IDEC
Safety Products
IDEC helps you build safe production systems
Solutions from IDEC

Safety is a paramount concern of IDEC as reflected in our corporate mission statement "Bringing people and technology through the optimum HMI environment." IDEC provides solutions to help you meet the emerging international requirements for safety, ISO 12100. The following model is one of our safety solutions.

Teaching Pendant
In compliance with the requirements of international safety standards for robots, the teaching pendant provides safety devices such as a three-position enabling switch and emergency stop switch.

Grip Switch / Enabling Switch
Safety devices are intended to help the operator avoid dangers of unexpected machine operation during work within hazardous areas.

Production System

<table>
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<th>Start switches, PLCs, etc.</th>
<th>Non-safety related part</th>
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<tr>
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<td>Initiation</td>
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<td>Safety related part</td>
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<td></td>
<td>Safety relay module, etc.</td>
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<td>Start-up</td>
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</table>

Emergency Stop Switch
Padlockable type

Emergency stop switches, safety switches, etc.

SignaLight Tower
Solenoid Safety Interlock Switch
This safety switch serves as an interlock that enables the machine to start only when the guard is closed and locked. The guard is unlocked by the solenoid.

Safety Interlock Switch
This safety switch serves as an interlock that enables the machine to start only when the guard is closed. Once the guard is opened, the machine stops or cannot be started. This safety switch is suitable for applications in limited mounting spaces.

Non-contact Safety Interlock Switch
This safety switch is an interlock switch that can detect the open/close status of the door without mechanical contact. Taking advantage of dust-proof and water-proof construction as well as miniature size, the non-contact safety switch is suitable for semiconductor manufacturing systems, food processing systems, and assembly lines.

Safety Relay Module
This device is intended to start the machine only when the safety control system is functioning normally and safety information from safety devices (safety switch, emergency stop switch, etc.) is relayed to the machine.

Safety Interlock Switch

Emergency Stop Switch
To avoid accidents in an emergency, this switch is used to stop the machine. This switch provides a safety lock mechanism to prevent accidental startup of the machine.

Non-contact Safety Interlock Switch

Emergency Stop Control Box
This control box can be mounted separate from the control panel wherever required to ensure safety.

Non-contact Safety Interlock Switch

Safety Light Curtain
This device detects the entry of a person or object into the hazardous area by the interruption of light beams.

Emergency Stop Control Box

Safety Product Accessories

Emergency Stop Switch
Safety Components

Machine Tool

Robot

Safety Components

Emergency Stop Switches

Safety Interlock Switches

Solenoid Safety Interlock Switches

Teaching Pendant

Emergency Stop Switch

Signalight Tower

Solenoid Safety Interlock Switch

Safety Relay Module

Emergency Stop Switch

Grip Switch

Safety Light Curtain

Teaching Pendant

Emergency Stop Switch

Solenoid Safety Interlock Switch

Safety Relay Module

Emergency Stop Control Box
Safety Components

Semi-conductor Manufacturing System

- Solenoid Safety Interlock Switch
- Signalight Tower
- SEMI EMO Switch (Emergency OFF)
- Switch Guard
- Conforming to SEMATECH Application Guide for SEMI S2-93 12.4
- Safety Relay Module

Food Packaging System

- Non-contact Safety Switch
- Signalight Tower
- Solenoid Safety Interlock Switch
- Emergency Stop Switch
- Jumbo Dome Pilot Light
- Safety Relay Module

Enabling Switches / Grip Switches

- Safety Plugs
- Non-contact Safety Switches
- Safety Relay Modules
- Safety Light Curtains

(07/01/31)
## Emergency Stop Switches

<table>
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<tr>
<th>Type</th>
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<th>Features</th>
<th>Safety Category</th>
<th>Applicable Standards</th>
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</thead>
</table>
| ø16 XA Emergency Stop Switch (Pushlock pull/turn reset) | ![Image](84x106 to 268x348) | • Safe break action: the main contact (NC contact) will open (contact OFF) if the contact block is separated from the operator.  
• Safety lock mechanism / Direct opening action mechanism  
• World’s first ø16 emergency stop switch with 4 contacts in short 27.9-mm body (including illuminated type)  
• Degree of protection IP65 | 4 | UL508 CSA C22.2 No.14 IEC/EN60947-1 IEC/EN60947-5-1 EN60947-5-5 |
| ø16 H8 Emergency Stop Switch (Pushlock turn reset) | ![Image](109x476 to 211x531) | • Safety lock mechanism: the contacts will not operate unless the button is completely locked.  
• Direct opening action mechanism: pressing the button forces the circuit to shut off even if the contacts are welded.  
• Separate contact block removable with a locking lever  
• Degree of protection IP65 | 4 | UL508 CSA C22.2 No.14 IEC/EN60947-1 IEC/EN60947-5-1 EN60947-5-5 |
| ø22 XW Emergency Stop Switch (Pushlock pull/turn reset) | ![Image](121x592 to 209x661) | • Safe break action: the main contact (NC contact) will open (contact OFF) if the contact block is separated from the operator.  
• Safety lock mechanism / Direct opening action mechanism  
• World’s first ø22 emergency stop switch with 4 contacts in short 48.7-mm body (including illuminated type)  
• Degree of protection IP65 | 4 | UL508 CSA C22.2 No.14 IEC/EN60947-1 IEC/EN60947-5-1 EN60947-5-5 |
| ø22 HW Unibody Emergency Stop Switch (Pushlock turn reset, unibody) | ![Image](122x711 to 220x776) | • Safety lock mechanism: the contacts will not operate unless the button is completely locked.  
• Direct opening action mechanism: pressing the button forces the circuit to shut off even if the contacts are welded.  
• Terminal cover is attached as standard  
• Degree of protection IP65 | 4 | UL508 CSA C22.2 No.14 IEC/EN60947-1 IEC/EN60947-5-1 EN60947-5-5 |
| ø22 HW Emergency Stop Switch (Pushlock turn reset, separate contact block type) | ![Image](131x541 to 209x581) | • Safety lock mechanism: the contacts will not operate unless the button is completely locked.  
• Direct opening action mechanism: pressing the button forces the circuit to shut off even if the contacts are welded.  
• Finger-safe spring-up screw terminals ensure safety and save wiring time  
• Degree of protection IP65 | 4 | UL508 CSA C22.2 No.14 IEC/EN60947-1 EN60947-5-1 |
| ø22 HW Emergency Stop Switch (Pushlock key reset) | ![Image](139x670 to 200x703) | • Safety lock mechanism: the contacts will not operate unless the button is completely locked.  
• Direct opening action mechanism: pressing the button forces the circuit to shut off even if the contacts are welded.  
• Finger-safe spring-up screw terminals ensure safety and save wiring time  
• Degree of protection IP65 | 4 | UL508 CSA C22.2 No.14 EN60947-1 EN60947-5-1 |
| ø22 HW Emergency Stop Switch (Pushlock pull reset) | ![Image](142x415 to 200x465) | • Safety lock mechanism: the contacts will not operate unless the button is completely locked.  
• Direct opening action mechanism: pressing the button forces the circuit to shut off even if the contacts are welded.  
• Finger-safe spring-up screw terminals ensure safety and save wiring time  
• Degree of protection IP65 | 4 | UL508 CSA C22.2 No.14 EN60947-1 EN60947-5-1 |
| ø22 YW Emergency Stop Switch (Push lock pull/turn reset) | ![Image](142x355 to 200x404) | • Safety lock mechanism: the contacts will not operate unless the button is completely locked.  
• Direct opening action mechanism: pressing the button forces the circuit to shut off even if the contacts are welded.  
• The contact blocks feature finger-safe terminals to ensure safety  
• Degree of protection IP65 | 4 | UL508 CSA C22.2 No.14 EN60947-1 EN60947-5-1 GB14048.5 |
| ø30 XN Emergency Stop Switch (Pushlock pull/turn reset, plastic bezel type and flush bezel type) | ![Image](216x220) | • Safe break action: the main contact (NC contact) will open (contact OFF) if the contact block is separated from the operator.  
• Safety lock mechanism / Direct opening action mechanism  
• Plastic bezel type: depth behind the panel 47.7 mm  
• Flush bezel type: height from the panel 21 mm  
• Degree of protection IP65 | 4 | UL508 EN60947-1 EN60947-5-1 EN60947-5-5 NFPA79 |
| ø30 XN Emergency Stop Switch (Pushlock turn reset, padlockable type) | ![Image](216x282) | • Locking with a padlock in a locked state can prevent an accidental reset  
• Safe break action: the main contact (NC contact) will open (contact OFF) if the contact block is separated from the operator.  
• Safety lock mechanism / Direct opening action mechanism  
• Degree of protection IP65 | 4 | UL508 EN60947-1 EN60947-5-1 EN60947-5-5 NFPA79 |
| ø30 HN Unibody Emergency Stop Switch (Pushlock turn reset) | ![Image](216x341) | • Safety lock mechanism: the contacts will not operate unless the button is completely locked.  
• Direct opening action mechanism: pressing the button forces the circuit to shut off even if the contacts are welded.  
• Terminal cover is attached as standard  
• Degree of protection IP65 | 4 | UL508 CSA C22.2 No.14 IEC/EN60947-1 IEC/EN60947-5-1 EN60947-5-5 |
## SEMI EMO Switches

<table>
<thead>
<tr>
<th>Type</th>
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</tr>
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</table>
| ø16 XA / ø22 XW Pushbutton Switch with EMO Marking (Pushlock pull/turn reset) | ![EMO Switch](image1) | - EMO: Emergency off Emergency OFF switches conforming to SEMI standards.  
- Safe break action: the main contact (NC contact) will open (contact OFF) if the contact block is separated from the operator.  
- Safety lock mechanism / Direct opening action mechanism  
- Degree of protection IP65 | 4 | UL508 CSA C22.2 No.14 EN60947-5-5 |
| ø22 HW Pushbutton Switch with EMO Marking (Pushlock turn reset, separate contact block type) | ![EMO Switch](image2) | - EMO: Emergency off Emergency OFF switches conforming to SEMI standards.  
- Safety lock mechanism / Direct opening action mechanism  
- Finger-safe spring-up screw terminals ensure safety and save wiring time  
- Degree of protection IP65 | 4 | UL508 CSA C22.2 No.14 EN60947-5-1 |
| Switch Guard for XA, XW, and HW | ![Switch Guard](image3) | - Combination with an IDEC emergency stop switch (conforming to SEMI S2) is approved by TÜV Rheinland.  
- Degree of protection IP65 | | |

## Emergency Stop Control Boxes

<table>
<thead>
<tr>
<th>Type</th>
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<th>Applicable Standards</th>
</tr>
</thead>
</table>
| FB Emergency Stop Control Box | ![Control Box](image4) | - HW/XW series emergency stop switch used as operator.  
- Lightweight plastic box  
- Versatile mounting capability  
- Degree of protection IP65 | 4 | UL508 |
| ø22 HW Emergency Stop Control Box | ![Control Box](image5) | - Emergency stop switch of pushlock turn reset type used as operator.  
- Plastic excellent in housing strength and environment resistance property (IP65)  
- Finger-safe spring-up screw terminals ensure safety and save wiring time  
- Dual insulating structure, grounding not required | 4 | UL508 CSA C22.2 No.14 |

## AS-Interface Safety at Work Emergency Stop Switches and Control Boxes

<table>
<thead>
<tr>
<th>Type</th>
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<th>Features</th>
<th>Safety Category</th>
<th>Applicable Standards</th>
</tr>
</thead>
</table>
| ø22 XW1E AS-Interface Safety at Work Emergency Stop Switch | ![Switch](image6) | - Emergency stop switch with safety slave functions can be connected to the AS-Interface Safety at Work network.  
- Safe break action / Safety lock mechanism / Direct opening action mechanism  
- Space, wire, and labor-saving solutions for safety equipment. | 4 | IEC61508 Part 1-7 IEC62061 IEC60204-1 EN61505 EN50295 EN500947-5-5 IEC61000-6-2 IEC61000-6-4 NFPA79 |
| ø22 XA1E AS-Interface Safety at Work Emergency Stop Switch | ![Switch](image7) | - Emergency stop switch with safety slave functions can be connected to the AS-Interface Safety at Work network.  
- Safe break action / Safety lock mechanism / Direct opening action mechanism  
- Space, wire, and labor-saving solutions for safety equipment. | 4 | |
| FB1W AS-Interface Safety at Work Plastic Control Box with Emergency Stop Switch | ![Control Box](image8) | - FB plastic control box equipped with a ø22 XW1E AS-Interface Safety at Work emergency stop switch.  
- M12 or AS interface piercing type terminal connectors available. | 4 | |
## Safety Interlock Switches

<table>
<thead>
<tr>
<th>Type</th>
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<th>Features</th>
<th>Safety Category</th>
<th>Applicable Standards</th>
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</thead>
<tbody>
<tr>
<td>HS6B Safety Switch</td>
<td><img src="image1.jpg" alt="Image" /></td>
<td>• World’s smallest: 30 mm x 15 mm x 78 mm&lt;br&gt; • Double contacts + one contact for monitor = 3 contacts: conforming to a category of high safety level&lt;br&gt; • NC contact: direct opening action mechanism&lt;br&gt; • Special actuator prevents defeating</td>
<td><strong>4</strong></td>
<td>UL508&lt;br&gt; CSA C22.2 No.14&lt;br&gt; IEC/EN60947-1&lt;br&gt; IEC/EN60947-5-1&lt;br&gt; GS-ET-15</td>
</tr>
<tr>
<td>HS6E Solenoid Safety Interlock Switch</td>
<td><img src="image2.jpg" alt="Image" /></td>
<td>• World’s smallest with solenoid: 75 mm x 15 mm x 75 mm&lt;br&gt; • Internal five contacts allow for four types of contact configurations&lt;br&gt; • Energy saving: current draw is 110 mA maximum&lt;br&gt; • Reversible mounting structure</td>
<td><strong>4</strong></td>
<td>UL508 (pending)&lt;br&gt; CSA C22.2 No.14 (pending)&lt;br&gt; EN1088&lt;br&gt; IEC/EN60947-5-1&lt;br&gt; GS-ET-19</td>
</tr>
<tr>
<td>HSSB Safety Switch</td>
<td><img src="image3.jpg" alt="Image" /></td>
<td>• Small size: 30 mm x 30 mm x 90 mm&lt;br&gt; • Metal head type excellent strength and durability&lt;br&gt; • Conduit port sizes available in G1/2, PG13.5, and M20&lt;br&gt; • Actuator can be inserted from eight directions.&lt;br&gt; • Direct opening action mechanism: the contacts are forced to open when the door is opened, even if the contacts are welded.&lt;br&gt; • Degree of protection IP67</td>
<td><strong>4</strong></td>
<td>UL508&lt;br&gt; CSA C22.2 No.14&lt;br&gt; IEC/EN60947-5-1&lt;br&gt; GS-ET-15</td>
</tr>
<tr>
<td>HSSC Safety Interlock Switch</td>
<td><img src="image4.jpg" alt="Image" /></td>
<td>• World’s smallest with solenoid: 35 mm x 40 mm x 146 mm&lt;br&gt; • NC contact: direct opening action mechanism&lt;br&gt; • Spring lock type / Solenoid lock type</td>
<td><strong>4</strong></td>
<td>UL508&lt;br&gt; CSA C22.2 No.14&lt;br&gt; EN1088&lt;br&gt; EN60947-5-1&lt;br&gt; GS-ET-19</td>
</tr>
<tr>
<td>HS1E Solenoid Safety Interlock Switch Lock strength 1500N</td>
<td><img src="image5.jpg" alt="Image" /></td>
<td>• The base unit and the solenoid unit integrated&lt;br&gt; • Spring lock type (unlocked when the solenoid is energized)&lt;br&gt; • Solenoid lock type (locked when the solenoid is energized)&lt;br&gt; • Manual unlock is possible using a proprietary tool or key in the event of power failure or for machine maintenance.&lt;br&gt; • Degree of protection IP67</td>
<td><strong>4</strong></td>
<td>UL508&lt;br&gt; IEC/EN60947-5-1&lt;br&gt; CSA C22.2 No.14&lt;br&gt; GS-ET-19</td>
</tr>
<tr>
<td>HS1E Solenoid Safety Interlock Switch Lock strength 2000N</td>
<td><img src="image6.jpg" alt="Image" /></td>
<td>• The base unit and the solenoid unit integrated&lt;br&gt; • Spring lock type (unlocked when the solenoid is energized)&lt;br&gt; • Solenoid lock type (locked when the solenoid is energized)&lt;br&gt; • Manual unlock is possible using a proprietary tool or key in the event of power failure or for machine maintenance.&lt;br&gt; • Degree of protection IP67</td>
<td><strong>4</strong></td>
<td>UL508&lt;br&gt; CSA C22.2 No.14&lt;br&gt; EN1088&lt;br&gt; EN60947-5-1&lt;br&gt; GS-ET-19</td>
</tr>
<tr>
<td>HS1E Solenoid Safety Interlock Switch</td>
<td><img src="image7.jpg" alt="Image" /></td>
<td>• The base unit and the solenoid unit integrated&lt;br&gt; • Three circuits for dual main circuits plus lock circuit&lt;br&gt; • Manual unlock type: hostage control is made possible by key.&lt;br&gt; • Degree of protection IP67</td>
<td><strong>4</strong></td>
<td>UL508&lt;br&gt; CSA C22.2 No.14&lt;br&gt; EN60947-5-1&lt;br&gt; GS-ET-19</td>
</tr>
<tr>
<td>HS2B Safety Switch</td>
<td><img src="image8.jpg" alt="Image" /></td>
<td>• Direct opening action mechanism: the contacts are forced to open when the door is opened, even if the contacts are welded.&lt;br&gt; • Actuator can be inserted from two directions.&lt;br&gt; • Degree of protection of contacts IP67&lt;br&gt; • Key interlock type: hostage control is made possible by key.&lt;br&gt; • Degree of protection IP67&lt;br&gt; • Three conduit ports</td>
<td><strong>4</strong></td>
<td>UL508&lt;br&gt; CSA C22.2 No.14&lt;br&gt; EN60947-5-1&lt;br&gt; GS-ET-15</td>
</tr>
<tr>
<td>HSB1 Safety Switch (Rugged die-cast aluminum)</td>
<td><img src="image9.jpg" alt="Image" /></td>
<td>• Direct opening action mechanism: the contacts are forced to open when the door is opened, even if the contacts are welded.&lt;br&gt; • Actuator can be inserted from two directions.&lt;br&gt; • Degree of protection of contacts IP67&lt;br&gt; • Three conduit ports&lt;br&gt; • Rugged die-cast aluminum housing</td>
<td><strong>4</strong></td>
<td>UL508&lt;br&gt; CSA C22.2 No.14&lt;br&gt; EN60947-5-1&lt;br&gt; GS-ET-15</td>
</tr>
<tr>
<td>HS1C Solenoid Safety Interlock Switch (Rugged die-cast aluminum with solenoid)</td>
<td><img src="image10.jpg" alt="Image" /></td>
<td>• The base unit and the solenoid unit integrated&lt;br&gt; • Solenoid-operated unlock driven by electric signals ensures safety.&lt;br&gt; • Manual unlock is possible using a proprietary tool or key in the event of power failure or for machine maintenance.&lt;br&gt; • Degree of protection IP67</td>
<td><strong>4</strong></td>
<td>UL508&lt;br&gt; CSA C22.2 No.14&lt;br&gt; EN60947-5-1&lt;br&gt; GS-ET-19</td>
</tr>
<tr>
<td>HS1C-K Solenoid Safety Interlock Switch (Rugged die-cast aluminum with key interlock)</td>
<td><img src="image11.jpg" alt="Image" /></td>
<td>• Locks the door/key without fail while the machine is running.&lt;br&gt; • The door is unlocked by removing the key to maintain the shut-off state of the load circuit or control circuit.&lt;br&gt; • Ideal as a portable key for use in hazardous areas.&lt;br&gt; • The key number is selectable (up to 30 types) to avoid compatibility problems between the adjacent equipment.&lt;br&gt; • The actuator can be inserted from two directions.</td>
<td><strong>4</strong></td>
<td>UL508&lt;br&gt; CSA C22.2 No.14&lt;br&gt; EN60947-5-1&lt;br&gt; GS-ET-19</td>
</tr>
</tbody>
</table>
### Non-contact Safety Interlock Switches

<table>
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<tr>
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<th>Features</th>
<th>Safety Category</th>
<th>Applicable Standards</th>
</tr>
</thead>
</table>
| HS7A             | ![Image](image1) | • Small size, easy positioning  
• Used in combination with a special safety relay module  
• Connectable up to safety category 4 (EN954-1)  
• Degree of protection IP67 | 4               | UL508  
CSA C22.2 No.14  
EN60947-5-1  
EN1088          |
| HS7A-DMP         | ![Image](image2) | • 3-contact type, operation can be monitored by reading operation signals from the auxiliary contact into the controller such as a PLC  
• Conformable up to safety category 4 (EN954-1) by combining with a special safety relay module.  
• Connectable up to 36 sets  
• Degree of protection IP67 | 4               | UL508  
CSA C22.2 No.14  
IEC/EN60947-5-2  
IEC/EN60947-5-3 |

### Safety Light Curtains

<table>
<thead>
<tr>
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</table>
| SE4B             | ![Image](image3) | • TYPE 4 conformable to safety category 4  
• Palm-size type: minimum detectable object ø30 mm  
• External device monitoring function enables configuration of control circuits conforming to safety category 4 without using safety relay modules. | 4               | UL1496-1  
UL1496-2  
UL508  
UL1998  
CSA C22.2 No.14  
CSA C22.2 No.0.8  
EN61496-1  
prEN61496-2 |

### Enabling Switches / Grip Switches

<table>
<thead>
<tr>
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</table>
| HE1B             | ![Image](image4) | • Ergonomically-designed OFF-ON-OFF 3-position operation to avoid hazards  
• Employs direct opening action mechanism for ON-OFF operation by pressing tightly.  
• Contacts will not turn on when released from OFF (position 3) to OFF (position 1). | 4               | UL508  
CSA C22.2 No.14  
EN60947-5-1          |
| HE2B             | ![Image](image5) | • Ergonomically-designed OFF-ON-OFF 3-position operation to avoid hazards  
• Contacts will not turn on when released from OFF (position 3) to OFF (position 1).  
• Two contacts to provide circuit redundancy (2 contacts for 3-position switch + 2 contacts for button release monitor switch + 2 contacts for button depression monitor switch = 6 contacts maximum). | 4               | UL508  
CSA C22.2 No.14  
EN60947-5-1          |
| HE3B             | ![Image](image6) | • Ergonomically-designed OFF-ON-OFF 3-position operation to avoid hazards  
• Contacts will not turn on when released from OFF (position 3) to OFF (position 1).  
• 3-position switch with internal 2 contacts assures dual safety. | 4               | UL508  
CSA C22.2 No.14  
EN60947-5-1          |
| HE5B             | ![Image](image7) | • Ergonomically-designed OFF-ON-OFF 3-position operation to avoid hazards  
• Contacts will not turn on when released from OFF (position 3) to OFF (position 1).  
• 3-position switch with internal 2 contacts assures dual safety  
• 16-mm round mounting hole | 4               | UL508  
CSA C22.2 No.14  
EN60947-5-1          |
| HE1G             | ![Image](image8) | • OFF-ON-OFF 3-position operation to avoid hazards  
• Direct opening action mechanism for ON-OFF operation  
• The switch does not turn on when released from position 3 (OFF when pressed) to position 1 (OFF when released).  
• Available with emergency stop switch  
• Meets ANSI robotics standards | 4               | UL508  
CSA C22.2 No.14  
IEC/EN60947-5-1  
GS-ET-22          |
| HE9Z-GSH51 + HE5B| ![Image](image9) | • OFF-ON-OFF 3-position operation to avoid hazards  
• Direct opening action mechanism for ON-OFF (pressed tightly) operation  
• Contacts will not turn on when released from OFF (position 3) to OFF (position 1).  
• Meets ANSI robotics standards | 4               | UL508  
CSA C22.2 No.14  
IEC/EN60947-5-1  
HE9Z-UL50          |
### Teaching Pendants

<table>
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<tr>
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</tr>
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</table>
| HG1H       | ![HG1H Teaching Pendant](image) | • Compact type: easily applicable to robots using a small number of axes such as single axis type robots and small assembly robots  
  • Equipped with 3-position enabling switch (HE2B)  
  • Emergency stop switch: XA1E, applicable up to 4NC contacts  
  • STN monochrome, character display LCD (20 characters x 4 lines)  
  • Simple and easy-to-use design for use by either right or left hand  
  • Small and lightweight type; Weight 400g | UL508  
CSA C22.2 No.14 |
| HG1T       | ![HG1T Teaching Pendant](image) | • High-performance type with 192 x 64 pixel graphic display LCD mounted: 45 membrane switches maximum and 15 LEDs maximum  
  • Equipped with 3-position enabling switch (HE3B)  
  • Equipped with HA1E emergency stop switch  
  • Simple and easy-to-use design for use by either right or left hand  
  • Detachable key sheet allows easy change of the key sheet.  
  • Available with four control units maximum | UL508  
UL1740  
CSA C22.2 No.14  
EN61000-6-2  
EN61000-6-4 |
| HG2S       | ![HG2S CC Pendant](image) | • Mobile type pendant with 5.7 inch color (256 colors)/monochrome LCD  
  • Equipped with 3-position enabling switch (HE1B x 2 switches)  
  • Equipped with HA1E emergency stop switch  
  • Combination of CC switches, touch switches and mechanical switches.  
  • IP65 rated excellent water and dust-proof structure  
  • Graphic drawing software WindO/I-NV2 makes screen design and operation settings easy. | UL508  
UL1740  
CSA C22.2 No.14 |

### Safety Relay Modules

<table>
<thead>
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</table>
| HR1S-AC Safety Relay Module        | ![HR1S-AC](image) | • Failure diagnosis function using dual safety circuits  
  • Operation of internal relays can be monitored by LED indicators  
  • DIN rail mounting (Width: 35 mm)  
  • 3NO output  
  • Transistor output available (PNP)  
  • Removable terminal block (HR1S-AC5121P) | 3              | UL508  
CSA C22.2 No.14  
EN60204-1 |
| HR1S-AF Safety Relay Module        | ![HR1S-AF](image) | • Failure diagnosis function using dual safety circuits  
  • Operation of internal relays can be monitored by LED indicators  
  • DIN rail mounting (Width: 35 mm)  
  • 3NO output  
  • Removable terminal block (HR1S-AF5130PB) | 4              | UL508  
CSA C22.2 No.14  
EN60204-1 |
| HR1S-AK Safety Relay Module        | ![HR1S-AK](image) | • Failure diagnosis function using dual safety circuits  
  • Operation of internal relays can be monitored by LED indicators  
  • DIN rail mounting (Width: 35 mm)  
  • Transistor output available  
  • Removable terminal block (HR1S-AK □□□□□ P) | 4              | UL508  
CSA C22.2 No.14  
EN60204-1 |
| HR1S-AT Safety Relay Module        | ![HR1S-AT](image) | • Failure diagnosis function using dual safety circuits  
  • Operation of internal relays can be monitored by LED indicators  
  • DIN rail mounting (Width: 35 mm)  
  • 3NO+1NC output, 2NO delay output  
  • Conformable to category 3 when using OFF delay output. | 4 (3)          | UL508  
CSA C22.2 No.14  
EN60204-1 |
| HR1S-DMB / DME Safety Relay Module | ![HR1S-DMB / DME](image) | • Failure diagnosis function using dual safety circuits  
  • Operation of internal relays can be monitored by LED indicators  
  • DIN rail mounting (Width: 35 mm)  
  • 2NO output  
  • Transistor output available  
  • Removable terminal block (HR1S-DMB □□□□□ □□□□□ P) | 4              | UL508  
CSA C22.2 No.14  
EN60204-1 |
| HR1S-ECM Safety Relay Module       | ![HR1S-ECM](image) | • Failure diagnosis function using dual safety circuits  
  • Operation of internal relays can be monitored by LED indicators  
  • DIN rail mounting (Width: 35 mm)  
  • For adding safety output circuits | 4              | UL508  
CSA C22.2 No.14  
EN60204-1 |
## Safety Plugs

<table>
<thead>
<tr>
<th>Type</th>
<th>Appearance</th>
<th>Features</th>
<th>Applicable Standards</th>
</tr>
</thead>
<tbody>
<tr>
<td>HS2P Safety Plug</td>
<td></td>
<td>• Bayonet-style plug ensures reliable connection.</td>
<td>UL508 CSA C22.2 No.14</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Circuit will always be in the off or open state as long as safety plug is removed.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Double breaking of the internal contacts prevents intentional short-circuit using wire or metal clips.</td>
<td></td>
</tr>
<tr>
<td>HS1P Safety Plug</td>
<td></td>
<td>• Bayonet-style plug ensures reliable connection.</td>
<td>UL508 CSA C22.2 No.14</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• The off state of the circuit can be maintained by detaching the safety plug.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Double breaking of the internal contacts prevents intentional short-circuit using wire or metal clips.</td>
<td></td>
</tr>
<tr>
<td>HS1P Safety Plug</td>
<td></td>
<td>• The off state of the circuit can be maintained by detaching the safety plug.</td>
<td>UL508 CSA C22.2 No.14</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Double breaking of the internal contacts prevents intentional short-circuit using wire or metal clips.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Locking mechanism: disconnecting the safety plug is impossible while the machine is running</td>
<td></td>
</tr>
<tr>
<td>HS1C-P Safety Plug</td>
<td></td>
<td>• The basic unit and the solenoid unit integrated</td>
<td>UL508 CSA C22.2 No.14</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Disconnecting the safety plug is impossible while the machine is running.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• The safeguard door can be unlocked and the shut-off state of the circuit can be maintained by detaching the safety plug.</td>
<td></td>
</tr>
</tbody>
</table>

## Safety Related Products

<table>
<thead>
<tr>
<th>Type</th>
<th>Appearance</th>
<th>Features</th>
<th>Applicable Standards</th>
</tr>
</thead>
<tbody>
<tr>
<td>HW1P Jumbo Dome Pilot Light</td>
<td></td>
<td>• The incandescent lamp type is applicable for displaying the muting state of light curtains, etc. (IEC61496-1).</td>
<td>UL508 CSA C22.2 No.14 EN60947-1 EN60947-5-1</td>
</tr>
<tr>
<td>HE1G Actuator with Plastic Holder</td>
<td></td>
<td>• Actuator with plastic holder compatible with HS5B/HS5E type safety switch can be mounted to the HE1G type grip switch using two attached screws.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Easy switching by removing/installing the grip switches can be achieved by designing a circuit to initiate automatic or manual operation when the safety switch is installed or removed, respectively.</td>
<td></td>
</tr>
<tr>
<td>HS5B/SE Plug Actuator</td>
<td></td>
<td>• Ideal for open/close detection of a swinging door by chaining door and the plug actuator.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Common use for HS5B/HS5E switches.</td>
<td></td>
</tr>
<tr>
<td>HS5B/SE Padlock Hasp</td>
<td></td>
<td>• Padlockable and is inserted into the entry slot of HSSB/HS5E safety switches.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Ideal for ensuring safety when two or more operators work in hazardous areas.</td>
<td></td>
</tr>
<tr>
<td>o22/o30 Padlock Cover</td>
<td></td>
<td>• Padlockable cover prevents unauthorized operation of key switches and safety plugs used as hostage controls, by preventing the key or safety plug from being inserted into the locks.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Ideal for ensuring safety when two or more operators work in hazardous areas.</td>
<td></td>
</tr>
</tbody>
</table>
### Control Boxes (Explosion-proof Type)

<table>
<thead>
<tr>
<th>Type</th>
<th>Appearance</th>
<th>Features</th>
<th>Applicable Standards</th>
<th>Approval</th>
</tr>
</thead>
<tbody>
<tr>
<td>EC1A Control Box</td>
<td></td>
<td>Lightweight aluminum enclosure</td>
<td>Technical standards conforming to IEC60079</td>
<td>TIS (Japan)</td>
</tr>
<tr>
<td>(Flameproof construction)</td>
<td></td>
<td>Meets technical standards conforming to IEC international standards</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>IP65 rated control units</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Hinge type, easy wiring</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EC2A Control Box</td>
<td></td>
<td>Applicable in explosive gas atmosphere defined as Division 1 and 2</td>
<td>Technical standards conforming to IEC60079</td>
<td>TIS (Japan)</td>
</tr>
<tr>
<td>(Flameproof and increased safety construction)</td>
<td></td>
<td>Meets technical standards conforming to IEC international standards</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Stainless steel enclosure: excellent corrosion resistance and waterproof properties (IP65)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Relay Barriers / Lamp Barriers (Explosion-proof Type)

<table>
<thead>
<tr>
<th>Type</th>
<th>Appearance</th>
<th>Features</th>
<th>Applicable Standards</th>
<th>Approval</th>
</tr>
</thead>
<tbody>
<tr>
<td>EB3C Relay Barrier</td>
<td></td>
<td>Globally acceptable products</td>
<td>Standards of each country conforming to IEC60079</td>
<td>TIS (Japan)</td>
</tr>
<tr>
<td>(Intrinsically safe explosion-proof construction)</td>
<td></td>
<td>Complicated grounding work not necessary (subject to local regulations)</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>Universal AC power input (100 to 240V AC)</td>
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<tr>
<td></td>
<td></td>
<td>Spring-up finger-safe terminals</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>Common type connectable to PLCs (8 and 16 circuits)</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>Small and lightweight</td>
<td></td>
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<td></td>
<td></td>
<td>Mountable to DIN rail or panel</td>
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<tr>
<td></td>
<td></td>
<td>Contacts applicable in explosive gas atmosphere defined as Division 0</td>
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<tr>
<td></td>
<td></td>
<td>(EB3C)</td>
<td></td>
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<td></td>
<td></td>
<td>120 types of pilot lights and buzzers connectable (EB3L)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EB3L Lamp Barrier</td>
<td></td>
<td>-divider</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>Lightweight aluminum enclosure</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>Meets technical standards conforming to IEC international standards</td>
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<tr>
<td></td>
<td></td>
<td>Built-in high resolution color LCD (10.4 inch)</td>
<td></td>
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</tr>
<tr>
<td></td>
<td></td>
<td>Degree of protection IP65</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>Control units including pilot lights</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>buzzers and buzzers, and 24-point key switches mountable</td>
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<tr>
<td></td>
<td></td>
<td>Small and lightweight</td>
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<td></td>
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<tr>
<td></td>
<td></td>
<td>Common type connectable to PLCs</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>Built-in high resolution color LCD (12.1 inch)</td>
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<td></td>
<td></td>
<td>Touch panel operable in hazardous areas</td>
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<tr>
<td></td>
<td></td>
<td>Control units including pilot lights</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>buzzers and buzzers, and maintenance ports mountable</td>
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<tr>
<td></td>
<td></td>
<td>(hydrogen gas non-applicable type)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Operator Interfaces (Explosion-proof Type)

<table>
<thead>
<tr>
<th>Type</th>
<th>Appearance</th>
<th>Features</th>
<th>Applicable Standards</th>
<th>Approval</th>
</tr>
</thead>
<tbody>
<tr>
<td>EX1R Operator Interfaces</td>
<td></td>
<td>Meets technical standards conforming to IEC international standards</td>
<td>Technical standards conforming to IEC60079</td>
<td>TIS (Japan)</td>
</tr>
<tr>
<td>(Flameproof construction)</td>
<td></td>
<td>Built-in high resolution color LCD (12.1 inch)</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>Degree of protection IP65</td>
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<td></td>
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<tr>
<td></td>
<td></td>
<td>Control units including pilot lights</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>Buzzers and buzzers, and 24-point key switches mountable</td>
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<tr>
<td></td>
<td></td>
<td>Small and lightweight</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Common type connectable to PLCs</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Specifications and other descriptions in this catalog are subject to change without notice.