



*Think Automation and beyond...*



# ROBOTICS

Industry Solutions

IDEC CORPORATION



# ROBOTICS INDUSTRY

IDEC has long served the robot industry by developing highly reliable products using the know-how that we have learned with our customers.

We offer a wide range of products to achieve downsizing, safety, durability, and robustness, required for robots, robot controllers, teaching pendants, and environments surrounding robots. Together with the development and growth of the robot industry, IDEC will relentlessly keep abreast with the latest market trends and technology advancement to provide products with extra values.

# Robot Industry and IDEC

## IMPROVING SAFETY

IDEC has consistently led the world in robotics safety, including developing the industry's first enabling switch with three-position functionality (dead man switch) and supplying a third-generation emergency switch featuring revolutionary mechanism.

By promoting Safety 2.0, a next-generation concept that enables humans and machines to collaborate seamlessly and efficiently without barriers, IDEC delivers a wide variety of products such as safety laser scanners, safety light curtains, safety interlock switches, and forced guide relays, to ensure safety for robot systems.

## ENHANCING QUALITY

Throughout our 75-year history, IDEC has continued developing and improving our products, and we constantly strive to improve usability and quality.

The IDEC brand has earned the trust of numerous customers in the robot industry, and many of our products are used actively around robots. We continue to provide products with the quality required by our customers, and contribute to the quality of robot systems.

## SERVING THE FUTURE

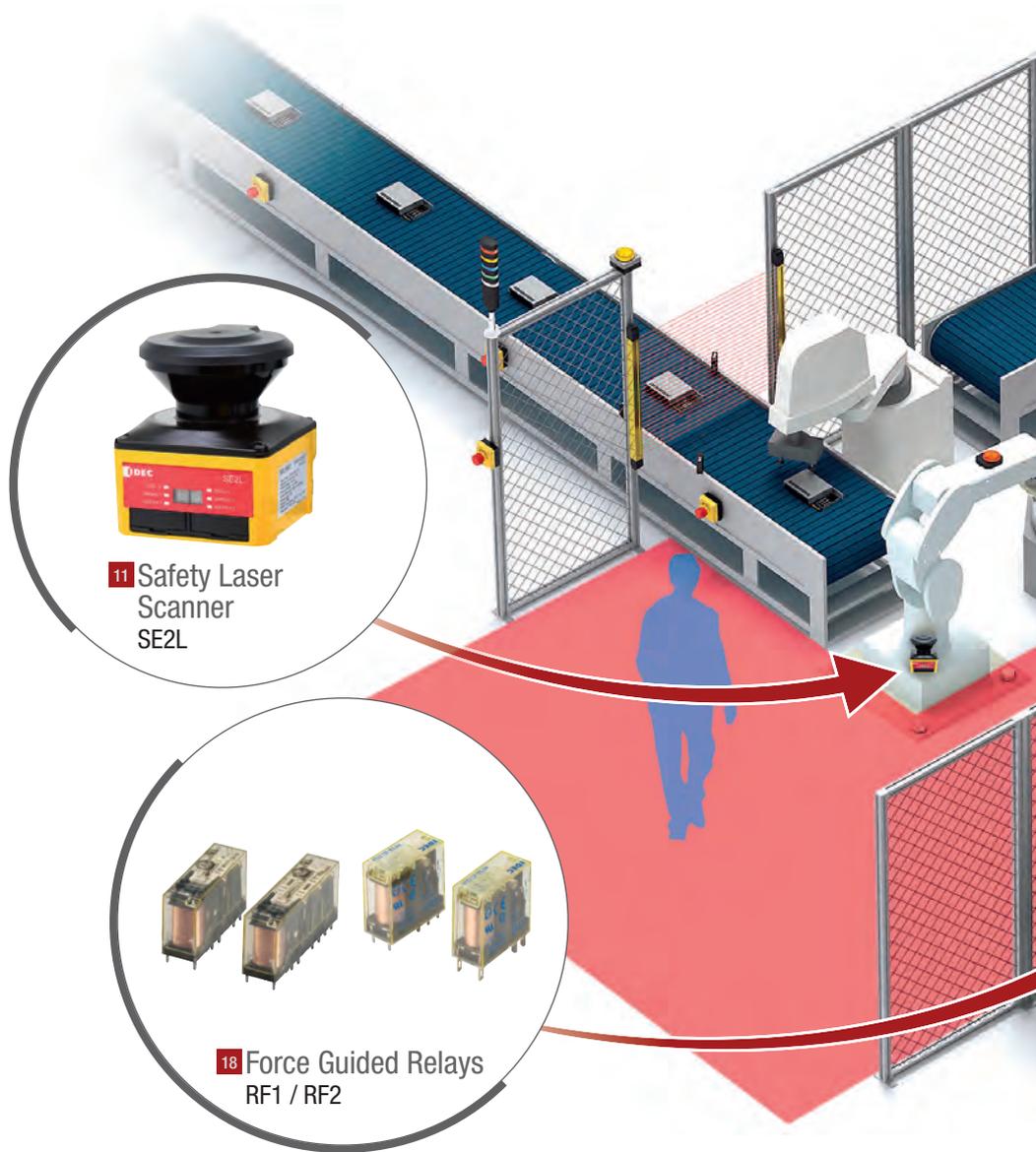
IDEC is working with the robotics industry to respond to the accelerated proliferation of IoT, workplace diversity, and other societal changes. We will respond to market needs with, for example, new products to add to safety the element of "peace of mind", for which there will be even greater demand in the future, as well as new products that boost utilization of commercially-available tablets. IDEC will continue to identify robotics industry trends and supply our customers with viable solutions, contributing to the future of humankind.



# Leading the way in HMI and collaborative safety for human and robots

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**11** Safety Laser Scanner  
SE2L

**18** Force Guided Relays  
RF1 / RF2

## Optimal HMI proposals for robots

**3**



ø16/ø22 Flush Silhouette Switches/  
ø16 Switches & Pilot Lights  
LB/LBW Series

**5**



Miniature Joysticks  
TS Series

**6**



Metal Switches  
AV Series

**7**



Pushbutton Switches  
IP / IS Series

**9**



Ultra-bright LED Pilot Lights  
AP22

**10**

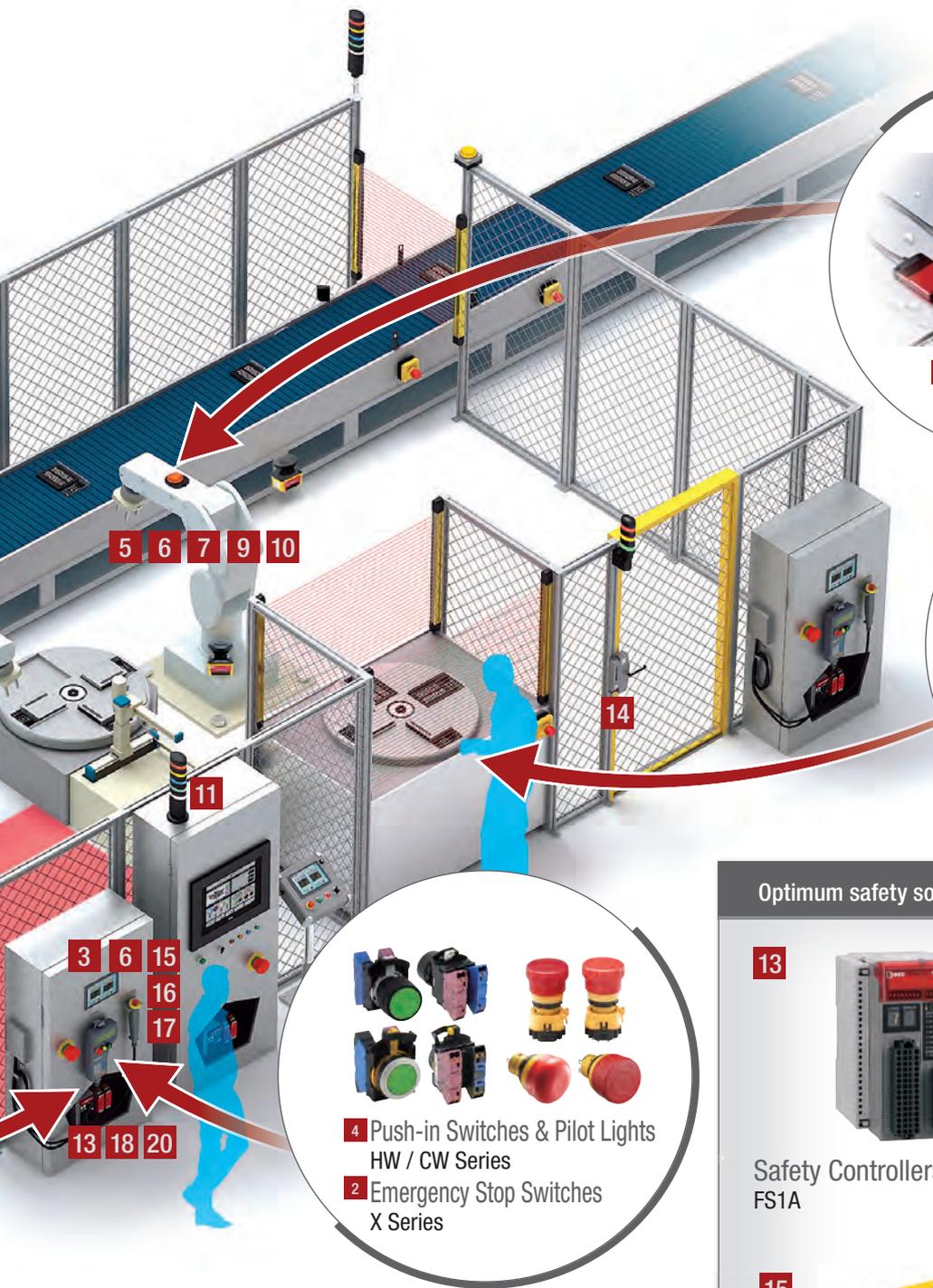


LED Indicators  
Q Series

**11**



LED Signalight Towers  
LD6A



**8** Surface Mount Indicators LH1D

**1** Tablet Mount Safety Device Safety Commander™

**4** Push-in Switches & Pilot Lights HW / CW Series  
**2** Emergency Stop Switches X Series

Optimum safety solutions for robots

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Safety Controllers FS1A

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Interlock Switches with Solenoid HS1T/HS5L

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Enabling Switches HE2B / HE6B

**16**

Safety Grip Switches HE2G

**17**

Operator Interface Hand-held Model HG1P / HG1H

Improve production efficiency

**18**

Relays/Plug-in Sockets RU/RJ/SU/SJ Series

**20**

LED Lighting LF1B-N / LF2B

# Safety Commander™ HT3P/HT4P

Tablet Mount Safety Device

Safety functions (emergency stop switch / enabling switch) made available to commercially available tablets for use as a remote controller or teaching pendant

- Holds up to **8 to 11-inch** (HT3P) / **10 to 13 inch** (HT4P) tablets with flexible mounting depending on the required display size.
- Ergonomic grip design ideal for long and **fatigue-free** operation.
- Tablets can be used **vertically** or **horizontally**.  
**Ergonomic** design for improved usability.
- Stable communication with **wired LAN** (HT4P) and **USB** charging available.
- **Mechanical switches** installed for reliable operation ideal for various applications (HT4P)
- **Accessories** include a wall mount hanger to enhance easy of use.



HT3P



HT4P



Wall mount bracket (accessory) enables operation while fixed to the wall.

\*The above image shows the device mounted on a commercially available tablet.

\*The tablet must be provided by the user.

Series	Supported Tablet Sizes	Supported Tablet Thickness	Wired LAN Connection	Mechanical Switches	IP Rating (*1)	Emergency Stop Switch	Enabling Switch
HT3P	8 to 11 inch	Up to 24mm	–	–	IP54	XA1E-LV302Q4R	HE5B-M2PY
HT4P	10 to 13 inch	Up to 23mm	●	● (*2)	IP54	XA1E-LV302Q4R	HE6B-M200Y

• The above data does not include a tablet.

\*1) Except when connected to a USB cable.

\*2) Up to 3 IDEC LB series switches can be installed. The product will be shipped with requested switches. For custom products, see HT4P catalog.

Application: Robot controller / Teaching pendant

Ensures safety in tablet operation in environments around robots



## HR6S



Safety Relay Modules

### Full range of diagnostic functions reduces downtime for robot systems

- **Diagnostic** results are **coded** and output as a pulse signal for easy and detailed monitoring of the safety system.
- **Dial switching** allows flexible configurations in connection with various input devices and selection of numerous start modes, eliminating the need use different modules for different functions.



## YB Series

Plastic Control Boxes

### Emergency stop switches can be easily added to industrial robot systems

- The box can be mounted without opening the box cover, improving **work efficiency**.
- Boxes available with **YW** series emergency stop switches, long used in the industrial robot industry, helping build highly reliable systems.



## SX5E

(8-port)

Ethernet Switches

### Unmanaged switch available with 5-port or 8-port entry

- High **EMI impulse rejection** enables high reliability and stable operation.
- Robust **metal housing** for superior impact and environmental resistance.
- Compliant with Fast Ethernet standards for **high-speed communication**.
- Equipped with various functions such as **QoS** (8-port model only) and redundant power input (2 power systems).



8-port

5-port

# X Series

Emergency Stop Switches

## Third generation emergency stop switches



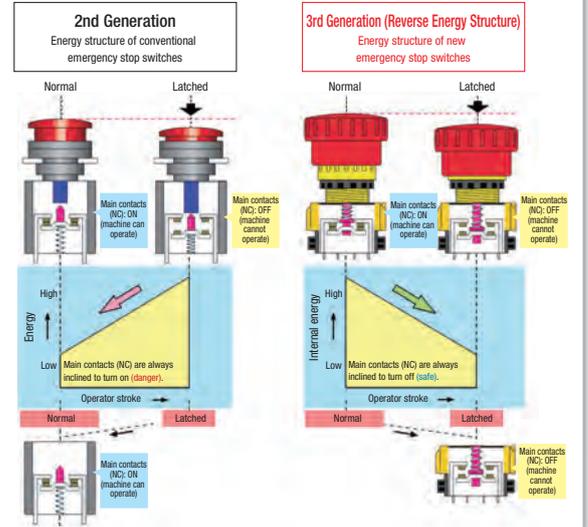
■ IDEC's unique safety technology designed for high reliability performance required by the robot industry.

1. Reverse Energy Structure
2. Safe Break Action

■ Emergency stop switches can be reset by pulling or turning. Turn reset / Pull reset

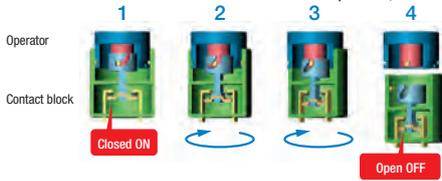
### Reverse Energy Structure

With X series, the potential energy level of the latched status is lower than that of normal status. In the event the switch is damaged due to excessive shocks, the NC contacts will turn off, thus stopping the machine (patented design)



### Safe Break Action

When the contact block is detached from the operator, the NC contact opens (OFF).



When the contact block is detached from the operator, the cam directly opens the NC main contacts (contacts are off). (Patented)

Series	Mounting Hole Size (mm)	Head Size (mm)	Terminal Style					IP Rating	Panel Depth	International Standards				
			Solder	Solder/Tab	PC Board	M3 Screw	Connector			UL	CSA	TÜV	CCC	CE
XW	ø22.3	ø40 ø60	●		●	●	●	IP65 IP67	48.7 mm	●	●	●	●	●
XW (indicator type)	ø22.3	ø38				●		IP65	46.4 mm	●	●	●	●	●
XA (unibody)	ø16.2	ø29 ø40	●	●				IP65 IP40	19.5 mm	●	●	●	●	●
XA (removable contact block)	ø16.2	ø30 ø40	●		●			IP65	27.9 mm	●	●	●	●	●
X6	ø16.2	ø30 ø40	●	●				IP65	19.5 mm	●	●	●	●	●

Application: Robot controller / Teaching pendant

Short-body / Safe and highly reliable



# LB/LBW Series

ø16 ø22 Flush Silhouette Switches  
ø16 Switches & Pilot Lights

For stylish design of panel surfaces

- Short body switches for slim and sleek teaching pendants.
- Enhances design of robot controllers.



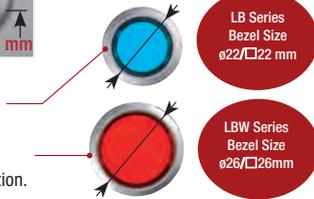
**Flush Silhouette**

Projects only 2mm from the panel surface. For sleek and refined style.



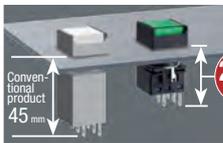
**LB Series Flush Silhouette Switches**  
Slim 2mm-thick bezels for stylish panels.

**LBW Series Flush Silhouette Switches**  
Smart appearance with large surface for secure operation.



**ø16 LB Series Miniature Switches and Pilot Lights**

Short body for space-saving installation.



**Short Body**  
Depth of only 27.9mm behind panel. Reduces the size of machines and control panels.

**Removable Contact Block / Single Board Mounting**

Removable contacts enable easy wiring / Single board mounting for space-saving installation.



UP series has the same depth as LB/LBW series. Mounts on the same panel.  
(Flush bezel: 34.9mm, standard bezel: 27.9mm)

Series	Mounting Hole Size (mm)	Bezel Size (mm)	Panel Depth	Screw	Terminal Style			IP Rating	International Standards				
					Solder/Tab	PC Board			UL	CSA	TÜV	CCC	CE
LB	ø18.2 □18.2 18.2 x 24.2	ø22 □22 18 x 22	27.9 mm		●	●	IP65	●	●	●	●	●	
LBW	ø22.3 □22.5	ø26 □26	27.9 mm		●	●	IP65	●	●	●	●	●	

Application: Robot controller / Teaching pendant

For sleek and refined style



# HW/CW Series

**S<sup>3</sup>** Push-in Switches & Pilot Lights  
**CONNECT**

## Simple wiring with Push-in technology

- **Push-in** terminals reduce wiring and maintenance time.
- Highly visible **LEDs** allow the transmission of reliable information.
- self-cleaning **wiping action contacts** ideal for robot systems requiring high reliability.



### High visibility with new LED

■ **ISO3864-4 Safety color compliant**  
 (Corresponding colors: R (Red), Y (Yellow), G (Green), PW (Pure white))  
 Safety colors are defined with ISO standards.  
 The bright and clear colors are effective for emergency situations.

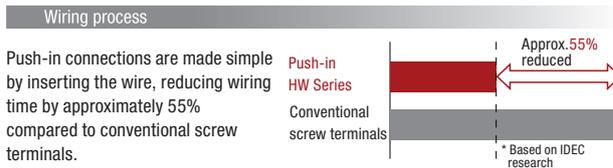
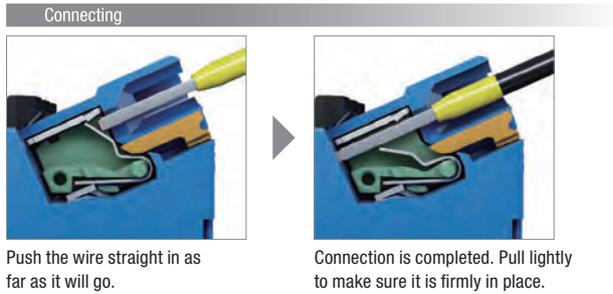


### Wiping, self-cleaning action contacts



### Time saving & efficient

#### Reduce wiring time



Series	Mounting Hole Size (mm)	Bezel Size (mm)	Terminal Style		IP Rating	International Standards				
			Screw	Push-in		UL	CSA	TÜV	CCC	CE
HW	ø22	ø30	●	●	IP65	●	●	●	●	●
CW	ø22	ø30	●	●	IP65	●	●	●	●	●

Application: Robot controllers

Improve wiring efficiency with push-in technology



# TS Series

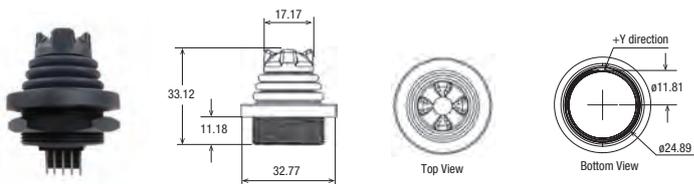
Miniature Joysticks

## For intuitive teaching operation

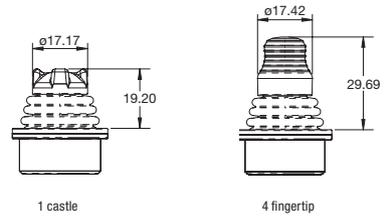
- **Short body** switches for slim pendant design
- **Intuitive** axis operations for simplified teaching



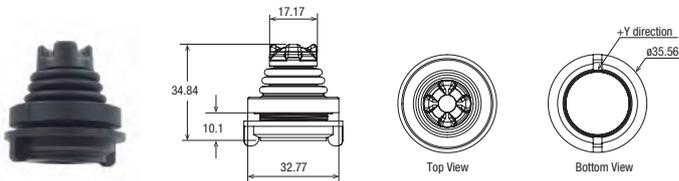
### ■ Metal Threaded Housing



### ■ Handle options



### ■ Plastic Threaded Housing



Dimensions in mm

Series	Durability	Output Type	Supply Voltage Range	IP Rating	EMC Immunity Level	EMC Emission Level	ESD
TS	1 million operations	Single, dual, analog, PWM, USB	5.00V DC ± 0.01	IP67/IP69K	EN61000-4-3	EN61000-6-3: 2001	EN61000-4-2

Application: Hand guide / Teaching pendant

Achieves intuitive operability



# AV Series APEM

Metal Switches

## Metal switches for use in harsh environments

**Metal** design resistant against cleaning agents for washing robots.

**Metal** appearance gives a **high-class** impression to the robot.

\*1 Differs depending on model.



Series	Mounting Hole Size (mm)	Output Type	Electrical Durability	Mechanical Durability	IP Rating
AV	ø22 to ø30	Contact output	500,000 operations	1 million operations	IP65/IP67/IP69K

Application: Direct teaching

Robust and smart design



# IP/IS Series

Pushbuttons

## Environment-resistant and compact switches for use in tight spaces

- Short body/compact design contributes to the **downsizing** of direct teaching devices.
- Ergonomic clicking feeling for **safe operation**.



Series	Mounting Hole Size (mm)	Dimensions (mm)
IP	Ø13.6	<p>IP Series (*1)</p>
IS	Ø13.6	<p>IS Series</p>

\*1 Dimensions of IP series, momentary type (illuminated round shape, soldered terminal). For other types, please see IDEC website.

Application: Direct teaching

Effective use of space with small and environment-resistant switches



# LH1D

Surface Mount Indicators

Suitable for indicating the operation status of robots



- **No mounting holes required**, enabling easy mounting on manipulators.
- **7 color variations** available to indicate the operating status of robots, such as servo ON/OFF.
- **IP67** protection for use in harsh environments.
- **Highly flexible, UL-compliant robot cable.**

Series	Color Variations	Cable Length	Rated Voltage	IP Rating	International Standards			
					UL	CSA	TÜV	CE
LH1D	1-color / 2-color alternate / 3-color alternate (*1)	Cable type: 1m, 3m, 5m M12 connector type (*1): 30cm	Cable type: 24V AC/DC M12 connector type (*1): 24V DC	IP67	●	●	●	●

\*1 Large dome only

Application: Robot operating status indicator

Easy mounting and highly visible



# AP22

Ultra-bright LED Indicators

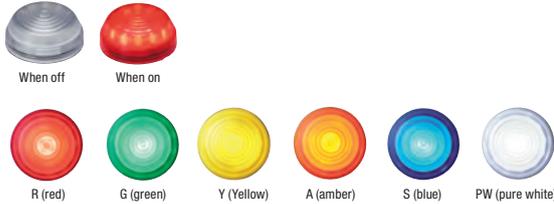
## Outstanding visibility to indicate the robot operating status

- Robot operating status highly visible from a **wide range** of angles.
- 6 color selections to **indicate operation status**, such as servo ON/OFF and cooperative mode operation.
- IP66 protection allows installation in harsh environments.



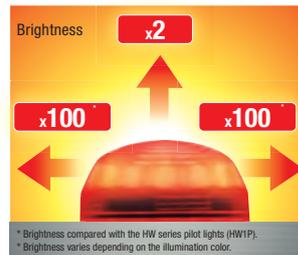
### Six colors for various applications

Clear lens provides sharper contrast between lit and unlit. Perfect for use in bright ambient light.



### Unique optical design achieves high visibility from all directions

Wide choice of installation locations, regardless of mounting orientation.



Series	Rated Voltage	Operating Temperature	Dimensions (mm)
AP22	24V	-25 to +55°C (No freezing)	

Application: Robot Operating status indicator

Reliable and high visibility from wide range of angles



# Q Series



LED Indicators

LED indicators with outstanding protection performance and suitable for a wide temperature range

- Wide operation temperatures ranges from **-40 to +85°C**, for flexible installation of robots (reed wire models).
- **IP67** protection for use in environments exposed to water.
- Available in sizes ranging from **ø6 to 22mm**.



Series	Mounting Hole Size (mm)	Bezel Shape	Terminal Style
Q	ø6, 8, 10, 12, 16, 22	Prominent, flush	solder lug, faston, reed wire

Application: Robot operating status indicator

Achieves high visibility



# LD6A

LED SignalLight Towers

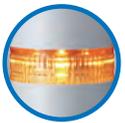
**Striped design for clear visibility and improved contrast**

- Multiple lenses and light tubes offer **high visibility** robot operating status from a wide range of angles.
- Striped design** less susceptible to external light ensures clear visibility.



## Stylish

Smart functions with a stylish design  
Universal design. Oval shape and striped design makes the SignalLight highly visible.

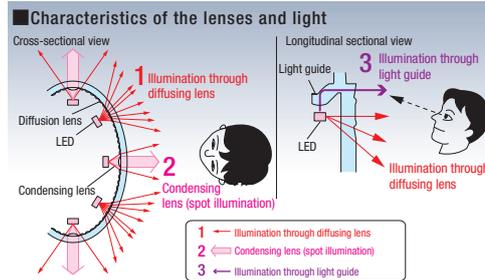


## Technology

Unique lens shape offers high visibility.  
The original lens shape enable high visibility from different directions.

### Lens Shape for High Visibility

3 illumination patterns for high visibility from any direction.



### Clear Difference between On/Off, and Visibility Improved



Series	IP Rating	Rated Voltage	Rated Current (per tier)	Power Consumption (per tier)	International Standards		
					UL	CSA	CE
LD6A	IP54/IP65	24V AC/DC	25 mA (R, Y) 30 mA (S, G) 20 mA (W)	0.6W (R, Y) 0.75W (S, G) 0.5W (W)	●	●	●

Application: Robot Operating Status Indicator

High visibility and smart design



# SE2L

Safety Laser Scanners

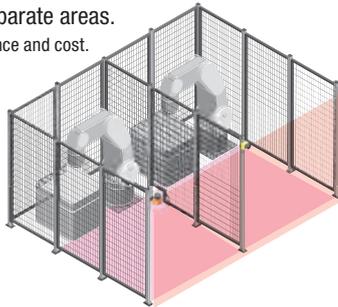
## Compact safety sensor for easy installation

- **Area protection** and **access protection** for flexible and safe construction of robot systems.
- Low-speed and stop zones can be set to ensure **productivity** and **safety**.
- Robot controller connection terminal (SE9Z-\*) equipped with a safety relay reduces **maintenance time** and **wiring time**.

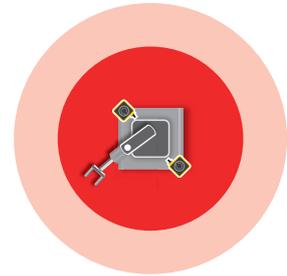


Robot controller connection terminal

■ One scanner can monitor two separate areas. Dual protection function reduces maintenance and cost.



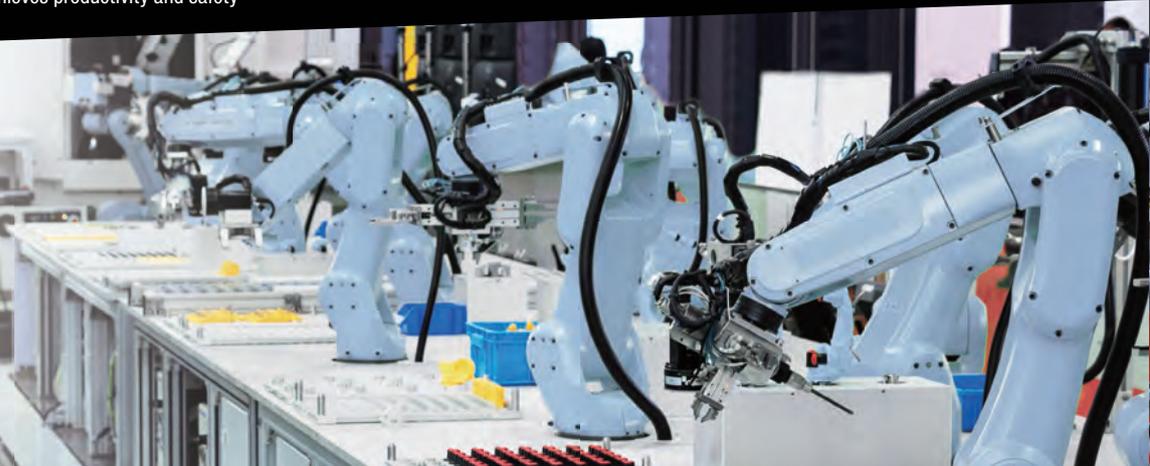
■ Ideal for collaborative robots. Two warning zones, in addition to one protection zone, can be configured to achieve slow speed areas.



Series	Safety Category	Performance Level	Detection Characteristics	Power Supply Voltage	International Standards			
					UL	CSA	TÜV	CE
SE2L	Type 3 (IEC61496-1, IEC61496-3)	PL=d, SIL3	Protected area: Max. 5 m Detection angle: 270°	24V DC ± 10%: When using converter power supply 24V DC -30%/+20%: When using battery	●	●	●	●

Application: Intrusion detection, area monitoring

Safety scanner for robot systems achieves productivity and safety



# FS1A

Safety Controllers

Pre-programmed to easily build a safe robot system

- With 35 safety circuit logics in a compact housing, **no programming** is required.
- Connects to a wide variety of safety equipment used to build safe robotic systems by **simplified** system wiring.



### Reduced Total Cost, Simplified System Wiring

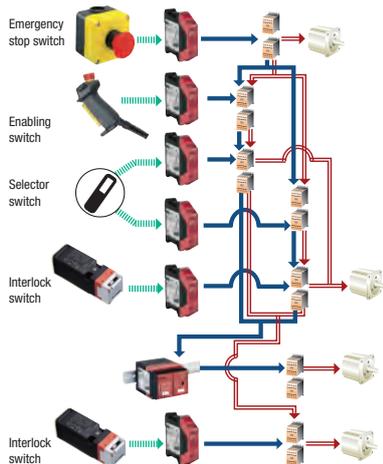
A single SafetyOne module can replace more than seven safety relay modules. Below is a comparison of systems (FS1A-C11S type, logic 104).

When using safety relay module

7 safety relay modules  
14 safety contactors

Before

The system is complicated, and the interlocking of mode selector switch cannot be determined. Results in a risk of not satisfying the required safety performance.

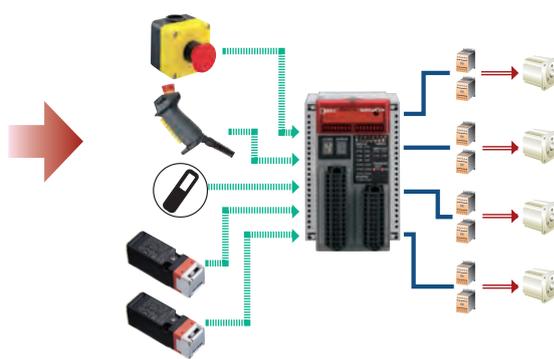


When using SafetyOne

1 FS1A  
8 safety contactors

After

Equipment and wiring costs are significantly reduced, and safe performance is ensured.



Series	SIL / PL / Category	Operating Voltage	Safety Circuit	International Standards			
				UL	CSA	TÜV	CE
FS1A	IEC61508 Safety Integrity Level 3, ISO13849-1 Performance Level e, ISO13849-1 Category 4	24V DC	Logic selection	●	●	●	●

Application: Safety measures for areas around robots

Reduced total cost, simplified system wiring



# HS1T/HS5L

Interlock Switches with Solenoid

## Superior robustness and safety

- Outstanding locking strength of **5000N** and compact body achieves safe construction of robot systems (HS1T).
- Highly **durable** and ideal for doors that open and close frequently.
- Lock monitor marking provide **reduction** of contacts and cost.



\*1 Compared with conventional IDEC products

Locking Strength: 5000N minimum (Slim type: □40 mm wide)



Small and Slim

Size is reduced by 13% from conventional models.\* Mounts on small doors and aluminum frames of machines. Compact design with 2- and 4-contacts reduce installation space. Greater flexibility in machine design.

\*Except two-conduit model.



Series	Type or Coding Level	Locking Strength	Mechanical Durability	Terminal Style	IP Rating	Rated Current	International Standards				
							UL	CSA	TÜV	CCC	CE
HS1T	Type 2 Interlock Device, Low Level Coded (EN ISO 14119)	5000N	2 million operations or more	Spring clamp	IP67	200 mA	●	●	●	●	●
HS5L	Type 2 Interlock Device, Low Level Coded (EN ISO 14119)	1400N	2 million operations or more (Operation frequency: 900 times/hour)	Spring clamp	IP67	200 mA	●	●	●	●	●

Application: Door Interlock for Safety Fences

Highly Reliable Safety



# HE2B/HE6B

Enabling Switches

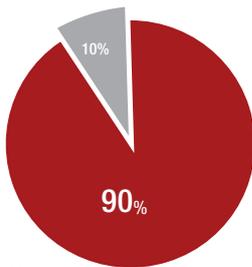
Suitable for international safety environments

Wide variety of models suitable for teaching pendants of various shapes and sizes.

Overwhelming trust with 90% global share.



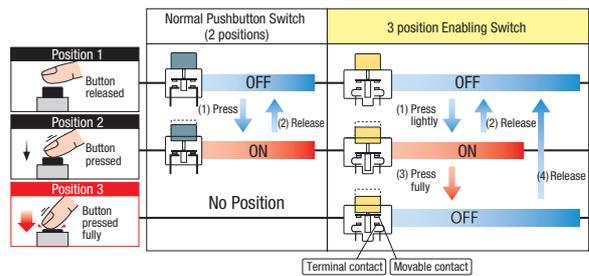
Global Share of Enabling Switches <sup>(\*)</sup>



\*1 Based on IDEC research

Ergonomic 3-Position Operation

By holding an enabling switch, an operator can avert danger when a machine operates unexpectedly. When the panicked operator either releases or grasps tightly the enabling switch, the switch disables the machine operation in either situations.



Series	Contact Rating		Mechanical Durability	Electrical Durability	Weight	IP Rating	International Standards				
	Rated Insulation Voltage	Rated Current					UL	CSA	TÜV	CCC	CE
HE2B	250V	3A	Position 1 → 2 → 1: 1 million operations minimum Position 1 → 2 → 3 → 1: 100,000 operations minimum	100,000 operations minimum	26 g (without rubber cover), 30 g (with rubber cover)	IP40 (without rubber cover), IP65 (with rubber cover)	●	●	●	●	●
HE6B	125V	3A	Position 1 → 2 → 1: 1 million operations minimum Position 1 → 2 → 3 → 1: 100,000 operations minimum	100,000 operations minimum (rated load), 1,000,000 operations minimum (24V AC/DC 100 mA)	14 g (without rubber cover), 17 g (with rubber cover)	IP65	●	●	●	●	●

Application: Teaching pendant

Ensures human-robot collaborative safety



# HE2G

Safety Grip Switch

## Easy-to-grip ergonomic design

- Wide range of **selections** for a variety of robot systems
- Lightweight, light force enable **stress-free** operation during maintenance.



### Select from a wide variety of models

Equipped with different control units for various use.

<p><b>HE2G-21SHE-L-L</b> Emergency stop switch XA1E-BV3U02R</p> <p>A: Momentary pushbutton (white) AB6M-M2PLW B: Momentary pushbutton (white) AB6M-M2PLW</p>	<p><b>HE2G-21SHE-L-K</b> Emergency stop switch XA1E-BV3U02R</p> <p>A: Momentary pushbutton (white) AB6M-M2PLW B: Key selector switch AS6M-2KT2PA</p>	<p><b>HE2G-21SHE-P-0</b> Emergency stop switch XA1E-BV3U02R</p> <p>C: Pilot light (green) UP9P-2498G</p>
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### Actuators with plastic holders, applicable for HS5 series interlock switches, can be used with the HE2G

Example of automatic and manual operation modes when HS5D is used

Automatic mode      Manual mode

Operation modes can be changed by inserting/removing the actuator with plastic holder installed to the HE2G into the HS5D. When the actuator is inserted, the operation is in automatic mode. When the actuator is removed, the operation is in manual mode.

Actuator with plastic holder (optional)  
HE9Z-GP15  
HS5B/HS5D interlock switch  
Hand strap (optional)  
HG9Z-PS1  
HS5E interlock switch with solenoid

### Compact design fits comfortably in the hand

The curved grip and small-size makes operation comfortable. The light-weight (approx. 140g, HE2G-21SH) and compact size is suitable for operators with small hands and for use in tight working environments.



Series	Wiring Style	Rubber Boot Material / Color	IP Rating	International Standards				
				UL	CSA	TÜV	CCC	CE
HE2G	Soldered terminal, internal connector	Silicon rubber / yellow, NBR / PVC polyblend / gray	IP67	●	●	●	●	●

Application: Maintenance work inside safety fences

Achieves highly reliable safety



# HG1P

Operator Interfaces, Hand-held Model

**Lightweight and robust teaching pendant with optimal usability**

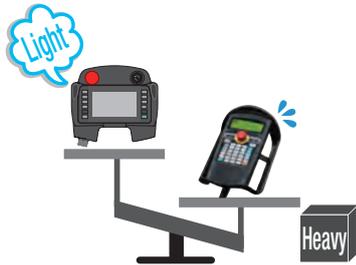


■ **Ergonomic** design and **lightweight structure** suitable for long teaching operation.

■ **Robust** design reduces damage even when dropped accidentally.

## HG1P

■ **Lightweight and compact**, weighs only 500g (\*1) Enables stress-free operation even when the worker needs to move around. (\*1) Not including cable



■ **Ergonomic design ideal for long and fatigue-free operation**  
Designed to fit comfortably in the hand by its ergonomic design.



■ **Withstands drop from a height of 1.5m**  
Designed to withstand a drop test from a predictable height during hand-held operation or storage. (\*2).  
\*2 Not resistant to excessive shock.



Series	Communication Interface	Cable Length	Display Screen	Operation Style	International Standards		
					UL	CSA	CE
HG1P	RS422/RS485 or Ethernet	3, 5, 7 m	4.3-inch TFT color LCD, 65,536 colors	Touch switch (analog resistive) Function switch	●	●	●

Application: Operator interface for robots

Human-robot cooperative safety



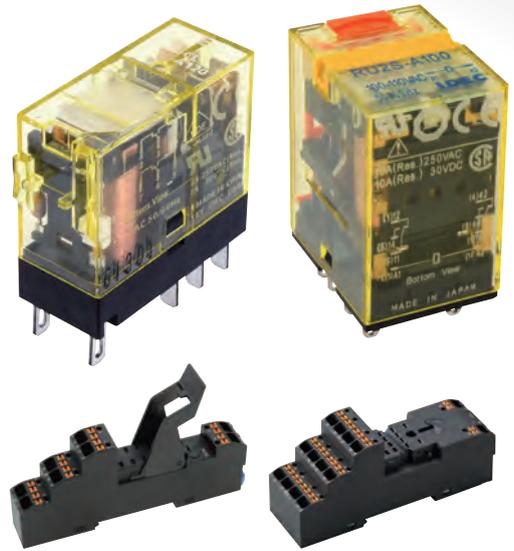
# RU/RJ/SU/RJ Series



Relays/ Push-in Sockets

## High-Performance easy-to-use relays/sockets

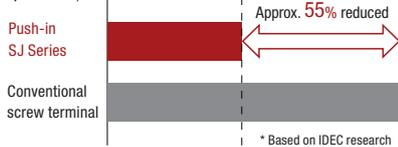
- Push-in terminals save up to **55%** in wiring time <sup>(\*)</sup>
- RJ relays with large switching capacity. **Slim** and **compact** design (12.7 mm) achieves downsizing of panel boards.
- Push-in terminals **reduce maintenance** work such as tightening of screws.



\*1 Compared with conventional screw terminal (Based on IDEC research)

### Time saving & efficient

■ Save up to **55%** in wiring time  
Wiring time reduced greatly compared with conventional screw terminals. (Compared with IDEC products)



### Reduce maintenance work

Push-in terminals eliminate the need for torque maintenance such as tightening of screws because screws are not used.



### Safe & easy

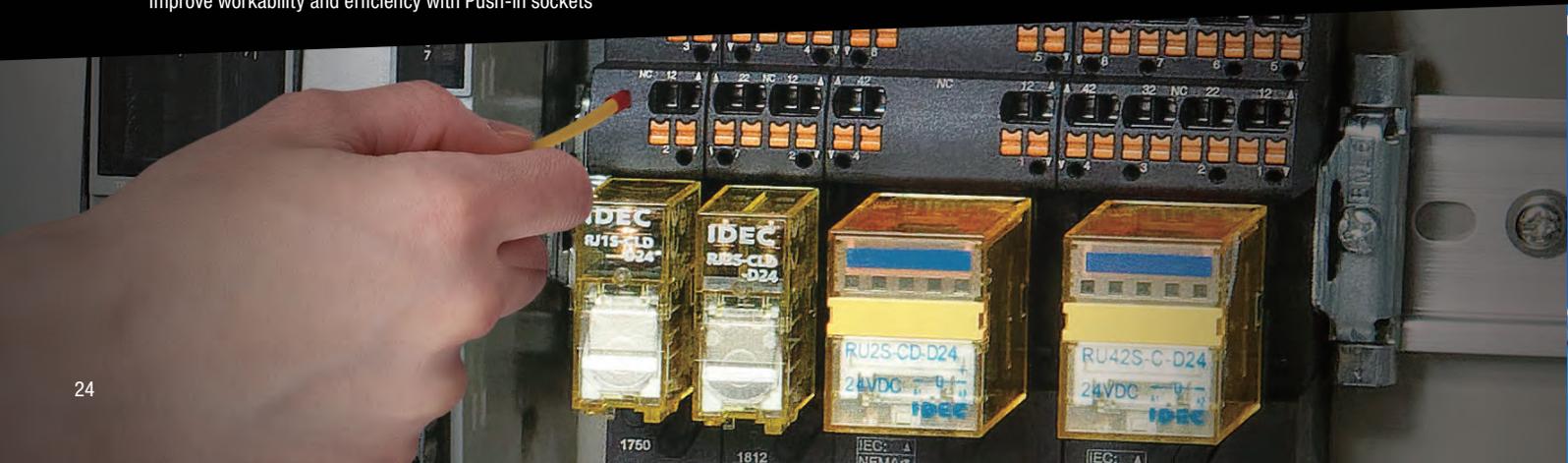
■ Equipped with a release lever  
The release lever easily holds and removes the relay.



Series	Allowable Switching Current	Mechanical Durability	International Standards			
			UL	CSA	TÜV (VDE)	CE
RJ	RJ1S (1 pole) : 12 A RJ2S (2 poles) : 8 A	AC coil: 30 million operations minimum (operating frequency: 18,000 operations per hour) DC coil: 50 million operations minimum (operating frequency: 18,000 operations per hour)	●	●	●	●
RU	RU2 (2 pole) : 10 A RU4 (4 pole) : 6 A RU42 (4-pole) (bifurcated) : 3 A	RU2, RU4: AC: 50 million operations or more, DC: 100 million operations minimum RU42: AC: 50 million operations or more, DC: 50 million operations minimum (operation frequency: 18,000 operations per hour)	●	●	●	●

Application: Robot controller, robot system control panel

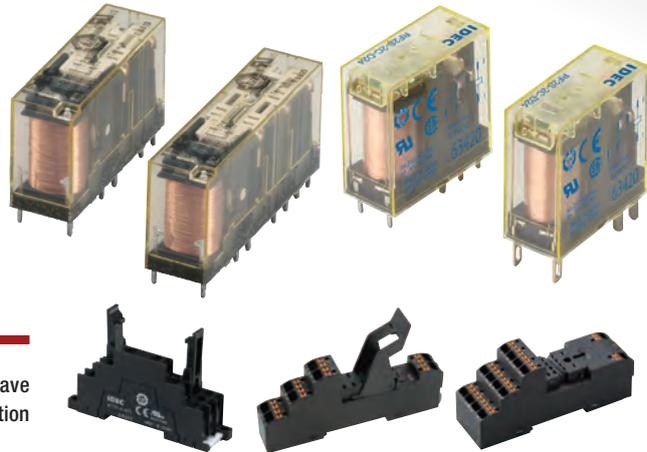
Improve workability and efficiency with Push-in sockets



# RF1/RF2

Force Guided Relays

Compact force guided relays help reduce installation space



2- to 6-pole models enable flexible construction of safety circuits. Save **cost** and installation **space** by selecting the ideal contact configuration to suit robot system safety.

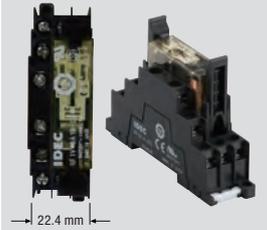
Highly visible LED indicator to show operating status. **Reduces** maintenance time

### When Using RF2S-1A1BLD1-D24 & DIN Rail Socket

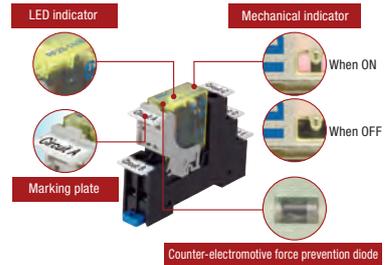


\* Compared to IDEC products. Total cost refers to the cost for relays and sockets.

### When using a 4-pole forced guide relay with LED indicator & DIN rail socket



### Built-in Functions for Easy of Use



Series	Allowable Contact Current	Power Consumption	Electrical Durability	Mechanical Durability	Compliance with International Standards			
					UL	CSA	TÜV	CE
RF1	Rated load: 250V AC/6 A, 30V DC/6 A Allowable contact power: 1,500VA AC, 180W DC (30V DC or less) 85W DC (30V DC to 125V DC or less) Allowable contact voltage: 250V AC, 125V DC Allowable contact current: 6 A	Approx. 0.36W (4 poles) Approx. 0.50W (6 poles)	100,000 operations or more at 250V AC/6 A resistive load (On/Off frequency: 1200 times/hour) 100,000 operations or more at 30V DC/6 A resistive load	10 million operations or more (On/Off frequency: 10,800 times/hour)	●	●	●	●
RF2	Rated load: NO contact: 240V AC/6 A / 24V DC/6 A NC contact: 240V AC/3 A / 24V DC/3 A Allowable contact power: NO contact: 1440VA/144W NC contact: 720VA/72W Allowable contact voltage: 250V AC, 125V DC Allowable contact current: 6 A	Approx. 0.7W	100,000 operations or more (On/Off frequency: 1800 times/hour)	10 million operations or more (On/Off frequency: 18,000 times/hour)	●	●	●	●

Application: Robot Controller, Robot System Control Panel

Flexible support for safety circuit construction



# LF1B-N/LF2B

LED Lighting

## Compact LEDs for a wide variety of applications

- Various lengths are offered to meet space requirements and illumination coverages.
- With a long lifespan (**40,000** hours, and approximately **54%** less power consumption compared to fluorescent tube lighting, maintenance work is reduced.
- **IP65** protection (waterproof/dustproof), suitable for use in wet areas.



LF2B



LF1B-N

Series	Cover	IP Rating	Rated Voltage	International Standards		
				UL	CSA	CE
LF1B-N	Clear / White	IP65	24V DC	●	●	●
LF2B	Clear / White	IP65	12/24V DC 100 to 240V AC	● (*1)	● (*1)	●

\*1 12/24V DC only

Application: Lighting inside robot controllers, lamps for indicators, control panels for robot systems

Small and easy-to-use inside equipment





# IDEC CORPORATION



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[in.idec.com](http://in.idec.com)

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## **IDEC IZUMI ASIA PTE. LTD.**

Aperia 08 Kallang Avenue, Tower 1, Unit #13-09  
Singapore 339509  
Tel: +65-6746-1155,  
Fax: +65-6844-5995  
E-mail: [info@sg.idec.com](mailto:info@sg.idec.com)

## **IDEC ASIA (THAILAND) CO., LTD.**

20th Fl., Sorachai Bldg., No.23/78, Soi Sukhumvit 63,  
Sukhumvit Rd., Klongton-nua, Wattana, Bangkok 10110  
Tel: +662-392-9765, Fax: +662-392-9768  
E-mail: [sales@th.idec.com](mailto:sales@th.idec.com)

## **IDEC CONTROLS INDIA PRIVATE LIMITED**

Rathod Landmark, 25/3, Industrial Suburb,  
1st Stage, Yashwantpur  
E-mail: [info\\_india@idec.com](mailto:info_india@idec.com)

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