



T30

DC-Operated Long-Range with Superior Durability

Epoxy-encapsulated sensors provide reliable sensing without adjustments.

- Features 30 mm plastic threaded barrel
- Available in opposed, retroreflective and fixed-field modes
- Designed for use in harsh sensing environments
- Advanced diagnostics warn of marginal sensing conditions or output overload
- Cordsets and brackets see page 178

Opposed T30, 10-30 V DC

→ Infrared LED

Sensing Mode	Range	Connection	Models NPN	Models PNP
 OPPOSED	60 m	2 m	T306E Emitter	
		4-Pin Euro QD	T306EQ Emitter	
		2 m	T30SN6R	T30SP6R
		4-Pin Euro QD	T30SN6RQ	T30SP6RQ

Polar Retro T30, 10-30 V DC

→ Visible Red LED

Sensing Mode	Range	Connection	Models NPN	Models PNP
 POLAR RETRO	6 m†	2 m	T30SN6LP	T30SP6LP
		4-Pin Euro QD	T30SN6LPQ	T30SP6LPQ

Fixed-Field T30, 10-30 V DC

→ Infrared LED

Sensing Mode	Range	Connection	Models NPN	Models PNP
 FIXED-FIELD	0 - 200 mm Cutoff	2 m	T30SN6FF200	T30SP6FF200
		4-Pin Euro QD	T30SN6FF200Q	T30SP6FF200Q
	0 - 400 mm Cutoff	2 m	T30SN6FF400	T30SP6FF400
		4-Pin Euro QD	T30SN6FF400Q	T30SP6FF400Q
	0 - 600 mm Cutoff	2 m	T30SN6FF600	T30SP6FF600
		4-Pin Euro QD	T30SN6FF600Q	T30SP6FF600Q

For more specifications see page 179.



Connection options: A model with a QD requires a mating cordset (see page 178).

For 9 m cable, add suffix **W/30** to the 2 m model number (example, **T30SN6LP W/30**).

† Retroreflective range is specified using a BRT-3 retroreflector.

Actual sensing range may differ, depending on the efficiency and reflective area of the retroreflector used. See Accessories for more information.



T30 AC

AC-Operated Long-Range with Superior Durability

Epoxy-encapsulated sensors provide reliable sensing without adjustments.

- Features 30 mm plastic threaded barrel
- Available in opposed, retroreflective and fixed-field modes
- Designed for use in harsh sensing environments
- Uses innovative dual-indicator system to reduce complexity of monitoring sensor performance
- Cordsets and brackets see page 178

Opposed T30, 20-250 V AC

→ Infrared LED

Sensing Mode	Range	Connection	Models LO	Models DO
 OPPOSED	60 m	2 m	T303E Emitter	
		4-Pin Micro QD	T303EQ1 Emitter	
		2 m	T30AW3R	T30RW3R
		4-Pin Micro QD	T30AW3RQ1	T30RW3RQ1

Polar Retro T30, 20-250 V AC

→ Visible Red LED

Sensing Mode	Range	Connection	Models LO	Models DO
 POLAR RETRO	6 m†	2 m	T30AW3LP	T30RW3LP
		4-Pin Micro QD	T30AW3LPQ1	T30RW3LPQ1

Fixed-Field T30, 20-250 V AC













→ Infrared LED


Sensing Mode	Range	Connection	Models LO	Models DO
 FIXED-FIELD	0 - 200 mm Cutoff	2 m	T30AW3FF200	T30RW3FF200
		4-Pin Micro QD	T30AW3FF200Q1	T30RW3FF200Q1
	0 - 400 mm Cutoff	2 m	T30AW3FF400	T30RW3FF400
		4-Pin Micro QD	T30AW3FF400Q1	T30RW3FF400Q1
	0 - 600 mm Cutoff	2 m	T30AW3FF600	T30RW3FF600
		4-Pin Micro QD	T30AW3FF600Q1	T30RW3FF600Q1

For more specifications see page 180.





Connection options: A model with a QD requires a mating cordset (see page 178). For 9 m cable, add suffix W/30 to the 2 m model number (example, T30AW3LP W/30). † Retroreflective range is specified using a BRT-3 retroreflector. Actual sensing range may differ, depending on the efficiency and reflective area of the retroreflector used. See Accessories for more information.


Cordsets

Euro QD (for Q models)				Micro QD (for Q1 models)			
See page 906				See page 919			
Length	Threaded 4-Pin			Length	Threaded 4-Pin		
	Straight	Right-Angle			Straight	Right-Angle	
1.83 m	 MQDC-406	 MQDC-406RA		1.83 m	 MQAC-406	 MQAC-406RA	
4.57 m	 MQDC-415	 MQDC-415RA		4.57 m	 MQAC-415	 MQAC-415RA	
9.14 m	 MQDC-430	 MQDC-430RA		9.14 m	 MQAC-430	 MQAC-430RA	

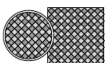

 Additional cordset information available.
See page 902.

Brackets

T30			
See page 866	See page 869	See page 869	See page 870
SMB1815SF	SMB30A	SMB30FA..	SMBAMS30P
			

 Additional brackets and information available.
See page 866.



Other Accessories

Reflectors	Apertures
See page 940	See page 966
	





Opposed, Polarized Retroreflective and
Fixed-field Models
Suffix E, R, LP and FF

T30 DC Specifications

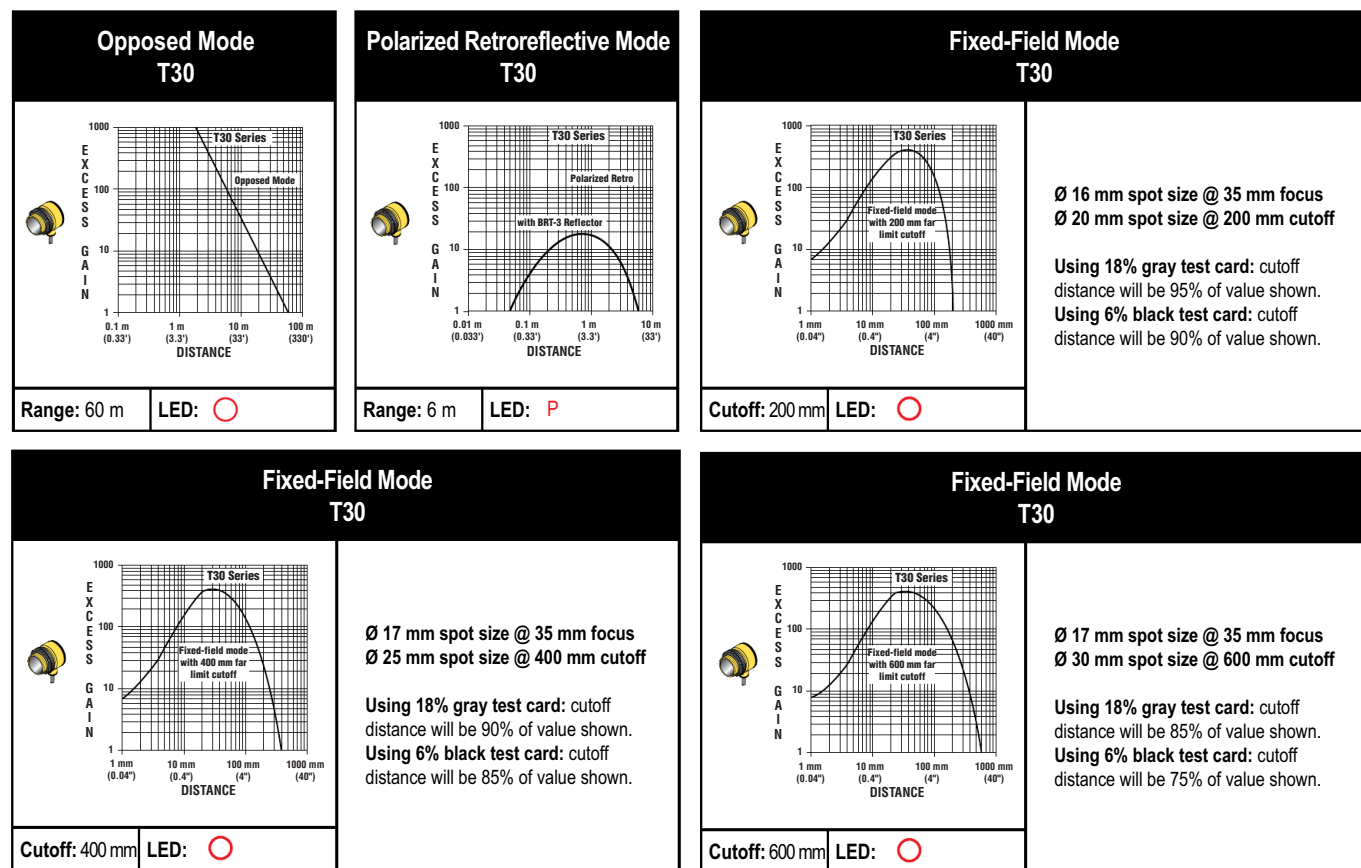
Supply Voltage and Current	10 to 30 V dc (10% max. ripple); Supply current (exclusive of load current): Opposed Emitters: 25 mA Opposed Receivers: 20 mA Polarized Retroreflective: 30 mA Fixed-Field: 35 mA
Supply Protection Circuitry	Protected against reverse polarity and transient voltages
Output Configuration	Solid-state dc switch; three-wire hookup; choose Light Operate (LO) or Dark Operate (DO) models Light Operate: Output conducts when the sensor sees its own (or the emitter's) modulated light Dark Operate: Output conducts when sensor sees dark
Output Rating	150 mA max. (each) in standard hookup; When wired for alarm output, the total load may not exceed 150 mA OFF-state leakage current: less than 1 μ A at 30 V dc ON-state saturation voltage: less than 1 V at 10 mA dc; less than 1.5 V at 150 mA dc
Output Protection Circuitry	Protected against false pulse on power-up and continuous overload or short circuit of outputs
Output Response Time	Opposed: 3 milliseconds ON; 1.5 milliseconds OFF Polarized Retroreflective and Fixed-Field: 3 milliseconds ON/OFF
Delay at Power-up	100 milliseconds; outputs are non-conducting during this time
Repeatability	Opposed: 375 microseconds Polarized Retroreflective and Fixed-Field: 750 microseconds Repeatability and response are independent of signal strength.
Indicators	Two LEDs: Solid Green: Power ON Flashing Green: output overload Solid Yellow: Light operate (LO) output energized Flashing Yellow: marginal excess gain
Construction	Housings are thermoplastic polyester. Lenses are polycarbonate or acrylic; one jam nut included.
Environmental Rating	Leakproof design rated NEMA 6P, IP67. QD models rated IP69K per DIN 40050-9.
Connections	2 m or 9 m attached cable, or 4-pin Euro-style quick-disconnect fitting. QD cordsets are ordered separately. See page 178.
Operating Conditions	Temperature: -40° to +70° C Relative humidity: 90% at 50° C (non-condensing)
Vibration and Mechanical Shock	All models meet Mil. Std. 202F requirements. Method 201A (Vibration; frequency 10 to 60 Hz, max., double amplitude 0.06-inch acceleration 10G). Method 213B conditions H&I (Shock: 75G with unit operating; 100G for non-operation)
Certifications	  ECOLAB® chemical compatibility pending on some models; contact Banner Engineering for details

T30 AC Specifications

Supply Voltage and Current	20 to 250 V ac (50/60 Hz). Average current: 20 mA Peak current: 200 mA at 20 V ac, 500 mA at 120 V ac, 750 mA at 250 V ac
Supply Protection Circuitry	Protected against transient voltages
Output Configuration	Solid-state ac switch; three-wire hookup; choose Light Operate (LO) or Dark Operate (DO) models Light Operate: Output conducts when the sensor sees its own (or the emitter's) modulated light Dark Operate: Output conducts when sensor sees dark
Output Rating	300 mA max. (continuous) Fixed-Field: derate 5 mA/° C above +50° C Inrush capability: 1 amp for 20 milliseconds, non-repetitive OFF-state leakage current: less than 100 µA ON-state voltage drop: 3 V at 300 mA ac; 2 V at 15 mA ac
Output Protection Circuitry	Protected against false pulse on power-up
Output Response Time	Opposed: 16 milliseconds ON; 8 milliseconds OFF Polarized Retroreflective and Fixed-Field: 16 milliseconds ON/OFF
Delay at Power-up	100 milliseconds
Repeatability	Opposed: 2 milliseconds Polarized Retroreflective and Fixed-Field: 4 milliseconds Repeatability and response are independent of signal strength
Indicators	Two LEDs: Solid Green: Power ON Solid Yellow: Light sensed Flashing Yellow: marginal excess gain
Construction	Housings are thermoplastic polyester. Lenses are polycarbonate or acrylic; one jam nut included.
Environmental Rating	Leakproof design rated NEMA 6P, IP67. QD models rated IP69K per DIN 40050-9.
Connections	2 m or 9 m attached cable, or 4-pin Micro-style quick-disconnect fitting. QD cordsets are ordered separately. See page 178.
Operating Conditions	Temperature: -40° to +70° C Relative humidity: 90% at 50° C (non-condensing)
Vibration and Mechanical Shock	All models meet Mil. Std. 202F requirements. Method 201A (Vibration; frequency 10 to 60 Hz, max, double amplitude 0.06-inch acceleration 10G). Method 213B conditions H&I (Shock: 75G with unit operating; 100G for non-operation)
Certifications	 

Excess Gain Curves (Fixed-Field mode performance based on 90% reflectance white test card)

○ = Infrared LED P = Visible Red LED Polarized



Beam Patterns

○ = Infrared LED P = Visible Red LED Polarized

