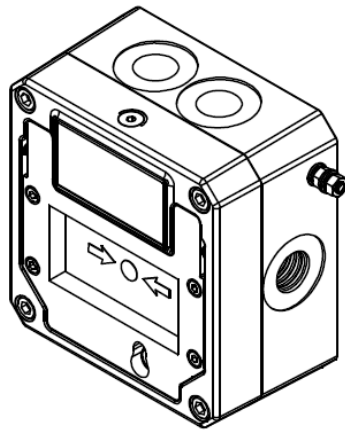


INSTRUCTION MANUAL
STExCP8-BG-I, STExCP8-BG-IR
Intrinsically Safe Call Point
Class I Div 1 ; UL60947
NEC / CEC / ATEX / IECEx / UKEx Zone 0, 1, 2



STExCP8-BG

1) Product Table

Unit Type Code	Input Parameters		
STExCP8-BG-I	Ui	=	30V
	Ii	=	500mA
	Pi	=	1100mW
STExCP8-BG-IR	Ci	=	0
	Li	=	0

Table 1: Electrical Ratings

2) Warnings



WARNINGS:

- DO NOT OPEN WHEN AN EXPLOSIVE ATMOSPHERE IS PRESENT
- DO NOT OPEN WHEN ENERGISED
- ELECTROSTATIC CHARGING HAZARD – CLEAN ONLY WITH A DAMP CLOTH.

AVERTISSEMENT:

- NE PAS OUVRIR UN PRESENCE D'ATMOSPHERE EXPLOSIVE
- NE PAS OUVRIR ENERGIE
- DANGER POTENTIEL CHARGE ÉLECTROSTATIQUE - NETTOYER UNIQUEMENT AVEC UN CHIFFON HUMIDE

3) Marking & Rating Information

The STExCP8-BG Call Points comply with the following standards for hazardous locations:

3.1 Class/Division Ratings for US & Canada

Standards	
UL 60079-0:2020 (Ed 7): Explosive Atmospheres - Part 0: Equipment - General requirements UL 60079-11:2023 (Ed6): Explosive Atmospheres - Part 1: Equipment protection by Intrinsic Safety	
CSA C22.2 NO. 60079-0: 2019 (Ed 4) Explosive Atmospheres – Part 0: Equipment – General requirements CSA C22.2 NO. 60079-11:2014 (Ed 3): Explosive Atmospheres – Part 11: Equipment protection by Intrinsic Safety	
Class Division Ratings for US (NEC) & Canada (CEC)	
Model No:	Rating
STExCP8-BG-I	Class I Div 1 Group ABCD T6 Ta -55°C to +70°C
STExCP8-BG-IR	Class I Div 1 Group ABCD T4 Ta -55°C to +70°C
Class Zone Ratings for US (NEC)	
Model No:	Rating
STExCP8-BG-I	Class I Zone 0 AEx ia IIC T6 Ga Ta -55°C to +70°C
STExCP8-BG-IR	Class I Zone 0 AEx ia IIC T4 Ga Ta -55°C to +70°C
Class Zone Ratings for Canada (CEC)	
Model No:	Rating
STExCP8-BG-I	Ex ia IIC T6 Ga Ta -55°C to +70°C
STExCP8-BG-IR	Ex ia IIC T4 Ga Ta -55°C to +70°C
Installation must be carried out in compliance with the National Electric Code / Canadian Electric Code	

3.2 ATEX / IECEX & UKEx Ratings

Standards	
EN60079-0:2018/IEC60079-0:2017 (ed.7): Explosive Atmospheres - Equipment General Requirements. EN60079-11:2012/IEC60079-11:2019 (ed.6): Explosive Atmospheres - Equipment Protection by Intrinsically Safe Enclosures "ia".	
Model No:	Rating
STExCP8-BG-I	Ex ia IIC T6 Ga Ta -55°C to +70°C
STExCP8-BG-IR	Ex ia IIC T4 Ga Ta -55°C to +70°C
See Product table for electrical ratings of each unit model	

Certificate No. DEMKO 15 ATEX 1589X
IECEX ULD 15.0018X
UKEx UL UL21UKEX2133X

Epsilon x
Equipment Group
and Category:



II 2G
II 2D

CE Marking and
Notified Body No.



2813

UKCA Marking and
Notified Body No.



0518

3.3 DNV Type Approval

The units have been tested and approved for the installation on ships in the following locations:

- Temperature:** Class A,B,C & D (all locations including open decks and masts)
- Humidity:** Class A & B (all locations)
- Vibration:** Class A (all locations except installation on machinery such as combustion engines, compressors, pumps, including piping on such machinery)
- EMC:** Class A & B (all locations including open decks and bridge)
- Enclosure:** Class A, B & C – IP56 (all locations except submerged applications and bilges)

3.4 UL 60947 Approval



All models are approved for use as Alarm System use:

UL 60947-4-1 LOW-VOLTAGE SWITCHGEAR AND CONTROLGEAR - PART 4-1: CONTACTORS AND MOTORSTARTERS - ELECTROMECHANICAL CONTACTORS AND MOTOR-STARTERS- Edition 3 - Revision Date 2017/10/17

CSA C22.2 NO. 60947-4-1-14 LOW-VOLTAGE SWITCHGEAR AND CONTROLGEAR — PART 4-1: CONTACTORS AND MOTOR-STARTERS — ELECTROMECHANICAL CONTACTORS AND MOTOR-STARTERS- Edition 2 - Issue Date 2014/01/04

UL 60947 Ambient Temperature Range: -55°C to +60°C

For Indoor and Outdoor Use
Pour usage Interieur INTÉRIEUR

4) Zones, Gas Group, Category and Temperature Classification

The units can be installed in locations with the following conditions:

Area Classification Gas	
Zone 0	Explosive gas air mixture continually present in normal operation.
Zone 1	Explosive gas air mixture likely to occur in normal operation.
Zone 2	Explosive gas air mixture not likely to occur in normal operation, and if it does, it will only exist for a short time.
Gas Groupings	
Group IIA	Propane
Group IIB	Ethylene
Group IIC	Hydrogen and Acetylene
Temperature Classification for Gas Applications	
T1	450° C
T2	300° C
T3	200° C
T4	135° C
T5	100°C (STExCP8-BG-I) only
T6	85°C (STExCP8-BG-I) only
Equipment Category	
1G	
Equipment Protection Level	
Ga, Gb, Gc	
Ambient Temperature Range	
-55°C to +70°C (-67°F to +158°F) ATEX/IECEX/UKEx	
IP Rating	
IP66 to EN60529 4 / 4X / 3R / 13 to UL50E / NEMA250	

5) Specific Conditions for Safe Use

The equipment has a maximum capacitance of 6.33pF.

The equipment does not provide 500V isolation between the intrinsically safe circuit and parts which may be earthed. This shall be considered in the end-use application to ensure the possibility of an earth connection will not compromise intrinsic safety.

Use galvanically isolating barriers or ensure that the installation is equipotentially bonded such that earth loops can not occur.

Refer to EN/IEC 60079-14.

Equipment is permitted to be wall mounted only in vertical position. The enclosure base is permitted in two mounting positions, with the double entry lowermost or uppermost.

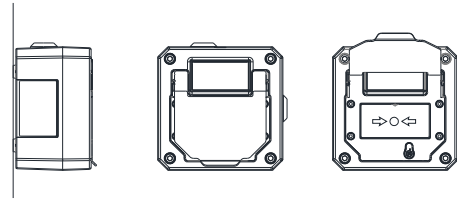


Fig 1 Wall Mounting

6) 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. They should only be fixed to services that can carry the weight of the unit.

To gain access to the mounting holes in the base the front cover must be removed. See Section 7

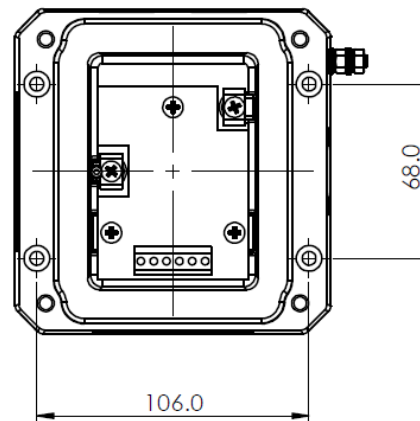


Fig. 1 View of base unit showing fixing centres (in mm).

7) Access to the Enclosure



Warning – High voltage may be present, risk of electric shock. DO NOT open when energised, disconnect power before opening.



Warning – Hot surfaces. External surfaces and internal components may be hot after operation, take care when handling the equipment.

To access the chamber, remove the four off M6 x 60 hexagon socket head screws and carefully withdraw the cover.

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

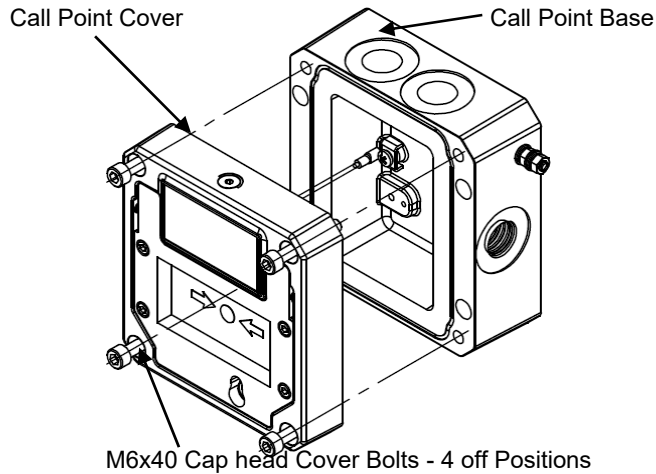


Fig. 2 Accessing the Enclosure.

Check that the earth bonding wire between the two castings is secure and the 'O' ring seal is in place.

When replacing the cover casting ensure that it is square with the chamber casting before inserting. Carefully place the cover on the base. Only after the cover is fully in place should the four M6 x 60 cover bolts and their spring washer be tightened down. Never use the cover bolts to force the cover into position.

8) Earthing

The units are provided with internal and external earth terminals which are mounted in the base of the unit.

Internal earthing connections should be made to the Internal Earth terminal in the base of the housing using a ring crimp terminal to secure the earth conductor under the earth clamp.

The earth conductor should be at least equal in size and rating to the incoming power conductors.

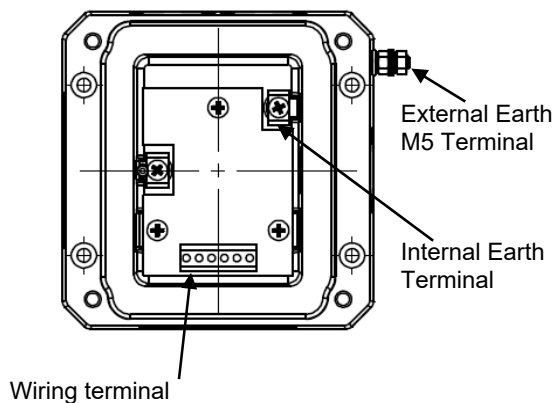


Fig 3 Earth terminals

9) Power Supply Selection Electrical Ratings

Input terminals and Zener Barrier or Galvanic Isolator

Power is supplied to the call point is via the + and - terminals. All terminals have the following input safety parameters:

U _i	=	30V
I _i	=	500mA
P _i	=	1100mW
C _i	=	0
L _i	=	0

The unit may be powered from an ATEX/IECEX/UKEx certified Zener barrier or galvanic isolator which have output parameters equal to or less than 30V, 500mA and 1100mW, where I_o is resistively limited. The cable parameters stated on the selected Zener barrier or galvanic isolator certificate must be observed.

10) Selection of Cable, Cable Glands, Blanking Elements & Adapters

ATEX/IECEX & UKEx Installations:

The equipment must only be installed by suitably qualified personnel in accordance with the latest issues of the relevant standards:

EN60079-14 / IEC60079-14: Explosive atmospheres - Electrical installations design, selection and erection
EN60079-10-1 / IEC60079-10-1: Explosive atmospheres - Classification of areas. Explosive gas atmospheres

The installation of the units must also be in accordance with any local codes that may apply and should only be carried out by a competent electrical engineer who has the necessary training.

For high ambient temperatures the cable entry temperature may exceed +70°C or the cable branching point temperature may exceed 80°C and therefore suitable heat resisting cables and cable glands must be used, with a rated service temperature of at least the values stated below:

For models STExCP8-BG-I:

Max. ambient temperature °C	50	55	60	65	70
req. Cable / Cable Gland rating: °C	76	81	86	91	96

For models STExCP8-BG-IR:

Max. ambient temperature °C	40	45	50	55	60	65	70
req. Cable / Cable Gland rating: °C	85	90	95	100	105	110	115

NEC / CEC Installations:

The installation of the units must also be in accordance with any local codes that may apply and should only be carried out by a competent electrical engineer who has the

necessary training. In compliance with the National Electrical Code NFPA 70 or Canadian Electric Code CSA22.1

For high ambient temperatures the cable entry temperature may exceed +60°C or the cable branching point temperature may exceed 60°C and therefore suitable heat resisting cables and cable glands must be used, with a rated service temperature of at least the values stated below:

For model STEXCP8-BG-I:

Max. ambient temperature °C	35	40	45	50	55	60
req. Cable / Cable Gland rating: °C	61	66	71	76	81	86

For model STEXCP8-BG-IR:

Max. ambient temperature °C	20	25	30	35	40	45	50	55	60
req. Cable / Cable Gland rating: °C	65	70	75	80	85	90	95	100	105

All Installations:

The enclosure is non-conducting and may generate an ignition-capable level of electrostatic charges under certain extreme conditions. The user should ensure that the equipment is not installed in a location where it may be subjected to external conditions that might cause a build-up of electrostatic charges on non-conducting surfaces.

The M12 Cap fitted to the top side of the unit is not a user serviceable part and must not be removed during installation and maintenance.

The cable gland entries have an M20 x 1.5 entry thread. Glands to be rated to IP66 (tightening torque 10Nm).

When only one cable entry is used the other entries must be closed with plugs to be rated to IP66 (tightening torque 10Nm).

Electrical connections are to be made into the PCB / terminal blocks / DIN rail provided.

The STEXCP8 Call Point range can be supplied with the following types of adapters:

- M20 to ½" NPT
- M20 to ¾" NPT
- M20 to M25

It is important to note that stopping plugs cannot be fitted onto adapters, only directly onto the M20 entries.

11) Cable & Wiring Connections

The units come with two options.

A DIN rail version which has 4-way connection and allows for the wiring of switches only.

Model : STEXCP8-BG-I

For full wiring details see wiring diagrams D202-06-501

The PCB Terminal Version has a 6-way connector but is designed to allow for full customer configuration with Series and EOL devices in a number of wiring configurations. E2S can also configure unit at time of order to E2S

Model : STEXCP8-BG-IR

For full wiring details see wiring diagrams D202-06-502

For EOL and Series device limitations and configurations see Section 15. Fitting can be requested by E2S at the order stage or added to the correct terminal blocks afterward. All devices must comply with the requirements stipulated in section 14.

Electrical Connections are to be made into the terminal blocks using solid or stranded wire.

Wires having a cross sectional area between 0.5 mm² to 2.5mm² (AWG 20 – 14) can be connected to each terminal way.

In most configuration an input and output wire can be fitted to individual terminals, where these are more complex and if fitting 2-off wires to one terminal way, the sum of the 2-off wires must be a maximum cross sectional area of 2.5mm².

Strip wires to 8mm. Wires may also be fitted using ferrules.

DIN Rail Terminals: 0.51 Nm / 4.5 Lb-in;

PCBA Main Terminals: 0.45 Nm / 4.0 Lb-in;

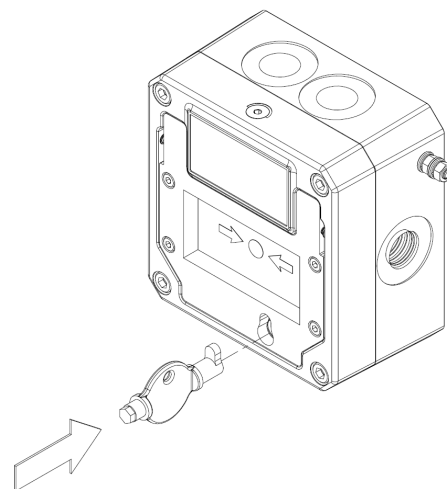
PCBA EOL and Series (1 & 2) Terminals: 0.38 Nm / 3.4 Lb-in

When connecting wires to the terminals great care should be taken to dress the wires so that when the cover is inserted into the chamber the wires do not exert excess pressure on the terminal blocks. This is particularly important when using cables with large cross-sectional areas such as 2.5mm².

12) Testing unit operation

The break glass unit can be tested without the need to break/replace the frangible glass element.

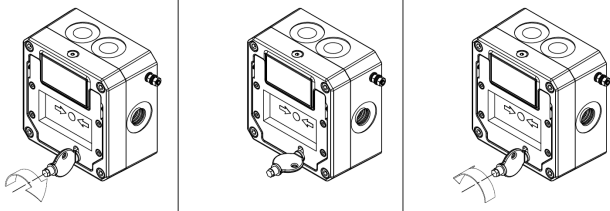
A test key (Plastic Key Supplied with unit) is used to mechanically drop the glass down activating the switch.



in the test cam and rotated clockwise by an angle of 90° the glass element will visibly drop down in the viewable window.

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

Once testing is complete the unit needs to be reset, the test key is rotated back anticlockwise 90° to its original vertical position. The glass element should now raise up so it is level again (horizontal) in the viewable window.



1. Insert test Key rotate clockwise 60°
2. Hold in position during test
3. Rotate back anticlockwise to reset

13) Replacement of glass element

If the break glass unit has been operated the broken glass element can be quickly replaced.

The break glass cover plate is removed by unscrewing the 4 off M4 cap head screws attaching it.

The STExCP8 Call Point range can be supplied with the following types of adapters:

- M20 to ½" NPT
- M20 to ¾" NPT
- M20 to M25

It is important to note that stopping plugs cannot be fitted onto adapters, only directly onto the M20 entries.

Any other adapters used must be suitably rated and ATEX / IECEx / UKEx or NEC/CEC certified adapters.

7) Cable & Wiring Connections

The units come with two options.

A DIN rail version which has 8-way connection and allows for limited wiring of EOL devices by customer, or, full pre-wired configurations if outlined with order to E2S.

For full wiring details see wiring diagrams D202-06-211

The PCB Terminal Version has a 6-way connector but is designed to allow for full customer configuration with Series and EOL devices in a number of wiring configurations. E2S can also configure unit at time of order to E2S

For full wiring details see wiring diagrams D202-06-212

For EOL and Series device limitations and configurations see Section 15. Fitting can be requested by E2S at the order stage or added to the correct terminal blocks afterward. All devices must comply with the requirements stipulated in section 15.

Electrical Connections are to be made into the terminal blocks using solid or stranded wire.

Wires having a cross sectional area between 0.5 mm² to 2.5mm² (AWG 20 – 14) can be connected to each terminal way.

In most configuration an input and output wire can be fitted to individual terminals, where these are more complex and if fitting 2-off wires to one terminal way, the sum of the 2-off wires must be a maximum cross sectional area of 2.5mm².

Strip wires to 8mm. Wires may also be fitted using ferrules.

DIN Rail Terminals: 0.51 Nm / 4.5 Lb-in;
Connector Block Terminals: 0.87 Nm / 7.7 Lb-in;

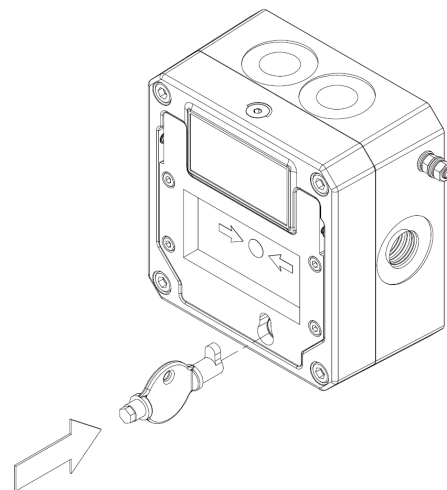
PCBA Main Terminals: 0.45 Nm / 4.0 Lb-in;
PCBA EOL and Series (1 & 2) Terminals: 0.38 Nm / 3.4 Lb-in

When connecting wires to the terminals great care should be taken to dress the wires so that when the cover is inserted into the chamber the wires do not exert excess pressure on the terminal blocks. This is particularly important when using cables with large cross-sectional areas such as 2.5mm².

8) Testing unit operation

The break glass unit can be tested without the need to break/replace the frangible glass element.

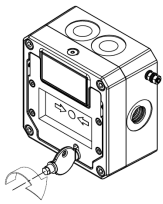
A test key (Plastic Key Supplied with unit) is used to mechanically drop the glass down activating the switch.



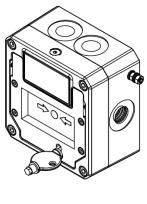
The test key is inserted in the test cam and rotated clockwise by an angle of 90° the glass element will visibly drop down in the viewable window.

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

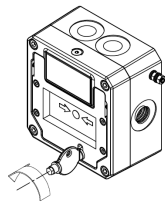
Once testing is complete the unit needs to be reset, the test key is rotated back anticlockwise 90° to its original vertical position. The glass element should now raise up so it is level again (horizontal) in the viewable window.



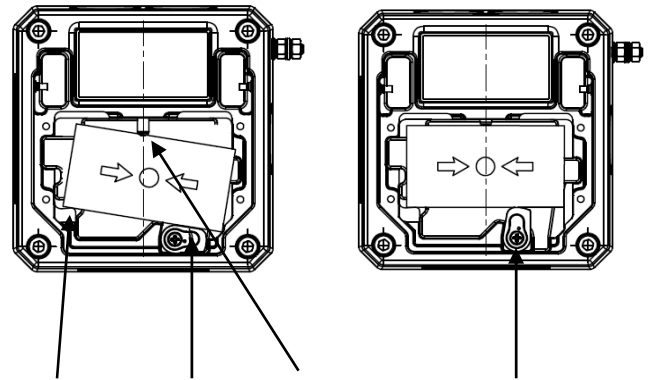
1. Insert test Key rotate clockwise 60°



2. Hold in position during test



3. Rotate back anticlockwise to reset

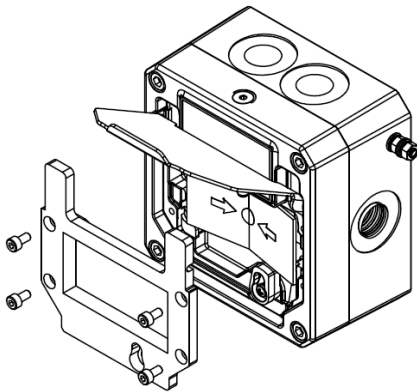


Pivot point Test Cam Plunger Shaft Rotate test cam back Upright set point

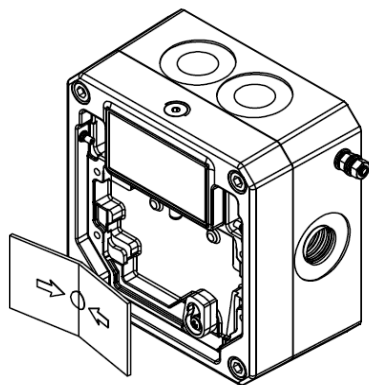
9) Replacement of glass element

If the break glass unit has been operated the broken glass element can be quickly replaced.

The break glass cover plate is removed by unscrewing the 4 off M4 cap head screws attaching it.



Once the cover is removed the broken glass will be free to be removed, clean out any other fragments of glass carefully.



To fit the new glass element rotate the test cam clockwise by an angle of 90° (use test key supplied) this will then allow the glass to fit back into the pocket it sits in, resting on the pivot point and test cam, ensure the plunger shaft is resting on the top of the glass, it might need to be pushed up slightly to achieve this.

Whilst lightly holding the glass in place rotate the test cam back anticlockwise 90° to its original vertical position. The glass element should now raise up so it is level again (horizontal) in the viewable window.

Replace the cover plate and tighten the 4 off M4 cap head screws.

Ensure the glass element is free to move under the cover plate. This can be done by running through the units test operation. See section 12 of this instruction manual.

14) End-of-Line and Series Devices

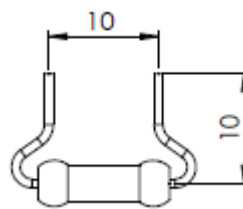
All STExCP8-BG-IR models can be fitted with series / end-of-line monitoring resistors, monitoring diodes and Zener and also LED options into the terminals of the units with the PCB terminal option.

Min. device values and current limitations must be observed depending on supply voltage and type of components fitted. If a combination of resistors / diodes / zener diodes or LED is used, values for all components must be observed and lowest current limit for either component becomes overall limit.

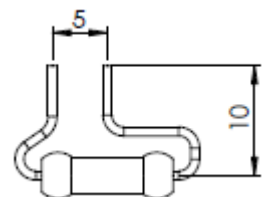
Current limitation for units fitted with end-of-line or series resistors, diodes or zener diodes must be ensured by using a current limited power supply or fitting a current limiting resistor at the control panel (not provided).

When fitting EOL or series device into the applicable terminal ensure the component is bent to the following specification to ensure the correct creepage and clearance is maintained.

Depending on the wiring option required either of these component lead bending configurations is suitable.



EOL or Series device Component Lead Bending



EOL only for alternative EOL wiring Component Lead Bending

The following table 2 shows limitations for all possible variations:

		Supply voltage 24Vdc Nom 30Vdc Max via barriers.	
Type of component fitted	value	Max. current (mA)	
End-of-Line Resistor 5% Max tolerance. Ø3.5 x 9.0mm – 2W Ø2.6 x 6.8mm – 0.5W Min component size	min. 470R / 2W or min. 2k2 / 0.5W	N/A Barrier limit	
End-of-Line Diode Type 1N5401 Ø4.8 x 7.2mm Min component size	2W	59.13 customer to limit	
Series Resistor 5% Max Tolerance. Ø3.5 x 9.0mm – 2W Ø2.6 x 6.8mm – 0.5W Min component size	min. 470R / 2W or min. 2k2 / 0.5W	N/A Barrier limit	
Series Diode Type 1N5401 Ø4.8 x 7.2mm Min component size	2W	59.13 customer to limit	
Series Zener Diode Type 1N53xxB Ø3.3 x 8.4mm Min component size	3.3V	230 customer to limit	
	4.7V	162 customer to limit	
	5.1V	149 customer to limit	
	5.6V	136 customer to limit	
	6.2V	122 customer to limit	
	6.8V	112 customer to limit	
	10V	76 customer to limit	
	12V	63 customer to limit	

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 4 module & LED devices – see wiring diagram D202-06-502

An optional LED monitoring module is designated after the model no as either,

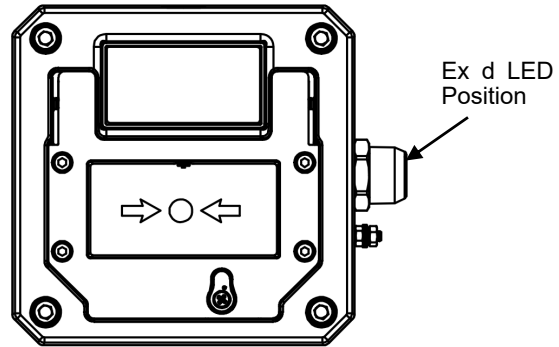
To include an LED and power limiting resistor (-L)

or,

Optional LED but where the units current must be limited to 20mA. As the LED has no power limiting resistor (-C)

The optional Ex d LED monitoring module is fitted in the M20x1.5 side entry as shown, when the main M20x1.5 entries are at the bottom of unit.

Wire LED into the Series terminals block, on the PCB, if fitting with an additional series resistor ferrule each lead together.



15) Maintenance, Overhaul, Repair and Cleaning

Maintenance, repair and overhaul of the equipment should only be carried out by suitably qualified personnel in accordance with the current relevant standards:

For ATEX / IECEx / UKEx

EN 60079-19 Explosive atmospheres – Equipment repair, overhaul and reclamation

EN 60079-17 Explosive atmospheres – Electrical installations inspections and maintenance

For US & CEC Class / Div / Zone

UL 60079-19 Explosive atmospheres - Equipment repair, overhaul and reclamation

UL 60079-17 Explosive atmospheres - Electrical installations inspection and maintenance

All Installations:

Electrostatic charging hazard – clean only with a damp cloth.

Units must not be opened while an explosive atmosphere is present.

Live maintenance is not permitted.

16) 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
System Type	A
Hardware Fault Tolerance	0
Safe Failure Fraction (credible claim)	75%
PFD (hazardous failure)	2.3×10^{-3}
Proof Test Interval	Up to 1 year

17) Electrical System Design For Installation In Hazardous Areas Using Zener Barriers

ATEX/IECEX & UKEx Installations:

17.1 Single Input Barrier

Where the call point switch uses a Zener barrier, as shown in Fig below.

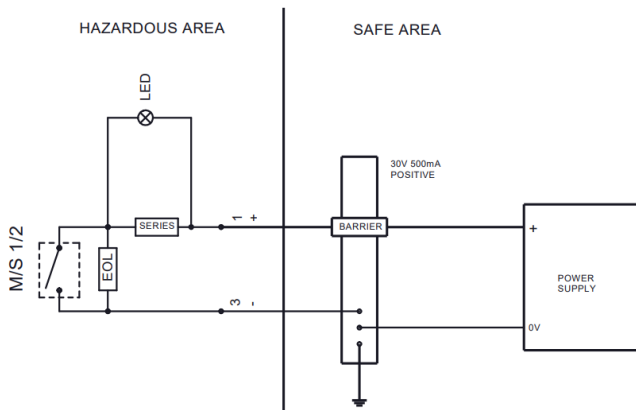


Fig. Single stage call point alarm using single barrier.

NEC /CEC Installations:

17.2 Single Input Barrier

Where the call point switch uses a Zener barrier, as shown in Fig below.

Hazardous (Classified) Location
Class I Div 1 Groups A, B, C, D
Class I, Zone 0 Groups IIA IIB IIC

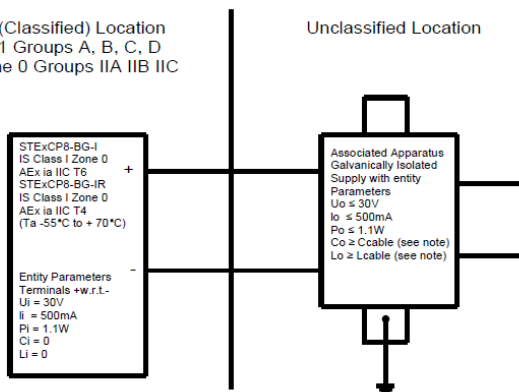


Fig. Single stage call point alarm using single barrier.

1. Associated apparatus output current must be limited by a resistor such that the output voltage current plot is a straight line drawn between open-circuit voltage and short-circuit current.
2. Installed should be in accordance with its manufacturer's control drawing and Article 504 of the National Electrical Code (ANSI/NFPA 70) for Canadian installation in the United States, or Section 18 of the Electrical Code for installations in Canada.
3. Where the cable capacitance and inductance per foot are not known, the following values shall be used: $C_{cable} = 60 \text{ pF/ft.}$, $L_{cable} = 0.2 \text{ μH/ft.}$
4. When required by the manufacturer's control drawing, the associated apparatus must be connected to a suitable ground electrode per the National Electrical Code (ANSI/NFPA 70), the Canadian Electrical Code, or other local installation codes, as applicable. The resistance of the ground path must be less than 1 ohm.

18) Electrical System Design For Installation In Hazardous Areas Using Galvanic Isolators

Galvanic isolators do not require a high integrity earth connection. For small systems where a high integrity earth is not already available, the use of galvanic isolators often reduces the overall installation cost and simplifies design.

ATEX/IECEX & UKEx Installations:

13.1 Single Input Barrier

Where the call point switch uses a single Zener barrier, as shown in Fig below.

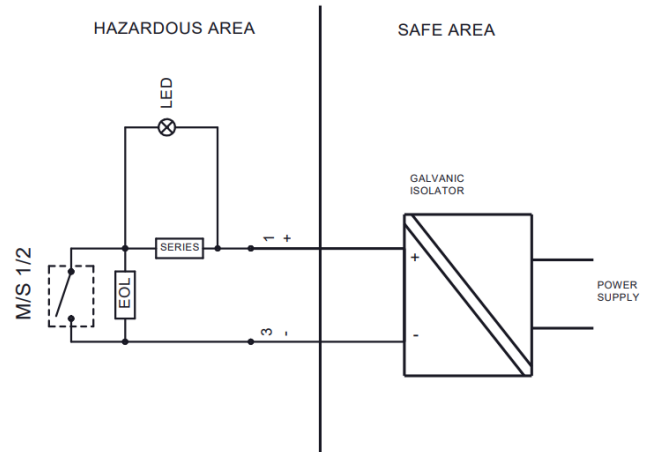


Fig. Single stage call point alarm using single galvanic isolator.

NEC /CEC Installations:

13.1 Single Input Barrier

Where the call point switch uses a single Zener barrier, as shown in Fig below.

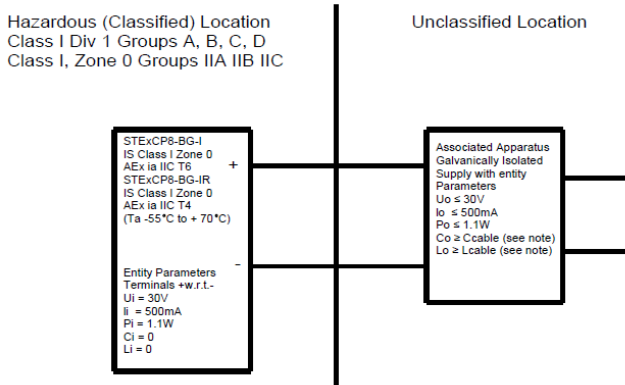


Fig. Single stage call point alarm using single galvanic isolator.

1. Associated apparatus output current must be limited by a resistor such that the output voltage current plot is a straight line drawn between open-circuit voltage and short-circuit current.
2. Installed should be in accordance with its manufacturer's control drawing and Article 504 of the National Electrical Code (ANSI/NFPA 70) for installation in the United States, or Section 18 of the Canadian Electrical Code for installations in Canada.
3. Where the cable capacitance and inductance per foot are not known, the following values shall be used: Ccable = 60 pF/ft., Lcable = 0.2 μH/ft.

SINGLE MICROSWITCH DEVICES

SHEET 1

ISSUE	MOD No.	REASON - INITIAL - DATE
1		Introduction RNP 02-02-2024

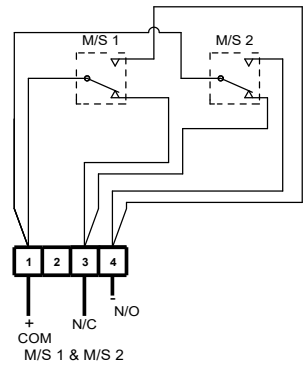
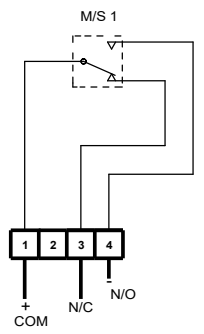
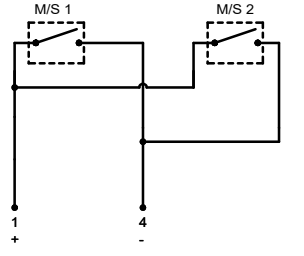
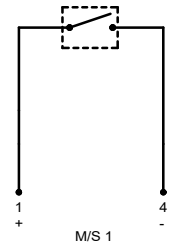
PRODUCTS:
GNExCP7, STExCP8

GNEXCP7-BG[s][t][l][e][m][d][v][o][x][u][v][e][s] Series
 Switch Type [s] Terminals [t] Product Version [v] Product Option [o] EOL Module [e] LED Indicator [u]

SINGLE SWITCH	CONFIG. D1-1	DUAL SWITCH WITH EOL DEVICE	CONFIG. D1-2
----------------------	---------------------	------------------------------------	---------------------

SWITCH TYPE [s] [S]
 TERMINALS [t] [D]
 PRODUCT OPTION [o] [1]
 LED INDICATOR [u] [N]
 Single
 DIN Rail
 Default
 NO LED

SWITCH TYPE [s] [D]
 TERMINALS [t] [D]
 PRODUCT OPTION [o] [1]
 LED INDICATOR [u] [N]
 Dual
 DIN Rail
 Parallel Wiring
 No LED



Circuit shown in Unoperated condition

Unoperated condition (Glass Intact / Standby Condition)
 Terminals +(1) & -(4) open
 Terminals +(2) & (3) closed

Operated condition (Glass Broken / Button pushed in)
 Terminals +(1) & -(4) closed
 Terminals +(1) & (3) open

Circuit shown in Unoperated condition

Unoperated condition (Glass Intact / Standby Condition)
 Terminals +(1) & -(4) open
 Terminals +(2) & (3) closed

Operated condition (Glass Broken / Button pushed in)
 Terminals +(1) & -(4) closed
 Terminals +(1) & (3) open

DRAWING TO BS8888:2000
 GEOMETRIC TOLERANCES TO ISO1101:1983
 LINEAR DIMENSIONAL TOLS
 ANGULAR DIMENSIONAL TOLS

STANDARDS
 GNExCP7-I and STExCP8-I units
 with DIN Rail

DRAWN DATE
 R.S.RAIT 02-02-2024

CHECKED DATE
 B.ISARD 02-02-2024

APPROVED DATE
 R.N.POTTS 02-02-2024

SURFACE FINISH WEIGHT (Kg)

MATERIAL

ALTERNATIVE MATERIAL

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 LONDON W3 7QH
 WWW.E2S.COM

ALL DIMENSIONS IN MM IF IN DOUBT, ASK - DO NOT SCALE			A3
TITLE GNExCP7-I & STExCP8-I IS CALL POINT WIRING / CIRCUIT OPERATION DIAGRAM			
SCALE NTS	SHEET 1 OF 1	DRAWING NUMBER D202-06-501	

SINGLE MICROSWITCH DEVICES

SHEET 1

PRODUCTS:
GNExCP7, STExCP8
& WP7

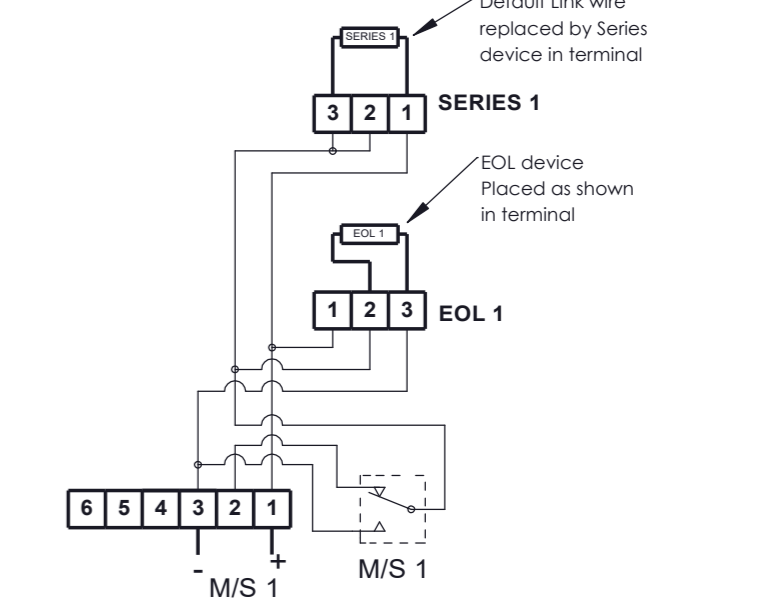
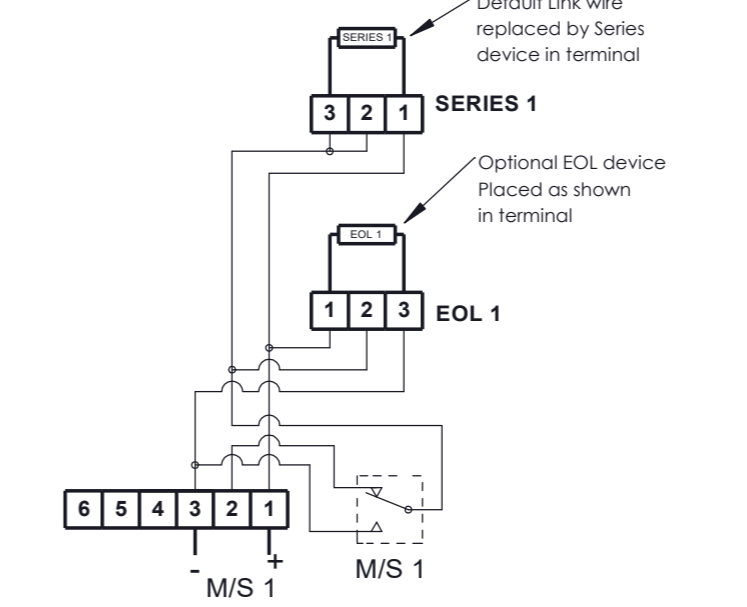
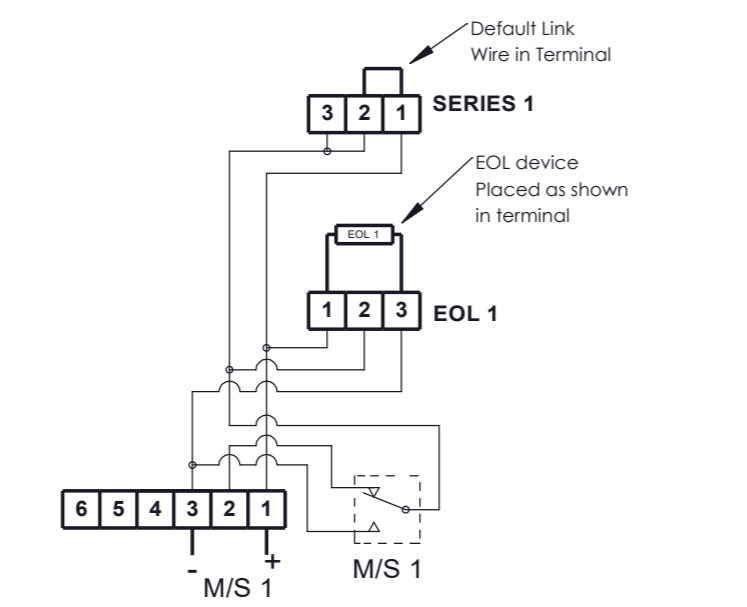
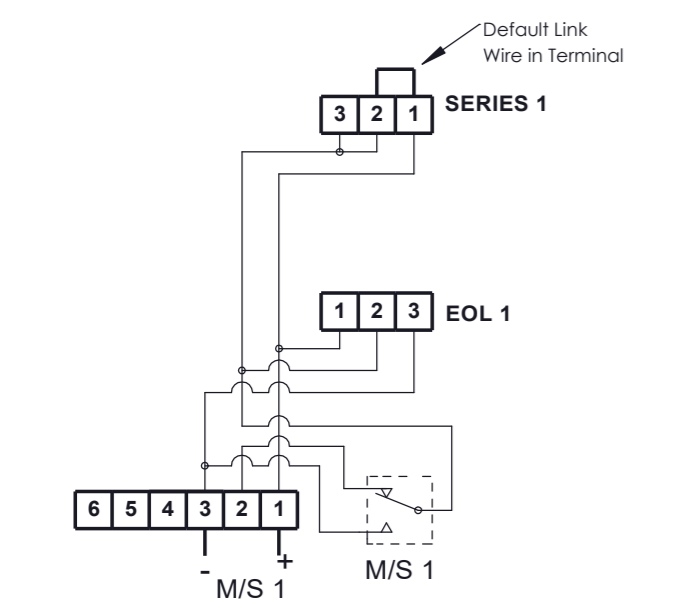
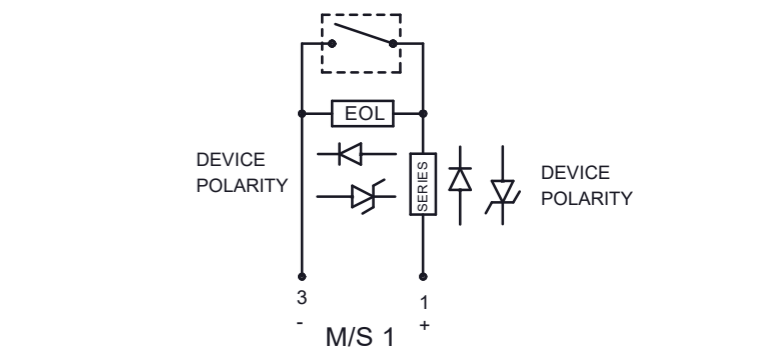
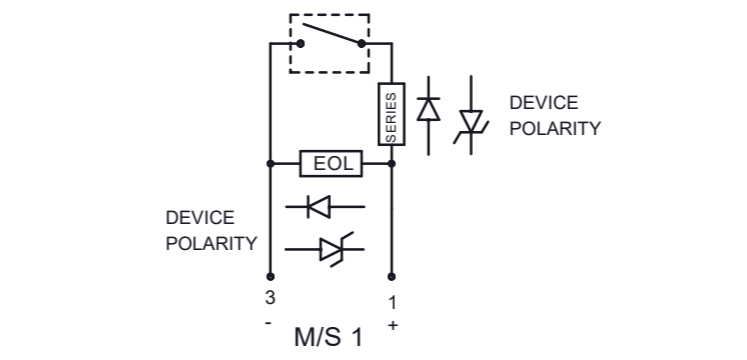
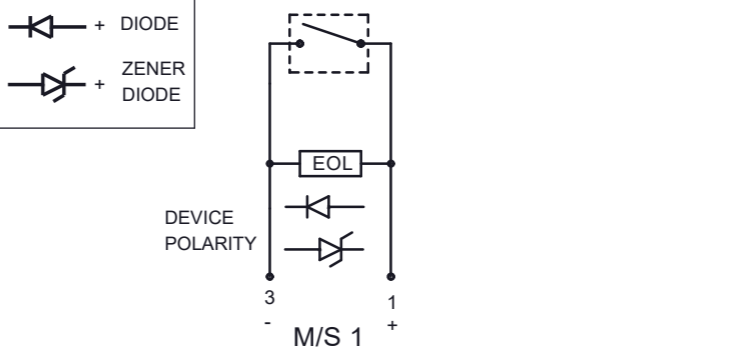
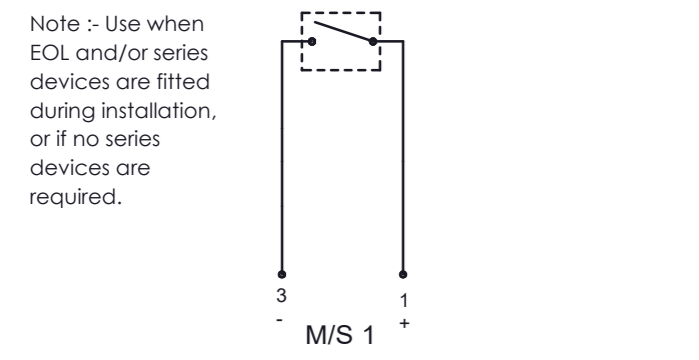
Diagram	Sheet
LED Indicator Wiring Configurations	2,4
Parallel Dual Switch Wiring Configurations	3,4

GNEXCP7-BG[s][t][l][e][m][d][v][o][x]-[u][e][s]
 Switch Type [s] Terminals [t] Product Version [v] Product Option [o] LED Indicator [u] Series Module [s] EOL Module [e]

Module Device Codes		
	EOL	Series
Resistor	ExxxR	SxxxR
Diode	ED1	SD1
Zener Diode	ExxxZ	SxxxZ
LED	N/A	L or C

ISSUE	MOD No.	REASON - INITIAL - DATE
1		Introduction RNP 02-02-2024

SINGLE SWITCH	CONFIG. P1 -1	SINGLE SWITCH WITH SERIES DEVICE	CONFIG. P1-2	SINGLE SWITCH WITH EOL & SERIES DEVICES	CONFIG. P1-3	SINGLE SWITCH WITH EOL & ALT SERIES DEVICES	CONFIG. P1-4
SWITCH TYPE [s] [S] TERMINALS [t] [P] PRODUCT OPTION [o] [R] LED INDICATOR [u] [N]	Single PCB Version With EOL/Series NO LED	SWITCH TYPE [s] [S] TERMINALS [t] [P] PRODUCT OPTION [o] [R] LED INDICATOR [u] [N] EOL MODULE [e] [Exxxx]	Single PCB Version With EOL/Series NO LED EOL Device	SWITCH TYPE [s] [S] TERMINALS [t] [P] PRODUCT OPTION [o] [R] LED INDICATOR [u] [N] MODULES [e][s] [Exxxx][Sxxxx]	Single PCB Version With EOL/Series NO LED EOL + Series	SWITCH TYPE [s] [S] TERMINALS [t] [P] PRODUCT OPTION [o] [W] LED INDICATOR [u] [N] MODULE [e][s] [Exxxx][Sxxxx]	Single PCB Version Alt. EOL Pos'n. NO LED EOL + Series



Circuit as shown in Unoperated condition

Unoperated Condition (Glass Intact / Standby Condition)
 Terminals +(1) & -(3) M/S 1 open
 Terminals +(1) & (2) M/S 1 closed

Operated Condition (Glass Broken / Button pushes in)
 Terminals +(1) & (2) M/S 1 open
 Terminals +(1) & -(3) M/S 1 closed

Circuit as shown in Unoperated condition

Unoperated Condition (Glass Intact / Standby Condition)
 Terminals +(1) & -(3) M/S 1 open
 Terminals +(1) & (2) M/S 1 closed

Operated Condition (Glass Broken / Button pushes in)
 Terminals +(1) & (2) M/S 1 open
 Terminals +(1) & -(3) M/S 1 closed

Circuit as shown in Unoperated condition

Unoperated Condition (Glass Intact / Standby Condition)
 Terminals +(1) & -(3) M/S 1 open
 Terminals +(1) & (2) M/S 1 closed

Operated Condition (Glass Broken / Button pushes in)
 Terminals +(1) & (2) M/S 1 open
 Terminals +(1) & -(3) M/S 1 closed

Circuit as shown in Unoperated condition

Unoperated Condition (Glass Intact / Standby Condition)
 Terminals +(1) & -(3) M/S 1 open
 Terminals +(1) & (2) M/S 1 closed

Operated Condition (Glass Broken / Button pushes in)
 Terminals +(1) & (2) M/S 1 open
 Terminals +(1) & -(3) M/S 1 closed

DRAWING TO BS8888:2000
 GEOMETRIC TOLERANCES TO ISO1101:1983
 LINEAR DIMENSIONAL TOLS
 ANGULAR DIMENSIONAL TOLS

STANDARDS
GNExCP7-IR and STExCP8-IR units with PCB

DRAWN	DATE
R.N.POTTS	02-02-2024
CHECKED	DATE
B.ISARD	02-02-2024
APPROVED	DATE
R.N.POTTS	02-02-2024

SURFACE FINISH	WEIGHT (Kg)
MATERIAL	
ALTERNATIVE MATERIAL	

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 LONDON W3 7QH
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ALL DIMENSIONS IN MM IF IN DOUBT, ASK - DO NOT SCALE		
		A3
TITLE		
GNExCP7-IR & STExCP8-IR IS CALL POINT WIRING / CIRCUIT OPERATION DIAGRAM		
SCALE	SHEET	DRAWING NUMBER
NTS	1 OF 4	D202-06-502

SINGLE MICROSWITCH LED DEVICES

SHEET 2

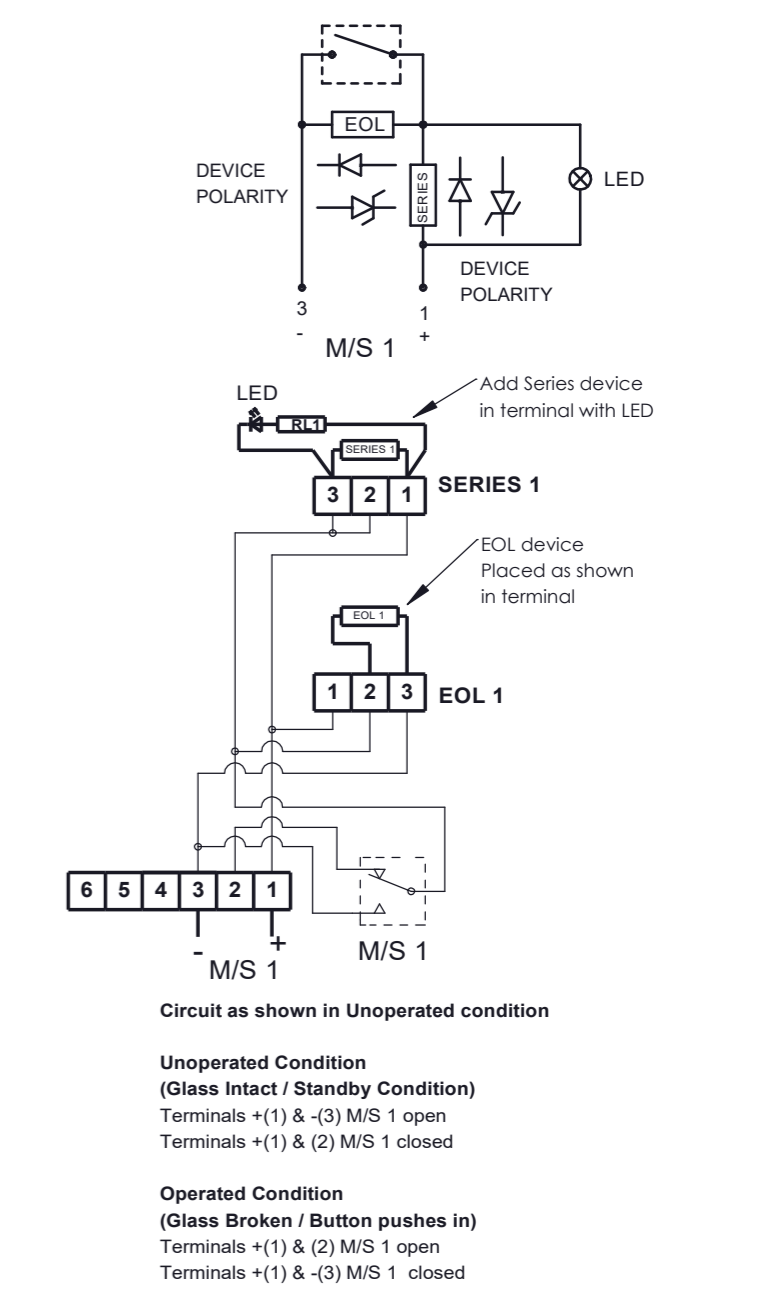
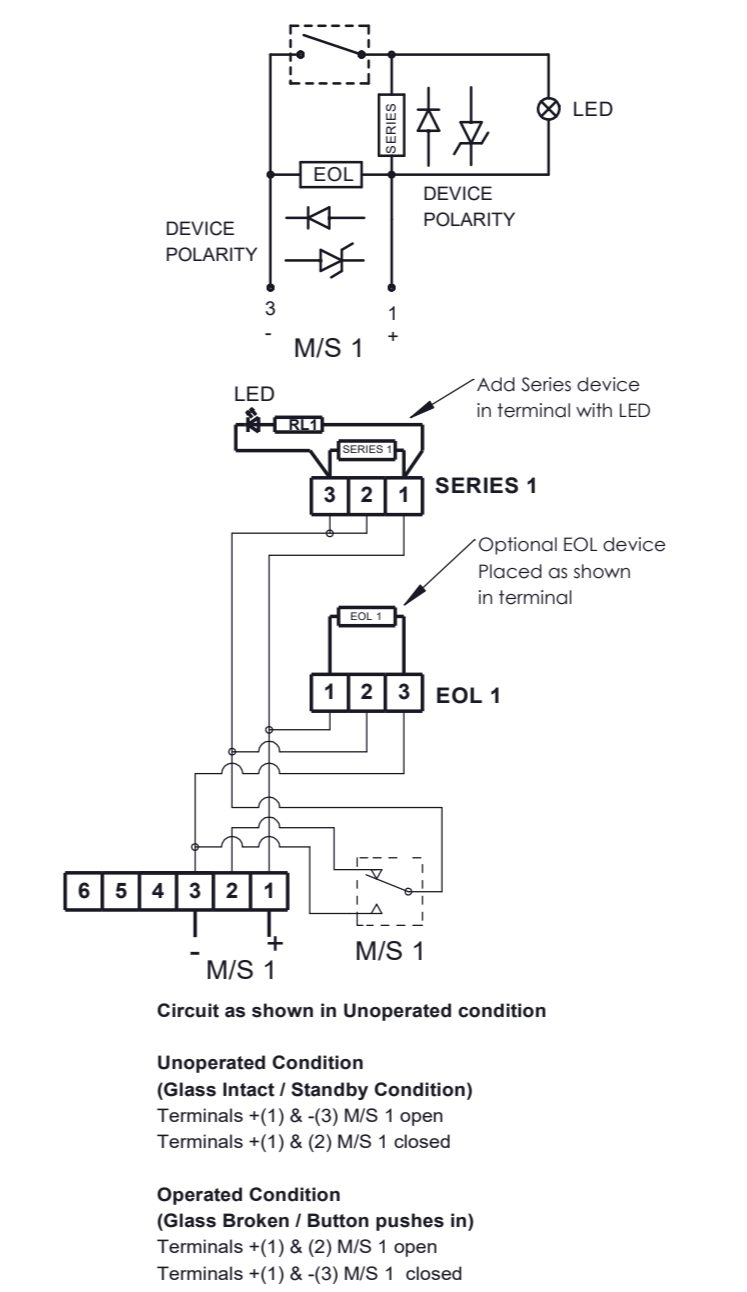
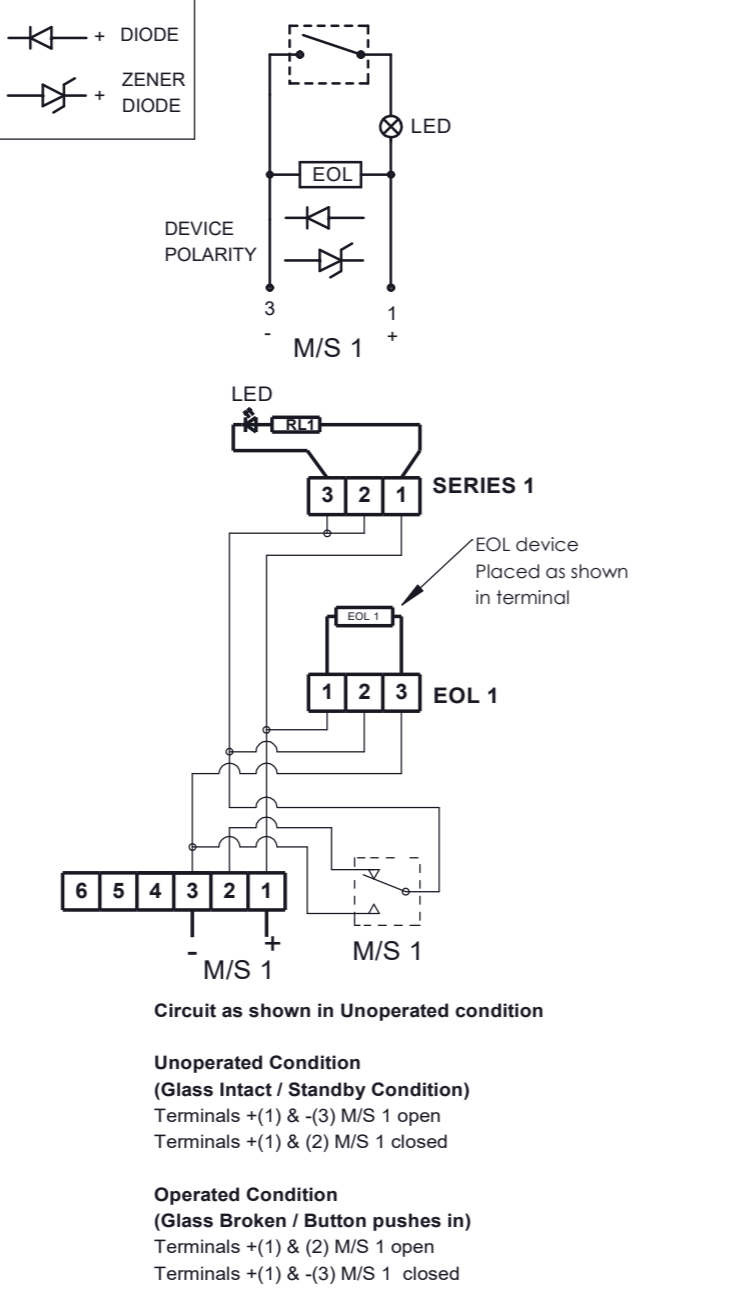
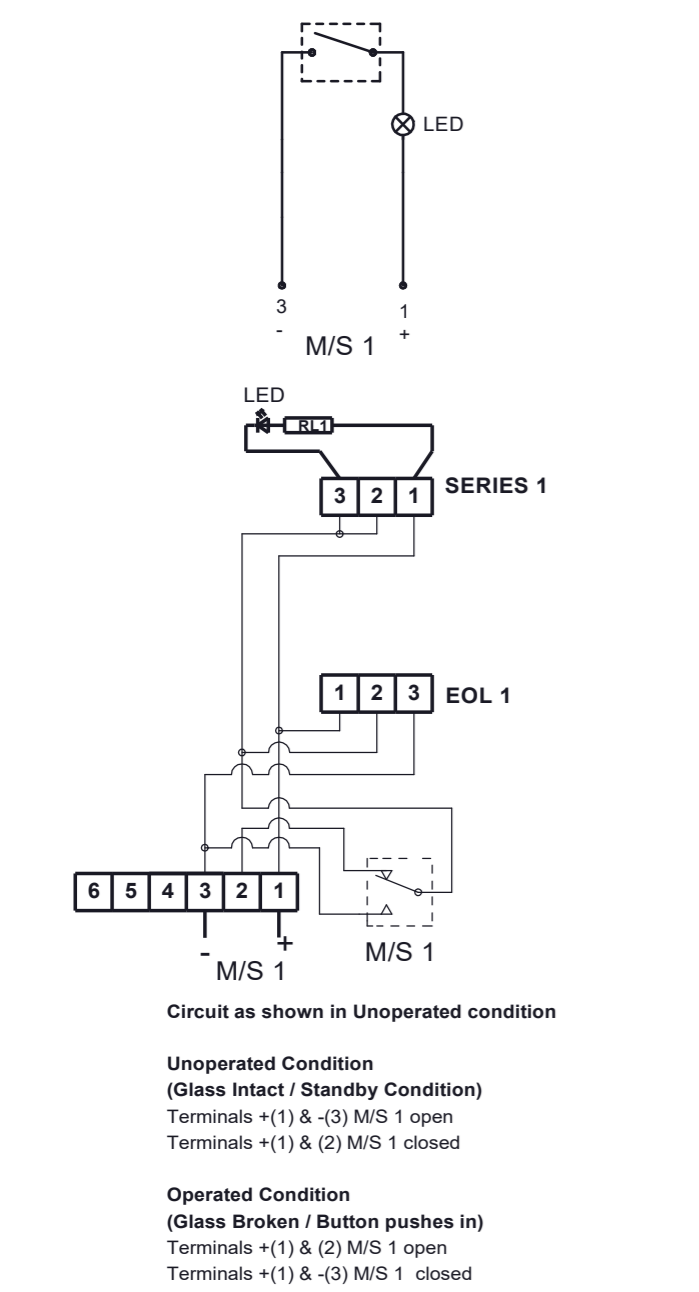
Notes:
1. Units have the option to remove the LED current-limiting resistor RL1 option 'L' using LED option 'C'. In all other cases shown RL1 is included.

GNEXCP7-BG[s][t][l][e][m][d][v][o][x]-[u][e][s]
 LED Indicator [u] Series Module [s]
 Resistor ExxxR SxxxR
 Diode ED1 SD1
 Zener Diode ExxxZ SxxxZ
 LED N/A L or C
 Switch Type [s] Terminals [t] Product Version [v] Product Option [o] EOL Module [e]

Module Device Codes		
	EOL	Series
Resistor	ExxxR	SxxxR
Diode	ED1	SD1
Zener Diode	ExxxZ	SxxxZ
LED	N/A	L or C

ISSUE	MOD No.	REASON - INITIAL - DATE
1		Introduction RNP 02-02-2024

SINGLE SWITCH	CONFIG. P4 -1	SINGLE SWITCH WITH SERIES DEVICES	CONFIG. P4-2	SINGLE SWITCH WITH EOL & SERIES DEVICES	CONFIG. P4-3	SINGLE SWITCH WITH EOL & ALT SERIES DEVICES	CONFIG. P4-4
SWITCH TYPE [s] [S] TERMINALS [t] [P] PRODUCT OPTION [o] [R] LED INDICATOR [u] [L]	Single PCB Version With EOL/Series LED with RL1	SWITCH TYPE [s] [S] TERMINALS [t] [P] PRODUCT OPTION [o] [R] LED INDICATOR [u] [L] EOL MODULE [e] [Exxxx]	Single PCB Version With EOL/Series LED with RL1 EOL Device	SWITCH TYPE [s] [S] TERMINALS [t] [P] PRODUCT OPTION [o] [R] LED INDICATOR [u] [L] MODULES [e][s] [Exxxx][Sxxxx]	Single PCB Version With EOL/Series LED with RL1 EOL + Series	SWITCH TYPE [s] [S] TERMINALS [t] [P] PRODUCT OPTION [o] [W] LED INDICATOR [u] [L] MODULE [e][s] [Exxxx][Sxxxx]	Single PCB Version Alt. EOL Pos'n. LED with RL1 EOL + Series



DRAWING TO BS8888:2000
GEOMETRIC TOLERANCES TO ISO1101:1983
LINEAR DIMENSIONAL TOLS
ANGULAR DIMENSIONAL TOLS

STANDARDS
**GNE_xCP7-IR and
STEXCP8-IR units
with PCB**

DRAWN	DATE
R.N.POTTS	02-02-2024
CHECKED	DATE
B.ISARD	02-02-2024
APPROVED	DATE
R.N.POTTS	02-02-2024

SURFACE FINISH	WEIGHT (Kg)
MATERIAL	
ALTERNATIVE MATERIAL	

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ALL DIMENSIONS IN MM IF IN DOUBT, ASK - DO NOT SCALE				A3
TITLE GNE_xCP7-IR & STEXCP8-IR IS CALL POINT WIRING / CIRCUIT OPERATION DIAGRAM				
SCALE	SHEET	DRAWING NUMBER		
NTS	2 OF 4	D202-06-502		

DUAL MICROSWITCH IN PARALLEL, & DEVICES

SHEET 3

GNEXCP7-BG[s][t][l][e][m][d][v][o][x]-[u][e][s] Series
 Switch Type [s] Product Version [v] Product Option [o] EOL Module [e]
 Terminals [t] LED Indicator [u]

Module Device Codes		
	EOL	Series
Resistor	ExxxR	SxxxR
Diode	ED1	SD1
Zener Diode	ExxxZ	SxxxZ
LED	N/A	L or C

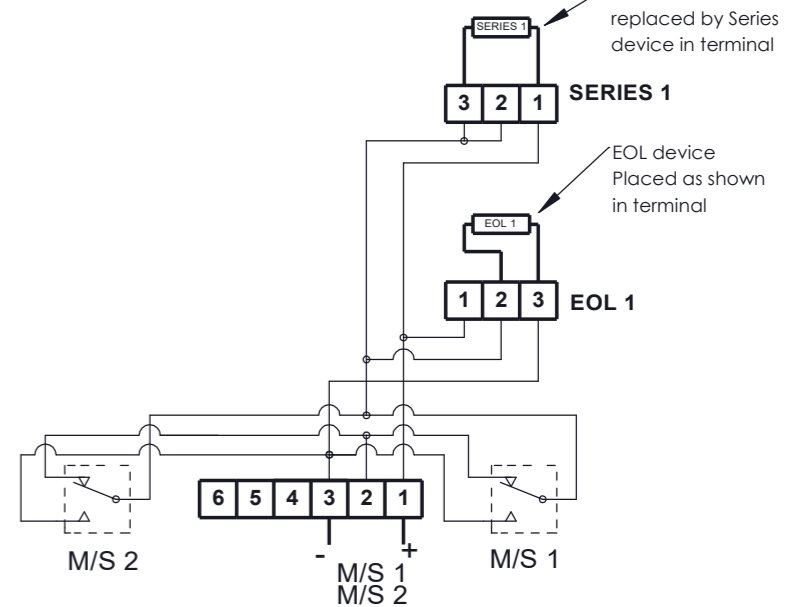
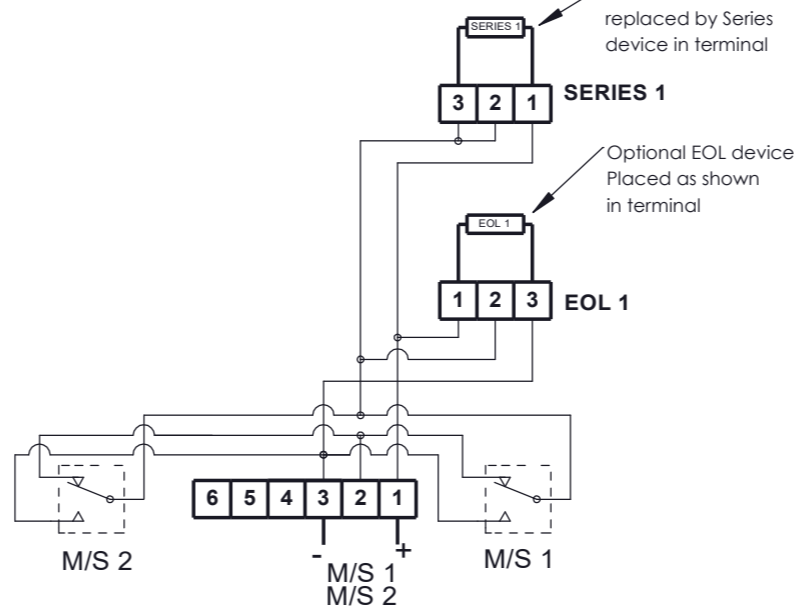
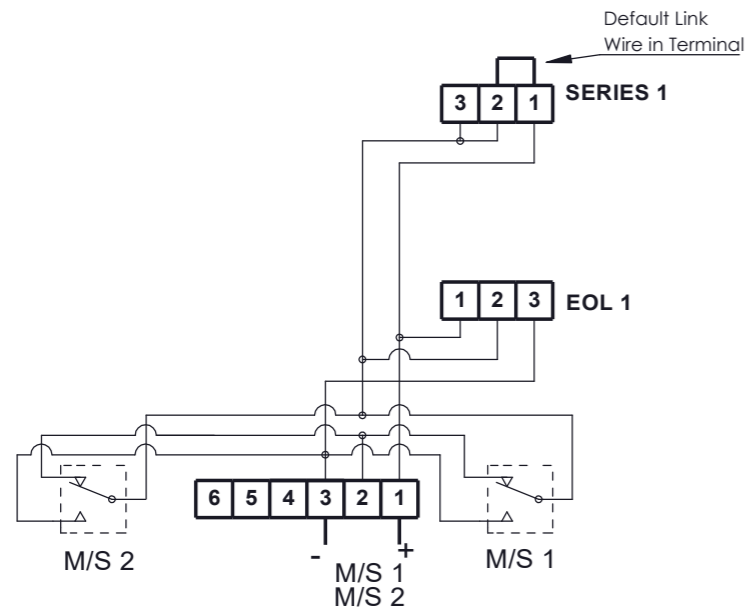
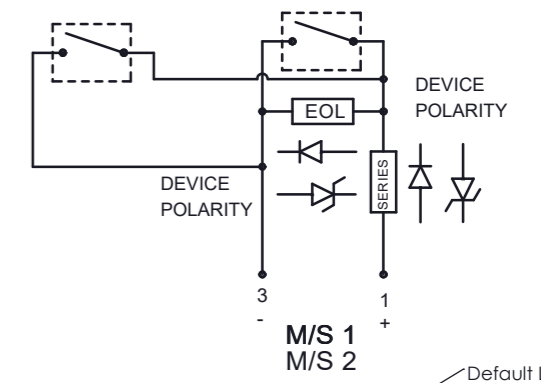
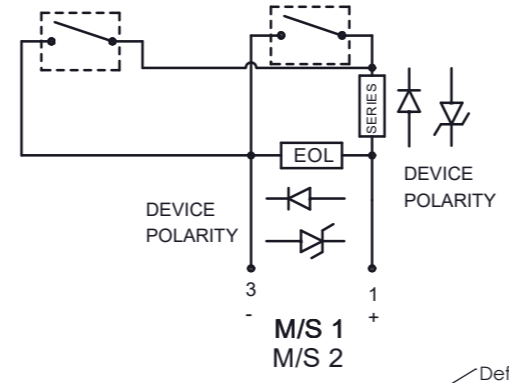
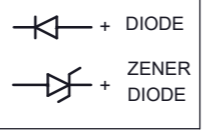
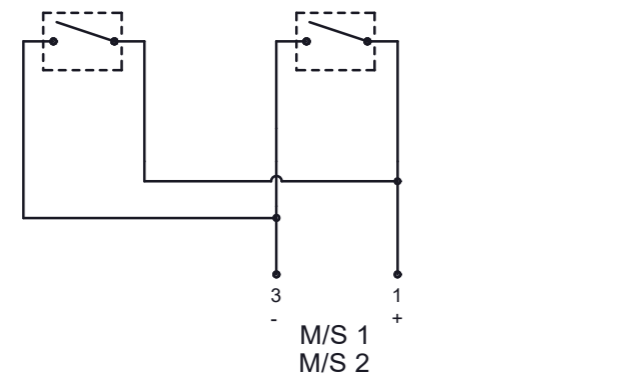
ISSUE	MOD No.	REASON - INITIAL - DATE
1		Introduction RNP 02-02-2024

Notes:
 1. Units have the option to remove the LED current-limiting resistor RL1 option 'L' using LED option 'C'. In all other cases shown RL1 is included.

DUAL SWITCH PARALLEL	CONFIG. P7-1	DUAL SWITCH, PARALLEL WITH EOL & SERIES DEVICES	CONFIG. P7-2	DUAL SWITCH, PARALLEL WITH EOL & ALT. SERIES DEVICES	CONFIG. P7-3
-----------------------------	---------------------	--	---------------------	---	---------------------

SWITCH TYPE [s] [D] TERMINALS [t] [P] PRODUCT OPTION [o] [R] LED INDICATOR [u] [N]	Dual PCB Version With EOL/Series No LED	SWITCH TYPE [s] [D] TERMINALS [t] [P] PRODUCT OPTION [o] [R] LED INDICATOR [u] [N] MODULES [e][s] [Exxx][Sxxx]	Dual PCB Version With EOL/Series No LED EOL + Series	SWITCH TYPE [s] [D] TERMINALS [t] [P] PRODUCT OPTION [o] [W] LED INDICATOR [u] [N] MODULES [e][s] [Exxx][Sxxx]	Dual PCB Version Alt. EOL Pos'n. No LED EOL + Series
---	---	--	---	--	---

Note :- Use when EOL and/or series devices are fitted during installation, or if no series devices are required.



Circuit as shown in Unoperated condition

Unoperated Condition (Glass Intact / Standby Condition)
 Terminals +(1) & -(3) M/S 1 and +(4) & -(6) M/S 2 open
 Terminals +(1) & (2) M/S 1 and +(4) & (5) M/S 2 closed

Operated Condition (Glass Broken / Button pushes in)
 Terminals +(1) & (2) M/S 1 and +(4) & (5) M/S 2 open
 Terminals +(1) & -(3) M/S 1 and +(4) & -(6) M/S 2 closed

Circuit as shown in Unoperated condition

Unoperated Condition (Glass Intact / Standby Condition)
 Terminals +(1) & -(3) M/S 1 and +(4) & -(6) M/S 2 open
 Terminals +(1) & (2) M/S 1 and +(4) & (5) M/S 2 closed

Operated Condition (Glass Broken / Button pushes in)
 Terminals +(1) & (2) M/S 1 and +(4) & (5) M/S 2 open
 Terminals +(1) & -(3) M/S 1 and +(4) & -(6) M/S 2 closed

Circuit as shown in Unoperated condition

Unoperated Condition (Glass Intact / Standby Condition)
 Terminals +(1) & -(3) M/S 1 and +(4) & -(6) M/S 2 open
 Terminals +(1) & (2) M/S 1 and +(4) & (5) M/S 2 closed

Operated Condition (Glass Broken / Button pushes in)
 Terminals +(1) & (2) M/S 1 and +(4) & (5) M/S 2 open
 Terminals +(1) & -(3) M/S 1 and +(4) & -(6) M/S 2 closed

DRAWING TO BS8888:2000
 GEOMETRIC TOLERANCES TO ISO1101:1983
 LINEAR DIMENSIONAL TOLS
 ANGULAR DIMENSIONAL TOLS

STANDARDS
GNEXCP7-IR and STEXCP8-IR units with PCB

DRAWN	DATE
R.N.POTTS	02-02-2024
CHECKED	DATE
B.ISARD	02-02-2024
APPROVED	DATE
R.N.POTTS	02-02-2024

SURFACE FINISH	WEIGHT (Kg)
MATERIAL	
ALTERNATIVE MATERIAL	

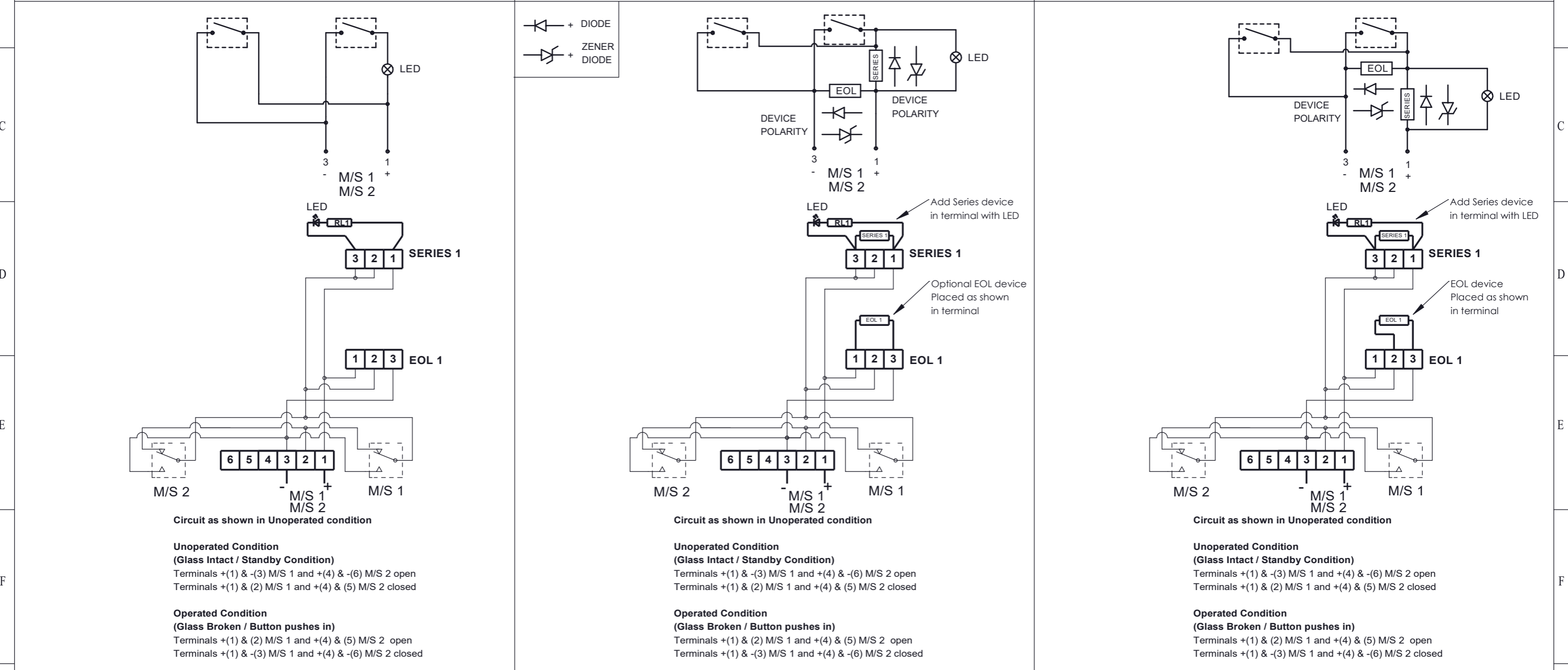
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 MANSELL ROAD
 ACTON
 LONDON W3 7QH
 WWW.E2S.COM

ALL DIMENSIONS IN MM IF IN DOUBT, ASK - DO NOT SCALE				A3
TITLE GNEXCP7-IR & STEXCP8-IR IS CALL POINT WIRING / CIRCUIT OPERATION DIAGRAM				
SCALE	SHEET	DRAWING NUMBER		
NTS	3 OF 4	D202-06-502		

DUAL SWITCH PARALLEL WITH LED	CONFIG. P8-1	DUAL SWITCH PARALLEL WITH LED, EOL & SERIES DEVICES	CONFIG. P8-2	DUAL SWITCH PARALLEL WITH LED, EOL & ALT. SERIES DEVICES	CONFIG. P8-3
SWITCH TYPE [s] [D] TERMINALS [t] [P] PRODUCT OPTION [o] [R] LED INDICATOR [u] [L]	Dual PCB Version With EOL/Series LED with RL1	SWITCH TYPE [s] [D] TERMINALS [t] [P] PRODUCT OPTION [o] [R] LED INDICATOR [u] [L] MODULES [e][s] [Exxxx][Sxxxx]	Dual PCB Version With EOL/Series LED with RL1 EOL + Series	SWITCH TYPE [s] [D] TERMINALS [t] [P] PRODUCT OPTION [o] [W] LED INDICATOR [u] [L] MODULES [e][s] [Exxxx][Sxxxx]	Dual PCB Version Alt. EOL Pos'n. LED with RL1 EOL + Series



EU Declaration of Conformity



Manufacturer: European Safety Systems Ltd.
Impress House, Mansell Road, Acton
London, W3 7QH
United Kingdom

Authorised Representative: E2S Warnsignaltechnik UG
Charlottenstrasse 45-51
72764 Reutlingen
Germany

Equipment Type: STExCP8-BG-I, STExCP8-BG-IR
STExCP8-PB-I, STExCP8-PM-I, STExCP8-PT-I,
STExCP8-PB-IR, STExCP8-PM-IR, STExCP8-PT-IR

Directive 2014/34/EU: Equipment and Protective Systems for use in Potentially Explosive Atmospheres (ATEX)

Notified Body for EU type Examination (Module B):	UL International Demko A/S Notified Body No.: 0539 Borupvang 5A, 2750 Ballerup, Denmark
EU-type Examination Certificate (Module B):	DEMKO 15ATEX1589X
Notified Body for Quality Assurance Notification / Conformity to EU-type based on quality assurance of the production process (Module D):	Sira Certification Service Notified Body No.: 2813 CSA Group Netherlands B.V, Utrechtseweg 310, 6812 AR, Arnhem, Netherlands
Quality Assurance Notification (Module D):	SIRA 05 ATEX M342
Provisions fulfilled by the equipment:	II 1G Ex ia IIC T6..T4 Ga
Standards applied:	EN 60079-0: 2018 EN 60079-11: 2012

Directive 2014/30/EU: Electromagnetic Compatibility Directive (EMC)

Standards applied:	EN 61000-6-1:2007 EN 61000-6-2:2005 EN 61000-6-3:2007 / A1:2011 / AC: 2012 EN 61000-6-4:2007 / A1: 2011
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Directive 2011/65/EU: Restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS)

The product and all the components contained within it are in accordance with the restriction of the use of hazardous substances in electrical and electronic equipment, including amendment by Directive 2015/863/EU.

Regulation (EC) 1907/2006: Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)

The product and all the components contained within it are free from substances of very high concern.

Other Standards and Regulations

EN 60529:1992+A2:2013 - Degrees of protection provided by enclosures (IP code) – enclosure rated IP66

On behalf of European Safety Systems Ltd., I declare that, on the date the equipment accompanied by this declaration is placed on the market, the equipment conforms with all technical and regulatory requirements of the above listed directives, regulations and standards.
This Declaration is issued under the sole responsibility of the manufacturer.

A handwritten signature in black ink, appearing to read 'Martin Streetz'.

Martin Streetz
Quality Assurance Manager

Document No.: DC-116_Issue_A
Date and Place of Issue: London, 29/02/2024



UKCA Declaration of Conformity



Manufacturer: European Safety Systems Ltd.
Impress House, Mansell Road, Acton
London, W3 7QH
United Kingdom

Equipment Type: STExCP8-BG-I, STExCP8-BG-IR
STExCP8-PB-I, STExCP8-PM-I, STExCP8-PT-I,
STExCP8-PB-IR, STExCP8-PM-IR, STExCP8-PT-IR

Directive UKSI 2016:1107 (as amended by UKSI 2019:696) – Schedule 3A, Part 1 : Product or Protective System Intended for use in Potentially Explosive Atmospheres (UKCA)

Notified Body for UK type Examination (Module B):	UL International (UK) Ltd Notified Body No.: 0843 Unit 1-3 Horizon Kingsland Business Park, Wade Road, Basingstoke, Hampshire RG24 8AH UK
UK-type Examination Certificate (Module B):	UL21UKEX2133X
Notified Body for Quality Assurance Notification / Conformity to EU-type based on quality assurance of the production process (Module D):	Sira Certification Service Notified Body No.: 0518 Rake Lane, Eccleston, Chester CH4 9JN, UK
Quality Assurance Notification (Module D):	CSAE 22UKQAN0046
Provisions fulfilled by the equipment:	II 1G Ex ia IIC T6...T4 Ga
Standards applied:	EN 60079-0:2018 EN 60079-11: 2012

Directive 2014/30/EU: Electromagnetic Compatibility Directive (EMC)

Standards applied:	EN 61000-6-1:2007 EN 61000-6-2:2005 EN 61000-6-3:2007 / A1:2011 / AC: 2012 EN 61000-6-4:2007 / A1: 2011
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Directive 2011/65/EU: Restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS)

The product and all the components contained within it are in accordance with the restriction of the use of hazardous substances in electrical and electronic equipment, including amendment by Directive 2015/863/EU.

Regulation (EC) 1907/2006: Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)

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Other Standards and Regulations

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On behalf of European Safety Systems Ltd., I declare that, on the date the equipment accompanied by this declaration is placed on the market, the equipment conforms with all technical and regulatory requirements of the above listed directives, regulations and standards.
This Declaration is issued under the sole responsibility of the manufacturer.

Martin Streetz
Quality Assurance Manager

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