



OSSD Emergency Stop Switch Operating Instructions



SALES NUMBER	MODEL
230300-Z	ES-P QC-M12 male 8 way (Left hand 250mm flying lead)
230301-Z	ES-P QC-M12 male 8 way (Right hand 250mm flying lead)
232300-Z	ESL-SS(L) QC-M12 male 8way (250mm flying lead)
232301-Z	ESL-SS(LP) QC-M12 male 8way (250mm flying lead)

Read and understand these instructions before installing, operating, or maintaining this equipment.

The product is designed to be a component of a customised safety orientated control system. It is the responsibility of each manufacturer to ensure the correct overall functionality of its systems and machines. IDEM, its subsidiaries and affiliates, are not in a position to guarantee all of the characteristics of a given system or product not designed by IDEM.

Application:

Emergency Stop Switches are mounted on machines and sections of plant conveyors that cannot be protected by guards. In combination with any dual channel safety monitoring system these switches with OSSD outputs can be used as emergency stop devices and monitored for up to Category 4/PLe to ISO13849-1. These devices can be connected in series with other IDEM 'Z' type devices to form a system. It is recommended to limit the number of switches connected in series to 30 maximum.

Operation:

All Emergency Stop Switches conform to European Standard EN ISO 13850 and IEC 60947-5-5. They have a positive mechanical linkage between the switch contacts and the E-Stop Button. The switches are mechanically latched and can then only be returned to the operational condition by a pressing the reset button as required by EN ISO 13850 and IEC 60947-5-5.

Installation Guide:

1. Installation of all switches must be in accordance with a risk assessment for the individual application and in accordance with local wiring regulations and EN60204-1. Installation must only be carried out by competent personnel and in accordance with these instructions.
2. M4 mounting bolts must be used to fix the switches. Tightening torque for mounting bolts to ensure reliable fixing is 4 Nm, tightening torque for the lid screws is 1.5 Nm to ensure IP seal.
3. Check operation of all switches and the control circuits by activating the switch (depress the Red Button) and resetting each switch by twisting the Red Button. Ensure each time that the switches latch off and require manual resetting.

Technical data:

Pin Out:

Quick Connect (QC) M12 8-pin Male Plug	External connections M12 Male 8 pin (on 25cm (10 inch) flying lead. Pin view from switch.
Pin view from Switch	
Pin 8	Aux. +24VDC out
Pin 7	Safety Input 1
Pin 1	Safety Output 1
Pin 4	Safety Input 2
Pin 6	Safety Output 2
Pin 2	Supply +24V DC
Pin 3	Supply 0V DC
Pin 5	Not used

**External LED Diagnostics:
(2 colour - visible on switch body – diagnostic only):**

GREEN ON	Outputs enabled
RED ON	Outputs disabled
RED / GREEN FLASH	Fault – remove cover check internal LED's (see below)

Internal LED Diagnostics:
CBZ contact module (under cover)

LED Function		Status
GREEN	RED	
ON	OFF	Plunger expelled, inputs active, outputs enabled.
OFF	ON	Plunger depressed, outputs disabled.
FLASHING	ON	Plunger expelled, inputs missing, outputs disabled.
OFF	FLASH 2Hz	Output fault (check for wiring short circuits)
OFF	FLASH 4Hz	Internal fault

Standards:		
ISO14119 EN 60947-5-3 EN 60204-1 ISO 13849-1 EN 62061 UL508 UL60947-5-1 IEC 60947-5-5		
Technical Data:		
Rated Operating Voltage	24V DC -15% +10%	Use SELV/PELV
Power Consumption	0.7W	
Outputs Rated Voltage	24V DC	
Outputs max. / min. Current	0.2 A / 1mA	
Outputs Type	OSSD, PNP	
Inputs Rated Voltage / Current	24V DC / 2mA	
Auxiliary Signalling Output Rated Voltage	24V DC	
Auxiliary Signalling Output Max. Current	0.2 A PNP	
Mechanical Reliability B10d	1.5 x 10 ⁶ operations	
Response Time Guard Open	60ms max.	
Response Time Inputs Off	20ms max.	
Operating Temperature	-20 / 50C	
Dielectric Withstand	250V AC	
Enclosure Protection	IP67 (Plastic) IP69K (S/Steel) (Temporary cleaning)	
Body material	Polyester or S/Steel 316	
Characteristic Data according to IEC62061 (used as a sub system)		
Safety Integrity Level	SIL3	
PFH (1/h)	1.0 E-09	Corresponds to 1% of SIL3
PFD	8.8 E-05	Corresponds to 9% of SIL3
Proof Test Interval T _r	20a	
Characteristic Data according to EN ISO13849-1		
Performance Level	e	
Category	4	
MTTF _d	771a	
Diagnostic Coverage DC	High	

**INFORMATION WITH REGARD TO
UL standards:**

Type 1 Enclosures.
Max. Temp: 50°C.
Use Class 2 supply or equivalent
Max. Output: 24V.dc 100mA.

OSSD Emergency Stop Switch

Maintenance:

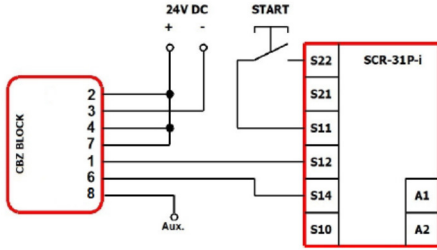
Every month: Check correct operation of the control circuits and latching mechanism. Inspect for damage to the E Stop button or casing. Never attempt to repair any switch.

Important:

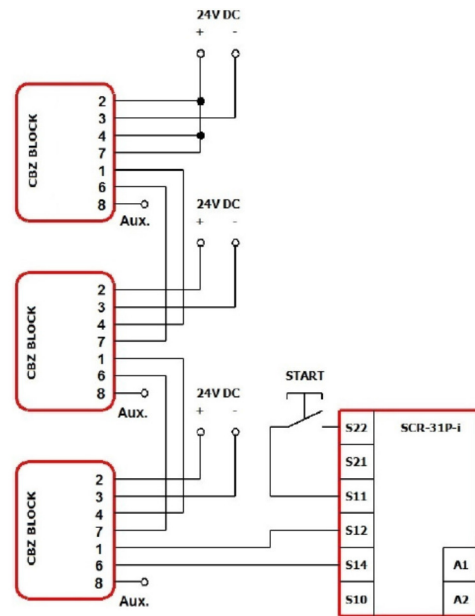
The safety functions and mechanics must be tested regularly. For applications where infrequent use is foreseeable, the system must have a manual function test to detect possible damage or faults. At least once per month for PL e Cat3/4 or once per year for PL d Cat3 (ISO13849-1). Where possible it is recommended that the control system of the machine demands and monitors these tests, and stops or prevents the machine from starting if the test is not done. (See ISO14119).

Wiring examples.

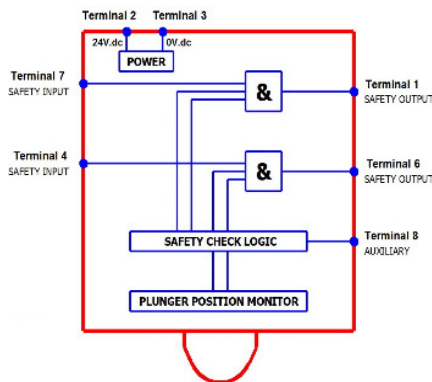
Single switch to an SCR-31-P-i relay



Switches in series to an SCR-31-P-i relay

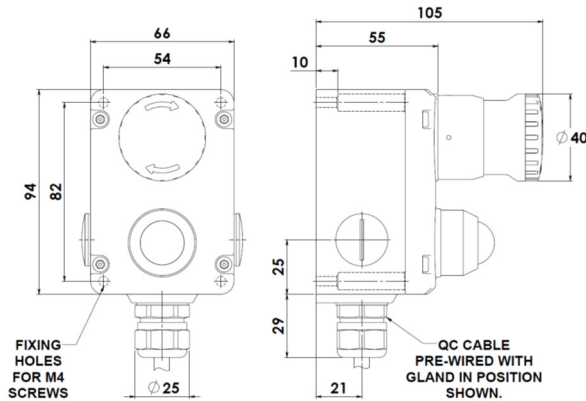


Schematic:

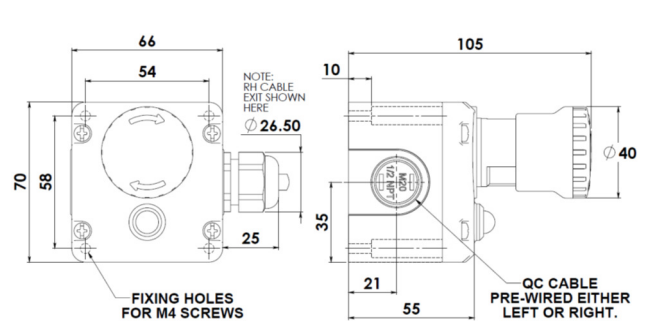


Dimensions (mm):

ESL-SS



ES-P



SPECIAL NOTE:

Where required by local regulations please affix the supplied yellow "EMERGENCY STOP" sticker as shown in the image.



SPECIAL NOTE:

Where the Risk Assessment identifies that inadvertent operation of the E-Stop button may occur during use or breakage and loss of the button function is foreseen, it may be preferable to specify the protection shroud version. If the Risk Assessment for the particular application allows use of the protection shroud, it is recommended consideration be given to the conditions of operation of the button during spontaneous operation as the shroud is not suitable for traditional E-Stop palm actuation of the button. The Risk Assessment must clearly identify any restrictions to the proper use of the button including any training or the requirement to place any restriction notices at the E-Stop location (e.g. "FINGER OPERATION REQUIRED").

IMPORTANT:

The padlock shackle diameter holes are 6.4mm (1/4 inch). It is recommended that a long shackle type is used and fitted through both holes.

It is the user's responsibility to ensure that after fitting the padlock, it prevents the button from being reset.

Original Instructions.

To request this data sheet in other languages please contact info@idemsafety.com
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 Pour obtenir cette fiche en Français, veuillez contacter info@idemsafety.com
 Para solicitar esta hoja de datos en Español, por favor contacto con info@idemsafety.com

WARNING: DO NOT DEFEAT, TAMPER, OR BYPASS THE SAFETY FUNCTION. FAILURE TO DO SO CAN RESULT IN DEATH OR SERIOUS INJURY.



AVERTISSEMENT: NE PAS DESACTIVER, MODIFIER, RETIRER, OU CONTOURNER CETI INTERVERROUILLAGE IL PEUT EN RESULTER DES BLESSURES GRAVES DU PERSONNEL UTILISATEUR.