



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	2 INDEPENDENT PORT: 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	PUR MOUNTING BRACKET: STEEL, WITH CATAPHORESIS TREATMENT
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





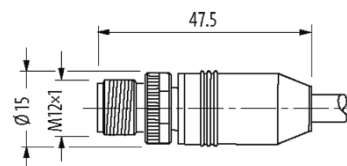
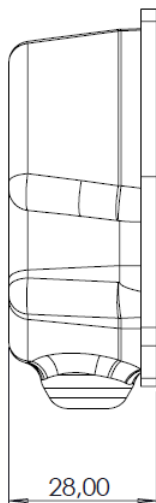
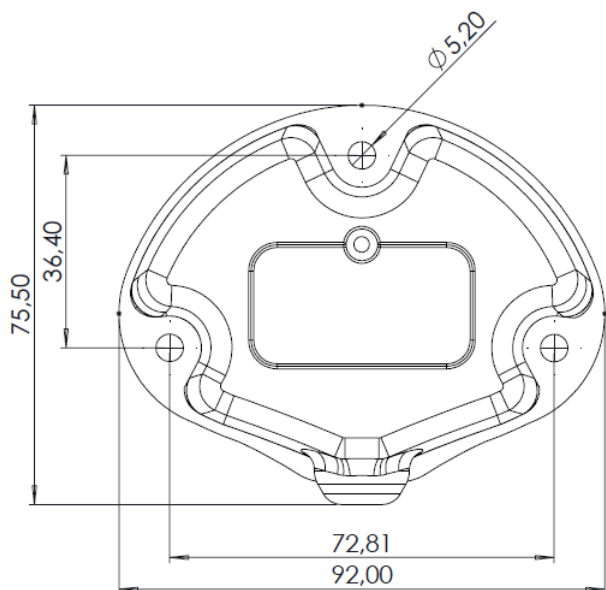
ELECTRONIC FEATURES

SLAVE USAGE	BY EDS FILE (CODESYS COMPATIBLE)
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

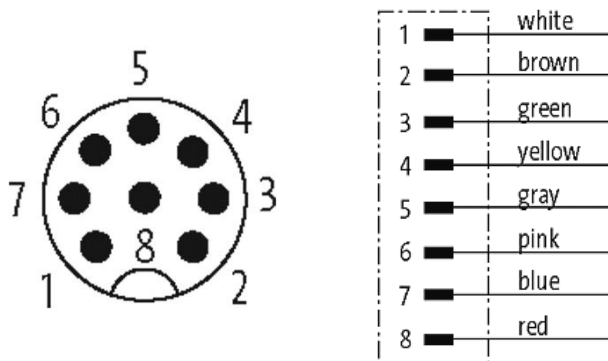
WIRED

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

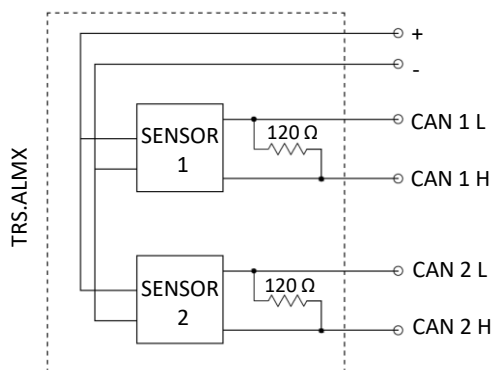
CONNECTOR DIAGRAM



INTERNAL SCHEME

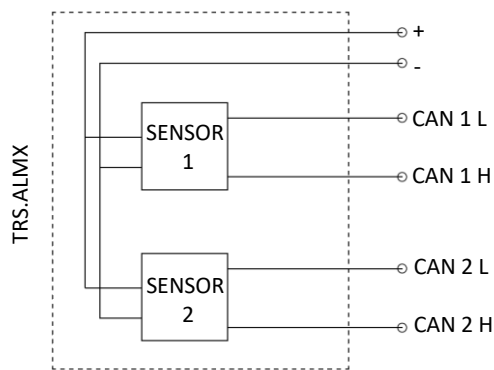
WITH TERMINATION RESISTORS

Code: **TRS.ALMX.367.6.R.S00**



WITHOUT TERMINATION RESISTORS

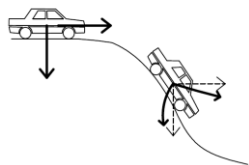
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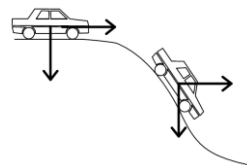
FEATURES

DEVICE SUITABLE FOR MOTION APPLICATION WITH BASIC CONSTANT REFERENCE

ACCURACY OF A TRADITIONAL DEVICE



ACCURACY WITH TRS.ALMX



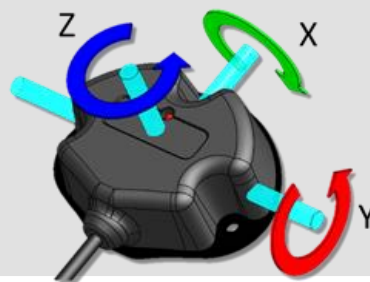
MEASURE OPTIONS

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