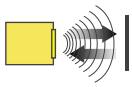
more sensors, more solutions

U-GAGE™ S18U Series Sensors with Discrete Output

18 mm Ultrasonic Sensors with TEACH-Mode programming

Features

- Fast, easy-to-use TEACH-Mode programming; no potentiometer adjustments
- Short dead zone
- One NPN and one PNP output
- Two bi-colored status LEDs
- Rugged encapsulated design for harsh environments
- Choose 2 meter or 9 meter unterminated cable, or 5-pin Euro-style QD connector
- Wide operating range of -20° to +60°C (-13° to +140°F)
- Choose either straight or right-angle housing
- Temperature compensation
- Configurable for normally open or normally closed operation
- Fast response time (5 milliseconds)



Ultrasonic

Models

Model Number	Sensing Range	Cable*	Supply Voltage	Output	Housing Configuration
S18UBA	30 to 300 mm (1.2" to 11.8")	5-wire, 2 m (6.5') cable	10 to 30V dc	Bipolar NPN/PNP	Straight
S18UBAQ		5-pin Euro-style QD			
S18UBAR		5-wire, 2 m (6.5') cable			Right-Angle
S18UBARQ		5-pin Euro-style QD			

* 9 m cables are available by adding suffix "**W/30**" to the model number of any cabled sensor (e.g., **S18UBA W/30**).
A model with a QD connector requires a mating cable; see page 10.

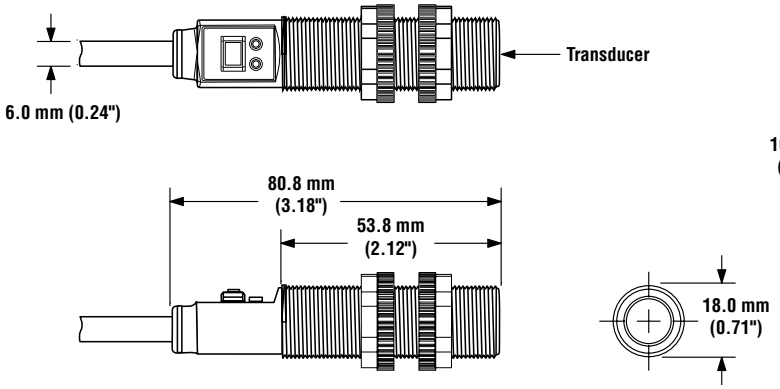
Specifications

Sensing Range	30 to 300 mm (1.2" to 11.8")	
Supply Voltage	10 to 30V dc (10% maximum ripple); 65 mA max. (exclusive of load), 40 mA typical @ 25V input	
Ultrasonic Frequency	300 kHz, rep. rate 2.5 ms	
Supply Protection Circuitry	Protected against reverse polarity and transient voltages	
Output Configuration	SPST solid-state switch conducts when target is sensed within sensing window; one NPN (current sinking) and one PNP (current sourcing) output in each model.	
Output Protection	Protected against short circuit conditions	
Output Ratings	100 mA maximum **OFF-state leakage current:** < 5 microamps **NPN saturation:** < 200 mV @ 10 mA and < 600 mV @ 100 mA **PNP saturation:** < 1.2V @ 10 mA and < 1.6V @ 100 mA	
Output Response Time	5 milliseconds	
Delay at Power-Up	300 milliseconds	
Temperature Effect	0.02% of distance/ °C	
Repeatability	0.5 mm	
Minimum Window Size	5 mm	
Hysteresis	0.7 mm	
Adjustments	**Sensing window limits:** TEACH-Mode programming of near and far window limits may be set using the push button or remotely via TEACH input (see page 3).	
Indicators	**Range Indicator (Red/Green)**	**Green** — Target is within sensing range **Red** — Target is outside sensing range **OFF** — Sensing power is OFF
	Teach/Output Indicator (Yellow/Red)	**Yellow** — Target is within taught limits **OFF** — Target is outside taught window limits **Red** — Sensor is in TEACH mode
Remote TEACH Input	**Impedance:** 12 kΩ	
Construction	**Threaded Barrel:** Thermoplastic polyester **Push Button:** Santoprene	**Push Button Housing:** ABS/PC **Lightpipes:** Acrylic
Operating Conditions	**Temperature:** -20° to +60° C (-4° to +140° F) **Maximum relative humidity:** 100%	
Connections	2 m (6.5') or 9 m (30') shielded 5-conductor (with drain) PVC jacketed attached cable or 5-pin Euro-style quick-disconnect (see page 10 for quick-disconnect cable options)	
Environmental Rating	Leakproof design is rated IEC IP67; NEMA 6P	
Vibration and Mechanical Shock	All models meet Mil. Std. 202F requirements method 201A (vibration: 10 to 60Hz max., double amplitude 0.06", maximum acceleration 10G). Also meets IEC 947-5-2 requirements: 30G 11 ms duration, half sine wave.	
Temperature Warmup Drift	Less than 1.7% of sensing distance upon power-up (see Temperature Compensation, page 2)	
Application Notes	Objects passing inside the specified near limit may produce a false response.	
Certifications	CE c UL us	

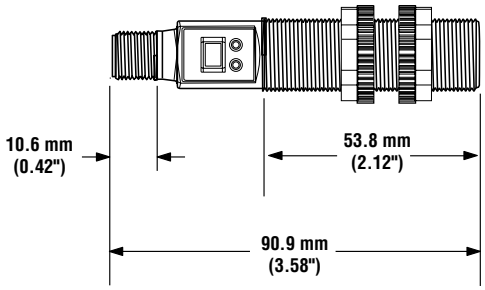
Dimensions

Straight Housing

Cabled Models

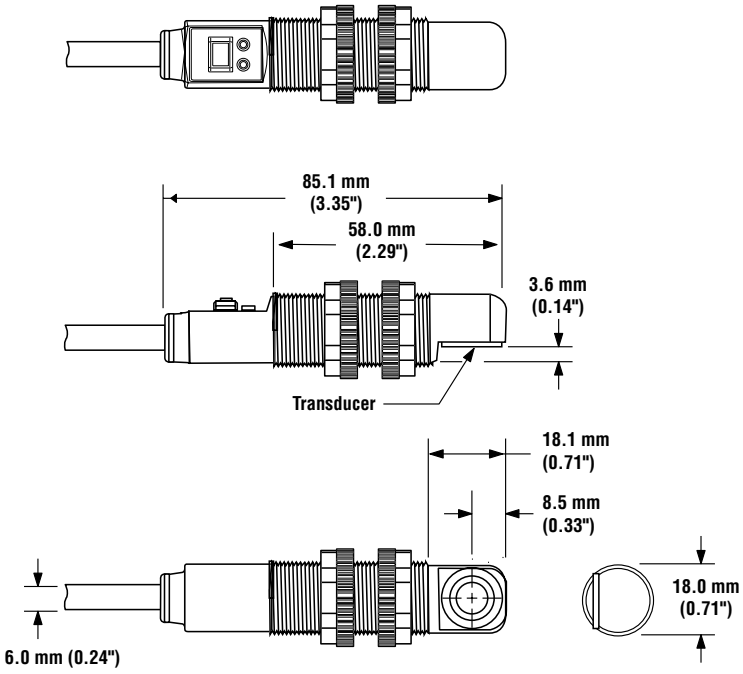


QD Models



Right-Angle Housing

Cabled Models



QD Models