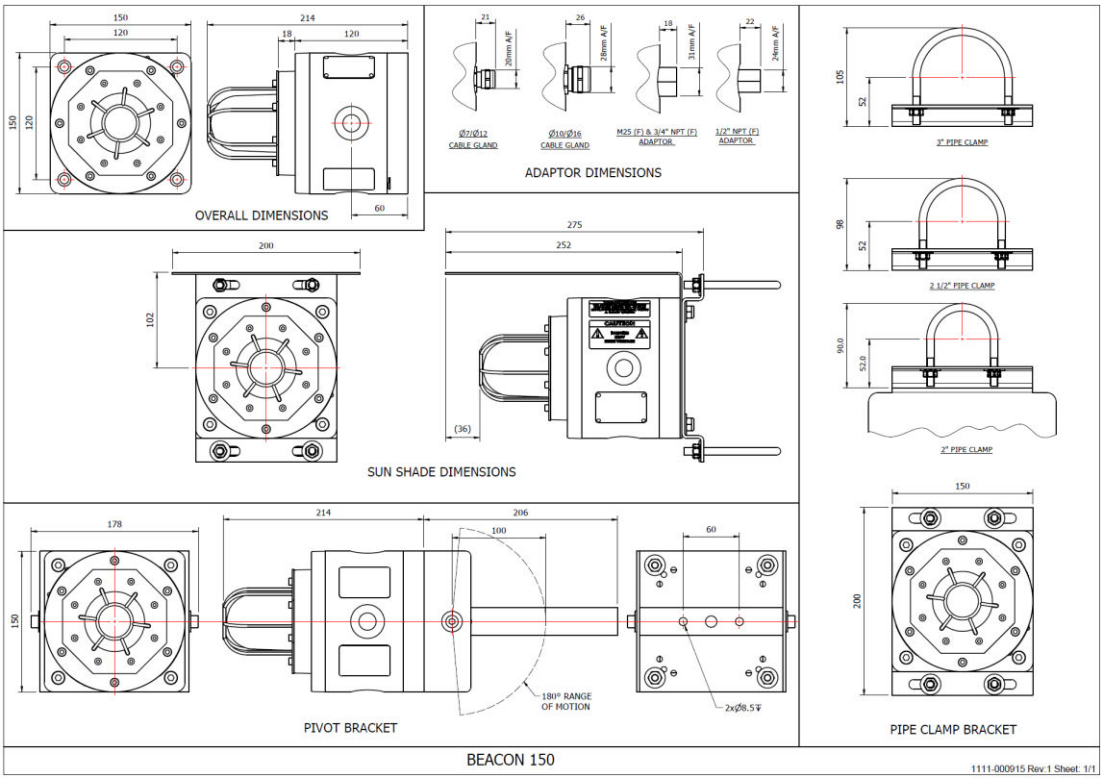
The product should be mounted on a vertical surface using four fixing holes in the base. Use of stainless-steel fastener is recommended by Ex-Tech Signalling. The beacon can be operated in any attitude.

The fixing holes are designed to fit M5 Allen Screw, for 125 series. The fixing holes are designed to fit M8 Allen Screw, for 150 series. If a mounting plate is required, contact Ex-Tech Signalling for the mounting plate installation drawing (see Picture 1).

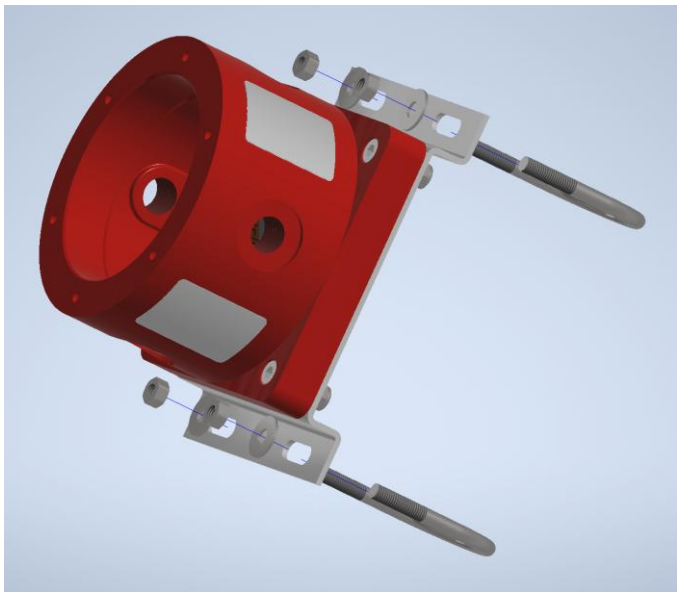
Picture 1 – BC125 Series mounting diagram (Showing optional mounts)



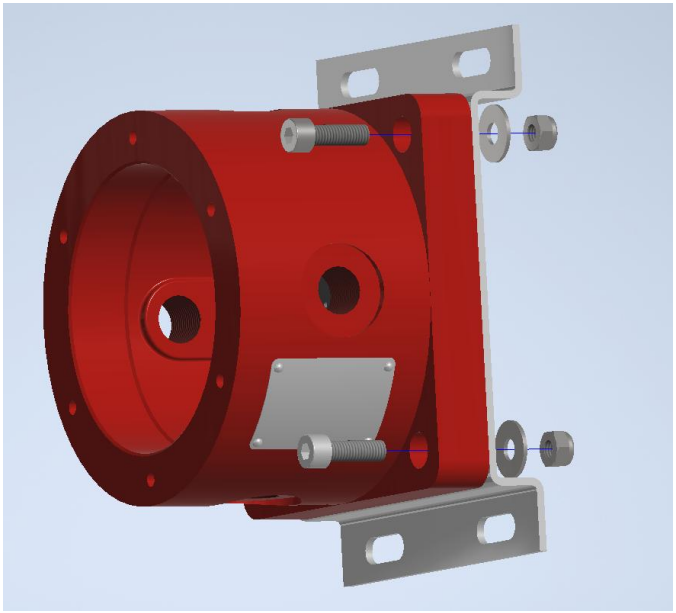
BC150-125 Series mounting diagram (Showing optional mounts)



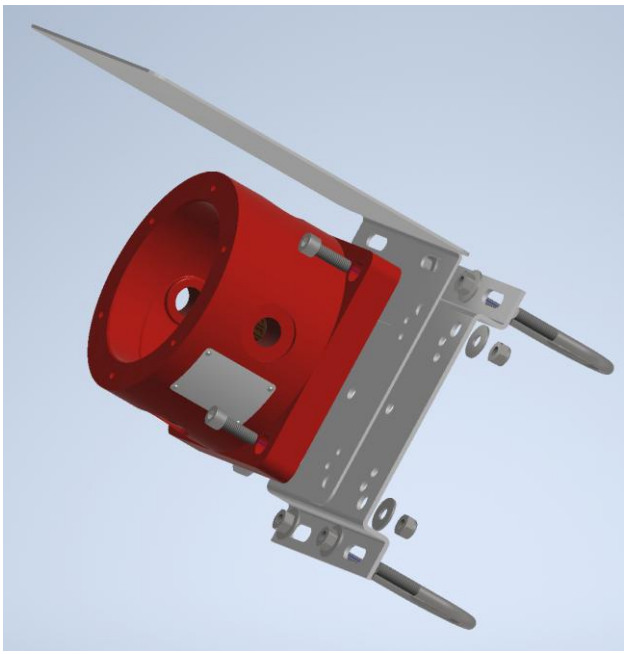
Pipe Mounting (Optional)



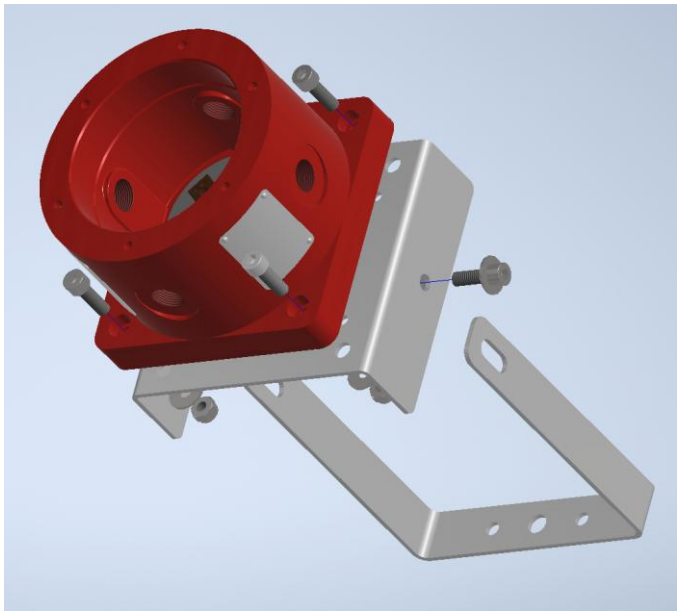
Wall Mounting (Optional)



Mounting with Sunshade (Optional)



Pivot Mounting (Optional)



Wiring

General Requirement

Ex-Tech Signalling recommends that all cables and cores should be fully identified (suggest using cable from 2.0 to 2.5 mm^2). Ensure that all nuts, bolts and screws are secured. Ensure that only certified cable glands are used and the installation is earthed correctly. Ensure that certified stopping plugs are used to blank of unused gland entry points. In order to maintain the IP rating of the product, sealing washers should be used. We can supply nickel plated brass or SS316 adaptors, gland and blanking plugs, if required.

Cable Connection

The Supply and Alarm Status cable is connected to the terminals located on the PCB located in the flameproof enclosure base.

CAUTION: Do not connect AC or DC to terminals S0, S1 or S2.

For **AC Supply** – connect **Supply** to terminals marked **L** and **N**. Terminals provide loop in loop out facility.

For **DC Supply** – connect **Supply+** to **L** and connect **0** to **N**.

Alarm Status – to terminals marked **S0**, **S1** and **S2**.

Remove Top Cover (Beacon Component)

CAUTION: Before removing the cover, ensure the power to the beacon is isolated.

Unscrew the M5 retained Hexagon socket head screws to open the cover. Twist the cover gently clockwise and anti-clockwise, while pulling away from the base, until it comes off.

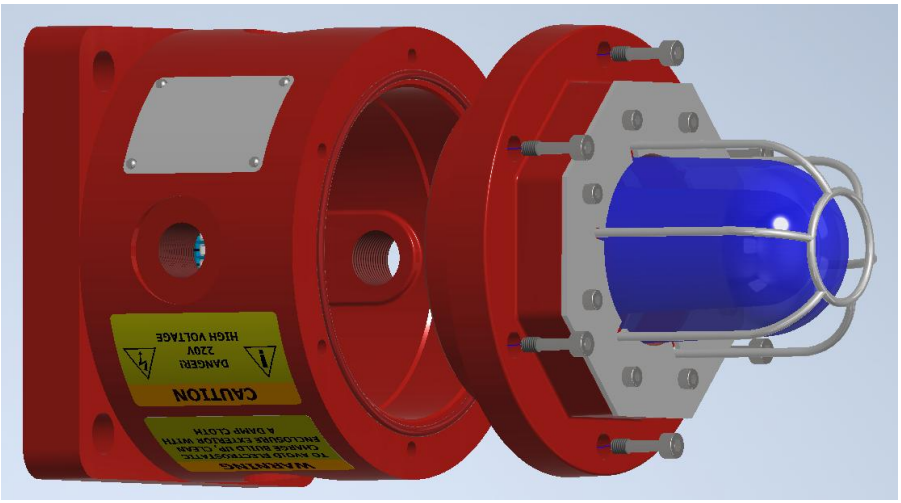
Note; it is recommended to open one blind plug to avoid internal vacuum in the unit.

This will release the cover from the base and allow the cover to hang on the retaining wire strap. Before replacing the cover, check that the flameproof joints are clean, free from damage and the gasket is still retained in its groove.

As lubrication/grease for the flameproof joint, a thin film of Acid-free Vaseline (soap-thickened mineral oils) or mineral oil can be used. Excessive lubrication/grease shall be removed before assembling.

Reinstall the cover in a similar way but operate in reverse manner as above. The recommended bolt torque for M5 lid screws is 4.5 Nm.

Front cover removal



Alarm Status, Flash Pattern & Frequency Adjustment

Flash Pattern/Frequency are set using the **DIP Switches-SW1** (refer to Picture and Picture) located on the PCB in the top cover of the flameproof enclosure.

LED Beacon: 3 pole

Xenon Beacon: 2 pole

Binary code used in the tables: **0 = Off** and **1 = On/High**

Alarm Status: set via remote switching. **Factory Pre-set for Stage 2 Alarm**

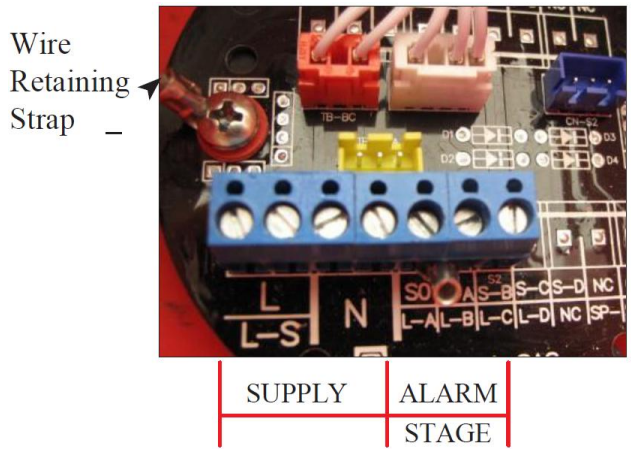
Table 1 – LED Beacon Frequency and Status Selection (BC125 and BC150)

DIP Switch			S1/S2			
			S1 = OFF S2 = OFF	S1 = ON S2 = OFF	S1 = OFF S2 = ON	S1 = ON S2 = ON
1st DIP	2nd DIP	3rd DIP	Alarm Stage 1	Alarm Stage 2	Alarm Stage 3	Alarm Stage 4
0	0	0 (1)	OFF	Flash 60 (75) times/min	Flash 75 (90) times/min	Steady light
1	0	0 (1)	OFF	Rotary 60 (75) times/min	Rotary 75 (90) times/min	Steady light
0	1	0 (1)	OFF	Triple flash 60 (75) times/min	Triple flash 75 (90) times/min	Triple flash 100 (120) times/min
1	1	0 (1)	OFF	Flash & Rotary 60 (75) times/min	Flash & Rotary 75 (90) times/min	Flash & Rotary 100 (120) times/min

Note; all values in ( ) are the numbers of flashes per time

BC125 Series

Picture 1 – Base PCB (BC125 Series)



Picture 2 – Typical cover PCB (BC125 Series)

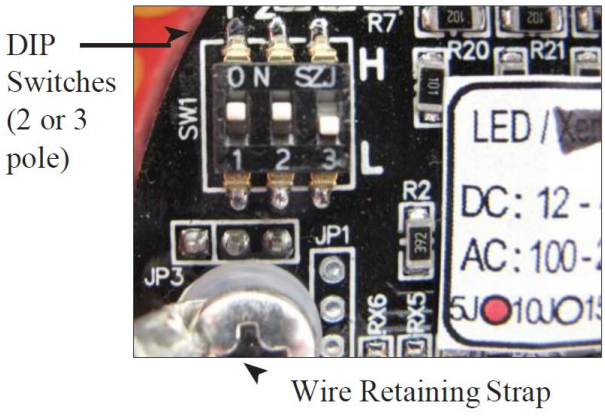


Table 2 – Xenon Beacon Frequency and Status Selection

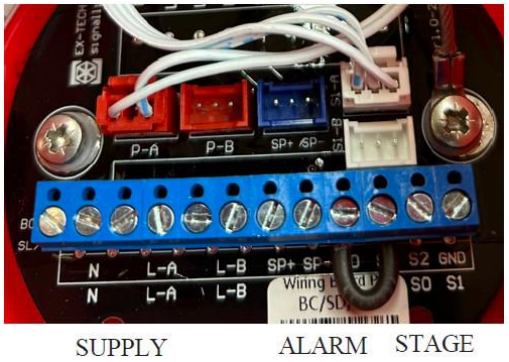
DIP Switch		S1/S2			
		S1 = OFF S2 = OFF	S1 = ON S2 = OFF	S1 = OFF S2 = ON	S1 = ON S2 = ON
1st DIP	2nd DIP	Alarm Stage 1	Alarm Stage 2	Alarm Stage 3	Alarm Stage 4
0	0	OFF	60 times/min (1)	90 times/min (1)	120 times/min (1)
1	0	OFF	60 times/min (2)	60 times/min (3)	60 times/min (4)
0	1	OFF	60 times/min (3)	60 times/min (4)	60 times/min (5)
1	1	OFF	60 times/min (4)	60 times/min (5)	60 times/min (6)

Note; all values in ( ) are the numbers of flashes per time

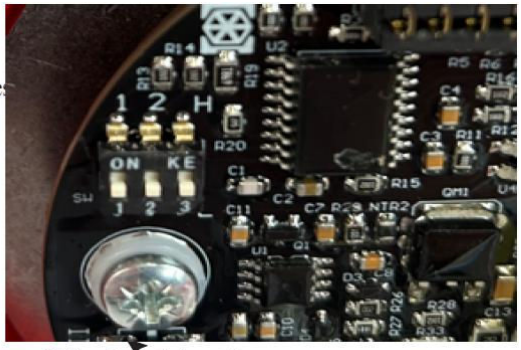
BC150 Series

Picture 3 shows S0 and S1 linked. Picture 4 shows the standard factory configuration, all three DIP on "0". This gives factory standard flash rate of 60 flashes per minute.

Picture 3 – Terminal PCB (BC150 Series)



Picture 4 – Power card PCB (BC150 Series)



Xenon Beacon Frequency: Units are factory set to operate at one flash per second.

Cable Gland

Only cable glands approved for Exd applications can be used with Ex-Tech Signalling Explosion Proof Products. These must be suitable for the type of cable being used and also meet the requirements of the Exd flameproof installation standard EN 60079-14.

SAFETY WARNING

If units are used at high ambient temperatures, ie over +40°C, then the cable entry temperature may exceed +70°C and therefore suitable heat resisting cable glands must be used, with a rated service temperature of at least +95°C.

If a high Ingress Protection (IP) rating is required, a suitable sealing washer must be fitted under the cable gland. Any unused cable entry holes must be closed with an Exd flameproof blanking plug, which must be suitably approved for the installation requirements.

End of Line Monitoring

An End of Line monitoring Diode or an End of Line monitoring Resistor can be connected across the 24V+ and 0 terminals.

BC125 Series

Resistor values for the End of Line will be determined by the customer with a minimum value of 1.2 kΩ.

BC150 Series

Resistor values for the End of Line will be determined by the customer with a minimum value of 470 Ω.

Maintenance

Little or no maintenance is required during the normal working life of the product. The Ex-Tech Signalling Exd enclosures are resistant to most acids, alkalis and chemicals and have been designed to withstand severe weather conditions. However, it is suggested that to avoid the possibility of potential electrostatic charge build up, the exterior of the product is periodically wiped down with a clean damp cloth. A visual inspection is then recommended to ensure that the product is in good working order and no damage has been sustained during its normal operation.

SAFETY WARNING

In the case of Anti-Static and UV Resistant GRP, the painting of the enclosure surface has been processed specially. To maintain the product to be Anti-Static, extra normal painting is not allowed.

If any failure occurs, not caused by human factors, the product can be returned to Ex-Tech Signalling for free repair or replacement during warranty.

Conditions for Safe Usage

Do not paint or change the surface finish of the unit.

This apparatus is suitable only to be used in the ambient temperature stated, at the label on the product to be installed.

Specific Condition for Use

Repairs of the flameproof joints must be made in compliance with the structural specifications provided by the manufacturer. Repairs must not be made on the basis of values specified in tables 1 and 2 of IEC/EN 60079-1.

Contact Details

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