



## TRS.ALMX

THREEAXIAL ANGULAR SAFETY SENSOR with DINAMIC COMPENSATION and 2 SEPARATE CAN-BUS LINES



The TRS.ALMX is an inclinometer sensor based on a double CPU, a double 3D-MEMS accelerometer and a double gyroscope, in a fully redundant circuit scheme, with 2 independent CAN-Bus lines.

In according to the code, the termination resistors are permanent and electrically measurable even with the device off.

The connector is an M12 with 8 poles.

Using a special algorithm, the device can filter and improve the measure accuracy in presence of vibration and acceleration loads. It can be implemented as SLAVE in a CAN network.

The polyurethane resin case makes the controller is suitable for use on machines that operate in harsh work environments.

It's E3 certified UNECE regulation 10 automotive.



### TECHNICAL FEATURES

MASTER CODE	TRS.184.367
POWER SUPPLY	9-36 VDC / CURRENT CONSUMPTION 30 mA AT 24 VDC
CAN BUS	<b>2 INDEPENDENT PORT:</b> 2.0B COMPLIANT - (11, 29 BIT) - ISO 11898 - UP TO 1MBIT/S
CAN BUS PROTOCOLS	CAN OPEN (CIA DS410 DEVICE PROFILE FOR INCLINOMETER, WITH DS306 COMPLIANT EDS FILE)
TECHNOLOGY	3D-MEMS ACCELEROMETER AND GYROSCOPE
SAFETY	DOUBLE CPU DOUBLE SENSOR DOUBLE CAN LINE
CONNECTION PORT	WIRED , WITH PUR CABLE AND M12 8PIN MALE CONNECTOR
LED	N.1 BI-COLOR STATUS LED
CASE	ENCAPSULATED IN PUR RESIN - SELF-EXTINGUISHING UL94 (V0)
WORKING TEMPERATURE	-40°C +85°C (TEMPERATURE DRIFT-REDUCTION)

### MEASURE FEATURES

OPTIONS	ANGLE – TILT
FILTERING	USER CONFIGURABLE
RESOLUTION	UP TO 0,01°
ADDITIONAL DATA	3-AXIS ACCELERATION ACCURACY: 0,5 mg/sample
	3-AXIS ROTATION SPEED ACCURACY: 0,03 (deg/s)/sample



Scan me





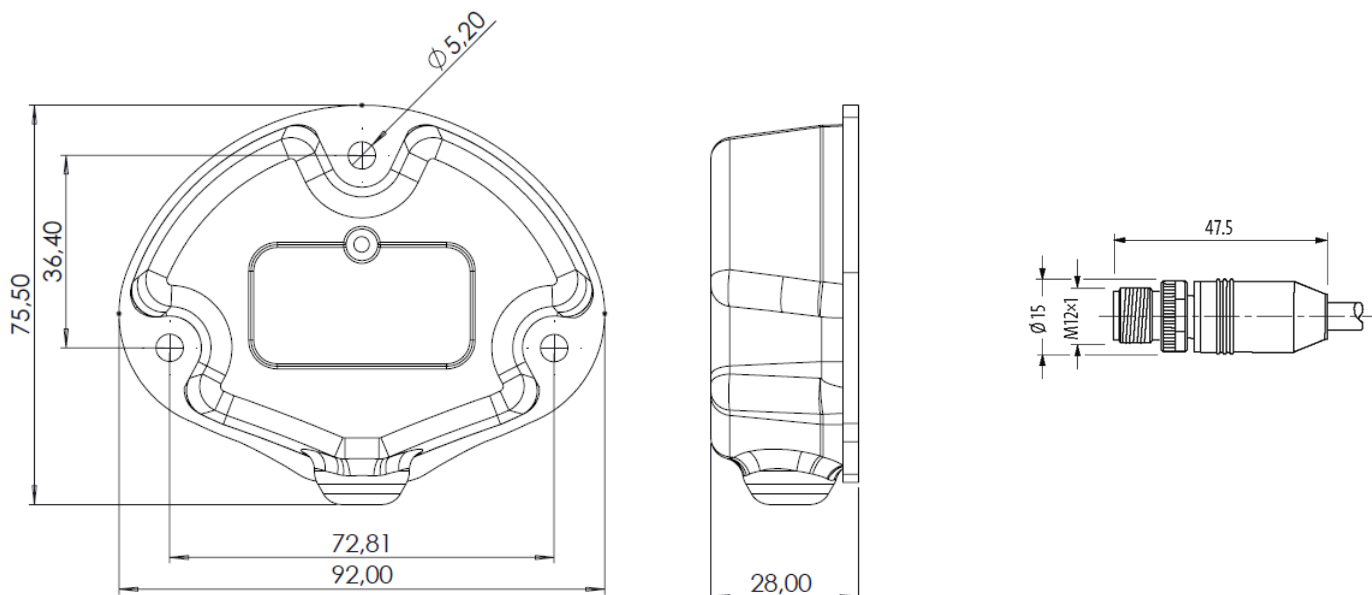
## ELECTRONIC FEATURES

SLAVE USAGE	EDS FILE
PROGRAMMING	FIRMWARE UPLOAD BY CAN BUS WITH ALOADER SOFTWARE TOOL
CONFIGURING	USING ALTILT CONFIG
SAMPLE TIME	LESS THAN 5 ms
CPU	DOUBLE ARM CORTEX M4, 32 bit MICROCONTROLLER CORE

## STANDARDS

ELECTROMAGNETIC EMISSIONS	EN 61000-6-4
ELECTROMAGNETIC IMMUNITY	EN 61000-6-2
ROAD VEHICLES — ELECTRICAL DISTURBANCES FROM CONDUCTION AND COUPLING — PART 2	ISO 7637-2: 2011
ROAD VEHICLES — COMPONENT TEST METHODS FOR ELECTRICAL DISTURBANCES FROM NARROWBAND RADIATED ELECTROMAGNETIC ENERGY — PART 1	ISO 11452-1: 2005
VERIFICATIONS AND TESTS PERFORMED ACCORDING TO THE REQUIREMENTS OF UNECE REGULATION 10 - AMENDMENT 06 - SUPPLEMENT 0	E3 – TYPE APPROVAL
BOX IP	IP68
MTTFd CALCULATED ACCORDING TO THE IEC61709 (SIEMENS SN29500), WITH ENVIRONMENTAL FACTORS 3K7 (IEC60721)	231,98 YEARS
PERFORMANCE AND SAFETY INTEGRITY LEVEL	PLd – SIL2 (DUAL CHANNEL INTERNAL SCHEME)

## SIZE (mm)





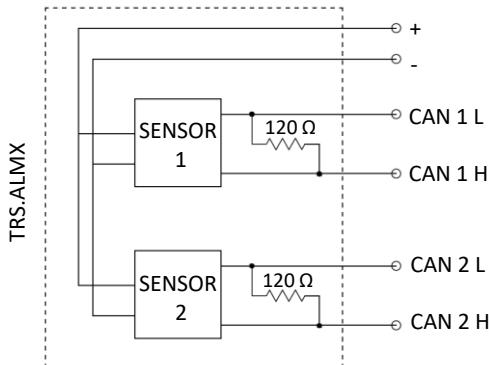
## ELECTRICAL CONNECTIONS

PINOUT		CONNECTOR DIAGRAM	
<b>WIRED</b>  CABLE: L=30cm  CONNECTOR: M12 8 PIN MALE (FPM)	1	CAN BUS L - PORT 1	
	2	POSITIVE POWER SUPPLY	
	3	CAN BUS H - PORT 1	
	4	CAN BUS L - PORT 2	
	5	empty	
	6	empty	
	7	GND POWER SUPPLY	
	8	CAN BUS H - PORT 2	

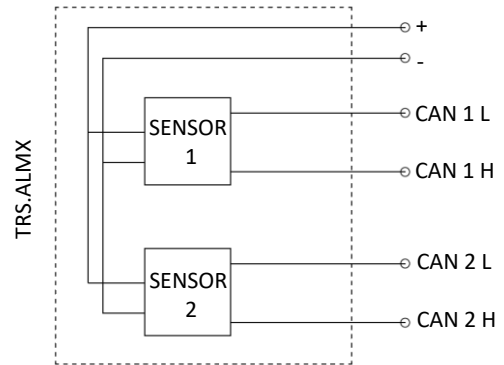
1	white
2	brown
3	green
4	yellow
5	gray
6	pink
7	blue
8	red

## INTERNAL SCHEME

WITH TERMINATION RESISTORS  
Code: **TRS.ALMX.367.6.R.S00**



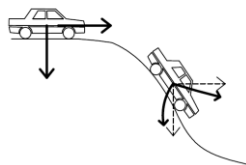
WITHOUT TERMINATION RESISTORS  
Code: **TRS.ALMX.367.6.S00**



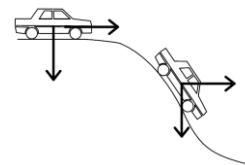
## FEATURES

DEVICE SUITABLE FOR MOTION APPLICATION WITH BASIC CONSTANT REFERENCE

ACCURACY OF A TRADITIONAL DEVICE



ACCURACY WITH TRS.ALMX

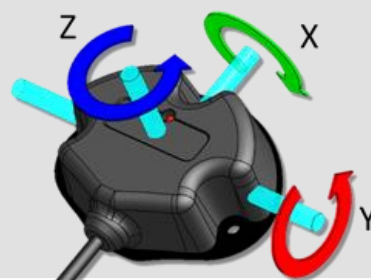


## MEASURE OPTIONS

S00

TRASDUCER WITH CONFIGURABLE MEASUREMENT MODE ON X Y & Z AXIS (FOR TILT/ANGLE/ROTATION)

**ACCURACY:** SELECTABLE AS: 1°-0,1°-0,01°-0,001°  
**MEASURING RANGE:** 0 ... 360° // -180°+180°





**ALMEC**  
MECHATRONICS

NOTE