Industrial intelligent control solution



2024 ENV2.8

Ultrasonic Sensors Brochure



Due to technical improvements in product development, displays may vary and products are subject to change without notice



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ABOUT US

Company Profile

RAYCOH Ruike Intelligent is located in Qingshui River, University of Electronic Science and Technology of China.The company is supported by experts and professors engaged in electronic research for many years.

RAYCOH Intelligent provides ultrasonic sensorsranging sensors, liquid level sensors, material level sensors, distance sensors, displacement sensors, anticollision and control systems for mobile devices and other products. The company has a complete and scientific quality management system.

RAYCOH intelligent integrity, strength and highquality products have been recognized and praised by theindustry.

Welcome friends from all walks of life to visit, guide and negotiate business.

R&D, testing, manufacturing and sales all concerned



Careful craftsmanship is our commitment to the quality of our products. At the same time, it is a sign of respect for our customers. We always pursue excellence and pay attention to every detail. Let every product reflect our ultimate pursuit of quality. We listen to our customers with allour heart, understand their needs, and win their trust and loyalty with quality products and services.

Insist On Independent Innovation



We will continue to enhance our R&D strength and innovation awareness to provide better products and services to our global customers with leading technology and excellent quality.

TECHNOLOGY



Technology is our priority, for smart industrial







Mutually beneficial and win-win



Helping made in china building the intelligent age



Customer foremost

Enterprise Value





ΩUI	M12 cylindrical	Tybe	Detection range	Blind	Resolution	Repeatability	shape
CK S	C. C	UB120	20-120mm	20mm	0 1mm	+0 15%	Straight
ELE	00 00 00	UB200	20-200mm	2011111	0.111111	±0.1370	et algite
C	M18 cylindrical	Tybe	Detection range	Blind	Resolution	Repeatability	shape
0	0	UB300	30 - 300mm	30mm	0.1mm	±0.15%	Straight/ Curved
Z		UB500	50 - 500mm	50mm	0.15mm	±0.15%	Straight/ Curved
Ouick Selection		UB1000	60 - 1000mm	60mm	0.17mm	±0.15%	Straight/ Curved
	M30 cylindrical	Tybe	Detection range	Blind	Resolution	Repeatability	shape
Main Products		UB2000	100 - 2000mm	100mm	0.17 - 0.5mm	±0.15%	Straight
Connotation		UB4000	200 - 4000mm	200mm	0.17 - 1.5mm	±0.15%	Straight
Usage pattern	SEC O	UB6000	35 0 - 6000mm	350mm	0.17 - 2.5mm	±0.15%	Straight
Features	UCC corrosion resistant	Tybe	Detection range	Blind	Resolution	Repeatability	shape
Installation Notes		UCC2500	150 - 2500mm	150 mm	0.2-0.5 mm	±0.15%	Straight flange
Accessores	UR Testing Series	Tybe	Detection range	Blind	Resolution	Repeatability	shape
Unstable description		UR2000	100 - 2000mm	100mm	0.17mm	+0.15%	Diactics
		UR3000	150 - 3000mm	150mm	0.17mm		Tastics
M12	UDA double sheet	Tybe	Detection range	Blind	Resolution	Repeatability	shape
		M12	20 - 40mm	5 mm	-	-	Straight
M30		M18	20 - 60mm	7 mm	-	_	Straight
		M30	20 - 100mm	7 mm		-	Straight
	UDB slot label	Tybe	Detection range	Blind	Resolution	Repeatability	shape
UCC		,				1 5	
UDB		UDB	5mm	-	-	-	Slot
UR	RAYCOH. 4						

Main Products

Application

Connotation

Usage pattern

Installation Notes

Accessores

Unstable

Features





M12 Cylindrical

M12 external thread, simple and compact ultrasonic sensor design, especially suitable for short-distance high-precision and narrow sound cone detection.

- The shortest external dimension is only 50mm, which is a compact form factor for easy installation.
- Switch output/analog output /RS485 output /IO-link output
- Detection distance: 120/200mm
- Temperature compensation function

M18 Cylindrical

M18 external thread installation, the longest shell length is 55mm. Ultrasonic sensor with small appearance and cost performance in 1m measuring range.

- ◆ The shell is 45/55mm series
- Switch output/analog output /RS485 output /IO-link output
- ◆ Temperature compensation function
- External synchronization function



M18 Elbow cylindrical

M18 external thread installation, Model with 90 degree elbow at the top. Ultrasonic sensor with small appearance and cost performance in 1m measuring range.

- The shell for 45/55mm two series, corresponding to the provision of elbow models
- Switching output/analogue output/RS485 output/IO-link output
- Temperature compensation function
- External synchronisation function



UCC Corrosion Resistance Cylindrical

PTFE and stainless steel design. suitable for all kinds of corrosive environments such as strong acid and alkali.

- ◆ Analog output /RS485 output /IO-link output
- Provides a 2.5 metre detection range
- ◆ Temperature compensation function
- Narrow cone design

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UR

UDB

Main Products

Application

Connotation

Usage pattern

Installation Notes

Features





M30 Cylindrical

M30 external thread installation, short design.

- ◆ Measuring distance of 2000/4000/6000mm
- Switch output/analog output /RS485 output /IO-link output
- External synchronization function
- ◆ Temperature compensation function

UR Series

The housing is compact, easy to install and waterproof.

- npn or pnp switching outputs
- Switch output/analog output /RS485 output /IO-link output/Modbus-rtu standard protocol communication
- ◆ Temperature compensation function
- External synchronization function





Accessores

M12

M18

M30

UDA

UCC

UDB

UDA Double SheetM12/M18/M30 external thread opposite
installation design is compatible with the
thinnest and thickest material detection to the
greatest extent.Groove
positio
used in
used in
• Used
fract• Materials with different thicknesses ranging
from 0.01mm to 3mm can be detected.• Vou o
material
• You o
material.• Compatible with paper, plastic film, silicon
wafer and metal sheet, etc.• Two
• Outp

◆ 3 switch outputs

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UDB Slot Label

Groove detection mode can accurately locate the position of high-speed moving labels, and is widely used in various label equipment.

- Used for label/joint detection and material fracture monitoring.
- You can teach and mediate different label materials automatically or by pressing keys.
- ♦ Two on-off outputs
- ♦ Output speed is less than 1ms

UR

Ultrasonic sensors show excellent performance in the application of non-contact positioning and distance measurement. It is not affected by color and shape, and is not limited by the material of the measured object, so it is widely used in industrial automation scenes.



UR

$\frac{U}{1} \frac{B}{2} \frac{1000}{3} - \frac{18}{4} \frac{GM}{5} \frac{55A}{6} - \frac{E2}{7} \frac{SH101}{8} - \frac{V15}{9}$

AT	Number	Name	Code And Me	aning
0	1	U	Ultrasonic Se	nsor
Quick Selection	2	Туре	B CylindricaC Custom MCC ChemicalD B(A/C) Doub	l Basic ade Resistance ble Sheet Detection
Main Products	3	Detection Range	120 120 mm 300 300 mm 6000 6000 m	n n ım
Application Connotation	4	Shell	 Cylinder, I Cylinder, I Cylinder, I Cylinder, I Square Va FK Slot FK(FK 	M12mm M18mm M30mm ırikont (U1, U9) K1)
Usage pattern	5	Housing Material (Only for Cylinder)	F42 Square F4 G M Meteal G K Plastic	2
Features	6	Length And Shape Of Shell	45, 50, 55,60 A 90-degree elb) Represents The Length Of Different Shells bow series
Installation Notes			E E2/E3 / E4/E5 E6/E7	npn + pnp Double switch output Single npn or single pnp switch output Dual pnp or dual pnp switching output
Accessores			U	Single analog voltage 0-10v output Single analog current 4-20mA output
Unstable description	7	Electrical Output	IU IE4 UE4	Analog voltage 0-10V+ analog current 4-20mA dual output Analog current 4-20mA+npn dual output Analog voltage 0-10V+npn dual output
M12			IE5 UE5	Analog current 4-20mA+pnp dual output Analog voltage 0-10V+pnp dual output
M18			R4 IO	Rs485 output IO - LINK output
M30	8	Custom Made Code	XA101	
UDA	٥	Connection	V Cable V1 4pin, m12x	<1
UCC	5	connection	V4 4pin, m8x1 V15 5pin, m12	2x1
UDB				

UR

RAYCOH_®

Ultrasonic sensor makes use of the characteristics of sound waves to provide a non-contact and accurate detection scheme for the state and distance of objects.

The sensor transmits mechanical sound waves with high frequency, and receives the sound waves reflected by the object. By calculating the time or energy between transmitting and receiving sound waves, the accurate distance or state of the target object can be obtained. Ultrasonic sensors are different from ordinary proximity switches and photoelectric sensors. Compared with inductive or capacitive proximity switch, its detection distance is longer. Compared with photoelectric sensor, it can be used in worse environment, and is not affected by the color of the target, dust and water mist in the air.

Ultrasonic sensors are suitable for detecting objects in different states, such as liquid, transparent materials, reflective materials and particles.

Accurate	((•)) Acoustic Properties	Main Products
Unaffected By Particles	Not Affected By Water Mist	Application
Switch output,no/nc set	Analog output, up/down mode set	Connotation
The factory default setting of the sensor is normally open NO.	Analog voltage output type of sensor, the factory default setting is that the minimum detection distance value and the maximum	Usage pattern
You can switch to normally closed NC by setting A2 point to the near side and A1 point to the far side.	detection distance value respectively correspond to OV and 10V of analog output, which is the rising mode.	Features
	Analog current output type of sensor, factory default setting is that the minimum detection distance value and the maximum detection	Installation Notes
	distance value respectively correspond to 4mA and 20mA of analog output, which is the rising mode.	Accessores
	current output type can be switched to the down mode by setting the A2 point near and the A1 point far side.	Unstable description
no output A1 output A2 no output	up mode A1 Linear output A2 0V or 4mA 10V or 20mA	M12
		M18
Sensing range Switching hysteresis	10V or 20mA 0V or 4mA down modeA2 A1	M30
Digital RS485		UDA
The factory default setting of sensor is Modbus		

The factory default setting of sensor is Modb protocol.

The agreement can be customized according to customer requirements.

UCC

UDB

Main Products

Features

Installation Notes

Accessores

Unstable

M12

M18

M30

UDA

UCC

UDB

description

Proximity Switch Mode

The sensor is provided with an A2 independent switching point, Different outputs are activated within the distance of the target passing through the corresponding switching point A2. The switch can be arbitrarily set in the detection range.

This working mode is suitable for counting or presence or absence detection on the conveyor belt.

Window Mode (interval Mode)

In window mode, the sensor can set two switching points A1 and A2.Each output will only be activated in A1 and A2 intervals. The two switching points can be arbitrarily set in the detection range. This working mode is suitable for detecting the defective rate of products.

For example, check whether the bottle in the wooden box meets the height standard, Detect products that are too high or too short.



Reflex arc mode

The reflection mode is actually a special window mode, Place the fixed reflector in the set window. As long as the target object completely blocks the reflector, the sensor will send out a signal. The working mode is similar to that of photoelectric reflector, Ultrasonic sensors don't need a special reflector, any reflector can be used.

Whether the target absorbs or transfers sound waves. This working mode can be used to detect foam or other sound-absorbing materials. Double switch mode (hysteres is mode)

Set A1 and A2 points in the detection range of the sensor. When the target reaches point A1 or A2, the output is switched. When moving from point A1(A2) to point A2(A1), the sensor keeps the current ON. Off state. Until the point A2(A1) passes, the output switches to the original state.

This working mode is used to automatically control liquid level and material level.



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Main Products

Application

Connotation

Usage pattern

Installation Notes

Accessores

Unstable description

M12

M18

M30

UDA

UCC

Features



Within the effective detection range of the sensor, A1 and A2 points can be arbitrarily set. The distance between points A1 and A2 will be proportional to the voltage (0-10V) Or current (4-20mA) signals are uniformly distributed and output. The distance information of the object is output linearly and in real time with analog signals. According to the position of points A1 and A2, switch the ascending mode and descending mode.

This working mode is suitable for all kinds of PLC, inverter and other real-time control.

Digital Output Mode(IO-LINK, RS232, RS485, TTL, CAN...)



Sensors can communicate in real time at the level of system architecture. The measured distance value is transmitted to the controller in real time in the form of serial data bits.

This working mode is suitable for all kinds of developed systems.

Double Sheet Detection



Ultrasonic single-sheet and double-sheet detection is the working mode of correlation, The number of sheets of material can be judged by detecting the sound wave energy transmitted through different sheets.

Used to detect single and double sheets of paper, film, plastic sheet and metal sheet.

FEATURES

Quick Selection

Main Products

Application

Connotation

Usage pattern

Ultrasonic sensors can detect almost all liquids, Such as purified water, oil and various solvents.





Ultrasonic sensors can detect different colours of ink, ink, etc.

Detection of reflective materials such as gold and silver foil. The ultrasonic sensors all perform well.





Installation Notes

Accessores

Unstable description

M12

M18

M30

UDA

UCC

UDB

UR

RAYCOH. 12



Detect various transparent materials and reflective materials, Such as glass bottles, glass plates, transparent PP/PE/PET films, etc.

Almost all fiber fabrics of different colors can be ultrasonic sensors can easily detect it.





Ultrasonic sensors are used to detect grain, etc. and automatically control the material level Automatic control of coal, sawdust, cement and other powder levels is also very suitable.

Main Products

Application

Connotation

Usage pattern

Installation Notes

Accessores

Unstable description

M12

M18

M30

UDA

UCC

UDB

Features

Ultrasonic sensors can be used in harsh environments, but water droplets and excessive dust accumulation will affect the normal output of ultrasonic waves. Fine dust and non-accumulated stains will not affect the normal work output.

To detect the object with smooth surface and high flatness, the sensor should be installed at an angle of 90 3 with the front of the object to be detected. Prevent the installation angle from being too large, and the sensor will not receive reflected sound waves.



The surface of the object is rough, and the installation angle of the sensor can be greater than 3. Due to the inherent characteristics of sound waves, when detecting some materials with strong sound absorption, such as cotton, sponge and special cloth, the effective detection distance of the sensor will be shortened. The specific installation conditions shall be subject to on-site debugging.

When selecting the type, it needs to be tested according to different materials.

Installation spacing

When two or more sensors of the same model are used respectively, the same frequency interference of the sensors will occur when they are installed too close, resulting in abnormal output of different sensors. In order to avoid this, enough distance should be kept between multiple sensors of the same model during installation.

The recommended installation distance is as follows:

		H	
Operating	g range		━━━┻
	150 mm	≥ 300 mm	≥ 1.5 m
	300 mm	≥ 400 mm	≥ 1.8 m
	500 mm	≥ 500 mm	≥ 2.5 m
	1000 mm	≥ 700 mm	≥ 4.0 m
	2000 mm	≥ 1500 mm	≥ 10.0 m
	4000 mm	≥ 3000 mm	≥ 20.0 m
	6000 mm	≥ 4000 mm	≥ 30.0 m



UR

Main Products

Application

Connotation

Usage pattern

Installation Notes

Accessores

Unstable description

M12

M18

M30

UDA

UCC

UDB

Features

Synchronizing function



If multiple sensors are installed, when the installation distance is smaller than the distance that will cause mutual interference, it is necessary to use synchronous or asynchronous function. synchronous or asynchronous function controls multiple sensors to measure at the same time.

RAYCOH ultrasonic sensor with synchronous function. When sensors of the same model or different models are installed, the synchronous function or asynchronous function is realized by the synchronous controller.

Redirecting the sound



The sound wave beam attenuates very little after being reflected and redirected by a smooth reflecting surface.



he propagation direction of sound waves can be deflected by using suitable fittings or adjusting the installation angle. This can be installed and used in some narrow environments.

Effect of air pressure, air flow and humidity

Air temperature is the most influential factor on the accuracy of ultrasonic sensor. Ultrasonic waves travel at different speeds in the air at different temperatures. Generally speaking, every 1°C change in air temperature will affect the measurement accuracy by 0.17%.

All ultrasonic sensors of RAYCOH are equipped with temperature compensation circuits. The repetition accuracy error is controlled at about 0.15%.

Effect of air pressure, air flow and humidity

The air pressure below 3 kilometers above sea level has little influence on the ultrasonic sensor. If the test distance exceeds 3 kilometers, the test distance will be shortened. Please test and use it. Wind speed below 60km/h has little effect on ultrasonic sensor. It is recommended to use it at wind speed below 60 km/h. The influence of air humidity on ultrasonic sensor can be neglected.





M12 cylindrical

Features

- M12cylindrical, only 25mm in length
- Small blind area, suitable for close-range find detection

Details

- 1 npn or pnp switch output
- Support the latest IO-Link outputs, RS485 modus-rtu outputs
- Analogue voltage output 0-10V or analogue current output 4-20mA
- Detection distance learning function via white line
- temperature compensation
- Standard working voltage DC 10-30V

Output Methods and Reference Curves

Five output modes of E4/E5 switching value

1. Windo NO	ow1 A1 < A2:	A1	A2	Target range ►
2. Wind NC	ow2 A2 < A1:	A2	A1	
3. single NO	e switch1 A1 -> ∞:	A2		
4. single NC	e switch2 A2 -> ∞:	A1		

5. A1 → ∞, A2 → ∞: target presence detection;
 Target detected: switch closed; Target not detected: switch open

Two output modes of E2/E3 switching value



Support IO-Link switching output mole



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Analog output mode



UB120



which needs to be realized by synchronous controller.



Teach-in function

Sett switch point

Ultrasonic sensor with switch output, the corresponding two switch points can be set. The setting method is to connect the TEACH-IN learning line to the power supply -UB or +UB respectively, and the connection time is at least three times when the indicator light flashes.

During the setting process, the LED light indicates whether the sensor detects the target. Set A1 point when the TEACH-IN learning line is connected to -UB, and set A2 point when it is connected to +UB.

The following five diff	erent output functio	ns can be selected:
-------------------------	----------------------	---------------------

mode	condition	requirement
ow Ie	NO	Place the target near the switch point. Set the TEACH-IN learning line connection -UB to A1 point until it is green, and the indicator light flashes for more than 3 times, and disconnect it.
		Place the target at the far switch point. Set the TEACH-IN learning line connection +UB to A2 point until it is green, and the indicator light flashes for more than 3 times, and disconnect it.
Wine Mo	NC	Place the target at the near switch point, connect the TEACH-IN learning cable to the +UB setting A2 point until it is green and the indicator light blinks more than 3 times, disconnect.
	NC	Place the target at the far switch point, connect the TEACH-IN learning cable to the -UB setting A1 point until it is green and the indicator light blinks more than 3 times, disconnect.
Switch mode	NO	With the target at the near switch point, connect the TEACH-IN learning cable to the +UB set point A2 until the green indicator blinks more than 3 times to disconnect.
		Cover the sensor with your hand or remove all objects within the detection range of the sensor until the red indicator flashes more than 3 times, and disconnect. Set the TEACH-IN learning line to -UB at point A1.
	NC	Place the target near the switch point. Set TEACH- IN LEARNING LINE CONNECTION -UB to point A1 until the green indicator blinks more than 3 times, then disconnect.
		Cover the sensor with your hand or remove all objects within the detection range of the sensor until the red indicator flashes more than 3 times, and disconnect.Set the TEACH-IN learning line connection +UB to A2 point.
Object presence detection mode	/	Cover the sensor with your hand or remove all objects within the sensor's detection range. Set TEACH-IN LEARNING CABLE CONNECTION -UB to point A1 until the red indicator blinks more than 3 times, then disconnect. Then disconnect. Connect the TEACH-IN Learning Cable +UB to point A2 until the red light blinks more than 3 times, then disconnect.

Factory settings

A1: Blind zone (minimum working range) A2: Maximum range

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UCC

UDB

UR

17 M12×1 ight source 57 value	M12 17 M12×1 Jight source 57 0-20mm 0.1mm 0.15% of full-scale value	CYLINDRICAL
perature drift compensation)	\pm 1%(Built-in temperature drift compensation)	
	1mm	Quick Selection
	45Hz	
	22ms	Main Products
	<500ms	
polarity protection	10-30V DC, reverse polarity protection	Application
bright, ies when studying. arget is always bright, hes when studying. nd green light te time.	No target is always bright, and no target flashes when studying. Detected that the target is always bright, and the target flashes when studying. 200mA, red light and green light flashing at the same time.	Connotation
1k Ohm	I/<300 Ohm, U/>1k Ohm	Usage pattern
	≤30mA	
ed, Brass, Urethane Foam	Plastic, Nickel Plated, Brass, Urethane Foam	Features
pr	4pin M12 connector	
	IP67	Installation Notes
-343K)	-25°C~+70°C (248~343K)	
~358K)	-40°C~+85°C (233~358K)	Accessores
	16g	Accessores
		Unstable
2-V1	UB200-12GM55-E2-V1	description
4-V1	UB200-12GM55-E4-V1	
ut	1 npn switch output	M12
Short Circuit Protection	NO/NC Adjustable, Short Circuit Protection	
UB $\begin{pmatrix} 2 & 1 \\ \bullet & \bullet \\ 3 & 4 \end{pmatrix}$	$\begin{array}{c} 1.BN \bullet +UB \\ 4.BK \bullet npn output \\ 3.BU \bullet \\ \end{array}$	M18
UB nput ⊶1.BN+,A2 ction ⊶3.BU- ,A1	$\begin{array}{c} & & & & \\ & & & & \\ & & & & \\ & & & & $	M30
3-V1	UB200-12GM55-E3-V1	UDA
5-V1	UB200-12GM55-E5-V1	
ut	1pnp switch output	UCC
e, short circuit protection	NO/NC adjustable, short circuit protection	
+UB pp output UB c Input 0-1.BN+,A2	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	UDB
nection ⊶ 3.BU- ,A1	Learning Connection → 3.BU- ,A1	

UR

17

12GM12 cylindrical, switch output: E2/E3/E4/E5

4 20-120mm **4**20-200mm Detection range Blind zone 0-20mm Resolution 0.1mm Repeatability 0.15% of full-scale Absolute accuracy ±1%(Built-in temp Switching hysteresis 1mm 55Hz Switching frequency 18ms Response time <500ms Power-Up Timer 10-30V DC, reverse Operating voltage No target is always and no target flash LED red light Detected that the ta LED green light and the target flas 200mA, red light ar flashing at the sam Overpower protection Load impedance I/<300 Ohm, U/> No-load current ≪30mA Plastic, Nickel Plate Material 4pin M12 connecto Connection type IP67 **Protection Class** Ambient temperature -25°C~+70°C (248~ -40°C~+85°C (233 Storage temperature 16g Weight Model UB120-12GM55-E UB120-12GM55-E 1 npn switch outpu NO/NC Adjustable, 4.BK np 3.BU 2.WH Sync In Learning Connec Model UB120-12GM55-E UB120-12GM55-E 1pnp switch outp NO/NC adjustable .BN 4.BK U ∜ р 3.BU Syn 2.WH Learning Conr **RAYCOH**_®

Z	M12 cylindrical, RS4	85/IO-LINK analoy output:I/U
12	Detection range	4 20-120mm
Q		<u>M12</u> <u>17</u>
YLIN		
D		67
R	Blind zone	0-20mm
\mathbf{A}	Resolution	0.1mm
Ē	Repeatability	0.15% of full-scale value
	Absolute accuracy	\pm 1%(Built-in temperature drift comp
Quick Selection	Switching hysteresis	1mm
	Switching frequency	55Hz
Main Products	Response time	18ms
	Power-Up Timer	<500ms
Application	Operating voltage	10-30V DC, reverse polarity protection
	LED red light	No target is always bright, and no target flashes when studying.
Connotation	LED green light	Detected that the target is always brig and the target flashes when studying
	Overpower protection	200mA, red light and green light
Usage pattern	Load impedance	I/<300 Ohm, U/>1k Ohm
	No-load current	≤30mA
Features	Material	Plastic, Nickel Plated, Brass, Urethane
	Connection type	4pin M12 connector
Installation Notes	Protection Class	IP67
	Ambient temperature	-25°C~+70°C (248~343K)
Accessores	Storage temperature	-40°C~+85°C (233~358K)
	Weight	20g
Unstable		
description	Model	UB120-12GM65-I-V1
M12		UB120-12GM65-U-V1
MIZ		U: Voltage output 0-10V I: Current o
		Short-circuit protection, switchabl
M18		1.BN +UB
M30		4.BK I: Analog current 4-20 U: Analog voltage0-10 3.BU UB
		2.WH Sync Input o- 1.BN+,
UDA		Learning Connection 0- 3.00°,
UCC		
UDB		
UR	RAYCOH 18	

20-120mm	-
M12 17 M12×1 43 light source 67	
)mm	0-2
nm	0.1
5% of full-scale value	0.1
%(Built-in temperature drift compensation)	±1
n	1m
Z	45H
IS	22r
)0ms	<5
80V DC, reverse polarity protection	10-3
arget is always bright, no target flashes when studying. ected that the target is always bright, I the target flashes when studying.	No and Det and
mA, red light and green light hing at the same time.	200 flas
00 Ohm, U/>1k Ohm	I/<3
)mA	≤3
tic, Nickel Plated, Brass, Urethane Foam	Pla
M12 connector	4pi
7	IP6
C~+70°C (248~343K)	-25
C~+85℃ (233~358K)	-40
	20ք
20-12GM65-I-V1	UB
20-12GM65-U-V1	UB
oltage output 0-10V I: Current output 4-20mA	U: \
ort-circuit protection, switchable down/up	Sh
1.BN +UB 4.BK I: Analog current 4-20mA U: Analog voltage0-10V 3.BU -UB 2.WH Sync Input o- 1.BN+,A2	U
→ Learning Connection → 3.BU-,A1	

20-200mm M12 $M12 \times 1$ **、**17 /light source 43 67 0mm mm 5% of full-scale value %(Built-in temperature drift compensation) m ١z ns 00ms 30V DC, reverse polarity protection target is always bright, d no target flashes when studying. tected that the target is always bright, d the target flashes when studying. OmA, red light and green light shing at the same time. 300 Ohm, U/>1k Ohm 0mA stic, Nickel Plated, Brass, Urethane Foam n M12 connector 7 °C~+70°C (248~343K) °C~+85°C (233~358K) ζ 200-12GM65-I-V1 200-12GM65-U-V1 Voltage output 0-10V I: Current output 4-20mA ort-circuit protection, switchable down/up



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M12 Cylindrical, Analogue Output RS485

Detection range	₩ ∎■■ 20-120mm	20-200mm	12
	$\begin{array}{c c} M12 \\ \hline S7 \\ \hline M12 \\ $	$\begin{array}{c} M12 \\ \hline \\ 33 \\ \hline \\ 57 \\ \end{array}$	CYLIND
Blind zone	0-20mm	0-20mm	R
Resolution	0.1mm	0.1mm	\rightarrow
Repeatability	0.15% of full-scale value	0.15% of full-scale value	Ē
Absolute accuracy	$\pm 1\%$ (Built-in temperature drift compensation)	$\pm 1\%$ (Built-in temperature drift compensation)	
Switching hysteresis	1mm	1mm	Quick Selection
Switching frequency	55Hz	45Hz	
Response time	18ms	22ms	Main Products
Power-Up Timer	<500ms	<500ms	
Operating voltage	10-30V DC, reverse polarity protection	10-30V DC, reverse polarity protection	Application
LED red light	No target is always bright, and no target flashes when studying. Detected that the target is always bright,	No target is always bright, and no target flashes when studying. Detected that the target is always bright,	
Overpower protection	and the target flashes when studying. 200mA, red light and green light flashing at the same time	and the target flashes when studying. 200mA, red light and green light flashing at the same time	Connotation
Load impedance	I/<300 Ohm, U/>1k Ohm	I/<300 Ohm, U/>1k Ohm	Usage pattern
No-load current	≤30mA	≤30mA	
Material	Plastic, Nickel Plated, Brass, Urethane Foam	Plastic, Nickel Plated, Brass, Urethane Foam	Features
Connection type	4pin M12 connector	4pin M12 connector	
Protection Class	IP67	IP67	Installation Notes
Ambient temperature	-25°C~+70°C (248~343K)	-25°C~+70°C (248~343K)	
Storage temperature	-40°C~+85°C (233~358K)	-40°C~+85°C (233~358K)	Accessores
Weight	16g	16g	
			Unstable
Model	UB120-12GM55-R4-V1	UB200-12GM55-R4-V1	description
	RS485	RS485	M10
	Modbus standard protocol	Modbus standard protocol	MIZ
	1.BN +UB 2 1 3.BU UB 2 1 3 4	$1.BN \qquad +UB \qquad 2 \qquad 1 \\ 3.BU \qquad -UB \qquad 3.4 $	M18
	4.BK B -RS485 2.WH A -RS485	4.BK o B -RS485 2.WH o A -RS485	M30
			UDA
			UCC
			UDB

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Z	M12 Cylinderical, Analogue IO-Link Outputs IO				
 N 1	Detection range	20-120mm	44 20-200mm		
2 CYLIND		$\begin{array}{c c} M12 & 17 & M12 \times 1 \\ \hline 33 & \hline 19 & 10 \\ \hline 33 & \hline 19 & 10 \\ \hline 57 & \hline \end{array}$	$\begin{array}{c c} M12 \times 17 & M12 \times 1 \\ \hline 33 & \hline 19 & $		
R	Blind zone	0-20mm	0-20mm		
\mathbf{P}	Resolution	0.1mm	0.1mm		
Ē	Repeatability	0.15% of full-scale value	0.15% of full-scale value		
	Absolute accuracy	$\pm 1\%$ (Built-in temperature drift compensation)	\pm 1%(Built-in temperature drift compensation)		
Quick Selection	Switching hysteresis	lmm	1mm		
	Switching frequency	55Hz	45Hz		
Main Products	Response time	18ms	22ms		
	Power-Up Timer	<500ms	<500ms		
Application	Operating voltage	10-30V DC, reverse polarity protection	10-30V DC, reverse polarity protection		
P. P	LED red light	No target is always bright,	No target is always bright,		
Connotation	LED green light	Detected that the target is always bright,	Detected that the target is always bright,		
	Overpower protection	200mA, red light and green light	200mA, red light and green light		
llsage nattern	Load impedance	I/<300 Ohm, U/>1k Ohm	I/<300 Ohm, U/>1k Ohm		
osage pattern	No-load current	≤30mA	≤30mA		
Footuros	Material	Plastic, Nickel Plated, Brass, Urethane Foam	Plastic, Nickel Plated, Brass, Urethane Foam		
reatures	Connection type	4pin M12 connector	4pin M12 connector		
	Protection Class	1P67	IP67		
Installation Notes	Ambient temperature	-25°C~+70°C (248~343K)	-25°C~+70°C (248~343K)		
	Storage temperature	-40°C~+85°C (233~358K)	-40°C~+85°C (233~358K)		
Accessores	Weight	160	16g		
Unstable	weight	108	108		
description	Model	UB120-12GM55-IO-V1	UB200-12GM55-IO-V1		
		Support IO-LINK output	Support IO-LINK output		
M12					
M18		4.BK IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	4.BK O IO: C/Q IO-LINK 3.BU		
M30		Learning Connection 0— 3.BU- ,A1	Learning Connection o- 3.BU- ,A1		
UDA					
UCC					
UDB					
UR	RAYCOH . 20				

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M18 cylindrical

Feature

- M18 Mounting Thread Sleeve
- Easy to install

Details

- 1 npn or pnp switch output
- 2 npn or pnp switching outputs
- Analogue voltage output 0-10V or analogue current output 4-20mA
- Latest IO-Link outputs, RS485 modbus-rtu outputs
- Detection distance learning function via grey line
- Standard working voltage DC 10-30V
- temperature compensation

Output Methods and Reference Curves

Two output modes of E2/E3 switching value



Five output modes of E4/E5 switching value



^{5.} A1 -> ∞ , A2 -> ∞ : Object presence detection;

Target detected: the switch is closed; Target not detected: switch open

E6/E7 dual switch three output modes



3. Switch A1->∞: Output 1; Detect that existence of an object Switch A2->∞: Output 2; Detect that existence of an object Switch A1&A2->∞: Double output; Detect that existence of an object

Main Products

Application

Connotation

Usage pattern

Features

E8/E9 dual switch four output modes

2EP-IO switching Output mode





Analog output mode



Installation Notes

Accessores

Unstable description

M12

M18

M30

UDA

UCC

UDB

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Output mode of analog+switch



UB1000







// – flat 100×100mm 📃 – round rod Ø 25mm

	mode	condition	requirement	C C
		NO	Place the target near the switch point. Set the TEACH-IN learning line connection -UB to A1 point until it is green, and the indicator light flashes for more than 3 times, and disconnect it.	LIND
.h Window Mode	ow le		Place the target at the far switch point. Set the TEACH-IN learning line connection +UB to A2 point until it is green, and the indicator light flashes for more than 3 times, and disconnect it.	RICA
	Wind Moc	Мом	Place the target at the near switch point, connect the TEACH-IN learning cable to the +UB setting A2 point until it is green and the indicator light blinks more than 3 times, disconnect.	
		NC	Place the target at the far switch point, connect the TEACH-IN learning cable to the -UB setting A1 point until it is green and the indicator light blinks more than 3 times, disconnect.	Quick Selection
		NO 	With the target at the near switch point, connect the TEACH-IN learning cable to the +UB set point A2 until the green indicator blinks more than 3 times to disconnect.	Application
	ch Je		Cover the sensor with your hand or remove all objects within the detection range of the sensor until the red indicator flashes more than 3 times, and disconnect. Set the TEACH-IN learning line to -UB at point A1.	Connotation
	Swit		Place the target near the switch point. Set TEACH- IN LEARNING LINE CONNECTION -UB to point A1 until the green indicator blinks more than 3 times, then disconnect.	Usage pattern
		NC	Cover the sensor with your hand or remove all objects within the detection range of the sensor until the red indicator flashes more than 3 times, and disconnect. Set the TEACH-IN learning line	Features
	0 a		connection +UB to A2 point. Cover the sensor with your hand or remove all	Installation Notes
	ct presence ction mode	/	objects within the sensor's detection range. Set TEACH-IN LEARNING CABLE CONNECTION -UB to point A1 until the red indicator blinks more than 3 times, then disconnect. Then disconnect.	Accessores
	Obje dete		point A2 until the red light blinks more than 3 times, then disconnect.	Unstable description
F A A	actory set	tings one (minin um range	num working range)	M12
,				

Teach-in function

Sensors of different models or the same model can realize asynchronous function or synchronous function, which needs to be realized by synchronous controller.



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M30

UDA

UCC

UDB

M18 Cylinderical, Switching output F2/F4/F3/F5

	mie cymuc			
8	Detection range	40 30-300mm	4 50-500mm	44 11 60-1000mm
CYLIND		$\begin{array}{c} M12 \\ \hline \\ $	M12 $M12$ $M18$ $M18$ 36 46 60.5	M12 46 57 70.5
R	Blind zone	0-30mm	0-50mm	0-60mm
	Resolution	0.1mm	0.15mm	0.17mm
Ē	Repeatability	0.15% of full-scale value	0.15% of full-scale value	0.15% of full-scale value
	Absolute accuracy	±1% (Built-in temperature drift compensation)	±1% (Built-in temperature drift compensation)	$\pm 1\%$ (Built-in temperature drift compensation)
Quick Selection	Switching hysteresis	2mm	2mm	2mm
	Switching frequency	45Hz	31Hz	19Hz
Main Products	Response time	22ms	32ms	52ms
	Power-Up Timer	<500ms	<500ms	<500ms
Application	Operating voltage	10-30V DC, reverse polarity protection	10-30V DC, reverse polarity protection	10-30V DC, reverse polarity protection
	LED red light	No target is always bright, and no target flashes when studying.	No target is always bright, and no target flashes when studying.	No target is always bright, and no target flashes when studying.
Connotation	LED green light	Detected that the target is always bright, and the target flashes when studying.	Detected that the target is always bright, and the target flashes when studying.	Detected that the target is always bright, and the target flashes when studying.
	Overpower protection	200mA, red light and green light flashing at the same time.	200mA, red light and green light flashing at the same time.	200mA, red light and green light flashing at the same time.
Usage pattern	Load impedance	I/<300 Ohm, U/>1k Ohm	l/<300 Ohm, U/>1k Ohm	I/<300 Ohm, U/>1k Ohm
	No-load current	≤30mA	≤30mA	≤30mA
Features	Material	Plastic, Nickel Plated, Brass, Urethane Foam	Plastic, Nickel Plated, Brass, Urethane Foam	Plastic, Nickel Plated, Brass, Urethane Foam
	Connection type	5 pole M12 connector	5 pole M12 connector	5 pole M12 connector
Installation Notes	Protection Class	IP67	IP67	IP67
	Ambient temperature	-25°C~+70°C (248~343K)	-25°C~+70°C (248~343K)	-25°C~+70°C (248~343K)
Accessores	Storage temperature	-40°C~+85°C (233~358K)	-40°C~+85°C (233~358K)	-40°C~+85°C (233~358K)
	Weight	32g	32g	38g
Unstable				
description	Model	UB300-18GM45-E2-V15	UB500-18GM45-E2-V15	UB1000-18GM55-E2-V15
M12		UB300-18GM45-E4-V15	UB500-18GM45-E4-V15	UB1000-18GM55-E4-V15
		1npn switch output	1npn switch output	1npn switch output
M18		NO/NC Adjustable, Short Circuit Protection	NO/NC Adjustable, Short Circuit Protection	NO/NC Adjustable, Short Circuit Protection
MIO		1.BN +UB 2.WH ppn output	1.BN +UB 2.WH +UB 2 1	1.BN +UB 2.WH +DB 2 1
M30		4.BK ← Iphrotiput 3 4 3.BU - UB 5.GY Sync Input ← 1.BN+,A2 Learning Connection ← 3.BU - ,A1	4.BK ← UB 3.BU - UB 5.GY Sync Input ~ 1.BN+,A2 Learning Connection ~ 3.BU - ,A1	4.BK → UB 3.BU → UB 5.GY Sync Input ← 1.BN+,A2 Learning Connection ← 3.BU-,A1
	Model	UB300-18GM45-E3-V15	UB500-18GM45-E3-V15	UB1000-18GM55-E3-V15
UDA		UB300-18GM45-E5-V15	UB500-18GM45-E5-V15	UB1000-18GM55-E5-V15
		1 PNP switching output	1 PNP switching output	1 PNP switching output
		NO/NC Adjustable, Short Circuit Protection	NO/NC Adjustable, Short Circuit Protection	NO/NC Adjustable, Short Circuit Protection
UDB		1.BN 2.WH 4.BK pnp output 3.BU 5.GY 5ync Input 0.BN+,A2	$\begin{array}{c} 1.BN \\ 2.WH \\ 4.BK \\ 3.BU \\ 5.GY \\ 5.GY \\ \end{array} pnp output \\ 0.BN+,A2 \\ 0.$	$\begin{array}{c} 1.BN \\ 2.WH \\ 4.BK \\ 3.BU \\ 5.GY \\ 5.$
UR	RAYCOH . 24	Learning connection ⊶ 3.BU- ,A1	Learning connection ⊶ 3.BU- ,A1	Learning Connection ← 3.BU- ,A1

M18 Cylinderical, Single switch output E6/E7/E8/E9



M18 Cylinderical, Analogue output/digital output I/U/IU

		······································		
0	Detection range	40 30-300mm	4 00 50-500mm	60-1000mm
CYLINDI		$\begin{array}{c} M12 \\ \hline \\ $	$\begin{array}{c} M12 \\ \hline \\ $	$\begin{array}{c c} M12 \\ \hline \\ $
R	Blind zone	0-30mm	0-50mm	0-60mm
\sim	Resolution	0.1mm	0.15mm	0.17mm
Ē	Repeatability	0.15% of full-scale value	0.15% of full-scale value	0.15% of full-scale value
	Absolute accuracy	±1% (Ruilt in temperature drift compensation)	±1% (Ruilt in temperature drift componention)	±1% (Ruilt in temperature drift compensation)
Quick Selection	Switching hysteresis	2mm	2mm	2mm
	Switching frequency	45Hz	31Hz	19Hz
Main Products	Response time	22ms	32ms	52ms
	Power-Up Timer	<500ms	<500ms	<500ms
Application	Operating voltage	10-30V DC, reverse polarity protection	10-30V DC, reverse polarity protection	10-30V DC, reverse polarity protection
	LED red light	No target is always bright,	No target is always bright,	No target is always bright,
Connotation	LED rea light	Detected that the target is always bright,	Detected that the target is always bright,	Detected that the target is always bright,
connotation		200mA, red light and green light	200mA, red light and green light	200mA, red light and green light
	Load impedance	flashing at the same time.	flashing at the same time.	flashing at the same time.
Usage pattern	Loud impedance	<20mA	<30mA	≤30mA
	No-load current	Plastic,	Plastic,	Plastic,
Features	Material	Nickel Plated, Brass, Urethane Foam	Nickel Plated, Brass, Urethane Foam	Nickel Plated, Brass, Urethane Foam
	Connection type	5 pole M12 connector	5 pole M12 connector	5 pole M12 connector
Installation Notes	Protection Class		1967	
	Ambient temperature	-25°C~+70°C (248~343K)	-25°C~+70°C (248~343K)	-25°C~+70°C (248~343K)
Accessores	Storage temperature	-40°C~+85°C (233~358K)	-40°C~+85°C (233~358K)	-40°C~+85°C (233~358K)
	Weight	32g	32g	38g
Unstable description				
	Model	UB300-18GM45-I-V15	UB500-18GM45-I-V15	UB1000-18GM55-I-V15
M12		UB300-18GM45-U-V15	UB500-18GM45-U-V15	UB1000-18GM55-U-V15
		U: Voltage output 0-10V I: Current output 4-20mA	U: Voltage output 0-10V I: Current output 4-20mA	U: Voltage output 0-10V I: Current output 4-20mA
M18		Short-circuit protection, switchable down/up	Short-circuit protection, switchable down/up	Short-circuit protection, switchable down/up
MIO		1.BN +UB 2.WH I: Analog current	1.BN +UB	1.BN +UB 2.WH
M30		4.BK 4-20mA 3.BU 9 0-10V 5.GY Sync Input ~ 1.BN+,A2 Learning Connection ~ 3.BU-,A1	4.BK C I: Analog current 4-20mA 3.BU U: Analog voltage0-10V 5.GY Sync Input - 1.BN+,A2 Learning Connection - 3.BU-,A1	4.BK I: Analog current 4-20mA 3.BU U: Analog voltage0-10V 5.GY Sync Input -1.BN+,A2 Learning Connection -3.BU-,A1
	Model	UB300-18GM45-IU-V15	UB500-18GM45-IU-V15	UB1000-18GM55-IU-V15
UDA		Analogue voltage 0-10V and analogue current 4-20mA	Analogue voltage 0-10V and analogue current 4-20mA	Analogue voltage 0-10V and analogue current 4-20mA
		Short-circuit protection, switchable down/up	Short-circuit protection, switchable down/up	Short-circuit protection, switchable down/up
		$1.BN \qquad +UB \qquad \begin{pmatrix} 2 & 1 \\ \bullet & 5 & \bullet \\ 3 & \bullet & \bullet \\ 3 & \bullet & \bullet \\ \end{pmatrix}$	$1.BN \qquad +UB \qquad \begin{pmatrix} 2 & 1 \\ 3 & 5 \\ 3 & 4 \end{pmatrix}$	1.BN +UB
UDB		4.BK 3.BU 5.GY 4.BK 4.BK 5.GY	U 4.BK U: Analog current 4-20mA U: Analog voltage0-10V 3.BU 5.GY Sync Input ~ 1.BN+,A2 Learning Connection ~ 3.BU- A1	L:Analog current 4-20mA 4.BK U: Analog voltage0-10V 3.BU -UB 5.GY Sync Input o− 1.BN+,A2 Learning Connection o− 3.BU- ,A1
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M18 Cylinderical, Analogue output/digital output UE4/IU4

Detection range	4 30-300mm	50-500mm	60-1000mm	8
	M12 36 46 60.5 M18	$\begin{array}{c} M12 \\ \hline \\ $	$\begin{array}{c} \underline{M12} \\ \underline{0} \\ $	CYLINDF
Blind zone	0-30mm	0-50mm	0-60mm	218
Resolution	0.1mm	0.15mm	0.17mm	A
Repeatability	0.15% of full-scale value	0.15% of full-scale value	0.15% of full-scale value	
Absolute accuracy	$\pm 1\%$ (Built-in temperature drift compensation)	\pm 1% (Built-in temperature drift compensation)	±1% (Built-in temperature drift compensation)	
Switching hysteresis	2mm	2mm	2mm	Quick Selection
Switching frequency	45Hz	31Hz	19Hz	
Response time	22ms	32ms	52ms	Main Products
Power-Up Timer	<500ms	<500ms	<500ms	
Operating voltage	10-30V DC, reverse polarity protection	10-30V DC, reverse polarity protection	10-30V DC, reverse polarity protection	Application
LED red light	No target is always bright, and no target flashes when studying. Detected that the target is always bright,	No target is always bright, and no target flashes when studying. Detected that the target is always bright,	No target is always bright, and no target flashes when studying. Detected that the target is always bright,	
	and the target flashes when studying. 200mA, red light and green light	and the target flashes when studying. 200mA, red light and green light	and the target flashes when studying. 200mA, red light and green light	Connotation
Load impedance	flashing at the same time.	flashing at the same time.	flashing at the same time.	
No lood surrent	<30mA	<20mA	≤30mA	Usage pattern
No-load current	Plastic,	Plastic,	Plastic,	
Connection trac	Nickel Plated, Brass, Urethane Foam	Nickel Plated, Brass, Urethane Foam	Nickel Plated, Brass, Urethane Foam	Features
Connection type	5 pole M12 connector	5 pole M12 connector	5 pole M12 connector	
Protection Class	IP67	IP67		Installation Notes
Ambient temperature	-25°C~+70°C (248~343K)	-25°C~+70°C (248~343K)	-25°C~+70°C (248~343K)	
Storage temperature	-40°C~+85°C (233~358K)	-40°C~+85°C (233~358K)	-40°C~+85°C (233~358K)	Accessores
Weight	32g	32g	38g	
Model		UR500-18GM45-UL4-V15	UB1000_18CM55_UU4_V15	description
Model				
			UB1000-18GM35-0E4-V15	M12
	UE4:Voltage output 0-10V+1NPN	UE4:Voltage output 0-10V+1NPN	UE4:Voltage output 0-10V+1NPN	
	IE4:Current output420mA+1NPN	IE4:Current output420mA+1NPN	IE4:Current output420mA+1NPN	M18
	Short-circuit protection, switchable down/up	Short-circuit protection, switchable down/up	Short-circuit protection, switchable down/up	
	$\begin{array}{c c} 1.BN & +UB \\ 2.WH & Switching output npn \\ 4.BK & Analogue current or \\ 3.BU & analogue voltage \\ \end{array}$	1.BN +UB 2.WH Switching output npn 4.BK Analogue current or 3.BU analogue voltage	1.BN +UB 2.WH Switching output npn 4.BK Analogue current or 3.BU 0	M30
	5.GY Sync Input -1.BN+,A2 Learning Connection - 3.BU-,A1	<u>5.GY</u> Sync Input ←1.BN+,A2 Learning Connection ←3.BU-,A1	5.GY Sync Input ←1.BN+,A2 Learning Connection ←3.BU-,A1	UDA
				UCC
				UDB

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M12

M18

M30

UDA

UCC

UDB

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M18 Cylinderical, Analogue output/digital output UE5/IE5

Detection range 30-300mm 50-500mm 60-1000mm M18 M12 M18 M12 .24 24 ×24 M18 36 36 46 46 60.5 60.5 0-30mm 0-50mm 0-60mm Blind zone 0.1mm 0.15mm 0.17mm Resolution Repeatability 0.15% of full-scale value 0.15% of full-scale value 0.15% of full-scale value +1%+1%+1%Absolute accuracy (Built-in temperature drift compensation) (Built-in temperature drift compensation) (Built-in temperature drift compensation) **Quick Selection** 2mm 2mm 2mm Switching hysteresis 45Hz 19Hz 31Hz Switching frequency 22ms 32ms 52ms **Main Products** Response time Power-Up Timer <500ms <500ms <500ms Operating voltage 10-30V DC, reverse polarity protection 10-30V DC, reverse polarity protection 10-30V DC, reverse polarity protection Application No target is always bright, No target is always bright, No target is always bright, LED red light and no target flashes when studying. and no target flashes when studying. and no target flashes when studying. Detected that the target is always bright, Detected that the target is always bright, Detected that the target is always bright, LED green light Connotation and the target flashes when studying. and the target flashes when studying. and the target flashes when studying. 200mA, red light and green light 200mA, red light and green light 200mA, red light and green light Overpower protection flashing at the same time. flashing at the same time. flashing at the same time. I/<300 Ohm, U/>1k Ohm I/<300 Ohm, U/>1k Ohm I/<300 Ohm, U/>1k Ohm Load impedance Usage pattern ≪30mA ≪30mA ≪30mA No-load current Plastic, Plastic, Plastic. Material Features Nickel Plated, Brass, Urethane Foam Nickel Plated, Brass, Urethane Foam Nickel Plated, Brass, Urethane Foam 5 pole M12 connector 5 pole M12 connector 5 pole M12 connector Connection type IP67 IP67 IP67 **Protection Class** Installation Notes -25°C~+70°C (248~343K) -25°C~+70°C (248~343K) -25°C~+70°C (248~343K) Ambient temperature -40°C~+85°C (233~358K) -40°C~+85°C (233~358K) -40°C~+85°C (233~358K) Storage temperature Accessores 32g 32g 38g Weight Unstable description UB500-18GM45-IU5-V15 Model UB300-18GM45-IU5-V15 UB1000-18GM55-IE5-V15 UB300-18GM45-UE5-V15 UB500-18GM45-UE5-V15 UB1000-18GM55-UE5-V15 UE5:Voltage output 0-10V+1pnp UE5:Voltage output 0-10V+1pnp UE5:Voltage output 0-10V+1pnp IE5:Current output4--20mA+1pnp IE5:Current output4--20mA+1pnp IE5:Current output4--20mA+1pnp Short-circuit protection, switchable down/up Short-circuit protection, switchable down/up Short-circuit protection, switchable down/up 1 BN 1 BN 1 BN +UΒ +UB +UB 2.WH Switching output pnp 2.WH Switching output pnp 2.WH Switching output pnp Analogue current or analogue voltage Analogue current or analogue voltage Analogue current or U U 4.BK 4.BK 4.BK ٨D -0-٨D kît analogue voltage ø ø Ø. 3.BU 3.BU 3.BU -UE -UB -UB Sync Input - 1.BN+,A2 Sync Input → 1.BN+,A2 Sync Input - 1.BN+,A2 5.GY 5.GY 5.GY Learning Connection → 3.BU- ,A1 Learning Connection → 3.BU- ,A1 Learning Connection → 3.BU- ,A1 **RAYCOH** 28

M18 Cylinderical, Analogue output/digital output RS485



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UDA

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M18 Cylinderical, IO-LINK output 2EP-IO/IUEP-IO

00	Detection range	44	•••••• 50-500mm	60-1000mm
CYLINDF		$\begin{array}{c c} & \underline{M12} \\ & \underline{M12} \\ & \underline{46} \\ & \underline{57} \\ & \underline{70.5} \end{array}$	$\begin{array}{c} 12 \\ 12 \\ 12 \\ 12 \\ 12 \\ 12 \\ 12 \\ 12 $	$\begin{array}{c} M12 \\ \hline \\ $
218	Blind zone	0-30mm	0-50mm	0-60mm
A	Resolution	0.1mm	0.15mm	0.17mm
	Repeatability	0.15% of full-scale value	0.15% of full-scale value	0.15% of full-scale value
	Absolute accuracy	±1% (Built-in temperature drift compensation)	$\pm 1\%$ (Built-in temperature drift compensation)	±1% (Built-in temperature drift compensation)
Quick Selection	Switching hysteresis	2mm	2mm	2mm
	Switching frequency	45Hz	31Hz	19Hz
Main Products	Response time	22ms	32ms	52ms
	Power-Up Timer	<500ms	<500ms	<500ms
Application	Operating voltage	10-30V DC, reverse polarity protection	10-30V DC, reverse polarity protection	10-30V DC, reverse polarity protection
Connotation	LED red light LED green light	No target is always bright, and no target flashes when studying. Detected that the target is always bright, and the target flashes when studying	No target is always bright, and no target flashes when studying. Detected that the target is always bright, and the target flashes when studying	No target is always bright, and no target flashes when studying. Detected that the target is always bright, and the target flashes when studying
	Overpower protection	200mA, red light and green light	200mA, red light and green light	200mA, red light and green light
Usage pattern	Load impedance	I/<300 Ohm, U/>1k Ohm	I/<300 Ohm, U/>1k Ohm	I/<300 Ohm, U/>1k Ohm
	No-load current	≤30mA	≤30mA	≤30mA
Features	Material	Plastic, Nickel Plated Brass Urethane Foam	Plastic, Nickel Plated, Brass, Urethane Foam	Plastic, Nickel Plated, Brass, Urethane Foam
	Connection type	5 pole M12 connector	5 pole M12 connector	5 pole M12 connector
Installation Notes	Protection Class	IP67	IP67	IP67
	Ambient temperature	-25°C~+70°C (248~343K)	-25°C~+70°C (248~343K)	-25°C~+70°C (248~343K)
Accessores	Storage temperature	-40°C~+85°C (233~358K)	-40°C~+85°C (233~358K)	-40°C~+85°C (233~358K)
	Weight	38g	38g	38g
Unstable				
description	Model	UB300-18GM55-2EP-IO-V15	UB500-18GM55-2EP-IO-V15	UB1000-18GM55-2EP-IO-V15
M12		Support IO-Link output	Support IO-Link output	Support IO-Link output
M18		$\begin{array}{c} 1.BN \\ 2.WH \\ 4.BK \\ 4.BK \\ 4.BK \\ 4.BK \\ 3 \\ 4 \\ 5 \\ 5 \\ 5 \\ 5 \\ 5 \\ 5 \\ 5 \\ 5 \\ 5$	$\begin{array}{c} 1.BN \\ 2.WH \\ 4.BK \\ 3BII \\ 3B$	U U U U U U U U U U U U U U
M30		Learning Connection ~ 3.BU- ,A1	<u>5.GY</u> Sync Input ⊶1.BN+,A2 Learning Connection ⊶3.BU-,A1	Learning Connection ← 3.BU- ,A1
UDA	Model	UB300-18GM55-IUEP-IO-V15 Analogue + 1 push pul + IO-link output support	UB500-18GM55-IUEP-IO-V15 Analogue + 1 push pul + IO-link output support	UB1000-18GM55-IUEP-IO-V15 Analogue + 1 push pul + IO-link output support
UCC		U U U U U U U U U U U U U U	L.BN 2.WH 4.BK ↓ C/Q ↓ Analogue voltage 3.BU ↓ cr ↓	$\begin{array}{c} 1.BN \\ 2.WH \\ 4.BK \\ 3.BU \end{array} \xrightarrow{+UB} C/Q \\ C/Q \\ C/Q \\ c \\ $
UDB		<u>5.GY</u> Sync input → 1.BN+,A2 Learning Connection → 3.BU-,A1	<u>5.GY</u> Sync input ←1.BN+,A2 Learning Connection ←3.BU-,A1	<u>5.GY</u> Sync Input ~1.BN+,A2 Learning Connection ~3.BU-,A1
UR	RAYCOH . 30			





M18 cylindrical-Bends

features

- M18 Mounting Thread Sleeve
- Models with 90 degree elbow at top

Details

- 1 npn or pnp switch output
- 2 npn or pnp switch outputs
- Analogue voltage output 0-10V or analogue current output 4-20mA
- Latest IO-Link outputs, RS485 modbus-rtu outputs
- Detection distance learning function via grey line
- Standard working voltage DC 10-30V
- Temperature compensation

Output Methods and Reference Curves

Two output modes of E2/E3 switching value



Five output modes of E4/E5 switching value



5. A1 -> ∞ , A2 -> ∞ : Object presence detection;

Target detected: the switch is closed; Target not detected: switch open

E6/E7 dual switch three output modes



3. Switch A1->∞: Output 1; Detect that existence of an object Switch A2->∞: Output 2; Detect that existence of an object Switch A1&A2->∞: Double output; Detect that existence of an object

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M18 -BEND

Quick Selection

Main Products

Application

Connotation

Usage pattern

Features

E8/E9 dual switch four output modes

2EP-IO switching Output mode

A2





Target range

Analog output mode



Installation Notes

Accessores

Unstable description

M12

M18

M30

UDA

UCC

UDB

UR

RAYCOH

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Output mode of analog+switch



UB1000





Y(mm) 400 300 200 100 0 -100 -200 -300 -400 200 400 600 800 1000 1500 X(mm)

🎆 - flat 100×100mm 📘 - round rod Ø 25mm

Teach-in function

	mode	condition	requirement	18
Window Mode		NO	Place the target near the switch point. Set the TEACH-IN learning line connection -UB to A1 point until it is green, and the indicator light flashes for more than 3 times, and disconnect it.	- BEN
		Place the target at the far switch point. Set the TEACH-IN learning line connection +UB to A2 point until it is green, and the indicator light flashes for more than 3 times, and disconnect it.		
	NC	Place the target at the near switch point, connect the TEACH-IN learning cable to the +UB setting A2 point until it is green and the indicator light blinks more than 3 times, disconnect.	Quick Selection	
		Place the target at the far switch point, connect the TEACH-IN learning cable to the -UB setting A1 point until it is green and the indicator light blinks more than 3 times, disconnect.	Main Products	
		NO	With the target at the near switch point, connect the TEACH-IN learning cable to the +UB set point A2 until the green indicator blinks more than 3 times to disconnect.	Application
ų	ch đe		Cover the sensor with your hand or remove all objects within the detection range of the sensor until the red indicator flashes more than 3 times, and disconnect. Set the TEACH-IN learning line to -UB at point A1.	Connotation
	Switt		Place the target near the switch point. Set TEACH- IN LEARNING LINE CONNECTION -UB to point A1 until the green indicator blinks more than 3 times, then disconnect.	Usage pattern
			Cover the sensor with your hand or remove all objects within the detection range of the sensor until the red indicator flashes more than 3 times, and disconnect.Set the TEACH-IN learning line	Features
			connection +UB to A2 point.	Installation Notes
	ct presence ction mode	/	Cover the sensor with your hand or remove all objects within the sensor's detection range. Set TEACH-IN LEARNING CABLE CONNECTION -UB to point A1 until the red indicator blinks more than 3 times, then disconnect. Then disconnect.	Accessores
	Objec		Connect the TEACH-IN Learning Cable +UB to point A2 until the red light blinks more than 3 times, then disconnect.	Unstable description
F A A	actory set 1: Blind zo 2: Maximu	tings one (minin um range	num working range)	M12
	Теа	ch-in fun	ction	M18
	- Ica			

Sensors of different models or the same model can realize asynchronous function or synchronous function, which needs to be realized by synchronous controller.



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UR

M30

UDA

UCC

UDB

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M18 Cylinderical-bends, Switching outputs E2/E4/E3/E5

	-			
7	Detection range	4 30-300mm	4 50-500mm	60-1000mm
118 - BEN		$ \begin{array}{c} $	$ \begin{array}{c} $	
	Blind zone	0-30mm	0-50mm	0-60mm
	Resolution	0.1mm	0.15mm	0.17mm
	Repeatability	0.15% of full-scale value	0.15% of full-scale value	0.15% of full-scale value
	Absolute accuracy	±1% (Built-in temperature drift compensation)	±1% (Built-in temperature drift compensation)	±1% (Built-in temperature drift compensation)
Quick Selection	Switching hysteresis	2mm	2mm	2mm
	Switching frequency	45Hz	31Hz	19Hz
Main Products	Response time	22ms	32ms	52ms
	Power-Up Timer	<500ms	<500ms	<500ms
Application	Operating voltage	10-30V DC, reverse polarity protection	10-30V DC, reverse polarity protection	10-30V DC, reverse polarity protection
	LED red light	No target is always bright, and no target flashes when studying.	No target is always bright, and no target flashes when studying.	No target is always bright, and no target flashes when studying.
Connotation	LED green light	Detected that the target is always bright, and the target flashes when studying.	Detected that the target is always bright, and the target flashes when studying.	Detected that the target is always bright, and the target flashes when studying.
	Overpower protection	200mA, red light and green light flashing at the same time.	200mA, red light and green light flashing at the same time.	200mA, red light and green light flashing at the same time.
Usage pattern	Load impedance	l/<300 Ohm, U/>1k Ohm	l/<300 Ohm, U/>1k Ohm	l/<300 Ohm, U/>1k Ohm
	No-load current	≤30mA	≤30mA	≤30mA
Features	Material	Plastic, Nickel Plated, Brass, Urethane Foam	Plastic, Nickel Plated, Brass, Urethane Foam	Plastic, Nickel Plated, Brass, Urethane Foam
	Connection type	5 pole M12 connector	5 pole M12 connector	5 pole M12 connector
Installation Notes	Protection Class	IP67	IP67	IP67
	Ambient temperature	-25°C~+70°C (248~343K)	-25°C~+70°C (248~343K)	-25°C~+70°C (248~343K)
Accessores	Storage temperature	-40°C~+85°C (233~358K)	-40°C~+85°C (233~358K)	-40°C~+85°C (233~358K)
	Weight	37g	38g	43g
Unstable description				
	Model	UB300-18GM45A-E2-V15	UB500-18GM45A-E2-V15	UB1000-18GM55A-E2-V15
M12		UB300-18GM45A-E4-V15	UB500-18GM45A-E4-V15	UB1000-18GM55A-E4-V15
		1npn switch output	1npn switch output	1npn switch output
M18		NO/NC Adjustable, Short Circuit Protection	NO/NC Adjustable, Short Circuit Protection	NO/NC Adjustable, Short Circuit Protection
		$\begin{array}{c} 1.BN & +UB \\ 2.WH & npn output \\ 4.BK & 4.00 \\ 4.95 & 4.00 \\ 4.95 & 4.00 \\ 4.95 & 4.00 \\ 3 & 4 \\ 4.95 & 4.00 \\ 3 & 4 \\ 4.95 & 4.00 \\ 3 & 4 \\ 4.95 & 4.00 \\ 3 & 4 \\ 4.95 & 4.00 \\ 3 & 4 \\ 4.95 & 4.00 \\ 3 & 4 \\ 4.95 & 4.00 \\ 1 &$	$\begin{array}{c} 1.BN & +UB \\ 2.WH & npn output \\ 4.BK & 3 & 4 \end{array}$	$\begin{array}{c} 1.BN & \bullet & +UB \\ 2.WH & \bullet & npn output \\ 4.BK & \bullet & \bullet \\ 4.BK & \bullet & \bullet \\ \end{array}$
M30		-UB <u>5.GY</u> Sync Input →1.BN+,A2 Learning Connection → 3.BU- ,A1	3.BU -UB 5.GY Sync Input ~1.BN+,A2 Learning Connection ~3.BU-,A1	3.BUUB 5.GY Sync Input ←1.BN+,A2 Learning Connection ←3.BU- ,A1
	Model	UB300-18GM45A-E3-V15	UB500-18GM45A-E3-V15	UB1000-18GM55A-E3-V15
ODA		UB300-18GM45A-E5-V15	UB500-18GM45A-E5-V15	UB1000-18GM55A-E5-V15
		1pnp switch output	1pnp switch output	1pnp switch output
		NO/NC Adjustable, Short Circuit Protection	NO/NC Adjustable, Short Circuit Protection	NO/NC Adjustable, Short Circuit Protection
UDB		$\begin{array}{c} 1.BN \\ 2.WH \\ 4.BK \\ 3.BU \\ 5.GY \\ 5.GY \\ \end{array} pnp output \\ -UB \\ 5.GY \\ -UB \\ 5.GY \\ -UB \\ -1.BN+,A2 \\ 0 \\ -1.BN+,A2 $	1.BN +UB 2.WH ↓ 4.BK pnp output 3.BU ↓ -UB 5.GY Sync Inputo-1.BN+,A2	1.BN + UB $2.WH - +UB$ $4.BK - pnp output$ $3.BUUB$ $5.GY - Sync Input - 1.BN+,A2$
UR	RAYCOH. 34	Learning connection⊶ 3.BU- ,AI	Learning Connection ~ 3.BU- ,AI	Learning Connection ^o — 3.BU- ,AI

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M18 Cylinderical-bends, Switching outputs E6/E7/E8/E9

Detection range	30-300mm	₩12 m ^{M18} 19	60-1000mm	ΓM
				8 - BEN
Blind zone	0-30mm	0-50mm	0-60mm	
Resolution	0.1mm	0.15mm	0.17mm	
Repeatability	0.15% of full-scale value	0.15% of full-scale value	0.15% of full-scale value	
Absolute accuracy	$\pm 1\%$ (Built-in temperature drift compensation)	$\pm 1\%$ (Built-in temperature drift compensation)	$\pm 1\%$	
Switching hysteresis	2mm	2mm	2mm	Quick Selection
Switching frequency	45Hz	31Hz	19Hz	
Response time	22ms	32ms	52ms	Main Products
Power-Up Timer	<500ms	<500ms	<500ms	
Operating voltage	10-30V DC, reverse polarity protection	10-30V DC, reverse polarity protection	10-30V DC, reverse polarity protection	Application
LED red light	No target is always bright,	No target is always bright,	No target is always bright,	Аррпсаноп
I FD green light	and no target flashes when studying. Detected that the target is always bright,	and no target flashes when studying. Detected that the target is always bright,	and no target flashes when studying. Detected that the target is always bright,	Connotation
	and the target flashes when studying. 200mA, red light and green light	and the target flashes when studying. 200mA, red light and green light	and the target flashes when studying. 200mA, red light and green light	connotation
Load impedance	flashing at the same time.	flashing at the same time.	flashing at the same time.	
No lood surrent	<20mA	<20m	<20m	Usage pattern
No-load current	≈sonia Plastic,	≈sonia Plastic,	≈sonia Plastic,	
Material	Nickel Plated, Brass, Urethane Foam	Nickel Plated, Brass, Urethane Foam	Nickel Plated, Brass, Urethane Foam	Features
Connection type	5 pole M12 connector	5 pole M12 connector	5 pole M12 connector	
Protection Class	IP67	IP67	IP67	Installation Notes
Ambient temperature	-25°C~+70°C (248~343K)	-25°C~+70°C (248~343K)	-25°C~+70°C (248~343K)	
Storage temperature	-40°C~+85°C (233~358K)	-40°C~+85°C (233~358K)	-40°C~+85°C (233~358K)	Accessores
Weight	37g	38g	43g	
				Unstable
Model	UB300-18GM45A-E6-V15	UB500-18GM45A-E6-V15	UB1000-18GM55A-E6-V15	description
	UB300-18GM45A-E8-V15	UB500-18GM45A-E8-V15	UB1000-18GM55A-E8-V15	M12
	2pnp switching output	2pnp switching output	2pnp switching output	
	Short-circuit protection, switchable down/up	Short-circuit protection, switchable down/up	Short-circuit protection, switchable down/up	M19
	$\begin{array}{c} 1.BN \\ 2.WH \\ 4.BK \\ 3.BU \\ \end{array} \begin{array}{c} + UB \\ pnp output \\ 3.BU \\ \end{array} \begin{array}{c} 2 \\ 5 \\ 4 \\ \end{array}$	$\begin{array}{c c} 1.BN & & +UB \\ \hline 2.WH & & \\ \hline 4.BK & & \\ \hline 3.BU & & \\ \end{array} \begin{array}{c} & & & \\ & & & \\ \end{array} \begin{array}{c} & & & \\ & & & \\ & & & \\ & & & \\ \end{array} \begin{array}{c} & & & \\ & & & \\ & & & \\ & & & \\ \end{array} \begin{array}{c} & & & \\ & & & \\ & & & \\ & & & \\ \end{array} \begin{array}{c} & & & \\ & & & \\ & & & \\ & & & \\ \end{array} \begin{array}{c} & & & \\ & & & \\ & & & \\ \end{array} \begin{array}{c} & & & \\ & & & \\ & & & \\ & & & \\ \end{array} \begin{array}{c} & & & \\ & & & \\ & & & \\ & & & \\ \end{array} \begin{array}{c} & & & \\ & & & \\ & & & \\ & & & \\ \end{array} \begin{array}{c} & & & \\ & & & \\ & & & \\ & & & \\ \end{array} \begin{array}{c} & & & \\ & & & \\ & & & \\ & & & \\ \end{array} \begin{array}{c} & & & \\ & & & \\ & & & \\ & & & \\ \end{array} \begin{array}{c} & & & \\ & & & \\ & & & \\ & & & \\ \end{array} \begin{array}{c} & & & \\ & & & \\ & & & \\ \end{array} \begin{array}{c} & & & \\ & & & \\ & & & \\ \end{array} \end{array}$	$\begin{array}{c} 1.BN \\ 2.WH \\ 4.BK \\ 3.BU \\ 3.BU \\ 3.BU \\ \end{array} + UB \\ 1.Bv \\ $	
	<u>5.GY</u> Sync Input ←1.BN+,A2 Learning Connection ← 3.BU- ,A1	5.GY Sync Input ⊶1.BN+,A2 Learning Connection ⊶3.BU-,A1	5.GY Sync Input ⊶1.BN+,A2 Learning Connection ⊶3.BU-,A1	M30
Model	UB300-18GM45A-E7-V15	UB500-18GM45A-E7-V15	UB1000-18GM55A-E7-V15	
	UB300-18GM45A-E9-V15	UB500-18GM45A-E9-V15	UB1000-18GM55A-E9-V15	UDA
	2npn switching output	2npn switching output	2npn switching output	
	Switchable down/up, short-circuit proof	Switchable down/up, short-circuit proof	Switchable down/up, short-circuit proof	UCC
	U 4.BK npn output 3.BU $-UB5.GY$ Sync Input $-1.BN+,A2$	U 4.BK npn output 3.BU $-UB5.GY$ Sync Input $-1.BN+,A2$	U 4.BK npn output 3.BU $-UB5.GY$ Sync input $-1.BN+,A2$	UDB
	Learning Connection ⊶ 3.BU- ,A1	Learning Connection ← 3.BU- ,A1	Learning Connection ⊶ 3.BU-,A1	UR

M18 Cylinderical-bends, Analogue output/digital output I/U/IU

7	Detection range	30-300mm	50-500mm	44 11 60-1000mm
118 - BEN		$ \begin{array}{c} $	M12 65 78.5 78.5 65 65 65 78.5 78.5 78.5	M12 $M18$ 19 75 64 88.5 75 75 75 75 75 75 75 7
	Blind zone	0-30mm	0-50mm	0-60mm
	Resolution	0.1mm	0.15mm	0.17mm
	Repeatability	0.15% of full-scale value	0.15% of full-scale value	0.15% of full-scale value
	Absolute accuracy	±1%	±1%	±1%
Quick Selection	Switching hysteresis	(Built-in temperature drift compensation) 2mm	(Built-in temperature drift compensation)	(Built-in temperature drift compensation) 2mm
	Curitaking francusary	45Hz	31Hz	19Hz
	Switching frequency	22ms	32ms	52ms
Main Products	Response time	<500mc	521113	521115 <e00mc< th=""></e00mc<>
	Power-Up Timer	< 300IIIS	< 5001115	< 300115
Application	Operating voltage	10-30V DC, reverse polarity protection	10-30V DC, reverse polarity protection	10-30V DC, reverse polarity protection
Connotation	LED red light	No target is always bright, and no target flashes when studying. Detected that the target is always bright,	No target is always bright, and no target flashes when studying. Detected that the target is always bright,	No target is always bright, and no target flashes when studying. Detected that the target is always bright,
	Overnower protection	200mA, red light and green light	200mA, red light and green light	200mA, red light and green light
		flashing at the same time. I/<300 Ohm, U/>1k Ohm	flashing at the same time. I/<300 Ohm, U/>1k Ohm	flashing at the same time. I/<300 Ohm, U/>1k Ohm
Usage pattern		≤30mA	≤30mA	≤30mA
	No-load current	Plastic,	Plastic,	Plastic,
Features	Material	Nickel Plated, Brass, Urethane Foam	Nickel Plated, Brass, Urethane Foam	Nickel Plated, Brass, Urethane Foam
	Connection type	5 pole M12 connector	5 pole M12 connector	5 pole M12 connector
Installation Notes	Protection Class	IP67	IP67	IP67
	Ambient temperature	-25°C~+70°C (248~343K)	-25°C~+70°C (248~343K)	-25°C~+70°C (248~343K)
Accessores	Storage temperature	-40°C~+85°C (233~358K)	-40°C~+85°C (233~358K)	-40°C~+85°C (233~358K)
	Weight	37g	38g	43g
Unstable				
description	Model	UB300-18GM45A-I-V15	UB500-18GM45A-I-V15	UB1000-18GM55A-I-V15
		UB300-18GM45A-U-V15	UB500-18GM45A-U-V15	UB1000-18GM55A-U-V15
M12		U: Voltage output 0-10 V I: Current output 4-20 mA	U: Voltage output 0-10 V I: Current output 4-20 mA	U: Voltage output 0-10 V I: Current output 4-20 mA
M10		Short-circuit protection, switchable down/up	Short-circuit protection, switchable down/up	Short-circuit protection, switchable down/up
M18		$1.BN + UB \qquad \begin{pmatrix} 2 & 1 \\ 3 & 4 \end{pmatrix}$	$1.BN + UB \qquad \begin{pmatrix} 2 & 1 \\ 3 & 4 \end{pmatrix}$	$1.BN \qquad +UB \qquad (\stackrel{1}{\underset{2}{\overset{1}{\overset{1}{}}} })$
M30		U 4.BK U:Analogue current 4-20mÅ 4.BK U:Analogue voltages 0-10 V 3.BU 5.GY Sync Input ← 1.BN+,A2 Learning Connection ← 3.BU-,A1	4.BK L:Analogue current 4-20mA 4.BK U:Analogue voltages 0-10 V 3.BU - UB 5.GY Sync Input → 1.BN+,A2 Learning Connection → 3.BU-,A1	U 4.BK U:Analogue current 4-20mÅ 4.BK U:Analogue voltages 0-10 V 3.BU U:Analogue voltages 0-10 V 5.GY Sync Input ~ 1.BN+,A2 Learning Connection ~ 3.BU-,A1
	Model	UB300-18GM45A-IU-V15	UB500-18GM45A-IU-V15	UB1000-18GM55A-IU-V15
UDA		Analogue voltage 0-10V and	Analogue voltage 0-10V and	Analogue voltage 0-10V and
		Short-circuit protection, switchable down/up	Short-circuit protection, switchable down/up	Short-circuit protection, switchable down/up
UCC		$\begin{pmatrix} 2 \\ 2 \\ -1 \end{pmatrix}$	$\begin{pmatrix} 2 \\ 2 \\ -1 \end{pmatrix}$	$\frac{2}{2}$
UDB		1.BN +UB 2.WH 4.BK 1:Analogue current 4.20mA 4.BK 0:U:Analogue voltages 0-10 V 3.BU 5.GY Sync Input o- 1.BN+,A2 Learning Connection o- 3 BIL-A1	1.BN +UB 2.WH 4.BK U:Analogue current 4-20mA 4.BK U:Analogue voltages 0-10 V 3.BU U:Analogue voltages 0-10 V 5.GY Sync Input o- 1.BN+,A2 Learning connection o- 3 BU- A1	1.BN +UB 2.WH I:Analogue current 4.20mA 4.BK ↔ U:Analogue voltages 0-10 V 3.BU ↔ -UB 5.GY Sync Input - 1.BN+,A2 Learning Connection - 3 BU- A1
UR	RAYCOH _• 36		connection of ond year	Comme connection a prop pre

M18 Cylinderical-bends, Analogue output/digital output UE4/IE4

Detection range	4 30-300mm	••••11115 0-500mm	60-1000mm	~
		$ \begin{array}{c} $	M12 M18 19 64 88.5 88.5 10 10 10 10 10 10 10 10 10 10	118 - BEN
Blind zone	0-30mm	0-50mm	0-60mm	D
Resolution	0.1mm	0.15mm	0.17mm	
Repeatability	0.15% of full-scale value	0.15% of full-scale value	0.15% of full-scale value	
Absolute accuracy	±1% (Built-in temperature drift compensation)	\pm 1% (Built-in temperature drift compensation)	\pm 1% (Built-in temperature drift compensation)	
Switching hysteresis	2mm	2mm	2mm	Quick Selection
Switching frequency	45Hz	31Hz	19Hz	
Response time	22ms	32ms	52ms	Main Products
Power-Up Timer	<500ms	<500ms	<500ms	
Operating voltage	10-30V DC, reverse polarity protection	10-30V DC, reverse polarity protection	10-30V DC, reverse polarity protection	Application
LED red light LED green light	No target is always bright, and no target flashes when studying. Detected that the target is always bright, and the target flashes when studying	No target is always bright, and no target flashes when studying. Detected that the target is always bright, and the target flashes when studying	No target is always bright, and no target flashes when studying. Detected that the target is always bright, and the target flashes when studying	Connotation
Overpower protection	200mA, red light and green light	200mA, red light and green light	200mA, red light and green light	
Load impedance	I/<300 Ohm, U/>1k Ohm	I/<300 Ohm, U/>1k Ohm	I/<300 Ohm, U/>1k Ohm	Usage pattern
No-load current	≤30mA	≤30mA	≤30mA	
Material	Plastic, Nickel Plated, Brass, Urethane Foam	Plastic, Nickel Plated, Brass, Urethane Foam	Plastic, Nickel Plated, Brass, Urethane Foam	Features
Connection type	5 pole M12 connector	5 pole M12 connector	5 pole M12 connector	
Protection Class	IP67	IP67	IP67	Installation Note
Ambient temperature	-25°C~+70°C (248~343K)	-25°C~+70°C (248~343K)	-25°C~+70°C (248~343K)	
Storage temperature	-40°C~+85°C (233~358K)	-40°C~+85°C (233~358K)	-40°C~+85°C (233~358K)	Accessores
Weight	37g	38g	43g	
Model				Unstable description
Model	UB300-18GM45A-104-V15	UB500-18GM45A-104-V15	UB1000-18GM55A-104-V15	
	UB300-18GM45A-UE4-V15	UB500-18GM45A-UE4-V15	UB1000-18GM55A-UE4-V15	M12
		UE4: voltage output 0-10 v+10nph	UE4: voitage output 0-10 v+10nph	
	Short-circuit protection, switchable down/up	Short-circuit protection, switchable down/up	Short-circuit protection, switchable down/up	M18
	1.BN +UB	1.BN 2.WH 4.BK Switching output NPN analogue current or analogue voltage	1.BN 2.WH 4.BK Switching output NPN analogue 4.BK Current or analogue voltage	M30
	3.BU Q _UB 5.GY _Sync Input → 1.BN+,A2 Learning Connection → 3.BU- ,A1	3.BU Q -UB 5.GY Sync Input ~1.BN+,A2 Learning Connection ~3.BU-,A1	UB <u>5.GY</u> Sync Input ← 1.BN+,A2 Learning Connection ← 3.BU-,A1	UDA
				UCC
				UDB

M18 Cylinderical-bends, Analogue output/digital output IE5/UE5

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Detection range

	Blind zone
	Resolution
	Repeatability
	Absolute accuracy
Quick Selection	Switching hysteresis
	Switching frequency
Main Products	Response time
	Power-Up Timer
Application	Operating voltage
	LED red light
Connotation	LED green light
	Overpower protection
Usage pattern	Load impedance
	No-load current
Features	Material
	Connection type
Installation Notes	Protection Class
	Ambient temperature
Accessores	Storage temperature
	Weight
Unstable description	
	Model
M12	
M18	
M30	
UDA	
UCC	
UDB	

UR

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(Built-in temperature drift compensation)

10-30V DC, reverse polarity protection

and no target flashes when studying.

Detected that the target is always bright,

and the target flashes when studying.

Nickel Plated, Brass, Urethane Foam

200mA, red light and green light

No target is always bright,

flashing at the same time.

I/<300 Ohm, U/>1k Ohm

5 pole M12 connector

-25°C~+70°C (248~343K)

-40°C~+85°C (233~358K)

UB300-18GM45A-IU5-V15

UB300-18GM45A-UE5-V15

1.BN

2.WH

4.BK

3.BU

5.GY

⊅

UE5:Voltage output 0-10V+1pnp

IE5:Current output4--20mA+1pnp

ø

Short-circuit protection, switchable down/up

+Uв

Learning Connection → 3.BU- ,A1

Switching output pnp

Analogue current or

analogue voltage _ -UB

Sync Input - 1.BN+,A2

0-30mm

0.1mm

 $\pm 1\%$

2mm

45Hz

22ms

<500ms

≤30mA

Plastic,

IP67

37g

0.15% of full-scale value





	00
0-50mm	0-60mm
0.15mm	0.17mm
0.15% of full-scale value	0.15% of full-scale value
±1% (Built-in temperature drift compensation)	±1% (Built-in temperature drift compensation)
2mm	2mm
31Hz	19Hz
32ms	52ms
<500ms	<500ms
10-30V DC, reverse polarity protection	10-30V DC, reverse polarity protection
No target is always bright, and no target flashes when studying.	No target is always bright, and no target flashes when studying.
Detected that the target is always bright, and the target flashes when studying.	Detected that the target is always bright, and the target flashes when studying.
200mA, red light and green light flashing at the same time.	200mA, red light and green light flashing at the same time.
I/<300 Ohm, U/>1k Ohm	I/<300 Ohm, U/>1k Ohm
≤30mA	≤30mA
Plastic, Nickel Plated, Brass, Urethane Foam	Plastic, Nickel Plated, Brass, Urethane Foam
5 pole M12 connector	5 pole M12 connector
IP67	IP67
-25°C~+70°C (248~343K)	-25°C~+70°C (248~343K)
-40°C~+85°C (233~358K)	-40°C~+85°C (233~358K)
38g	43g
UB500-18GM45A-IU5-V15	UB1000-18GM55A-IE5-V15
UB500-18GM45A-UE5-V15	UB1000-18GM55A-UE5-V15
UE5:Voltage output 0-10V+1pnp	UE5:Voltage output 0-10V+1pnp
IE5:Current output420mA+1pnp	IE5:Current output420mA+1pnp
Short-circuit protection, switchable down/up	Short-circuit protection, switchable down/up
\sim	\sim

L.BN

2.WH

4.BK

3.BU

5.GY

ø

U

⊅

+Ub

Learning Connection → 3.BU- ,A1

Switching output pnp Analogue current or

analogue voltage _ -Uв

Sync Input - 1.BN+,A2



M18 Cylinderical-bends, Analogue output/digital output RS485

	<i>, , , , , , , , , ,</i>			
Detection range	4 30-300mm	4 50-500mm	60-1000mm	7
		$ \begin{array}{c} $	M12 $M18$ 19 64 88.5 88.5 C C C C	118 - BEN
Blind zone	0-30mm	0-50mm	0-60mm	
Resolution	0.1mm	0.15mm	0.17mm	
Repeatability	0.15% of full-scale value	0.15% of full-scale value	0.15% of full-scale value	
Absolute accuracy	\pm 1% (Built-in temperature drift compensation)	±1% (Built-in temperature drift compensation)	±1% (Built-in temperature drift compensation)	
Switching hysteresis	2mm	2mm	2mm	Quick Selection
Switching frequency	45Hz	31Hz	19Hz	
Response time	22ms	32ms	52ms	Main Products
Power-Up Timer	<500ms	<500ms	<500ms	
Operating voltage	10-30V DC, reverse polarity protection	10-30V DC, reverse polarity protection	10-30V DC, reverse polarity protection	Application
LED red light	No target is always bright, and no target flashes when studying.	No target is always bright, and no target flashes when studying.	No target is always bright, and no target flashes when studying.	
LED green light	Detected that the target is always bright, and the target flashes when studying.	Detected that the target is always bright, and the target flashes when studying.	Detected that the target is always bright, and the target flashes when studying.	Connotation
Overpower protection	200mA, red light and green light flashing at the same time.	200mA, red light and green light flashing at the same time.	200mA, red light and green light flashing at the same time.	
Load impedance	I/<300 Ohm, U/>1k Ohm	I/<300 Ohm, U/>1k Ohm	I/<300 Ohm, U/>1k Ohm	Usage pattern
No-load current	≤30mA	≤30mA	≤30mA	
Material	Plastic, Nickel Plated, Brass, Urethane Foam	Plastic, Nickel Plated, Brass, Urethane Foam	Plastic, Nickel Plated, Brass, Urethane Foam	Features
Connection type	5 pole M12 connector	5 pole M12 connector	5 pole M12 connector	
Protection Class	IP67	IP67	IP67	Installation Notes
Ambient temperature	-25°C~+70°C (248~343K)	-25°C~+70°C (248~343K)	-25°C~+70°C (248~343K)	
Storage temperature	-40°C~+85°C (233~358K)	-40°C~+85°C (233~358K)	-40°C~+85°C (233~358K)	Accessores
Weight	37g	38g	43g	
				Unstable
Model	UB300-18GM45A-R4-V15	UB500-18GM45A-R4-V15	UB1000-18GM55A-R4-V15	description
	RS485	RS485	RS485	M12
	Modbus standard protocol	Modbus standard protocol	Modbus standard protocol	
	$U = \frac{1.BN}{3.BU} + UB = 2 \frac{2}{5} \frac{1}{4.BK} + UB = -UB = \frac{2}{3} \frac{1}{5} \frac{1}{4} \frac{1}{3} \frac{1}{4} \frac{1}{5} \frac{1}{4} \frac{1}{5} \frac$	$\begin{array}{c} 1.BN \\ \textbf{U} \\ \textbf{U} \\ \textbf{U} \\ \textbf{4}.BK \\ \textbf{O} \\ \textbf{B} \\ \textbf{K} \\ \textbf{O} \\ \textbf{B} \\ \textbf{K} \\ \textbf{C} \\ \textbf{B} \\ \textbf{K} \\ \textbf{C} \\$	$\begin{array}{c} 1.BN \\ 3.BU \\ 4.BK \\ 4.BK \\ \end{array} \qquad B + BS485 \\ B + BS485 \\ B + BS485 \\ \end{array}$	M18
	2.WH APS485	2.WH APS485	2.WH APS485	M30







BN	-0	+UB	2
BU		-Uв	3
BK	_ o	B -RS48	35
WН		A -RS48	35

M30

UDA

UCC

UDB

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M18 Cylinderical-bends, IO-LINK outputs 2EP-IO/IUEP-IO

~	Detection range	4 30-300mm	44 50-500mm	•• ••••••••••••••••••••••••••••••••••
118 - BEN			M12 19 19 19 19 19 19 19 19 19 19	
D	Blind zone	0-30mm	0-50mm	0-60mm
	Resolution	0.1mm	0.15mm	0.17mm
	Repeatability	0.15% of full-scale value	0.15% of full-scale value	0.15% of full-scale value
	Absolute accuracy	±1% (Built-in temperature drift compensation)	±1% (Built-in temperature drift compensation)	\pm 1% (Built-in temperature drift compensation)
Quick Selection	Switching hysteresis	2mm	2mm	2mm
	Switching frequency	45Hz	31Hz	19Hz
Main Products	Response time	22ms	32ms	52ms
	Power-Up Timer	<500ms	<500ms	<500ms
Application	Operating voltage	10-30V DC, reverse polarity protection	10-30V DC, reverse polarity protection	10-30V DC, reverse polarity protection
	LED red light	No target is always bright, and no target flashes when studving.	No target is always bright, and no target flashes when studving.	No target is always bright, and no target flashes when studving.
Connotation	LED green light	Detected that the target is always bright, and the target flashes when studying.	Detected that the target is always bright, and the target flashes when studying.	Detected that the target is always bright, and the target flashes when studying.
	Overpower protection	200mA, red light and green light flashing at the same time.	200mA, red light and green light flashing at the same time.	200mA, red light and green light flashing at the same time.
Usage pattern	Load impedance	I/<300 Ohm, U/>1k Ohm	I/<300 Ohm, U/>1k Ohm	I/<300 Ohm, U/>1k Ohm
	No-load current	≤30mA	≤30mA	≤30mA
Features	Material	Plastic, Nickel Plated, Brass, Urethane Foam	Plastic, Nickel Plated, Brass, Urethane Foam	Plastic, Nickel Plated, Brass, Urethane Foam
	Connection type	5 pole M12 connector	5 pole M12 connector	5 pole M12 connector
Installation Notes	Protection Class	IP67	IP67	IP67
	Ambient temperature	-25°C~+70°C (248~343K)	-25°C~+70°C (248~343K)	-25°C~+70°C (248~343K)
Accessores	Storage temperature	-40°C~+85°C (233~358K)	-40°C~+85°C (233~358K)	-40°C~+85°C (233~358K)
	Weight	37g	38g	43g
Unstable				
description	Model	UB300-18GM55A-2EP-IO-V15	UB500-18GM55A-2EP-IO-V15	UB1000-18GM55A-2EP-IO-V15
M10		2push pull	2push pull	2push pull
MIZ		Supports IO-LINK output	Supports IO-LINK output	Supports IO-LINK output
M18		1.BN +UB 2.WH 4.BK Switching output	U U U U U U U U U U U U U U	U U 4.BK 4.BK C/Q C/Q Switching output
M30		3.BU Q ↓ ↓ ∪B 5.GY Sync Input ~ 1.BN+,A2 Learning Connection ~ 3.BU-,A1	3.BU Q ↓ -UB 5.GY Sync Input ~ 1.BN+,A2 Learning Connection ~ 3.BU-,A1	Learning Connection ← 3.BU-,A1
	Model	UB300-18GM55A-IUEP-IO-V15	UB500-18GM55A-IUEP-IO-V15	UB1000-18GM55A-IUEP-IO-V15
UDA		Analogue + 1push pull + IO-Link output	Analogue + 1push pull + IO-Link output	Analogue + 1push pull + IO-Link output
UCC		1.BN 2.WH 4.BK 3.BU 5.GY	1.BN 2.WH 4.BK 3.BU 5.GY 5.GY Sync Input ~1.BN+,A2 1.BN 4.BK 4.BK 5.GY 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0	$\begin{array}{c} 1.BN \\ 2.WH \\ \hline \\ 4.BK \\ \hline \\ 5.GY \\ 5.GY \\ \hline \\ \\ 5.GY \\ \hline \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ $
UR	RAYCOH . 40	Comme Connection - 2.00- ,AI	Conning connection - 3.00- ,41	Learning connection ~ 3.D0-,A1





M30 cylindrical

features

- M30 cylindrical
- Small blind spot, use in harsh environments

Details

- 1 npn or pnp switch output
- 2 npn or pnp switch output
- Analog voltage output 0-10V or analog current output 4-20mA
- Supports the latest IO-Link output, digital RS485, modbus-rut standard.
- The teach-in function is realized by the gray line
- Standard working voltage 10-30V
- Emperature Compensation

Output Methods and Reference Curves

Two output modes of E2/E3 switching value



Five output modes of E4/E5 switching value



5. A1 -> ∞ , A2 -> ∞ : Object presence detection;

Target detected: the switch is closed; Target not detected: switch open

E6/E7 dual switch three output modes



3. Switch A1->∞: Output 1; Detect that existence of an object Switch A2->∞: Output 2; Detect that existence of an object Switch A1&A2->∞: Double output; Detect that existence of an object

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Main Products

Application

Connotation

Usage pattern

Features

E8/E9 dual switch four output modes

2EP-IO switching Output mode





Analog output mode



Installation Notes

Accessores

Unstable description

M12

M18

UDA

UCC

UDB

UR

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Output mode of analog+switch





UB4000

UB6000





Teach-in function

	mode	condition	requirement	CY
		NO	Place the target near the switch point. Set the TEACH-IN learning line connection -UB to A1 point until it is green, and the indicator light flashes for more than 3 times, and disconnect it.	LINDI
	dow de		Place the target at the far switch point. Set the TEACH-IN learning line connection +UB to A2 point until it is green, and the indicator light flashes for more than 3 times, and disconnect it.	RICAI
	Wing Mo	NC	Place the target at the near switch point, connect the TEACH-IN learning cable to the +UB setting A2 point until it is green and the indicator light blinks more than 3 times, disconnect.	Quick Selection
		NC	Place the target at the far switch point, connect the TEACH-IN learning cable to the -UB setting A1 point until it is green and the indicator light blinks more than 3 times, disconnect.	Main Products
			With the target at the near switch point, connect the TEACH-IN learning cable to the +UB set point A2 until the green indicator blinks more than 3 times to disconnect.	Application
	ch le	NO	Cover the sensor with your hand or remove all objects within the detection range of the sensor until the red indicator flashes more than 3 times, and disconnect. Set the TEACH-IN learning line to -UB at point A1.	Connotation
	Swit	NC	Place the target near the switch point. Set TEACH- IN LEARNING LINE CONNECTION -UB to point A1 until the green indicator blinks more than 3 times, then disconnect.	Usage pattern
			Cover the sensor with your hand or remove all objects within the detection range of the sensor until the red indicator flashes more than 3 times, and disconnect.Set the TEACH-IN learning line	Features
	<i>a</i>		connection +UB to A2 point.	Installation Notes
	ct presence ction mode	/	TEACH-IN LEARNING CABLE CONNECTION -UB to point A1 until the red indicator blinks more than 3 times, then disconnect. Then disconnect.	Accessores
	Obje dete		point A2 until the red light blinks more than 3 times, then disconnect.	Unstable description
F A A	actory set 1: Blind zo 2: Maximu	tings one (minin ım range	num working range)	M12
	Теа	ction	M18	

Sensors of different models or the same model can realize asynchronous function or synchronous function, which needs to be realized by synchronous controller.



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UDA

UCC

UDB

M30 Cylinderical Switching output E2/E4/E3/E5

	MSUCythide	fical, Switching output EZ/E	14/E3/E3	
80	Detection range	••100-2000mm	400-4000mm	411 3 50-6000mm
CYLINDI		M12 62 76 M30 M30 62 46	M12 M30 0 0 0 0 0 0 0 0 0 0 0 0 0	M12 M30 100_84 32 114
R	Blind zone	0-100mm	0-200mm	0-350mm
\mathbf{P}	Resolution	0.17mm	0.17-1.5mm	0.17-2.5mm
Ē	Repeatability	0.15% of full-scale value	0.15% of full-scale value	0.15% of full-scale value
	Absolute accuracy	±1% (Built-in temperature drift compensation)	±1% (Built-in temperature drift compensation)	±1% (Built-in temperature drift compensation)
Quick Selection	Switching hysteresis	2mm	4mm	5mm
	Switching frequency	10Hz	5Hz	4Hz
Main Products	Response time	82ms	162ms	232ms
	Power-Up Timer	<500ms	<500ms	<500ms
Application	Operating voltage	10-30V DC, reverse polarity protection	10-30V DC, reverse polarity protection	10-30V DC, reverse polarity protection
Application		No target is always bright,	No target is always bright,	No target is always bright,
Connotation	LED green light	Detected that the target is always bright,	Detected that the target is always bright,	Detected that the target is always bright,
connotation	Overpower protection	200mA, red light and green light	200mA, red light and green light	200mA, red light and green light
lleage pattern	Load impedance		I/<300 Ohm II/>1k Ohm	$1/c_{300}$ Ohm $11/>1k$ Ohm
Usage pattern	No load surront	< 30m A	<30m4	<30m4
_	No-load current	Plastic,	Plastic,	Plastic,
Features	Drotoction Close	Nickel Plated, Brass, Urethane Foam	Nickel Plated, Brass, Urethane Foam	Nickel Plated, Brass, Urethane Foam
	Connection type	E polo M12 connector	E polo M12 connector	F noto M12 connector
Installation Notes	connection type	5 pole M12 connector	25°C++70°C (249-242K)	
	Ambient temperature	-25 C*+10 C (248*545K)	-40°C~+85°C (233~358K)	-25 C~+10 C (248~343K)
Accessores	Storage temperature		120	-40 C++65 C (255-556K)
Unstable	Weight	998	138g	210g
description	Model	UB2000-30GM60-F2-V15	UB4000-30GM60-F2-V15	LIB6000-30GM70-E2-V15
	Model	UB2000-30GM60-E4-V15	UB4000-30CM60-E4-V15	UB6000-30GM70-E4-V15
M12				
		NO/NC Adjuctable Short Circuit Protection	NO/NC Adjustable Short Circuit Protection	NO/NC Adjustable Short Circuit Protection
M18		1.BN +UB	1.BN +UB	1.BN +UB
M30		$\begin{array}{c} 2.WH & \begin{array}{c} & npn output \\ \hline 4.BK & \\ \hline 3.BU & \\ \hline 5.GY & Sync Input \\ \hline Learning Connection \\ \hline -3.BU \\ \hline .1BV \\ -3.4 \\ \hline .1BV \\ -4.8 $	$\begin{array}{c} 2.WH & \begin{array}{c} 1 & \text{npn output} \\ \hline 4.BK & \begin{array}{c} 3 & 4 \\ \hline 3.BU & \begin{array}{c} -UB \\ \hline 5.GY & \begin{array}{c} Sync \text{ Input} \\ \hline -1.BN+,A2 \\ \hline Learning \text{ Connection } -3.BU-,A1 \end{array}$	$\begin{array}{c} 2.WH \\ 4.BK \\ 3.BU \\ 5.GY \\ Sync Input \\ Connection \\ -3.BU \\ -1.BN+,A2 \\ Cearning Connection \\ -3.BU \\ -3.BU \\ -1.BN+,A2 \\ Cearning Connection \\ -3.BU \\ -3.BU$
	Model	UB2000-30GM60-E3-V15	UB4000-30GM60-E3-V15	UB6000-30GM70-E3-V15
UDA		UB2000-30GM60-E5-V15	UB4000-30GM60-E5-V15	UB6000-30GM70-E5-V15
		1pnp switch output	1pnp switch output	1pnp switch output
		NO/NC Adjustable, Short Circuit Protection	NO/NC Adjustable, Short Circuit Protection	NO/NC Adjustable, Short Circuit Protection
UDB		1.BN 2.WH 4.BK pnp output 3.BU 5.GV Sync Inputo-1.BN+,A2 Learning 2.BU	1.BN 2.WH 4.BK pnp output 3.BU 5.GY Sync Inputo-1.BN+,A2	1.BN 2.WH 4.BK 3.BU 3.BU 5.GY 5.GY 1.BN+A2 2.WH 1.BN+A2 1.B
UR	RAYCOH _® 44	Learning connection ~ 3.80-,A1	Learning connection⊶ 3.BU- ,AI	Learning connection⊶ 3.BU- ,AI

M30 Cylinderical, Switching outputs E6/E7/E8/E9

Detection range	40 100-2000mm	4 200-4000mm	 350-6000mm	30
	M12 62 46 76	$M12 \\ M30 \\ 63 \\ 27.5 \\ 93 \\ 93 \\ 93 \\ 64 \\ 79 \\ 93 \\ 93 \\ 64 \\ 79 \\ 79 \\ 79 \\ 93 \\ 79 \\ 79 \\ 79 \\ 79$	M12 M30 100_84_32 114	CYLINDF
Blind zone	0-100mm	0-200mm	0-350mm	218
Resolution	0.17mm	0.17-1.5mm	0.17-2.5mm	A
Repeatability	0.15% of full-scale value	0.15% of full-scale value	0.15% of full-scale value	
Absolute accuracy	$\pm 1\%$ (Built-in temperature drift compensation)	$\pm 1\%$ (Built-in temperature drift compensation)	\pm 1% (Built-in temperature drift compensation)	
Switching hysteresis	2mm	4mm	5mm	Quick Selection
Switching frequency	10Hz	5Hz	4Hz	
Response time	82ms	162ms	232ms	Main Products
Power-Up Timer	<500ms	<500ms	<500ms	
Operating voltage	10-30V DC, reverse polarity protection	10-30V DC, reverse polarity protection	10-30V DC, reverse polarity protection	Application
LED red light	No target is always bright, and no target flashes when studying.	No target is always bright, and no target flashes when studying.	No target is always bright, and no target flashes when studying.	
LED green light	Detected that the target is always bright, and the target flashes when studying.	Detected that the target is always bright, and the target flashes when studying.	Detected that the target is always bright, and the target flashes when studying.	Connotation
Overpower protection	200mA, red light and green light flashing at the same time.	200mA, red light and green light flashing at the same time.	200mA, red light and green light flashing at the same time.	
Load impedance	I/<300 Ohm, U/>1k Ohm	I/<300 Ohm, U/>1k Ohm	l/<300 Ohm, U/>1k Ohm	Usage pattern
No-load current	≤30mA	≤30mA	≤30mA	
Material	Plastic, Nickel Plated, Brass, Urethane Foam	Plastic, Nickel Plated, Brass, Urethane Foam	Plastic, Nickel Plated, Brass, Urethane Foam	Features
Protection Class	IP67	IP67	IP67	
Connection type	5 pole M12 connector	5 pole M12 connector	5 pole M12 connector	Installation Notes
Ambient temperature	-25°C~+70°C (248~343K)	-25°C~+70°C (248~343K)	-25°C~+70°C (248~343K)	
Storage temperature	-40°C~+85°C (233~358K)	-40°C~+85°C (233~358K)	-40°C~+85°C (233~358K)	Accessores
Weight	99g	138g	210g	
				Unstable
Model	UB2000-30GM60-E6-V15	UB4000-30GM60-E6-V15	UB6000-30GM70-E6-V15	description
	UB2000-30GM60-E8-V15	UB4000-30GM60-E8-V15	UB6000-30GM70-E8-V15	
	2pnp switching output	2pnp switching output	2pnp switching output	MIZ
	Short-circuit protection, switchable down/up	Short-circuit protection, switchable down/up	Short-circuit protection, switchable down/up	
	$\begin{array}{c} 1.BN \\ 2.WH \\ 4.BK \\ 4.BK \\ 4.BK \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ $	$\frac{1.BN}{2.WH} + UB$ $\frac{2.WH}{4.BK} pnp output \begin{pmatrix} 2 & 1 \\ 5 & 4 \\ 3 & 4 \end{pmatrix}$	$\begin{array}{c} 1.BN \\ 2.WH \\ 4.BK \\ 4.BK \\ \end{array} pnp output \begin{pmatrix} 2 & 1 \\ \bullet & 5 \\ 3 & \bullet & 4 \end{pmatrix}$	M18
	3.BU ↓↓ -UB 5.GY Sync Input ~1.BN+,A2 Learning Connection ~3.BU-,A1	3.BU ↓↓ -UB 5.GY Sync Input ~1.BN+,A2 Learning Connection ~3.BU-,A1	3.BU -UB 5.GY Sync Input -1.BN+,A2 Learning Connection ~ 3.BU-,A1	M30
Model	UB2000-30GM60-E7-V15	UB4000-30GM60-E7-V15	UB6000-30GM70-E7-V15	
	UB2000-30GM60-E9-V15	UB4000-30GM60-E9-V15	UB6000-30GM70-E9-V15	UDA
	2npn switching output	2npn switching output	2npn switching output	
	Switchable down/up, short-circuit proof	Switchable down/up, short-circuit proof	Switchable down/up, short-circuit proof	UCC
	$\begin{array}{c} 1.BN \\ 2.WH \\ 4.BK \\ 3.BU \\ 5.GV \\ \end{array} \begin{array}{c} +UB \\ -UB \\ -UB \\ 5.GV \\ \end{array} \begin{array}{c} 2 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\$	U 4.BK npn output 3.BU $-UB5.GY Sync input \sim 1 BN+ A2$	$\begin{array}{c c} 1.BN & & +UB \\ \hline 2.WH & & npn output \\ \hline 4.BK & & npn output \\ \hline 3.BU & & -UB \\ \hline 5.GV & Sync Input & -1 BN+A2 \end{array}$	UDB
	Luarning Connection → 3.BU- ,A1	Learning Connection ⊶ 3.BU- ,A1	Learning Connection ~ 3.BU- ,A1	UR

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M30 Cylinderical Analogue output/digital output I/II/III

	MSUCythiue	encal, Analogue output/digi	laloulpul1/0/10	
80	Detection range	41 100-2000mm	4011 200-4000mm	411 3 50-6000mm
CYLINDI		M12 $M3062$ 4676	$\begin{array}{c} M12 \\ \hline M30 \\ \hline 79 \\ \hline 63 \\ \hline 27.5 \\ \hline 93 \\ \end{array}$	M12 M30 L00 84 32 114
RIO	Blind zone	0-100mm	0-200mm	0-350mm
A	Resolution	0.17mm	0.17-1.5mm	0.17-2.5mm
	Repeatability	0.15% of full-scale value	0.15% of full-scale value	0.15% of full-scale value
	Absolute accuracy	±1% (Built-in temperature drift compensation)	\pm 1% (Built-in temperature drift compensation)	$\pm 1\%$ (Built-in temperature drift compensation)
Quick Selection	Switching hysteresis	2mm	4mm	5mm
	Switching frequency	10Hz	5Hz	4Hz
Main Products	Response time	82ms	162ms	232ms
	Power-Up Timer	<500ms	<500ms	<500ms
Application	Operating voltage	10-30V DC, reverse polarity protection	10-30V DC, reverse polarity protection	10-30V DC, reverse polarity protection
	LED red light	No target is always bright, and no target flashes when studying.	No target is always bright, and no target flashes when studying.	No target is always bright, and no target flashes when studying.
Connotation	LED green light	Detected that the target is always bright, and the target flashes when studying.	Detected that the target is always bright, and the target flashes when studying.	Detected that the target is always bright, and the target flashes when studying.
	Overpower protection	200mA, red light and green light flashing at the same time.	200mA, red light and green light flashing at the same time.	200mA, red light and green light flashing at the same time.
Usage pattern	Load impedance	I/<300 Ohm, U/>1k Ohm	l/<300 Ohm, U/>1k Ohm	I/<300 Ohm, U/>1k Ohm
	No-load current	≤30mA	≤30mA	≤30mA
Features	Material	Plastic, Nickel Plated, Brass, Urethane Foam	Plastic, Nickel Plated, Brass, Urethane Foam	Plastic, Nickel Plated, Brass, Urethane Foam
	Protection Class	IP67	IP67	IP67
Installation Notes	Connection type	5 pole M12 connector	5 pole M12 connector	5 pole M12 connector
	Ambient temperature	-25°C~+70°C (248~343K)	-25°C~+70°C (248~343K)	-25°C~+70°C (248~343K)
Accessores	Storage temperature	-40°C~+85°C (233~358K)	-40°C~+85°C (233~358K)	-40°C~+85°C (233~358K)
	Weight	99g	138g	210g
Unstable				
description	Model	UB2000-30GM60-I-V15	UB4000-30GM60-I-V15	UB6000-30GM70-I-V15
M12		UB2000-30GM60-U-V15	UB4000-30GM60-U-V15	UB6000-30GM70-U-V15
		U: Voltage output 0-10 V I: Current output 4-20 mA	U: Voltage output 0-10 V I: Current output 4-20 mA	U: Voltage output 0-10 V I: Current output 4-20 mA
M18		Short-circuit protection, switchable down/up	Short-circuit protection, switchable down/up	Short-circuit protection, switchable down/up
		1.BN o +UB 2.WH o I:Analogue current 4-20mA	LBN +UB 2.WH LAnalogue current 4-20mA	LISN +UB 2.WH LiAnalogue current 4-20mA
M30		4.BK U:Analogue voltages 0-10 V 3.BU U - UB 5.GY Sync Input → 1.BN+,A2 Learning Connection → 3.BU-,A1	4.BK ULAnalogue voltages 0-10 V 3.BU ULAnalogue voltages 0-10 V 3.BU ULANALOGUE - UB 5.GY Sync Input → 1.BN+,A2 Learning Connection → 3.BU-,A1	4.BK → U:Analogue voltages 0-10 V 3.BU → -UB 5.GY Sync Input → 1.BN+,A2 Learning Connection → 3.BU-,A1
	Model	UB2000-30GM60-IU-V15	UB4000-30GM60-IU-V15	UB6000-30GM70-IU-V15
UDA		Analogue voltage 0-10V and analogue current 4-20mA	Analogue voltage 0-10V and analogue current 4-20mA	Analogue voltage 0-10V and analogue current 4-20mA
		Short-circuit protection, switchable down/up	Short-circuit protection, switchable down/up	Short-circuit protection, switchable down/up
000		$1.BN \qquad \qquad$	1.BN +UB	1.BN +UB
UDB		2.WH I:Analogue current 4-20mA 4.BK U:Analogue voltages 0-10 V 3.BU - ∪B 5.GY Sync Input o– 1.BN+,A2 Learning Connection o– 3 BlL A1	U 2.WH 4.BK U:Analogue current 4-20mA U:Analogue voltages 0-10 V 3.BU 5.GY Sync Input o− 1.BN+,A2 Learning Connection o− 3 BIL A1	U 2.WH 4.BK U:Analogue current 4-20mA U:Analogue voltages 0-10 V 3.BU 5.GY Sync Input o− 1.BN+,A2 Learning (connection o− 3 BU A 1
UR	RAYCOH 46	Connie connection of 5.00- ,01		

M30 Cylinderical, Analogue output/digital output IE4/UE4,RS458

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				ω
Detection range	44 100-2000mm	••• •••••••••••••••••••••••••••••••••	 350-6000mm	0
		$\begin{array}{c} M12 \\ \hline 79 \\ \hline 93 \end{array}$	M12 M30 Fo 100 84 32 114	CYLIND
Blind zone	0-100mm	0-200mm	0-350mm	RIO
Resolution	0.17mm	0.17-1.5mm	0.17-2.5mm	\rightarrow
Repeatability	0.15% of full-scale value	0.15% of full-scale value	0.15% of full-scale value	Ē
Absolute accuracy	±1% (Built-in temperature drift compensation)	$\pm 1\%$ (Built-in temperature drift compensation)	$\pm 1\%$ (Built-in temperature drift compensation)	
Switching hysteresis	2mm	4mm	5mm	Quick Selection
Switching frequency	10Hz	5Hz	4Hz	
Response time	82ms	162ms	232ms	Main Products
Power-Up Timer	<500ms	<500ms	<500ms	
Operating voltage	10-30V DC, reverse polarity protection	10-30V DC, reverse polarity protection	10-30V DC, reverse polarity protection	Application
LED red light	No target is always bright, and no target flashes when studying.	No target is always bright, and no target flashes when studying.	No target is always bright, and no target flashes when studying.	
LED green light	Detected that the target is always bright, and the target flashes when studying.	Detected that the target is always bright, and the target flashes when studying.	Detected that the target is always bright, and the target flashes when studying.	Connotation
Overpower protection	200mA, red light and green light flashing at the same time.	200mA, red light and green light flashing at the same time.	200mA, red light and green light flashing at the same time.	
Load impedance	I/<300 Ohm, U/>1k Ohm	I/<300 Ohm, U/>1k Ohm	I/<300 Ohm, U/>1k Ohm	Usage pattern
No-load current	≤30mA	≤30mA	≤30mA	
Material	Plastic, Nickel Plated, Brass, Urethane Foam	Plastic, Nickel Plated, Brass, Urethane Foam	Plastic, Nickel Plated, Brass, Urethane Foam	Features
Protection Class	IP67	IP67	IP67	
Connection type	5 pole M12 connector	5 pole M12 connector	5 pole M12 connector	Installation Note
Ambient temperature	-25°C~+70°C (248~343K)	-25°C~+70°C (248~343K)	-25°C~+70°C (248~343K)	
Storage temperature	-40°C~+85°C (233~358K)	-40°C~+85°C (233~358K)	-40°C~+85°C (233~358K)	Accessores
Weight	99g	138g	210g	
				Unstable
Model	UB2000-30GM60-IE4-V15	UB4000-30GM60-IE4-V15	UB6000-30GM70-IE4-V15	description
	UB2000-30GM60-UE4-V15	UB4000-30GM60-UE4-V15	UB6000-30GM70-UE4-V15	M12
	UE4: Voltage output 0-10 V+10npn	UE4: Voltage output 0-10 V+10npn	UE4: Voltage output 0-10 V+10npn	
	IE4:Current output 4-20mA+1npn	IE4:Current output 4-20mA+1npn	IE4:Current output 4-20mA+1npn	M18
	Short-circuit protection, switchable down/up	Short-circuit protection, switchable down/up	Short-circuit protection, switchable down/up	-
	1.BN +UB (↓↓↓) 2.WH Switching output NPN analogue 3.BU - UB	1.BN +UB 2.WH Switching output NPN analogue 4.BK current or analogue voltage 3.BUUB	1.BN +UB 2.WH Switching output NPN analogue 4.BK current or analogue voltage 3.BUUB	M30
Model	Learning Connection ← 1.BN+,A2 UB2000-30GM60-R4-V15	<u>5.GY</u> <u>Sync Input</u> ←1.BN+,A2 Learning Connection ←3.BU- ,A1 UB4000-30GM60-R4-V15	<u>5.GY</u> Sync Input ←1.BN+,A2 Learning Connection ←3.BU-,A1 UB6000-30GM70-R4-V15	UDA
	RS485	RS485	RS485	
	Modbus standard protocol	Modbus standard protocol	Modbus standard protocol	UCC
	1.BN +UB 3.BU -UB 4.BK B -RS485 2.WH	1.BN +UB 3.BU -UB 4.BK B -RS485	1.BN +UB 3.BU -UB 4.BK B -RS485 2.WH	UDB
	A -RS485	A -RS485	A -RS485	UR

M30 Cylinderical, Analogue output/digital output IE5/UE5

30	Detection range	100-2000mm	44	411 350-6000mm
CYLINDF		M12 62 46 76	$M12 \qquad M30 \qquad 070 $	$\begin{array}{c} M12 \\ \hline \\ 100 \\ \hline \\ 114 \end{array}$
	Blind zone	0-100mm	0-200mm	0-350mm
A	Resolution	0.17mm	0.17-1.5mm	0.17-2.5mm
	Repeatability	0.15% of full-scale value	0.15% of full-scale value	0.15% of full-scale value
	Absolute accuracy	$\pm 1\%$ (Built-in temperature drift compensation)	\pm 1% (Built-in temperature drift compensation)	\pm 1% (Built-in temperature drift compensation)
Quick Selection	Switching hysteresis	2mm	4mm	5mm
	Switching frequency	10Hz	5Hz	4Hz
Main Products	Response time	82ms	162ms	232ms
	Power-Up Timer	<500ms	<500ms	<500ms
Application	Operating voltage	10-30V DC, reverse polarity protection	10-30V DC, reverse polarity protection	10-30V DC, reverse polarity protection
	LED red light	No target is always bright, and no target flashes when studying.	No target is always bright, and no target flashes when studying.	No target is always bright, and no target flashes when studying.
Connotation	LED green light	Detected that the target is always bright, and the target flashes when studying.	Detected that the target is always bright, and the target flashes when studying.	Detected that the target is always bright, and the target flashes when studying.
	Overpower protection	200mA, red light and green light flashing at the same time.	200mA, red light and green light flashing at the same time.	200mA, red light and green light flashing at the same time.
Usage pattern	Load impedance	l/<300 Ohm, U/>1k Ohm	l/<300 Ohm, U/>1k Ohm	I/<300 Ohm, U/>1k Ohm
	No-load current	≤30mA	≤30mA	≪30mA
Features	Material	Plastic, Nickel Plated, Brass, Urethane Foam	Plastic, Nickel Plated. Brass. Urethane Foam	Plastic, Nickel Plated. Brass. Urethane Foam
	Protection Class	IP67	IP67	IP67
Installation Notes	Connection type	5 pole M12 connector	5 pole M12 connector	5 pole M12 connector
	Ambient temperature	-25°C~+70°C (248~343K)	-25°C~+70°C (248~343K)	-25°C~+70°C (248~343K)
Accessores	Storage temperature	-40°C~+85°C (233~358K)	-40°C~+85°C (233~358K)	-40°C~+85°C (233~358K)
	Weight	99g	138g	210g
Unstable				
description	Model	UB2000-30GM60-IE5-V15	UB4000-30GM60-IE5-V15	UB6000-30GM70-IE5-V15
M10		UB2000-30GM60-UE5-V15	UB4000-30GM60-UE5-V15	UB6000-30GM70-UE5-V15
MIZ		UE5: Voltage output 0-10 V+10pnp	UE5: Voltage output 0-10 V+10pnp	UE5: Voltage output 0-10 V+10pnp
		IE5:Current output 4-20mA+1pnp	IE5:Current output 4-20mA+1pnp	IE5:Current output 4-20mA+1pnp
M18		Short-circuit protection, switchable down/up	Short-circuit protection, switchable down/up	Short-circuit protection, switchable down/up
M30		1.BN +UB 2.WH Switching output pp 4.BK Analogue current or	1.BN +UB 2.WH Switching output pnp 4.BK Analogue current or	$1.BN \circ +UB$ $2.WH \circ Switching output pnp 3 \circ 4 Analogue current or 3 \circ 4$
UDA		Analogue voltage 3.BU → UB 5.GY Sync Input ~ 1.BN+,A2 Learning Connection ~ 3.BU - ,A1	3.BU → analogue voltage 3.BU → UB 5.GY Sync Input ~ 1.BN+,A2 Learning Connection ~ 3.BU-,A1	4.BK → analogue voltage 3.BU → -UB 5.GY Sync Input ~ 1.BN+,A2 Learning Connection ~ 3.BU ,A1
UCC				
UDB				
UR	RAYCOH 。 48			

M30 Cylinderical, IO-LINK output 2EP-IO/IUEP-IO

Detection range	••1 00-2000mm	4 1 200-4000mm	 350-6000mm	30
	M12 62 76	$M12 \\ M30 \\ 0 \\ 79 \\ 63 \\ 27.5 \\ 93 \\ 93 \\ 93 \\ 93 \\ 93 \\ 93 \\ 93 \\ 9$	M12 M30 100 84 32 114	CYLINDF
Blind zone	0-100mm	0-200mm	0-350mm	215
Resolution	0.17mm	0.17-1.5mm	0.17-2.5mm	A
Repeatability	0.15% of full-scale value	0.15% of full-scale value	0.15% of full-scale value	
Absolute accuracy	\pm 1% (Built-in temperature drift compensation)	\pm 1% (Built-in temperature drift compensation)	±1% (Built-in temperature drift compensation)	
Switching hysteresis	2mm	4mm	5mm	Quick Selection
Switching frequency	10Hz	5Hz	4Hz	
Response time	82ms	162ms	232ms	Main Products
Power-Up Timer	<500ms	<500ms	<500ms	
Operating voltage	10-30V DC, reverse polarity protection	10-30V DC, reverse polarity protection	10-30V DC, reverse polarity protection	Application
LED red light	No target is always bright, and no target flashes when studving.	No target is always bright, and no target flashes when studving.	No target is always bright, and no target flashes when studying.	
LED green light	Detected that the target is always bright, and the target flashes when studying.	Detected that the target is always bright, and the target flashes when studying.	Detected that the target is always bright, and the target flashes when studying.	Connotation
Overpower protection	200mA, red light and green light flashing at the same time.	200mA, red light and green light flashing at the same time.	200mA, red light and green light flashing at the same time.	
Load impedance	I/<300 Ohm, U/>1k Ohm	I/<300 Ohm, U/>1k Ohm	I/<300 Ohm, U/>1k Ohm	Usage pattern
No-load current	≪30mA	≤30mA	≤30mA	
Material	Plastic,	Plastic,	Plastic,	Features
Protection Class	IP67	IP67	IP67	
Connection type	5 pole M12 connector	5 pole M12 connector	5 pole M12 connector	In the Hardbarr, Markey
Ambient temperature	-25°C~+70°C (248~343K)	-25°C~+70°C (248~343K)	-25°C~+70°C (248~343K)	Installation Notes
Storage temperature	-40°C~+85°C (233~358K)	-40°C~+85°C (233~358K)	-40°C~+85°C (233~358K)	Accessores
Weight	99g	138g	210g	Accessores
g.it	·	-		Unstable
Model	UB2000-30GM60-2EP-IO-V15	UB4000-30GM60-2EP-IO-V15	UB6000-30GM70-2EP-IO-V15	description
	2push pull	2push pull	2push pull	
	Supports IO-LINK output	Supports IO-LINK output	Supports IO-LINK output	M12
	$1.BN \qquad +UB \qquad 2.WH \qquad -C/Q \qquad 3.BU \qquad -UB \qquad $	$\begin{array}{c} 1.BN \\ 2.WH \\ 4.BK \\ 3.BU \\ 3.BU \\ 3.BU \\ -UB \end{array} + UB \\ C/Q \\ Switching output \\ -UB \\ -UB \end{array}$	1.BN 2.WH 4.BK 3.BU 3.BU U 4.BK -UB -UB	M18
	Learning Connection ← 1.BN+,A2	Learning Connection ← 1.BN+,A2	Learning Connection ← 3.BU- ,A1	M30
Model	UB2000-30GM60-IUEP-IO-V15	UB4000-30GM60-IUEP-IO-V15	UB6000-30GM70-IUEP-IO-V15	
	Analogue + 1push pull + IO-Link output	Analogue + 1push pull + IO-Link output	Analogue + 1push pull + IO-Link output	UDA
	U 1.BN 2.WH 4.BK ↓ UB C/Q Analogue voltage or	$\frac{1.BN}{2.WH} \xrightarrow{\downarrow} C/Q$ Analogue voltage or	UB 2.WH 4.BK ↓ UB C/Q Analogue voltage or	UCC
	3.BU → analogue current -UB -UB 5.GY Sync Input -1.BN+,A2 Learning Connection → 3.BU-,A1	3.BU of analogue current -UB 5.GY Sync Input ~1.BN+,A2 Learning Connection ~3.BU- ,A1	3.BU & analogue current -UB <u>5.GY</u> Sync Input ~1.BN+,A2 Learning Connection ~3.BU- ,A1	UDB
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UDA double sheet contro

features

- 3 output control
- easy to teach-in according to any material

Details

- suitable for various materials
- 3 npn or pnp output
- Standard working voltage 10-30V
- The teach-in function is realized by the pink line

Function Description

Single and double ultrasonic sensors are used to automatically distinguish between single and double application scenes, so as to protect equipment and avoid waste.

Combined with ultrasonic point sensor, it is mainly used for packaging or label positioning, and can realize automatic control automatically and accurately.

Different Learning Methods Of Materials

Learning mode: pink line learning line, pink line hanging in the air during learning mode.

1. After power-on, the yellow light and the green light flash.

Place a piece of material in the middle of two sensors, and the green light flashes. Short-circuit the pink line to the blue line (GND), and then let it go, so that the green becomes always bright. At this point, the single study is completed.

2. Then place two pieces of materials in the middle of the sensor, then short the brown line (+) with a pink line, and switch to the twopiece learning mode. At this time, the indicator light turns red and flashes. Then short the pink line to the blue line (GND), and then let it go. The test red light turns on normally. At this time, the doublesheet study is completed.

3. After the study is finished, turn off the electricity.

Connect the pink line and the blue line (GND) together. Power on again, and it can be used normally.

4. In the learning mode, enter the single learning step. If the thickness of the placed material is too thick, it will exceed the detection range of the sensor. Before shorting the blue line (GND), after placing a single piece of material, the indicator light will turn red and blink.

5. In the learning mode, enter the single learning step. If the thickness of the placed material is too thin, the sensor cannot detect the material. Before shorting the blue line (GND), after placing a single piece of material, the indicator light will turn yellow and blink.

Mounting Adjustment

M12 installation/adjustment

Recommended distance





Detecting metal sheet



(use thick paper)

Single-sheet sensor learning box

A special learning box for single and double ultrasonic transducers is used for learning problems of frequent switching of multiple materials.



Quick Selection

Main Products

Application

Connotation

Usage pattern

Features

Installation Notes

Accessores

Unstable description

M12

M18

M30

UDA

UCC

UDB

UR

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M18 installation/adjustment

Recommended distance

UDA double sheet contro 3E1/3E2

	Detection range	20-40mm	20-60mm	20-100mm
UDA		61.5 46.5 1.1m LEDS LED LED	<pre></pre>	-2m -2m -2m -2m -2m -2m -2m -2m
	Blind zone	7mm in front of transmitter and receiver	7mm in front of transmitter and receiver	7mm in front of transmitter and receive
	Maximum angle deviation of operation	45 to the vertical plane	45 to the vertical plane	45 to the vertical plane
	Working range	Paper with a weight per unit area of 20-60 g/m ² , alloy laminates and films with a thickness of 0.2 mm, self-adhesive films	<1mm thick metal composite plate and film, self-adhesive sheet, Label on the substrate, paper >0.01mm,PCB, silicon chip	<3mm thick metal plate
	Operating voltage	10-30V DC, reverse polarity protection	10-30V DC, reverse polarity protection	10-30V DC, reverse polarity protection
Quick Selection	Response delay	4ms	10ms	10ms
	LED Green	Single sheet detected	Single sheet detected	Single sheet detected
Main Products	LED Red	Double sheet detected	Double sheet detected	Double sheet detected
	LED Red	No target (air)	No target (air)	No target (air)
Application	LED Yellow	200mA, red light and green light flashing at the same time	200mA, red light and green light flashing at the same time	200mA, red light and green light flashing at the same time
	No-load current	≤30mA	≤30mA	≤30mA
Connotation	Overpower protection	2m, PVP cable 0.14mm ²	2m, PVP cable 0.14mm ²	2m, PVP cable 0.14mm ²
	Operational current	3x200mA short circuit protection	3x200mA short circuit protection/overload protection	3x200mA short circuit protection
Usage pattern	Material Voltage drop	Copper nickel plating, plastic fittings, glass filled epoxy resin ≤2V	Copper nickel plating, plastic fittings, glass filled epoxy resin ≪2V	Copper nickel plating, plastic fittings, glass filled epoxy resin ≤2V
Fosturos	Connection type	IP67	IP67	IP67
reatures	Ambient temperature	-25°C~+70°C (248~343K)	-25°C~+70°C (248~343K)	-25°C~+70°C (248~343K)
La stalla Maria Marta a	Storage temperature	-40°C~+85°C (233~358K)	-40°C~+85°C (233~358K)	-40°C~+85°C (233~358K)
Installation Notes	Weight	200g	220g	480g
Accessores	, , , , , , , , , , , , , , , , , , ,			
Unstable description				
description	Model	UDA-12GM25-400-3E1	UDA-18GM55-200-3E1	UDA-30GM60-100-3E1
M12		UDA-12GM25-400-3E2	UDA-18GM55-200-3E2	UDA-30GM60-100-3E2
		3 switch outputs npn	3 switch outputs npn	3 switch outputs npn
M18		3E1(NO)/3E2(NC)	3E1(NO)/3E2(NC)	3E1(NO)/3E2(NC)
M30		BN om +UB PK om Learning function WH om Single output BK on Double output	BN → +UB PK → Learning function WH → Single output BK → Double output	BN → +UB PK → Learning function WH → Single output BK → Double output
		GY Air output BUUB	GY Air output	GY Air output BUUB
UDA				
UCC				
UDB				
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UDA double sheet contro 3E3/3E4

Detection range	20-40mm	20-60mm	20-100mm	
	$\begin{array}{c} 61.5 \\ 46.5 \\ 1.1m \\ LEDs \\ LED \\ LED \\ LED \\ LED \end{array}$	^{/=2m} E receiver emitter 20 €		UDA
Blind zone	7mm in front of transmitter and receiver	7mm in front of transmitter and receiver	7mm in front of transmitter and receiver	
Maximum angle deviation of operation	45 to the vertical plane	45 to the vertical plane	45 to the vertical plane	
Working range	Paper with a weight per unit area of 20-60 g/m ² , alloy laminates and films with a thickness of 0.2 mm, self-adhesive films	<1mm thick metal composite plate and film, self-adhesive sheet, Label on the substrate, paper >0.01mm,PCB, silicon chip	<3mm thick metal plate	
Operating voltage	10-30V DC, reverse polarity protection	10-30V DC, reverse polarity protection	10-30V DC, reverse polarity protection	
Response delay	4ms	10ms	10ms	Quick Selection
LED Green	Single sheet detected	Single sheet detected	Single sheet detected	
LED Red	Double sheet detected	Double sheet detected	Double sheet detected	Main Products
LED Red	No target (air)	No target (air)	No target (air)	
LED Yellow	200mA, red light and green light flashing at the same time	200mA, red light and green light flashing at the same time	200mA, red light and green light flashing at the same time	Application
No-load current	≪30mA	≤30mA	≤30mA	
Overpower protection	2m, PVP cable 0.14mm ²	2m, PVP cable 0.14mm ²	2m, PVP cable 0.14mm ²	Connotation
Operational current	protection/overload protection	ax200mA short circuit protection	ax200mA short circuit protection/overload protection	
Material	Copper nickel plating, plastic fittings, glass filled epoxy resin	Copper nickel plating, plastic fittings, glass filled epoxy resin	Copper nickel plating, plastic fittings, glass filled epoxy resin	Usage pattern
Voltage drop	≤2V	≤2V	≤2V	
Connection type	IP67	IP67	IP67	Features
Ambient temperature	-25°C~+70°C (248~343K)	-25°C~+70°C (248~343K)	-25°C~+70°C (248~343K)	
Storage temperature	-40°C~+85°C (233~358K)	-40°C~+85°C (233~358K)	-40°C~+85°C (233~358K)	Installation Notes
Weight	200g	220g	480g	
				Accessores
Model	UDA-12GM25-400-3E3	UDA-18GM55-200-3E3	UDA-30GM60-100-3E3	Unstable description
modet	UDA-12GM25-400-3E4	LIDA-18GM55-200-3E4		
	3 switch outputs pnp	3 switch outputs pnp	3 switch outputs pnp	M12
	3E3(NO)/3E4(NC)	3E3(NO)/3E4(NC)	3E3(NO)/3E4(NC)	M19
	BN +UB PK Learning function	BN +UB PK Learning function	BN +UB	M10
	U WH ○ Single output BK ○ Double output GY ○ Air output BU ○ Up	U WH → Single output BK → Double output GY → Air output BU → U	U WH ∽ Single output BK ∽ Double output GY ∽ Air output BU ∽ Up	M30
		-08	-08	UDA
				UCC
				UDB
				UR





UR Waterproof Series

features

- Compact case size for easy installation
- Waterproof performance

Details

- 1 npn or pnp switch output
- 2 npn or pnp switch outputs
- Analogue voltage output 0-10V or analogue current output 4-20mA
- Support digital RS485, Modbus-rtu standard protocol communication
- Simple debugging through learning functions
- Standard operating voltage DC 10-30 V
- temperature compensation

Output Methods and Reference Curves

Two output modes of E2/E3 switching value



Five output modes of E4/E5 switching value



5. A1 $\rightarrow \infty$, A2 $\rightarrow \infty$: Object presence detection;

Target detected: the switch is closed; Target not detected: switch open

E6/E7 dual switch three output modes



3. Switch A1->∞: Output 1; Detect that existence of an object Switch A2->∞: Output 2; Detect that existence of an object Switch A1&A2->∞: Double output; Detect that existence of an object

E8/E9 dual switch four output modes



Output mode of analog+switch



Analog output mode



UR2000



UR3000



Teach-in function

	mode	condition requirement		
X e		NO	Place the target near the switch point. Set the TEACH-IN learning line connection -UB to A1 point until it is green, and the indicator light flashes for more than 3 times, and disconnect it.	Connotation
	ow Je		Place the target at the far switch point. Set the TEACH-IN learning line connection +UB to A2 point until it is green, and the indicator light flashes for more than 3 times, and disconnect it.	Usage pattern
	Wind Moo	NC	Place the target at the near switch point, connect the TEACH-IN learning cable to the +UB setting A2 point until it is green and the indicator light blinks more than 3 times, disconnect.	Features
		NC	Place the target at the far switch point, connect the TEACH-IN learning cable to the -UB setting A1 point until it is green and the indicator light blinks more than 3 times, disconnect.	Installation Note
		NO 	With the target at the near switch point, connect the TEACH-IN learning cable to the +UB set point A2 until the green indicator blinks more than 3 times to disconnect.	Accessores
			Cover the sensor with your hand or remove all objects within the detection range of the sensor until the red indicator flashes more than 3 times, and disconnect. Set the TEACH-IN learning line to	Unstable description
	/itch ode		-OB at point A1.	
	ъ Sv		Place the target near the switch point. Set TEACH- IN LEARNING LINE CONNECTION -UB to point A1 until the green indicator blinks more than 3 times then disconnect	
		NC	Cover the sensor with your hand or remove all	M18
		objects within the detection range of the sensor until the red indicator flashes more than 3 times, and disconnect.Set the TEACH-IN learning line connection +UB to A2 point.	M30	
	oresence on mode	1	Cover the sensor with your hand or remove all objects within the sensor's detection range. Set TEACH-IN LEARNING CABLE CONNECTION -UB to point A1 until the red indicator blinks more than 3	UDA
	Object p detectio		times, then disconnect. Then disconnect. Connect the TEACH-IN Learning Cable +UB to point A2 until the red light blinks more than 3 times, then disconnect.	UCC
Factory settings A1: Blind zone (minimum working range)				UDB
	AZ: Maximum range			

– round rod Ø 25mm

RAYCOH_® 55

Quick Selection

Main Products

UR Series Switching outputs E2/E4/E3/E5

	Detection range	•••1 00-2000mm	••• [1] 150-3000mm
UR		46.5 46.5 64 1 M12 040 040 040	46.5 24 64 M30 64 M12
	Blind zone	0-100mm	0-150mm
	Resolution	0.17mm	0.17mm
	Repeatability	0.15% of full-scale value	0.15% of full-scale value
	Absolute accuracy	$\pm 1\%$ (Built-in temperature drift compensation)	±1% (Built-in temperature drift compensation)
Quick Selection	Switching hysteresis	2mm	3mm
	Switching frequency	10Hz	9Hz
Main Products	Response time	82ms	102ms
	Power-Up Timer	<500ms	<500ms
Application	Operating voltage	10-30V DC, reverse polarity protection	10-30V DC, reverse polarity protection
	LED red light	and no target is always bright, and no target flashes when studying.	and no target flashes when studying.
Connotation	LED green light	and the target flashes when studying.	and the target flashes when studying.
	Overpower protection	flashing at the same time.	flashing at the same time.
Usage pattern	Load impedance	I/<300 Ohm, U/>1k Ohm	I/<300 Ohm, U/>1k Ohm
	No-load current	≤30mA	≤30mA
Features	Material	Plastic, Polyurethane Foam	Plastic, Polyurethane Foam
	Connection type	5 pole M12 connector	5 pole M12 connector
Installation Notes	Protection Class	IP67	IP67
	Ambient temperature	-25°C~+70°C (248~343K)	-25°C~+70°C (248~343K)
Accessores	Storage temperature	-40°C~+85°C (233~358K)	-40°C~+85°C (233~358K)
	Weight	62g	62g
Unstable description			
	Model	UR2000-30GK-E2-V15	UR3000-30GK-E2-V15
M12		UK2000-30GK-E4-V13	0K3000-30GK-E4-VI5
		Inpn switch output	1npn switch output
M18		1.BN 2.WH +UB 2.WH +UB 2.WH	1.BN 2.WH 2.WH +UB
M30		U 4.BK on pn output 3.BU - UB 5.GY Sync Input \sim 1.BN+,A2 Learning Connection \sim 3.BU-,A1	$\begin{array}{c c} U \\ \hline \\ 4.BK \\ \hline \\ 3.BU \\ \hline \\ 5.GY \\ \hline \\ 5.GY \\ \hline \\ Sync \ lnput \\ \hline \\ -1.BN+,A2 \\ \hline \\ Learning \ Connection \\ \hline \\ -3.BU \\ -3$
	Model	UR2000-30GK-E3-V15	UR3000-30GK-E3-V15
ODA		UR2000-30GK-E5-V15	UR3000-30GK-E5-V15
		1pnp switch output	1pnp switch output
		NO/NC Adjustable, Short Circuit Protection	NO/NC Adjustable, Short Circuit Protection
UDB		$ \begin{array}{c} 1.BN & +UB \\ 2.WH & \\ \hline 4.BK & pnp output \\ 3.BU & -UB \\ 5.GY & Sync Input & -1.BN+,A2 \end{array} $	$\begin{array}{c} 1.BN \\ 2.WH \\ 4.BK \\ 3.BU \\ 5.GY \\ 5.$
UR	RAYCOH. 56	Learning Connection ← 3.BU- ,A1	Learning Connection ← 3.BU- ,A1

UR Series Switching outputs E6/E7/E8/E9



UR Series Analogue/digital outputs I/U/IU

	Detection range	100-2000mm	4 150-3000mm
UR		46.5 24 64 M12 Ø40 M12	46.5 24 64 M30 64 M12
	Blind zone	0-100mm	0-150mm
	Resolution	0.17mm	0.17mm
	Repeatability	0.15% of full-scale value	0.15% of full-scale value
	Absolute accuracy	$\pm 1\%$ (Built-in temperature drift compensation)	$\pm 1\%$ (Built-in temperature drift compensation)
Quick Selection	Switching hysteresis	2mm	3mm
	Switching frequency	10Hz	9Hz
Main Products	Response time	82ms	102ms
	Power-Up Timer	<500ms	<500ms
Application	Operating voltage	10-30V DC, reverse polarity protection	10-30V DC, reverse polarity protection
	LED red light	No target is always bright, and no target flashes when studying.	No target is always bright, and no target flashes when studying.
Connotation	LED green light	Detected that the target is always bright, and the target flashes when studying.	Detected that the target is always bright, and the target flashes when studying.
	Overpower protection	200mA, red light and green light flashing at the same time.	200mA, red light and green light flashing at the same time.
Usage pattern	Load impedance	l/<300 Ohm, U/>1k Ohm	I/<300 Ohm, U/>1k Ohm
	No-load current	≪30mA	≤30mA
Features	Material	Plastic, Polyurethane Foam	Plastic, Polyurethane Foam
	Connection type	5 pole M12 connector	5 pole M12 connector
Installation Notes	Protection Class	IP67	IP67
	Ambient temperature	-25°C~+70°C (248~343K)	-25°C~+70°C (248~343K)
Accessores	Storage temperature	-40°C~+85°C (233~358K)	-40°C~+85°C (233~358K)
	Weight	62g	62g
Unstable description			
description	Model	UR2000-30GK-U-V15	UR3000-30GK-U-V15
M12		U: Voltage output 0-10 V I: Current output 4-20 mA Short-circuit protection, switchable down/up	U: Voltage output 0-10 V I: Current output 4-20 mA Short-circuit protection, switchable down/up
M18		$ \begin{array}{c c} 1.BN & +UB \\ \hline 2.WH & \\ \hline 4.Bu \\ 4.Bu \\ \hline 4.Bu $	1.BN +UB
M30		U-Lanalogue voltages 0-10 V <u>3.BU</u> U-UB <u>5.GY</u> Sync Input - 1.BN+,A2 Learning Connection - 3.BU-,A1	Control of the second se
	Model	UR2000-30GK-IU-V15	UR3000-30GK-IU-V15
UDA		Analogue voltage 0-10V and analogue current 4-20mA	Analogue voltage 0-10V and analogue current 4-20mA
		Short-circuit protection, switchable down/up	Short-circuit protection, switchable down/up
UCC		1.BN +UB (↓↓↓) 2.WH LAnalogue current 4-20mA 4.BK UAnalogue voltages 0-10 V 3.BU ↓ January - 1 BN+ 42	1.BN 2.WH 4.BK U:Analogue current 4-20mA U:Analogue voltages 0-10 V 3.BU 5.GV Svrc Innut c 1 BN+ 42
UR	RAYCOH. 58	Learning Connection o– 3.BU- ,A1	Learning Connection - 3.BU- ,A1

UR Series Analogue/digital outputsIE4/UE4

Detection range	44 11 100-2000mm	₩ 150-3000mm	
	46.5 24 64 M12 Ø40 M12	46.5 24 64 M30 64 M12	UR
Blind zone	0-100mm	0-150mm	
Resolution	0.17mm	0.17mm	
Repeatability	0.15% of full-scale value	0.15% of full-scale value	
Absolute accuracy	±1% (Built-in temperature drift compensation)	±1% (Built-in temperature drift compensation)	
Switching hysteresis	2mm	3mm	Quick Selection
Switching frequency	10Hz	9Hz	
Response time	82ms	102ms	Main Products
Power-Up Timer	<500ms	<500ms	
Operating voltage	10-30V DC, reverse polarity protection	10-30V DC, reverse polarity protection	Application
LED red light	No target is always bright, and no target flashes when studying. Detected that the target is always bright, and the target flashes when studying	No target is always bright, and no target flashes when studying. Detected that the target is always bright, and the target flacher when studying	Connotation
Overnower protection	200mA, red light and green light	200mA, red light and green light	
Load impedance	I/<300 Ohm, U/>1k Ohm	I/<300 Ohm, U/>1k Ohm	llsago pattorn
No-load current	≤30mA	≤30mA	osage pattern
Material	Plastic, Polyurethane Foam	Plastic, Polyurethane Foam	Fosturos
Connection type	5 pole M12 connector	5 pole M12 connector	reatures
Protection Class	IP67	IP67	II
Ambient temperature	-25°C~+70°C (248~343K)	-25°C~+70°C (248~343K)	Installation Note:
Storage temperature	-40°C~+85°C (233~358K)	-40°C~+85°C (233~358K)	Accessores
Weight	62g	62g	Accessores
			Unstable
Model	UR2000-30GK-IE4-V15	UR3000-30GK-IE4-V15	description
	UR2000-30GK-UF4-V15	UR3000-30GK-UE4-V15	
	UE4: Voltage output 0-10 V+10npn	UE4: Voltage output 0-10 V+10npn	M12
	IE4:Current output 4-20mA+1npn	IE4:Current output 4-20mA+1npn	
	Short-circuit protection, switchable down/up	Short-circuit protection, switchable down/up	M18
	1.BN 2.WH A BK Switching output NPN analogue	1.BN 2.WH J J A BK Switching output NPN analogue	M30
Model	↓	S.BU → Current or analogue voltage S.BU → UB S.GY Sync Input → 1.BN+,A2 Learning Connection → 3.BU-,A1	UDA
			UCC
			UDB
		RAYCOH . 59	UR

UR Series Analogue/digital outputs IE5/UE5

	Detection range	44 111 100-2000mm	41 150-30
UR		46.5 24 64 M12	46.5 24 M30 64
	Blind zone	0-100mm	0-150mm
	Resolution	0.17mm	0.17mm
	Repeatability	0.15% of full-scale value	0.15% of full-scale va
	Absolute accuracy	土1% (Built-in temperature drift compensation)	±1% (Built-in temperature
Quick Selection	Switching hysteresis	2mm	3mm
	Switching frequency	10Hz	9Hz
Main Products	Response time	82ms	102ms
	Power-Up Timer	<500ms	<500ms
Application	Operating voltage	10-30V DC, reverse polarity protection	10-30V DC, reverse po
	LED red light	No target is always bright, and no target flashes when studying.	No target is always b and no target flashes
Connotation	LED green light	Detected that the target is always bright, and the target flashes when studying.	Detected that the tar and the target flashe
	Overpower protection	200mA, red light and green light flashing at the same time.	200mA, red light and flashing at the same
Usage pattern	Load impedance	I/<300 Ohm, U/>1k Ohm	I/<300 Ohm, U/>1k
ouge pattern	No-load current	≤30mA	≪30mA
Fosturos	Material	Plastic, Polyurethane Foam	Plastic, Polyurethar
reatures	Connection type	5 pole M12 connector	5 pole M12 connecto
II	Protection Class	IP67	IP67
Installation Notes	Ambient temperature	-25°C~+70°C (248~343K)	-25°C~+70°C (248~343
	Storage temperature	-40°C~+85°C (233~358K)	-40°C~+85°C (233~3°
Accessores	Woight	62g	62g
Unstable	weight	5	
description	Model	LIP2000-30GK-IE5-V15	
	Model		
M12		UR2000-30GK-UE5-V15	0R3000-30GR-0E5-0
		UE5: Voltage output 0-10 V+10pnp	UE5: Voltage output
M18		IE5:Current output 4-20mA+1pnp	Short-circuit protection
		Shore-circuit protection, switchable down/up	Short-circuit protection
M30		1.BN +UB 2.WH Switching output pnp 4.BK Analogue current or analogue voltage	1.BN → + 2.WH → Sw 4.BK → Ani 4.BK → Ani
UDA		3.BU JL 5.GY Sync Input om 1.BN+,A2 Learning Connection om 3.BU-,A1	3.80 Sync In 5.GY Sync In Learning Connec
UCC			
UDB			
UR	RAYCOH . 60		

Image: 150-3000mmImage: 150-3000mmImage: 140-14Image:	
$ \begin{array}{ c c c c } $	
0-150mm 0.17mm 0.15% of full-scale value ±1% (Built-in temperature drift compensation) 3mm 9Hz 102ms 102ms <500ms 10-30V DC, reverse polarity protection No target is always bright, and no target flashes when studying. Detected that the target is always bright and the target flashes when studying. 200mA, red light and green light flashing at the same time. 1/<300 Ohm, U/>1k Ohm 200mA, red light and green light flashing at the same time. 1/<300 Ohm, U/>1k Ohm <30mA Plastic, Polyurethane Foam 5 pole M12 connector IP67 -25°C~+70°C (248~343K) -40°C~+85°C (233~358K) 62g UR3000-30GK-IE5-V15 UR3000-30GK-UE5-V15 UR3000-30GK-UE5-V15 UR3000-30GK-UE5-V15 UE5: Voltage output 0-10 V+10pnp IE5:Current output 4-20mA+1pnp Short-circuit protection, switchable down/w UT 2WH Switching output pnp Les: Voltage output 0-10 V+10pnp IE5:Current output 4-20mA+1pnp <th></th>	
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UR3000-30GK-UE5-V15 UE5: Voltage output 0-10 V+10pnp IE5:Current output 4-20mA+1pnp Short-circuit protection, switchable down/u	
UE5: Voltage output 0-10 V+10pnp IE5:Current output 4-20mA+1pnp Short-circuit protection, switchable down/u	
IE5:Current output 4-20mA+1pnp Short-circuit protection, switchable down/u	
Short-circuit protection, switchable down/u	
1.BN +UB 2.WH Switching output pnp	/up
3.BU Junalogue voltage 3.BU Junalogue voltage 5.GY Sync Input – 1.BN+,A2	$ \begin{array}{c} 2 & 1 \\ \bullet & 5 \\ 3 \\ \bullet & 4 \\ \bullet & \bullet \\ \end{array} $

UR Series Analogue/digital outputs RS485







UCC Series

features

- Stainless steel and PTFE corrosion-resistant flange probe design for a variety of corrosive environments
- Small blind spot, small sound cone, suitable for close range fine detection

Details

- Support RS485 modbus-rtu output
- Analog voltage output 0-10V or analog current output 4-20mA
- through the gray line detection distance learning function
- Standard operating voltage DC 10-30 V
- Temperature compensation

UCC Corrosion Resistant Series Analogue/Digital I



U: Voltage output 0-10 V I: Current output 4-20 mA

Short-circuit protection, switchable down/up



注: ①:PTFE ②:Stainless

UCC Corrosion Resistant Series Analogue/Digital U/RS485

Detection range	••• [11]] 150-2500mm
Blind zone	0-150mm
Resolution	0.2-0.5mm
Repeatability	0.15% of full-scale value
Absolute accuracy	±1% (Built-in temperature drift compensation)
Response time	160ms
Power-Up Timer	<500ms
operating voltage	10-30V DC, reverse polarity protection
LED red light	No target is always bright, and no target flashes when studying.
LED green light	Detected that the target is always bright, and the target flashes when studying.
verpower protection	200mA, red light and green light flashing at the same time.
Load impedance	l/<300 Ohm, U/>1k Ohm
No-load current	≤30mA
Material	PTFE & Stainless Steel
Protection Class	5 pole M12 connector
Connection type	IP67
mbient temperature	-25°C~+70°C (248~343K)
Storage temperature	-40°C~+85°C (233~358K)
Weight	180g

Model

0

UCC2500-30PT70-U-V15 (1) UCC2500-30ST70-U-V15 (2)

U: Voltage output 0-10 V I: Current output 4-20 mA

Short-circuit protection, switchable down/up



注:

PTFE
 Stainless

/RS485	
■[]] 150-2500mm	
Ø40	UCC
0-150mm	
0.2-0.5mm	
0.15% of full-scale value	
$\pm 1\%$	
160ms	Quick Selection
<500ms	
10-30V DC, reverse polarity protection	Main Products
No target is always bright, and no target flashes when studying.	
Detected that the target is always bright, and the target flashes when studying. 200mA, red light and green light flaching at the same time.	Application
I/<300 Ohm, U/>1k Ohm	Connotation
≤30mA	
PTFE & Stainless Steel	Usago pattorn
5 pole M12 connector	Usage pattern
IP67	Factoria
-25°C~+70°C (248~343K)	Features
-40°C~+85°C (233~358K)	
1800	Installation Notes
(1)	Accessores
UCC2500-30PT70-R4-V15	
RS485	Unstable description
Modbus standard protocol	
	M12
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	M18
A -RS485	M30
①:PTFE ②:Stainless	UDA
	UCC
	UDB

RAYCOH

63

UR





UDB groove label detection

features

- UDB recessed design, compact size, space-saving identification of transparent, opaque and printed labels
- Response time: 250µs

Details

- pnp+npn switching output
- at a very fast transmission speed, it can be monitored accurately with a short response time
- the top of the sensor housing is provided with an LED indicator and a switch button
- by learning the teaching function, debugging is simple and fast
- Standard working voltage DC 10-30V
- temperature compensation

Functional description

UD ultrasonic groove sensor is used to identify the printing mode of labels and carrier materials, and the materials with transparency and surface roughness, and can identify whether the materials are one layer or two layers. Such as transparent labels on transparent carrier materials and different printed patterns on the labels.

UD ultrasonic groove sensor can identify the labels with the minimum spacing of 2mm, and it has high positioning accuracy, short response time and small size, which makes the groove sensor widely used.

Teach-in function

- Power-on state: Yellow light, single green light, double red light; Learning status:
- ① When pressing the key for a long time > 2s, the green light will start flashing, and then the automatic learning leaflet will be released (if successful, the green light will continue flashing for 3 times; If it fails, the red light flashes 3 times);
- ② When pressing the key for longer than 5s, switch from flashing green light to flashing yellow light. At this time, release the automatic learning double sheets (if the green light flashes three times successfully; If it fails, the red light flashes 3 times);
- ③ Double thresholds will be automatically completed when learning a single sheet, and work will start automatically after learning. The learning function is not limited to time.
- Functional signals



- RAYCOH Tip: Pressing the button before powering on can set normally open and normally closed.
- Placement of the label or substrate within the effective area of the slotted sensor
- Multiple labels via slot sensors







		UDB
trough depth	68mm	
trough width	5mm	
Smallest detectable object	Label spacing to date/label size: 2 mm	
Switching frequency	1.2kHZ	
Response time	250µs	Quick Selection
Workingvoltage	10-30V DC, reverse polarity protected	
LED red	Double Sheets Detected	Main Products
LED green	Double Sheets Detected	
LED yellow	No targets (air)	Application
Switching output	pnp+npn	
Input Type	Synchronisation and learning functions	Connotation
Output Current	100mA	
Material	Metal, aluminium	Usage pattern
Material	4 pole M8 connectors	
Connection type	IP67	Features
Ambient temperature	-25°C~+70°C (248~343K)	
Storage temperature	-40°C~+85°C (233~358K)	Installation Notes
Weights	105g	
		Accessores
Model	UDB-5FK-E-V4	
	npn+pnp	Unstable
		description

	$\begin{array}{c} 1.BN & +UB \\ 2.WH & npn output \\ 4.BK & pnp output \\ 3.BU & -UB \end{array}$	
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M18

M12

M30

UDA

UCC

RAYCOH 65 UR

CCESSORIES

Accessory Connections & Accessories



Quick Selection

Main Products

Application

Connotation

Usage pattern

Features

Installation Notes

Accessores

Unstable description

M12

M18

M30

UDA

UCC

UDB

UR



































Note: WIFI versions available

V4-W-2M-PVC 4pin-M12 initiator plug, bends 2m PVC cable,4x0.25mm²

V4-W-10M-PVC

V4-G-10M-PVC

V15-W-10M-PVC

V15-G-10M-PVC

V1-W-10M-SW

V1-G-10M-SW

V15-W-10M-PUR

V15-G-10M-PUR

V15-W-10M-PUR

V15-W-10M-PUR

4pin-M8 initiator plug, bends

4pin-M8 initiator plug, straight

5pin-M12 initiator plug, bends

5pin-M12 initiator plug, bends

4pin-M12 initiator plug, bends

10m 485 SW cable,4x0.2mm²

4pin-M12 initiator plug, straight

5pin-M12 initiator plug, bends

5pin-M12 initiator plug,vertical

5pin HPVC initiator plug, bends

5pin HPVC initiator plug, vertical

10m HPVC cable,4x0.25mm²

10m HPVC cable,4x0.25mm²

10m PUR cable,4x0.25mm²

10m PUR cable,4x0.25mm²

10m 485 SW cable,4x0.2mm²

10m PVC cable,5x0.25mm²

10m PVC cable,5x0.25mm²

10m PVC cable,4x0.25mm²

10m PVC cable,4x0.25mm²

V4-G-2M-PVC 4pin-M8 initiator plug, straight 2m PVC cable,4x0.25mm²

V15-W-2M-PVC 5pin-M12 initiator plug, bends 2m PVC cable,5x0.25mm²

V15-G-2M-PVC 5pin-M12 initiator plug, bends 2m PVC cable,5x0.25mm²

V1-W-2M-SW 4pin-M12 initiator plug, bends 2m 485 SW cable,4x0.2mm²

V1-G-2M-SW 4pin-M12 initiator plug, straight 2m 485 SW cable,4x0.2mm²

V15-W-2M-PUR 5pin-M12 initiator plug, bends 2m PUR cable,4x0.25mm²

V15-G-2M-PUR 5pin-M12 initiator plug, vertical 2m PUR cable,4x0.25mm²

V15-W-2M-PUR 5pin hpvc initiator plug, bends 2m HPVC cable,4x0.25mm²

V15-G-2M-PUR 5pin HPVC initiator plug, vertical 2m HPVC cable,4x0.25mm²

Ultrasonic sensor synchronous asynchronous controller General model: ZCPJ-COM-SY01 0 supply electricity: 10-30V

Setting controller for single and double ultrasonic sensors model: ZCPJ-CONT-UDA supply electricity: 10-30V







Main Products

Application

Connotation

Usage pattern

The principle of ultrasonic sensor is to judge the state or distance of the target by detecting and processing sound waves. Therefore, the transmission rate of sound waves will be affected by the state of air, thus affecting the output state of ultrasonic sensors.

RAYCOH's ultrasonic sensor has made as much compensation as possible on the circuit for various influencing factors, such as a full range of temperature drift compensation circuits.

In order to ensure the stable and effective operation of the ultrasonic sensor. The following situations are recommended to be considered before testing.

- ▶ The target surface temperature is higher than 100°C.
- ▶ Detect the scene where the ambient wind speed is greater than 60 km/h.
- ▶ The environment is used in areas with an altitude of more than 3 kilometers.
- ▶ In a sealed environment, the air pressure exceeds 1.2 standard atmospheric pressure.
- ► The working environment is below minus 20°C and above 70°C.
- ▶ Non-reflective plate mode, which detects materials with strong sound absorption, such as felt, wool, cotton or sponge foam.
- ► Sound waves cannot propagate in a vacuum. When used in vacuum environment, the ultrasonic sensor fails.
- ▶ Detect other unknown substances and uncertain usage scenarios.

Installation Notes

Features

Accessores





扫码关注公众号

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