

# U-GAGE M25U Ultrasonic Sensors

## Product Specifications

<b>Sensing Range</b>	<b>Normal Speed:</b> 500 mm (19.7 in.) <b>High Speed:</b> 250 mm (9.8 in.) <b>140KHz:</b>
<b>Supply Voltage and Current</b>	<b>Emitter:</b> 10 to 30V dc (10% max. ripple) at less than 85 mA <b>Receiver:</b> 10 to 30V dc (10% max. ripple) at less than 38 mA (exclusive of load)
<b>Supply Protection Circuitry</b>	Protected against reverse polarity and transient voltages
<b>Receiver Output Configuration</b>	Bipolar (1 NPN & 1 PNP) solid-state output;  Normally Closed (output is activated when an object blocks the sensing beam)
<b>Output Rating</b>	100 mA (each output) with short circuit protection <b>OFF-state leakage current NPN:</b> < 200 $\mu$ A sinking <b>OFF-state leakage current PNP:</b> < 10 $\mu$ A sourcing <b>ON-state saturation voltage NPN:</b> < 1.6V @ 100 mA <b>ON-state saturation voltage PNP:</b> < 3.0V @ 100 mA
<b>Output Protection Circuitry</b>	Protected against short circuit conditions
<b>Output Response Time</b>	<b>Normal Speed:</b> 4.0 milliseconds <b>High Speed:</b> 3.0 milliseconds
<b>Repeatability</b>	1 millisecond
<b>Delay at Power-up</b>	< 250 milliseconds
<b>Delay for Switching Between Normal and High Speed</b>	20 milliseconds
<b>Indicators</b>	<b>Green Power LED:</b> indicates Power ON <b>Amber Output LED:</b> indicates output activated
<b>Construction</b>	<b>Housing:</b> 316 Stainless Steel <b>LED window:</b> Polysulfone
<b>Connections</b>	<b>Emitter:</b> 4-pin Euro-Style QD <b>Receiver:</b> 5-pin Euro-Style QD
<b>Environmental Rating</b>	Leakproof design, rated IEC IP67 (NEMA 6), IP69K
<b>Operating Conditions</b>	<b>Temperature:</b> -20° to +70°C (-4° to +158° F) <b>Max. Relative Humidity:</b> 95% at 50°C non-condensing
<b>Vibration and</b>	All models meet Mil. Std. 202F requirements method 201A (vibration:

<b>Mechanical Shock</b>	10 to 60 Hz max. amplitude 0.06 in., max. acceleration 10G). Also meets IEC 947-5-2; 30G 11 ms duration.
<b>Certifications</b>	CE pending
<b>Notes</b>	<p>1. NPN &lt; 200 <math>\mu</math>A for load impedance &gt; 3 K<math>\Omega</math>; for load current of 100 mA, leakage &lt; 1% of load current</p> <p>2. When mounting the M25U, care should be taken to acoustically isolate the emitter and receiver to eliminate sound energy coupling between the sensor pair. This is best accomplished with elastomeric materials between the sensor and rigid mounting brackets.</p>