RIGHT ANGLE



Infrared LED

Visible Red LED

Infrared LED



Q40 DC-Operated Long-Range Sensors

The Q40 Standard operates on DC voltage and offers long-range sensing with a 30 mm base.

- · Reliable sensing without adjustments
- · Completely epoxy-encapsulated for superior durability
- · Long-range sensing in harsh environments
- · Available in opposed, retroreflective and fixed-field modes
- Cordsets and brackets see page 112

Opposed Q40, 10-30 V DC

Connection Models NPN Sensing Mode Range Models PNP Q406E Emitter 2 m 4-Pin Euro QD Q406EQ Emitter 60 m 2 m Q40SN6R Q40SP6R 4-Pin Euro QD Q40SN6RQ Q40SP6RQ

Polar Retro Q40, 10-30 V DC

Sensing Mode	Range	Connection	Models NPN	Models PNP
P P P P P P P P P P P P P P P P P P P	6 mt	2 m	Q40SN6LP	Q40SP6LP
	0 m	4-Pin Euro QD	Q40SN6LPQ	Q40SP6LPQ

Fixed-Field Q40, 10-30 V DC

Sensing Mode	Range	Connection	Models NPN	Models PNP
Fixed-Field	0 - 200 mm Cutoff 0 - 400 mm Cutoff 0 - 600 mm	2 m	Q40SN6FF200	Q40SP6FF200
		4-Pin Euro QD	Q40SN6FF200Q	Q40SP6FF200Q
		2 m	Q40SN6FF400	Q40SP6FF400
		4-Pin Euro QD	Q40SN6FF400Q	Q40SP6FF400Q
		2 m	Q40SN6FF600	Q40SP6FF600
	Cutoff	4-Pin Euro QD	Q40SN6FF600Q	Q40SP6FF600Q

For more specifications see page 113.

Connection options: A model with a QD requires a mating cordset (see page 112).

For 9 m cable, add suffix W/30 to the 2 m model number (example, Q40SN6R 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.







Q40 AC AC-Operated Long-Range Sensors

The Q40 Standard operates on AC voltage and offers long-range sensing with a bigger base.

- · Reliable sensing without adjustments
- · Completely epoxy-encapsulated for superior durability
- Long-range sensing in harsh environments
- · Available in opposed, retroreflective and fixed-field modes
- · Cordsets and brackets see page 112

Opposed Q40, 20-250 V AC				
Sensing Mode	Range	Connection	Models LO	Models DO
OPPOSED	60 m	2 m	Q403E Emitter	
		4-Pin Micro QD	Q403EQ1 Emitter	
		2 m	Q40AW3R	Q40RW3R
		4-Pin Micro QD	Q40AW3RQ1	Q40RW3RQ1

Polar Retro Q40, 20-250 V AC

Polar Retro Q40,	20-250 V AC			Hisible Re	d LED
Sensing Mode	Range	Connection	Models LO	Models DO	
P P P P P P P P P P P P P P P P P P P	6 mt	2 m	Q40AW3LP	Q40RW3LP	
	0 111	4-Pin Micro QD	Q40AW3LPQ1	Q40RW3LPQ1	

Fixed-Field Q40, 20-250 V AC

				1
Sensing Mode	Range	Connection	Models LO	Models DO
FIXED-FIELD	0 - 200 mm Cutoff	2 m	Q40AW3FF200	Q40RW3FF200
		4-Pin Micro QD	Q40AW3FF200Q1	Q40RW3FF200Q1
	0 - 400 mm Cutoff	2 m	Q40AW3FF400	Q40RW3FF400
		4-Pin Micro QD	Q40AW3FF400Q1	Q40RW3FF400Q1
	0 - 600 mm Cutoff	2 m	Q40AW3FF600	Q40RW3FF600
		4-Pin Micro QD	Q40AW3FF600Q1	Q40RW3FF600Q1

For more specifications see page 114.

Connection options: A model with a QD requires a mating cordset (see page 112).

For 9 m cable, add suffix W/30 to the 2 m model number (example, Q40SN6R 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.

Infrared LED

PHOTOELECTRIC

FEATURED



RIGHT ANGLE

BARREL

Cordsets



Micro QD (for Q1 models)					
	See page 919				
	Threaded 4-Pin				
Length	5	Straight	Ri	ght-Angle	
1.83 m		MQAC-406	000	MQAC-406RA	
4.57 m	H	MQAC-415	Ţ	MQAC-415RA	
9.14 m	Ĭ	MQAC-430		MQAC-430RA	

Brackets

	Q	25	
See page 872	See page 872	See page 873	See page 873
SMB30A	SMB30FA	SMB30SC	SMBAMS30P
			69
Additional brackets and information available. See page 852.			

Other Accessories





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

112



Q40 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 complementary; choose NPN (current sinking) or PNP (current sourcing) models The Dark Operate (DO) output may be wired as a normally open marginal signal alarm output, depending upon hookup to the power supply		
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 Strength		
Indicators	Two LEDs: Green and Yellow Solid Green: Power ON Solid Yellow: Light Operate (LO) output energized See datasheet for detailed information Flashing Green: Output over loaded 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 112.		
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	CE . COLAB® chemical compatibility pending on some models; contact Banner Engineering for details		

PHOTOELECTRIC

FEATURED

RECTANGLE

RIGHT ANGLE

BARREL

Q40 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: magrinal excess gain See datasheet for detailed information		
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 112.		
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	CE . CCLAB® chemical compatibility pending on some models; contact Banner Engineering for details		



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

O = Infrared LED P = Visible Red LED Polarized



Beam Patterns

