



The ACEINNA MTLT110S-R series is a static tilt sensor with programmable tilt threshold alarm and RS232 Interface. The MTLT110S-R integrates highly reliable MEMS inertial sensors, microprocessor, and algorithms to compute tilt angles under static conditions to achieve a 1° accuracy over a broad range of operating environments. The MTLT110S-R also includes a programmable tilt alarm for tilt safety applications. It can be programmed to be triggered to go active high when the tilt exceeds a specified threshold. The tilt alarm can be used to lock out controls or trigger an alarm or warning light. It is an all-in-one tilt safety solution eliminating the need for an external microprocessor to interpret tilt angles. The MTLT110S-R also includes a standard RS232 communication port to digitally sample the real-time angles. MTLT110S-R is available in a fully enclosed IP67 plastic enclosure.

# MTLT110S-R

Static Tilt Sensor Module



## Applications

- Construction (boom tilt measurement)
- Safety control systems for static Forklifts and Aerial Lifts
- Equipment lockout for unsafe tilted environments
- Platform Leveling
- Robotics Control



Tilt Safety



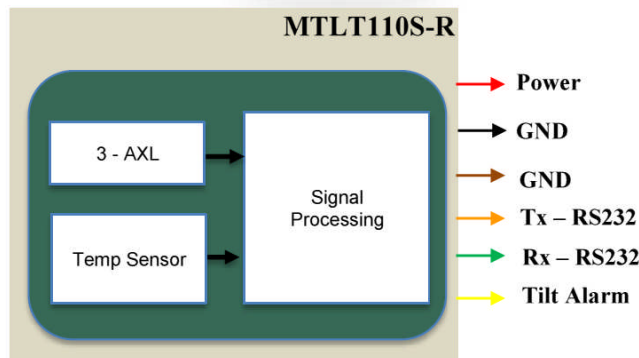
Aerial Lift Safety



Platform Leveling

## Features

- High Performance 3 axis MEMS Sensors
- 1° accuracy in static conditions
- Programmable Tilt Alarm
- RS232 Interface
- Miniature IP67 enclosure (54 x 40 x 15 mm)
- Wide Temp Range, -40C to +70C
- High Reliability, MTBF > 50k hours
- ITAR- Free





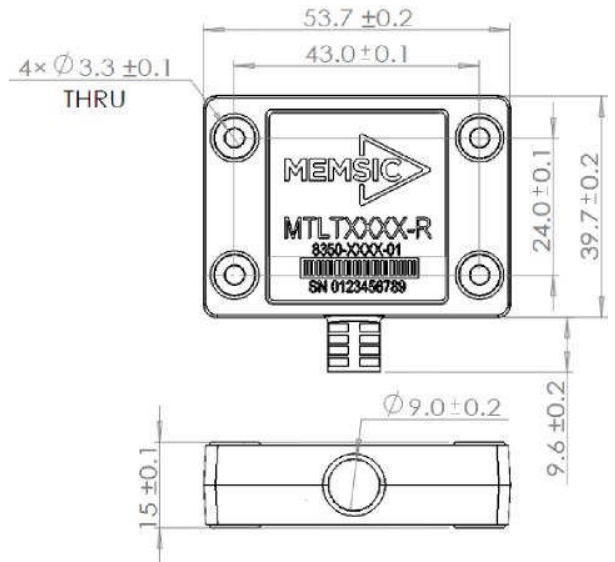
# MTLT110S-R

Static Tilt Sensor Module

## Performance Characteristics

Ta = 25°C, VDC = 15.0V, unless otherwise stated

Sensor Performance	
Axes	Pitch, Roll
Range	±90°, ±180°
Resolution	0.05°
Static Accuracy <sup>1</sup>	1.0°
Programmable Tilt Alarm	
Vout (V)	3.3
Bandwidth(Hz)	5 - 50 (User Configurable)
Electrical	
Input Voltage (V)	9 to 32
Power Consumption (mW)	< 400
Interface	RS232
Environment	
Operating Temperature (°C)	-40 °C to 70°C
Non-Operating Temperature (°C)	-55 °C to 85
Physical	
Enclosure	Plastic
Size (mm)	54 x 40 x 15
Protection Class	IP67



\* All dimensions in mm

## Tools and Support

NAV-VIEW provides an easy to use graphical interface to display, record, playback, and analyze all of the MTLT110S-R parameters.

NAV-VIEW can also be used to set a wide range of user-configurable fields in the MTLT110S-R to optimize the system performance for highly dynamic applications.

NAV-VIEW software is available for download from ACEINNA's website at: [www.aceinna.com/support](http://www.aceinna.com/support)

## Pin Out Description

Pin Number	Flying Lead Color	Pin Description
1	Red	Power
2	Black	GND
3	Brown	GND
4	Orange	RS232 Tx
5	Green	RS232 Rx
6	Yellow	Tilt Alarm

## Part Ordering Information

MTLT110S-R	1° High Performance Static Tilt Sensor Module
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<sup>1</sup> RMS Error