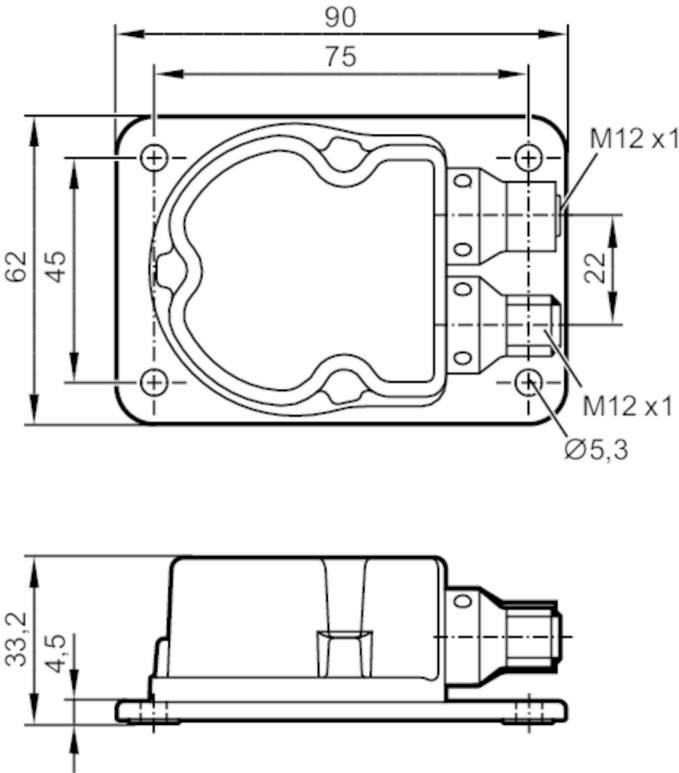


JN2300



Inclination sensor

INC-M2M360J-KG/US



Product characteristics

Measuring principle	MEMS capacitive
Communication interface	CAN
Inclination measurement	
Number of measurement axes	2
Angular range [°]	0...360 / ± 180

Application

Function principle	static
Application	High-precision inclination measurement in 2 axes for mobile applications

Electrical data

Operating voltage [V]	9.2...30 DC
Current consumption [mA]	70; (24 V DC, 25 °C)
Max. current consumption [mA]	310; (9,2 V DC; -40 °C)
Min. insulation resistance [MΩ]	100; (500 V DC)
Protection class	III
Reverse polarity protection	yes
Reverse polarity protection	yes
Power-on delay time [s]	300; (warm-up time; Max. initialization time: 1000 ms)

Measuring/setting range

Measuring principle	MEMS capacitive
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Inclination sensor

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Inclination measurement		
Number of measurement axes		2
Angular range [°]		0...360 / ± 180
Limit frequency [Hz]		0.5...10; (configurable)
Vibration measurement		
Measuring range of vibration [g]		16; (± 2 ; ± 4 ; ± 8 g configurable)
Measuring range of vibration [mm/s]		3200
Frequency range [Hz]		0.1...400
Number of measurement axes		X/Y/Z configurable
Accuracy / deviations		
Accuracy [°]		$\leq \pm 0,5$; (absolute)
Hysteresis [°]		$\leq \pm 0.05$
Repeatability [°]		$\leq \pm 0,1$
Resolution [°]		0.1
Temperature coefficient [1/K]		$\leq \pm 0,02$ °
Interfaces		
Communication interface		CAN
Number of CAN interfaces		1
Terminating resistor		yes; (internal ; configurable)
CAN		
Protocol		SAE J1939
Factory settings		Baud rate: 250 kBit/s device address (ECU): 25
Operating conditions		
Ambient temperature [°C]		-40...85
Storage temperature [°C]		-40...85
Protection		IP 65; IP 67; IP 68; IP 69K
Tests / approvals		
EMC	DIN EN 61000-4-2 ESD	4 kV CD / 8 kV AD
	DIN EN 61000-4-3 HF radiated	10 V/m
	DIN EN 61000-4-4 Burst	2 kV
	DIN EN 61000-4-6 HF conducted	10 V
	DIN EN 55022 class B / CISPR 16-2-3	30 - 1000 MHz
	CISPR 25 ECE R 10	30 - 1000 MHz narrowband and broadband
	ISO 11452-2 ECE R 10	20 - 2000 MHz / 30 V/m
	ISO 7637-2 ECE R 10	pulse 1, 2a, 2b, 3a, 3b, 4, and pulse emission during operation, switching-on, switching-off
Shock resistance	ISO 7637-3	- 80 V pulse a / + 80 V pulse b
	DIN EN 60068-2-27	100 g 1 ms / 10000 Impacts per axis (X/Y)
Vibration resistance	DIN EN 60068-2-29	30 g 6 ms / 24000 shock (bump)
	DIN EN 60068-2-64	10...2000 Hz Test VII / random, mounting place car body
Salt spray test	DIN EN 60068-2-6	10...500 Hz / 10 g 10 cycles/axis, sine
	DIN EN 60068-2-52	severity level 5 (motor vehicle)

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Damp heat	DIN EN 60068-2-30	55 °C cyclic upper temperature / 95 % rh 2 cycles of 24 h
MTTF [years]	372	
Standard	Compliant with ECE R 10, rev. 5; ISO 7637-3: 2007-07	

Mechanical data

Weight [g]	415
Dimensions [mm]	90 x 62 x 33.2
Material	housing: diecast zinc nickel-plated
Mounting orientation	Horizontal

Displays / operating elements

Display	Run mode	1 x LED, green
	fault	1 x LED, red

Accessories

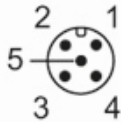
Items supplied	Protective cover: 1
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Remarks

Remarks	the device complies with overvoltage category II
Pack quantity	1 pcs.

Electrical connection - CAN-In

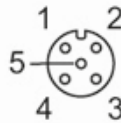
Connector: 1 x M12; coding: A



1	CAN screen
2	+ UB
3	CAN_GND
4	CAN_H
5	CAN_L

Electrical connection - CAN-Out

Connector: 1 x M12; coding: A



1	CAN screen
2	+ UB
3	CAN_GND
4	CAN_H
5	CAN_L

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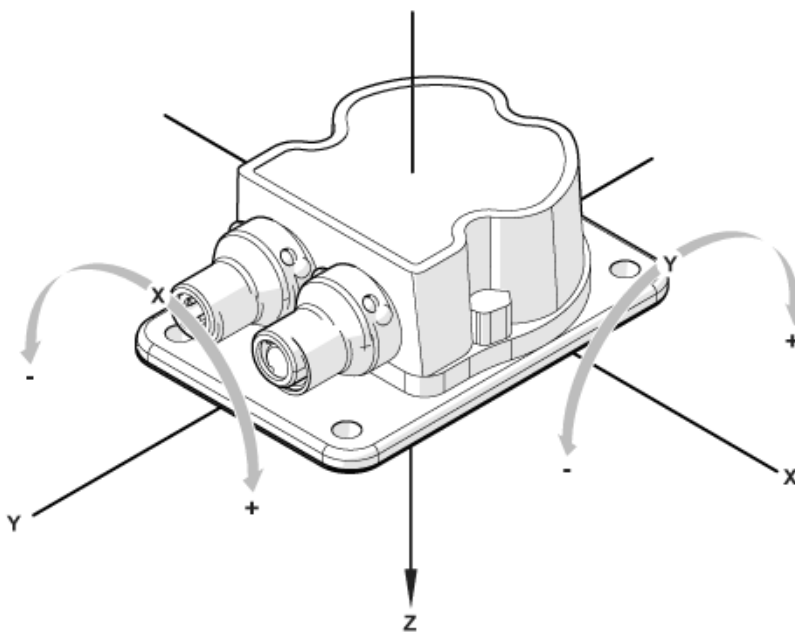


Inclination sensor

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Diagrams and graphs

measuring and installation direction



horizontal installation position / rotation about x- and y-axis