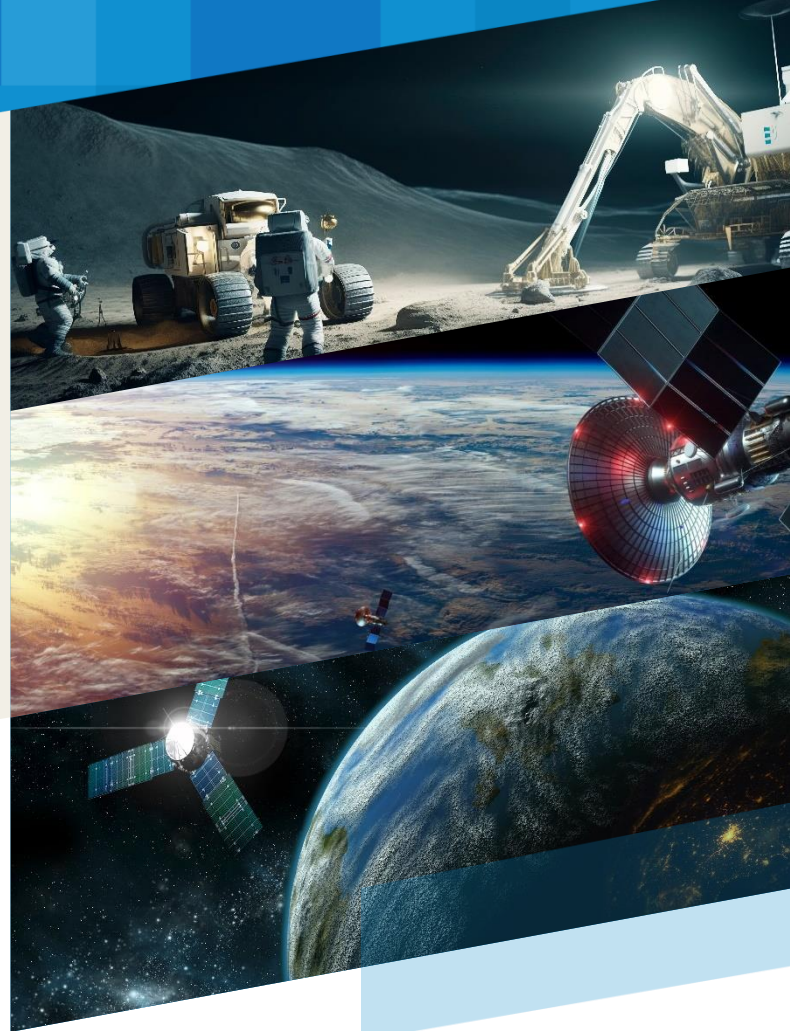


Small & Redundant
Inertial Sensor(IMU)

MRN-0X



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Description

- IMU for space is composed of high precision MEMS gyroscopes and accelerometers
- Redundant IMU with 2 independent 3-axis IMU units
- Space environment resistant
- Proven for long-term use in space
- Customizable gyroscope and accelerometer range

Application

Inertial navigation and spacecraft attitude control

Launch vehicle

Probe(Rover)

Satellite

Orbital vehicle



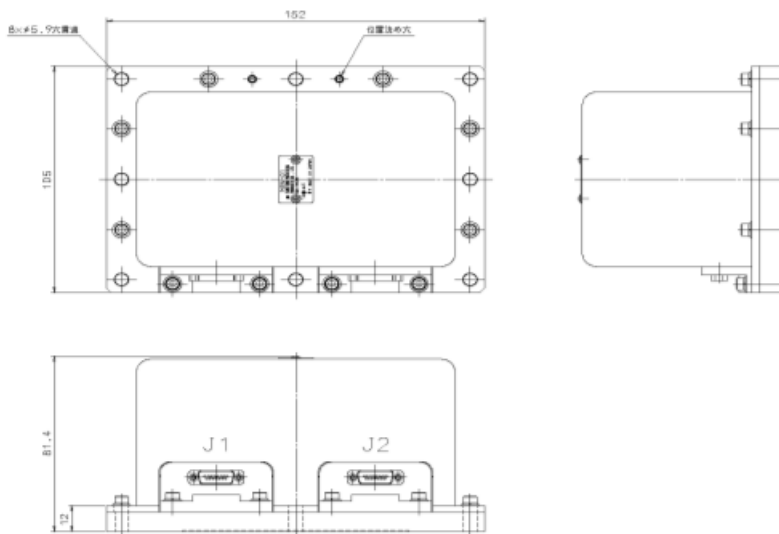
Etc.

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Technical Data

Item		Value	
		MRN-01-SS	MRN-0X (Low range)
Gyroscope Performance	Measurement range	±400 deg/s	±50 deg/s
	Performance range	±30 deg/s	±10 deg/s
	Bias over temperature	10deg/h	10deg/h
	Bias repeatability	20 deg/h	20 deg/h
	Bias instability	0.2 deg/h	0.1 deg/h
	Angle random walk	0.051 deg/√h	0.02 deg/√h
	Scale factor over temperature	500 ppm	500 ppm
	Scale factor non-linearity	500 ppm	500 ppm
	Misalignment	4m rad	4m rad
	Bias vibration sensitivity	1 deg/h/grms ²	1 deg/h/grms ²
Acceleration Performance	Measurement range	±30 g	±2.5 g
	Performance range	±11 g	±1 g
	Bias over temperature	1 mg	1 mg
	Bias repeatability	3 mg	3 mg
	Bias instability	90 μG	10 μG(TBD)
	Angle random walk	150 mm/s/√h	25mm/s/√h(TBD)
	Scale factor over temperature	500 ppm(±3g)	500ppm
	Misalignment	4m rad	4m rad
	Bias vibration sensitivity	0.15mg/grms ²	TBD

Item		Value
Electrical Characteristics	Supply voltage	12VDC±1V
	Power consumption	5W (2.5W/Unit)
	Warm-up time	30min
Mechanical Characteristics	Dimensions	153 × 106 × 83 mm
	Weight	1.3kg
	Connector	Micro D-sub 15pin×2
Interfaces	Data output cycle	100Hz
	Output format	RS422
	Communication type	Asynchronous serial
	Baud rate	115,200bps
Operating Conditions	Operating temperature range	-24°C~65°C
	Performance temperature range	-14°C~55°C
	Humidity (operation)	60%RH
	Random vibration (operation)	XY direction : 112m/s ² rms Z direction : 150m/s ² rms
	Low frequency shock (operation)	139m/s ² × 10ms
	High frequency shock (operation)	50~790 Hz: +6dB/oct 790~4000Hz: 3335m/s ²



SUMITOMO PRECISION PRODUCTS CO., LTD.

INERTIAL SENSOR SYSTEMS DEPARTMENT

1-10 Fuso-Cho, Amagasaki, Hyogo 660-0891, Japan

T +81(0) 6-6489 5917 F +81(0) 6- 6489 5910 E mems-sales@spp.co.jp

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Specification subject to change without notice. Issue Sep./2023