



APPLICATION

Contrast sensor checks label alignment and confirms presence of print markings during packaging operations

During high-volume production of confectionery, sealed cartons of bagged candy travel by conveyor to a labeling station. A photoelectric contrast sensor, mounted beside the conveyor, checks the label alignment and confirms the presence of print markings as each carton leaves the labeling area. If a label is blank, illegible or wrongly positioned, the carton is diverted to a holding area for investigation.

INDUSTRIES

Packaging, logistics, materials handling, food and beverage, filling machines, printing, quality control, sorting processes, tobacco industry, wood processing machines



Color sorting on drinks conveyor



Detection of anodized products



Detection of marks on cartons



Print-mark detection on label machine

COLOR AND CONTRAST PHOTOELECTRIC SENSORS

EXCELLENT RESOLUTION FOR SMALLEST VARIATIONS

Color sensors detect variations in target color, allowing color sorting or checking. Up to three separate outputs can be programmed using the teach-in function. **Contrast** sensors are ideal for detecting print marks in printing, labeling and packaging processes. With excellent resolution and five tolerance levels and detection is accurate, even when color or contrast differences are minimal.

KEY ADVANTAGES

- ✓ Rugged housing, 40 x 50 x 15 mm
- ✓ Connector adjustable at 0°, 45° and 90°
- ✓ 5 switching tolerance levels

Color sensors

- ✓ Three color-teach channels with independent outputs
- ✓ High positioning tolerance
- ✓ High switching frequency: up to 4 kHz

Contrast sensors

- ✓ Detection of very small print marks thanks to a narrow, collimated light spot
- ✓ RGB emission technology with best emission color automatically selected
- ✓ Excellent tolerance to target distance variations
- ✓ High switching frequency: up to 10 kHz

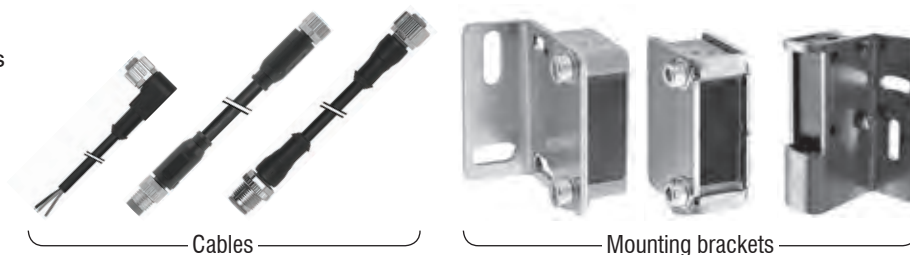


PRODUCT OVERVIEW

IO-Link		
SERIES Housing size mm	4050 Color □ 40 × 50 × 15	4050 Contrast □ 40 × 50 × 15
Diffuse (s _n mm)	40	12

ACCESSORIES

Go to page 298 to see all the accessories



Cables

Mounting brackets

COMMON FEATURES



Supply Voltage range 10 ... 30 VDC

OUTPUT

Sensor type
 [T] Diffuse
 [x][x][x]-4155-[xxx] — see p. 197
Connection
 [K] Cable [S] Connector
 [F] Color sensor
 [K] Contrast sensor

Reference key on page 197

OPERATING PRINCIPLE

 Diffuse (Color)
 Diffuse (Contrast)

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 4050 4050 SERIES

FAMILY	OPERATING PRINCIPLE	SENSING RANGE (mm)	HOUSING SIZE (mm)	LIGHT SOURCE
CUBIC 4050 – 4050 SERIES		40	40 × 50	LED, white
		40	40 × 50	LED, white
		12	40 × 50	LED, RGB
		12	40 × 50	LED, RGB

CUBIC 4050 – 4050 SERIES



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	HOUSING MATERIAL	CABLE	CONNECTOR	IO-Link	SWITCHING FREQUENCY	AMBIENT TEMPERATURE	DEGREE OF PROTECTION	PART REFERENCE	ACCESSORIES (SEE PAGE 184)
	PBTP		M12		4,000	-5 ... +55°C	IP67	FTS-4155-301	C F H
	PBTP		M12		4,000	-5 ... +55°C	IP67	FTS-4155-303	C F H
	PBTP		M12	IO-Link	10,000	-5 ... +55°C	IP67	KTS-4155-407	C F H
	PBTP	PVC		IO-Link	10,000	-5 ... +55°C	IP67	KTK-4155-407	F H