



# Automation System

Application in Elevator / Escalator / Automated parking systems



**ELEVATOR  
SYSTEM**



**ESCALATOR  
SYSTEM**



**AUTOMATED PARKING  
SYSTEM**

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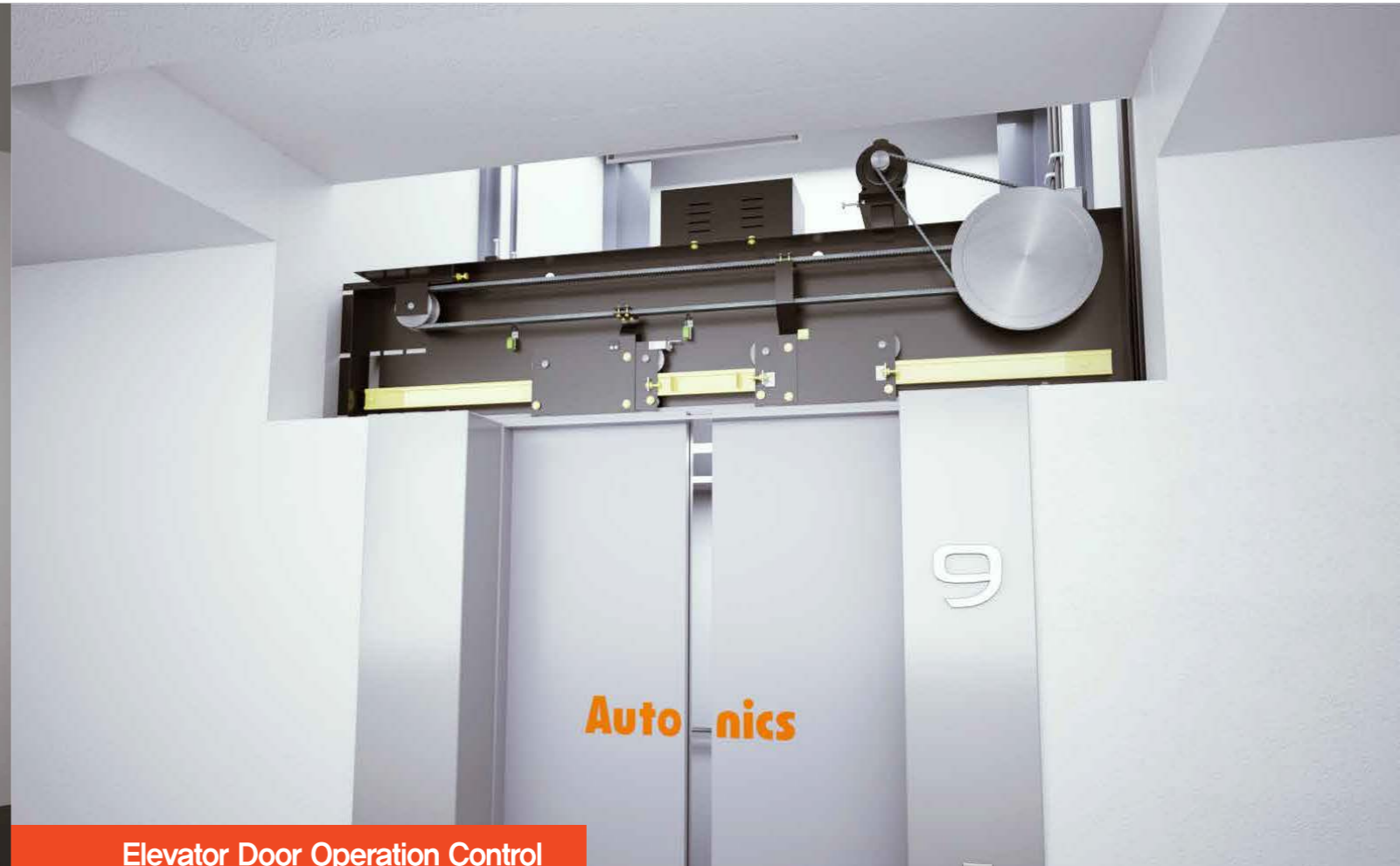
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# Elevator Door Operation



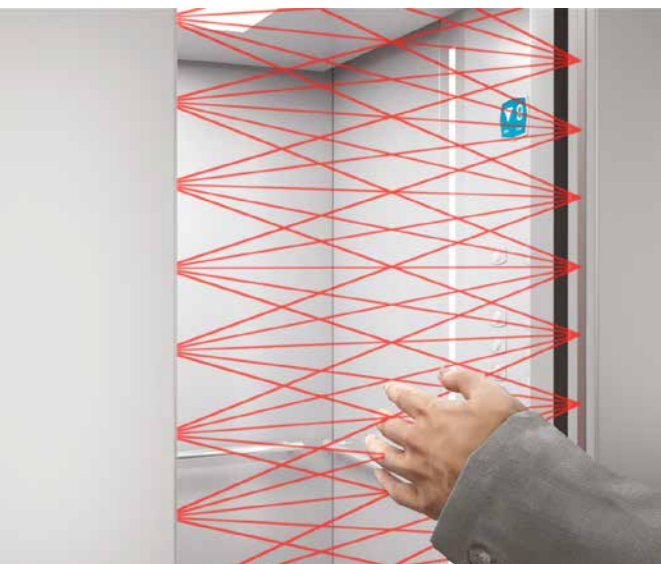
**Detection of Passengers or Objects Entering or Leaving Elevators**

5-point cross-beam type elevator sensors are used to detect people or objects entering or leaving the elevator and accordingly control the opening and closing of elevator doors.



**Elevator Door Operation Control**

Proximity sensors transmit position limit signals during opening and closing of elevator doors to signal completion.



## Cross-Beam Elevator Sensors

### BWE Series CE

- 4/5-point cross-beam type sensors for minimal non-detection area
- Easy installation with installation mode function
- Operation test (stop emitter) function and self-diagnosis function
- Buzzer output function and maintain output function using configuration switch



## Rectangular Inductive Proximity Sensors

### PSN Series CE

- Excellent noise immunity with specialized sensor IC
- Built-in reverse polarity protection circuit, output short-circuit (overcurrent) protection circuit
- Operation indicator (red LED)
- IP67 protection structure (IEC standard)



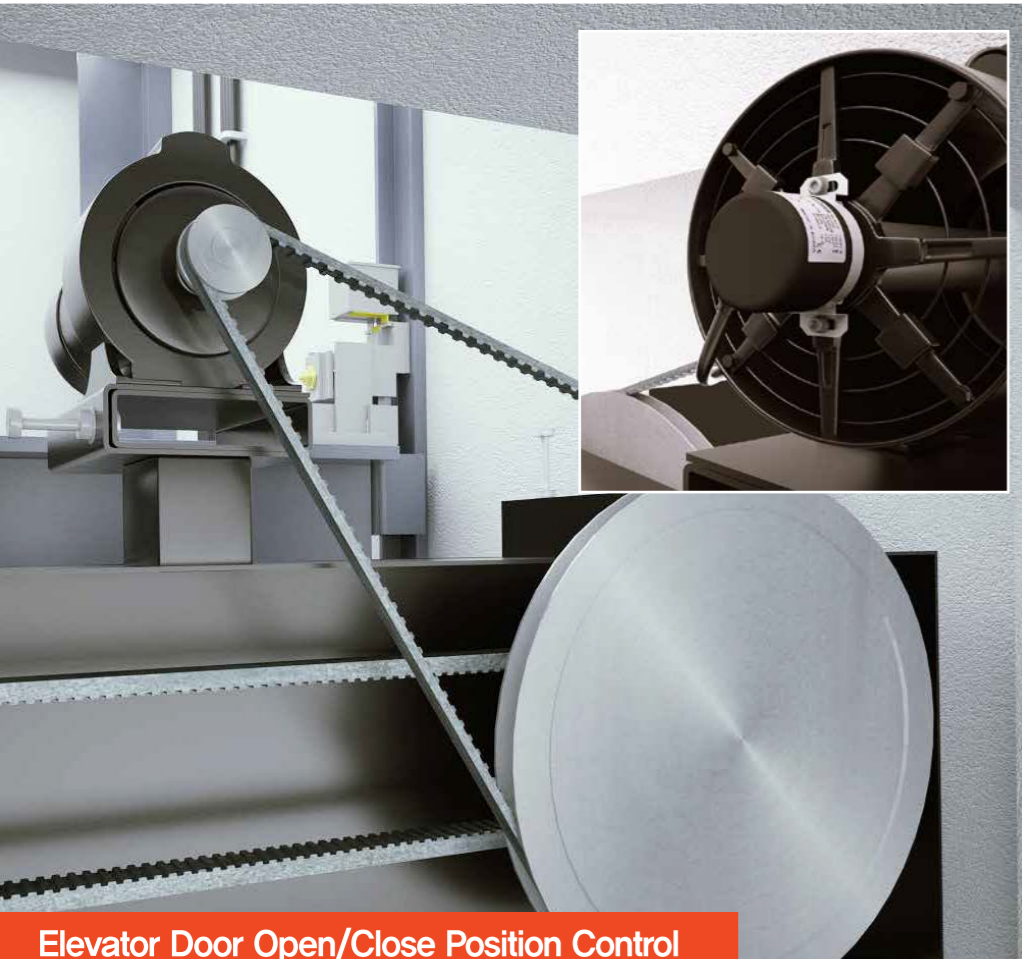
## Flat Type Inductive Proximity Sensors

### PFI Series CE

- Flat, compact design (10 mm height) allows easy installation in limited spaces
- Excellent noise immunity with specialized sensor IC
- Operation indicator (red LED)
- IP67 protection structure (IEC standard)



## Elevator Door Operation



**Elevator Door Open/Close Position Control**

Incremental rotary encoders are installed inside the motor of the door operation control room to accurately control the open/close position of elevator doors using pulse signals from the encoders.

## Elevator Car Drive Operation



**Elevator Car Position Control**

U-shaped photoelectric sensors are used for precise position control of elevator cars by detecting light blocking plates on each floor and prohibiting excess movement.



**Motor Position Control in Geared Winding Machines**

Incremental rotary encoders are used alongside motors in geared winding machines to control ascending or descending movement of elevator cars.

### Ø40mm Incremental Rotary Encoders



#### E40 Series CE

- Low shaft moment of inertia
- Output types: totem-pole, NPN open collector, voltage, line driver
- Power supply: 5 VDC ±5%, 12–24 VDC ±5%
- Various resolutions: up to 5000 pulses per revolution

### U-Shaped 4-Channel Photoelectric Sensors BUM Series CE

- Independent 4 channel output
- High-speed response time under 1 ms
- Built-in reverse polarity protection circuit, output short-circuit (overcurrent) protection circuit
- IP65 protection structure (IEC standard)



### U-Shaped Photoelectric Sensors BUP Series CE

- High noise immunity to ambient light
- High-speed response time under 1 ms
- Switch between Light ON and Dark ON modes using control wire
- Built-in reverse polarity protection circuit, output short-circuit (overcurrent) protection circuit
- IP66 protection structure (IEC standard)



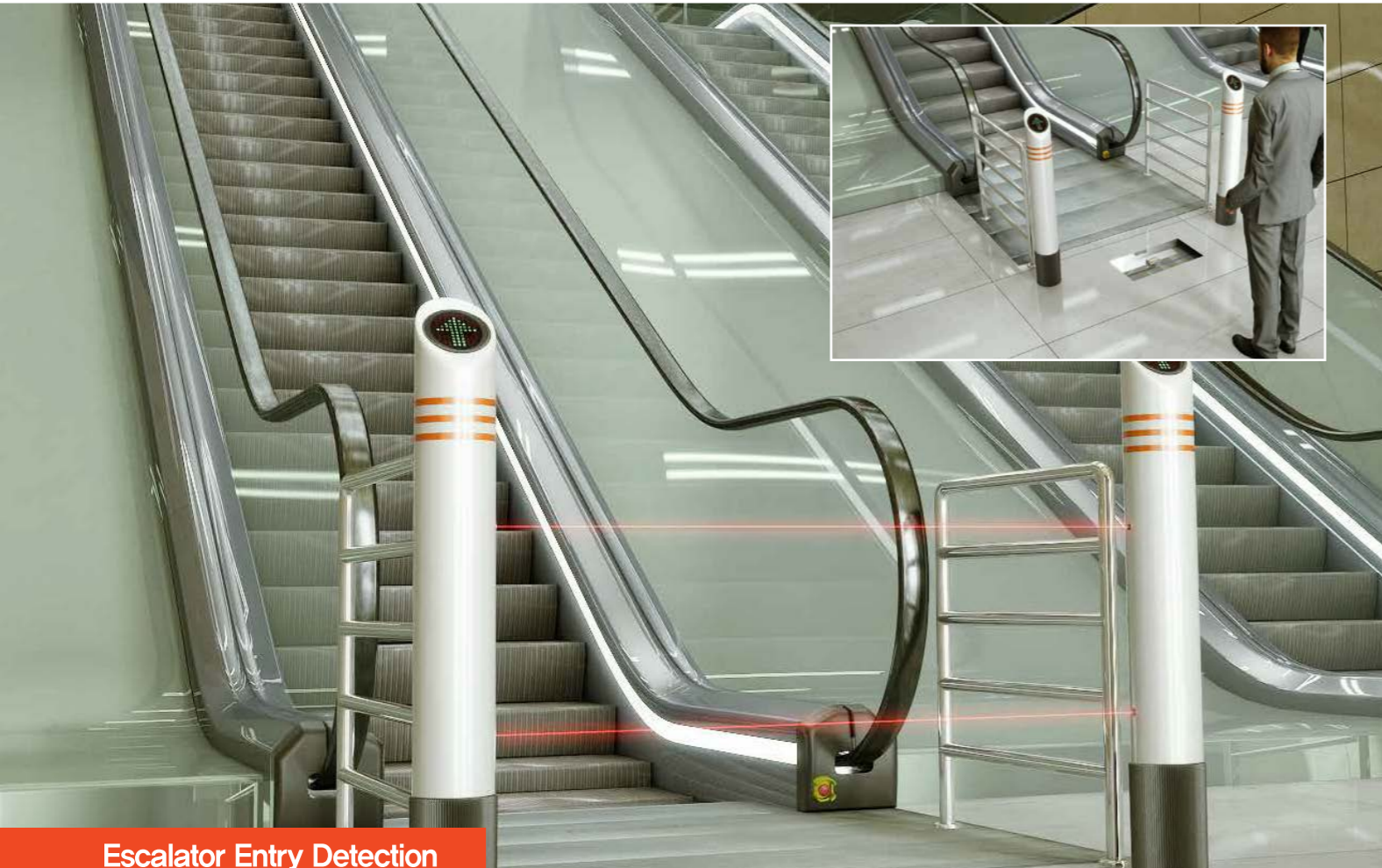
### Ø88mm Incremental Rotary Encoders



#### E88H Series CE

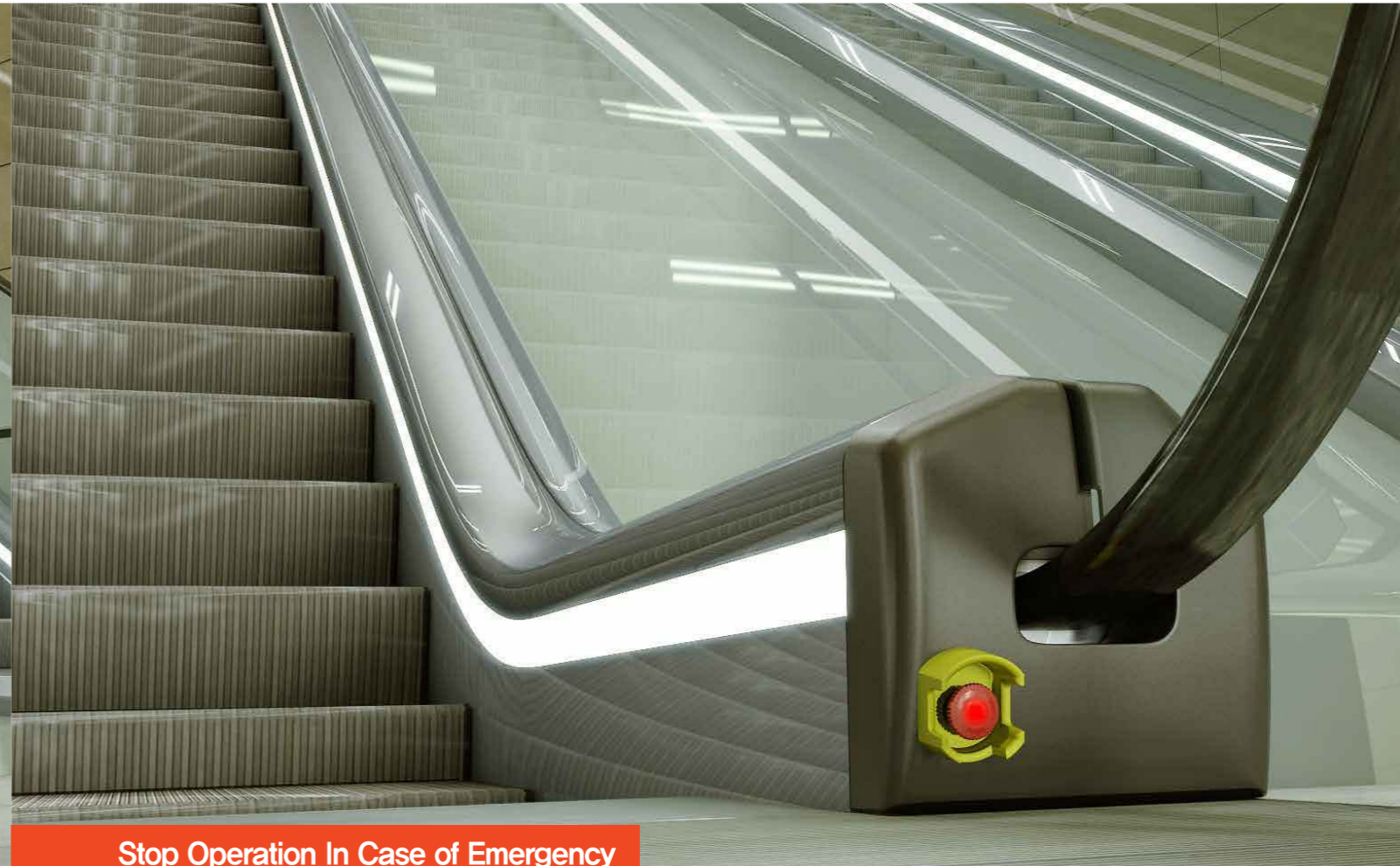
- Install directly on rotating shaft without couplings
- Output types: complementary, line driver
- Power supply: 5 VDC ±5%, 15 VDC ±5%
- Resolution: 1024 pulses per revolution

# Escalator Drive Operation



**Escalator Entry Detection**

Automatic door-side sensors are used to detect entry into escalators and start escalator drive operation.



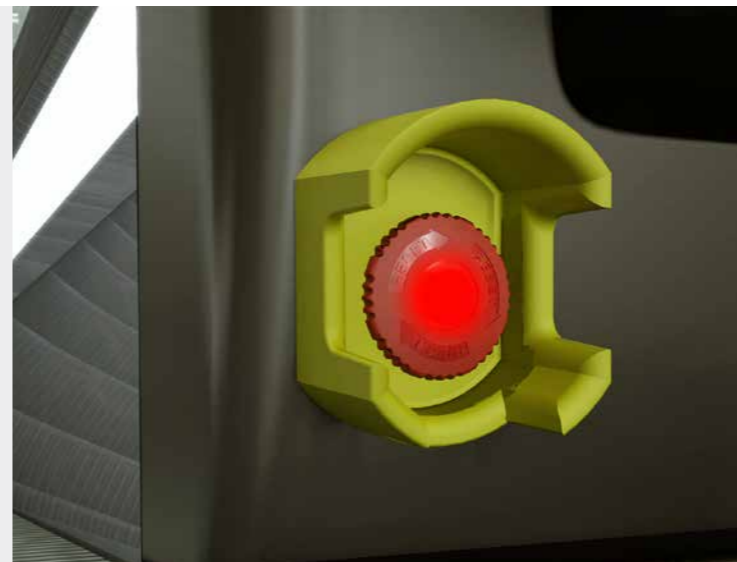
**Stop Operation In Case of Emergency**

Emergency switches installed on escalators can be used to stop operation of the escalator in the event of an emergency (falling, entrapments, etc.).



## Automatic Door-Side Sensors ADS-SE1/2 Series CE

- Long sensing distance: 0 to 10 m
- Ambient lighting: up to 100,000 lx
- Easy connection between sensor head and controller
- Self-diagnosis function, auto sensitivity adjustment
- Compact size (W77×H44×D24mm)

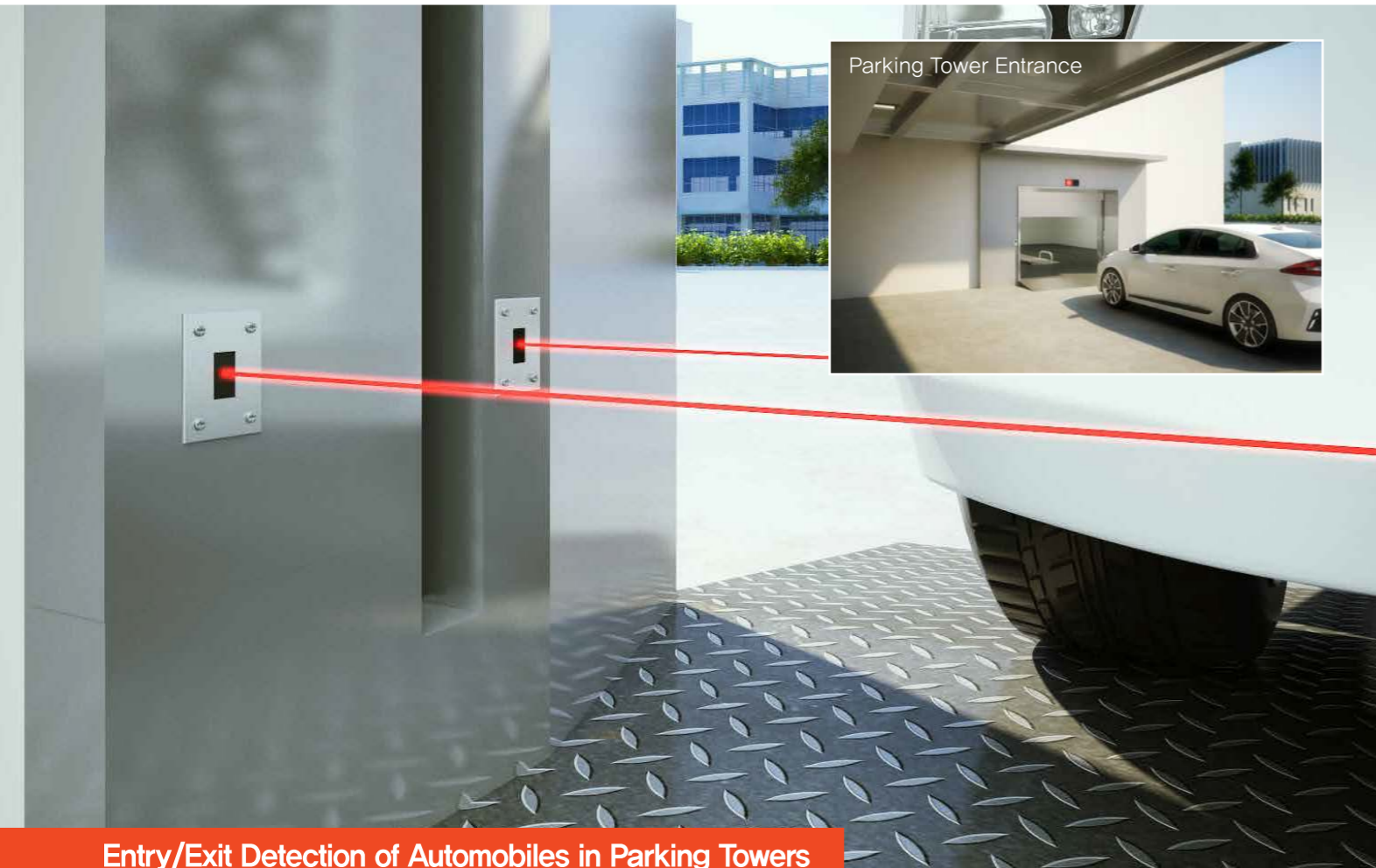


## Ø22/Ø25mm Emergency Switches S2ER Series CE



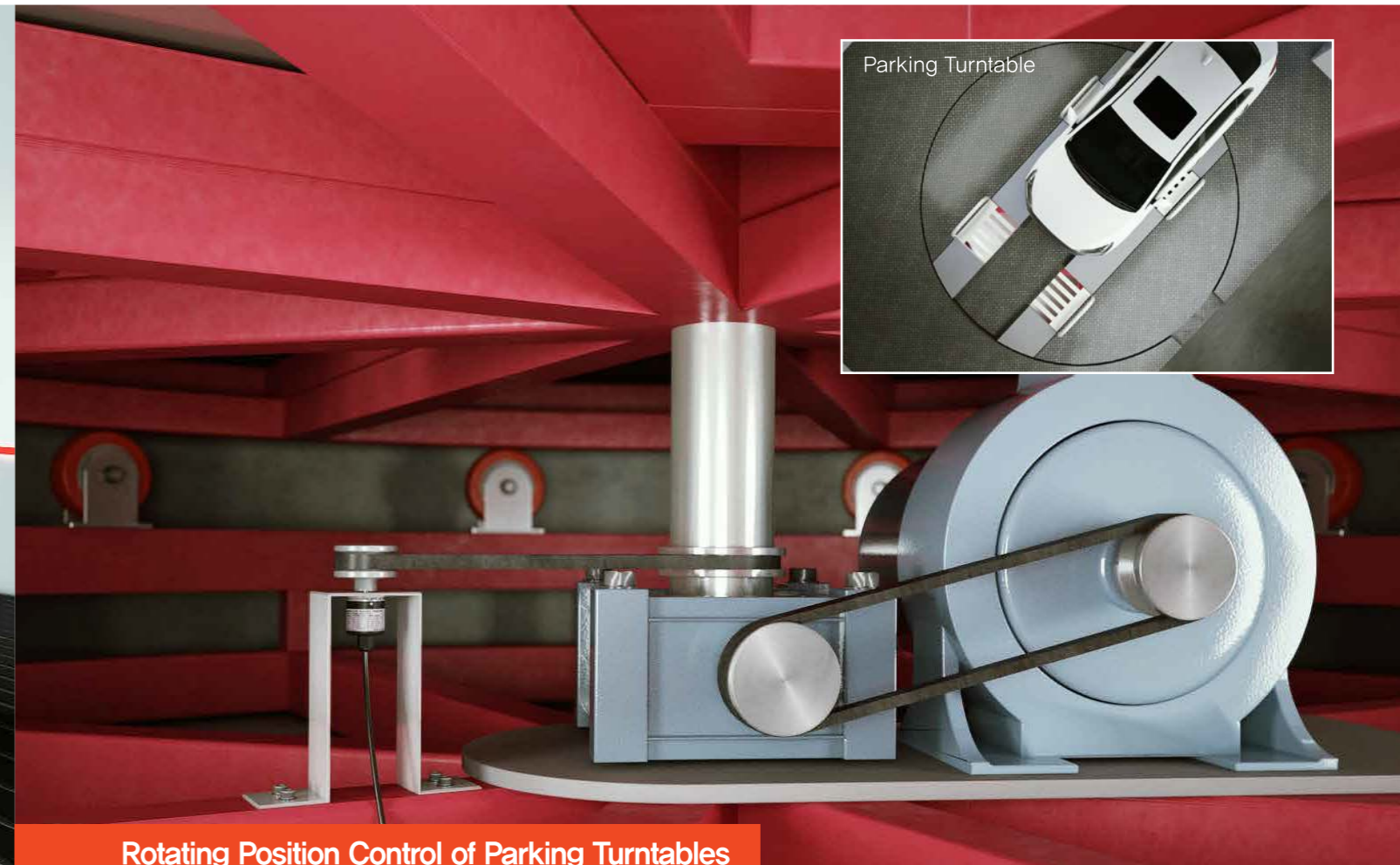
- Various button head sizes: Ø30 mm, Ø40 mm, Ø60 mm
- Installation panel thickness up to 6 mm
- IP52 protection structure for switch head (IEC standard)

## Parking Tower Entry/Exit



**Entry/Exit Detection of Automobiles in Parking Towers**

Photoelectric sensors are used to detect entry or exit of vehicles in parking towers to prevent automatic closing of doors.



**Rotating Position Control of Parking Turntables**

Absolute rotary encoders are used to control the rotating position of parking turntables used during entry/exit of automobiles.



### Universal AC/DC Photoelectric Sensors

#### BEN Series CE

- Universal AC/DC photoelectric sensors
- Light ON/Dark ON operation mode switch
- Built-in sensitivity adjuster(except through-beam type)

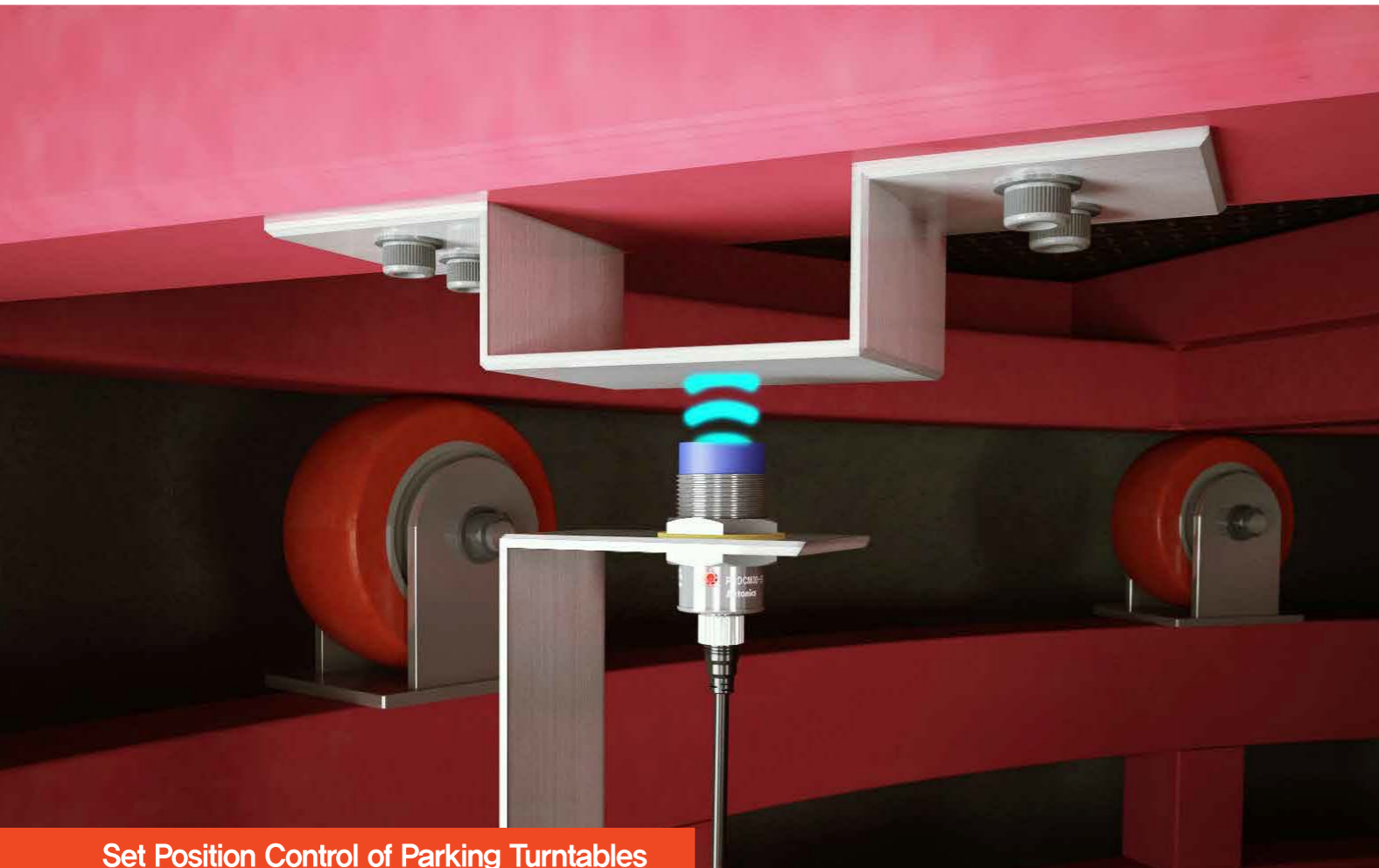


### Ø50mm Absolute Rotary Encoders

#### EP50S Series CE

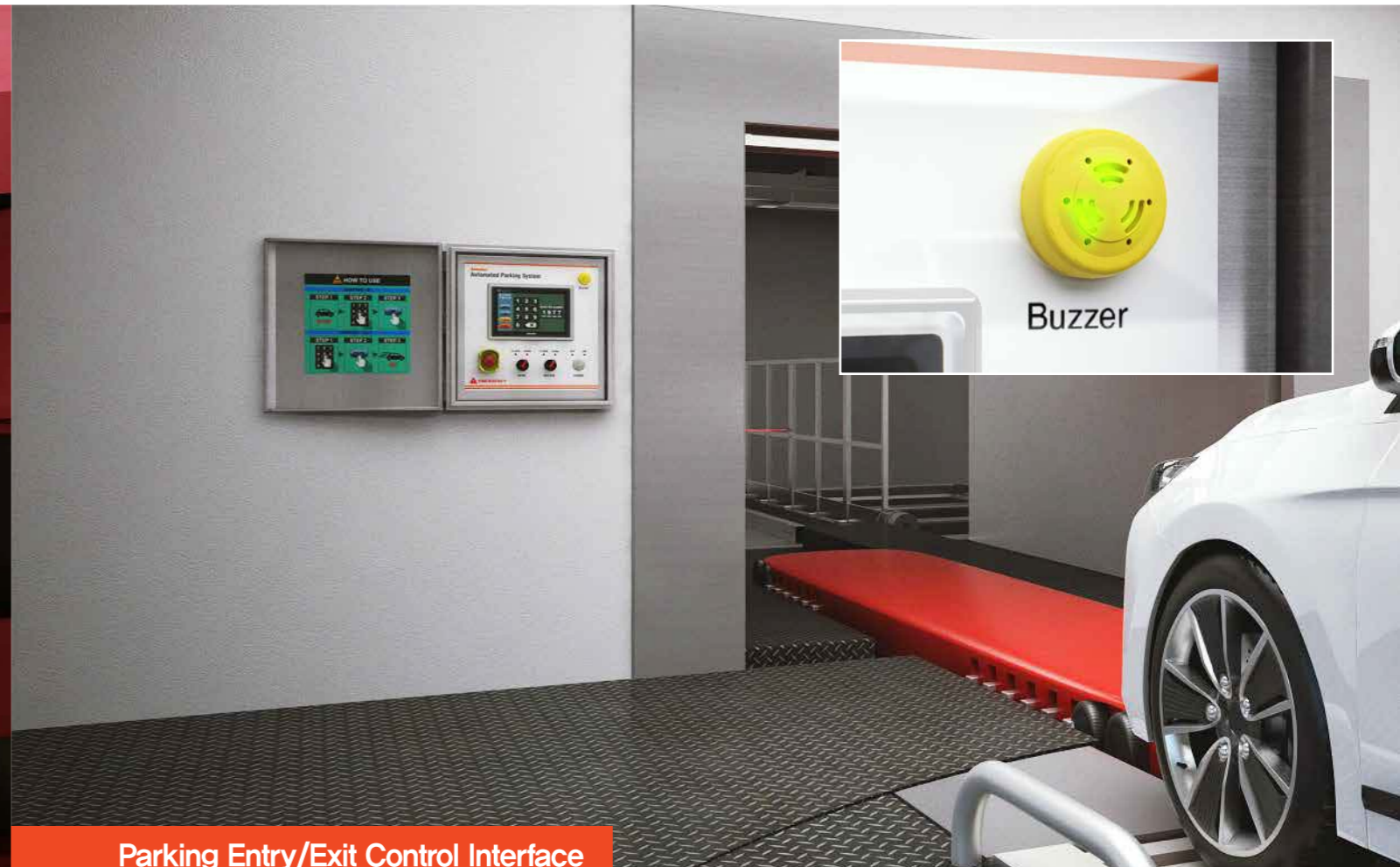
- Various output code options: BCD, binary, Gray code
- Power supply: 5 VDC, 12-24 VDC ±5%
- Various resolutions: up to 1024 pulses per revolution
- IP64 protection structure (IEC standard)





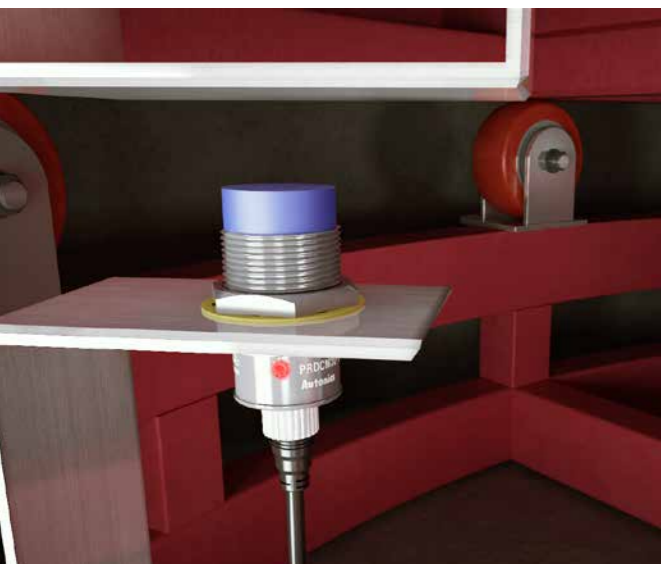
**Set Position Control of Parking Turntables**

Inductive proximity sensors installed in parking turntables to detect the plates on the turntables and control the set/fixed position of the turntables.



**Parking Entry/Exit Control Interface**

HMI graphic panels used to control parking operation and retrieval of vehicles, and monitor status of parking spaces with simple touch panel operation.



### Cylindrical Inductive Proximity Sensors with Long Sensing Distance

#### PRDCM Series

- Long sensing distance and excellent noise immunity with specialized sensor IC
- Simple operation, reliable performance, and high durability
- IP67 protection structure (IEC standard)



### 7-Inch Color LCD Graphic Panels

#### GP-S070 Series



- 7-inch widescreen true color TFT LCD panel
- Analog touch screen
- Data logger function: store and backup data from control devices
- USB host/device, Ethernet support

### Ø22/Ø25mm Piezo Buzzer

#### B2PB-B1D



- Continuous/intermittent sound (volume: 98 ±8 dB)
- Operation indicator (green LED)
- Installation panel thickness up to 6 mm
- IP65 protection structure (IEC standard)

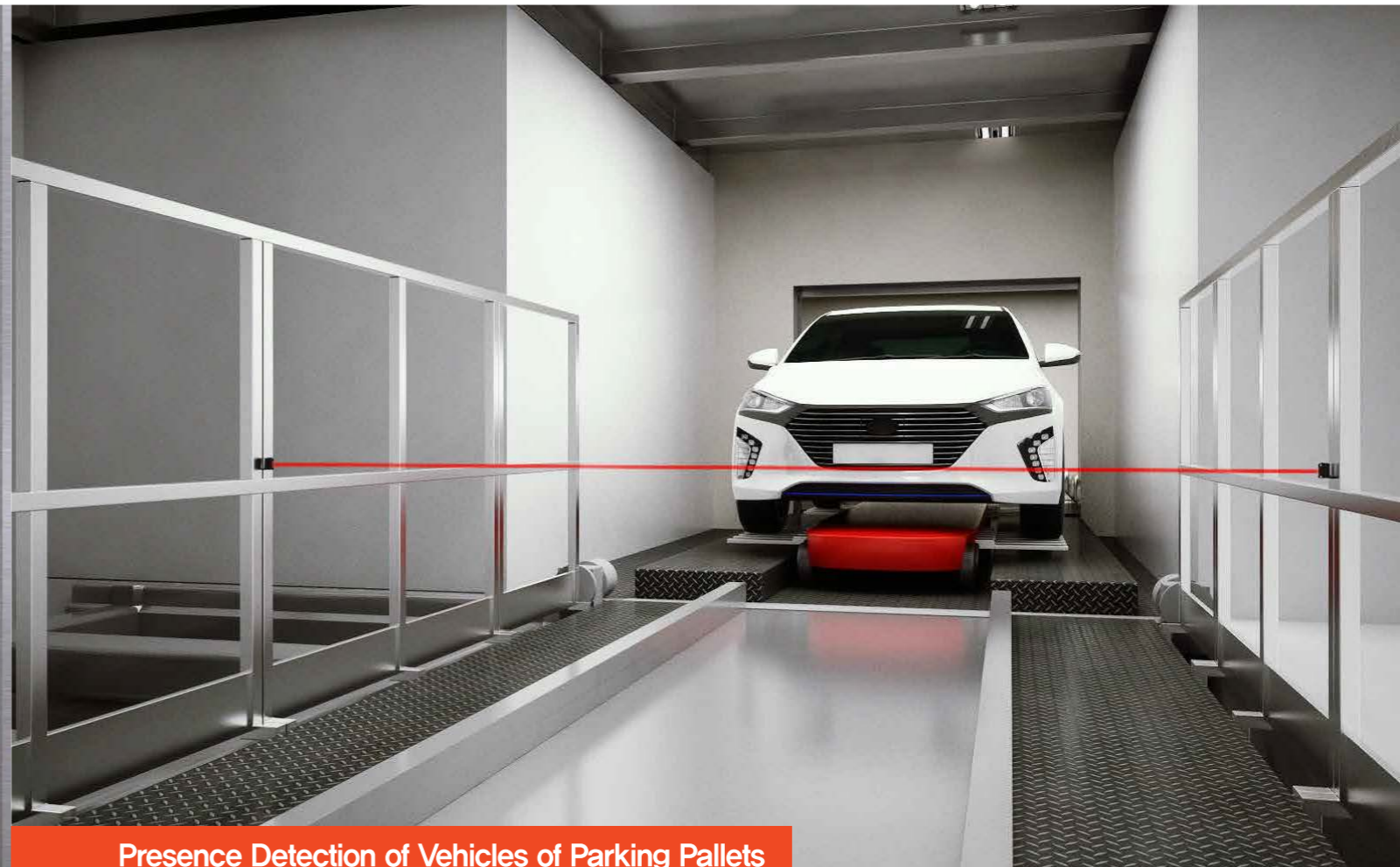
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## Parking Tower Entry/Exit



**Simple Entry/Exit Control of Vehicles**

Key switches and selector switches can be used to control drive/stop operation automatically or manually.



**Presence Detection of Vehicles of Parking Pallets**

Photoelectric sensors used in parking tower pallets for presence detection of vehicles within designated areas.

### Ø22/Ø25mm Selector Switches

S2SR Series     

- Various operating positions
  - 2-position: spring return, maintained
  - 3-position: two-way spring return, right spring return, left spring return, maintained
- Various colors
  - Non-illuminated: red, white
  - Illuminated: red, blue, green, yellow, white
- Various head/lever types
  - Flush, extended, standard lever, shark-head lever, short lever, long lever
- Installation panel thickness up to 6 mm
- IP52 protection structure for switch head (IEC standard)



### Ø30mm Key Selector Switches

S3KF Series     

- Various key removal positions
  - left, left + right, left + center, right, right + center, center, left + center + right
- Various operating positions
  - 2-position: spring return, maintained
  - 3-position: two-way spring return, right spring return, left spring return, maintained
- Two color types
  - Extended: silver, black
  - Flush: silver
- Installation panel thickness up to 6 mm
- IP52 protection structure for switch head (IEC standard)



### Compact High Performance Photoelectric Sensors

BJ Series 

- Long sensing distance up to 15 m (through-beam type)
- Mutual interference prevention function (except through-beam, BGS reflective type)
- Excellent noise immunity and minimal influence from ambient light
- Light ON/Dark ON operation mode switch
- Built-in sensitivity adjuster
- IP67 protection structure for connector types (IEC standard)





# Photoelectric Sensors

Series	Sensing Type	Sensing Distance	Sensing Target	Light Source	Response Time	Power Supply	Current Consumption	Sensitivity Adjustment	Operation Mode	
<b>Compact, Long Sensing Distance, Built-in Amplifier Type Photoelectric Sensor BJ Series</b>	Through-beam type	15m	Opaque material of min. Ø12mm	Infrared LED (850nm)	Max. 1ms	12-24VDC≒	Emitter/Receiver : Max. 20mA	Sensitivity adjuster	Light ON/ Dark ON (set by switch)	
		10m	Opaque material of min. Ø12mm	Red LED (660nm)						
		7m	Opaque material of min. Ø8mm	Red LED (650nm)						
	<Cable type>	Retroreflective type (built-in polarizing filter)	3m (MS-2A)	Opaque material of min. Ø75mm	Red LED (660nm)	Max. 1ms	12-24VDC≒	Max. 30mA	Sensitivity adjuster	Light ON/ Dark ON (set by switch)
		Diffuse reflective type	1m	Opaque, Translucent material	Infrared LED (850nm)	Max. 1ms	12-24VDC≒	Max. 30mA	Sensitivity adjuster	Light ON/ Dark ON (set by switch)
	300mm		Opaque, Translucent material	Red LED (660nm)						
	100mm		Opaque, Translucent material	Infrared LED (850nm)						
	30mm		Opaque, Translucent material	Infrared LED (850nm)	Max. 1ms	12-24VDC≒	Max. 30mA	—	Light ON	
	15mm		Translucent material (glass)							
	BGS reflective type	10 to 30mm	Opaque, Translucent material	Red LED (660nm)	Max. 1.5ms	12-24VDC≒	Max. 30mA	Sensitivity adjuster	Light ON/ Dark ON (set by switch)	
Narrow beam reflective type	30 to 70mm	Opaque, Translucent material (min. sensing target: min. Ø0.2mm (copper wire))	Red LED (650nm)	Max. 1.5ms	12-24VDC≒	Max. 30mA	Sensitivity adjuster	Light ON/ Dark ON (set by switch)		
	70 to 130mm									



Through-beam type/  
Retroreflective type/  
Diffuse reflective type/  
BGS reflective type/  
Narrow beam reflective type  
: W10.6×H32×L20mm

Series	Sensing Type	Sensing Distance	Sensing Target	Light Source	Response Time	Power Supply	Current Consumption And Power Consumption	Sensitivity Adjustment	Operation Mode	
<b>AC/DC, Long Sensing Distance, Built-in Amplifier Type Photoelectric Sensor BEN Series</b>	Through-beam type	10m	Opaque material of min. Ø16mm	Infrared LED (850nm)	Max. 1ms	12-24VDC≒	Emitter/Receiver : Max. 50mA	—	Light ON/ Dark ON (set by switch)	
					Max. 20ms	24-240VAC~ 24-240VDC≒	Emitter/Receiver : Max. 4VA			
	<Diffuse reflective type>	Retroreflective type (standard type)	5m (MS-2)	Opaque material of min. Ø60mm	Infrared LED (850nm)	Max. 1ms	12-24VDC≒	Max. 50mA	Sensitivity adjuster	Light ON/ Dark ON (set by switch)
		Max. 20ms	24-240VAC~ 24-240VDC≒	Max. 4VA						
	Retroreflective type (built-in polarizing filter)	3m (MS-2)	Opaque material of min. Ø60mm	Red LED (660nm)	Max. 1ms	12-24VDC≒	Max. 50mA	Sensitivity adjuster	Light ON/ Dark ON (set by switch)	
					Max. 20ms	24-240VAC~ 24-240VDC≒	Max. 4VA			
Diffuse reflective type	300mm	Opaque, Translucent material	Infrared LED (940nm)	Max. 1ms	12-24VDC≒	Max. 50mA	Sensitivity adjuster	Light ON/ Dark ON (set by switch)		
				Max. 20ms	24-240VAC~ 24-240VDC≒	Max. 4VA				






Through-beam type/  
Retroreflective type/  
Diffuse reflective type  
: W18×H50×L50mm


Control Output	Timer Function	Connection	Environment		Protection Structure	Approval	Model
			Ambient Illumination	Ambient Temperature			
■ Type No-mark: NPN open collector P: PNP open collector	—	Cable type (Ø3.5, 2m)	Sunlight : Max. 11,000lx, Incandescent lamp : Max. 3,000lx (received illumination)	-25 to 55°C	IP65 (connector type: IP67)	CE	BJ15M-TDT-■
		Connector type (M8)					BJ15M-TDT-C-■
		Cable type (Ø3.5, 2m)					BJ10M-TDT-■
		Connector type (M8)					BJ10M-TDT-C-■
■ Type No-mark: NPN open collector P: PNP open collector	—	Cable type (Ø3.5, 2m)	Sunlight : Max. 11,000lx, Incandescent lamp : Max. 3,000lx (received illumination)	-25 to 55°C	IP65 (connector type: IP67)	CE	BJ3M-PDT-■
		Connector type (M8)					BJ3M-PDT-C-■
■ Type No-mark: NPN open collector P: PNP open collector	—	Cable type (Ø3.5, 2m)	Sunlight : Max. 11,000lx, Incandescent lamp : Max. 3,000lx (received illumination)	-25 to 55°C	IP65 (connector type: IP67)	CE	BJ1M-DDT-■
		Connector type (M8)					BJ1M-DDT-C-■
		Cable type (Ø3.5, 2m)					BJ300-DDT-■
		Connector type (M8)					BJ300-DDT-C-■
		Cable type (Ø3.5, 2m)					BJ100-DDT-■
NPN open collector	—	Cable type (Ø3.5, 2m)	Sunlight : Max. 11,000lx, Incandescent lamp : Max. 3,000lx (received illumination)	-25 to 55°C	IP65	CE	BJG30-DDT
■ Type No-mark: NPN open collector P: PNP open collector	—	Cable type (Ø3.5, 2m)	Sunlight : Max. 11,000lx, Incandescent lamp : Max. 3,000lx (received illumination)	-25 to 55°C	IP65	CE	BJ30-BDT-■
							BJ50-BDT-■
■ Type No-mark: NPN open collector P: PNP open collector	—	Cable type (Ø3.5, 2m)	Sunlight : Max. 11,000lx, Incandescent lamp : Max. 3,000lx (received illumination)	-25 to 55°C	IP65	CE	BJN50-NDT-■
							BJN100-NDT-■

Control Output	Timer Function	Connection	Environment		Protection Structure	Approval	Model
			Ambient Illumination	Ambient Temperature			
NPN, PNP open collector simultaneous output	—	Cable type (Ø5, 2m)	Sunlight : Max. 11,000lx, Incandescent lamp : Max. 3,000lx (received illumination)	-20 to 65°C	IP50	CE	BEN10M-TDT
							Relay
NPN, PNP open collector simultaneous output	—	Cable type (Ø5, 2m)	Sunlight : Max. 11,000lx, Incandescent lamp : Max. 3,000lx (received illumination)	-20 to 65°C	IP50	CE	BEN5M-MDT
							Relay
NPN, PNP open collector simultaneous output	—	Cable type (Ø5, 2m)	Sunlight : Max. 11,000lx, Incandescent lamp : Max. 3,000lx (received illumination)	-20 to 65°C	IP50	CE	BEN3M-PDT
							Relay
NPN, PNP open collector simultaneous output	—	Cable type (Ø5, 2m)	Sunlight : Max. 11,000lx, Incandescent lamp : Max. 3,000lx (received illumination)	-20 to 65°C	IP50	CE	BEN300-DDT
							Relay

# Photoelectric Sensors / Door Sensors

Series	Sensing Type	Sensing CH	Sensing Distance	Sensing Target	Light Source	Response Time	Power Supply	Current Consumption	Sensitivity Adjustment	Operation Mode
<b>4-CH U-Shaped Type Photoelectric Sensor BUM Series</b>  W68×H180×L80mm	Through-beam type	4-CH	40mm	Opaque material of min. Ø4mm	Infrared LED (940nm)	Max. 1ms	18-35VDC≒	Max. 50mA	—	Dark ON

Series	Sensing Type	Sensing CH	Sensing Distance	Sensing Target	Light Source	Response Time	Power Supply	Current Consumption	Sensitivity Adjustment	Operation Mode
<b>U-Shaped Type Photoelectric Sensor BUP Series</b> <BUP30>  <BUP50>  BUP30: W52×H20×L72mm BUP50: W78.5×H20×L78.1mm	Through-beam type	1-CH	30mm	Opaque material of min. Ø4mm	Infrared LED (940nm)	Max. 1ms	12-24VDC≒	Max. 30mA	—	Light ON/ Dark ON (set by control wire)
				Opaque material of min. Ø1.5mm	Infrared LED (940nm)	Max. 1ms	12-24VDC≒	Max. 30mA	Sensitivity adjuster	Light ON/ Dark ON (set by control wire)
			50mm	Opaque material of min. Ø4mm	Infrared LED (940nm)	Max. 1ms	12-24VDC≒	Max. 30mA	—	Light ON/ Dark ON (set by control wire)
				Opaque material of min. Ø1.5mm	Infrared LED (940nm)	Max. 1ms	12-24VDC≒	Max. 30mA	Sensitivity adjuster	Light ON/ Dark ON (set by control wire)


Series	Sensing Method	Sensing Distance	Light Source	Power Supply	Current Consumption And Power Consumption	Control Output	Sensor Mounting
<b>Economical Door Side Sensor ADS-SE1/2</b>  W77×H24×L44mm	Through-beam type	0 to 10m	Infrared LED (850nm modulated)	12-24VAC~ 12-24VDC≒	Current Consumption : Max. 2VA Power Consumption : Max. 50mA	Relay (SPST(1a))	1-CH  2-CH

Control Output	Timer Function	Connection	Environment		Protection Structure	Approval	Model
			Ambient Illumination	Ambient Temperature			
NPN open collector (individual 4 outputs)	—	Cable type (Ø6, 4m)	Sunlight : Max. 11,000lx, Incandescent lamp : Max. 3,000lx (received illumination)	-25 to 65°C	IP65	CE	BUM4-40DW-4M
		Cable type (Ø6, 2m)	Sunlight : Max. 11,000lx, Incandescent lamp : Max. 3,000lx (received illumination)	-25 to 65°C	IP65	CE	BUM4-40DW-2M/A
		Cable type (Ø6, 3m)	Sunlight : Max. 11,000lx, Incandescent lamp : Max. 3,000lx (received illumination)	-25 to 65°C	IP65	CE	BUM4-40DW-3M/A
		Cable type (Ø6, 4m)	Sunlight : Max. 11,000lx, Incandescent lamp : Max. 3,000lx (received illumination)	-25 to 65°C	IP65	CE	BUM4-40DW-4M/A
		Cable type (Ø6, 2m)	Sunlight : Max. 11,000lx, Incandescent lamp : Max. 3,000lx (received illumination)	-25 to 65°C	IP65	CE	BUM4-40DW-2M/B
		Cable type (Ø6, 3m)	Sunlight : Max. 11,000lx, Incandescent lamp : Max. 3,000lx (received illumination)	-25 to 65°C	IP65	CE	BUM4-40DW-3M/B
		Cable type (Ø6, 4m)	Sunlight : Max. 11,000lx, Incandescent lamp : Max. 3,000lx (received illumination)	-25 to 65°C	IP65	CE	BUM4-40DW-4M/B


Control Output	Timer Function	Connection	Environment		Protection Structure	Approval	Model
			Ambient Illumination	Ambient Temperature			
NPN open collector	—	Cable type (Ø4, 2m)	Sunlight : Max. 11,000lx, Incandescent lamp : Max. 3,000lx (received illumination)	-25 to 65°C	IP66	CE	BUP-30
PNP open collector	—	Cable type (Ø4, 2m)	Sunlight : Max. 11,000lx, Incandescent lamp : Max. 3,000lx (received illumination)	-25 to 65°C	IP66	CE	BUP-30-P
NPN open collector	—	Cable type (Ø4, 2m)	Sunlight : Max. 11,000lx, Incandescent lamp : Max. 3,000lx (received illumination)	-25 to 65°C	IP66	CE	BUP-30S
PNP open collector	—	Cable type (Ø4, 2m)	Sunlight : Max. 11,000lx, Incandescent lamp : Max. 3,000lx (received illumination)	-25 to 65°C	IP66	CE	BUP-30S-P
NPN open collector	—	Cable type (Ø4, 2m)	Sunlight : Max. 11,000lx, Incandescent lamp : Max. 3,000lx (received illumination)	-25 to 65°C	IP66	CE	BUP-50
PNP open collector	—	Cable type (Ø4, 2m)	Sunlight : Max. 11,000lx, Incandescent lamp : Max. 3,000lx (received illumination)	-25 to 65°C	IP66	CE	BUP-50-P
NPN open collector	—	Cable type (Ø4, 2m)	Sunlight : Max. 11,000lx, Incandescent lamp : Max. 3,000lx (received illumination)	-25 to 65°C	IP66	CE	BUP-50S
PNP open collector	—	Cable type (Ø4, 2m)	Sunlight : Max. 11,000lx, Incandescent lamp : Max. 3,000lx (received illumination)	-25 to 65°C	IP66	CE	BUP-50S-P

Sensitivity Setting	Sensor Cable Length	Environment		Protection Structure	Approval	Model
		Ambient Illumination	Ambient Temperature			
Set by button	5m	Sunlight : Max. 100,000lx (receiver illumination)	-20 to 55°C	IP30	CE	ADS-SE1
Set by button	5m	Sunlight : Max. 100,000lx (receiver illumination)	-20 to 55°C	IP30	CE	ADS-SE2

# Area Sensors / Proximity Sensors

Series	Sensing Method	Sensing Distance	Light Source	Optical Axis Pitch	Number Of Optical Axes	Sensing Height / Total Length (mm)	Power Supply
<b>Cross-Beam Elevator Area Sensor BWE Series</b>    W20×H10×L2000mm	Through-beam type	0 to 4m	Infrared LED (940nm modulated)	58mm	32	20 to 1820	12-24VDC $\equiv$
				116mm	17	20 to 1820	12-24VDC $\equiv$


※Sold separately: Sensor controller (BWE-C-F, BWE-C-FP)


Series	Wire Type And Power	Sensing Side Diameter	Sensing Distance	Installation	Standard Sensing Target	Response Frequency	Current Specification
<b>Cylindrical, Long Sensing Distance, Connector Type Proximity Sensor PRDCM Series</b>  <Non-flush> 	DC 2-wire type 12-24VDC $\equiv$	M12	4mm	Shield (flush)	12×12×1mm (iron)	450Hz	Leakage current : Max. 0.6mA
			8mm	Non-shield (non-flush)	25×25×1mm (iron)	400Hz	Leakage current : Max. 0.6mA
		M18	7mm	Shield (flush)	20×20×1mm (iron)	250Hz	Leakage current : Max. 0.6mA
			14mm	Non-shield (non-flush)	40×40×1mm (iron)	200Hz	Leakage current : Max. 0.6mA
		M30	15mm	Shield (flush)	45×45×1mm (iron)	100Hz	Leakage current : Max. 0.6mA
			25mm	Non-shield (non-flush)	75×75×1mm (iron)	100Hz	Leakage current : Max. 0.6mA

Control Output	Operation mode	Environment		Connection	Protection Structure	Approval	Model
		Ambient Illumination	Ambient Temperature				
NPN open collector	Light ON	Ambient light : Max. 100,000lx (receiver illumination)	-20 to 60°C	Cable connector type (Ø5, 300mm, M12)	IP50	CE	BWE58-32
PNP open collector							BWE58-32P
NPN open collector	Light ON	Ambient light : Max. 100,000lx (receiver illumination)	-20 to 60°C	Cable connector type (Ø5, 300mm, M12)	IP50	CE	BWE116-17
PNP open collector							BWE116-17P

Control Output	Materials	Connection	Ambient Temperature	Protection Structure	Approval	Non-Polarity	Body Length	Model
<input type="checkbox"/> : Type O: N.O. / C: N.C.	Brass (nickel plated)	<input checked="" type="checkbox"/> : Type No-mark: Standard connector I: IEC standard	-25 to 70°C	IP67	CE	—	Standard type	PRDCMT12-4D□-■
<input type="checkbox"/> : Type O: N.O. / C: N.C.	Brass (nickel plated)	<input checked="" type="checkbox"/> : Type No-mark: Standard connector I: IEC standard	-25 to 70°C	IP67	CE	—	Standard type	PRDCMT12-8D□-■
<input type="checkbox"/> : Type O: N.O. / C: N.C.	Brass (nickel plated)	<input checked="" type="checkbox"/> : Type No-mark: Standard connector I: IEC standard	-25 to 70°C	IP67	CE	—	Standard type	PRDCMT18-7D□-■
<input type="checkbox"/> : Type O: N.O. / C: N.C.	Brass (nickel plated)	<input checked="" type="checkbox"/> : Type No-mark: Standard connector I: IEC standard	-25 to 70°C	IP67	CE	—	Long body	PRDCMLT18-7D□-■
<input type="checkbox"/> : Type O: N.O. / C: N.C.	Brass (nickel plated)	<input checked="" type="checkbox"/> : Type No-mark: Standard connector I: IEC standard	-25 to 70°C	IP67	CE	—	Standard type	PRDCMT18-14D□-■
<input type="checkbox"/> : Type O: N.O. / C: N.C.	Brass (nickel plated)	<input checked="" type="checkbox"/> : Type No-mark: Standard connector I: IEC standard	-25 to 70°C	IP67	CE	—	Long body	PRDCMLT18-14D□-■
<input type="checkbox"/> : Type O: N.O. / C: N.C.	Brass (nickel plated)	<input checked="" type="checkbox"/> : Type No-mark: Standard connector I: IEC standard	-25 to 70°C	IP67	CE	—	Standard type	PRDCMT30-15D□-■
<input type="checkbox"/> : Type O: N.O. / C: N.C.	Brass (nickel plated)	<input checked="" type="checkbox"/> : Type No-mark: Standard connector I: IEC standard	-25 to 70°C	IP67	CE	—	Long body	PRDCMLT30-15D□-■
<input type="checkbox"/> : Type O: N.O. / C: N.C.	Brass (nickel plated)	<input checked="" type="checkbox"/> : Type No-mark: Standard connector I: IEC standard	-25 to 70°C	IP67	CE	—	Standard type	PRDCMT30-25D□-■
<input type="checkbox"/> : Type O: N.O. / C: N.C.	Brass (nickel plated)	<input checked="" type="checkbox"/> : Type No-mark: Standard connector I: IEC standard	-25 to 70°C	IP67	CE	—	Long body	PRDCMLT30-25D□-■

# Proximity Sensors


Series	Wire Type And Power	Sensing Side Diameter	Sensing Distance	Installation	Standard Sensing Target	Response Frequency	Current Specification
<b>Cylindrical, Long Sensing Distance, Connector Type Proximity Sensor PRDCM Series &lt;Flush&gt;</b> 	DC 3-wire type 12-24VDC	M12	4mm	Shield (flush)	12×12×1mm (iron)	500Hz	Current consumption : Max. 10mA
			8mm	Non-shield (non-flush)	25×25×1mm (iron)	400Hz	Current consumption : Max. 10mA
		M18	7mm	Shield (flush)	20×20×1mm (iron)	300Hz	Current consumption : Max. 10mA
			14mm	Non-shield (non-flush)	40×40×1mm (iron)	200Hz	Current consumption : Max. 10mA
		M30	15mm	Shield (flush)	45×45×1mm (iron)	100Hz	Current consumption : Max. 10mA
			25mm	Non-shield (non-flush)	75×75×1mm (iron)	100Hz	Current consumption : Max. 10mA

Series	Wire Type And Power	Sensing Side Size	Sensing Distance	Standard Sensing Target	Response Frequency	Current Specification
<b>Rectangular, Standard Type Proximity Sensor PS/PSN Series</b> 	AC 2-wire type 100-240VAC	Frame size 25mm	5mm	25×25×1mm (iron)	20Hz	Leakage current : Max. 2.5mA
			Frame size 30mm	10mm	30×30×1mm (iron)	20Hz
		15mm		45×45×1mm (iron)	20Hz	Leakage current : Max. 2.5mA
		Frame size 40mm	20mm	60×60×1mm (iron)	20Hz	Leakage current : Max. 2.5mA
	DC 2-wire type 12-24VDC	Frame size 17mm	5mm	18×18×1mm (iron)	700Hz	Leakage current : Max. 0.6mA
			DC 3-wire type 12-24VDC	Frame size 12mm	4mm	12×12×1mm (iron)
	Frame size 17mm	5mm			18×18×1mm (iron)	700Hz
		8mm		25×25×1mm (iron)	200Hz	Current consumption : Max. 10mA
	Frame size 25mm	5mm		25×25×1mm (iron)	300Hz	Current consumption : Max. 10mA
	Frame size 30mm	10mm	30×30×1mm (iron)	250Hz	Current consumption : Max. 10mA	
		15mm	45×45×1mm (iron)	200Hz	Current consumption : Max. 10mA	
	Frame size 40mm	20mm	60×60×1mm (iron)	100Hz	Current consumption : Max. 10mA	


Control Output	Materials	Connection	Ambient Temperature	Protection Structure	Approval	Non-Polarity	Body Length	Model
□: Type N: NPN N.O. / N2: NPN N.C. P: PNP N.O. / P2: PNP N.C.	Brass (nickel plated)	Standard connector	-25 to 70°C	IP67	CE	—	Standard type	PRDCM12-4D□
							Long body	PRDCML12-4D□
□: Type N: NPN N.O. / N2: NPN N.C. P: PNP N.O. / P2: PNP N.C.	Brass (nickel plated)	Standard connector	-25 to 70°C	IP67	CE	—	Standard type	PRDCM12-8D□
							Long body	PRDCML12-8D□
□: Type N: NPN N.O. / N2: NPN N.C. P: PNP N.O. / P2: PNP N.C.	Brass (nickel plated)	Standard connector	-25 to 70°C	IP67	CE	—	Standard type	PRDCM18-7D□
							Long body	PRDCML18-7D□
□: Type N: NPN N.O. / N2: NPN N.C. P: PNP N.O. / P2: PNP N.C.	Brass (nickel plated)	Standard connector	-25 to 70°C	IP67	CE	—	Standard type	PRDCM18-14D□
							Long body	PRDCML18-14D□
□: Type N: NPN N.O. / N2: NPN N.C. P: PNP N.O. / P2: PNP N.C.	Brass (nickel plated)	Standard connector	-25 to 70°C	IP67	CE	—	Standard type	PRDCM30-15D□
							Long body	PRDCML30-15D□
□: Type N: NPN N.O. / N2: NPN N.C. P: PNP N.O. / P2: PNP N.C.	Brass (nickel plated)	Standard connector	-25 to 70°C	IP67	CE	—	Standard type	PRDCM30-25D□
							Long body	PRDCML30-25D□

Control Output	Sensing Method	Materials	Ambient Temperature	Protection Structure	Approval	Different Frequency	Model
□: Type O: N.O. / C: N.C.	Standard type (front sensing type)	Heat-resistant ABS	-25 to 70°C	IP67	CE	—	PSN25-5A□
□: Type O: N.O. / C: N.C.	Standard type (front sensing type)	Heat-resistant ABS	-25 to 70°C	IP67	CE	—	PSN30-10A□
□: Type O: N.O. / C: N.C.	Standard type (front sensing type)	Heat-resistant ABS	-25 to 70°C	IP67	CE	—	PSN30-15A□
□: Type O: N.O. / C: N.C.	Standard type (front sensing type)	Heat-resistant ABS	-25 to 70°C	IP67	CE	—	PSN40-20A□
□: Type O: N.O. / C: N.C.	■: Type No-mark: Standard type (front sensing type) U: Upper sensing type	Heat-resistant ABS	-25 to 70°C	IP67	CE	—	PSNT17-5D□■
NPN N.O.	■: Type No-mark: Standard type (front sensing type) U: Upper sensing type	Heat-resistant ABS	-25 to 70°C	IP67	CE	—	PS12-4DN■
PNP N.O.	■: Type No-mark: Standard type (front sensing type) U: Upper sensing type	Heat-resistant ABS	-25 to 70°C	IP67	CE	—	PS12-4DP■
NPN N.C.	■: Type No-mark: Standard type (front sensing type) U: Upper sensing type	Heat-resistant ABS	-25 to 70°C	IP67	CE	—	PS12-4DN2■
□: Type N: NPN N.O. / N2: NPN N.C.	Standard type (front sensing type)	Heat-resistant ABS	-25 to 70°C	IP67	CE	—	PSN17-5D□
□: Type N: NPN N.O. / N2: NPN N.C.	Upper sensing type	Heat-resistant ABS	-25 to 70°C	IP67	CE	—	PSN17-5D□U
NPN N.O.	Standard type (front sensing type)	Heat-resistant ABS	-25 to 70°C	IP67	CE	●	PSN17-5DN-F
□: Type P: PNP N.O. / P2: PNP N.C.	■: Type No-mark: Standard type (front sensing type) U: Upper sensing type	Heat-resistant ABS	-25 to 70°C	IP67	CE	—	PSN17-5D□■
□: Type N: NPN N.O. / N2: NPN N.C. P: PNP N.O. / P2: PNP N.C.	■: Type No-mark: Standard type (front sensing type) U: Upper sensing type	Heat-resistant ABS	-25 to 70°C	IP67	CE	—	PSN17-8D□■
□: Type N: NPN N.O. / N2: NPN N.C. P: PNP N.O. / P2: PNP N.C.	■: Type No-mark: Standard type (front sensing type) U: Upper sensing type	Heat-resistant ABS	-25 to 70°C	IP67	CE	●	PSN17-8D□■-F
PNP N.O.	■: Type No-mark: Standard type (front sensing type) U: Upper sensing type	Heat-resistant ABS	-25 to 70°C	IP67	CE	●	PSN17-8DP■-F
□: Type N: NPN N.O. / N2: NPN N.C. P: PNP N.O. / P2: PNP N.C.	Standard type (front sensing type)	Heat-resistant ABS	-25 to 70°C	IP67	CE	—	PSN25-5D□
□: Type N: NPN N.O. / N2: NPN N.C. P: PNP N.O. / P2: PNP N.C.	Standard type (front sensing type)	Heat-resistant ABS	-25 to 70°C	IP67	CE	—	PSN30-10D□
□: Type N: NPN N.O. / N2: NPN N.C. P: PNP N.O. / P2: PNP N.C.	Standard type (front sensing type)	Heat-resistant ABS	-25 to 70°C	IP67	CE	—	PSN30-15D□
□: Type N: NPN N.O. / N2: NPN N.C. P: PNP N.O. / P2: PNP N.C.	Standard type (front sensing type)	Heat-resistant ABS	-25 to 70°C	IP67	CE	—	PSN40-20D□

# Proximity Sensors / Rotary Encoders

Series	Wire Type And Power	Sensing Side Size	Sensing Distance	Standard Sensing Target	Response Frequency	Current Specification
<b>Rectangular, Flat Type Proximity Sensor PFI Series</b> 	AC 2-wire type 100-240VAC~	Frame size 25mm	8mm	25×25×1mm (iron)	20Hz	Leakage current : Max. 2.5mA
	DC 3-wire type 12-24VDC=	Frame size 25mm	8mm	25×25×1mm (iron)	200Hz	Current consumption : Max. 10mA

Control Output	Sensing Method	Materials	Ambient Temperature	Protection Structure	Approval	Different Frequency	Model
□: Type O: N.O. / C: N.C.	Upper sensing type	Poly Phenylene Sulfide	-25 to 70°C	IP67	CE	—	PFI25-8A□
□: Type N: NPN N.O. / N2: NPN N.C. P: PNP N.O. / P2: PNP N.C.	Upper sensing type	Poly Phenylene Sulfide	-25 to 70°C	IP67	CE	—	PFI25-8D□

Series	Shaft Inner Diameter	Max. Response Frequency	Max. Allowable Revolution	Starting Torque	Resolution (□: Type)			
					To 50	To 250	To 1000	To 5000
<b>Incremental, Ø40mm Built-in Hollow Shaft Type Rotary Encoder E40HB Series</b> 	□: Type 6: Ø6mm 8: Ø8mm 10: Ø10mm 12: Ø12mm	300kHz	5000rpm	Max. 50gf·cm (max. 0.0049N·m)	1, 2, 5, 12	—	—	—
					10, 15, 20, 23, 25, 30, 35, 40, 45, 50	60, 75, 80, 100, 120, 125, 150, 192, 200, 240, 250	256, 300, 360, 400, 500, 512, 600, 800, 1000	1024, 1200, 1500, 1800, 2000, 2048, 2500, 3000, 3600, 5000

Output Phase	Control Output	Power Supply	Connection	Protection Structure	Approval	Model
A, B	■: Type T: Totem pole N: NPN open collector V: Voltage	5VDC=	Radial cable type	IP50	CE	E40HB□□-2-■-5
			Radial cable connector type			E40HB□□-2-■-5-C
		12-24VDC=	Radial cable type	IP50	CE	E40HB□□-2-■-24
			Radial cable connector type			E40HB□□-2-■-24-C
A, $\bar{A}$ , B, $\bar{B}$	Line driver	5VDC=	Radial cable type	IP50	—	E40HB□□-4-L-5
			Radial cable connector type			E40HB□□-4-L-5-C
		12-24VDC=	Radial cable type	IP50	—	E40HB□□-4-L-24
			Radial cable connector type			E40HB□□-4-L-24-C
□: Type 2: A, B 3: A, B, Z 4: A, $\bar{A}$ , B, $\bar{B}$	■: Type T: Totem pole N: NPN open collector V: Voltage	5VDC=	Radial cable type	IP50	CE	E40HB□□-□-■-5
			Radial cable connector type			E40HB□□-□-■-5-C
		12-24VDC=	Radial cable type	IP50	CE	E40HB□□-□-■-24
			Radial cable connector type			E40HB□□-□-■-24-C
A, $\bar{A}$ , B, $\bar{B}$ , Z, $\bar{Z}$	Line driver	5VDC=	Radial cable type	IP50	—	E40HB□□-6-L-5
			Radial cable connector type			E40HB□□-6-L-5-C
		12-24VDC=	Radial cable type	IP50	—	E40HB□□-6-L-24
			Radial cable connector type			E40HB□□-6-L-24-C

## Rotary Encoders / Graphic Panel

Series	Shaft Inner Diameter	Max. Response Frequency	Max. Allowable Revolution	Starting Torque	Resolution
Incremental, Ø88mm, Hollow Shaft Type Rotary Encoder E88H Series	Ø30mm	150kHz	3600rpm	Max. 600gf·cm (max. 0.06N·m)	1024



Output Phase	Control Output	Power Supply	Connection	Protection Structure	Approval	Model
A, B	Complemental	15VDC≒	Radial cable type	IP50	CE	E88H30-1024-2-15
A, $\bar{A}$ , B, $\bar{B}$ , Z, $\bar{Z}$	Line driver	5VDC≒	Radial cable type	IP50	CE	E88H30-1024-6-L-5

Series	Shaft Outer Diameter	Max. Response Frequency	Max. Allowable Revolution	Starting Torque	Resolution (□: Type)	
					To 45	To 1024
Absolute, Ø50mm, Shaft Type Rotary Encoder EP50S Series	Ø8mm	35kHz	3000rpm	Max. 70gf·cm (max. 0.0069N·m)	6, 8, 10, 12, 16, 20, 24, 32, 40, 45	48, 64, 90, 128, 180, 256, 360, 512, 720, 1024



Output Code	Rotating Direction	Control Output	Power Supply	Connection	Protection Structure	Approval	Model
□: Type 1: BCD code 2: Binary code 3: Gray code	CW	NPN open collector	5VDC≒	Axial cable type	IP64	CE	EP50S8-□-F-N-5
			12-24VDC≒	Axial cable type	IP64	CE	EP50S8-□-F-N-24
		PNP open collector	5VDC≒	Axial cable type	IP64	CE	EP50S8-□-F-P-5
			12-24VDC≒	Axial cable type	IP64	CE	EP50S8-□-F-P-24
	CCW	NPN open collector	5VDC≒	Axial cable type	IP64	CE	EP50S8-□-R-N-5
			12-24VDC≒	Axial cable type	IP64	CE	EP50S8-□-R-N-24
		PNP open collector	5VDC≒	Axial cable type	IP64	CE	EP50S8-□-R-P-5
			12-24VDC≒	Axial cable type	IP64	CE	EP50S8-□-R-P-24

Series	Display Specifications				Graphic Drawing Memory	Touch Method
	LCD Type	Resolution	Display Area	Color		
7 inch, TFT LCD (Color) Graphic Panel GP-S070 Series	7 inch TFT Color LCD	800×480 pixel	152.4×91.44mm	16,777,216 colors	16MB	Pressure sensitive type



W194×H134×L35mm

Interface	Interface				Power Supply	Protection Structure	Dedicated Software	Approval	Model
	RS232C	RS422	USB (Host)	USB (Device)					
1	1	1	1	1	24VDC≒	IP65F (front panel)	GP Editor (drawing program)	CE	GP-S070-T9D6
2	—	1	1	1	24VDC≒	IP65F (front panel)	GP Editor (drawing program)	CE	GP-S070-T9D7

※1. Ethernet communication is available only for data upload/download of the dedicated software.

# Autonics

## Global Network

### Korea (Headquarters)

39, Magokjungang 5-ro 1-gil, Gangseo-gu,  
Seoul, Republic of Korea, 07594  
T 82-2-2048-1577  
E sales@autonics.com

### India

Autonics Automation India Private Limited  
T 91-22-2768-2570  
E india@autonics.net.in

### Malaysia

Mal-Autonics Sensor Sdn. Bhd.  
T 60-3-7805-7190 F 60-3-7805-7193  
E malaysia@autonics.com

### Türkiye

Autonics Otomasyon Ticaret Ltd. Sti.  
T 90-216-365-9117/3 F 90-216-365-9112  
E turkiye@autonics.com

### Brazil

Autonics do Brasil Comercial Importadora  
e Exportadora LTDA  
T 55-11-2307-8480 / 3195-4610 F 55-11-2309-7784  
E comercial@autonics.com.br

### Indonesia

PT. Autonics Indonesia  
T 62-21-8088-8814/5  
E indonesia@autonics.co.id

### Mexico

Autonics Mexico S.A. DE C.V.  
T 52-55-5207-0019 F 52-55-1663-0712  
E ventas05@autonics.com

### USA

Autonics USA, Inc.  
T 1-847-680-8160 F 1-847-680-8155  
E sales@autonicsusa.net

### China

Autonics Electronic (Jiaxing) Corporation  
T 86-21-5422-5969 F 86-21-5422-5961  
E china@autonics.com

### Japan

Autonics Japan Corporation  
T 81-3-6435-8380 F 81-3-6435-8381  
E ja@autonics.com

### Russia

Autonics Rus LLC  
T/F 7-495-660-10-88  
E russia@autonics.com

### Vietnam

Cong Ty TNHH Autonics Vina  
T 84-28-3771-2662 F 84-28-3771-2663  
E vietnam@autonics.com

## Products

### Sensors, Controllers, Motion Devices, Safety, Measuring Equipment, Connection Equipment and more

- Photoelectric Sensors • Photomicro Sensors • Fiber Optic Sensors • Door Sensors • Area Sensors • Proximity Sensors • LiDAR
- Displacement Sensors • Ultrasonic Sensors • Rotary Encoders • Temperature Sensors • Temperature Transmitters • Pressure Sensors
- Pressure Transmitters • Smart Camera • Vision Sensors • Safety Light Curtains • Safety Door Switches • Safety Switches
- Safety Controllers • Temperature Controllers • Solid State Relays • Power Controllers • Counters • Timers • Digital Panel Meters
- Digital Display Units • Sensor Controllers • SMPS • Industrial PC • HMIs • Recorders • Indicators • Network Converters
- Closed Loop Stepper Motor System • 5-Phase Stepper Motor & Drivers • 2-Phase Stepper Motor Drivers • Motion Controllers
- Industrial Networking • I/O Terminal Blocks • Distribution Boxes • Cables • Control Switches / Pilot Lights / Buzzers • Software

\* The dimensions or specifications on this product guide may change and some models may be discontinued without notice.

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