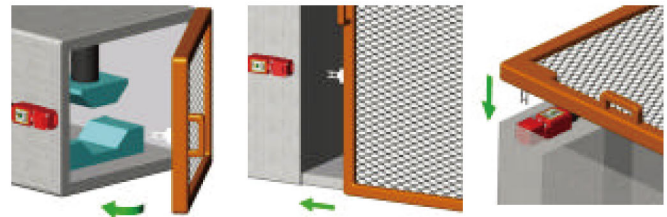
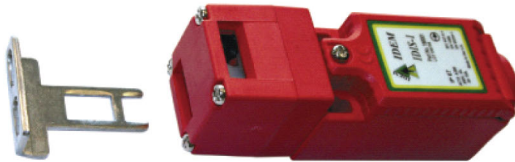


Tongue Interlock Safety Switch - Type: IDIS-1



IDEM IDIS-1 Compact Safety Interlock switches are designed to provide position interlock detection for small moving guards.

They are designed to fit to the leading edge of sliding, hinged or lift off machine guards.



Hinged guard

Sliding guard
Actuator options

Lift off guard



Flat



Angled

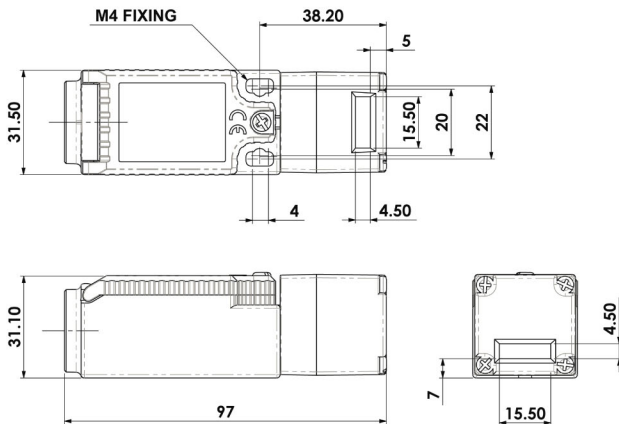
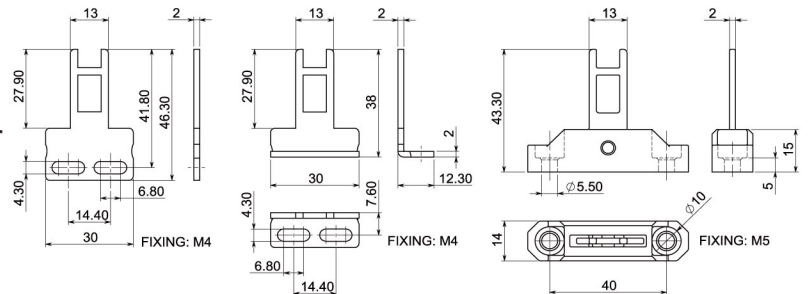


Plastic Flexible

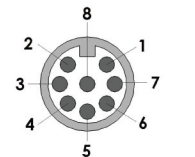
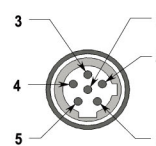
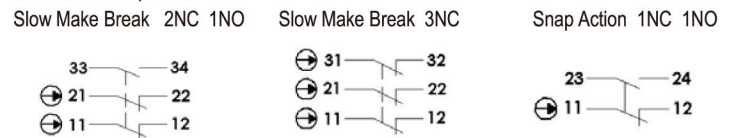
The rugged Stainless Steel actuator profile is designed to match a cam mechanism to provide a positively operated not easily defeatable interlock mechanism.

The compact body, 22mm fixing profile and rotatable head make them easy to install where space is restricted. A Plastic Flexible Actuator is available for tight radius guards.

Contact blocks are replaceable with optional slow or snap break operation.



Contact Block Options:



Standards EN1088 IEC 60947-5-1 EN 60204-1
ISO 13849-1 EN62061 EN 954-1 UL508

Safety Classification and Reliability Data:

| | |
|---------------------------------------|---|
| Mechanical Reliability B10d | 2.5 x 10 ⁶ operations at 100mA load up to Category 4 with Safety Relay |
| EN 954-1 | up to PLe depending upon system architecture |
| ISO 13849-1 | up to SIL3 depending upon system architecture |
| EN 62061 | 8 cycles per hour / 24 hours per day / 365 days |
| Safety Data - Annual Usage | 3.44 x 10 ⁻⁸ |
| PFHd | |
| Proof Test Interval (Life) | 35 years |
| MTTFd | 356 years |
| Utilization Category | AC15 A300 3A. |
| Thermal Current (Ith) | 5A |
| Rated Insulation / Withstand Voltages | 600VAC / 2500 VAC |
| Travel for Positive Opening | 6mm |
| Actuator entry minimum radius | 175mm Standard 100mm Flexible |
| Maximum Approach / Withdrawal speed | 600mm/s. |
| Body Material | Polyester |
| 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 Part Numbers) |
| Fixing | 2 x M4 |

| Quick Connect (QC) 1/2" UNF 6 Way Male (connector length 14mm) Pin view from switch | Switch Circuit | Quick Connect (QC) M12 8 Way Male (on Flying Lead 250mm) Pin view from switch |
|---|--------------------|---|
| 1 5 | 11 / 12 | 1 7 |
| 2 6 | 21 / 22 or 23 / 24 | 6 5 |
| 3 4 | 33 / 34 or 31 / 32 | 4 3 |

| Female QC Leads | Length | Sales Number |
|-----------------|--------------|--------------|
| M12 8 Way | 5m. (15Ft.) | 140101 |
| M12 8 Way | 10m. (30Ft.) | 140102 |
| 1/2" UNF | 2m. (6Ft.) | 140141 |
| 1/2" UNF | 5m. (15Ft.) | 140142 |

| Sales Numbers | Contacts | M20 | 1/2"NPT | QC 1/2" UNF 6 way | QC M12 8 Way |
|-----------------------|--------------|--------|---------|-------------------|--------------|
| Angled Actuator | 2NC 1NO | 190001 | 190002 | 190003 | 190028 |
| Flat Actuator | 2NC 1NO | 190004 | 190005 | 190006 | 190029 |
| Plastic Flex.Actuator | 2NC 1NO | 190019 | 190020 | 190021 | 190030 |
| Angled Actuator | 3NC | 190007 | 190008 | 190009 | 190031 |
| Flat Actuator | 3NC | 190010 | 190011 | 190012 | 190032 |
| Plastic Flex.Actuator | 3NC | 190022 | 190023 | 190024 | 190033 |
| Angled Actuator | 1NC 1NO Snap | 190013 | 190014 | 190015 | 190034 |
| Flat Actuator | 1NC 1NO Snap | 190016 | 190017 | 190018 | 190035 |
| Plastic Flex.Actuator | 1NC 1NO Snap | 190025 | 190026 | 190027 | 190036 |

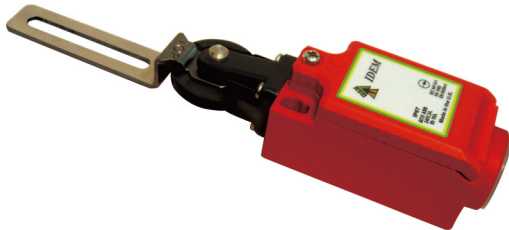
Gold Plated Contacts available for low power circuits (5V. 5mA).
Add GC to Part Number e.g. 190001-GC

Hinge Interlock Safety Switch - Type: IDIS-2



IDEM IDIS-2 Compact Hinge Safety Interlock switches are designed to provide position interlock detection for moving guards.

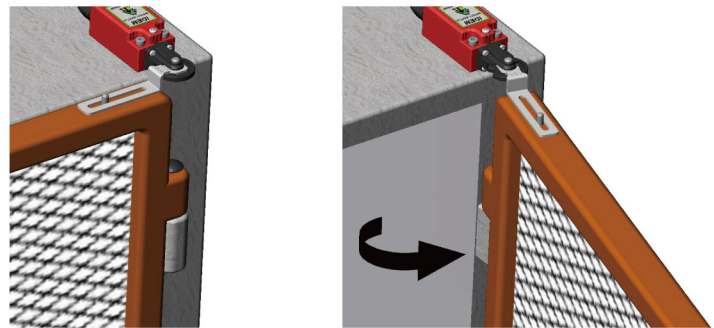
They are designed to fit to the hinged axis of machine guard doors. The switch body fits to the door frame and the leaf actuator fits to the door.



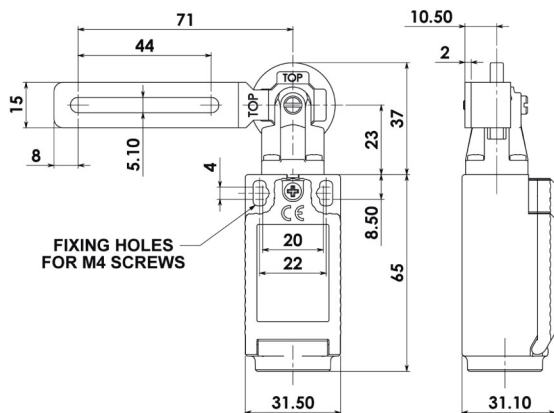
Universal fitting – opening angle 180 degrees for swing doors

The rugged Stainless Steel actuator profile is designed to fix to the door and provide a positively operated not easily defeatable interlock mechanism. They can be mounted unobtrusively away from direct vision or contact.

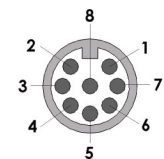
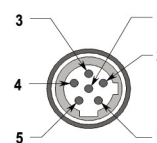
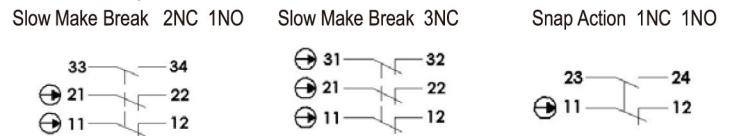
The compact body and 22mm fixing profile make them easy to install where space is restricted. The head can be rotated through 90 degree increments to provide ease of mounting in 4 positions.



Contact blocks are replaceable with optional slow or snap break operation.



Contact Block Options:



Safety Classification and Reliability Data:

| | |
|--|---|
| Standards | EN1088 IEC 60947-5-1 EN 60204-1 ISO 13849-1 EN62061 EN 954-1 UL508 |
| Mechanical Reliability B10d | 2.5 x 10 ⁶ operations at 100mA load up to Category 4 with Safety Relay |
| EN 954-1 | up to PLe depending upon system architecture |
| ISO 13849-1 | up to SIL3 depending upon system architecture |
| EN 62061 | 8 cycles per hour / 24 hours per day / 365 days |
| Safety Data - Annual Usage | 3.44 x 10 ⁻⁸ |
| PFHd | 35 years |
| Proof Test Interval (Life) | 356 years |
| MTTFd | |
| Utilization Category | AC15 A300 3A. |
| Thermal Current (Ith) | 10A |
| Rated Insulation / Withstand Voltages | 600VAC / 2500 VAC |
| Actuator Rotation for Positive Opening | 7 degrees 0.5Nm |
| Materials | UL approved glass-filled polyester |
| 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 Part Numbers) |
| Fixing | 2 x M4 |

| Quick Connect (QC) 1/2" UNF 6 Way Male (connector length 14mm) Pin view from switch | Switch Circuit | Quick Connect (QC) M12 8 Way Male (on Flying Lead 250mm) Pin view from switch |
|---|--------------------|---|
| 1 5 | 11 / 12 | 1 7 |
| 2 6 | 21 / 22 or 23 / 24 | 6 5 |
| 3 4 | 33 / 34 or 31 / 32 | 4 3 |

| Female QC Leads | Length | Sales Number |
|-----------------|--------------|--------------|
| M12 8 Way | 5m. (15Ft.) | 140101 |
| M12 8 Way | 10m. (30Ft.) | 140102 |
| 1/2" UNF | 2m. (6Ft.) | 140141 |
| 1/2" UNF | 5m. (15Ft.) | 140142 |

| Sales Number | Contacts | M20 | 1/2"NPT | QC 1/2" UNF 6 way | QC M12 8 Way |
|--------------------|--------------|--------|---------|-------------------|--------------|
| Universal Actuator | 2NC 1NO | 192001 | 192002 | 192003 | 192022 |
| Universal Actuator | 3NC | 192004 | 192005 | 192006 | 192023 |
| Universal Actuator | 1NC 1NO Snap | 192007 | 192008 | 192009 | 192024 |

Gold Plated Contacts available for low power circuits (5V. 5mA).
 Add GC to Part Number e.g. 192001-GC

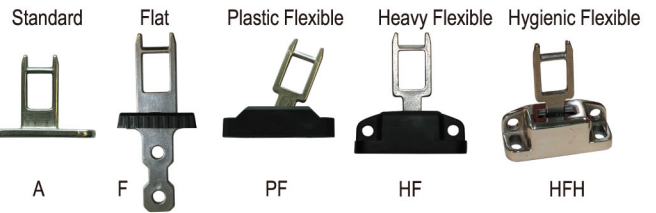
Kobra - Tongue Switches - Type: K-15 & K-15-SS



IDEM K-15 and K-15-SS Safety Interlock switches are designed to provide position interlock detection for moving guards.

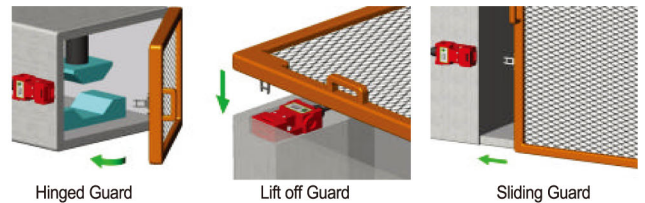
They are designed to fit to the leading edge of sliding, hinged or lift off machine guards.

Actuator options (See Page 51)



Hinged Lid Replaceable Contact Blocks

Head Rotates to give 4 actuator entry positions



They offer a compact 86mm long body to fit to applications where space is restricted, yet offer 3 pole contacts and choice of 3 conduit entries for wiring versatility. The head can be rotated to give 4 actuator entry positions. For extra durability, Flexible Actuators and Stainless Steel head versions are available.

Contact blocks are replaceable.

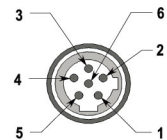
Accessories: (See Page 50)



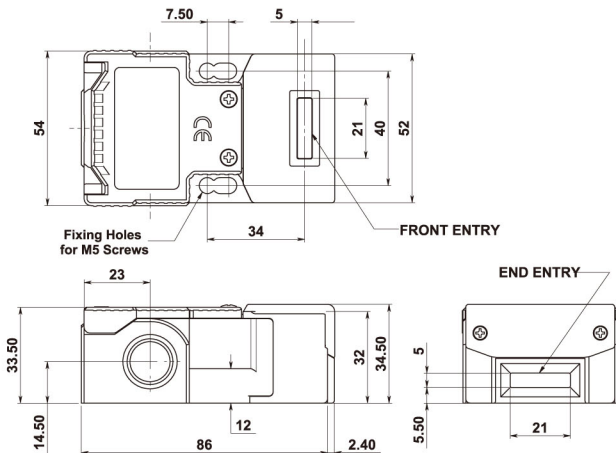
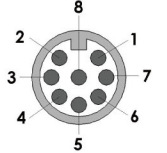
Contact Block Options:

Slow Make Break 2NC 1NO

Slow Make Break 3NC



Quick Connect Pin View from switch



Standards EN1088 IEC 60947-5-1 EN 60204-1 ISO 13849-1 EN62061 EN 954-1 UL508

Safety Classification and Reliability Data:

| | |
|---------------------------------------|---|
| Mechanical Reliability B10d | 2.5 x 10 ⁶ operations at 100mA load up to Category 4 with Safety Relay |
| EN 954-1 | up to PLe depending upon system architecture |
| ISO 13849-1 | up to SIL3 depending upon system architecture |
| EN 62061 | 8 cycles per hour / 24 hours per day / 365 days |
| Safety Data - Annual Usage | 3.44 x 10 ⁻⁸ |
| PFHd | 35 years |
| Proof Test Interval (Life) | 356 years |
| MTTFd | AC15 A300 3A. 5A |
| Utilization Category | 500VAC / 2500 VAC |
| Thermal Current (Ith) | 8mm |
| Rated Insulation / Withstand Voltages | 175mm Standard 100mm Flexible |
| Travel for Positive Opening | 600mm/s. |
| Actuator entry minimum radius | Polyester |
| Maximum Approach / Withdrawal speed | Polyester or Stainless Steel 316 |
| Body Material | IP67 |
| Head Material | -25C. +80C. |
| Enclosure Protection | IEC 68-2-6, 10-55Hz+1Hz, Excursion: 0.35mm, 1 octave/min |
| Operating Temperature | Various (See Sales Part Numbers) |
| Vibration | 2 x M5 |
| Conduit Entry | |
| Fixing | |

| Quick Connect (QC) 1/2" UNF 6 Way Male | Switch Circuit | Quick Connect (QC) M12 8 Way Male (on Flying Lead 250mm) Pin view from switch |
|--|--------------------|---|
| 1 5 | 11 / 12 | 1 7 |
| 2 6 | 21 / 22 or 23 / 24 | 6 5 |
| 3 4 | 33 / 34 or 31 / 32 | 4 3 |

| Female QC Leads | Length | Sales Number |
|-----------------|--------------|--------------|
| M12 8 Way | 5m. (15Ft.) | 140101 |
| M12 8 Way | 10m. (30Ft.) | 140102 |
| 1/2" UNF | 2m. (6Ft.) | 140141 |
| 1/2" UNF | 5m. (15Ft.) | 140142 |

| Sales Numbers | Contacts | M20 | 1/2"NPT | QC 1/2" UNF 6 way | QC M12 8 Way |
|---------------|----------|--------|---------|-------------------|--------------|
| K-15 Switch | 2NC 1NO | 207001 | 207002 | 207003 | 207008 |
| K-15 Switch | 3NC | 207004 | 207005 | 207006 | 207009 |

| 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 HFH to Sales Part Number |
| Stainless Steel Head Version | | Add SS to Sales Part Number |
| Actuator Holding - 40N. | | Add 40N to Part Number |

Ordering Example: Kobra K - 15 M20 2NC 1NO with Standard Actuator and Stainless Steel Head Part Number. 207001-A-SS

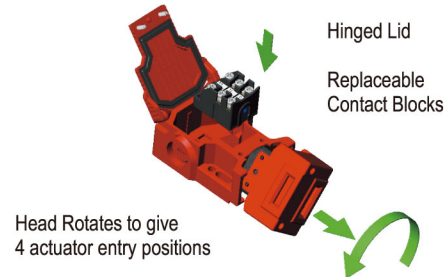
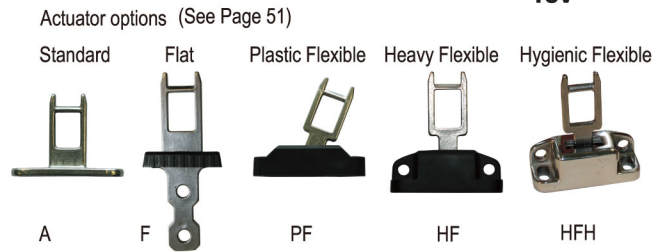
Gold Plated Contacts available for low power circuits (5V. 5mA). Add GC to Part Number e.g. 207001-A-GC

Kobra - Tongue Switches - Type: KP & KP-SS



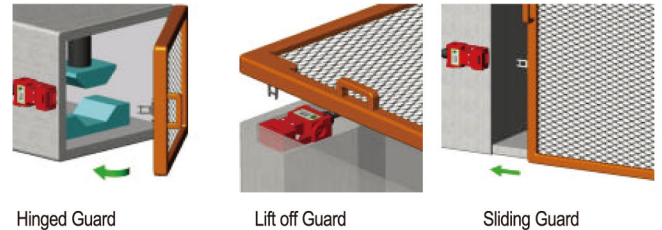
IDEM KP Interlock switches are designed to provide position interlock detection for moving guards.

They 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 head can be rotated to give 4 actuator entry positions. For extra durability, Flexible Actuators and Stainless Steel head versions are available.

Contact blocks are replaceable with optional explosion proof versions. They are sealed to IP67 and survive most wash down solutions due to the high material specification.



Functional Specification:

Positive break contacts to IEC 60947-5-1

High Functional Safety to ISO 13849-1

3 pole, 4 pole or Explosion Proof Contact Blocks

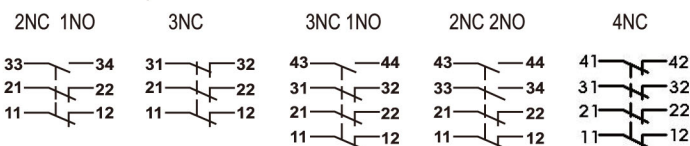
Stainless Steel Head version available

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

Industry Fitting 52mm wide 98mm long 40mm fixing

Pre-Wired Explosion Proof

Contact Block Options:

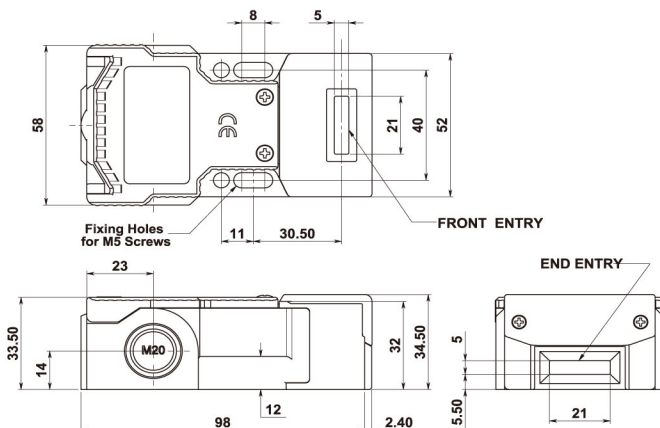


Classification Exd IIC T6 (-20 ≤ Ta ≤ +60C) Gb
Ex tb IIIC T85C (-20 ≤ Ta ≤ +60C) Db

Standards EN1088 IEC 60947-5-1 EN 60204-1
ISO 13849-1 EN62061 EN 954-1 UL508

Safety Classification and Reliability Data:

| | |
|---------------------------------------|---|
| Mechanical Reliability B10d | 2.5 x 10 ⁶ operations at 100mA load |
| EN 954-1 | up to Category 4 with Safety Relay |
| ISO 13849-1 | up to PLe depending upon system architecture |
| EN 62061 | up to SIL3 depending upon system architecture |
| Safety Data - Annual Usage | 8 cycles per hour / 24 hours per day / 365 days |
| PFHd | 3.44 x 10 ⁻⁸ |
| Proof Test Interval (Life) | 35 years |
| MTTFd | 356 years |
| Utilization Category | AC15 A300 3A. |
| Thermal Current (Ith) | 5A |
| Rated Insulation / Withstand Voltages | 500VAC / 2500 VAC |
| Travel for Positive Opening | 8mm |
| Actuator entry minimum radius | 175mm Standard 100mm Flexible |
| Maximum Approach / Withdrawal speed | 600mm/s. |
| Body Material | Polyester |
| Head Material | Polyester 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 Part Numbers) |
| Fixing | 2 x M5 |



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

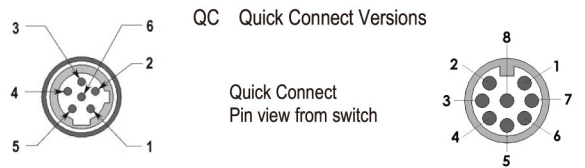
Kobra - Tongue Switches - Type: KP & KP-SS



Contact operation at withdrawal of Actuator

| 2NC 1NO | | | 3NC (1NO) | | |
|---------|------|------|-----------|-------|------|
| | 6.8 | 6.0 | 0 mm | | |
| 11/12 | Open | | | 11/12 | Open |
| 21/22 | Open | | | 21/22 | Open |
| 33/34 | | Open | | 31/32 | Open |
| | | | | 43/44 | Open |

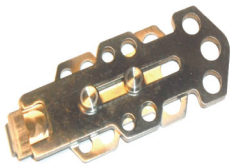
| 4NC | | | 2NC 2NO | | |
|-------|------|------|---------|------|------|
| | 6.0 | 0 mm | | | |
| 11/12 | Open | | 11/12 | Open | |
| 21/22 | Open | | 21/22 | Open | |
| 31/32 | Open | | 33/34 | | Open |
| 41/42 | Open | | 43/44 | | Open |



| Quick Connect (QC) 1/2" UNF 6 Way Male (connector length 14mm) | Switch Circuit | Quick Connect (QC) M12 8 Way Male (on Flying Lead 250mm) Pin view from switch |
|--|--------------------|--|
| 1 5 | 11 / 12 | 1 7 |
| 2 6 | 21 / 22 | 6 5 |
| 3 4 | 33 / 34 or 31 / 32 | 4 3 |
| | 41 / 42 or 43 / 44 | 8 2 |

Accessories: (See Page 50)

Maintenance Lockout Actuator



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

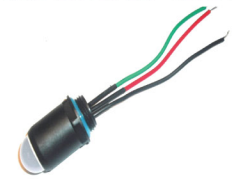
Actuator with chain



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

2 Colour LED Conduit Beacon

(Available voltages 24Vdc 110Vac 230Vac and M20 or 1/2" NPT)

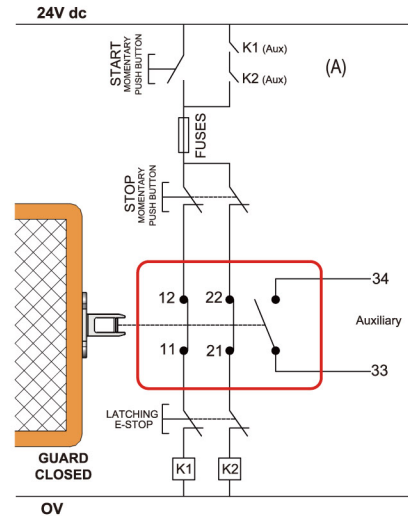


2 colour LED (3 wires) providing Steady Red and Steady Green. Fits to conduit entry and provides option for LED indication based upon switch contacts.

Guard Door Interlocked - Dual Channel (Non Monitored)

Application Example:

This system shows interlock switch circuits 11-12 and 21-22 configured to allow direct feed to contactor coils K1 and K2. This provides Dual Channel wiring and a check of the contactor feedback circuits through the auxiliary contacts (A) of K1 and K2. Opening the Interlock switch or depressing the E Stop will isolate power to the contactor coils. Re-start can only occur providing the Guard is closed, and the E-Stop is reset. System is shown with machine stopped, guard 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 |
| 1/2" UNF | 2m. (6Ft.) | 140141 |
| 1/2" UNF | 5m. (15Ft.) | 140142 |



| Sales Numbers | Contacts | M20 | 1/2"NPT | QC 1/2" UNF 6 way | QC M12 8 Way |
|--|---------------------|------------------------------|---------|-------------------------|--------------------|
| Kobra KP Switch | 2NC 1NO | 200001 | 200002 | 200003 | 200021 |
| Kobra KP Switch | 3NC | 200004 | 200005 | 200006 | 200022 |
| Kobra KP Switch | 3NC 1NO | 200007 | 200008 | | 200023 |
| Kobra KP Switch | 2NC 2NO | 200010 | 200011 | | 200024 |
| Kobra KP Switch | 4NC | 200013 | 200014 | | 200025 |
| Kobra KP Switch | 1NC 1NO Ex | 200016 | | 3m. 4 Core Ex | |
| Kobra KP Switch | 2NC Ex | 200019 | | 3m. 4 Core Ex | |
| Kobra KP Switch | 2NC 2NO Ex | 200026 | | 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 HFH to Sales Part Number | | | |
| Stainless Steel Head Version | | Add SS to Sales Part Number | | | |
| Actuator Holding - 40N. (3 pole versions only) | | Add 40N to Part Number | | | |

Ordering Example: Kobra KP M20 3NC with Stainless Steel Head and Heavy Duty Flexible Actuator Part No. 200004-HF-SS

Gold Plated Contacts available for low power circuits (5V. 5mA). Add GC to Part Number e.g. 200001-A-GC

Kobra Metal - Tongue Switches - Type: KM

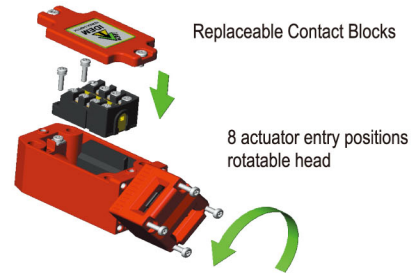
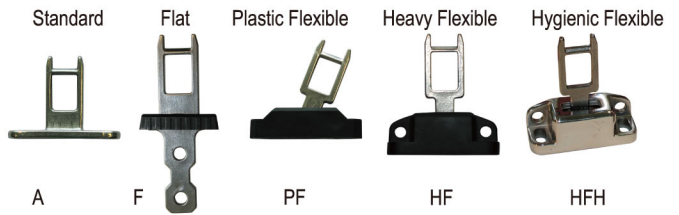


IDEM KM Interlock switches are designed to provide position interlock detection for medium to heavy duty moving guards.

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.

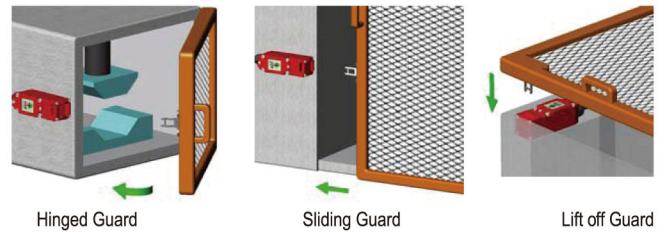


Actuator options (See Page 51)



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.



Functional Specification:

Positive break contacts to IEC 60947-5-1

High Functional Safety to ISO 13849-1

3 pole, 4 pole or Explosion Proof Contact Blocks

Stainless Steel Head version available

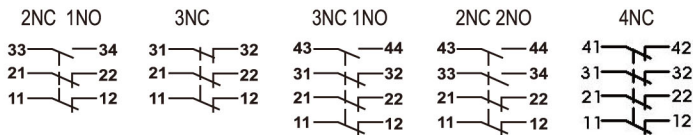
Connects to most Safety Relays to give up to PLe Cat.4.

Industry Fitting 118mm long 40mm wide 30mm fixing

Pre-Wired Explosion Proof



Contact Block Options:

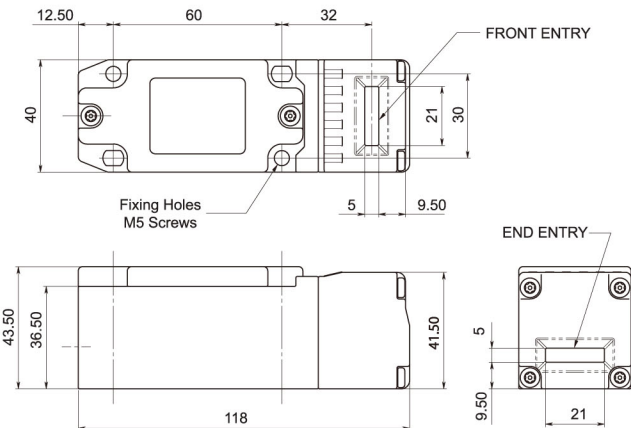


Classification Exd IIC T6 (-20 ≤ Ta ≤ +60C) Gb
Ex tb IIIC T85C (-20 ≤ Ta ≤ +60C) Db

Standards EN1088 IEC 60947-5-1 EN 60204-1
ISO 13849-1 EN62061 EN 954-1 UL508

Safety Classification and Reliability Data:

| | |
|---------------------------------------|---|
| Mechanical Reliability B10d | 2.5 x 10 ⁶ operations at 100mA load |
| EN 954-1 | up to Category 4 with Safety Relay |
| ISO 13849-1 | up to PLe depending upon system architecture |
| EN 62061 | up to SIL3 depending upon system architecture |
| Safety Data - Annual Usage | 8 cycles per hour / 24 hours per day / 365 days |
| PFHd | 3.44 x 10 ⁻⁸ |
| Proof Test Interval (Life) | 35 years |
| MTTFd | 356 years |
| Utilization Category | AC15 A300 3A. |
| Thermal Current (Ith) | 5A |
| Rated Insulation / Withstand Voltages | 500VAC / 2500 VAC |
| 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 Part Numbers) |
| Fixing | 4 x M5 |



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

Kobra Metal - Tongue Switches - Type: KM

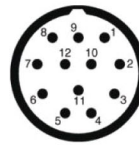


Contact operation at withdrawal of Actuator

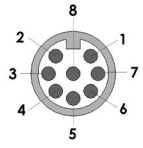
| 2NC 1NO | | | 3NC (1NO) | | |
|---------|-------|-------|-----------|-------|-------|
| 11/12 | 21/22 | 33/34 | 11/12 | 21/22 | 31/32 |
| Open | Open | Open | Open | Open | Open |
| | | | | | |
| | | | | | |

| 4NC | | | 2NC 2NO | | |
|-------|-------|-------|---------|-------|-------|
| 11/12 | 21/22 | 31/32 | 11/12 | 21/22 | 33/34 |
| Open | Open | Open | Open | Open | Open |
| | | | | | |
| | | | | | |

QC Quick Connect Versions



Quick Connect
Pin view from switch



| 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 |

Accessories: (See Page 50)

Maintenance Lockout Actuator



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

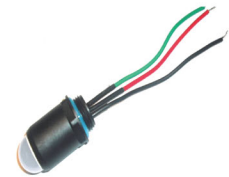
Actuator with chain



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

2 Colour LED Conduit Beacon

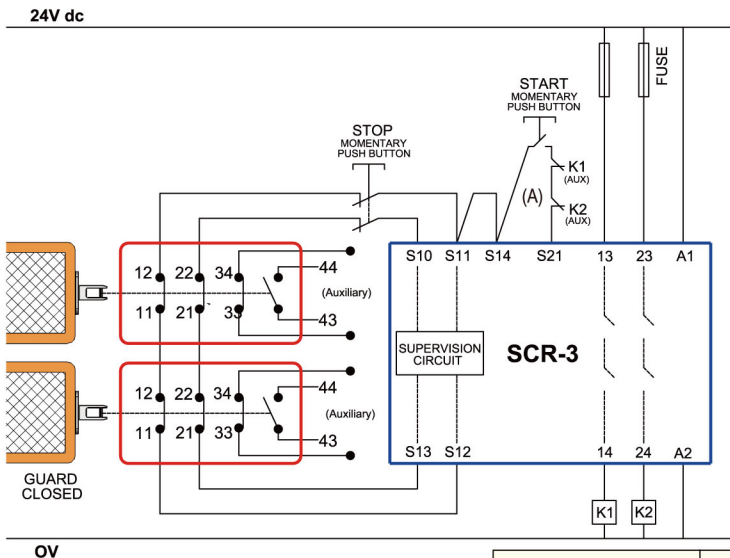
(Available voltages 24Vdc 110Vac 230Vac and M20 or 1/2" NPT)



2 colour LED (3 wires) providing Steady Red and Steady Green. Fits to conduit entry and provides option for LED indication based upon switch contacts.

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-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 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 |



| Sales Number | Contacts | M20 | 1/2" NPT | QC M23 | 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 | |
| Kobra Actuator | Standard | Add A to Sales Part Number | | | |
| Kobra Actuator | Flat | Add F to Sales Part Number | | | |
| Kobra Actuator | Plastic Flexible | Add PF to Sales Part Number | | | |
| Kobra Actuator | Heavy Duty Flexible | Add HF to Sales Part Number | | | |
| Kobra Actuator | Heavy Duty S/Steel | Add HFH to Sales Part Number | | | |
| Stainless Steel Head Version | | Add SS to Sales Part Number | | | |
| Actuator Holding - 40N (3 pole versions only) | | Add 40N to Part Number | | | |

Ordering Example: Kobra KM M20 2NC 1NO with Heavy Flexible Actuator Part No. 203001- HF

Gold Plated Contacts available for low power circuits (5V. 5mA).
Add GC to Part Number e.g. 203001-A-GC

Kobra Stainless Steel Switch Type: HYGIECAM KM-SS

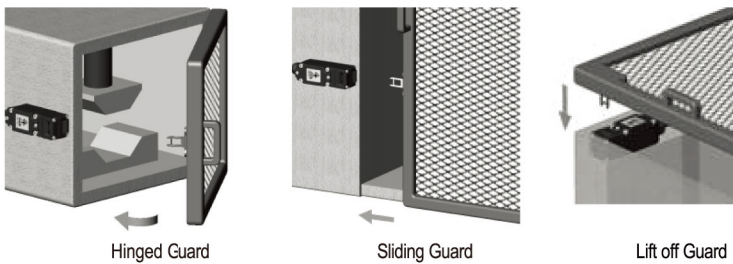


HYGIECAM Series Interlock Switches have a rugged Stainless Steel 316 body and have been designed to cope with the rigorous applications of the Food Processing and Packaging Industries. The surface finish is mirror polished to Ra10 to resist the accumulation of food debris and is suitable for high pressure hosing at high temperature.

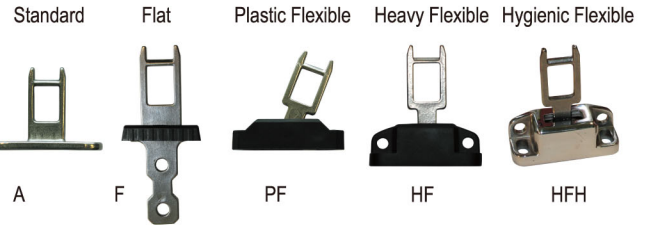
They offer a compact slimline housing which will fit to areas where there are space restrictions and are sealed to IP69K enclosure protection. They can be high pressure hosed with most detergents at high temperature.

They 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. High holding force versions are available for applications where vibration can be a nuisance.



Actuator options (See Page 51)



HYGIECAM



They offer up to 4 pole contacts to suit modern control circuits and are available with Explosion Proof contact blocks.

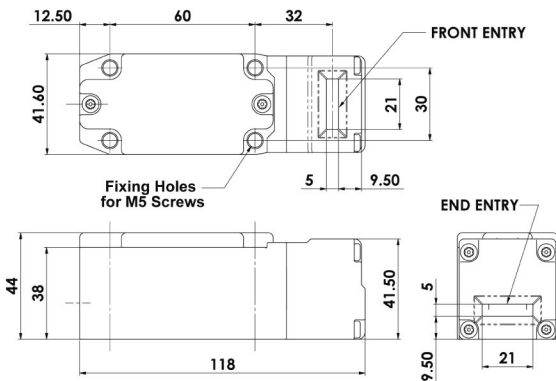
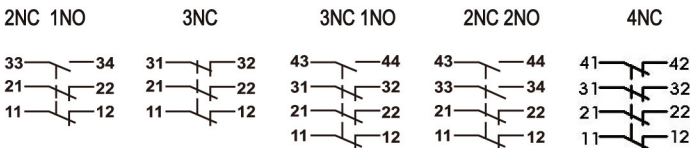
Functional Specification:

Positive break contacts to IEC 60947-5-1

High Functional Safety to ISO 13849-1

Will fit on 30mm fixing centres –DIN standard body mounting

Contact Block Options:



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

Mirror Finish Stainless Steel 316 Body
Connects to most Safety Relays to give up to PLe Cat.4.
IP69K Suitable for SIP and CIP processes

Pre-Wired Explosion Proof



Classification Exd IIC T6 (-20 ≤ Ta ≤ +60C) Gb
Ex tb IIIC T85C (-20 ≤ Ta ≤ +60C) Db

Standards EN1088 IEC 60947-5-1 EN 60204-1
ISO 13849-1 EN62061 EN 954-1 UL508

/ Classification and Reliability Data:

| | |
|---------------------------------------|---|
| Mechanical Reliability B10d | 2.5 x 10 ⁶ operations at 100mA load |
| EN 954-1 | up to Category 4 with Safety Relay |
| ISO 13849-1 | up to PLe depending upon system architecture |
| EN 62061 | up to SIL3 depending upon system architecture |
| Safety Data - Annual Usage | 8 cycles per hour / 24 hours per day / 365 days |
| PFHd | 3.44 x 10 ⁻⁸ |
| Proof Test Interval (Life) | 35 years |
| MTTFd | 356 years |
| Utilization Category | AC15 A300 3A. |
| Thermal Current (Ith) | 5A |
| Rated Insulation / Withstand Voltages | 500VAC / 2500 VAC |
| Travel for Positive Opening | 8mm |
| Actuator entry minimum radius | 175mm Standard 100mm Flexible |
| Maximum Approach / Withdrawal speed | 600mm/s. |
| Body Material | Stainless Steel 316 |
| Head Material | 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 Part Numbers) |
| Fixing | 4 x M5 |

Kobra Stainless Steel Switch Type: HYGIECAM KM-SS



Contact operation at withdrawal of Actuator

2NC 1NO 6.8 6.0 0 mm

| | | |
|-------|------|------|
| 11/12 | Open | |
| 21/22 | Open | |
| 33/34 | | Open |

3NC (1NO) 6.8 6.0 0 mm

| | | |
|-------|------|------|
| 11/12 | Open | |
| 21/22 | Open | |
| 31/32 | Open | |
| 43/44 | | Open |

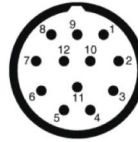
4NC 6.0 0 mm

| | | |
|-------|------|--|
| 11/12 | Open | |
| 21/22 | Open | |
| 31/32 | Open | |
| 41/42 | Open | |

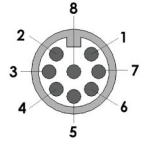
2NC 2NO 6.8 6.0 0 mm

| | | |
|-------|------|------|
| 11/12 | Open | |
| 21/22 | Open | |
| 33/34 | | Open |
| 43/44 | | Open |

QC Quick Connect Versions



Quick Connect Pin view from switch



| 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 |

Accessories: (See Page 50)
Maintenance Lockout Actuator



Actuator with chain



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

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

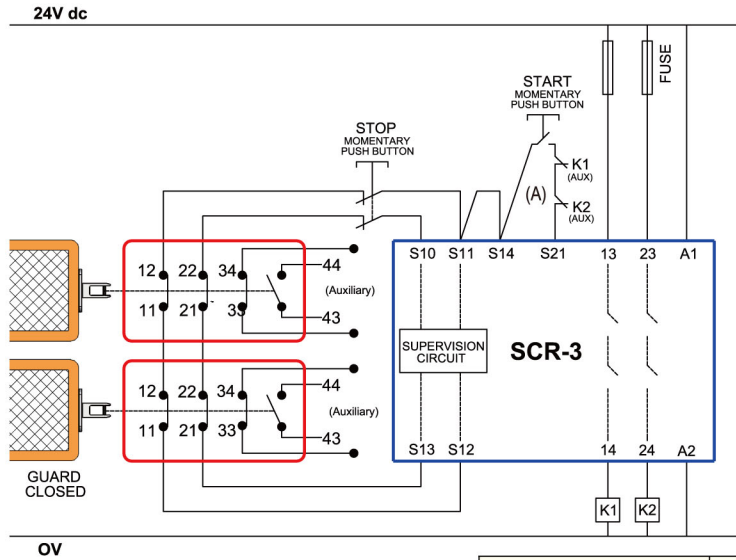
2 Colour LED Conduit Beacon
(Available voltages 24Vdc 110Vac 230Vac and M20 or 1/2" NPT)



2 colour LED (3 wires) providing Steady Red and Steady Green. Fits to conduit entry and provides option for LED indication based upon switch contacts.

Application Example:

Multiple Guard Door Interlocks - Dual Channel (Monitored)



The switch contacts 11-12 and 21-22 from each switch and 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 guide internal relays.

System is shown with 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 |



| Gland | stainless steel 316 |
|---------|---------------------|
| M20 | 140120 |
| 1/2"NPT | 140121 |

It is recommended to use our stainless steel gland with this switch

| Sales Number | Contacts | M20 | 1/2"NPT | QC M23 | QC M12 8 Way |
|---|---------------------|--------|------------------------------|--------|---------------|
| Kobra KM-SS Switch | 2NC 1NO | 204001 | 204002 | 204003 | 204021 |
| Kobra KM-SS Switch | 3NC | 204004 | 204005 | 204006 | 204022 |
| Kobra KM-SS Switch | 3NC 1NO | 204007 | 204008 | 204009 | |
| Kobra KM-SS Switch | 2NC 2NO | 204010 | 204011 | 204012 | |
| Kobra KM-SS Switch | 4NC | 204013 | 204014 | 204015 | |
| Kobra KM-SS Switch | 1NC 1NO Ex | 204016 | | | 3m. 4 core Ex |
| Kobra KM-SS Switch | 2NC Ex | 204019 | | | 3m. 4 core Ex |
| Kobra KM-SS Switch | 2NC 2NO Ex | 204026 | | | 3m. 8 core Ex |
| Kobra Actuator | Standard | | Add A to Sales Part Number | | |
| Kobra Actuator | Flat | | Add F to Sales Part Number | | |
| Kobra Actuator | Plastic Flexible | | Add PF to Sales Part Number | | |
| Kobra Actuator | Heavy Duty Flexible | | Add HF to Sales Part Number | | |
| Kobra Actuator | Heavy Duty S/Steel | | Add HFH to Sales Part Number | | |
| Actuator Holding - 40N (3 pole versions only) | | | Add 40N to Part Number | | |

Ordering Example:

Kobra KM - SS 1/2"NPT 2NC 2NO with Heavy Flexible Actuator Part No.204011 - HF

Gold Plated Contacts available for low power circuits (5V. 5mA).
Add GC to Part Number e.g. 204001-A-GC

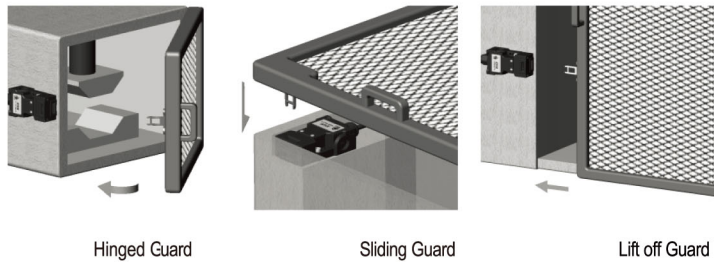
Kobra Stainless Steel Tongue Switch - Type: HYGIECAM K-SS



HYGIECAM Series Interlock Switches have a rugged Stainless Steel 316 body and have been designed to cope with the rigorous applications of the Food Processing and Chemical Industries.

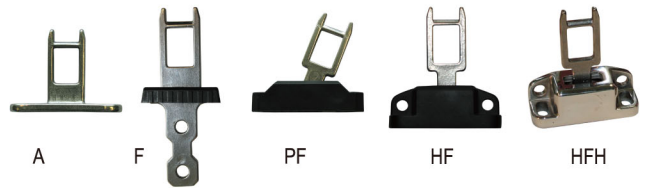
They have IP69K enclosure protection (maintained by a double seal lid gasket and seals) and can be high pressure hosed with detergent at high temperature.

They 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.



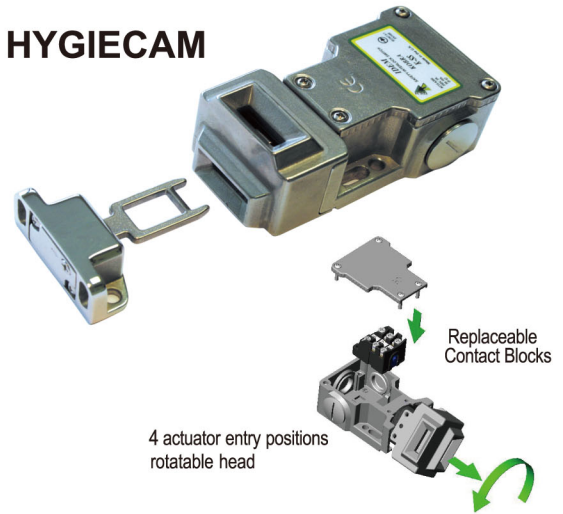
Actuator options (See Page 51)

Standard Flat Plastic Flexible Heavy Flexible Hygienic Flexible



The head can be rotated to give 4 actuator entry positions. For extra durability, Flexible Actuators are available. Contact blocks are replaceable with optional explosion proof versions. They are sealed to IP69K and survive most caustic wash down solutions.

HYGIECAM



Functional Specification:

Positive break contacts to IEC 60947-5-1

High Functional Safety to ISO 13849-1

Will fit on 40mm fixing centres –industry standard housing

Contact Block Options:

| 2NC 1NO | 3NC | 3NC 1NO | 2NC 2NO | 4NC |
|-------------------------------|-------------------------------|--|--|--|
| | | | | |
| 33 — 34 21 — 22 11 — 12 | 31 — 32 21 — 22 11 — 12 | 43 — 44 31 — 32 21 — 22 11 — 12 | 43 — 44 33 — 34 21 — 22 11 — 12 | 41 — 42 31 — 32 21 — 22 11 — 12 |

Stainless Steel 316 Body and External Fixings
Connects to most Safety Relays to give up to PLe Cat.4.
IP69K Suitable for SIP and CIP processes

Pre-Wired Explosion Proof

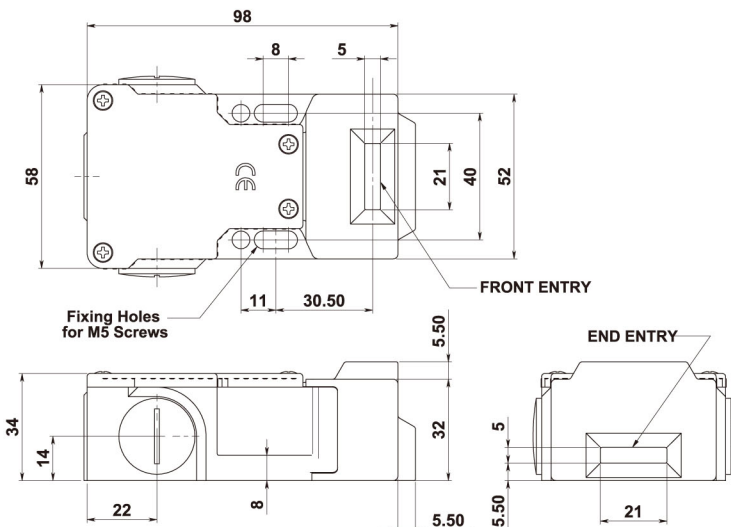


Classification Exd IIC T6 (-20 ≤ Ta ≤ +60C) Gb
Ex tb IIIC T85C (-20 ≤ Ta ≤ +60C) Db

Standards EN1088 IEC 60947-5-1 EN 60204-1
ISO 13849-1 EN62061 EN 954-1 UL508

Safety Classification and Reliability Data:

| | |
|---------------------------------------|---|
| Mechanical Reliability B10d | 2.5 x 10 ⁶ operations at 100mA load |
| EN 954-1 | up to Category 4 with Safety Relay |
| ISO 13849-1 | up to PLe depending upon system architecture |
| EN 62061 | up to SIL3 depending upon system architecture |
| Safety Data - Annual Usage | 8 cycles per hour / 24 hours per day / 365 days |
| PFHd | 3.44 x 10 ⁻⁸ |
| Proof Test Interval (Life) | 35 years |
| MTTFd | 356 years |
| Utilization Category | AC15 A300 3A. |
| Thermal Current (Ith) | 5A |
| Rated Insulation / Withstand Voltages | 500VAC / 2500 VAC |
| Travel for Positive Opening | 8mm |
| Actuator entry minimum radius | 175mm Standard 100mm Flexible |
| Maximum Approach / Withdrawal speed | 600mm/s. |
| Body Material | Stainless Steel 316 |
| Head Material | Stainless Steel 316 |
| Enclosure Protection | IP67 IP69K |
| Operating Temperature | -25C. +80C. |
| Vibration | IEC 68-2-6, 10-55Hz+1Hz, |
| Conduit Entry | Excursion: 0.35mm, 1 octave/min |
| Fixing | Various (See Sales Part Numbers) |
| | 4 x M5 |



Kobra Stainless Steel Tongue Switch - Type: HYGIECAM K-SS



Contact operation at withdrawal of Actuator

2NC 1NO 6.8 6.0 0 mm

| | | |
|-------|------|------|
| 11/12 | Open | |
| 21/22 | Open | |
| 33/34 | | Open |

3NC (1NO) 6.8 6.0 0 mm

| | | |
|-------|------|------|
| 11/12 | Open | |
| 21/22 | Open | |
| 31/32 | Open | |
| 43/44 | | Open |

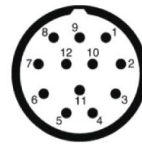
4NC 6.0 0 mm

| | | |
|-------|------|--|
| 11/12 | Open | |
| 21/22 | Open | |
| 31/32 | Open | |
| 41/42 | Open | |

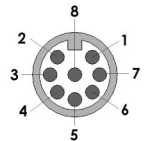
2NC 2NO 6.8 6.0 0 mm

| | | |
|-------|------|------|
| 11/12 | Open | |
| 21/22 | Open | |
| 33/34 | | Open |
| 43/44 | | Open |

QC Quick Connect Versions



Quick Connect Pin view from switch



| 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 |

Accessories: (See Page 50)

Maintenance Lockout Actuator



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

Actuator with chain



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

2 Colour LED Conduit Beacon
(Available voltages 24Vdc 110Vac 230Vac and M20 or 1/2" NPT)



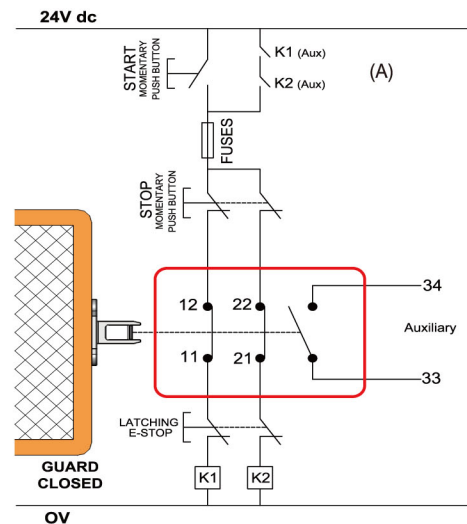
2 colour LED (3 wires) providing Steady Red and Steady Green. Fits to conduit entry and provides option for LED indication based upon switch contacts.

Application Example:

Guard Door Interlocked - Dual Channel (Non Monitored)

This system shows interlock switch circuits 11-12 and 21-22 configured to allow direct feed to contactor coils K1 and K2. This provides Dual Channel wiring and a check of the contactor feedback circuits through the auxiliary contacts (A) of K1 and K2. Opening the Interlock switch or depressing the E stop will isolate power to the contactor coils. Restart can only occur providing the Guard is closed, and the E-stop is reset.

System is shown with machine stopped, guard 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 |



| Gland | | stainless steel 316 |
|----------|--------|---------------------|
| M20 | 140120 | |
| 1/2" NPT | 140121 | |

It is recommended to use our stainless steel gland with this switch

| Sales Numbers | Contacts | M20 | 1/2"NPT | QC M23 | QC M12 8 Way |
|--|---------------------|--------|---------|------------------------------|------------------------|
| Kobra K-SS Switch | 2NC 1NO | 208001 | 208002 | 208003 | 208021 |
| Kobra K-SS Switch | 3NC | 208004 | 208005 | 208006 | 208022 |
| Kobra K-SS Switch | 3NC 1NO | 208007 | 208008 | 208009 | |
| Kobra K-SS Switch | 2NC 2NO | 208010 | 208011 | 208012 | |
| Kobra K-SS Switch | 4NC | 208013 | 208014 | 208015 | |
| Kobra K-SS Switch | 1NC 1NO Ex | 208016 | | 3m. 4 Core Ex | |
| Kobra K-SS Switch | 2NC Ex | 208019 | | 3m. 4 Core Ex | |
| Kobra K-SS Switch | 2NC 2NO Ex | 208026 | | 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 HFH to Sales Part Number | |
| Actuator Holding - 40N. (3 pole versions only) | | | | | Add 40N to Part Number |

Ordering Example:
Kobra K - SS M20 3NC 1NO with Standard Actuator Part No. 208007 - A
Gold Plated Contacts available for low power circuits (5V. 5mA).
Add GC to Part Number e.g. 208001-A-GC