INDUSTRIES

Packaging, logistics, materials handling, woodworking industry, quality control, precision engineering, printed circuit board production

Position control in furniture factory

Sensing and measuring shelf space

Packaging systems

Logistics

APPLICATION

Distance sensor with IO-Link 1.1 profile detects presence of goods on shelf and measures available shelf space

In a warehouse with an intelligent logistics concept, a robot arm must reliably detect whether goods are on the shelf and measure any available shelf space. With its ability to measure distances of up to 5,000 mm precisely, the C55 distance sensor is perfectly suited for this task. Using its IO-Link interface, it transmits the measurements directly to the control system as millimeter values in digital form, enabling optimal use of warehouse space.

DISTANCE
PHOTOELECTRIC SENSORS

HIGH PRECISION AND DIRECT DIGITAL TRANSMISSION

As contactless measurement devices, photoelectric **Distance sensors** are suitable for numerous areas of application. C23 types use a triangulation method for accurate distance measurement at short range. For longer ranges, the optical time-of-flight (TOF) method is used by C55 types. Distance measurement is largely independent of target color or surface characteristics and repeatability is high.

KEY ADVANTAGES

C23 distance-measuring sensors
✓ Two distance-measurement ranges: 20 … 80 mm and 30 … 200 mm
✓ Housing 20 × 34 × 12 mm
✓ High precision and repeatability
✓ Settable analog range for optimum distance measurement
✓ Enclosure rating IP67/IP69K

C55 distance-measuring sensors
✓ Distance measurement up to 5,000 mm
✓ Housing 50 × 50 × 23 mm
✓ High precision and repeatability
✓ Settable analog range for optimum distance measurement
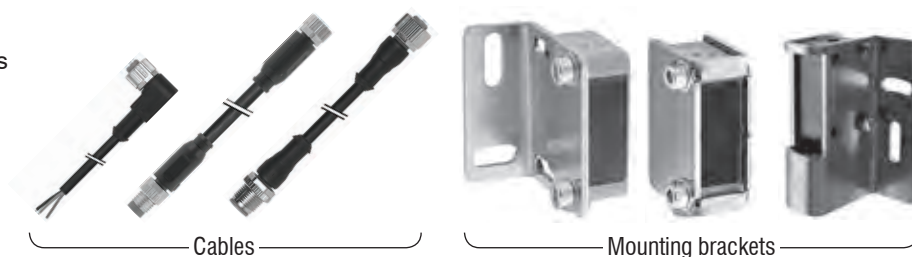✓ Enclosure rating IP67/IP69K, Ecolab approved
✓ ⬡ **IO**-Link

PRODUCT OVERVIEW

SERIES Housing size mm	C23 □ 20 × 34 × 12	C55 □ 50 × 50 × 23
Short range	80 / 100 / 200	–
Medium range	–	5,000

(s, mm)

ACCESSORIES

Go to page 298 to see all the accessories

Cables — Mounting brackets

COMMON FEATURES

Supply Voltage range	13 … 30 VDC

OUTPUT
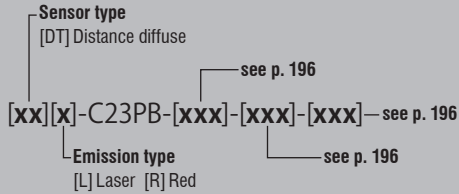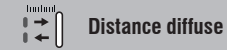
Sensor type
[DT] Distance diffuse

see p. 196

[xx][x]-C23PB-[xxx]-[xxx]-[xxx] — see p. 196

Emission type
[L] Laser [R] Red

see p. 196

Reference key on page 196

OPERATING PRINCIPLE

Distance diffuse

ACCESSORIES

A Group A: M8 3-pin
Sub-group: Field attachable connectors
Sub-group: Distribution boxes

B Group B: M8 4-pin
Sub-group: Field attachable connectors

C Group C: M12 4-pin
Sub-group: Field attachable connectors
Sub-group: Distribution boxes

D Group D: M12 AC/DC 3-pin

E Group E: Universal mounting brackets
Sub-group: Mechanical stops

F Group F: Photoelectric mounting brackets

G Group G: Photoelectric reflectors

H Group H: Sensor tester

Go to page 298 for details

CABLES
Cable lengths available:
2 m, 5 m, 10 m
other customised lengths possible

CUBIC C23
C23 SERIES

FAMILY	OPERATING PRINCIPLE	SENSING RANGE (mm)	HOUSING SIZE (mm)	LIGHT SOURCE	
CUBIC C23 – C23 SERIES		80	20 × 34 (C23)	LED, red 632 nm	
		80	20 × 34 (C23)	LED, red 632 nm	
		100	20 × 34 (C23)	⚠ Laser class 1, red 650 nm	
		200	20 × 34 (C23)	LED, red 632 nm	
		200	20 × 34 (C23)	LED, red 632 nm	

KEY ADVANTAGES

✓ Two distance measurement ranges: 20 … 80 mm and 30 … 200 mm
✓ Housing 20 × 34 × 12 mm
✓ High precision and repeatability
✓ Settable analog range for optimum distance measurement
✓ Enclosure rating IP67 / IP69K

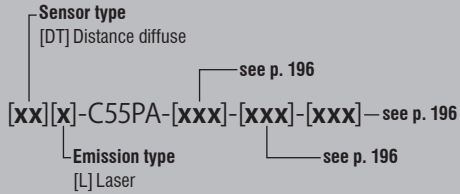| HOUSING MATERIAL	CABLE	CONNECTOR	IO-Link	SWITCHING FREQUENCY	AMBIENT TEMPERATURE	DEGREE OF PROTECTION	PART REFERENCE	ACCESSORIES (SEE PAGE 178)
ABS		M8		1,000	− 20 … +60°C	IP67 / IP69K	DTR-C23PB-TMS-139	B F H
ABS		M8		1,000	− 20 … +60°C	IP67 / IP69K	DTR-C23PB-TMS-129	B F H
ABS		M8		1,000	− 20 … +60°C	IP67 / IP69K	DTL-C23PB-TMS-139-501	B F H
ABS		M8		1,000	− 20 … +60°C	IP67 / IP69K	DTR-C23PB-TLS-139	B F H
ABS		M8		1,000	− 20 … +60°C	IP67 / IP69K	DTR-C23PB-TLS-129	B F H

COMMON FEATURES

Supply Voltage range	18 … 30 VDC

OUTPUT

Sensor type
[DT] Distance diffuse

[xx][x]-C55PA-[xxx]-[xxx]-[xxx]

Emission type
[L] Laser

Reference key on page 196

OPERATING PRINCIPLE

	Distance diffuse

ACCESSORIES

A Group A: M8 3-pin
Sub-group: Field attachable connectors
Sub-group: Distribution boxes

B Group B: M8 4-pin
Sub-group: Field attachable connectors

C Group C: M12 4-pin
Sub-group: Field attachable connectors
Sub-group: Distribution boxes

D Group D: M12 AC/DC 3-pin

E Group E: Universal mounting brackets
Sub-group: Mechanical stops

F Group F: Photoelectric mounting brackets

G Group G: Photoelectric reflectors

H Group H: Sensor tester

CABLES
Cable lengths available:
2 m, 5 m, 10 m
other customised lengths possible

CUBIC C55
C55 SERIES

FAMILY	OPERATING PRINCIPLE	SENSING RANGE (mm)		HOUSING SIZE (mm)	LIGHT SOURCE	
			5,000	50 × 50 (C55)	Laser class 1, red 655 nm	
			5,000	50 × 50 (C55)	Laser class 1, red 655 nm	
			5,000	50 × 50 (C55)	Laser class 1, red 655 nm	

CUBIC C55 – C55 SERIES

KEY ADVANTAGES

✓ Distance measurement up to 5,000 mm

✓ Housing 50 × 50 × 23 mm

✓ High precision and repeatability

✓ Settable analog range for optimum distance measurement

✓ Enclosure rating IP67 / IP69K, Ecolab approved

✓ ◈ **IO**-Link

	HOUSING MATERIAL	CABLE	CONNECTOR	◈ **IO**-Link	SWITCHING FREQUENCY	AMBIENT TEMPERATURE	DEGREE OF PROTECTION	PART REFERENCE	ACCESSORIES (SEE PAGE 180)
	ABS		M12		250	−40…+60℃	IP67 / IP69K	**DTL-C55PA-TMS-119-502**	C F H
	ABS		M12		250	−40…+60℃	IP67 / IP69K	**DTL-C55PA-TMS-119-503**	C F H
	ABS		M12	◈ **IO**-Link	500	−40…+60℃	IP67 / IP69K	**DTL-C55PA-TMS-407-505**	C F H