T18U Series

Opposed Dual-Range Ultrasonic Sensors

- T-style right-angle sensor package with an 18 mm threaded mounting hub, for versatile mounting
- Response time of 1 millisecond and ranges up to 600 mm suitable for high-speed applications such as counting
- Offers high immunity to electrical and acoustic noise
- Includes signal strength indicator to make alignment easy
- Ideal for small object and clear object detection

T18U

Range†	Connection	Response Time	Models NPN*	Models PNP*
NORMAL resolution: 600 mm **HIGH resolution:** 300 mm	2 m 4-pin Euro QD	**NORMAL resolution:** 2 ms **HIGH resolution:** 1 ms	**T186UE Emitter** **T186UEQ Emitter**	
NORMAL resolution: 600 mm **HIGH resolution:** 300 mm	2 m 4-pin Euro QD	**NORMAL resolution:** 2 ms **HIGH resolution:** 1 ms	**T18VN6UR** **T18VN6URQ**	**T18VP6UR** **T18VP6URQ**

Connection options: A model with a QD requires a mating cordset.

For 9 m cable, add suffix **W/30** to the 2 m model number (example, **T18VN6UR W/30**).
† Receivers may be wired for either resolutions: Normal or High.
* Sensor pair requires one emitter and one receiver.

4-Pin

Euro-Style
Straight connector models listed; for right-angle, add **RA** to the end of the model number (example, **MQDC-406RA**)

MQDC-406
2 m (6.5')
MQDC-415
5 m (15')
MQDC-430
9 m (30')

Additional cordset information is available
See page 758

SMB18A

SMB18FA..

SMB1815SF

Additional bracket information is available
See page 723

Ultrasonic Wave Guides

Inside Diameter	Model
5.0 mm	**UWG18-5.0**
6.4 mm	**UWG18-6.4**

Additional wave guide information is available
See page 959

T18U Specifications

Sensing Range (no minimum range)	**NORMAL resolution mode:** to 600 mm **HIGH resolution mode:** to 300 mm
Supply Voltage and Current	12 to 30 V dc, 10% max. ac ripple 50 mA (emitters); 35 mA (receivers), exclusive of output load
Ultrasonic Frequency	230 kHz
Minimum spacing (adjacent pairs)	50 mm for emitter-to-receiver separations of up to 150 mm Add 10 mm of adjacent-pair spacing for every 100 mm of emitter-to-receiver spacing beyond 150 mm
Receiver Output Configuration	**T18VN models:** NPN sinking, NO and NC (complementary) **T18VP models:** PNP sourcing, NO and NC (complementary)
Receiver Output Rating	150 mA max. each output at 25 °C, derated to 100 mA at 70 °C (derate ≈ 1 mA per °C) Both outputs may be used simultaneously. **ON-state saturation voltage:** less than 1.5 V at 10 mA; less than 2.0 V at 150 mA **OFF-state leakage current:** less than 1 µA at 30 V dc **Output protection:** Overload and short-circuit protected. **No false pulse upon receiver power-up:** false pulse protection causes a 100 millisecond delay upon power-up.
Output Response Time	**NORMAL resolution mode:** 2 milliseconds ON/OFF **HIGH resolution mode:** 1 millisecond ON/OFF
Rep Rate	**NORMAL resolution mode:** 125 Hz max. **HIGH resolution mode:** 200 Hz max.
Mechanical Sensing Repeatability at 300 mm range	**NORMAL resolution mode:** less than 2 mm **HIGH resolution mode:** less than 1 mm
Beam Angle (-3dB full angle)	15 ± 2°
Indicators	Emitters have a green LED for dc power ON. Receivers have two LEDs, one yellow and one green **Solid Green:** power ON **Flashing Green:** output overloaded **Yellow:** sonic signal received (flash rate is proportional to received signal strength; flash is from full to half intensity) See data sheet for detailed information
Construction	T-style yellow PBT polyester housing with black PBT polyester back cover. Transducer housing is threaded M18 x 1. Mating jam nut is supplied for mounting. Acoustic face is epoxy reinforced. Circuitry is epoxy-encapsulated.
Environmental Rating	IEC IP67; NEMA 6P
Operating Temperature	-40 to +70 °C
Vibration and Mechanical Shock	All models meet Mil.Std 202F requirements method 201A (Vibration: frequency 10 to 60 Hz, max., and double amplitude 0.06", maximum acceleration 10G) and method 213B conditions H&I (Shock: 75G with unit operation; 100G for non-operation). Also meets IEC 947-5-2 requirements: 30G, 11 milliseconds duration, half sine wave.
Certifications	CE