

R58A Series Registration Mark Sensors



Registration Mark Sensors with Single Color LED and Potentiometer Adjustment of Switching Threshold

Features



- Fast 10 kHz switching frequency; 15 μ s repeatability
- Rugged zinc alloy die-cast housing with high quality acrylic lens suitable for food processing applications: Rated IP67
- Fixed-convergent sensing at 10 mm \pm 3 mm (0.39" \pm 0.12")
- Rectangular 1.2 mm \times 3.8 mm (0.05" \times 0.15") sensing image at 10 mm (0.39") from the lens
- Easy selection of Light/Dark Operate (LO/DO) by selection switch
- Red or green LEDs available, depending on model
- Parallel or perpendicular sensing image, depending on model
- 20 millisecond OFF-delay by model

Models

Models*	Output & Supply Voltage	Focus Distance	Sensing Image Orientation	Emitter Color	OFF-Delay	
R58ACG1	Bipolar NPN/PNP 10 to 30V dc	10 mm (0.39")	Parallel to sensor length 	Green	0	
R58ACG1D					20 ms	
R58ACR1				Red	0	
R58ACR1D					20 ms	
R58ACG2			Perpendicular to sensor length 	10 mm (0.39")	Green	0
R58ACG2D						20 ms
R58ACR2					Red	0
R58ACR2D						20 ms

* Only Standard 2 m (6.5') cable models are listed.

- For 9 m (30') cable, add suffix "**W/30**" to the model number (e.g., **R58ACG1 W/30**).
- For 150 mm (6") pigtail with a 4-pin Euro-style connector, add suffix "**Q**" to the model number (e.g., **R58ACG1Q**).
- For integral 4-pin Euro-style QD, add suffix "**Q8**" to the model number (e.g., **R58ACG1Q8**).

Overview

R58A sensors offer high-performance, cost-effective registration mark sensing featuring a single emitter color and simplified sensor setup and adjustment.

The switching threshold is adjusted with a potentiometer, and two green LEDs assist with setting the optimal threshold (See Sensor Setup, below). Output status information is provided by an amber output LED. Light Operate or Dark Operate is also easily selectable via the LO/DO selection switch (See Figure 1).

The fast 10 kHz switching frequency and 15 microsecond repeatability ensure reliability in high-speed operations. Models are available with a parallel or perpendicular sensing image, as well as a 20 millisecond OFF-delay to solve a variety of applications. The rugged zinc alloy die-cast housing and high quality acrylic lens are designed to handle ambient electrical noise and vibration from presses and die cutting machinery.



Figure 1. Features

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|--------------------------------------|
| 1. Amber Output Indicator |
| 2. Green Setup Indicators |
| 3. Switching Threshold Potentiometer |
| 4. LO/DO Selection Switch |

Sensor Setup

1. Align light spot to mark.	
2. Turn Potentiometer in the direction shown by green LED until it switches.	
3. Align light spot to background.	
4. Turn potentiometer, and count turns, in the direction shown by green LED until it switches.	
5. Turn potentiometer back half the number of turns from step 4.	
6. Select Light Operate or Dark Operate.	

Specifications

Feature	Description	
Supply Voltage and Current	10 to 30V dc (10% max. ripple within specified voltage range); 36 mA exclusive of load	
Supply Protection Circuitry	Protected against reverse polarity and transient voltages	
Output Configuration	Bipolar; one current sourcing (PNP) and one current sinking (NPN)	
Output Rating	150 mA max. (each output)	
	Off-state leakage current: < 10 microamps	
	NPN saturation: < 200 mV at 10 mA and < 1.0V at 150 mA	PNP saturation: < 1V at 10 mA and < 2.0V at 150 mA
Output Protection Circuitry	Protected against false pulse on power-up and continuous overload or short-circuit of outputs	
Output Response Time	50 microseconds: 100 millisecond delay on power-up (outputs do not conduct)	
Repeatability	15 microseconds	
Sensing Image	Rectangular: 1.2 mm x 3.8 mm (0.05" x 0.15") at 10 mm (0.39") from face of lens; Image oriented either parallel or perpendicular to sensor length, by model (see page 1).	
Adjustments	Light/Dark Operate (LO/DO) select switch, and 15-turn switchpoint adjustment potentiometer	
Indicators	1 Amber: Output active	2 Green: Switchpoint threshold adjustment indicators
Construction	Housing: Zinc alloy die-cast housing with black painted finish and o-ring sealed lens port cap.	
	Lens: Acrylic	Lens port cap and lens holder: ABS
	Sensitivity and LO/DO adjusters: Acetal	QD: Anodized aluminum
Environmental Rating	IEC IP67; NEMA 6	
Connections	PVC-jacketed 4-conductor 2 m (6.5'); 9 m (30') attached cable; integral 4-pin Euro-style QD fitting; or 150 mm (6") pigtail with 4-pin Euro-style QD fitting. Mating QD cordsets are purchased separately.	
Operating Conditions	Temperature: -10° to 55° C (+14° to 131° F)	Storage Temperature: -20° to 80° C (-4° to 185° F)
	Maximum relative humidity: 90% at 50°C (non-condensing)	
Vibration and Shock	All models meet IEC 68-2-6 and IEC 68-2-27 testing criteria	
Application Notes	1. Do not mount the sensor directly perpendicular to shiny surfaces; position it at approximately 15 angle in relation to the sensing target.	
	2. Minimize web or product "flutter" whenever possible to maximize sensing reliability. Position sensor near a roller if possible.	
	3. The lens may be installed in either of the two lens ports. The lens port cap must be installed on the unused port for reliable operation.	

Quick-Disconnect (QD) Cordsets

Style	Model	Length	Dimensions	Pinout
4-pin Euro-style straight	MQDC-406	2 m (6.5')		Female
	MQDC-415	5 m (15')		
	MQDC-430	9 m (30')		
4-pin Euro-style Right-angle	MQDC-406RA	2 m (6.5')		1 = Brown 2 = White 3 = Blue 4 = Black
	MQDC-415RA	5 m (15')		
	MQDC-430RA	9 m (30')		

Accessory Mounting Brackets

SMB55A		SMB55F	
<ul style="list-style-type: none"> • 15° offset bracket • 12-gauge stainless steel 		<ul style="list-style-type: none"> • Flat-mount bracket • 12-gauge stainless steel 	
SMB55RA		SMB55S	
<ul style="list-style-type: none"> • Right-angle bracket • 12-gauge stainless steel 		<ul style="list-style-type: none"> • 15° offset bracket • 12-gauge stainless steel 	

Replacement Lens

Model	Description
UC-R55	Replacement lens for R58A and R58E <div style="float: right; text-align: center;"> </div>

**WARNING . . . Not To Be Used for Personnel Protection**

Never use this product as a sensing device for personnel protection. Doing so could lead to serious injury or death

This product does NOT include the self-checking redundant circuitry necessary to allow its use in personnel safety applications. A sensor failure or malfunction can cause either an energized or deenergized sensor output condition. Consult your Banner Safety Products catalog for safety products that meet OSHA, ANSI and IEC standards for personnel protection.