



TRS.184

THREEAXIAL ANGULAR SAFETY SENSOR with  
DINAMIC COMPENSATION



The TRS.184 is an inclinometer sensor based on a double CPU, a double 3D-MEMS accelerometer and a double gyroscope, in a fully redundant circuit scheme.

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.



## TECHNICAL FEATURES

MASTER CODE	TRS.184
POWER SUPPLY	9-36 VDC / CURRENT CONSUMPTION 30 mA AT 24 VDC
CAN BUS	<b>1 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 AND DOUBLE SENSOR
MEASURE OPTIONS	ANGLE TILT
CONNECTION PORT	WIRED, WITH 30 cm CABLE LENGTH AND SUPERSEAL/M12 OR CONNECTORIZED, WITH M12 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)





## ELECTRONIC FEATURES

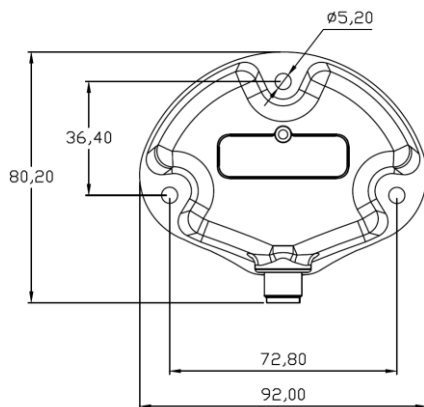
SLAVE USAGE	BY EDS FILE (CODESYS COMPATIBLE)	
PROGRAMMING	FIRMWARE UPLOAD BY CAN BUS WITH ALOADER SOFTWARE TOOL	
CONFIGURING	THROUGH ALTILT CONFIG	
SAMPLE TIME	LESS THAN 5 ms	
CPU	DOUBLE ARM CORTEX M4, 32 bit MICROCONTROLLER CORE	
MEASURING RANGE	TILT	0 ... 360°
	ANGLE	-180°+180°
ACCURACY	TILT	0,01°
	ANGLE	0,1°

## STANDARDS

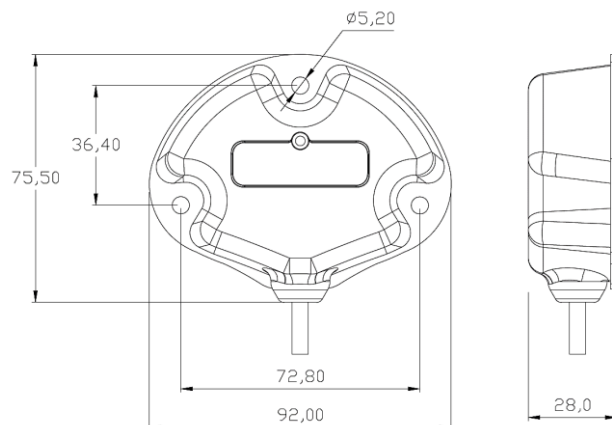
ELECTROMAGNETIC EMISSIONS	EN 61000-6-4// EN 55011 (RF RADIATE)
ELECTROMAGNETIC IMMUNITY	EN 61000-6-2// EN 61000-4-2/3/4/6
IP	BOX: IP68 M12 VERSION: IP67
MTTFd	233,89 YEARS CALCULATED ACCORDING TO THE IEC61709 (SIEMENS SN29500), WITH ENVIRONMENTAL FACTORS 3K7 (IEC60721)
PERFORMANCE AND SAFETY INTEGRITY LEVEL	PLd – SIL2 (DUAL CHANNEL INTERNAL SCHEME)

IN ACCORDANCE WITH THE EN50498 THE DEVICE MEETS THE TECHNICAL SPECIFIC REQUIREMENTS OF 2004-104 DIRECTIVE (AUTOMOTIVE). THE DEVICE IS EMC 2004/108 COMPLIANT.

## SIZE (mm)



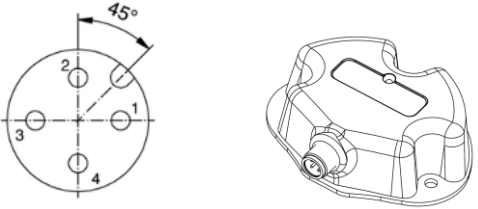
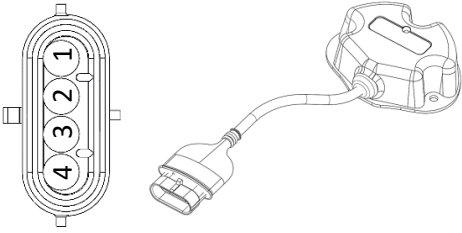
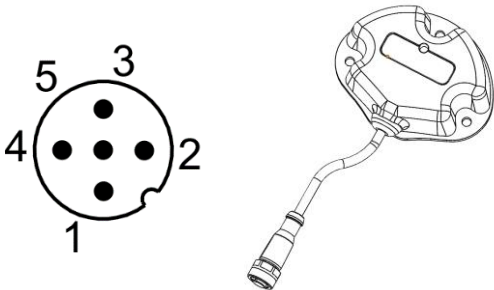
WITH M12  
CONNECTOR



WITH  
CABLE



### ELECTRICAL CONNECTIONS

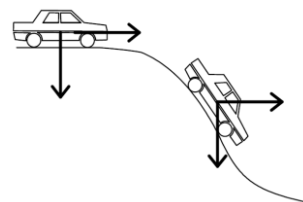
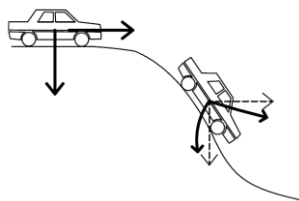
CONNECTORIZED		PINOUT		
M12 MALE CONNECTOR 4 POLES	1	POSITIVE POWER SUPPLY		
	2	CAN L		
	3	GND		
	4	CAN H		
WIRED		PINOUT		
SUPERSEAL CONNECTOR 4 POLES	1	POSITIVE POWER SUPPLY		
	2	CAN L		
	3	GND		
	4	CAN H		
WIRED		PINOUT		
M12 MALE CONNECTOR 5 POLES	1	CAN GND		
	2	POSITIVE POWER SUPPLY		
	3	GND		
	4	CAN H		
	5	CAN L		

### FEATURES

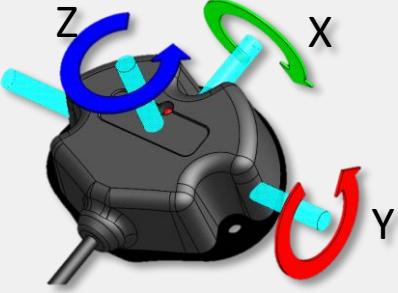
DEVICE SUITABLE FOR MOTION APPLICATION WITH BASIC CONSTANT REFERENCE

ACCURACY OF A TRADITIONAL DEVICE

ACCURACY WITH TRS.184



### MEASURE OPTIONS

VERSION	DESCRIPTION	
S01	ANGLE MEASUREMENT MODE ON Z AXLE	
S04	PLANARITY MEASUREMENT MODE ON X & Y AXIS	
S10	ROTATION MEASUREMENT MODE ON Z & Y AXIS	



**ALMEC**  
MECHATRONICS

NOTE