

Additional Value for Factory Automation Sensors

Displacement
Sensors



Laser Sensors



BGS/TOF Distance Setting Sensors



Photoelectric Sensors



Color Mark Sensors



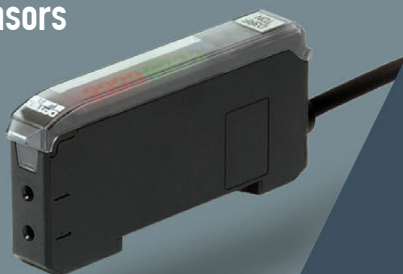
Transparent-object
Detection Sensors



Communication Units



Fiber Sensors



Non-contact
Thermometers



Vision Sensors





Realize World's No. 1 Linearity : $\pm 0.015\%$ F.S.

CDX Series



Web Server

CDA
amplifier

Model	Repeat accuracy	Measurement range*1	Reflection mode
CDX-L15A/LW15A	0.25 μ m	15 $\pm$ 1 mm	Specular
CDX-30A/W30A	0.25 μ m	30 $\pm$ 5 mm	Specular / Diffuse
CDX-85A/W85A	0.25 μ m	85 $\pm$ 20 mm	Specular / Diffuse
CDX-150A/W150A	0.25 μ m	150 $\pm$ 40 mm	Diffuse

*1: Value of diffuse installation

Small-sized, amplifier built-in sensors for wide range of measurement distances

CD33 Series



UQ1
I/F Unit

Model	Repeat accuracy	Measurement range*1	Reflection mode
CD33-L30*/30*	2 μ m	30 $\pm$ 4 mm	Specular / Diffuse
CD33-L50*/50*	5 μ m	50 $\pm$ 10 mm	Specular / Diffuse
CD33-L85*/85*	10 μ m	85 $\pm$ 20 mm	Specular / Diffuse
CD33-120*	30 μ m	120 $\pm$ 60 mm	Diffuse
CD33-250*	75 μ m	250 $\pm$ 150 mm	Diffuse

*1: Value of diffuse installation

Compact, amplifier built-in sensors

CD22 Series



W17.8×D31
×H44.4mm

CDA
amplifier

Model	Repeat accuracy	Measurement range	Laser class
CD22-15*	1 μ m	15 $\pm$ 5 mm	Class 1
CD22-35*	6 μ m	35 $\pm$ 15 mm	Class 1
CD22-100*	20 μ m	100 $\pm$ 50 mm	Class 2



Flexible system building
with 11 Sensor heads
and a 3ch amplifier

CD5 Series

Specular
/ Diffuse

UQ1
I/F Unit



Through-beam edge sensor
for width and gap
measurement

TD1 Series

W9.6×D21
×H61mm

CDA
amplifier



2-dimensional laser
sensor for width and
height measurement

LS Series

3 control
outputs

1 analog
output

Compact amplifier for data calculation,
multiple outputs and network connectivity

CDA Series



Master / slave

CD22 Sensor

TD1 Sensor

Communication interface unit for
Mitsubishi PLC

UQ1 Series

2 channels

CD33 Sensor





Smallest Time-of-Flight sensors in the class

Laser

IO-Link

TOF-DL Series

Display

Analog Output

3 Control
Outputs

IO-Link

TOF-L Series

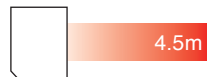
Long distance

Sensing distance

TOF-DL



TOF-L



Minimum detectable height difference = 0.08 mm

Laser

BGS-HDL Series

0.08 mm
GAP2 Control
Outputs

BGS-HL Series

0.08 mm
GAP1 control
output

BGS-HLM Series

0.08 mm
GAP

SUS Housing

1 control
output

Sensing distance

Short range



Middle range



Industry-standard laser BGS sensor

Laser

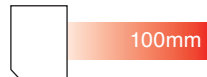
BGS-ZL Series

25.4mm
screw pitch

Low hysteresis

Sensing distance

Short range



Middle range

Diffuse reflective and Retro
reflective models

Laser

TOF-3V Series

Retro
reflectiveDiffuse
reflective

up to 20m

CMOS laser sensor
with teaching functions

Laser

BGS-DL Series

Display

Teaching

Laser Type with Potentiometer
**BGS-DL (Volume)
Series**

Laser

up to 700mm



Industry-standard LED BGS sensor

BGS-Z Series

25.4mm
screw pitchStainless steel housing for
water and oil resistance

IP67g

BGS-ZM Series

25.4mm
screw pitchSUS
HousingSmall-sized with elongated installation
holes

BGS-S/2S Series

BGS-S
W10xD17.4xH28mmBGS-2S
W11xD20xH31mm

Basic BGS sensors

BGS Series

Low
hysteresis

AC/DC power models

BGS-2V Series

AC/DC
and DC24V

up to 1m

Relay
output

M18 cylindrical housing

BGS-C2 Series

Metal
HousingPlastic
Housing



High-power amplifier-separate laser sensors

Laser



DS Series

Coaxial

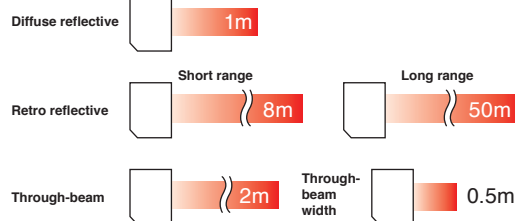
1 or 2 control outputs

4-20mA output

Flexible Teaching

Master/slave Max. 8 units

Sensing distance



Industry-standard Laser Sensors

Laser

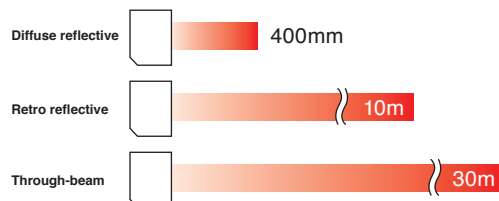


Z-L Series

25.4mm screw pitch

250μs

Sensing distance



IO-Link supported LED sensors

IO-Link

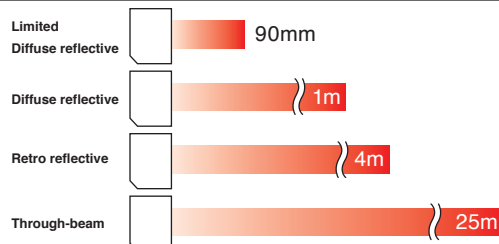


Z4 Series

IO-Link

NPN PNP output

Sensing distance



Universal power input sensors with terminal blocks



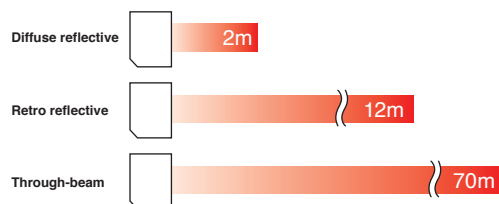
V3/V4 Series

AC/DC and DC24V

Relay output

Terminal block

Sensing distance



High performance and wide range of line-up

Z3 Series

Limited diffuse

Wide diffuse

Diffuse reflective

Retro reflective

Through-beam



Standard LED sensors

Z2 Series

Diffuse reflective

Retro reflective

Through-beam



Stainless steel housing for water and oil resistance

Z-M Series

Diffuse reflective

Retro reflective

Through-beam

IP67g



M18 cylindrical metal housing

C-R Series

Infrared

Limited diffuse

Diffuse reflective

Retro reflective

Through-beam



M18 cylindrical metal and plastic housing

C2 Series

Infrared

Limited diffuse

Diffuse reflective

Retro reflective

Through-beam



Miniature Flat On/Side On Sensors

E Series

Flat On / Side On

Limited diffuse

Diffuse reflective

Through-beam



Resin-filled environmental resistant sensors

J Series

Infrared

Head On / Side On

Limited diffuse

Wide diffuse

Diffuse reflective

Retro reflective

Through-beam



Small-sized sensors

S Series

Diffuse reflective

Retro reflective

Through-beam

W10xD17.4 xH28mm



AC/DC power models

V/V2 Series

Infrared

AC/DC / DC power

Diffuse reflective

Terminal block

Retro reflective

Through-beam

Relay output



Transparent-object Detection Sensors



Color Mark



Communication Units

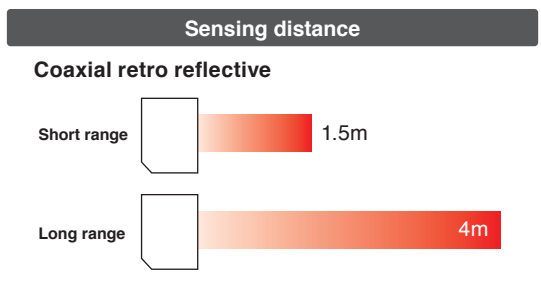
High power laser sensors with flexible adjustability

DR-Q Series

Laser



- Coaxial retro reflective
- Digital teaching



Long-time seller with a wide range of detection distances

KR-Q Series

- Wide / Pin spots
- Retro reflective
- 500mm
- 1.5m
- 2.5m



Small-sized sensors

SR-Q Series

- Wide spots
- Retro reflective
- W10×D17.4×H28mm
- 300mm



High-performance coaxial sensors

ZR-QX Series

- Coaxial retro reflective
- 2m



Standard transparent-object detection sensors

Z3R-Q Series

- Retro reflective
- 2m



RGB LED color mark sensor

DM Series

- Digital teaching
- Color / Mark mode
- 8 banks
- 18±2mm



Fiber sensor amplifier with white LED light

D3WF Series

- Master / slave Max. 16 units
- UC1 UC2
- 62mm



Field network communication units

- UC1-CL11 CC-Link
- UC1-EC EtherCAT
- UC1-EP EtherNet/IP

- Slave adapter
- Max. 16 devices
- CDA amplifier
- D3RF/D3WF Sensors

Compact IO-Link master unit

UR-MS16DT

IO-Link

- 16 channels
- Input/Output
- IO-Link / NPN / PNP
- Online setting



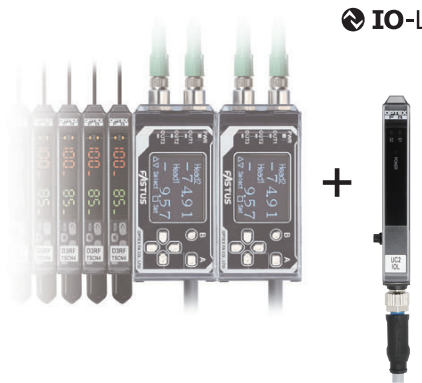
CC-Link IE TSN
CC-Link IE Field

IO-Link gateway for fiber sensors and displacement sensor amplifiers

UC2-IOL

IO-Link

- Max. 16 devices
- D3RF/D3WF Sensors
- CDA amplifier





Fiber Sensor Amplifier

High performance with a wide range of line-up



D3RF Series

- Stand-alone
- Master / slave Max. 16 units
- 1ch / 2ch outputs
- Digital teaching
- Up to 16µs
- UC1 UC2



Durable IP66 and analog-output models



D2RF Series

- Stand-alone
- Master / slave Max. 8 units
- 1ch / 2ch outputs
- Digital teaching
- 4-20mA output
- IP66 model
- Up to 60µs



High usability with digital teaching and IP66 protection

D1RF Series

- Stand-alone
- Up to 50µs



Easy teaching with sensitivity indicator

V2RF Series

- Stand-alone
- 250µs



Digital teaching for mark detection

D2GF Series

- Master / slave
- Up to 60µs

Green LED



Potentiometer adjustment for mark detection

BGF Series

- Stand-alone
- 250µs

Green LED



Infrared light source for water detection

D3IF Series

- Stand-alone
- Up to 16µs

Infrared

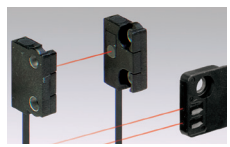


Basic potentiometer models

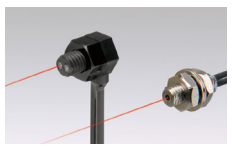
BRF Series

- Stand-alone
- 50µs / 250µs

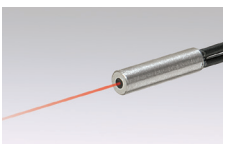
Fiber Units



Easy mounting



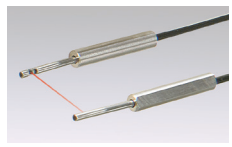
Thread



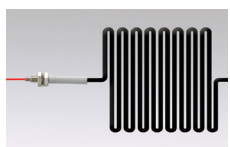
Cylindrical



Sleeve (straight view)



Sleeve (side view)



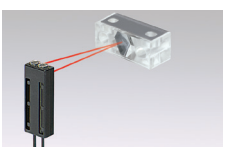
Flexible R1



Flexible R2



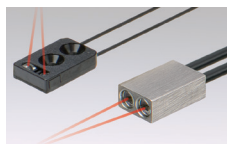
Flex resistance R4/R2



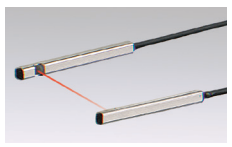
Retro-reflective



Screen/Array



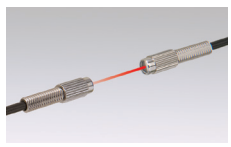
Limited diffuse reflective



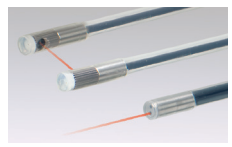
Narrow view / wafer mapping



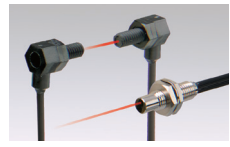
Small object detection



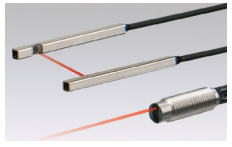
Lens for through-beam



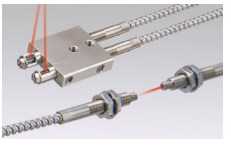
Chemical resistant



Heat resistant (130°C or below)



Heat resistant (180 to 200°C)



Heat resistant (250 to 350°C)



Liquid level / leakage



Water detection



Installation Models

Compact sensor head
for flexible installation

IP69K

CS Series

Measurement range

-40~500°C / -40~932°F 0~1000°C / 32~1832°F

Heat resistance

0~100°C / 32~212°F 0~180°C / 32~356°F



4~20mA
output

2 × C Contact

M18 cylindrical models

IP67

SA-80 Series

Measurement range

0~200°C / 32~392°F 0~400°C / 32~752°F

Heat resistance

0~70°C / 32~158°F



4~20mA
output

All-in-one models

IP65

BA Series

Measurement range

0~500°C / 32~932°F

Heat resistance

0~50°C / 32~122°F



4~20mA
output

1mV/°C
output

Separate models

IP67

BS Series

Measurement range

0~500°C / 32~932°F

Heat resistance

0~50°C / 32~122°F 0~150°C / 32~302°F



4~20mA
output

1mV/°C
output

*with optional cooling jacket

Hand-held Models

Wide Measurement Range

PT-2LD

Measurement range

-40~510°C / -40~950°F



PT-5LD



PT-7LD



Waterproof,
Shock Resistant

PT-5LD/7LD

Measurement range

PT-5LD 0~500°C / 32~932°F

PT-7LD -30~200°C / -22~392°F

Long Range with Narrow FOV

PT-S80/U80

Measurement range

-30~600°C / -22~1112°F

PT-U80-USB I/F
Data memory



Multiple-camera vision sensor systems with a separate controller

MVS Series

MVS-EM-R : Edge Measurement

MVS-OCR2 : Optical Character Recognition

MVS-PM-R : Color Pattern Matching

Max. 3
cameras

4.3" display

Touch operation

Lighting control

NPN/PNP
x 6

Ethernet

USB



All-in-one vision sensors with camera, lighting, monitor and controller

CVS Series

CVSE1 : Easy Setup Color Matching

CVS1 : Color Matching

CVS2 : Color Pattern Matching

CVS3 : Edge Matching

CVS4 : Optical Character Recognition

Multiple
viewing areas

NPN/PNP
x 2

W42×D33.8
×H95mm

External lighting
& monitor

IP67



CVSE1



CVS1



CVS2



CVS3



CVS4



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