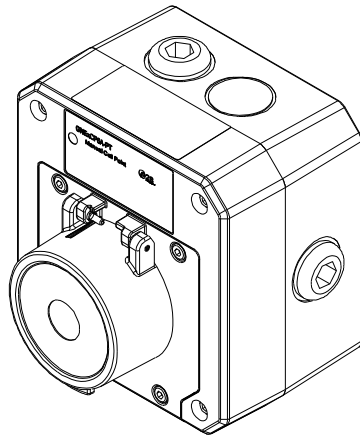


GNExCP6B-PT, GNExCP6D-PT & GNExCP6E-PT
Manual Call Point – Tool reset
With Resistor Modules
For use in Flammable Gas and Combustible Dust Atmospheres.



1) Introduction

The GNExCP6B-PT/ GNExCP6D-PT/ GNExCP6E-PT is a tool reset button manual call point which is certified to the European and International Gas and Dust standards. The unit meets the requirements of the ATEX directive 2014/34/EU and IECEx scheme.

The call point can be used in hazardous areas where potentially flammable gas and dust atmospheres may be present.

All units have up to two of the following series and/or EOL devices:

- Monitoring resistors per module: -
 - GNExCP6B-PT - 2.0W Max
 - GNExCP6D-PT - 1.0W Max
 - GNExCP6E-PT - 1.75W Max
- Monitoring diode
- Monitoring Zener diode

GNExCP6B-BG units may also incorporate an LED indicator in addition to the two series and/or EOL devices allowed.

The units are Group II, EPL (equipment protection level) Gb. The equipment is certified 'Ex db eb mb IIC T4 Gb' and as such may be used in Zones 1 and 2 with flammable gases and vapours with gas groups IIA, IIB & IIC and temperature classes T1, T2, T3 and T4.

These units are also Group III, EPL Db. The equipment is certified:

'Ex tb IIIC T80°C Db' (GNExCP6B-PT),
 'Ex tb IIIC T80°C Db' (GNExCP6D-PT),
 'Ex tb IIIC T75°C Db' (GNExCP6E-PT)
 and as such may be used in Zones 21 and 22 for combustible dusts groups IIIA, IIIB & IIIC.

2) Ratings & Markings

All units have a rating label, which carries the following important information: -

Unit Type No.:
 GNExCP6B-PT Manual Call Point
 GNExCP6D-PT Manual Call Point
 GNExCP6E-PT Manual Call Point


Input Voltages:
 48VDC nominal 56VDC Max 0.75A Max
 24VDC nominal 28VDC Max 5.0A Max Resistive Load; 3.0A Max Inductive Load
 12VDC nominal 15VDC Max 5.0A Max
 6VDC nominal 9VDC Max 5.0A Max

Code:
 GNExCP6B-PT
 Ex db eb mb IIC T4 Gb
 Ex tb IIIC T80°C Db
 IP66
 -40°C <= Ta <= +50°C

GNExCP6D-PT	GNExCP6E-PT
Ex db eb mb IIC T4 Gb	Ex db eb mb IIC T4 Gb
Ex tb IIIC T80°C Db	Ex tb IIIC T75°C Db
IP66	IP66
-40°C <= Ta <= +70°C	-40°C <= Ta <= +65°C

Certificate No.:
 SIRA 09ATEX3286X
 IECEx SIR 09.0121X

Epsilon x:  II 2GD

CE Marking
 Notified body No.  2813

Year/Serial No. i.e. 20/1CP6BPT000001
 Or 20/1CP6DPT000001
 Or 20/1CP6EPT000001

WARNING - DO NOT OPEN WHEN AN EXPLOSIVE ATMOSPHERE MAY BE PRESENT, ELECTROSTATIC HAZARD – CLEAN ONLY WITH A DAMP CLOTH

3) Type Approval Standards

The call point has an EC Type examination certificate issued by SIRA and have been approved to the following standards: -

EN60079-0:2018 / IEC60079-0:2017
 EN60079-1:2014 / IEC60079-1:2014
 EN60079-7:2015 / IEC60079-7:2017
 EN60079-18:2015 / IEC60079-18:2014
 EN60079-31:2014 / IEC60079-31:2013

The equipment is certified for use in ambient temperatures in the range:

GNExCP6B-PT -40°C to +50°C
 GNExCP6D-PT -40°C to +70°C
 GNExCP6E-PT -40°C to +65°C

and shall not be used outside this range.

4) Installation Requirements

out by suitably trained personnel in accordance with the applicable code of practice e.g. IEC 60079-14/EN 60079-14

Repair of this equipment shall only be carried out by the manufacturer or in accordance with the applicable code of practice e.g. IEC 60079-19/EN 60079-19.

Refer to certificates SIRA 09ATEX3286X and IECEx SIR 09.0121X for special conditions of safe use.

The certification of this equipment relies on the following materials used in its construction:

Enclosure: GRP - Glass Reinforced Polyester

Through enclosure mechanism: Plastic Nylon Zytel Injection Moulded

Sealing of enclosure and mechanism: O-ring Acrylonitrile-Butadiene Rubber

Potting Compound of resistors where used: Epoxy Resin

If the equipment is likely to come into contact with aggressive substances, then it is the responsibility of the user to take suitable precautions that prevent it from being adversely affected, thus ensuring that the type of protection is not compromised.

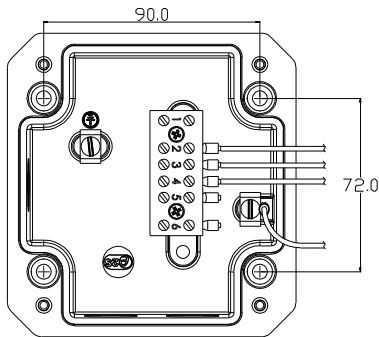
"Aggressive substances" - e.g. acidic liquids, gases or solvents that may affect polymeric materials.

"Suitable precautions" - e.g. regular checks as part of routine inspections or establishing from the material's data sheet that it is resistant to specific chemicals.

Under extreme conditions the unit may generate an ignition-capable level of electrostatic charges. The unit must not be installed in a location where it may be subjected to external conditions (such as high-pressure steam) which may cause a build-up of electrostatic charges on non-conducting surfaces. Cleaning of the unit must only be carried out with a damp cloth.

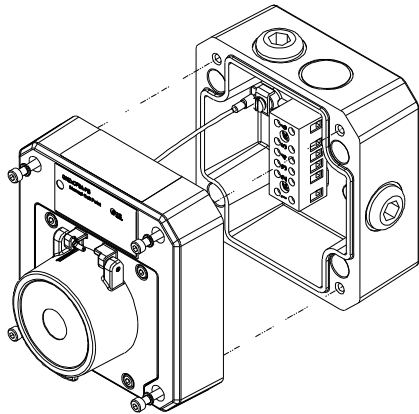
5) Call Point Location and Mounting

The location of the call point should enable ease of access for operation and testing. The unit should be mounted using the 4 off fixing holes which will accept up to M5 sized fixings.



View of base unit showing fixing centres (in mm).

To gain access to the mounting holes in the base the front cover must be removed. This is achieved by removing the 4 off M4 cap head bolts holding on the cover.

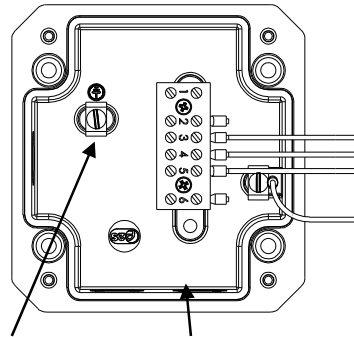


Once the screws are removed the cover will hang down out of the way to gain access to the Ex e terminal block, the internal earth terminal and mounting hole recesses.

6) Earthing

The unit has an internal earth terminal. It is recommended that a cable crimp lug is used on the earth wires.

The internal earth wire is placed under an earth clamp which will stop the cable twisting. This is secured by an M4 screw and spring washer.



Internal Earth terminal

Ex e terminal block

Note: Depending on options chosen an 8-Way DIN Rail or 6-Way terminal block may be selected.

7) Cable connections

There are 3 off cable entries for M20x1.5 Ex e approved cable glands or stopping plugs with a minimum ingress protection of IP66

The unit can be wired in a number of different ways depending on the device combination selected.

EOL (End of line) device;
resistor – ExxxR / diode – ED1 / zener – ExxxZ
Series (In line) device;
resistor – SxxxR / diode – SD1 / zener – SxxxZ / LED
Microswitch 1 = M/S 1
Microswitch 2 = M/S 2

The unit can be wired with a maximum of 2 module devices – refer to wiring schematic D154-06-051

Voltage option	Max Voltage	Min resistor value allowable in module Type B unit (2.0W)	Min resistor value allowable in module Type D unit (1.0W)	Min resistor value allowable in module Type E unit (1.75W)
6 V dc	9 V dc	47 ohms	91 ohms	51 ohms
12V dc	15 V dc	120 ohms	240 ohms	150 ohms
24V dc	28 V dc	470 ohms	820 ohms	510 ohms
48V dc	56 V dc	1K8 ohms	3K3 ohms	2K0 ohms

When wiring to Increased Safety terminal enclosures, you are only permitted to connect one wire into each way on the terminal block unless a pair of wires are crimped into a suitable ferrule. For the six-way terminal block wire sizes allowable are 0.5mm² to 4.0mm². For the 8-way DIN rail wire sizes allowable are 0.5mm² to 2.5mm².

Leads connected to the terminals shall be insulated for the appropriate voltage and this insulation shall extend to within 1mm of the metal of the terminal throat. They shall only be installed and wired with cable in an ambient temperature of -10°C to +80°C

All terminal screws, used or unused, shall be tightened down to between 0.5 Nm and 0.7 Nm

7.1) Fitted LED, Diode or Zener Diode

If a diode module is pre-fitted as either an EOL or series device, the following current limitation applies:

Unit Voltage	Max. Current
48V DC	0.75A
6, 12 & 24V DC	2.0A

If a Zener diode module is pre-fitted as either EOL or Series device, the following current limitation applies:

Zener Voltage	Max. Input Voltage	Max. Current
3.3V	56V DC	230mA
4.7V		162mA
5.1V		149mA
5.6V		136mA
6.2V		122mA
6.8V		112mA
10V		76mA
12V		63mA

If an LED indicator is pre-fitted (optional on GNExCP6B Units only), the LED is protected by the LED current-limiting resistor. See value of this resistor in table below. This only applies to units with LED option code 'L'.

GNExCP6B-PTXXXXXXXL-XX-ExxxR-SxxxR

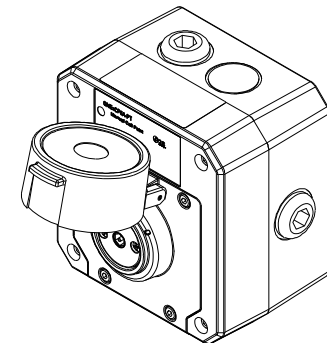
LED Resistor	Max. Input Voltage
3K3 (3300Ω)	56V DC
1K5 (1500Ω)	28V DC

In any scenario, the lowest value of maximum current should be used. For example, if the unit has both a diode and a Zener diode, the Zener diode would determine the maximum input current of the unit, since its max. current is lowest.

8) Testing unit operation

The tool reset button unit can be tested without the need to replace any element.

To test, lift the cover lift flap to reveal the tool reset button. The button should be pressed into the body to activate the unit and place it into the operated condition.

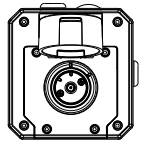
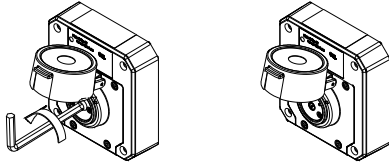


The call point switch will now change over its contacts to operate the alarm.

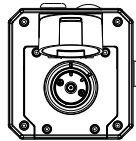
Once testing is complete the unit needs to be reset from the operated condition.

Using the special reset tool provided, rotate the tool reset button anticlockwise by an angle of 55°, see guide alignment marks on the button and cover, shown below (1). The tool reset button should pop back up to its original position.

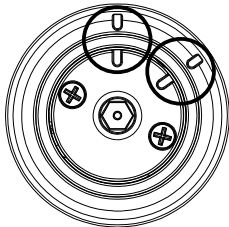
Ensure that the tool reset button has also twisted back clockwise by 55° to its original position see guide marks on button and cover, shown below (2). The unit is now reset.



1. On operated unit twist tool reset button anticlockwise 55° with special key to reset



2. Button should pop up and twist back to original position



Note: use alignment marks circled to indicate the tool reset buttons status/position

Unit currently shown as 'standby condition'

Resetting an operated unit is the same as resetting a tested unit.

9) SIL 2 Reliability Data

Reliability and Functional safety IEC/EN61508 which has been assessed and is considered suitable for use in low demand safety function:

- Random Hardware Failures and Systematic Failures (route 2H)
- As an unvoted item (i.e. hardware fault tolerance of 0) at SIL 2

The product was assessed against failure modes:

- Failure to close a contact when the call point is struck with specified force
- Failure to open a contact when the call point is struck with specified force
- Spurious output despite no input

Integrity in respect of failure to close	SIL 2
Total Failure rate	0.133 pmh
"hazardous" failure rate (revealed)	0 pmh
"hazardous" failure rate (unrevealed)	0.1 pmh
"safe" failure rate (revealed)	0.033 pmh
"safe" failure rate (unrevealed)	0
Diagnostic Coverage	99%
System type	A
Hardware Fault Tolerance	0
Safe Failure Fraction	>99%
PFD (hazardous failure)	1.25×10^{-3}
Proof Test Interval	Up to 1 year