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.

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.

- **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
  - ISO 13849-1
  - EN 62061
  - Safety Data - Annual Usage: 3.44 x 10^8
  - Proof Test Interval (Life): 35 years
  - MTFd: 35 years
  - Utilization Category: AC15 A300 3A
  - Thermal Current (ftf): 5A
  - Rated Insulation / Withstand Voltages: 600VAC / 2500 VAC
  - Travel for Positive Opening: 6mm
  - Actuator entry minimum radius: 175mm Standard 100mm Flexible 600mm/s
  - Maximum Approach / Withdrawal speed: 25C +80C
  - Body Material: Polyester
  - Enclosure Protection: IP67
  - Operating Temperature: IEC 68-2-6, 10-55Hz +1Hz
  - Vibration: 0.35mm, 1 octave/min
  - Conduit Entry: Various (See Sales Part Numbers)
  - Fixing: 2 x M4

- **Contact Block Options:**
  - Slow Make Break: 2NC 1NO
  - Slow Make Break: 3NC
  - Snap Action: 1NC 1NO

- **Quick Connect (QC):**
  - 1/4" UNF 6 Way Male (connector length 14mm)
  - Pin view from switch:
    - Female QC Leads: M12 8 Way
    - Length: 5m (15ft)
    - Sales Number: 140101
  - M12 8 Way: 10m (30ft)
  - 1/4" UNF: 2m (6ft)
  - 1/2" UNF: 5m (15ft)
  - 1/8" UNF: 8m (25ft)
  - 1/8" UNF: 12m (40ft)

- **Sales Numbers:**
  - 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

www.idemsafety.com
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.

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:
- Slow Make Break 2NC 1NO
- Slow Make Break 3NC
- Snap Action 1NC 1NO

Quick Connect (QC) 1/2" UNF 6 Way Male (connector length 14mm)
Pin view from switch
- 5
- 6
- 4

Switch Circuit
- 11/12
- 23/24
- 31/32

Quick Connect (QC) M12 8 Way Male (on Flying Lead 250mm)
Pin view from switch
- 1
- 2
- 3

Female QC Leads
- M12 8 Way 5m (15FT) 140101
- 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

www.idemsafety.com
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.

Stainless Steel Head
Heavy Duty Flexible (Stainless Steel)
Standard Actuator Stainless Steel
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.

<table>
<thead>
<tr>
<th>Fixing Holes for M5 Screws</th>
<th>FRONT ENTRY</th>
</tr>
</thead>
<tbody>
<tr>
<td>34</td>
<td>34</td>
</tr>
<tr>
<td>21</td>
<td>21</td>
</tr>
<tr>
<td>21</td>
<td>21</td>
</tr>
<tr>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td>9</td>
<td>9</td>
</tr>
<tr>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>14.50</td>
<td>14.50</td>
</tr>
<tr>
<td>33.50</td>
<td>33.50</td>
</tr>
<tr>
<td>1.50</td>
<td>1.50</td>
</tr>
</tbody>
</table>

Standards
- EN1088
- IEC 60947-5-1
- EN 60204-1
- ISO 13849-1
- EN20661
- EN 554-1
- 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
- Safety Data - Annual Usage: 3.44 x 10^8 cycles per hour / 24 hours per day / 365 days
- Proof Test Interval (Life): 35 years
- MTTFd: 356 years
- Utilization Category: AC15 A300
- Thermal Current (Ith): 5A
- Rated Insulation / Withstand Voltages: 500V/AC / 2500 VAC
- Vibration: -25C...+60C
- Operating Temperature: IEC 66-2-5, 10-55kHz±1Hz, Excursion: 0.35mm, 1 octave/min
- Conduit Entry: Various (See Sales Part Numbers)
- Fixing: 2 x M5

Quick Connect (QC) 1/8 UNF 6 Way Male
Switch Circuit Quick Connect (QC) M12 8 Way Male (on Flying Lead 250mm)
Pin view from switch

| 5 | 6 |
| 1 | 7 |
| 2 | 6 |

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

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
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

**Classification**

- Exd IIC T6 (-20°C to +60°C) Gb
- Ex tb IIIC T85°C (-20°C to +60°C) Db

**Standards**

- EN1088
- IEC 60947-5-1
- EN 60204-1
- ISO 13849-1
- EN60601
- 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
  - up to PLe depending on system architecture
  - up to SIL3 depending on system architecture
  - 8 cycles per hour / 24 hours per day / 365 days

- PFf:
  - 3.44 x 10^4

- MTTFd:
  - 35 years
  - 356 years

- Utilization Category:
  - AC15
  - A300
  - 3A

- Thermal Current (Itt):
  - 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:
  - -25°C to +60°C

- Vibration:
  - IEC 66-2-6, 10-55Hz / 1 Hz

- Excursion:
  - 0.35mm, 1 octave/min

- Conduit Entry Fixing:
  - Various (See Sales Part Numbers)

- 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

<table>
<thead>
<tr>
<th>2NC 1NO</th>
<th>6.8 6.0</th>
<th>0 mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>11/12</td>
<td>Open</td>
<td>21/22</td>
</tr>
<tr>
<td>21/22</td>
<td>Open</td>
<td>33/34</td>
</tr>
<tr>
<td>33/34</td>
<td>Open</td>
<td>43/44</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>3NC (1NO)</th>
<th>6.8 6.0</th>
<th>0 mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>11/12</td>
<td>Open</td>
<td>21/22</td>
</tr>
<tr>
<td>21/22</td>
<td>Open</td>
<td>33/34</td>
</tr>
<tr>
<td>33/34</td>
<td>Open</td>
<td>43/44</td>
</tr>
</tbody>
</table>

QC Quick Connect Versions

Quick Connect (QC) M12 8 Way Male
(connector length 14mm)
Pin view from switch

<table>
<thead>
<tr>
<th>Quick Connect (QC)</th>
<th>Switch Circuit</th>
<th>Quick Connect (QC)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/8 UNF 6 Way Male</td>
<td>11/12 1 7</td>
<td>1/8 UNF 6 Way Male</td>
</tr>
<tr>
<td>2/10 2/14</td>
<td>2/12 6 5</td>
<td>M20 or 1/8 NPT</td>
</tr>
<tr>
<td>3/4</td>
<td>3/34 or 31/32</td>
<td></td>
</tr>
<tr>
<td>4/34</td>
<td>or 43/44 8 2</td>
<td></td>
</tr>
</tbody>
</table>

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.

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.

Guard Door Interlocked - Dual Channel (Non Monitored)

2 Colour LED Conduit Beacon
(Available voltages 24Vdc 110Vac 230Vac and M20 or 1/8 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.

Female QC Leads | Length | Sales Number |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>M12 8 Way</td>
<td>5m. (15FL)</td>
<td>140101</td>
</tr>
<tr>
<td>M12 8 Way</td>
<td>10m. (30FL)</td>
<td>140102</td>
</tr>
<tr>
<td>1/8 UNF</td>
<td>2m. (6FL)</td>
<td>140141</td>
</tr>
<tr>
<td>1/8 UNF</td>
<td>5m. (15FL)</td>
<td>140142</td>
</tr>
</tbody>
</table>

Sales Numbers | Contacts | M20 | 1/8NPT | QC | QC |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Kobra KP Switch</td>
<td>2NC 1NO</td>
<td>200001</td>
<td>200002</td>
<td>200003</td>
<td>200021</td>
</tr>
<tr>
<td>Kobra KP Switch</td>
<td>3NC</td>
<td>200004</td>
<td>200005</td>
<td>200006</td>
<td>200022</td>
</tr>
<tr>
<td>Kobra KP Switch</td>
<td>3NC 1NO</td>
<td>200007</td>
<td>200008</td>
<td>200023</td>
<td></td>
</tr>
<tr>
<td>Kobra KP Switch</td>
<td>2NC 2NO</td>
<td>200010</td>
<td>200011</td>
<td>200024</td>
<td></td>
</tr>
<tr>
<td>Kobra KP Switch</td>
<td>4NC</td>
<td>200013</td>
<td>200014</td>
<td>200025</td>
<td></td>
</tr>
<tr>
<td>Kobra KP Switch</td>
<td>1NC 1NO Ex</td>
<td>200016</td>
<td>3m.</td>
<td>4 Core Ex</td>
<td></td>
</tr>
<tr>
<td>Kobra KP Switch</td>
<td>2NC Ex</td>
<td>200019</td>
<td>3m.</td>
<td>4 Core Ex</td>
<td></td>
</tr>
<tr>
<td>Kobra KP Switch</td>
<td>2NC 2NO Ex</td>
<td>200026</td>
<td>3m.</td>
<td>8 Core Ex</td>
<td></td>
</tr>
</tbody>
</table>

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

www.idemSafety.com

20
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.

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

Contact Block Options:

<table>
<thead>
<tr>
<th>2NC</th>
<th>1NO</th>
<th>3NC</th>
<th>3NC</th>
<th>1NO</th>
<th>2NC</th>
<th>2NO</th>
<th>4NC</th>
</tr>
</thead>
<tbody>
<tr>
<td>33</td>
<td>34</td>
<td>31</td>
<td>32</td>
<td>43</td>
<td>44</td>
<td>41</td>
<td>42</td>
</tr>
<tr>
<td>21</td>
<td>22</td>
<td>21</td>
<td>22</td>
<td>21</td>
<td>22</td>
<td>21</td>
<td>22</td>
</tr>
<tr>
<td>11</td>
<td>12</td>
<td>11</td>
<td>12</td>
<td>11</td>
<td>12</td>
<td>11</td>
<td>12</td>
</tr>
</tbody>
</table>

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

Classification: Exd IIC T6 (-20°C Ta ≤ +60°C) Gb
Ex tb IIC T85°C (-20°C Ta ≤ +60°C) Db

Standards EN1088 IEC 60947-5-1 EN 60204-1
EN 13849-1 EN 602061 EN 954-1 UL508

Safety Classification and Reliability Data:

- Mechanical Reliability B10d 2.5 x 10^6 operations at 100mA load
- Safety Data - Annual Usage up to Category 4 with Safety Relay
- Safety Data - Annual Usage up to SIL3 depending upon system architecture
- Safety Data - Annual Usage 8 cycles per hour / 24 hours per day / 365 days
- Proof Test Interval (Life) 3.44 x 10^4 years
- MTTFd 35 years
- Utilization Category AC15 A300 3A
- Thermal Current (If) 5A
- Rated Insulation / Withstand Voltages
- Voltage 500VAC / 2500 VAC
- Travel for Positive Opening 6mm
- Actuator entry minimum radius 8mm
- Actuator entry minimum radius 175mm Standard 100mm Flexible
- Maximum Approach / Withdrawal speed 600mm/s
- Body Material Die Cast
- Head Material Painted Red
- Enclosure Protection Die Cast
- Painted Red or Stainless Steel 316
- Operating Temperature -25°C - +60°C
- Vibration IEC 602-2-6, 10-55Hz+1Hz,
- Conduction Protection 0.35mm, 1 octave/min
- Various (See Sales Part Numbers)
- Conduit Entry Fixing 4 x M5

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

www.idemsafety.com
**Kobra Metal - Tongue Switches - Type: KM**

**Contact operation at withdrawal of Actuator**

<table>
<thead>
<tr>
<th>2NC 1NO</th>
<th>3NC (1NO)</th>
<th>4NC</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.8</td>
<td>6.0</td>
<td>6.0</td>
</tr>
<tr>
<td>0 mm</td>
<td>0 mm</td>
<td>0 mm</td>
</tr>
<tr>
<td>11/12</td>
<td>Open</td>
<td>Open</td>
</tr>
<tr>
<td>21/22</td>
<td>Open</td>
<td>Open</td>
</tr>
<tr>
<td>31/32</td>
<td>Open</td>
<td>Open</td>
</tr>
<tr>
<td>41/42</td>
<td>Open</td>
<td>Open</td>
</tr>
</tbody>
</table>

**Quick Connect Versions**

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

**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.

**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.

**Sales Number**

<table>
<thead>
<tr>
<th>Contacts</th>
<th>M20</th>
<th>½&quot;NPT</th>
<th>QC M23</th>
<th>QC M12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kobra KM Switch</td>
<td>2NC 1NO</td>
<td>203001</td>
<td>203002</td>
<td>203003</td>
</tr>
<tr>
<td>Kobra KM Switch</td>
<td>3NC</td>
<td>203004</td>
<td>203005</td>
<td>203006</td>
</tr>
<tr>
<td>Kobra KM Switch</td>
<td>3NC 1NO</td>
<td>203007</td>
<td>203008</td>
<td>203009</td>
</tr>
<tr>
<td>Kobra KM Switch</td>
<td>2NC 2NO</td>
<td>203010</td>
<td>203011</td>
<td>203012</td>
</tr>
<tr>
<td>Kobra KM Switch</td>
<td>4NC</td>
<td>203013</td>
<td>203014</td>
<td>203015</td>
</tr>
<tr>
<td>Kobra KM Switch</td>
<td>1NC 1NO Ex</td>
<td>203016</td>
<td>3m. 4 core Ex</td>
<td></td>
</tr>
<tr>
<td>Kobra KM Switch</td>
<td>2NC Ex</td>
<td>203019</td>
<td>3m. 4 core Ex</td>
<td></td>
</tr>
<tr>
<td>Kobra KM Switch</td>
<td>2NC 2NO Ex</td>
<td>203026</td>
<td>3m. 8 core Ex</td>
<td></td>
</tr>
<tr>
<td>Kobra Actuator</td>
<td>Standard</td>
<td>Add A to Sales Part Number</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kobra Actuator</td>
<td>Flat</td>
<td>Add F to Sales Part Number</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kobra Actuator</td>
<td>Plastic Flexible</td>
<td>Add PF to Sales Part Number</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kobra Actuator</td>
<td>Heavy Duty Flexible</td>
<td>Add HF to Sales Part Number</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kobra Actuator</td>
<td>Heavy Duty S/Steel</td>
<td>Add HFH to Sales Part Number</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stainless Steel Head Version</td>
<td>Add SS to Sales Part Number</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Actuator Holding - 40N (3 pole versions only)</td>
<td>Add 40N to Part Number</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**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

www.idemssafety.com
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.

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

<table>
<thead>
<tr>
<th>Contact Block Options:</th>
<th>2NC</th>
<th>1NO</th>
<th>3NC</th>
<th>1NO</th>
<th>2NC</th>
<th>2NO</th>
<th>4NC</th>
</tr>
</thead>
<tbody>
<tr>
<td>32</td>
<td>34</td>
<td>31</td>
<td>32</td>
<td>43</td>
<td>44</td>
<td>43</td>
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<td>21</td>
<td>22</td>
<td>31</td>
<td>32</td>
<td>33</td>
<td>34</td>
</tr>
<tr>
<td>11</td>
<td>12</td>
<td>11</td>
<td>12</td>
<td>21</td>
<td>22</td>
<td>21</td>
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<td>11</td>
<td>12</td>
<td>11</td>
<td>12</td>
<td>11</td>
<td>12</td>
<td>11</td>
<td>12</td>
</tr>
</tbody>
</table>

- Mechanical Reliability: 810k
- EN 954-1
- ISO 13849-1
- EN 62061

- Safety Data - Annual Usage
  - PFhDr
  - Proof Test Interval (Life)
  - MTTfD
  - Utilization Category
  - AC15 A300 3A
  - 5A

- Rated Insulation / Withstand Voltages
  - 8mm 500VAC / 2500 VAC

- Actuator entry minimum radius
- Maximum Approach / Withdrawal speed
- Body Material: Stainless Steel 316
- Head Material: Stainless Steel 316
- IP67
- -25°C +60°C
- IEC 66-2-6, 10-55Hz+1Hz, Excursion: 0.35mm, 1 octave/Min
- Various (See Sales Part Numbers)

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

HYGIECAM

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 IIIC T6 (-20°C to +60°C) Gb
Ex tb IIIC T85°C (-20°C to +60°C) Db

Standards
EN1088  IEC 60947-5-1  EN 60204-1
ISO 13849-1  EN62061  EN 954-1  UL508
# Kobra Stainless Steel Switch Type: HYGIECAM KM-SS

## Contact operation at withdrawal of Actuator

<table>
<thead>
<tr>
<th>2NC 1NO</th>
<th>6.8</th>
<th>6.0</th>
<th>0 mm</th>
<th>3NC (1NO)</th>
<th>6.8</th>
<th>6.0</th>
<th>0 mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>11/12</td>
<td>Open</td>
<td></td>
<td></td>
<td>11/12</td>
<td>Open</td>
<td></td>
<td></td>
</tr>
<tr>
<td>21/22</td>
<td>Open</td>
<td></td>
<td></td>
<td>21/22</td>
<td>Open</td>
<td></td>
<td></td>
</tr>
<tr>
<td>39/34</td>
<td>Open</td>
<td></td>
<td></td>
<td>31/32</td>
<td>Open</td>
<td></td>
<td></td>
</tr>
<tr>
<td>43/44</td>
<td>Open</td>
<td></td>
<td></td>
<td>43/44</td>
<td>Open</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>4NC</th>
<th>6.0</th>
<th>0 mm</th>
<th>2NC 2NO</th>
<th>6.8</th>
<th>6.0</th>
<th>0 mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>11/12</td>
<td>Open</td>
<td></td>
<td>11/12</td>
<td>Open</td>
<td></td>
<td></td>
</tr>
<tr>
<td>21/22</td>
<td>Open</td>
<td></td>
<td>21/22</td>
<td>Open</td>
<td></td>
<td></td>
</tr>
<tr>
<td>31/32</td>
<td>Open</td>
<td></td>
<td>31/32</td>
<td>Open</td>
<td></td>
<td></td>
</tr>
<tr>
<td>43/44</td>
<td>Open</td>
<td></td>
<td>43/44</td>
<td>Open</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## 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 ½ 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)

**24V dc**

![Diagram of SCR-3 Relay Circuit]

**Female QC Leads** | **Length** | **Sales Number**
---|---|---
M12 8 Way | 5m. (15Fl.) | 140101
M12 8 Way | 10m. (30Fl.) | 140102
Kobra KM-SS Switch | 2NC 1NO | 204001
Kobra KM-SS Switch | 3NC | 204004
Kobra KM-SS Switch | 3NC 1NO | 204007
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. 6 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 FH to Sales Part Number
Kobra Actuator | Heavy Duty | Add 40N to Part Number
Actuator Holding - 40N (3 versions only) | Add 40N to Part Number

**Gland**
- stainless steel 316
  - M20 | 140120
  - ½"NPT | 140121

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

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.

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.

**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:**

<table>
<thead>
<tr>
<th>2NC</th>
<th>1NO</th>
<th>3NC</th>
<th>3NC 1NO</th>
<th>2NC 2NO</th>
<th>4NC</th>
</tr>
</thead>
<tbody>
<tr>
<td>31</td>
<td>32</td>
<td>31</td>
<td>32</td>
<td>31</td>
<td>32</td>
</tr>
<tr>
<td>21</td>
<td>11</td>
<td>21</td>
<td>11</td>
<td>21</td>
<td>11</td>
</tr>
</tbody>
</table>

**Classification**
Exd II2C T6 (-20°C Ta ≤+60°C) Gb
Ex db II2C T85C (-20°C Ta ≤+60°C) 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 10^9 operations at 100mA load
- **EN 954-1** up to Category 4 with Safety Relay
- **EN ISO 13849-1** up to PLe depending upon system architecture
- **EN 62061** up to SIL3 depending upon system architecture
- **Possibility** 6 cycles per hour / 24 hours per day / 365 days
- **3.44 x 10^4** 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** -25°C to +80°C
- **Vibration Excursion** 0.35mm, 1 octave/min
- **Conduit Entry** Various (See Sales Part Numbers)
- **Fixing** 4 x M5

www.idemsafety.com
Kobra Stainless Steel Tongue Switch - Type: HYGIECAM K-SS

Contact operation at withdrawal of Actuator

<table>
<thead>
<tr>
<th>2NC 1NO</th>
<th>6.8</th>
<th>8.0</th>
<th>0 mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>11/12 Open</td>
<td>21/22 Open</td>
<td>33/34 Open</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>3NC (1NO)</th>
<th>6.8</th>
<th>8.0</th>
<th>0 mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>11/12 Open</td>
<td>21/22 Open</td>
<td>33/34 Open</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>4NC</th>
<th>6.0</th>
<th>0 mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>11/12 Open</td>
<td>21/22 Open</td>
<td>33/34 Open</td>
</tr>
<tr>
<td>33/34 Open</td>
<td>43/44 Open</td>
<td></td>
</tr>
</tbody>
</table>

Quick Connect Versions

Quick Connect Pin view from switch

<p>| Quick Connect (QC) M23 12 Way Male (connector Length 26mm) Pin view from switch |</p>
<table>
<thead>
<tr>
<th>Switch Circuit</th>
<th>Quick Connect (QC) M12 8 Way Male (on Flying Lead 25mm) Pin view from switch</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 3</td>
<td>11/12</td>
</tr>
<tr>
<td>4 8</td>
<td>21/22</td>
</tr>
<tr>
<td>7 8</td>
<td>33/34 or 31/32</td>
</tr>
<tr>
<td>9 10</td>
<td>41/42 or 43/44</td>
</tr>
<tr>
<td>12</td>
<td>Earth</td>
</tr>
<tr>
<td>8</td>
<td></td>
</tr>
</tbody>
</table>

2 Colour LED Conduit Beacon
(Available voltages 24Vdc 110Vac 230Vac and M20 or ½” NPT)

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.

<table>
<thead>
<tr>
<th>Female QC Leads</th>
<th>Length</th>
<th>Sales Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>M12 8 Way</td>
<td>5m. (15Fl.)</td>
<td>140101</td>
</tr>
<tr>
<td>M12 8 Way</td>
<td>10m. (30Fl.)</td>
<td>140102</td>
</tr>
<tr>
<td>M23 12 Way</td>
<td>5m. (15Fl.)</td>
<td>140143</td>
</tr>
<tr>
<td>M23 12 Way</td>
<td>10m. (30Fl.)</td>
<td>140144</td>
</tr>
</tbody>
</table>

Female QC Leads | Length | Sales Number |
|----------------|--------|--------------|

Gland stainless steel 316

M20 140120
1/2NPT 140121

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

Gold Plated Contacts available for low power circuits (5V, 5mA).
Add GC to Part Number e.g. 208001-A-GC

Ordering Example:
Kobra K-SS M20 3NC 1NO with Standard Actuator Part No. 208007 - A

www.idemsaftiy.com

24