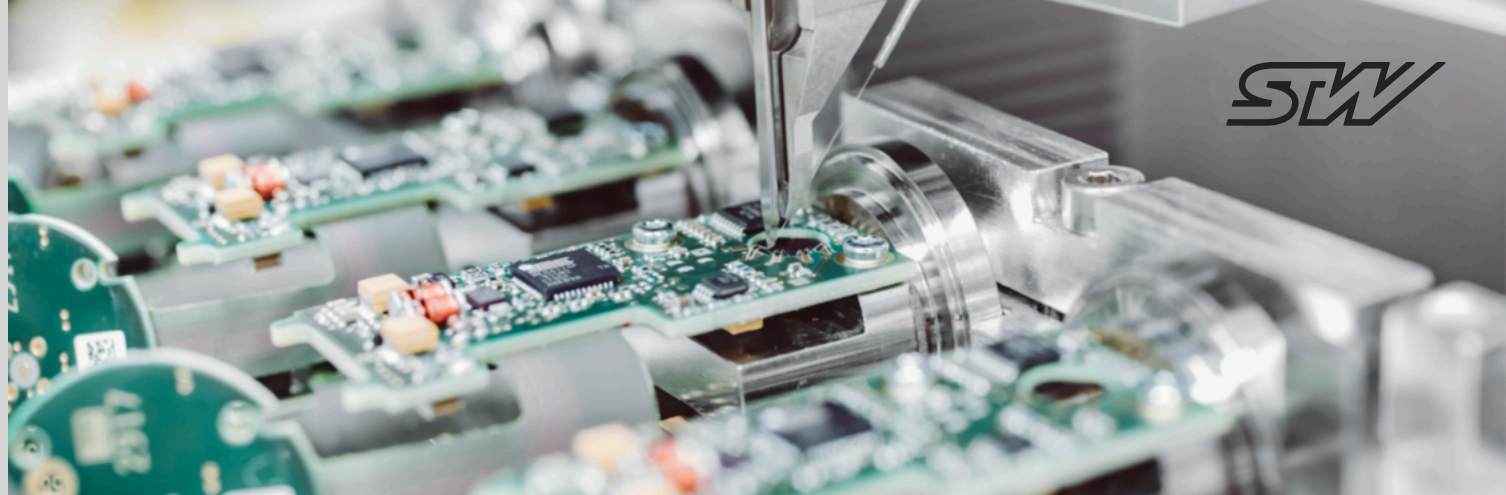


PRELIMINARY



STW

SMX.igs-a

Inclination and Gyro Sensors

KEY FEATURES

- Inertial measurement unit (IMU)
- Functional safe measurement of acceleration in 3 axes
- Functional safe measurement of angular velocity in 3 axes
- Functional safe measurement of the inclination of up to 3 axes
- Compact and robust design for use in harsh environments
- Internal adjustable digital signal filters, e.g. Kalman filters
- Integrated into STW's openSYDE software platform
- With ECE type approval

TECHNICAL DATA

- Acceleration measurement range ± 3 g
- Gyroscope measurement range $125^\circ/\text{s} \dots 4000^\circ/\text{s}$
- Configurable inclination measurement range $\pm 90^\circ$ or 360°
- Temperature range -40°C to $+85^\circ\text{C}$
- Configurable CAN protocols: CANopen safety, CAN, CANopen or SAE J1939
- Status LED
- Protection class IP6K5/IPX7/IPX9K

Sensor-Technik Wiedemann GmbH

Am Bärenwald 6
87600 Kaufbeuren
Germany
+49 8341 9505-0
info.stw@wiedemann-group.com
www.stw-mm.com

TECHNICAL DATA

Sensor

Parameter	SMX.igs-a
Acceleration measuring range	±3 g
Acceleration resolution	0.25 µg
Acceleration accuracy	Tbd.
Gyroscope measuring range	±125°/s ... 4000°/s
Gyroscope resolution	0.004375°/s ... 0.140°/s (the resolution depends on the measuring range)
Gyroscope accuracy	Tbd.
Angle measuring range (configurable)	±90° or 360°
Angle resolution	0.01°
Angle accuracy	static ±0.25° dynamic ±0.5°
Filter options (configurable)	Butterworth filter 8 th order Critical damped filter 8 th order Kalman filter

CAN Interface

Feature	Properties
Output signal	CAN, bit rate 100 ... 1000 kBit/s
Protocols (configurable)	CANopen safety, CAN, CANopen or SAE J1939
Electrical protection	Short circuit protected (signal on GND/VCC)
Two-Colour-Status LED	Green / Red

Power Supply

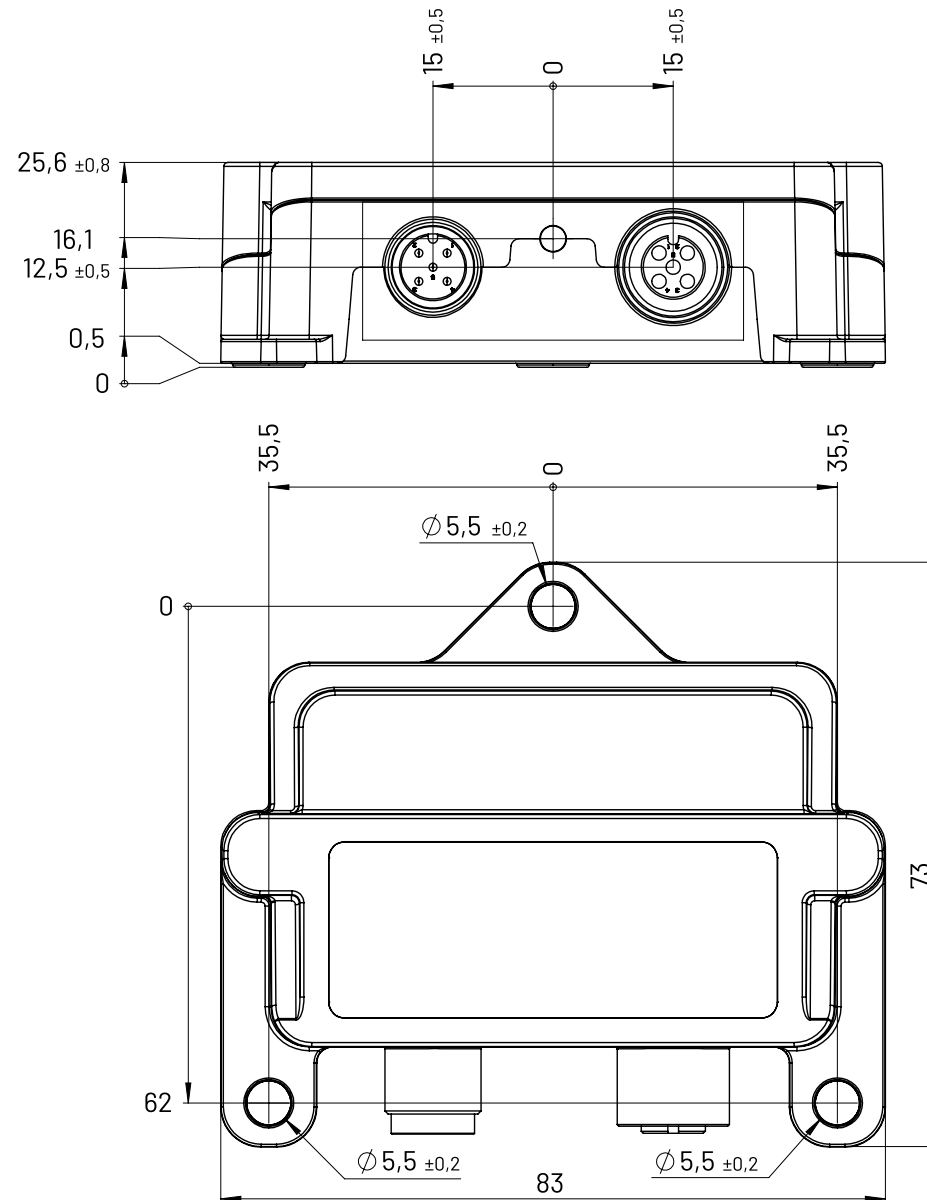
Feature	Properties
Voltage supply (power supply pin VCC)	9 ... 36 V DC Supply lines inverse-polarity protected
Current Consumption (without active heating)	25 mA @12 V DC
Current Consumption (with active heating)	350 mA @12 V DC

Housing

Feature	Properties
Housing material	Zinc die cast
Dimensions (L x W x H)	83 x 73 x 26 mm
Weight	Approx. 130 g
Degree of protection	IP6K5/IPX7/IPX9K
Electrical connection	5 pole M12 plug, A coded 5 pole M12 socket, A coded
Operating temperature	-40 °C ... +85 °C / -40 °F ... +185 °F
Storage temperature	-40 °C ... +85 °C / -40 °F ... +185 °F

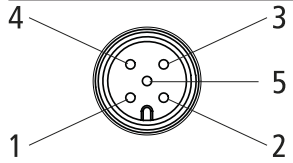
Functional Safety

Standard	Description
SN 29500	MTTF = Tbd. years
EN ISO 13849 - 2015	PL d
IEC 61508 - 2010	SIL 2



PIN ASSIGNMENT

Pin Assignment 5 Pin M12 Connector (plug or socket)



Pin	Name	Description
1	CAN_SHLD	Shield
2	VCC	Power supply, 9 ... 36 V DC
3	GND	Common Ground
4	CAN_H	CAN High
5	CAN_L	CAN Low

QUALIFICATION

Compliance Information

Standard	Description	Parameter
ISO/IEC 17050-1	Conformity	See Declaration of Conformity
KBA (Kraftfahrt-Bundesamt)	Certification	According UN ECE Regulation No. 10