Think Automation and beyond...

IDEC

Safety Products

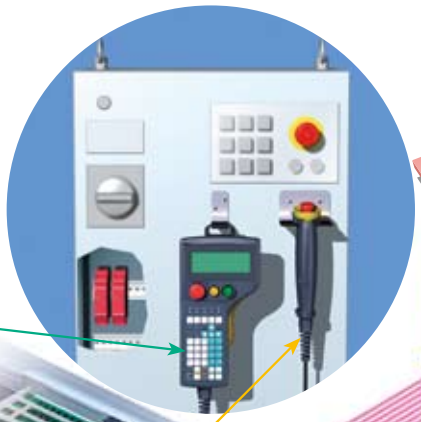
IDEC helps you build safe production systems

IDEC CORPORATION

(07/01/31)

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.

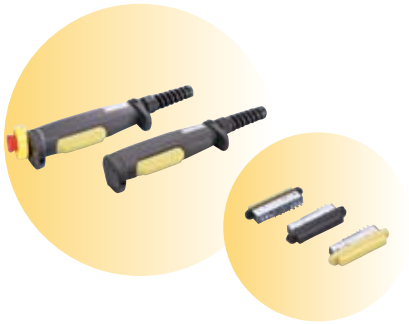


Teaching Pendant

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

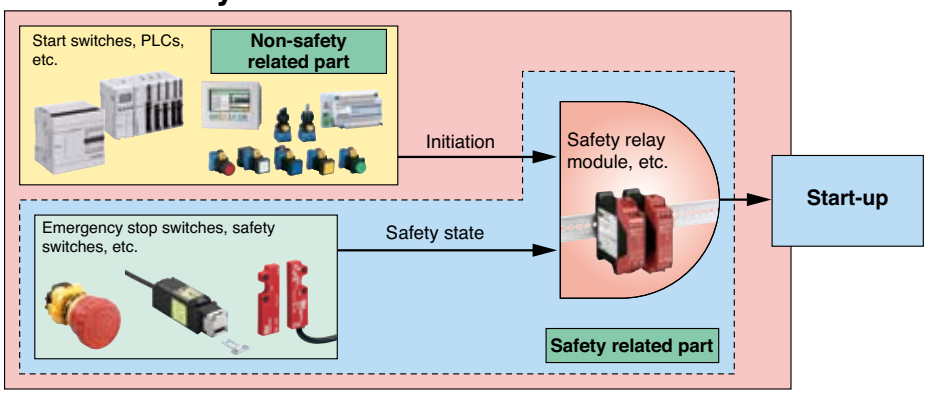
Safety devices are intended to help the operator avoid dangers of unexpected machine operation during work within hazardous areas.



Emergency Stop Switch

Padlockable type

Production System



Signalight Tower

Solenoid Safety Interlock Switch

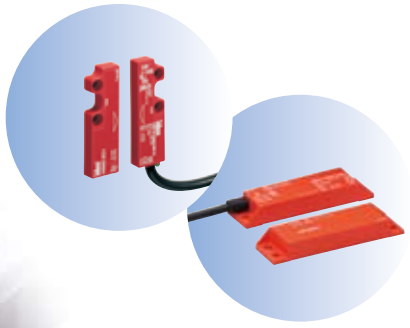
This safety switch serves as an interlock that enables the machine to start only when the guard is closed and locked. The guard is unlocked by the solenoid.

Safety Interlock Switch

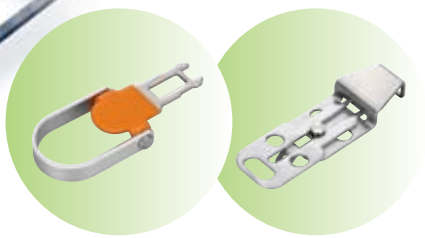
This safety switch serves as an interlock that enables the machine to start only when the guard is closed. Once the guard is opened, the machine stops or cannot be started. This safety switch is suitable for applications in limited mounting spaces.

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.

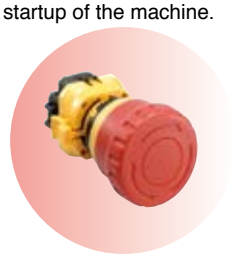


Safety Product Accessories



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.



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

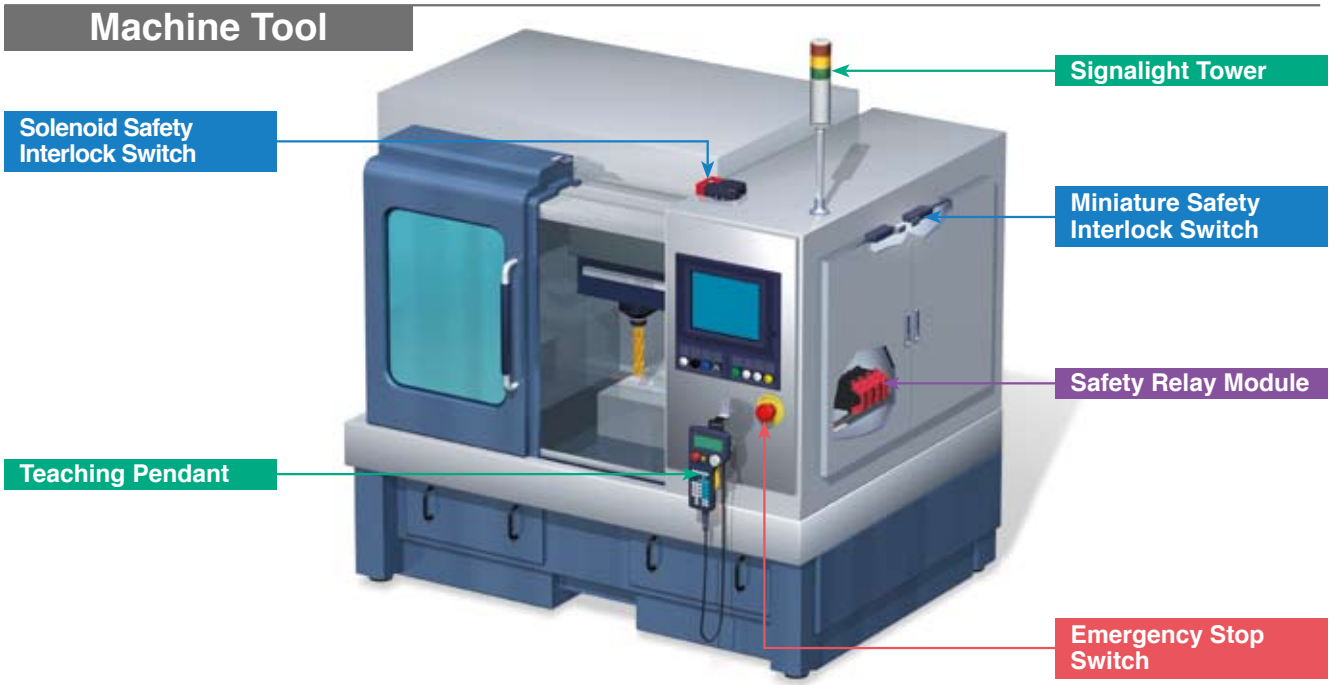
This control box can be mounted separate from the control panel wherever required to ensure safety.

Safety Relay Module

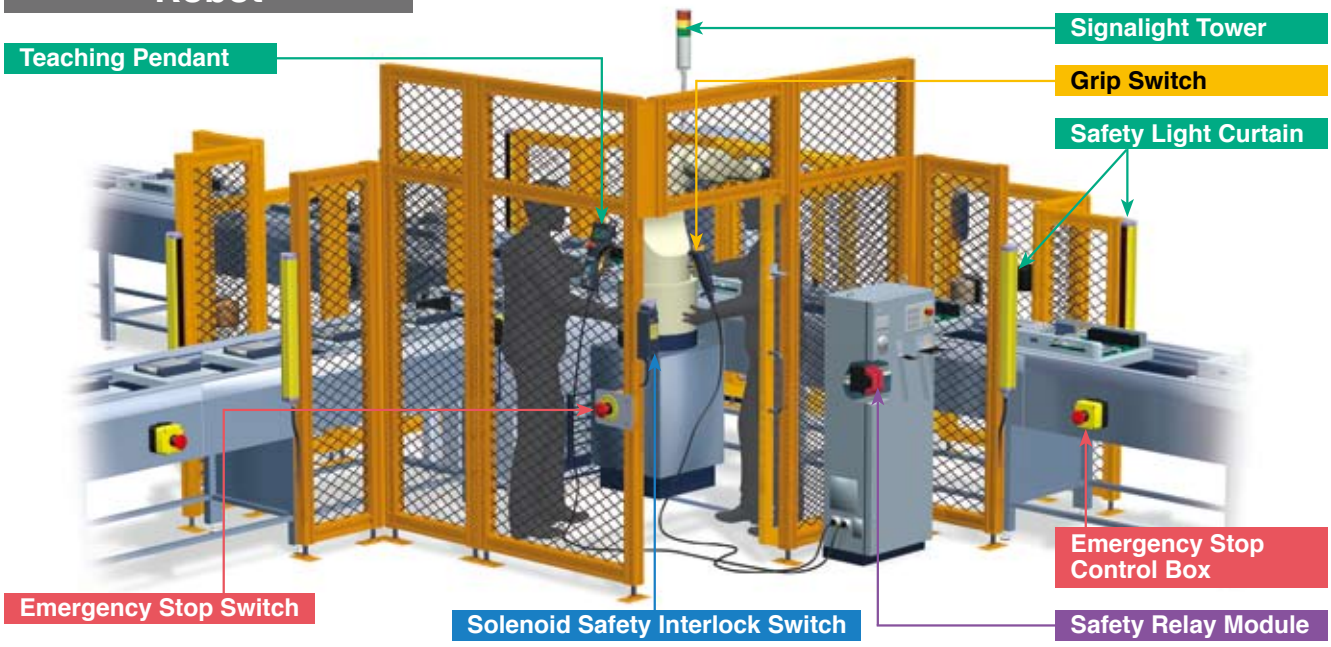
This device is intended to start the machine only when the safety control system is functioning normally and safety information from safety devices (safety switch, emergency stop switch, etc.) is relayed to the machine.

Safety Components

Machine Tool



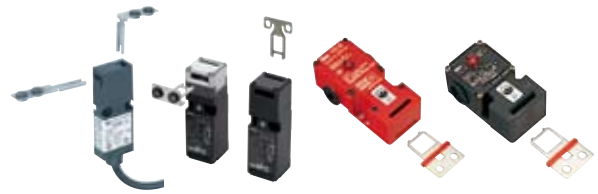
Robot



Safety Components

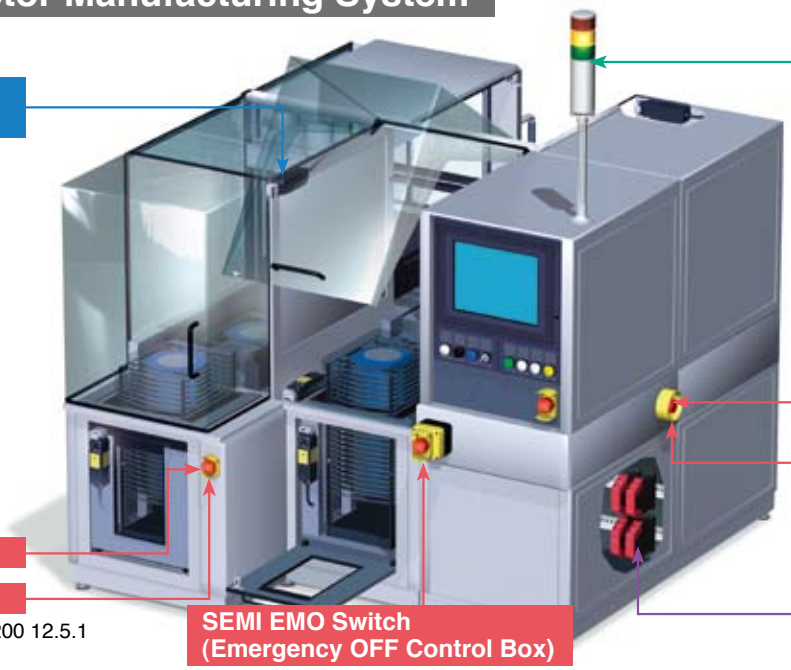
Emergency Stop Switches

Safety Interlock Switches



Solenoid Safety Interlock Switches

Semiconductor 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

SEMI EMO Switch

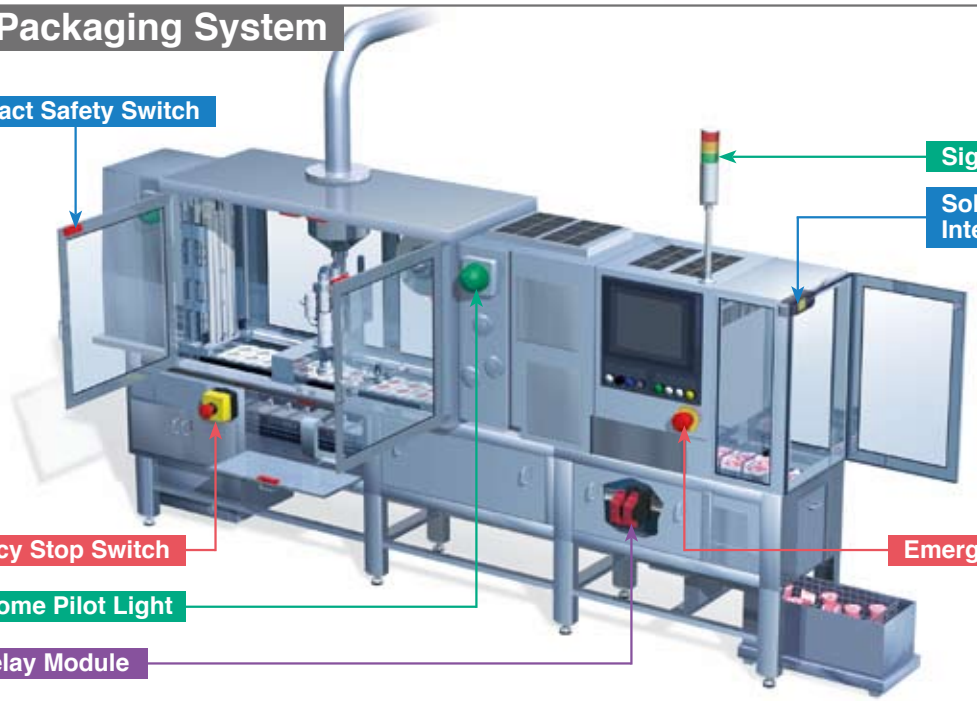
Switch Guard

Conforming to SEMI S2-0200 12.5.1

SEMI EMO Switch (Emergency OFF Control Box)

Safety Relay Module

Food Packaging System



Non-contact Safety Switch

Signalight Tower

Solenoid Safety Interlock Switch

Emergency Stop 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

Emergency Stop Switches

Type	Appearance	Features	Safety Category	Applicable Standards
ø16 XA Emergency Stop Switch (Pushlock pull/turn 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 • 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 H6 Emergency Stop Switch (Pushlock turn reset)		• 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 IEC/EN60947-5-5
ø22 XW Emergency Stop Switch (Pushlock pull/turn 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 • 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)		• 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 IEC/EN60947-5-5
ø22 HW Emergency Stop Switch (Pushlock turn reset, separate contact block type)		• 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 key reset)		• 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)		• 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)		• 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)		• 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)		• 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)		• 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 IEC/EN60947-5-5

SEMI EMO Switches

Type	Appearance	Features	Safety Category	Applicable Standards
ø16 XA / ø22 XW Pushbutton Switch with EMO Marking (Pushlock pull/turn reset)		• 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: 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		• Combination with an IDEC emergency stop switch (conforming to SEMI S2) is approved by TÜV Rheinland. • Degree of protection IP65	—	

Emergency Stop Control Boxes

Type	Appearance	Features	Safety Category	Applicable Standards
FB Emergency Stop Control Box		• 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		• 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

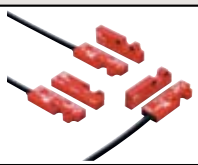
AS-Interface Safety at Work Emergency Stop Switches and Control Boxes

Type	Appearance	Features	Safety Category	Applicable Standards
ø22 XW1E AS-Interface Safety at Work Emergency Stop Switch		• 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 EN954-1 EN50295 EN60947-5-5 IEC61000-6-2 IEC61000-6-4 NFPA79
ø22 XA1E AS-Interface Safety at Work Emergency Stop Switch		• 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		• 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

Type	Appearance	Features	Safety Category	Applicable Standards
HS6B Safety Switch		• World's smallest: 30 mm x 15 mm x 78 mm • Double contacts + one contact for monitor = 3 contacts: conforming to a category of high safety level • NC contact: direct opening action mechanism • Special actuator prevents defeating	4	UL508 CSA C22.2 No.14 IEC/EN60947-1 IEC/EN60947-5-1 GS-ET-15
HS6E Solenoid Safety Interlock Switch		• World's smallest with solenoid: 75 mm x 15 mm x 75 mm • Internal five contacts allow for four types of contact configurations • Energy saving: current draw is 110 mA maximum • Reversible mounting structure	4	UL508 (pending) CSA C22.2 No.14 (pending) EN1088 IEC/EN60947-5-1 GS-ET-19
HS5B Safety Switch		• Small size: 30 mm x 30 mm x 90 mm • Metal head type excellent strength and durability • Conduit port sizes available in G1/2, PG13.5, and M20 • Actuator can be inserted from eight directions. • Direct opening action mechanism: the contacts are forced to open when the door is opened, even if the contacts are welded. • Degree of protection IP67	4	UL508 CSA C22.2 No.14 EN1088 IEC/EN60947-5-1 GS-ET-15
HS5E Solenoid Safety Interlock Switch		• World's smallest with solenoid: 35 mm x 40 mm x 146 mm • Actuator can be inserted from eight directions. • NC contact: direct opening action mechanism • Spring lock type / Solenoid lock type	4	UL508 CSA C22.2 No.14 EN1088 EN60947-5-1 GS-ET-19
HS1E Solenoid Safety Interlock Switch Lock strength 1500N		• The base unit and the solenoid unit integrated • Spring lock type (unlocked when the solenoid is energized)/ Solenoid lock type (locked when the solenoid is energized) • Manual unlock is possible using a proprietary tool or key in the event of power failure or for machine maintenance. • Degree of protection IP67	4	UL508 CSA C22.2 No.14 EN60947-5-1 GS-ET-19
HS1E Solenoid Safety Interlock Switch Lock strength 2000N		• The base unit and the solenoid unit integrated • Spring lock type (unlocked when the solenoid is energized)/ Solenoid lock type (locked when the solenoid is energized) • Manual unlock is possible using a proprietary tool or key in the event of power failure or for machine maintenance. • Degree of protection IP67	4	UL508 CSA C22.2 No.14 EN60947-5-1 GS-ET-19
HS1E Solenoid Safety Interlock Switch Three circuits Manual unlock key type/ Hostage key type		• The base unit and the solenoid unit integrated • Three circuits for dual main circuits plus lock circuit • Key interlock type: hostage control is made possible by key. • Degree of protection IP67	4	UL508 CSA C22.2 No.14 EN60947-5-1 GS-ET-19
HS2B Safety Switch		• Direct opening action mechanism: the contacts are forced to open when the door is opened, even if the contacts are welded. • Actuator can be inserted from two directions. • Three conduit ports • Degree of protection of contacts IP67 • Small and lightweight plastic housing	4	UL508 CSA C22.2 No.14 EN60947-5-1 GS-ET-15
HS1B Safety Switch (Rugged die-cast aluminum)		• Direct opening action mechanism: the contacts are forced to open when the door is opened, even if the contacts are welded. • Actuator can be inserted from two directions. • Three conduit ports • Degree of protection IP67 (contacts) • Rugged die-cast aluminum housing	4	UL508 CSA C22.2 No.14 EN60947-5-1 GS-ET-15
HS1C Solenoid Safety Interlock Switch (Rugged die-cast aluminum with solenoid)		• The base unit and the solenoid unit integrated • Solenoid-operated unlock driven by electric signals ensures safety. • Manual unlock is possible using a proprietary tool or key in the event of power failure or for machine maintenance. • Degree of protection IP67	4	UL508 CSA C22.2 No.14 EN60947-5-1 GS-ET-19
HS1C-K Solenoid Safety Interlock Switch (Rugged die-cast aluminum with key interlock)		• Locks the door/key without fail while the machine is running. • The door is unlocked by removing the key to maintain the shut-off state of the load circuit or control circuit. • Ideal as a portable key for use in hazardous areas • The key number is selectable (up to 30 types) to avoid compatibility problems between the adjacent equipment. • The actuator can be inserted from two directions.	4	UL508 CSA C22.2 No.14 EN60947-5-1 GS-ET-19

Non-contact Safety Interlock Switches

Type	Appearance	Features	Safety Category	Applicable Standards
HS7A Non-contact Safety Switch		• Small size, easy positioning • Used in combination with a special safety relay module conformable up to safety category 4 (EN954-1) • Connectable up to 36 sets • Degree of protection IP67	4	UL508 CSA C22.2 No.14 EN60947-5-1 EN1088
HS7A-DMP Non-contact Safety Switch		• 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/EN60947-5-1 IEC/EN60947-5-2 IEC/EN60947-5-3

Safety Light Curtains

Type	Appearance	Features	Safety Category	Applicable Standards
SE4B Safety Light Curtain		• 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	UL61496-1 UL61496-2 UL508 UL1998 CSA C22.2 No.14 CSA C22.2 No.0.8 EN61496-1 prEN61496-2

Enabling Switches / Grip Switches

Type	Appearance	Features	Safety Category	Applicable Standards
HE1B Enabling Switch (Side mounting type)		• 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 Enabling Switch (with/without rubber boot)		• 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 EN60947-1 EN60947-5-1
HE3B Enabling Switch (with/without rubber boot)		• 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-positon switch with internal 2 contacts assures dual safety.	4	UL508 CSA C22.2 No.14 EN60947-1 EN60947-5-1
HE5B Enabling Switch (ø16 mounting hole type)		• 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-positon switch with internal 2 contacts assures dual safety. • 16-mm round mounting hole	4	UL508 CSA C22.2 No.14 EN60947-1 EN60947-5-1
HE1G Grip Switch (with/without emergency stop switch)		• 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 EN60947-1 IEC/EN60947-5-1 GS-ET-22
HE9Z-GSH51 + HE5B Grip Switch		• 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 (HE9Z: UL50) EN60947-5-1

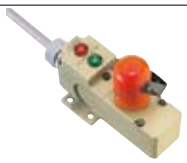
Teaching Pendants

Type	Appearance	Features	Applicable Standards
HG1H Teaching Pendant		• 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 UL1740 CSA C22.2 No.14
HG1T Teaching Pendant		• 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 CC Pendant		• 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

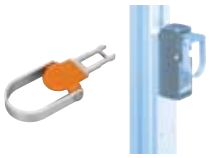
Type	Appearance	Features	Safety Category	Applicable Standards
HR1S-AC Safety Relay Module (for emergency stop switch; guard open / close limit switch; safety switch)		• Failure diagnosis function using dual safety circuits • Operation of internal relays can be monitored by LED indicators. • DIN rail mounting (Width: 35 mm) • 3NO output • Transistor output available (PNP) • Removable terminal block (HR1S-AC5121P)	3	UL508 CSA C22.2 No.14 EN954-1 EN60204-1
HR1S-AF Safety Relay Module (for emergency stop switch; guard open / close limit switch; safety switch)		• 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 EN954-1 EN60204-1
HR1S-AK Safety Relay Module (for emergency stop switch; guard open / close limit switch; safety switch + light curtain)		• 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 EN954-1 EN60204-1
HR1S-AT Safety Relay Module (for emergency stop switch; guard open / close limit switch; safety switch)		• 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 EN954-1 EN60204-1
HR1S-DMB / DME Safety Relay Module (for non-contact safety switch)		• 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 □□□□ /DME □□□ P)	4	UL508 CSA C22.2 No.14 EN954-1 EN60204-1
HR1S-ECM Safety Relay Module (for expanding safety output circuits)		• 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 EN954-1 EN60204-1

Safety Plugs

Type	Appearance	Features	Applicable Standards
HS2P Safety Plug (Panel mount)		• Bayonet-style plug ensures reliable connection. • Circuit will always be in the off or open state as long as safety plug is removed. • Double breaking of the internal contacts prevents intentional short-circuit using wire or metal clips.	UL508 CSA C22.2 No.14
HS1P Safety Plug (Rugged die-cast aluminum housing)		• Bayonet-style plug ensures reliable connection. • The off state of the circuit can be maintained by detaching the safety plug. • Double breaking of the internal contacts prevents intentional short-circuit using wire or metal clips.	UL508 CSA C22.2 No.14
HS1P Safety Plug (Rugged die-cast aluminum housing with solenoid)		• The off state of the circuit can be maintained by detaching the safety plug. • Double breaking of the internal contacts prevents intentional short-circuit using wire or metal clips. • Locking mechanism: disconnecting the safety plug is impossible while the machine is running	UL508 CSA C22.2 No.14
HS1C-P Safety Plug (Rugged die-cast aluminum housing with door lock)		• The basic unit and the solenoid unit integrated • Disconnecting the safety plug is impossible while the machine is running (solenoid type) • The safeguard door can be unlocked and the shut-off state of the circuit can be maintained by detaching the safety plug.	UL508 CSA C22.2 No.14

Safety Related Products

Safety Related Products

Type	Appearance	Features	Applicable Standards
HW1P Jumbo Dome Pilot Light		• The incandescent lamp type is applicable for displaying the muting state of light curtains, etc. (IEC61496-1). • Clear recognition from a distance and from the side.	UL508 CSA C22.2 No.14 EN60947-1 EN60947-5-1
HE1G Actuator with Plastic Holder		• Actuator with plastic holder compatible with HS5B/HS5E type safety switch can be mounted to the HE1G type grip switch using two attached screws. • 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.	
HS5B/5E Plug Actuator		• Ideal for open/close detection of a swinging door by chaining door and the plug actuator. • Common use for HS5B/HS5E switches.	
HS5B/5E Padlock Hasp		• Padlockable and is inserted into the entry slot of HS5B/HS5E safety switches. • Ideal for ensuring safety when two or more operators work in hazardous areas.	
ø22/ø30 Padlock Cover		• 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. • Ideal for ensuring safety when two or more operators work in hazardous areas.	

Control Boxes (Explosion-proof Type)

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

Relay Barriers / Lamp Barriers (Explosion-proof Type)

Type	Appearance	Features	Applicable Standards	Approval
EB3C Relay Barrier (Intrinsically safe explosion-proof construction) [Contact signal transducer]		• Globally acceptable products • Complicated grounding work not necessary (subject to local regulations) • Universal AC power input (100 to 240V AC) • Spring-up finger-safe terminals • Common type connectable to PLCs (8 and 16 circuits) • Small and lightweight • Mountable to DIN rail or panel • Contacts applicable in explosive gas atmosphere defined as Division 0 (EB3C) • 120 types of pilot lights and buzzers connectable (EB3L)	Standards of each country conforming to IEC60079	TIIS (Japan) NK (Japan) ATEX (Europe) FM (USA) CSA (Canada) CQST (China) KR (Korea) KOSHA (Korea)
EB3L Lamp Barrier (Intrinsically safe explosion-proof construction)				

Operator Interfaces (Explosion-proof Type)

Type	Appearance	Features	Applicable Standards	Approval
EX1R Operator Interfaces (Flameproof construction)		• Meets technical standards conforming to IEC international standards • Built-in high resolution color LCD (10.4 inch) • Degree of protection IP65 • Control units including pilot lights, pushbutton switches and buzzers, and 24-point key switches mountable	Technical standards conforming to IEC60079	TIIS (Japan)
EX4R Operator Interfaces with Touch Switches (Intrinsically safe and flameproof construction)		• Applicable in hydrogen gas atmosphere and places defined as Division 1 and 2 • Meets technical standards conforming to IEC international standards • Built-in high resolution color LCD (12.1 inch) • Touch panel operable in hazardous areas • Control units including pilot lights, pushbutton switches, buzzers and maintenance ports mountable (hydrogen gas non-applicable type)	Technical standards conforming to IEC60079	TIIS (Japan)

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

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