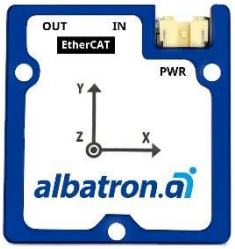
TALO-M1000

NeuronEDGE Inertia Sensor Module, MEMS-based IMU/VRU with EtherCAT

Preliminary



Features

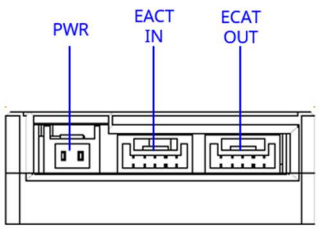
- Integrates 3-axis accelerometer and 3-axis gyroscope MEMS sensors for reliable motion sensing
- Features an adaptive Extended Kalman Filter (EKF) fusion algorithm with data output rates up to 1 kHz for high-performance robotic control
- Delivers exceptional ±0.15° pitch/roll accuracy for high-precision robotic motion
- Quaternion-based orientation fusion enhances robot stability and improves real-time control during dynamic motion
- Offers superior dynamic tracking performance with highly effective vibration suppression for stable robotic motion
- Supports EtherCAT In/Out for seamless daisy-chain connectivity across robotic modules
- Supports a wide 9–36 VDC power input range
- Supports a wide operating temperature range of –40 °C to 85 °C

Specifications

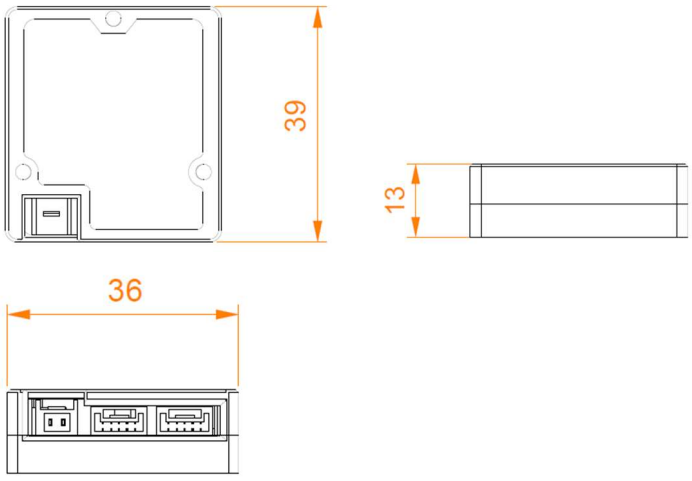
Sensor	
Standard Full Range	Gyroscope: ± 2000 °/s Accelerometer: ± 12g
In-run Bias Stability	Gyroscope: 5° /h Accelerometer: 35ug
Bandwidth (3dB)	Gyroscope: Up to 200 Hz Accelerometer: Up to 200 Hz
Noise Density	Gyroscope: 0.01° /s/ √Hz Accelerometer: 90ug / √Hz
g-sensitivity	Gyroscope: 0.1° /s/g Accelerometer: N/A
Non-linearity	Gyroscope: 0.1% Accelerometer: 0.1%
Sensor Fusion Accuracy	
Pitch / Roll	0.15°
Heading (VRU, Vertical Reference Unit)	0.3°
Quaternion	Support
Bring-up Time	1s

Mechanical	
Dimensions	39 x 36 x 13 mm (1.53” x 1.41” x 0.51”)
Weight	25g (0.055lb)
Environment	
Input Voltage	9 to 36V DC
Typical Power Consumption	1.2W
Interface	2x Ethernet with lock connector
Protocol	EtherCAT Slave
Output Frequency	1KHz
Assembly Screws	M2.5
Operating Temperature	-40°C to 85°C (-40°F to 185°F)
Storage Temperature	-40°C to 85°C (-40°F to 185°F)
Casing Material	Aluminum
Certifications	FCC, CE

I/O Interface



Dimensions



Ordering Information

Model Name	Description
TALO-M1000	NeuronEDGE inertial sensor, MEMS-based IMU/VRU with EtherCAT

Accessories

Others	
PWR Cable	Power cable, 30 cm
ECAT Cable	EtherCAT cable, 30 cm