

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 µs 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 ± 3 mm (0.39" ± 0.12")
- Rectangular 1.2 mm x 3.8 mm (0.05" x 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 mm (0.39")	1 -	Parallel to sensor length Perpendicular to sensor length	Green	0
R58ACG1D					20 ms
R58ACR1				Red	0
R58ACR1D					20 ms
R58ACG2				Green	0
R58ACG2D				Green	
R58ACR2				Red	0
R58ACR2D			ixeu	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).

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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

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

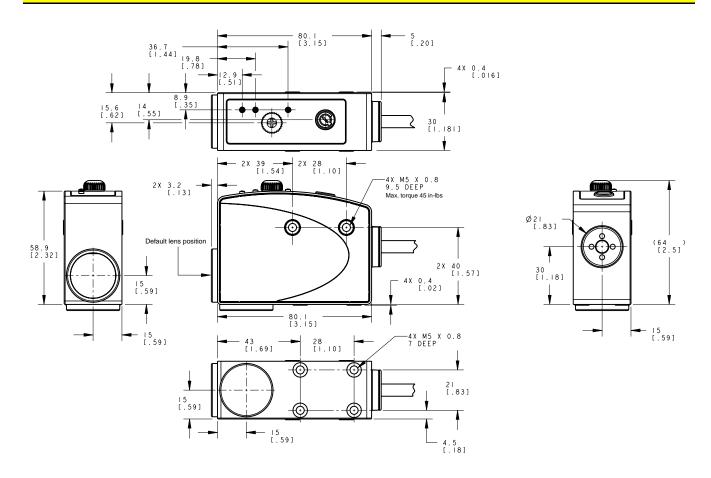
Sensor Setup

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.	

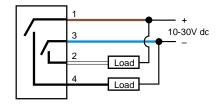
Specifications

Feature	Description			
Supply Voltage and Current	10 to 30V dc (10% max. ripple within specified voltage range); 36 mA exlusive of load			
Supply Protection Circuitry	Protected against reverse polarity and transient voltages			
Output Configuration	Bipolar; one current sourcing (PNP) and one current sinking (NPN)			
	150 mA max. (each output)			
Output Rating	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 threshhold adjustment indicators		
	Housing: Zinc alloy die-cast housing with black painted finish and o-ring sealed lens port cap.			
Construction	Lens: Acrylic	Lens port cap and lens holder: ABS		
	Sensitivity and LO/DO adjusters: Acetal	QD: Anodized aluminum		
Environmental Rating	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			
	Do not mount the sensor directly perpendicular to shiny surfaces; position it at approximately 15 angle in relation to the sensing target.			
Application Notes	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.			

Dimensions



Hookups



Wiring Key:

- 1 = Brown
- 2 = White
- 3 = Blue
- 4 = Black

Quick-Disconnect (QD) Cordsets

Style	Model	Length	Dimensions	Pinout
				Female
4-pin Euro-style straight	MQDC-406 MQDC-415 MQDC-430	2 m (6.5') 5 m (15') 9 m (30')	0 15 mm (0.6°) 44 mm max. (1.7°) M12 x 1	1 (20) 3
4-pin Euro-style Right-angle	MQDC-406RA MQDC-415RA MQDC-430RA	2 m (6.5') 5 m (15') 9 m (30')	38 mm max. (1.5°) 38 mm max. (1.5°)	1 = Brown 2 = White 3 = Blue 4 = Black

Accessory Mounting Brackets

SMB55A	SMB55F	
15° offset bracket12-gauge stainless steel	Flat-mount bracket 12-gauge stainless steel	1 1
SMB55RA	SMB55S	
Right-angle bracket12-gauge stainless steel	15° offset bracket12-gauge stainless steel	

Replacement Lens

Model	Description
UC-R55	Replacement lens for R58A and R58E



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 denergized sensor output condition. Consult your Banner Safety Products catalog for safety products that meet OSHA, ANSI and IEC standards for personnel protection.

