

R58 Expert™ Registration Mark Sensors

Sensor Configuration

The R58E is pre-set to power up in RUN mode and sense the most recently taught registration mark. The sensitivity of the R58E may be quickly optimized by using one of two available TEACH modes: Static TEACH or Dynamic TEACH.

- **Static TEACH:** Both the Output ON and Output OFF conditions are presented, and sensitivity can be adjusted manually via the push buttons.
- **Dynamic TEACH:** The registration mark is presented during actual sensing conditions, and the sensitivity can be adjusted manually via the push buttons.

Remote TEACH

The sensor may be configured either via its push buttons, or via a remote switch. Remote configuration also may be used to enter SETUP mode to set ON- and OFF-delay, and to disable the push buttons to prevent unauthorized adjustment of the configuration settings. To access this feature, connect the gray wire of the sensor to 0V dc, with a remote switch between the sensor and 0V dc.

Configuration is accomplished by following the sequence of input pulses (see following procedures). The duration of each pulse (corresponding to a push button “click”), and the period between multiple pulses, are defined as “T”:

$$0.04 \text{ seconds} \leq \text{“T”} \leq 0.8 \text{ seconds}$$

Status Indicators

LED	Indicates
Power	ON Green: RUN mode OFF: TEACH or SETUP mode
Output	ON Yellow: Output is conducting, or TEACH Output ON condition OFF: Output is not conducting, or TEACH Output OFF condition
Light Operate	ON Green: Light Operate (LO) operation
Dark Operate	ON Green: Dark Operate (DO) operation
OFF-Delay	ON Green: 30 ms pulse stretcher (OFF-delay) is active OFF: No OFF-delay
ON-Delay	ON Green: 30 ms ON-delay is active OFF: No ON-delay
8-Segment Bargraph Display	ON Red: RUN mode — Indicates signal strength with respect to the sensing threshold (switchpoint); higher segment number for higher sensing contrast TEACH mode — Indicates relative contrast SETUP mode — Displays sensing beam LED color (see Figure 5) OFF: TEACH or SETUP mode — Sensor configuration active

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Static TEACH

In Static TEACH mode, the sensor learns two sensing conditions after each is presented one time. The sensor automatically positions the switchpoint midway between the two conditions. See Figure 3.

NOTE: The sensor will return to RUN mode if either TEACH condition is not registered within 60 seconds. TEACH mode may be cancelled by pressing and holding the Static push button for ≥ 2 seconds. In either case, the sensor will revert to the previous conditions taught (i.e., exit without save).

Static TEACH and Manual Adjust

Sensitivity may be adjusted at any time when the sensor is in RUN mode by clicking the “+” and “-” buttons. Each click translates to 1/2 segment on the signal strength bargraph display. For best sensing reliability, both sensing conditions should register equally distant from the switchpoint on the signal strength bargraph display.

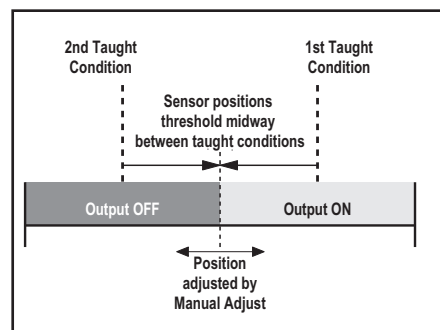
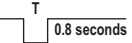


Figure 2. Static TEACH (Light Operate shown)

	Procedure		Result
	Push Button 0.04 sec. $\leq$ “click” $\leq$ 0.8 sec.	Remote Line 0.04 sec. $\leq$ “T” $\leq$ 0.8 sec.	
Access TEACH Mode	Push and hold the Static push button for > 2 seconds. 	No action required; sensor is ready for the 1st sensing condition.	(push button only) LO and DO: Alternately flash Green Output: ON Yellow (indicating ready to teach 1st sensing condition) Bargraph display: Goes OFF
Teach 1st Sensing Condition	- Present the 1st sensing condition. “Click” the Static push button. 	- Present the 1st sensing condition. - Single-pulse the remote line. - Wait at least 0.8 seconds. 	LO and DO: Alternately flash Green Output: OFF (indicating ready to teach 2nd sensing condition) Bargraph display: Remains OFF
Teach 2nd Sensing Condition	- Present the 2nd sensing condition. “Click” the Static push button. 	- Present the 2nd sensing condition. - Single-pulse the remote line. 	Teach Accepted - Bargraph display flashes one segment for three seconds to indicate relative contrast (see contrast table on page 5). - Sensor enters RUN mode.
			Teach Unacceptable - Pairs of bargraph display segments flash for three seconds to indicate low contrast. - Sensor returns to TEACH 1st sensing condition.