

# KOBRA - Tongue Operated Switch (Metal) Type: KM

## FEATURES:



IDEM KM Interlock switches are designed to provide position interlock detection for medium to heavy duty moving guards.

They have robust die-cast housings and are designed to fit to the leading edge of sliding, hinged or lift off machine guards. They provide a forced disconnect of the safety contacts at the withdrawal of the actuator and have an anti-tamper mechanism.

The rotatable heads have dual actuator entry positions to give up to 8 different entry positions. For extra durability, Flexible Actuators and Stainless Steel head versions are available.

Contact blocks are replaceable with optional explosion proof versions. High holding force versions are available for applications where vibration can be a nuisance.

The head can be rotated to give 8 actuator entry positions.

Designed with a removable lid to fit replaceable contact blocks.

Flexible actuators are available and the KM is available with a Stainless Steel head.

## FUNCTIONAL SPECIFICATIONS:

Positive Break Contacts to EN60947-5-1

High Functional Safety to ISO13849-1

3 pole, 4 pole or Explosion Proof Contact Blocks

Stainless Steel Head version available

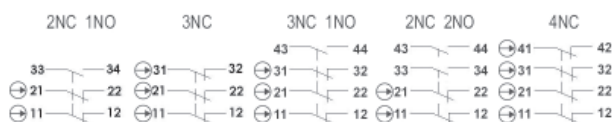
Connects to most Safety Relays to give up to PLe Cat.4

Industry Standard Fitting:

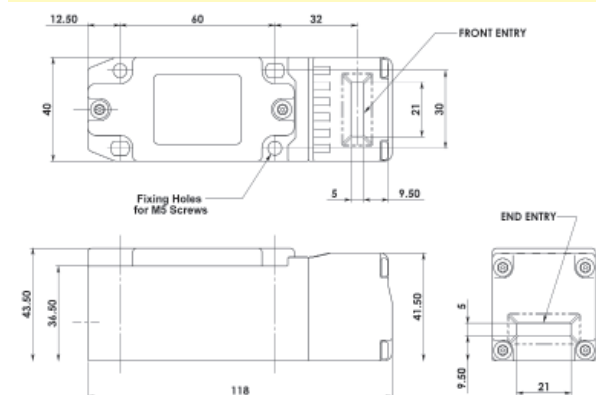
118mm long 40mm wide 30mm fixing



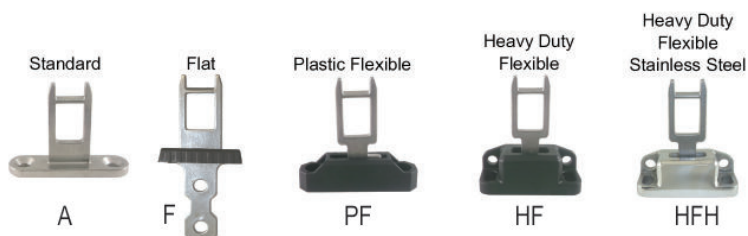
## CONTACT BLOCK OPTIONS:



## DIMENSIONS:



## ACTUATOR OPTIONS (see p100)



## PRE-WIRED EXPLOSION PROOF:



### CLASSIFICATION:

Exd IIC T6 (-20 ≤ Ta ≤ +60C) Gb

Ex tb IIIC T85C (-20 ≤ Ta ≤ +60C) Db

**Standards:** ISO14119 EN60947-5-1 EN60204-1  
ISO13849-1 EN62061 UL508

### Safety Classification and Reliability Data:

Mechanical Reliability B10d	2.5 x 10 <sup>6</sup> operations at 100mA load
ISO13849-1	Up to PLe depending upon system architecture
EN62061	Up to SIL3 depending upon system architecture
Safety Data – Annual Usage	8 cycles per hour/24 hours per day/365 days
	MTTFd 356 years
Utilization Category	AC15 A300 3A
Thermal Current (Ith)	10A
Rated Insulation/Withstand Voltages	500Vac/2500Vac
Travel for Positive Opening	8mm
Actuator Entry Minimum Radius	175mm Standard 100mm Flexible
Maximum Approach/Withdrawal Speed	600mm/s
Body Material	Die Cast (Painted Red)
Head Material	Die Cast (Painted Red) or Stainless Steel 316
Enclosure Protection	IP67
Operating Temperature	-25C +80C
Vibration	IEC 68-2-6 10-55Hz + 1Hz Excursion 0.35mm 1 octave/min
Conduit Entry	Various (See Sales Number)
Fixing	4 x M5

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## CONTACT OPERATION AT WITHDRAWAL OF ACTUATOR



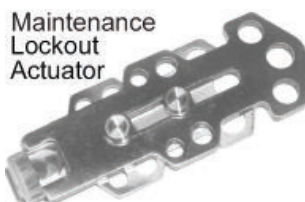
2NC 1NO	6.8 6.0 0mm
11/12	Open
21/22	Open
33/34	Open

3NC 1NO	6.8 6.0 0mm
11/12	Open
21/22	Open
31/32	Open
43/44	Open

4NC	6.0 0mm
11/12	Open
21/22	Open
31/32	Open
41/42	Open

2NC 2NO	6.8 6.0 0mm
11/12	Open
21/22	Open
33/34	Open
43/44	Open

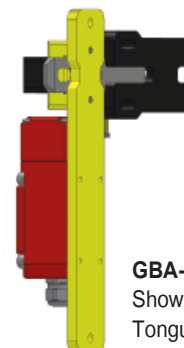
## ACCESSORIES (see p100-101 and Gate Bolts Section 6)



Fits to switch aperture during maintenance and provides multiple padlock holes.

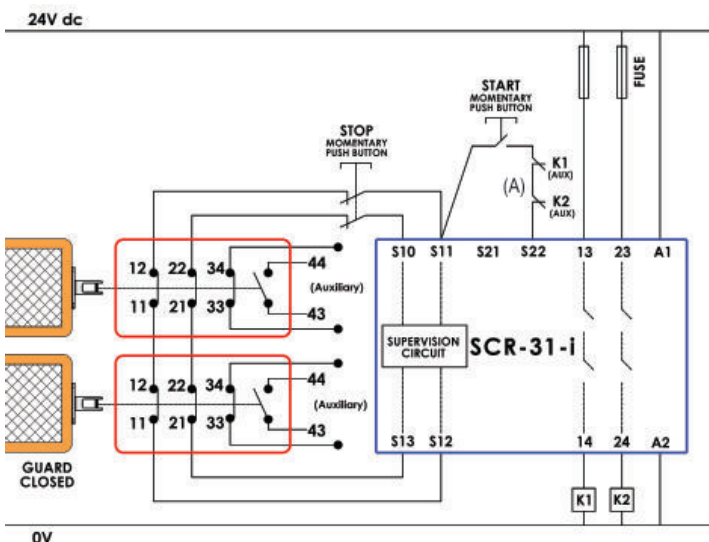


Flat Actuator supplied with 300mm (12") chain. Can be used where poor alignment exists and provides manual insertion of actuator by operator.



**GBA-1 Gate Bolt**  
Shown fitted with KM Tongue Switch.

## APPLICATION EXAMPLE



### Multiple Guard Door Interlocks - Dual Channel (Monitored)

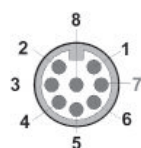
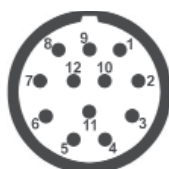
The switch contacts 11-12 and 21-22 from each switch are wired in series to an SCR-31-i Safety Relay to monitor for wiring short circuits.

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

The system is shown with the Machine Stopped, Guards Closed and the contactors able to be energised.

FEMALE QC LEADS	LENGTH	SALES NUMBER
M12 8 Way	5m (15ft)	140101
M12 8 Way	10m (30ft)	140102
M23 12 Way	5m (15ft)	140143
M23 12 Way	10m (30ft)	140144



Quick Connect (QC) M23 12 Way Male (connector length 26mm) Pin View from Switch	Switch Circuit	Quick Connect (QC) M12 8 Way Male (on Flying Lead 250mm) 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

SALES NUMBER	CONTACTS	M20	1/2" NPT	QC M23 12 WAY	QC M12 8 WAY
Kobra KM Switch	2NC 1NO	203001	203002	203003	203021
Kobra KM Switch	3NC	203004	203005	203006	203022
Kobra KM Switch	3NC 1NO	203007	203008	203009	
Kobra KM Switch	2NC 2NO	203010	203011	203012	
Kobra KM Switch	4NC	203013	203014	203015	
Kobra KM Switch	1NC 1NO Ex	203016		3m 4 Core Ex	
Kobra KM Switch	2NC Ex	203019		3m 4 Core Ex	
Kobra KM Switch	2NC 2NO Ex	203026		3m 8 Core Ex	
Actuator	Standard	Add A	to Sales Part Number		
Actuator	Flat	Add F	to Sales Part Number		
Actuator	Plastic Flexible	Add PF	to Sales Part Number		
Actuator	Heavy Duty Flexible	Add HF	to Sales Part Number		
Actuator	Heavy Duty S/Steel	Add HFS	to Sales Part Number		
Stainless Steel Head Version		Add SS	to Sales Part Number		
Actuator Holding 40N (3 pole version only)		Add 40N	to Sales Part Number		

Ordering example: Kobra KM M20 2NC 1NO with Heavy Duty Flexible Actuator:  
Sales Number: 203001-HF  
Gold Plated Contacts available for low power circuits (5V 5mA).  
Add GC to Sales Number e.g. 203001-A-GC

For all IDEM switches the normally closed (NC) circuits are closed when the guard is closed actuator inserted.

Also available with 3NO Contacts for use as indication purposes only.  
Please contact us for further information.