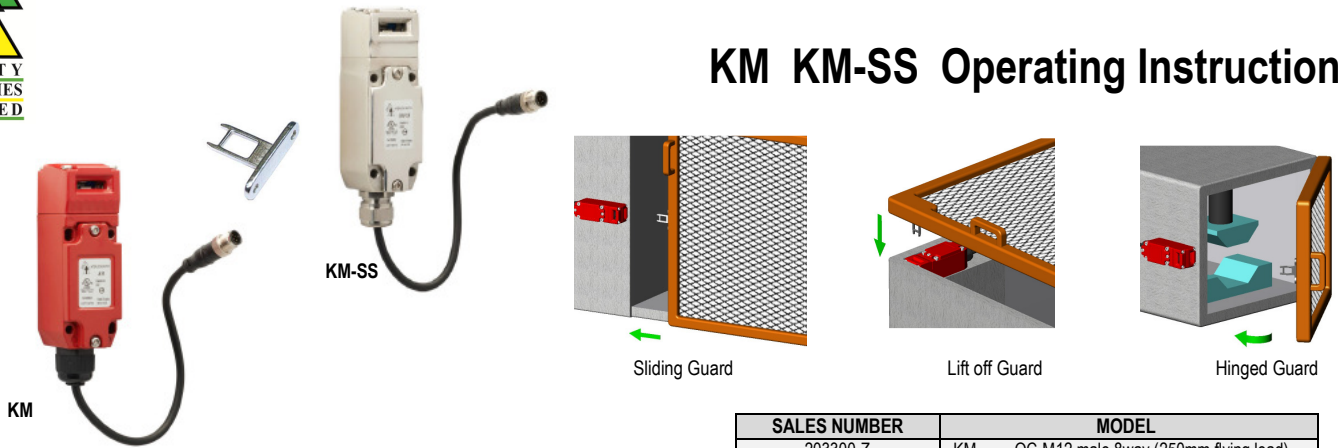


KM KM-SS Operating Instructions



SALES NUMBER	MODEL
203300-Z	KM QC-M12 male 8way (250mm flying lead)
204300-Z	KM-SS QC-M12 male 8way (250mm flying lead)

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 circuits 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 When the actuator is withdrawn the safety circuits are positively opened and the machine control circuit is broken.

In combination with any dual channel safety monitoring system these switches can be 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. They are Type 2 devices in accordance with ISO14119.

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.
- 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.
- 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 required position (see Fig A). Set the actuator gap to 3mm when the guard is closed and against the stop. (See Fig. B.) 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.
- After installation check operation of all control circuits ensuring that when the actuator is out of the switch, the machine cannot be started.

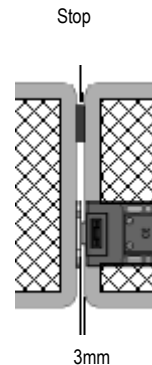


Fig. B

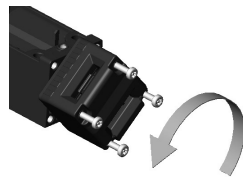


Fig. A

4 actuator entry positions
rotatable head

Circuit operation at withdrawal of actuator

	6.8	0mm
Safety Output 1	OFF	ON
Safety Output 2	OFF	ON
Auxiliary	ON	OFF

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 where 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 PLc 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.

Original Instructions.

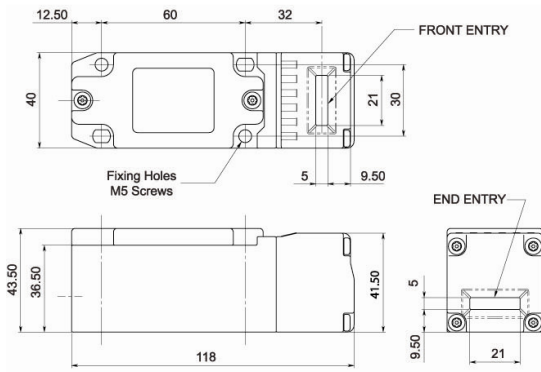
To request this data sheet in other languages please contact info@idemsafety.com
 Um dieses Datenblatt in Deutscher Sprache wenden Sie sich bitte anfordern info@idemsafety.com
 Pour obtenir cette fiche en Français, veuillez contacter info@idemsafety.com
 Para solicitar esta hoja de datos en Español, 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.

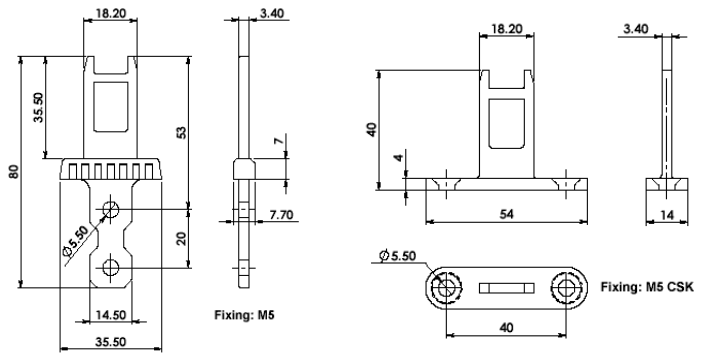


AVERTISSEMENT: NE PAS DESACTIVER, MODIFIER, RETIRER, OU CONTOURNER CETI INTERVERROUILLAGE IL PEUT EN RESULTER DES BLESSURES GRAVES DU PERSONNEL UTILISATEUR.

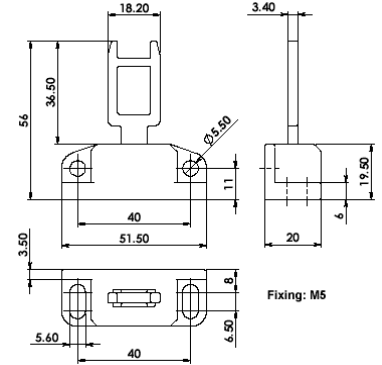
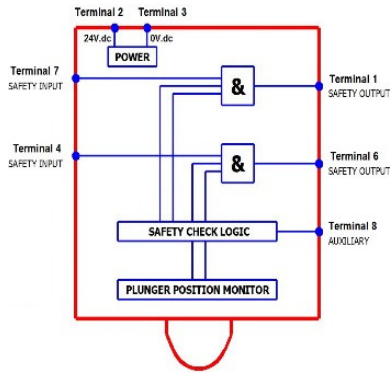
Dimensions: (mm)



OSSD Safety Interlock Switch



Schematic:

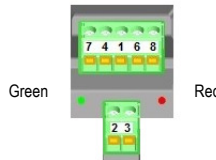


Technical data:

Quick Connect (QC) M12 8-pin Male Plug Pin view from Switch	External connections M12 Male 8 pin (on 25cm (10 inch) flying lead. 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

Internal LED Diagnostics:
CBZ contact module (remove switch lid)



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	2.5 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 (Metal) IP69K (S/Steel) (Temporary cleaning)	
Body material	Die Cast Metal 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 ₁	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.
Earth bonding terminal inside enclosure if required.
Wire range: 16AWG – 12AWG Copper. Torque 7lb/in (0.8Nm)

Wiring examples:

