

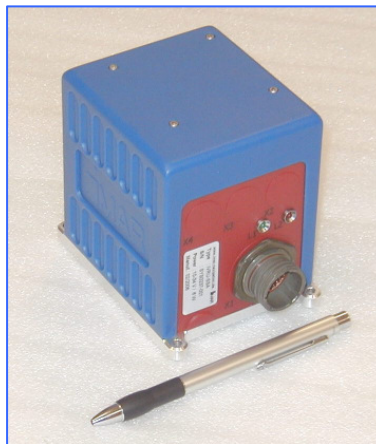
iVRU-SSC

Vertical Reference Unit with MEMS Gyros, MEMS Accelerometers and integrated Strapdown Processor

With iVRU-SSC a MEMS sensor based vertical reference unit is provided for applications which require medium accuracy and simple using.

- Three MEMS rate gyros and three MEMS accels
- < 0.1 deg/s bias stability
- Integrated GPS and odometer interface
- CAN / RS232 / RS422 interfaces
- Sync Input / Output available
- Guidance & Attitude Control

iVRU-SSC is a triaxial system with three orthogonal mounted



rugged MEMS gyroscopes, three MEMS accelerometers and an integrated powerful micro-processor with 16 bit sensor data digitalisation to provide digital data transmission (CAN, RS232) and extended internal error modelling. As an option also analog output data can be provided. As a further option an internal GPS or/and magnetometer can be provided as well as a speed sensor interface to achieve higher performance also in difficult environment. Interfaces for platform stabilisation are available on request.

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Technical Data of iVRU-SSC:

	Gyro Performance	Accel Performance for 2g / 10g / 30g versions
Sensor Range:	± 75 %/s (*)	$\pm 2 / 10 / 30$ g
Bias:	< 0.1 %/s < 1 %/s < 0.01 %/s	(stabil. at const. temp.) (OTR -40...+65 °C) (short time stability)
Resolution:	< 0.005 %/s	< 0.1 mg (@ 2 g range)
Linearity / Scale error:	< 0.2 % / < 1 %	< 0.3 % / < 0.3 %
g-sensitivity:	< 0.03 %/s/g	
Noise (0-100 Hz):	< 2 %/√h (120 %/h/√Hz, 0.03 %/s/√Hz)	< 36 / 180 / 360 μg/√Hz (< 0.02 / 0.1 / 0.2 m/s/√h)
Bandwidth:	0...40 Hz	0...200 / 200 / 100 Hz (depends on range)
Attitude / Heading Range:	± 180 ° Roll, ± 90 ° Pitch, ± 180 ° relative Heading	
Attitude Accuracy (2 g version):	< 0.3 ° roll/pitch (static or linear unaccelerated motion, unaided mode) < 1 ° roll/pitch with proper velocity aiding (GPS or odometer)	
Track / Heading Accuracy:	depends on aiding options (if any: GPS and/or 3D magnetometer -> 0.2...3 °)	
Attitude / Heading Resolution:	< 0.01 °	
Analog Output:	± 5 V (analog output only as special option; CAN/RS232 recommended)	
Output:	$\omega_x, \omega_y, \omega_z, a_x, a_y, a_z$ (rate and acceleration), BIT option: Roll, Pitch, delta_Yaw (attitude, rel. heading)	
Digital resolution:	> 16 bit	
Digital Interface, start-up-time:	CAN (up to 1 MBit/s; remote and continuous); Sync-Trigger-Input/Output ; RS232 (up to 115,200 Bd); HDLC on request; < 1 sec	
Integrated Options:	Standard L1 GPS; odometer interface	
Output Data Rate, Connector:	up to 200 Hz via CAN; MIL-C-38999-III 37 pin	
Temperature:	-40...+65 °C (case temperature)	
Power:	11...34 V DC; approx. 7 W (depends on options)	
Size / Weight:	108x87x108 mm (IP41) or open-frame unit	
Weight, Shock, Vibration:	approx. 0.8 kg (standard, plastic housing), 200 g, 1 ms ; 20...2000 Hz 2 g(rms)	
(*) = other on request (50 %/s @ 80 Hz or 200 %/s @ 30 Hz; up to 1000 %/s)		

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