

# Product Selection Guide



UAM  
Safety Laser Scanner

UST

The smallest and  
The lightest, Wider range  
and Faster response



UXM  
Outdoor use,  
Long distance and  
High speed

UTM

Long distance,  
Wide range  
and High speed



Optical Data  
Transmission Devices

# Unique Products & Best Sensing

We strive to be the best partner of our customers throughout the world!

## SCANNING LASER RANGE FINDERS

2D scanners for measuring distance, size, position and direction of moving objects. Suitable for applications such as environment recognition for robots or obstacle detection for automated vehicles.



## OPTICAL DATA TRANSMISSION DEVICES

Mainly used for data transmission between AGV/RGVs, automated storage systems, cranes. Serial, parallel and other interfaces are available.



## Our locations

### Head office

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### Toyonaka Factory




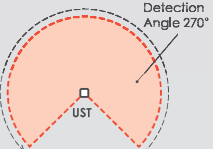


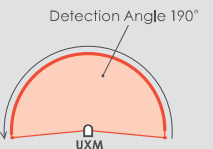

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# S


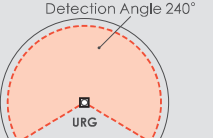

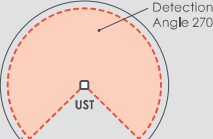


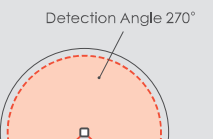


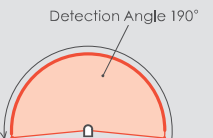

# CANNING LASER RANGE FINDERS

Scanning Laser Range Finders are 2-dimensional sensors for measuring the distance between the sensor and its surroundings. It is possible to detect size, position and the moving direction of the objects based on scanning data obtained. Please select either Area setting type (Parallel type) or Data output type (Serial type) from the following line-up depending on your requirements.

## Area Setting Type

Model Number	Part No.	Features	Scanning distance	Interface	Power supply	Scanning range zone
	UAM-05LP-T301	<ul style="list-style-type: none"> <li>Safety Laser Scanner The smallest in the world</li> <li>Type3 SIL2 PLd</li> </ul>	Protection Range Max. 5m Warning Range Max. 20m	OSSD1/2/3/4 WARNING1/2 Ethernet 100BASE-TX	24VDC	
	UST-05LN	<ul style="list-style-type: none"> <li>The smallest and the lightest of its kind</li> </ul>	5m	CONTROL OUTPUT 1/2/3	12VDC	
	UST-20LN	<ul style="list-style-type: none"> <li>Wider detection range</li> <li>Faster response</li> </ul>	20m		24VDC	
	UXM-30LN-PW	<ul style="list-style-type: none"> <li>Long distance</li> <li>High speed</li> </ul>	30m	CONTROL OUTPUT 1/2/3 Ethernet 100BASE-TX	10-30VDC	
	UXM-30LAH-EWA	<ul style="list-style-type: none"> <li>Long distance</li> <li>High speed</li> <li>Better accuracy</li> <li>Finer resolution</li> <li>Built-in heater</li> </ul>	80m			

## Data Output Type

	URG-04LX-UG01	<ul style="list-style-type: none"> <li>Super small</li> <li>USB bus power</li> </ul>	4m	USB1.1 / 2.0	USB	
	UST-10LX	<ul style="list-style-type: none"> <li>Long distance</li> <li>Wide range</li> </ul>	10m	Ethernet 100BASE-TX	12VDC	
	UST-20LX	<ul style="list-style-type: none"> <li>High speed</li> </ul>	20m		24VDC	
	UTM-30LX	<ul style="list-style-type: none"> <li>Long distance</li> <li>Wide range</li> <li>High speed</li> </ul>	30m	USB2.0	12VDC	
	UTM-30LX-EW	<ul style="list-style-type: none"> <li>Long distance</li> <li>Wide range</li> <li>High speed</li> <li>Multi-Echo data</li> </ul>				
	UXM-30LX-EW	<ul style="list-style-type: none"> <li>Long distance</li> <li>High speed</li> <li>Multi-Echo data</li> </ul>	80m	Ethernet 100BASE-TX	10-30VDC	
	UXM-30LXH-EWA	<ul style="list-style-type: none"> <li>Long distance</li> <li>High speed</li> <li>Better accuracy</li> <li>Finer resolution</li> <li>Built-in heater</li> </ul>				

# NEW PRODUCT SAFETY LASER SCANNER



SIL2 Type3  
PL d Category3

## UAM-05LP-T301

### Features

- 5m x 270 degrees safety range
- Dual protection
- Encoder input
- Distance data output

### Applications

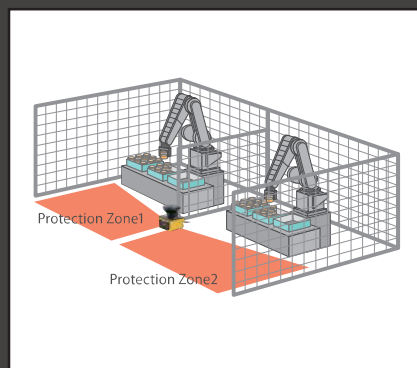
- Collision prevention
- Presence detection
- Intrusion detection



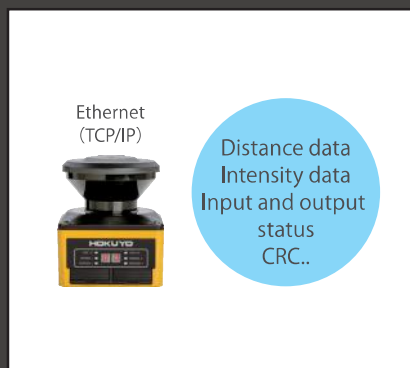
## Specifications

Part No.	UAM-05LP-T301
Power supply	DC 24V ±10%: when operation using converter power supply DC 24V -30%/+20%: when operation using battery
Protection range	Max. 5m
Warning range	Max. 20m
Distance tolerance	+ 100mm
Detection capability	From Black-Reflector Sheet (1.8%) to Retro-Reflector Sheet
Minimum detectable width	φ30 mm (Max: 1.8m), φ50 mm (Max: 3.0 m), φ70 mm (Max: 5.0 m)
Scan frequency	30ms (Rotational Speed: 2000 rpm)
Area pattern	Max 32 patterns
Interface	USB2.0 (USB micro type-B connector) Ethernet 100BASE-TX (Water proof connector)
Cable	Flying lead cable length : 3m
Weight and size	0.8Kg, 80mm (W)×80mm (D)×95mm (H)

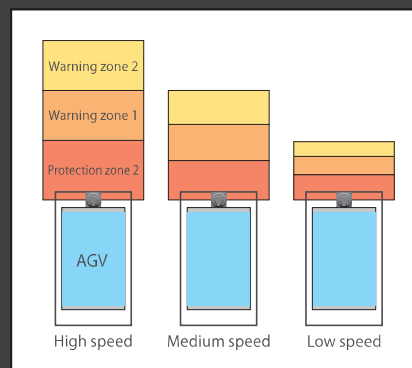
## New Functions



● Dual Protection



● Distance Data output



● Encoder input

# NEW PRODUCT SCANNING LASER RANGE FINDER

**UST-05LN**  
**UST-05LA**  
**UST-20LN**

## Features

- Wide detection range
- Fast response
- More flexible settings
- The smallest and the lightest of its kind

## Applications

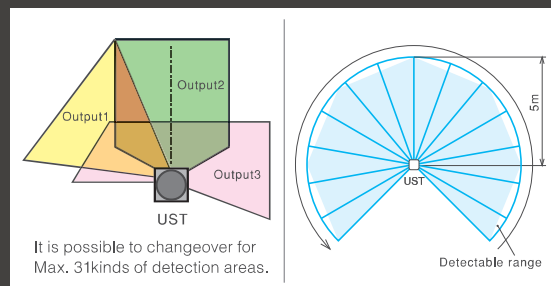
- Obstacle detection
- Presence detection



## Specifications

Part No.	UST-05LN / UST-05LA	UST-20LN
Power supply	12VDC / 24VDC (10-30VDC ripple: 10% or less)	
Consumption current	150mA (DC24V) or less (400mA when switching on)	
Light source	Semiconductor laser (905nm), class 1 eye safe	
Distance	0.06-5m (White sheet) 0.06-2m (Black sheet with 10% reflectivity)	0.06-20m (White sheet) 0.06-8m (Black sheet with 10% reflectivity)
Distance accuracy	±40mm	
Repeatability	$\sigma < 30\text{mm}$	
Scanning angle	270°	
Scanning time	25ms per scan	
Angular resolution	0.5°	0.25°
Start-up time	10sec or less	
Area pattern	31 patterns	
Output	Photo coupler / Open collector	
Response time	66ms or less	
Interface	USB / RS422 (only for UST-05LA data output)	USB / RS422 (for area setting)
Indicator LED	Power (blue) : Blinking during start-up and malfunction	
Ambient temperature	-10 to 50 °C	
Protective structure	IP65	
Weight	130g (excluding cable)	

## System structure



## Applications



- Obstacle detection of AGVs
- Load shifting detection

# NEW PRODUCT SCANNING LASER RANGE FINDER

## UXM-30LXH-EWA UXM-30LAH-EWA

### Features

- Better accuracy
- Ethernet
- Finer resolution
- Multi-Echo
- Built-in heater
- IP67

### Applications

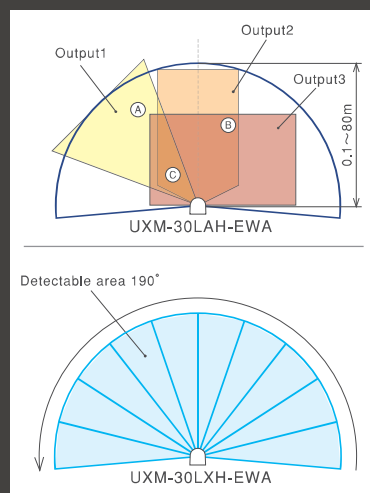
- Container crane control
- Tower crane collision avoidance
- AGV obstacle detection



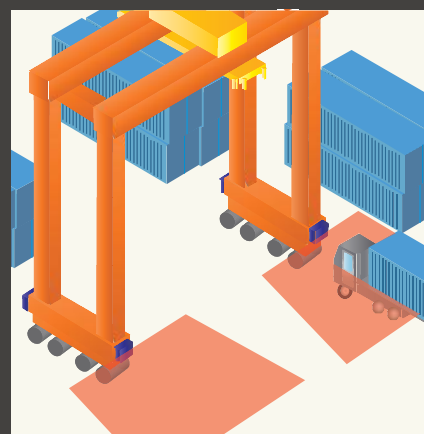
### Specifications

Part No.	UXM-30LXH-EWA / UXM-30LAH-EWA	Start-up time	30sec or less
Power supply	10-30VDC	Area pattern	15 patterns (UXM-30LAH-EWA only)
Consumption current	7.2W or less (usual operation) 15W when heater is on with power of 12VDC 30W when heater is on with power of 24VDC	Output	Photo coupler / Open collector Output 1 , 2 & 3 : area detection (UXM-30LAH-EWA only) Output 4: malfunction (Normally ON) Output 5: Sync. Output
Light source	Semiconductor laser (905nm), class 1 eye safe	Response time	100ms or less Extra 1 scan time is needed during area switching
Distance	0.1m-30m (Black sheet with 10% reflectivity) 0.1m-80m (White sheet with 90% reflectivity)	Interface	Ethernet
Distance accuracy	±50mm	Ambient temperature	-30 to 50 °C
Repeatability	$\sigma < 30\text{mm}$	Protective structure	IP67
Scanning angle	190°	Weight	1.2kg (excluding cable)
Scanning time	50ms per scan		
Angular resolution	0.125°		

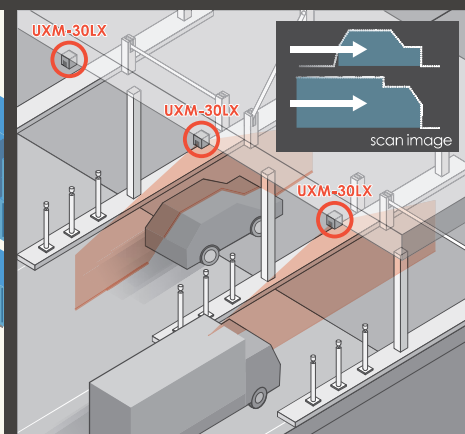
### System structure



### Applications



● UXM-30LAH-EWA :  
Collision avoidance for RTGs, RMGs and AGVs



● UXM-30LXH-EWA :  
Vehicle Classification System by Binaryworks

# SCANNING LASER RANGE FINDER

## URG-04LX-UG01

The most affordable laser scanner in the world

### Features

- Low cost
- High accuracy
- Low power consumption
- USB bus power

### Applications

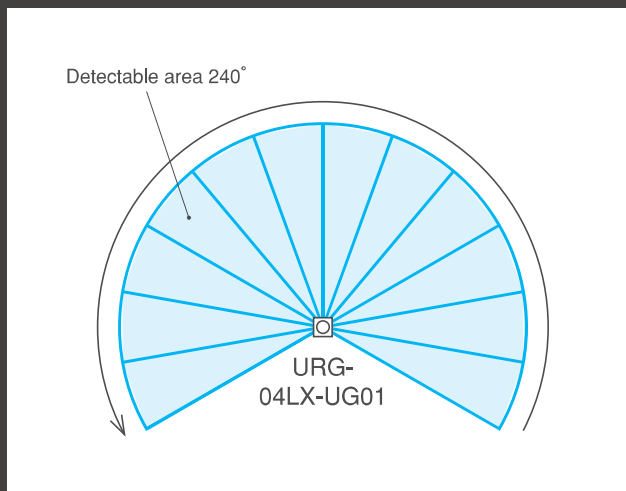
- Service robotics
- Research robotics
- Intelligent AGV



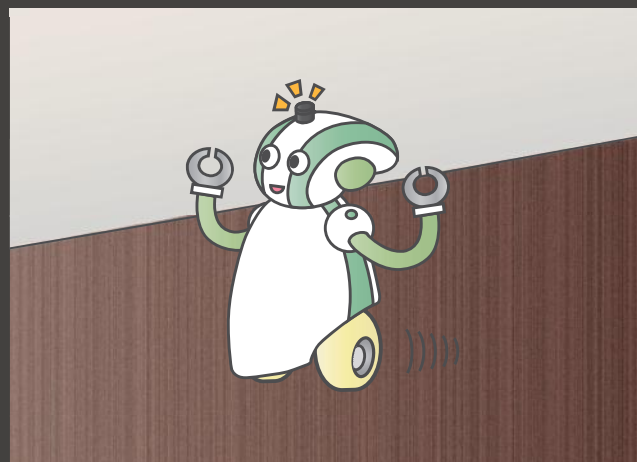
## Specifications

Part No.	URG-04LX-UG01
Power supply	5VDC $\pm$ 10% (USB bus power)
Consumption current	500mA or less (600mA when switching on)
Light source	Semiconductor laser (785nm), class 1 eye safe
Distance	0.06-4m (White sheet)
Distance accuracy	0.06-1m : $\pm$ 30mm, 1-4m : 3% of distance
Scanning angle	240 degrees
Scanning time	100ms per scan
Angular resolution	0.36°
Interface	USB1.1 / 2.0
Ambient temperature	-10 to 50 °C
Protective structure	IP64
Weight	160g

## System structure



## Applications



- Environment recognition for autonomous robot

# SCANNING LASER RANGE FINDER

## UST-10LX UST-20LX

### Features

- High speed
- Long distance
- Wide range
- Compact and lightweight

### Applications

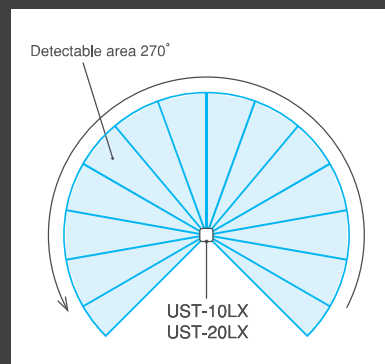
- Service robot
- Research robot
- Medical robot



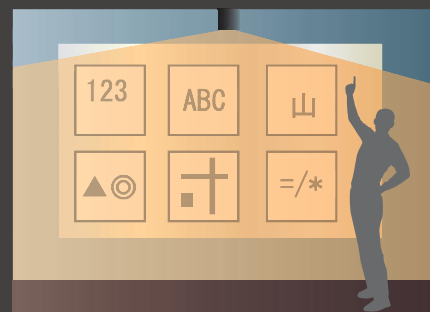
## Specifications

Part No.	UST-10LX	UST-20LX
Power supply	12VDC / 24VDC (10-30VDC ripple: 10% or less)	
Consumption current	150mA or less (450mA when switching on)	
Light source	Semiconductor laser (905nm) , class 1	
Distance	0,06-10m (White sheet) 0,06-4m (Black sheet with 10% reflectivity) Max. detection distance : 30m	0,06-20m (White sheet) 0,06-8m (Black sheet with 10% reflectivity) Max. detection distance : 60m
Distance accuracy	±40mm	
Repeatability	$\sigma < 30\text{mm}$	
Scanning angle	270 degrees	
Scanning time	25ms per scan	
Angular resolution	0.25°	
Start-up time	10sec or less	
Interface	Ethernet 100BASE-TX	
Ambient temperature	-10 to 50 °C	
Protective structure	IP65	
Weight	130g (excluding cables)	

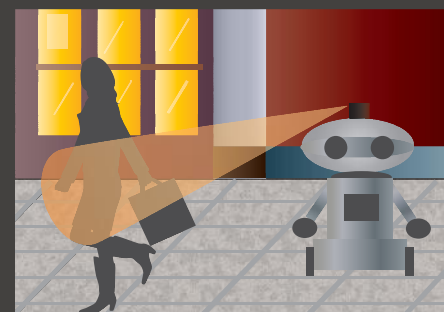
## System structure



## Applications



- Interactive media systems



- Environment recognition for autonomous service robots



# SCANNING LASER RANGE FINDER

## UTM-30LX UTM-30LX-EW

### Features

- Long distance
- Wide range
- High speed
- Multi-Echo data (UTM-30LX-EW)
- IP67 (UTM-30LX-EW)

### Applications

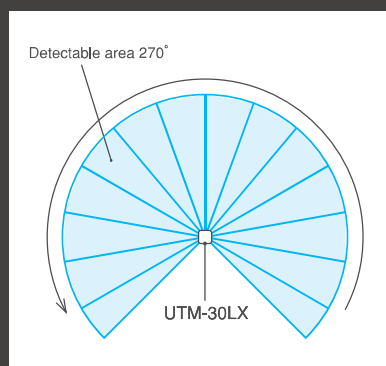
- Service robot
- Medical robot
- Research robot
- Intelligent AGV



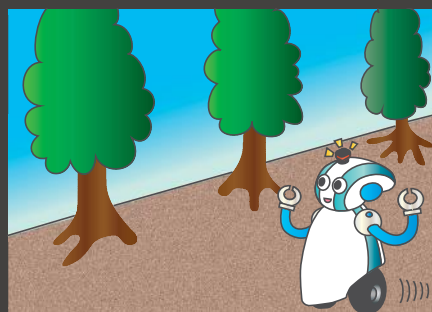
## Specifications

Part No.	UTM-30LX / UTM-30LX-EW
Power supply	12VDC $\pm 10\%$
Consumption current	700mA or less (1A when switching on)
Light source	Semiconductor laser (905nm), class 1 eye safe
Distance	0.1-30m (White sheet)
Distance accuracy	$\pm 50\text{mm}$
Repeatability	$\sigma < 30\text{mm}$
Scanning angle	270 degrees
Scanning time	25ms per scan
Angular resolution	0.25°
Output	Sync.
Interface	USB for UTM-30LX Ethernet for UTM-30LX-EW
Ambient temperature	-10 to 50 °C
Protective structure	IP64 for UTM-30LX IP67 for UTM-30LX-EW
Weight	210g (excluding cables)

## System structure



## Applications



- Environment recognition by autonomous robot for outdoor use



- Analyzing human movement patterns for marketing purposes



# OPTICAL DATA TRANSMISSION DEVICES

Mainly used for data transmission between AGV/RGVs, automated storage systems, cranes.  
Serial, parallel and other interfaces are available.

## Serial Type

Interface	Image	Transmission distance	Part NO.
Ethernet 100BASE-TX		100m	EWF-1EA-01 / EWF-1EB-01
Ethernet 10BASE-T		100m	BWF-3EA / BWF-3EB
		200m	BWF-4EA / BWF-4EB
		200m	BWF-4EA-SF / BWF-4EB-SF
CC-Link		200m	BWF-2CA / BWF-2CB
		100m	BWF-17A / BWF-17B
		200m	BWF-27A / BWF-27B
DeviceNet		100m	CWF-1NA-S / CWF-1NB-S
mitsubishi electric SSCNETIII		50m	EWF-0VA / EWF-0VB
RS-232C/RS-422		100m	BWF-11A / BWF-11B
		200m	BWF-21A / BWF-21B
RS-422		100m	EWF-11A / EWF-11B
RS-232C		1m	DMS-GF1A / DMS-GF1B
			DMS-HF1A / DMS-HF1B

## Parallel Type

Classification	Capacity	Image	Transmission distance	Part NO.
Head-ON	4BIT		1m	DMS-GA1-V
	8BIT		3m	DMS-GA2-V
Side-ON			4BIT	1m
	8BIT		3m	DMS-GB2-V
Head-ON	4BIT		1m	DMS-HA1-V
	8BIT		3m	DMS-HA2-V
Side-ON	4BIT	1m	DMS-HB1-V	
	8BIT	3m	DMS-HB2-V	
Head-ON	16BIT		3m	DMH-GC1
Side-ON			3m	DMH-HC1

# NEW PRODUCT OPTICAL DATA TRANSMISSION DEVICE

## EWF-1E



### Features

- Non-contact optical repeater
- Available for Ethernet communication
- Can be directly connected to Ethernet
- 100Mbps speed

### Applications

- Stacker crane communication and control
- Ethernet Camera

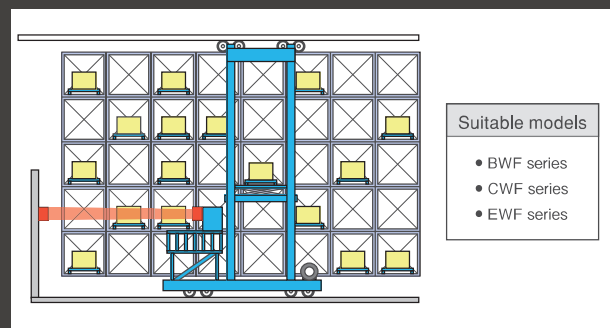
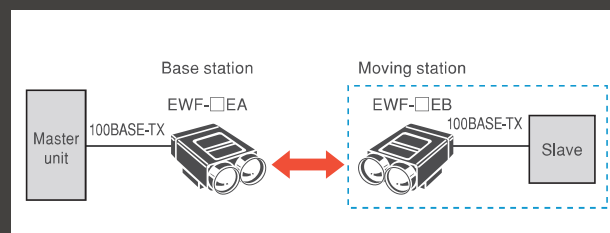


## Specifications

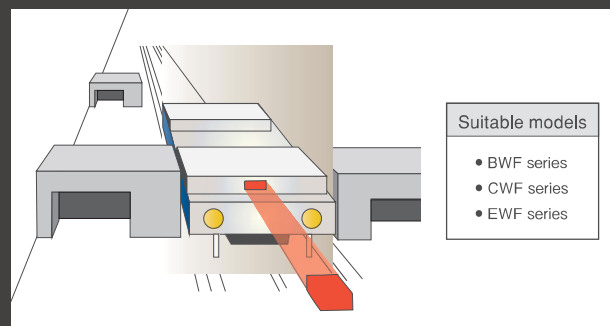
Part No.	EWF-1EA-01 / EWF-1EB-01
Transmission distance	100m
Directional angle	0.7° full angle
Power source	24VDC (±10%)
Consumption current	150mA (24VDC)
Transmission method	Full-duplex two-way transmission
Transmission speed	100Mbps
Laser class	2M
Interface	Ethernet
Communication standard	IEEE802.3u 100BASE-TX
Modulated method	Direct modulation
Connection	Mini clamp connector (Power / CD signal), Modular jack RJ-45 (Ethernet)
Ambient temperature	-10 to 50 °C
Ambient illuminance	10,000lux or less (Halogen / Mercury lamp)
Impact resistance	490m/s <sup>2</sup> , Each 10 time in X, Y and Z directions
Vibration resistance	Double amplitude 1.5mm, 10~55Hz, each 2 hour in X, Y and Z direction
Protective structure	IP40
Light-reception level output (CD)	Photo-coupler open-collector (Withstand voltage 35V), Light-ON (Max.50mA, Residual voltage 1.5V)

Note: A and B must work together as a pair.

## System composition



- **Control of stacker crane for Automated Storage Systems**  
Instruction of address, main power ON / OFF, traveling and upturn / downturn etc.



- **Control of track type AGVs**  
Instruction of address, main power ON / OFF, traveling etc.



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