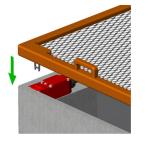
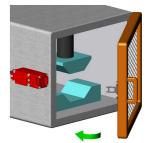
Safety Interlock Switch



KM Operating Instructions





Sliding Guard

Lift off Guard

Hinged Guard

IMPORTANT NOTE:

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 the user 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/Operation:

Tongue operated Safety Interlock Switches are designed to fit to the leading edge of sliding, hinged or lift off machine guards to provide positively operated switching contacts and provide a tamper resistant actuator mechanism. They are designed to provide robust position interlock detection for moving guards.

The switch is rigidly mounted to the frame of the guard or machine. The actuator is fitted to the moving part (frame) of the guard and is aligned to the switch entry aperture. The actuator profile is designed to match a cam mechanism within the switch head and provides a positively operated not easily defeatable interlock switch. When the actuator is inserted into the switch the safety contacts close and allow the machine start circuit to be enabled. When the actuator is withdrawn the safety contacts are positively opened and the machine circuit is broken.

Installation:

- Installation of all IDEM interlock switches must be in accordance with a risk assessment for the individual application.
 Installation must only be carried out by competent personnel and in accordance with these instructions.
- 2. M5 mounting bolts must be used to fix the switch and actuator, the tightening torque to ensure reliable fixing is 4.0 Nm. Tightening torque for the lid screws, conduit entry plugs and cable glands must be 1.0 Nm to ensure IP seal. Only use the correct size gland for the conduit entry and cable outside diameter. Tightening torque for the connection terminal screws is 0.8 Nm. recommended conductor size is 1.5 2.5sg.mm.
- 3. Always fit a mechanical stop to the guard to prevent damage to the front of the switch.

 The switch head position can be rotated by opening the lid and then pulling the end cover away from the switch and then rotating to the position required.
 - Set the actuator gap to 3mm when the guard is closed and against the stop. (See Fig. A.)
 Use alignment guides to ensure that the actuator enters the switch without interfering with the sides of the aperture.
 Always fit the aperture plug to the unused entry aperture to prevent foreign debris entering the switch mechanism.
- 4. After installation check operation of all control circuits ensuring that when the actuator is out of the switch, the machine cannot be started.

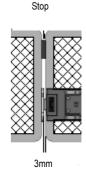
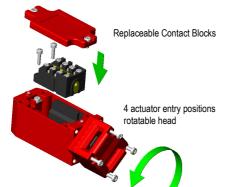


Fig. A



All NC contacts are positively operated at withdrawal of actuator



The NC contacts are closed when the guard is closed and the actuator is present.

Contact operat	ion at withdrawal	of actuator
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1NO		6.8	6.0) mm	3NC 1NO	6	.8 6.0	0 m	11
11/12	Open				11/12	Open			
21/22	Open				21/22	Open			
33/34			Open		31/32	Open			
				_	43/44		One	en	

4NC		6.0	0 mn
11/12	Open		
21/22	Open		
31/32	Open		

2NC 2NO	6	8 (5.0	0 mm
11/12	Open			
21/22	Open			
33/34			Open	
43/44			Open	

IMPORTANT

The Risk Assessment for the particular application should include the risk of spare actuators. Spare actuators should not be readily available and must be securely controlled. Application consideration must be given to the fixing of the actuator which has to be in a way that prevents disassembly by easy means. The safety functions and mechanics must be tested regularly. For applications were infrequent guard access is foreseeable, the system must have a manual function test to detect a possible accumulation of faults. At least once per month for PLe Cat3/4 or once per year for PLd 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).

Maintenance:

Every Month: Check the switch actuator and body for signs of mechanical damage and wear.

Replace any switch showing damage.

Every 6 Months: Check for mechanical damage to switch body or actuator.

Replace any switch showing damage.

Isolate power and remove cover. Check screw terminal tightness and check for signs of

moisture ingress. Never attempt to repair any switch.

These requirements form part of the product warranty.

QC Quick Connect Versions



Quick Connect Pin view from switch



Quick Connect (QC) M23 12 Way Male (connector Length 26mm)	Switch Circuit	Quick Connect (QC) M12 8 Way Male (on Flying Lead 250mm)
Pin view from switch		Pin view from switch
1 3	11 / 12	1 7
4 6	21 / 22	6 5
7 8	33 / 34 or 31 / 32	4 3
9 10	41/42 or 43/44	
12	Earth	8

Application Example: Door Interlock - Dual Channel non-monitored.

The switch contacts 11-12 and 21-22 from each switch are wired in series to an SCR-31-i Safety Relay to monitor for wiring short circuits.

This provides Dual Channel monitoring and a check of the contactor feedback circuits through the auxiliary contacts (A) of K1 and K2.

The SCR-31-i monitors the switches and the contactors K1 and K2 and provides its own self-monitoring via force guided internal relays.

System is shown with machine stopped, guards closed and the contactors able to be energized. (E Stop switch is optional).

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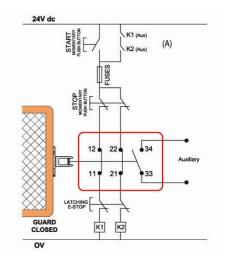
K1 K2

219 33

GUARD CLOSED

ov

Safety Interlock Switch



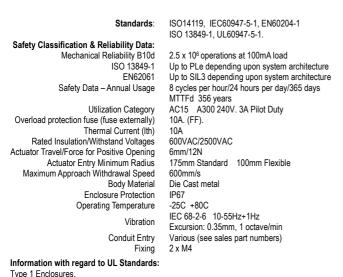
Application Example: Door Interlocks - Dual Channel monitored

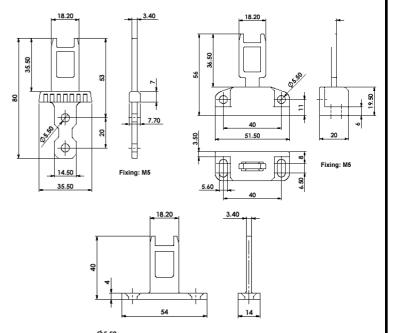
The switch contacts 11-12 and 21-22 from each switch are wired in series to an SCR-3 Safety Relay to monitor for wiring short circuits.

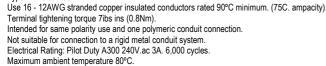
This provides Dual Channel monitoring and a check of the contactor feedback circuits through the auxiliary contacts (A) of K1 and K2.

The SCR-3 monitors the switch and the contactors K1 and K2 and provides its own self-monitoring via force guided internal relays.

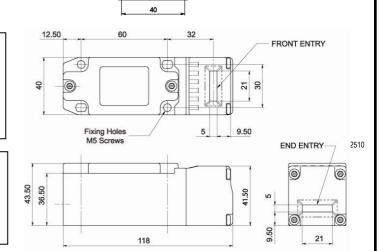
System is shown with machine stopped, guards closed and the contactors able to be energized.







(Earth bonding terminal inside enclosure if required – use 16-12AWG conductors).



Fixing: M5 CSK

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.

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