



### Description

The 45CRM is a photoelectric contrast sensor that reliably detects registration marks on a web. This sensor features red, green, and blue (RGB) emitter LEDs. During the teach process the sensor determines which of the emitter LEDs maximizes the contrast between the registration mark and the web (background). The teach process is completed using a simple rotary switch.

The extremely fast response time enables the control system to precisely align web material within the machine, for example, lining up labels on a web with the cutting blade of the equipment prior to the label being placed on a bottle.

### Features

- Three emitter LEDs (red, green, and blue)
- A 40 µs response time
- Three simple setup methods: dynamic teach, static teach, or IO-Link configurable
- Adjustable-position micro (M12) quick-disconnect (QD) for mounting flexibility

### General Specifications

<b>Environmental</b>	
Certifications	UL, cULus, and CE Marked for all applicable directives
Enclosure Type Rating	IP67
Operating Temperature [C (F)]	-20...60° (-4...140°)
Storage Temperature [C (F)]	-40...75° (-40...167°)
Vibration	10...55 Hz, 0.5 mm amplitude, meets or exceeds IEC 60947-5-2
Shock	30 g with 11 ms pulse duration, meets or exceeds IEC 60947-5-2
<b>Optical</b>	
Sensing Distance	11 mm ± 2 mm
Angle Deviation	± 3° max.
Light Source	3 LEDs (red, green, blue)
<b>Electrical</b>	
Operating Voltage	10...30 V DC (18...30V DC when operating in IO link mode)
Current Consumption	≤ 60 mA @ 24V DC
Protection Type	Short circuit, reverse polarity
<b>Communication Interface</b>	
Interface	IO-Link V1.0
Baud Rate	COM 2 (38.4 kBaud)
<b>Outputs</b>	
Response Time	40 µs
Sensitivity Adjustment	Rotary switch
Output Type	2 x PNP/NPN (Push-Pull) complementary outputs
Output Mode	Light or dark operation
Output Leakage Current, Max.	≤ 100 µA per output
Discrete Output Rating	30V DC max./100 mA max.
<b>Mechanical</b>	
Housing Material	Die-cast zinc, nickel-plated
Lens Material	PMMA Luxacryl, clear
Connection Type	M12, 4-pin , 90° rotateable

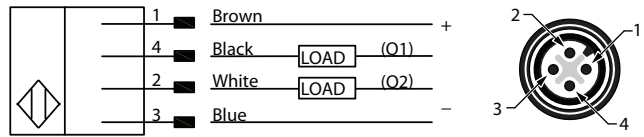
# PHOTOSWITCH® Photoelectric Sensors

## 45CRM Contrast Sensor

### Product Selection

Spot Size [mm (in.)]	Cat. No.
1 x 3 (0.04 x 0.12)	45CRM-4LHT1-D4
3 x 1 (0.12 x 0.04)	45CRM-4LHT2-D4

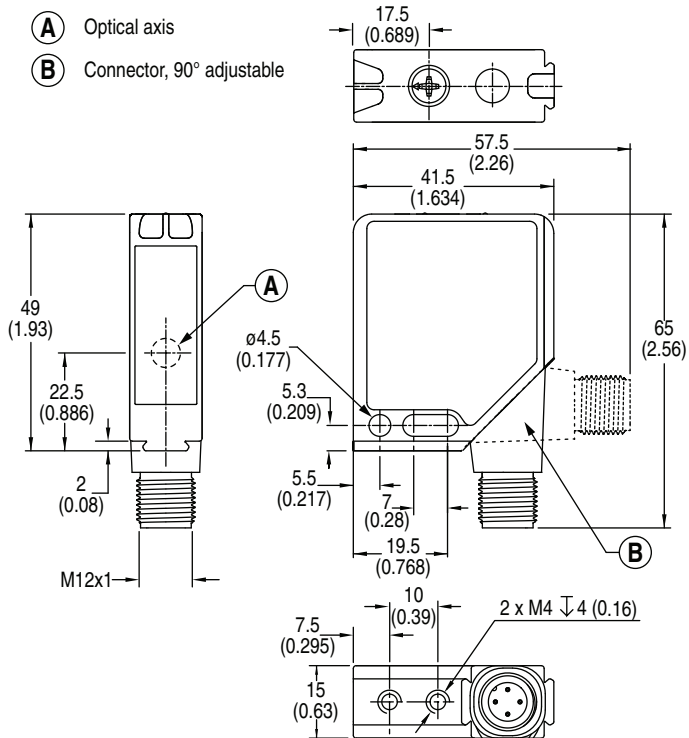
### Wiring Diagrams



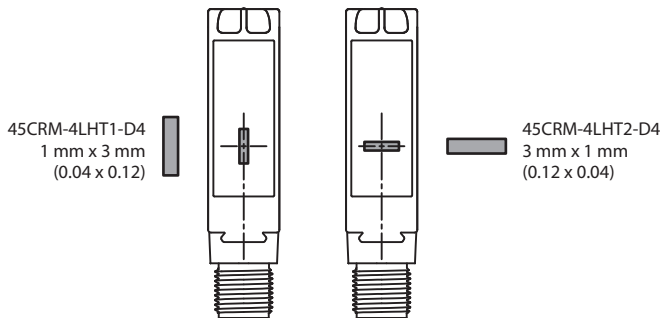
### Cordsets and Accessories

Description	Cat. No.
DC micro QD cordset, straight, 4-pin, 2 m	889D-F4AC-2

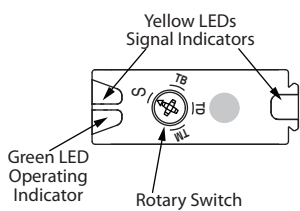
### Approximate Dimensions [mm (inches)]



### Light Spot Orientation [mm (in.)]



### Controls and Indicators



1-Photoelectric Sensors