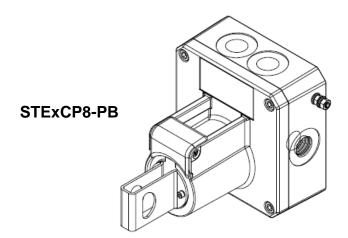
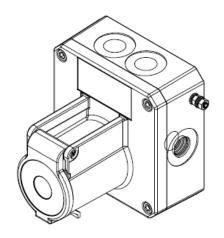


INSTRUCTION MANUAL (ATEX / IECEx / UKEX / DNV)

STEXCP8-PB-S, STEXCP8-PB-D, STEXCP8-PM-S, STEXCP8-PM-D, STEXCP8-PT-S & STEXCP8-PT-D CALL POINTS

For use in Flammable Gas Atmospheres and Marine Environments





STExCP8-PM

STExCP8-PT

1) Warnings

- USE COVER BOLTS CLASS A4-70
- DO NOT OPEN WHEN AN EXPLOSIVE ATMOSPHERE IS PRESENT
- POTENTIAL ELECTROSTATIC HAZARD
- ALL ENTRIES M20 X 1.5
- DO NOT OPEN WHEN ENERGIZED
- IF TEMPERATURE EXCEEDS 70°C AT ENTRY OR 80°C AT BRANCHING POINT USE SUITABLE RATED CABLE AND CABLE GLANDS

2) Rating & Marking Information

2.1 ATEX / IECEx / UKEX Certification

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

Model No.: STExCP8-PB-S (Single Switch)

STExCP8-PB-D (Dual Switch)

STExCP8-PB-S-L or -C (Single Switch

with LED

STExCP8-PM-S (Single Switch) STExCP8-PM-D (Dual Switch)

STExCP8-PM-S-L or -C (Single Switch

with LED

STExCP8-PT-S (Single Switch) STExCP8-PT-D (Dual Switch)

STExCP8-PT-S-L or -C (Single Switch

with LED

Input Voltage: DC Units 48Vdc Max

AC Units 250Vac max (units without

series, end-of-line or LED devices only)

STExCP8-PB-S;-PM-S;-PT-S Codes:

Ex db IIC T6 Gb Ta. -55°C to +70°C

STEXCP8-PT-S-L or -C; STEXCP8-PM-S-L or -C;

STExCP8-PB-S-L or -C Codes:

Ex db IIC T5 Gb Ta. -55 to +70°C Ex db IIC T6 Gb Ta. -55 to +65°C

STExCP8- PB-D ; -PM-D ; -PT-D Codes:

Ex db IIC T5 Gb Ta. -55°C to +70°C Ex db IIC T6 Gb Ta. -55°C to +60°C

STExCP8-PT-D-L or -C; STExCP8-PM-D-L or -C; STExCP8-PB-D-L or -C Codes:

Ex db IIC T4 Gb Ta. -55 to +70°C Ex db IIC T5 Gb Ta. -55 to +65°C Ex db IIC T6 Gb Ta. -55 to +50°C

Certificate No. DEMKO 15 ATEX 1589X

IECEx ULD 15.0018X UL21UKEX2133X

ATEX Marking
Equipment Group and

Category:

CE Marking Notified Body No.

_

UKCA Marking Notified Body No. UK ,

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

Area Classification Gas:

Zone 1	Explosive gas air mixture likely to occur in normal operation.
Zone 2	Explosive gas atmosphere not likely to occur in normal operation but may be present for short periods.

Gas Groupings:

Group IIA	Propane
Group IIB	Ethylene
Group IIC	Hydrogen and Acetylene

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Temperature Classification:

T1	450°C
T2	300°C
T3	200°C
T4	135°C
T5	100°C (STEXCP8-P*-D-L or C only up to Tamb 65°C)
T6	85°C (STEXCP8-P*-D only up to Tamb 60°C) (STEXCP8-P*-S-L or C only up to Tamb 65°C) (STEXCP8-P*-D-L or C only up to Tamb 50°C)

IP66/67 to EN/IEC60529 and IP6X to IP Rating:

EN/IEC60079-0, EN/IEC60079-31

Equipment Category: 2G **Equipment Protection Level:** Gb

Ambient Temperature Range:

-55°C to +70°C Gas Groups IIA, IIB and IIC

2.2 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)

Class A (all locations except installation on Vibration:

machinery such as combustion engines, compressors, pumps, including piping on

such machinery)

EMC: Class A & B (all locations including open

decks and bridge)

Class A, B & C - IP56 (all locations except **Enclosure:**

submerged applications and bilges)

Type Approval Standards

The beacon carries an EC Type Examination Certificate and IECEx Certificate of Conformity, and have been certified to comply with the following standards:

EN60079-0:2012+A11:2013 / IEC60079-0:2011 (Ed 6): Explosive Atmospheres - Equipment. General requirements

EN60079-1:2014 / IEC60079-1:2014 (Ed 7):

Explosive Atmospheres - Equipment protection by flameproof enclosures "d"

Installation Requirements

The beacon 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 beacon 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.

The equipment must not be installed with any obstruction to the flanged flameproof joint any closer than permitted as per EN/IEC60079-14, table 13.

5) Special Conditions of Use

On completion of the installation the flameproof joint surfaces should be inspected to ensure that they are clean and that they have not been damaged during installation. Flameproof joints are not permitted to be repaired.

When fitting the flameproof cover ensure the cover is sitting flat and correctly positioned on the base. Insert the M6 x 40 cover bolts and fully tighten down (tightening torque 8.8Nm), ensuring no gap is visible between the cover and base of the enclosure.

The metallic enclosure has a non-conductive coating. These 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.

Additionally, cleaning of the equipment should be done only with a damp cloth.

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.

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.

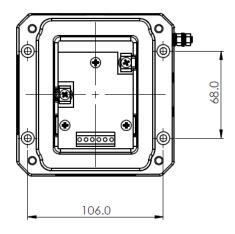


Fig. 1 View of base unit showing fixing centres (in mm).

Access to the Flameproof 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 Ex d chamber, remove the four off M6 x 25 hexagon socket head screws and withdraw the flameproof cover taking extreme care not to damage the flameproof joints in the process. M6 cover screws are Class A4-70 stainless steel and only screws of this category can be used for the enclosure.

On completion of the installation, the flameproof joints should be inspected to ensure that they are clean and that they have not been damaged during installation.

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.

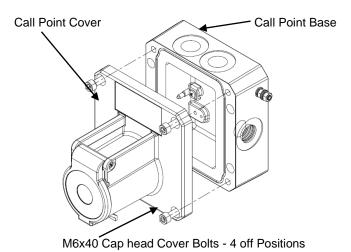


Fig. 2 Accessing the Explosion proof Enclosure.

Check that the earth bonding wire between the two castings is secure and the 'O' ring seal is in place. When replacing the flameproof cover casting ensure that it is square with the flameproof chamber casting before inserting. Carefully place the cover on the base. Only after the cover is fully in place should the four M6 Stainless Steel A4-70 cover bolts and their spring washer be tightened down. Never use the cover bolts to force the cover into position.

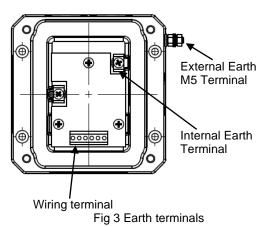
Earthing

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.

When using the internal earth terminal ensure that the stainless steel M4 flat washer is between the incoming earth wire and the enclosure.

External earthing connections should be made to the M5 earth stud, using a ring crimp terminal to secure the earth conductor to the earth stud. The external earth conductor should be at least 4mm² in size.



9) Power Supply Selection

Electrical Ratings

250Vac max. / 5.0A max 48Vdc max. / 1.0A max 24Vdc max / 3.0A max

A supply voltage variation of +/-10% outside the voltage range is permissible.

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

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

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 Single Switch models STExCP8-PT-S / STExCP8-PM-S / STExCP8-PB-S:

Max. ambient temperature °C	55	60	65	70
req. Cable / Cable Gland rating: °C	80	85	90	95

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For Dual Switch models STExCP8-PT-D / STExCP8-PM-D / STEVCP8-PR-D

GTEXOLO-LE-D.						
Max. ambient	45	50	55	60	65	70
temperature °C						
req. Cable /	80	85	90	95	100	105
Cable Gland						
rating: °C						

The cable gland entries have an M20 x 1.5 entry thread. Only suitably rated and ATEX / IECEx / UKEX certified cable glands which must be suitable for the type of cable being used and also meet the requirements of the current Ex 'd' flameproof installation standards EN 60079-14 / IEC60079-14.

When only one cable entry is used the other entries must be closed with suitably rated and ATEX / IECEx / UKEX certified blanking plugs.

If a high IP (Ingress Protection) rating is required then a suitable sealing washer must be fitted under the cable glands or blanking plugs.

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

M20 to 1/2" NPT M20 to 3/4" 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 certified adapters.

11) 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 13. 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 13.

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 wav.

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.

12) Testing unit operation

The push button types -PB -PT and -PM are all operated by pressing in the main plunger down activating the switch.

The -PB plunger needs to be firstly twisted by 90 degrees clockwise to position shown and then pressed in.

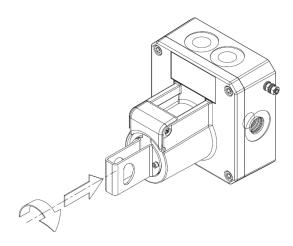


Fig 6 -PB Version Twist and Push Action

The -PM and -PT need to have the protective flip lid opened first and then the main plunger pressed in.

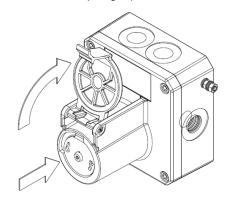
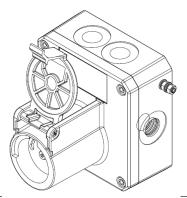


Fig 7 -PT & -PM Versions Push Action

On -PM versions the operation is momentary and as such the plunger will reset automatically once the pressure on the plunger is released.



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On -PB the plunger will remain in the down position until the unit is reset. This is done by pulling the plunger back up to the start position shown in fig 6. Then the plunger is twisted back 90 degrees anti-clockwise to the stop.

On -PT the plunger will remain in the down position until the unit is reset. This is done by lifting the plunger back up using the tool reset key provided.

13) End-of-Line and Series Devices

All models can be fitted with series resistors, end-of-line monitoring resistors, monitoring diodes and zener diodes if supplied with direct current up to 48Vdc.

Min. resistor values and current limitations must be observed depending on supply voltage and type of components fitted. If a combination of resistors / diodes / zener diodes 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 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).

The following table 1 shows limitations for all possible variations:

	Supply volta	age 24Vdc	Supply voltage 48Vdc		
Type of	value	Max.	value	Max.	
component fitted		current		current	
End-of-Line Resistor *See note	min. 470R / 2W or min. 2k2 / 0.5W	3.0 A	min. 2k2 / 2W or min. 8k2 / 0.5W	1.0 A	
End-of-Line Diode Type 1N5401	2W	59.13 mA	2W	25.26 mA	
Series Resistor *See note	min. 470R / 2W or min. 2k2 / 0.5W	3.0 A	min. 2k2 / 2W or min. 8k2 / 0.5W	1.0 A	
Series Diode Type 1N5401	2W	59.13 mA	2W	25.26 mA	
	3.3V	230 mA	3.3V	230 mA	
	4.7V	162 mA	4.7V	162 mA	
Carias Zanan	5.1V	149 mA	5.1V	149 mA	
Series Zener	5.6V	136 mA	5.6V	136 mA	
Diode	6.2V	122 mA	6.2V	122 mA	
Type 1N5333B	6.8V	112 mA	6.8V	112 mA	
	10V	76 mA	10V	76 mA	
	12V	63 mA	12V	63 mA	

* note :- EOL and series resistor values are listed as the minimum resistor value allowable at the specified minimum wattage.

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 1Microswitch 2 = M/S 2

The unit can be wired with a maximum of 4 module devices – see wiring diagrams.

Note:- The maximum voltage stated must not be exceeded, as the internal resistor modules are rated as compliant with Ex d according to the units voltage

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

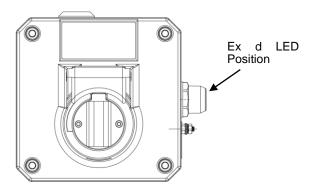
STExCP8-P*-S-L or STExCP8- P*-D-L to include an LED and power limiting resistor

or.

STEXCP8-P*-S-C or STEXCP8-P*-D-C with includes the LED but where the units current must be limited to 20mA. As the LED has no power limiting resistor.

The optional Ex d LED monitoring module is fitted in the M20 side entry as shown, when the main M20 entries are at the bottom of unit.

The wiring is shown as per wiring diagrams D202-06-211 or D202-06-212 see the various LED configuration options.



14) Maintenance, Overhaul & Repair

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

EN60079-19 Explosive atmospheres - Equipment repair, overhaul and reclamation

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

To avoid a possible ELECTROSTACTIC CHARGE the unit must only be cleaned with a damp cloth.

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

European Safety Systems Ltd. Impress House, Mansell Road, Acton, London W3 7QH Document No. D204-00-201-IS Issue 8 10-09-2023 Sheet 5 of 6

15) SIL 2 Reliability Data

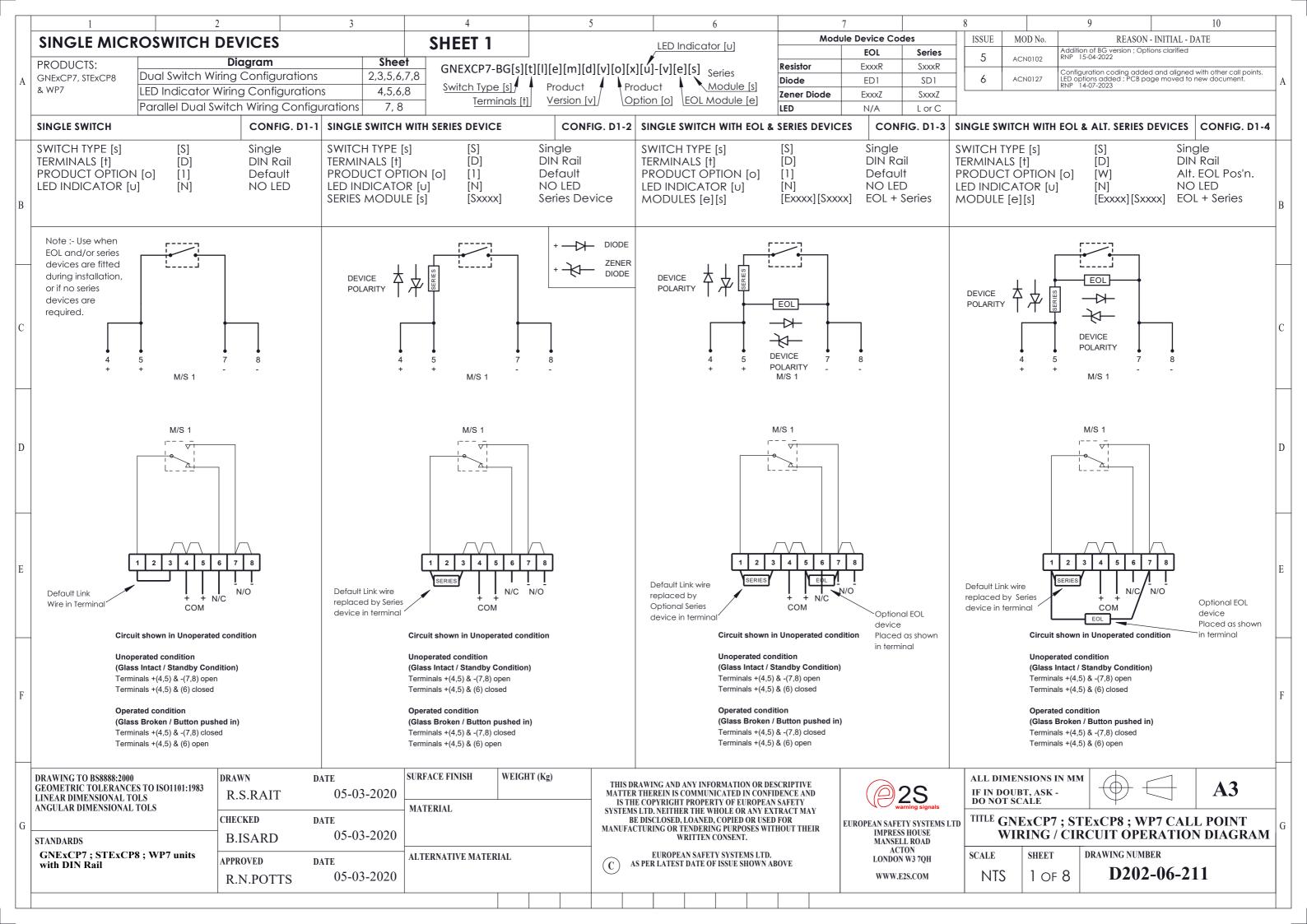
Reliability and Functional safety IEC/EN61508 which has been assessed and is considered suitable for use in low demand safety function:

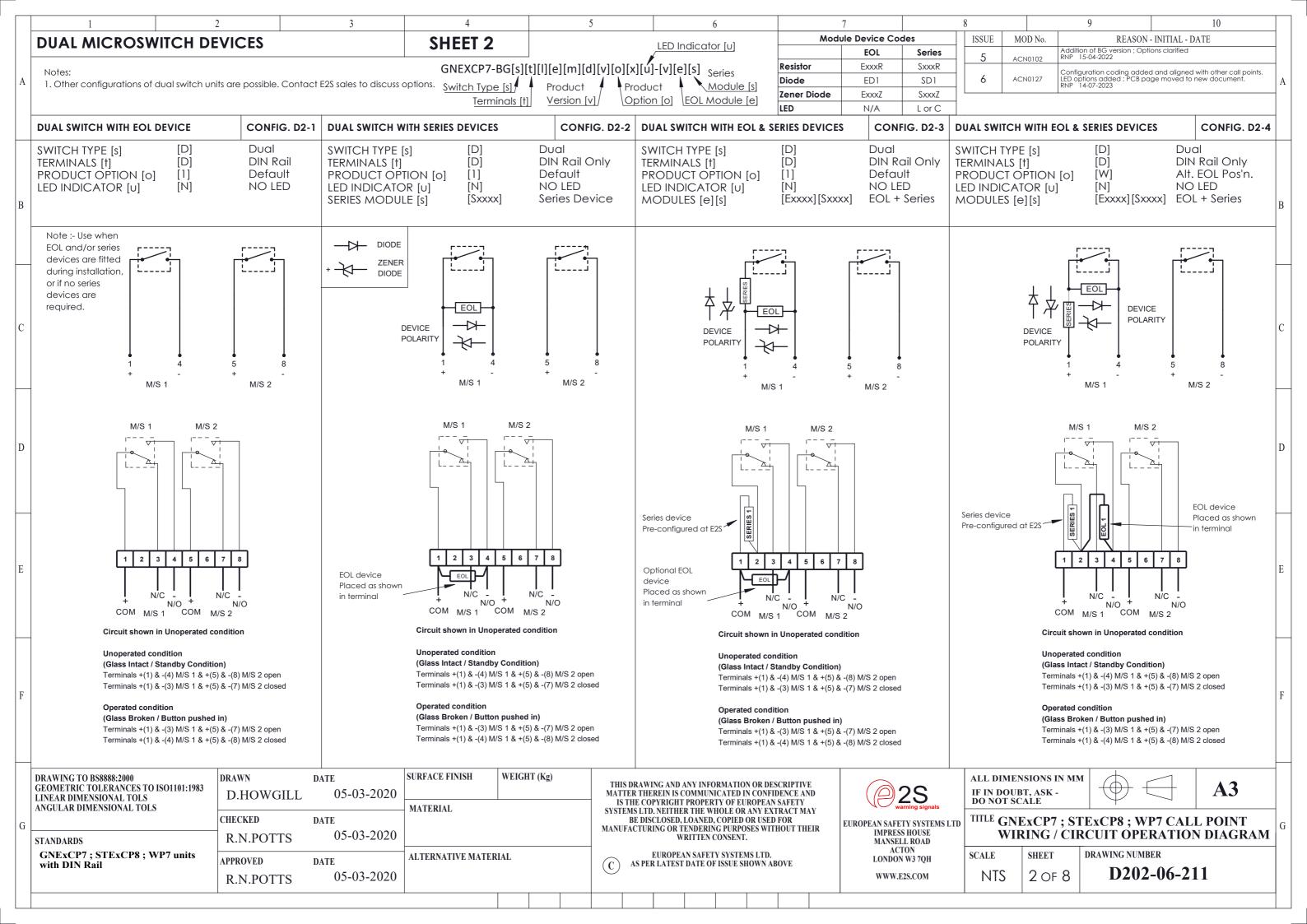
- Random Hardware Failures and Systematic Failures (route 2H)
- As an unvoted item (i.e. hardware fault tolerance of 0) at SIL 2

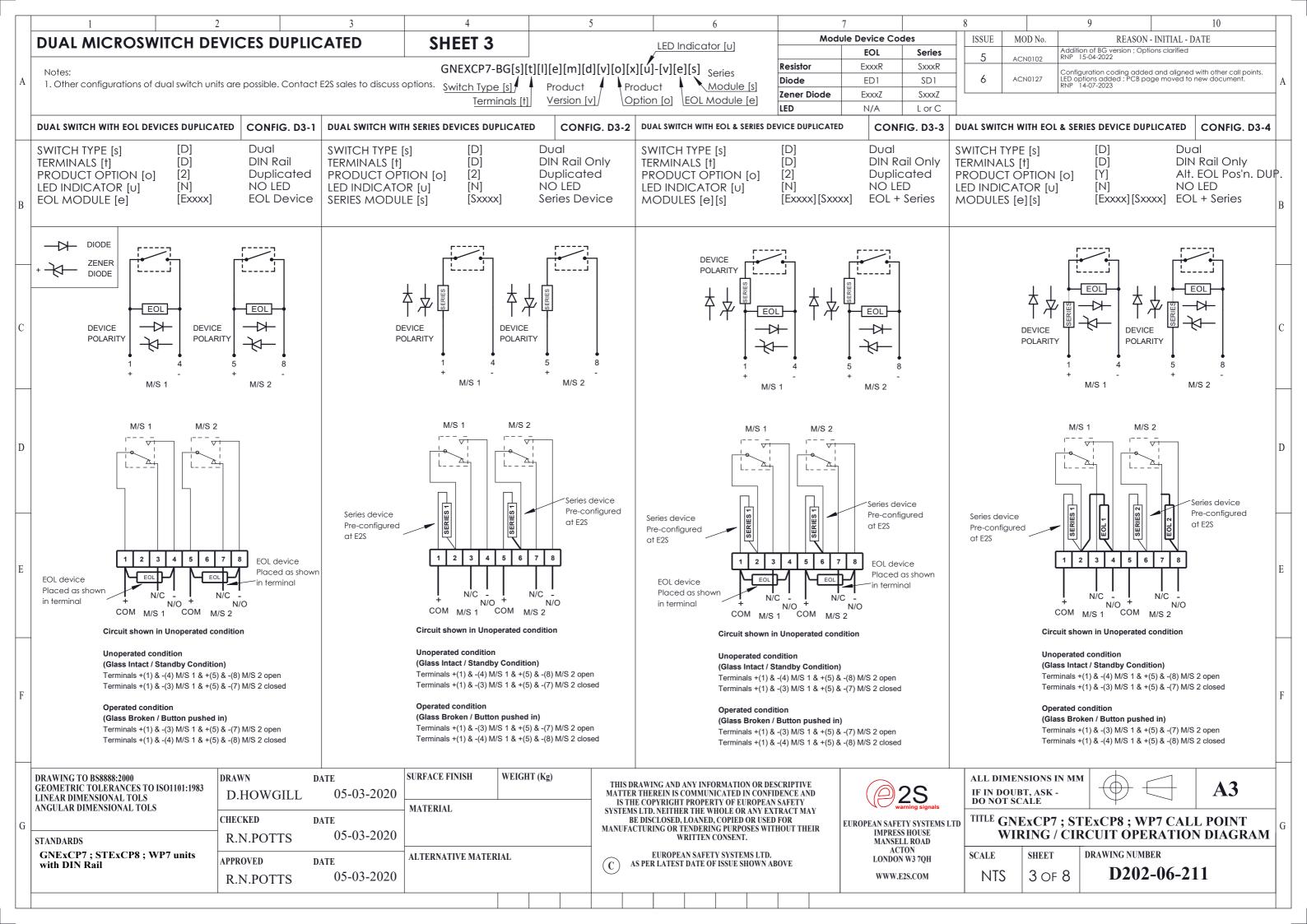
The product was assessed against failure modes:

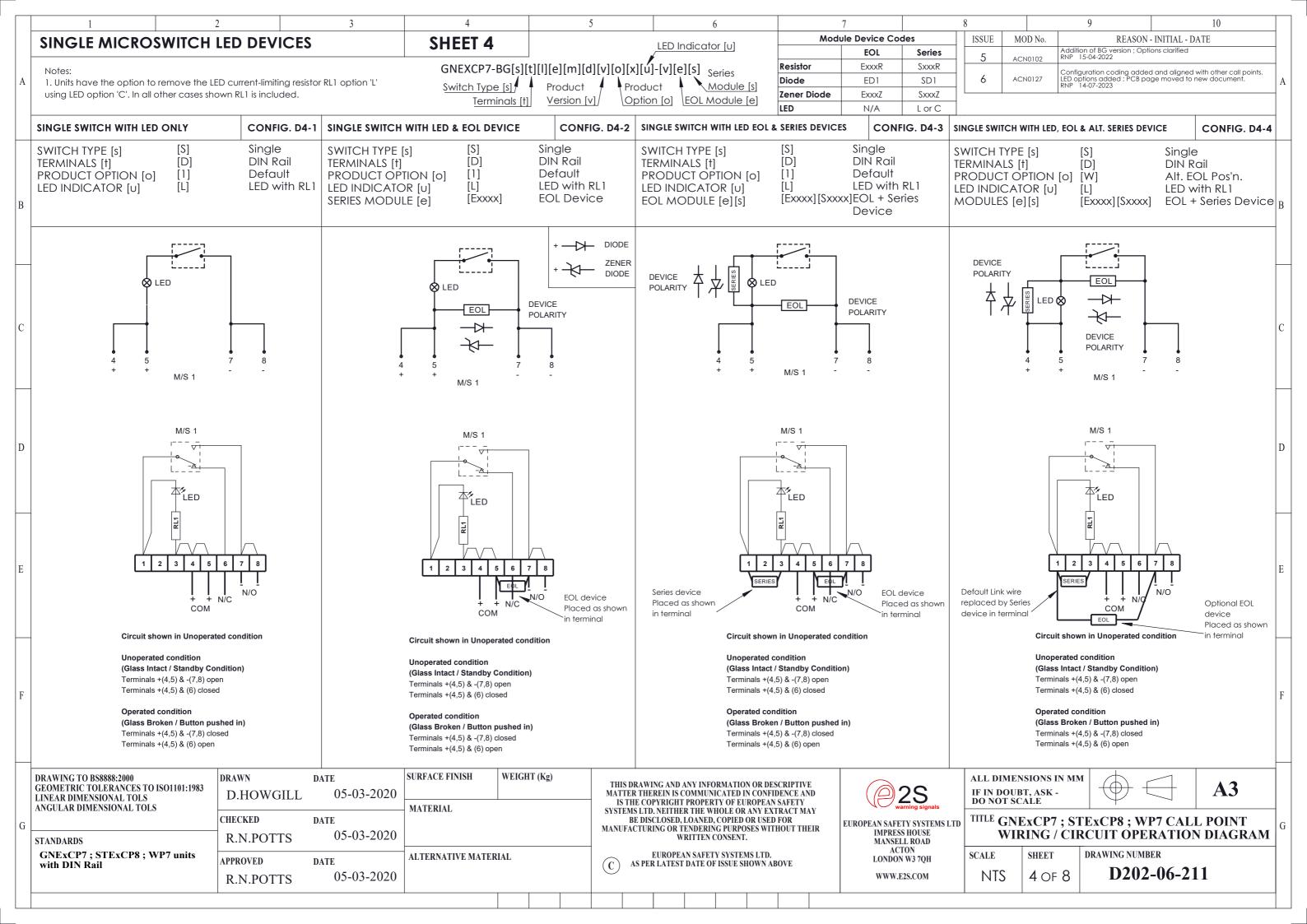
- Failure to close a contact when the call point is struck with specified force
- Failure to open a contact when the call point is struck with specified force
- Spurious output despite no input

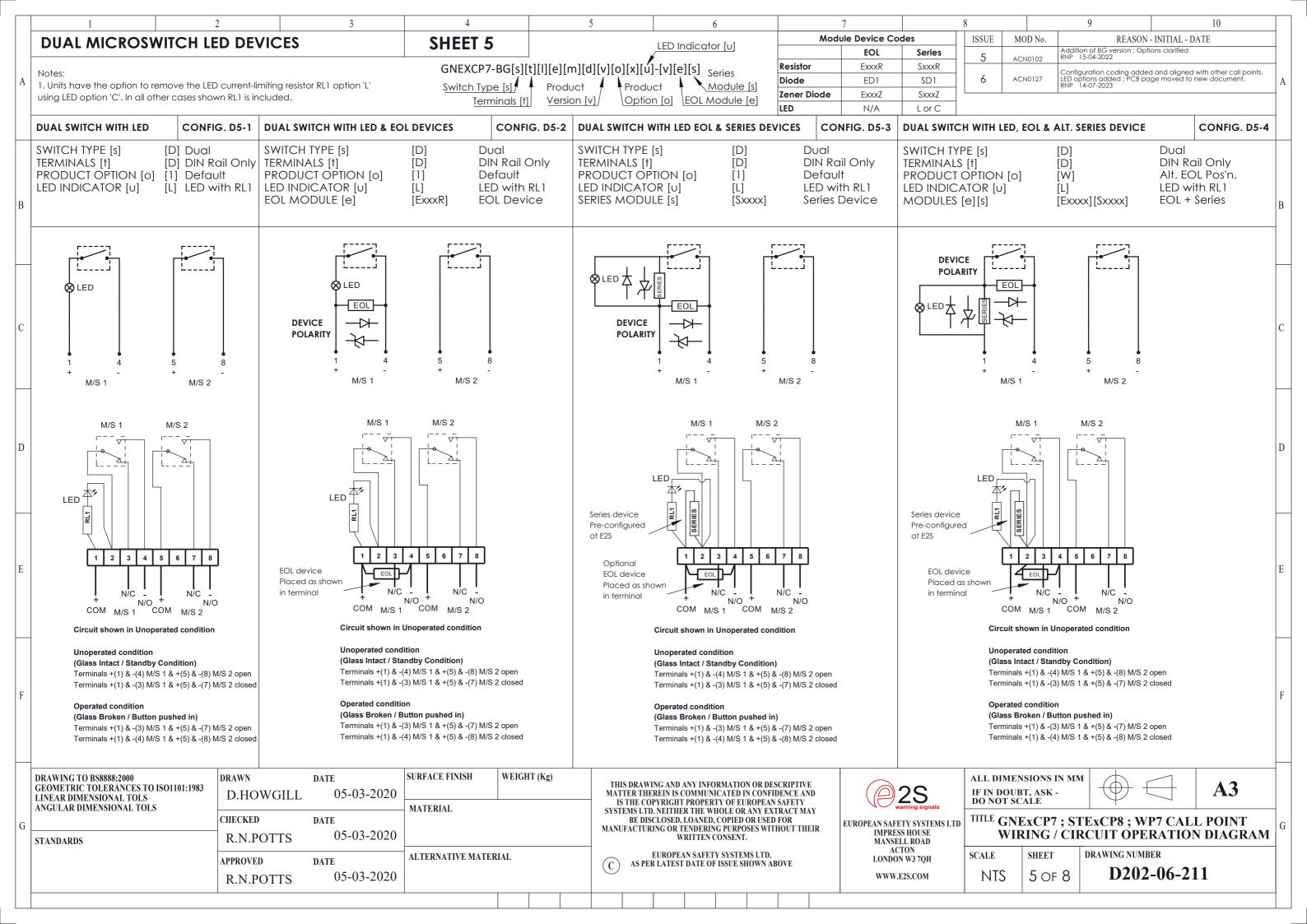
Integrity in respect of failure to close	SIL 2
System Type	Α
Hardware Fault Tolerance	0
Safe Failure Fraction (credible claim)	75%
PFD (hazardous failure)	2.3 x 10 ⁻³
Proof Test Interval	Up to 1 year

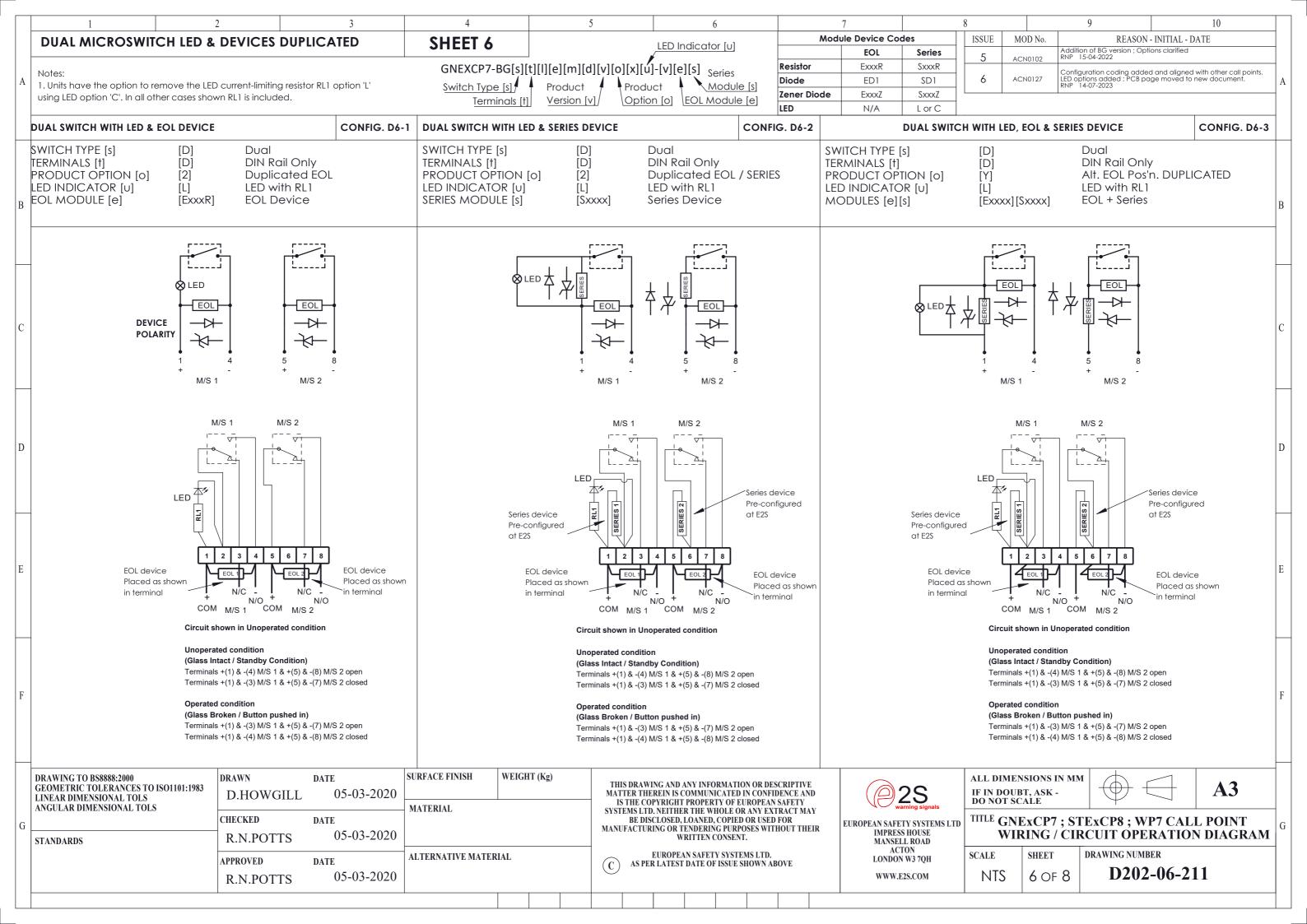


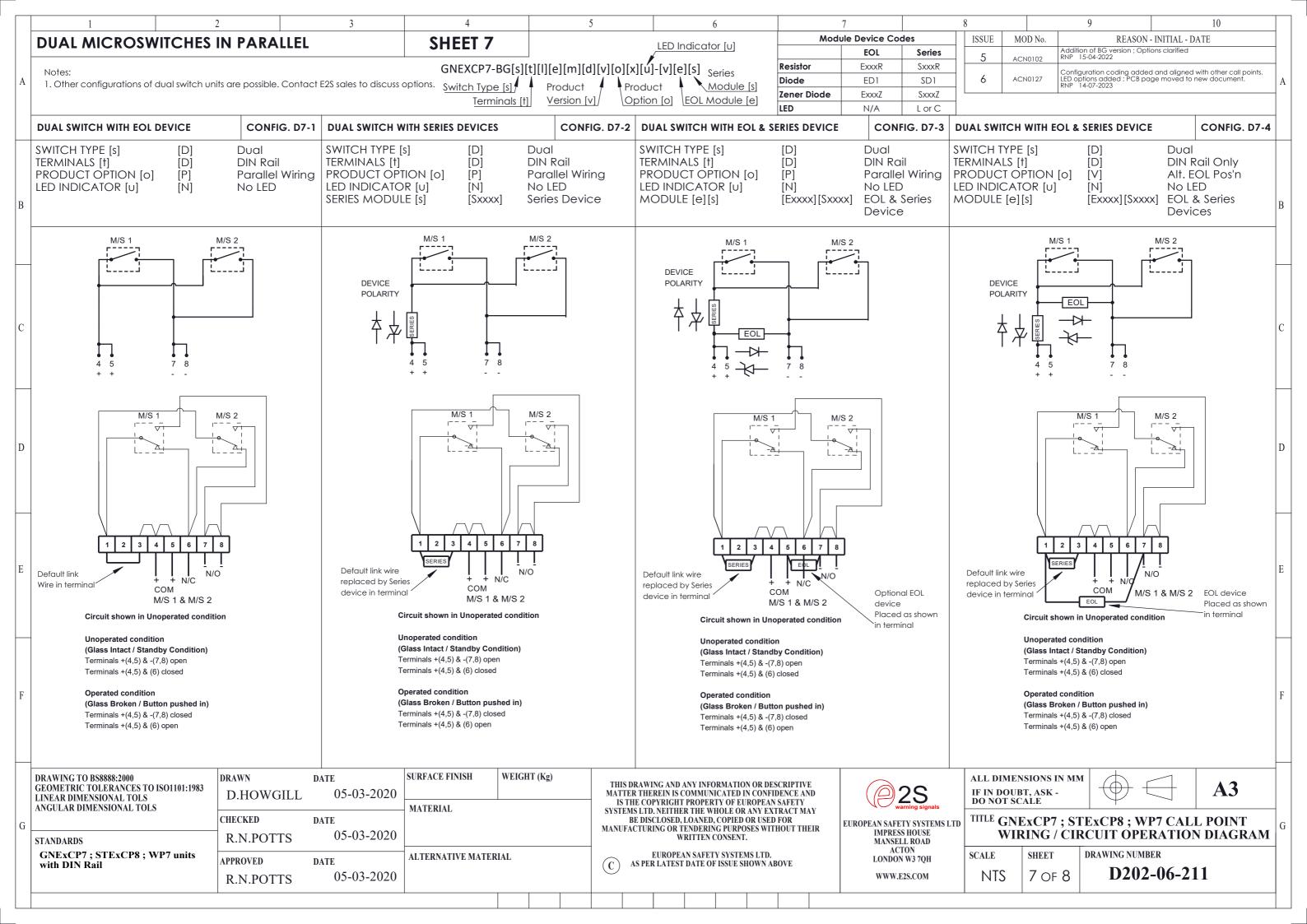


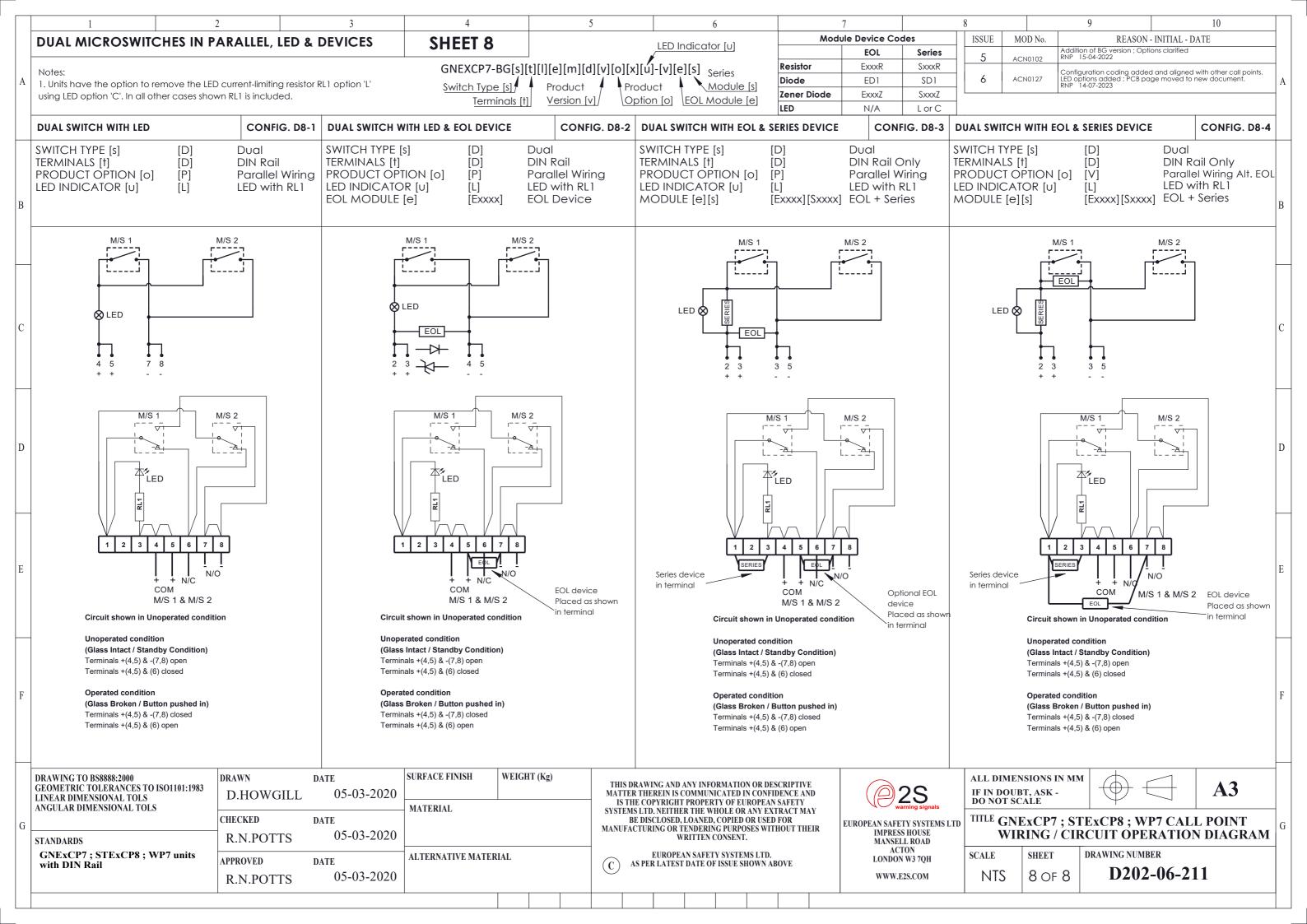


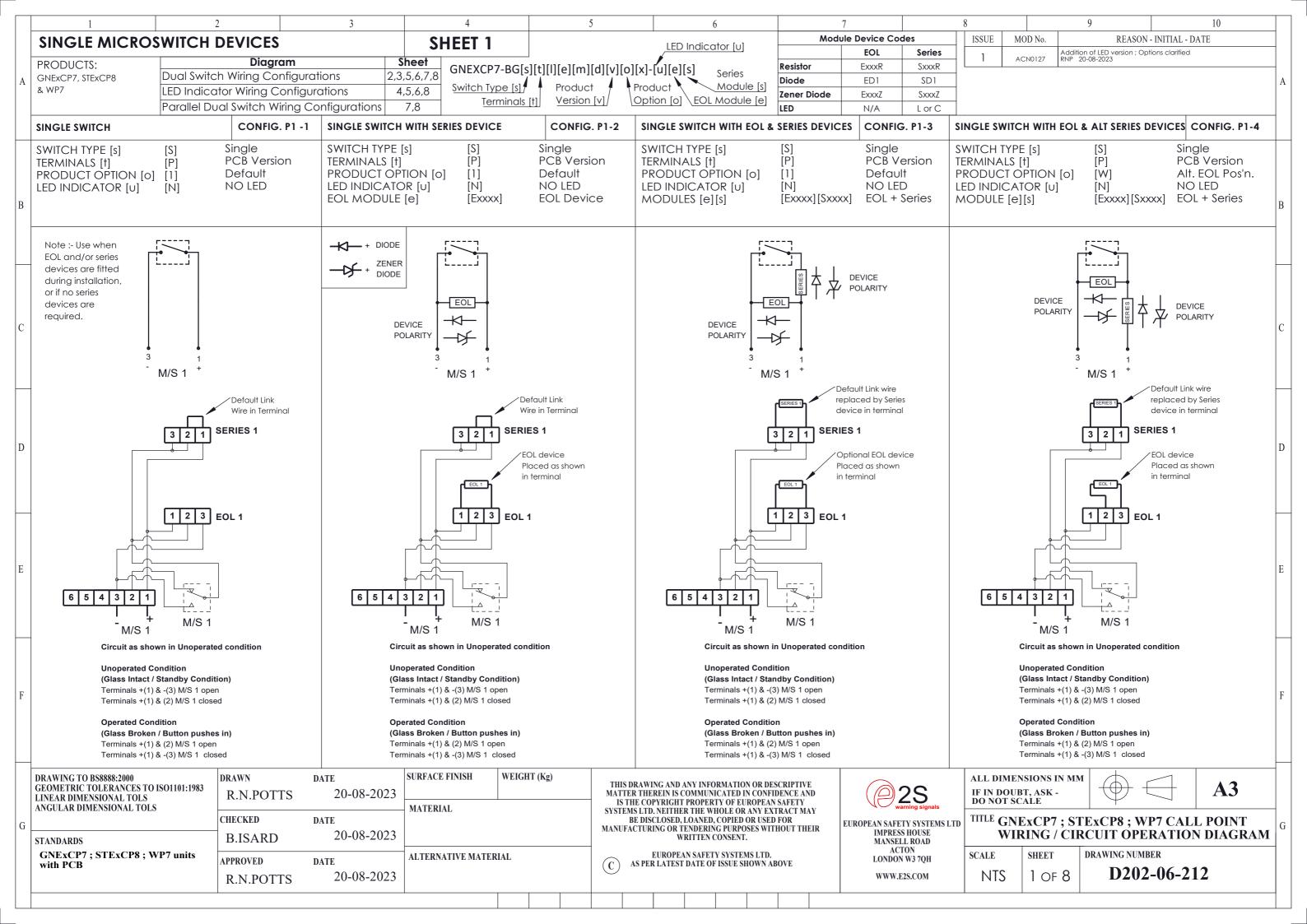


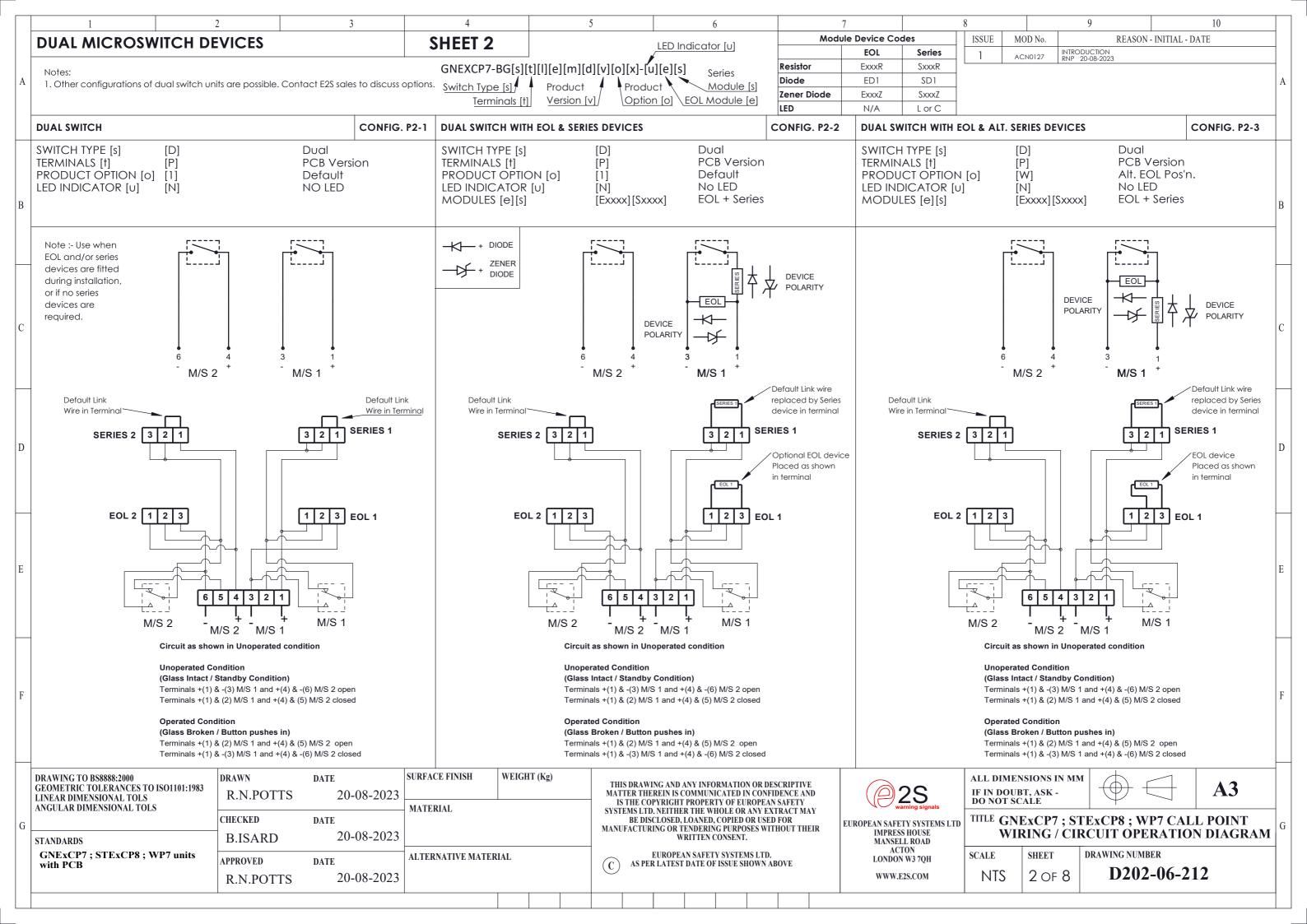


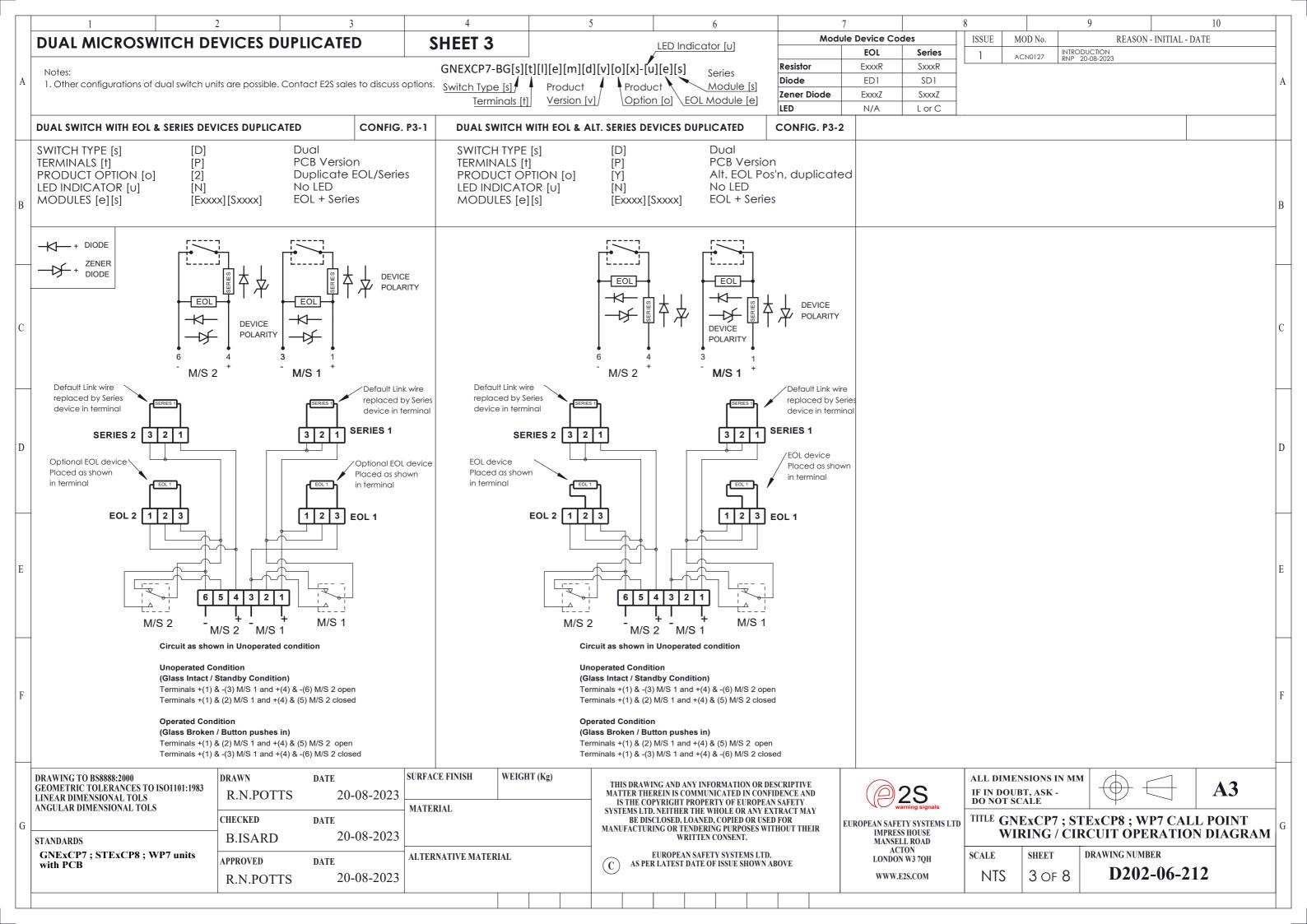


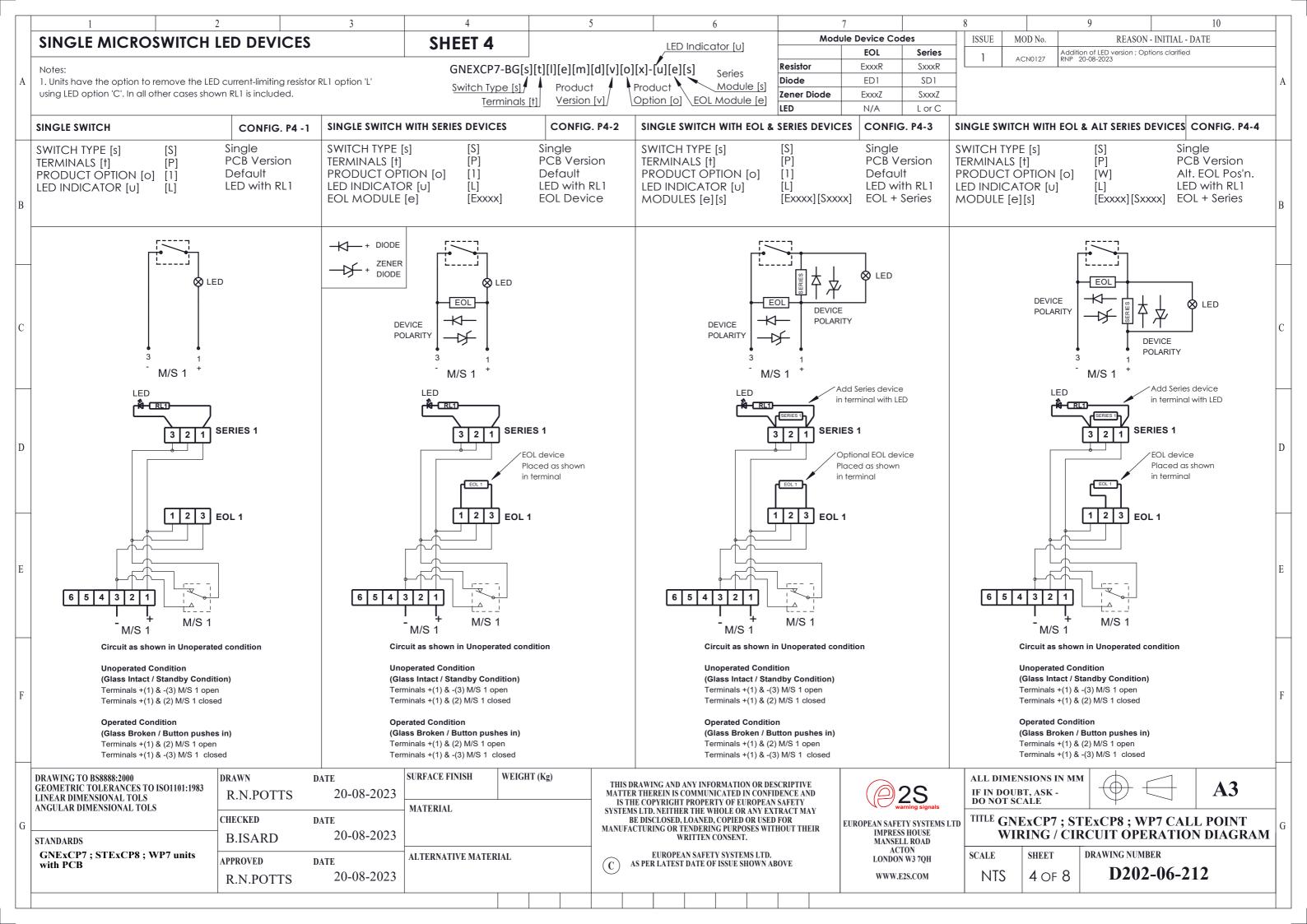


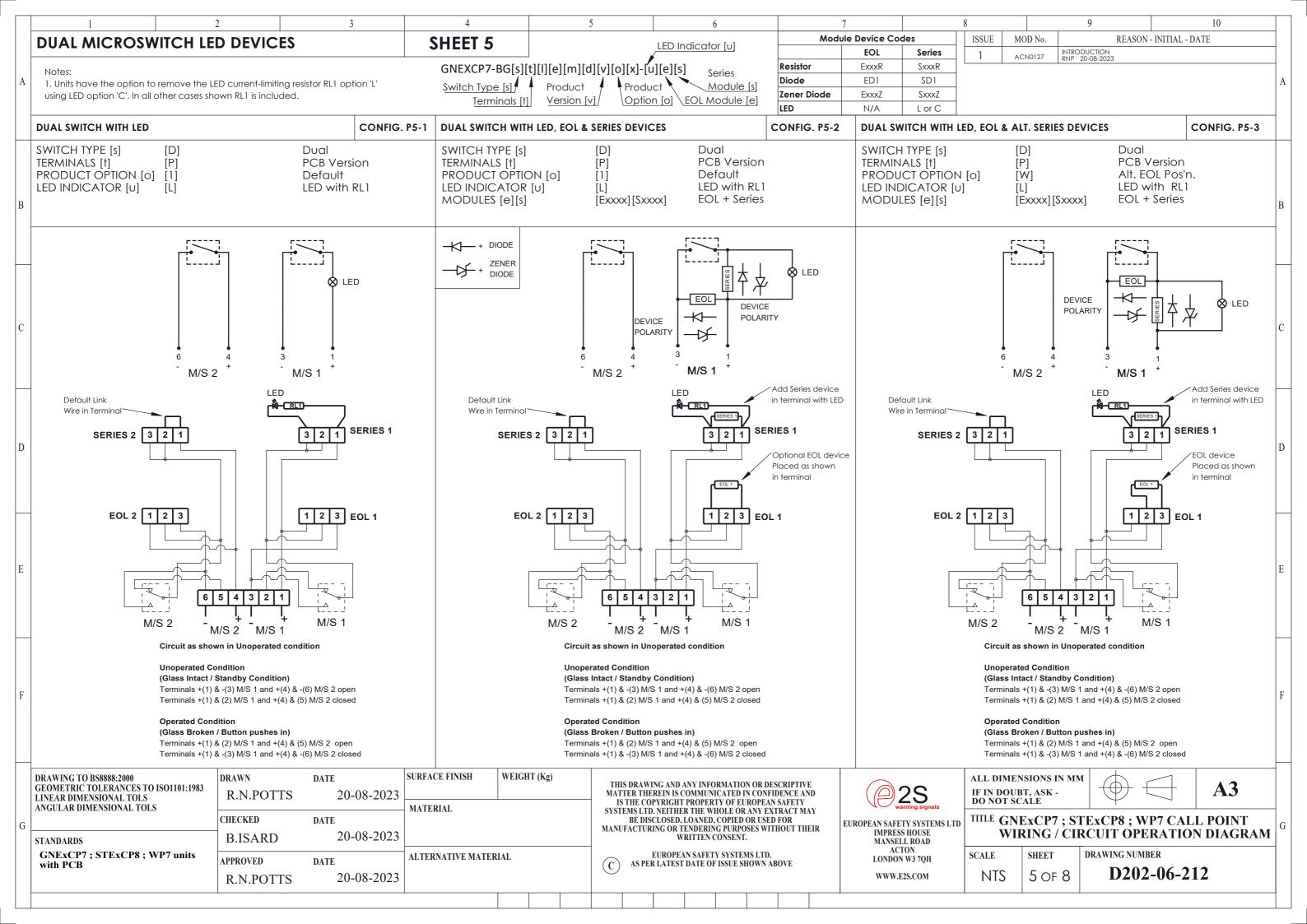


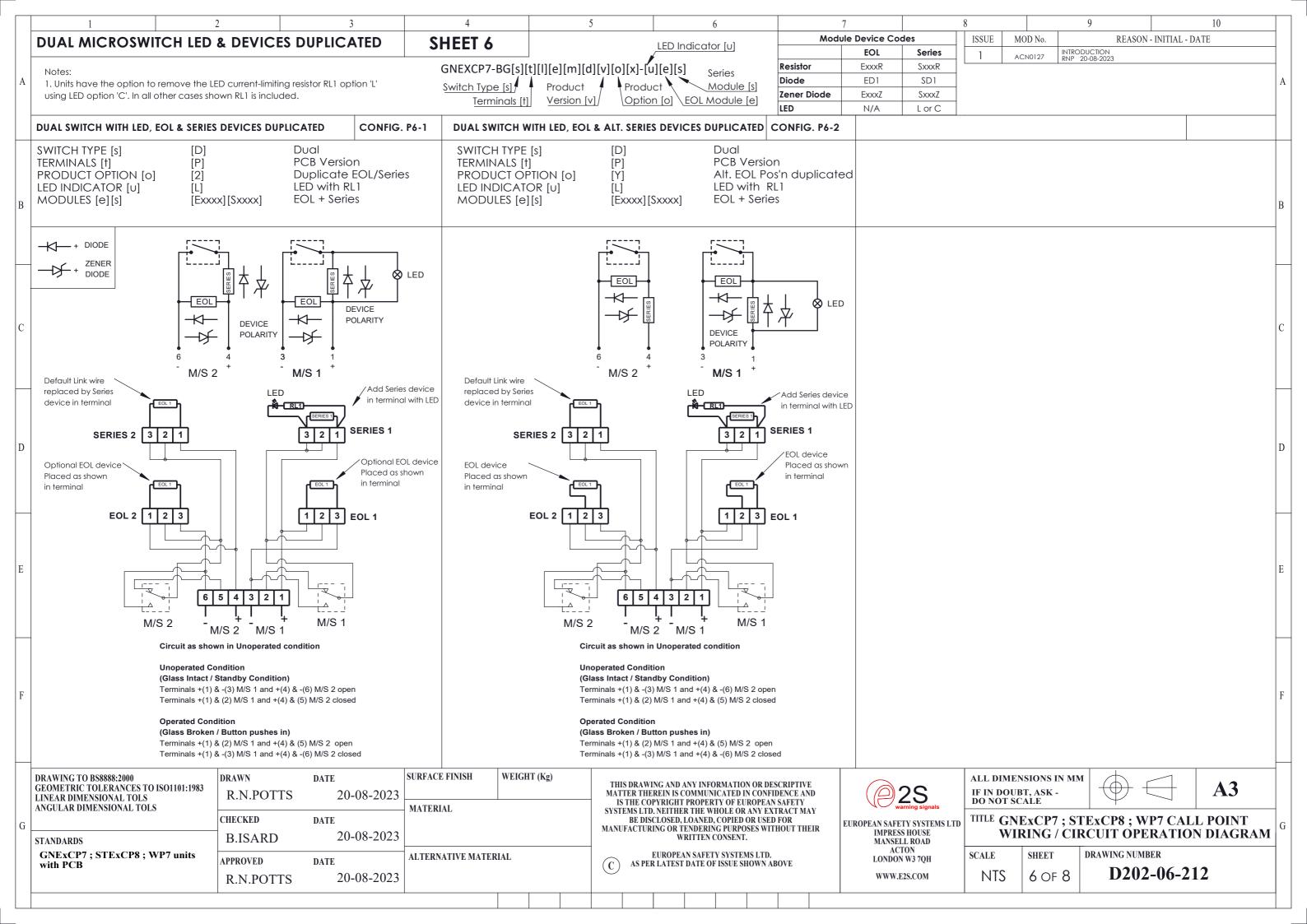


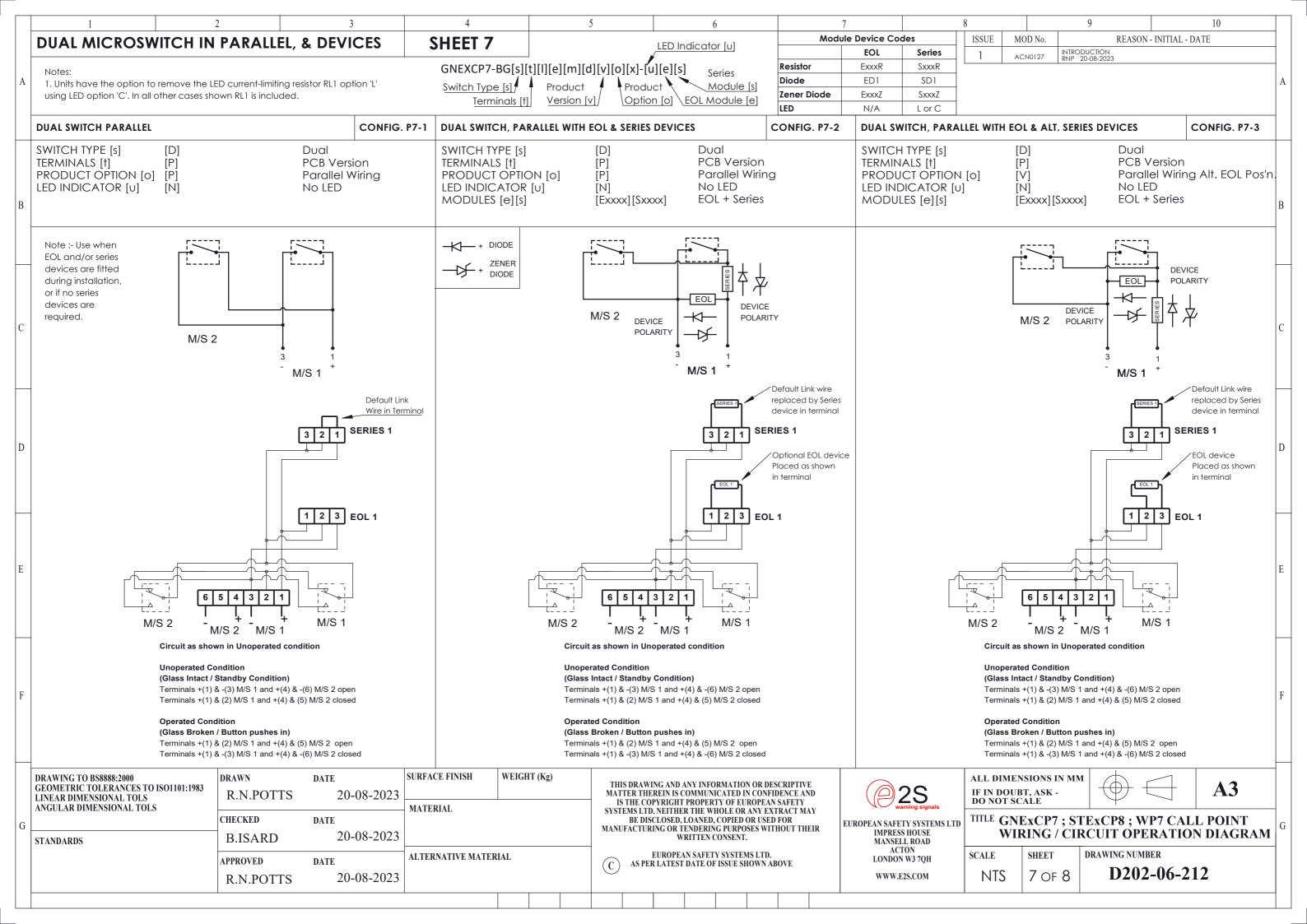


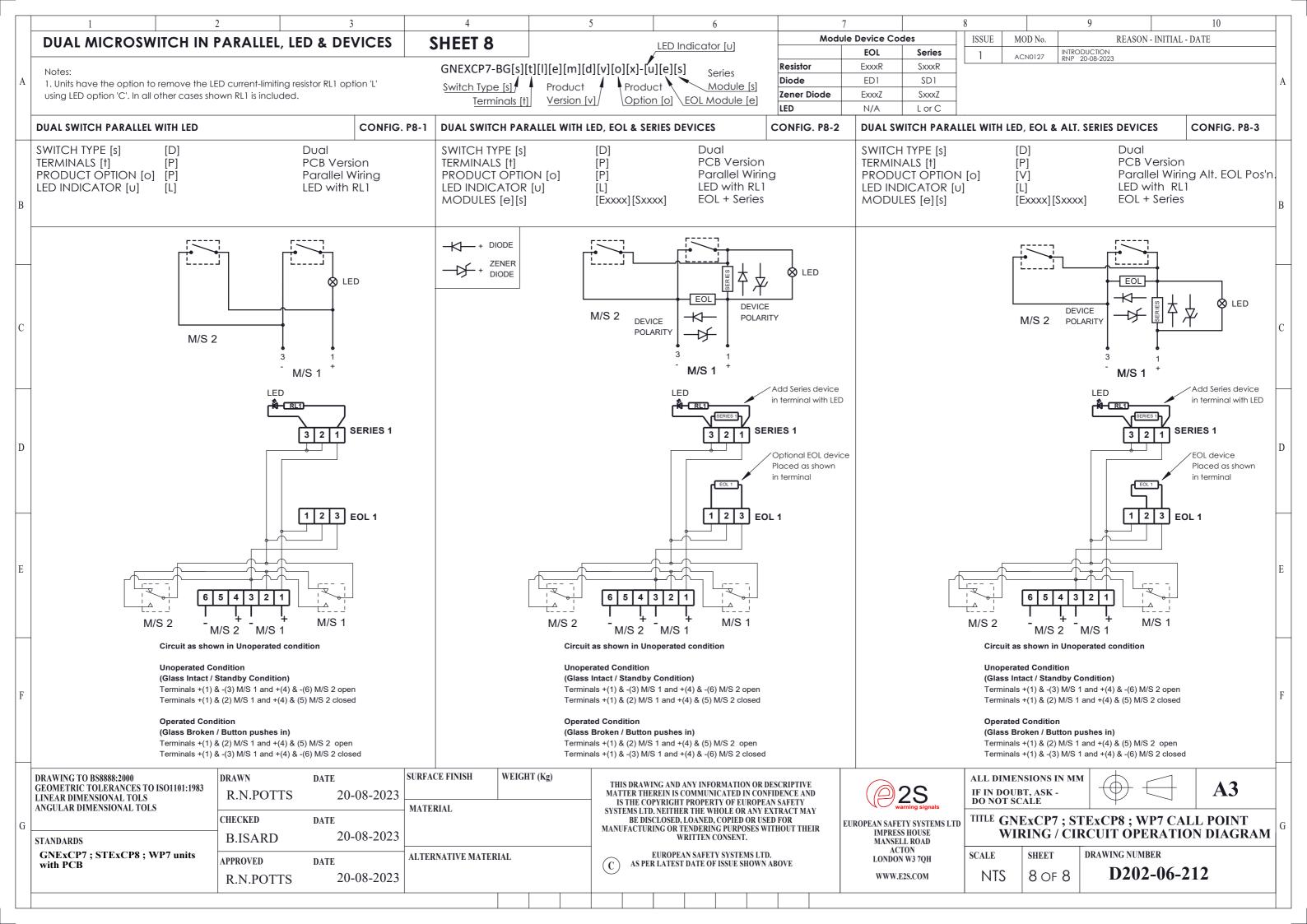












EU Declaration of Conformity



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-S, STExCP8-BG-D, STExCP8-BG-S-L or C, STExCP8-BG-D-L or C

STExCP8-PB-S, STExCP8-PM-S, STExCP8-PT-S,

STEXCP8-PB-S-L or C, STEXCP8-PM-S-L or C, STEXCP8-PT-S-L or C,

STExCP8-PB-D, STExCP8-PM-D, STExCP8-PT-D

STExCP8-PB-D-L or C, STExCP8-PM-D-L or C, STExCP8-PT-D-L or C

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 $\,$

pased on

Sira Certification Service Notified Body No.: 2813

quality assurance of the production process (Module D): CSA Group Netherlands B.V, Utrechtseweg 310, 6812 AR, Arnhem, Netherlands

Quality Assurance Notification (Module D):SIRA 05 ATEX M342Provisions fulfilled by the equipment:II 2G Ex db IIC T4 Gb

II 2G Ex db IIC T5 Gb II 2G Ex db IIC T6 Gb

Standards applied: EN 60079-0: 2012 + A11: 2013

EN 60079-1: 2014

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

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

EU Declaration of Conformity



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

Document No.:
Date and Place of Issue:

DC-071_Issue_E London 10/09/2023



UKCA Declaration of Conformity



Manufacturer: European Safety Systems Ltd.

Impress House, Mansell Road, Acton

London, W3 7QH **United Kingdom**

Equipment Type: STExCP8-BG-S, STExCP8-BG-D, STExCP8-BG-S-L or C, STExCP8-BG-D-L or C

STExCP8-PB-S, STExCP8-PM-S, STExCP8-PT-S,

STExCP8-PB-S-L or C, STExCP8-PM-S-L or C, STExCP8-PT-S-L or C,

STExCP8-PB-D, STExCP8-PM-D, STExCP8-PT-D

STExCP8-PB-D-L or C, STExCP8-PM-D-L or C, STExCP8-PT-D-L or C

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 Sira Certification Service

Notified Body No.: 0518 quality assurance of the production process (Module D):

Rake Lane, Eccleston, Chester CH4 9JN, UK

Quality Assurance Notification (Module D): CSAE 22UKQAN0046

Provisions fulfilled by the equipment: II 2G Ex db IIC T4 Gb

> II 2G Ex db IIC T5 Gb II 2G Ex db IIC T6 Gb

EN IEC 60079-0:2018 Standards applied:

EN 60079-1: 2014

<u>Directive 2014/30/EU: Electromagnetic Compatibility Directive (EMC)</u>

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

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.

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



UKCA Declaration of Conformity



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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