



# POSITAL

## FRABA

### TILTIX Inclinometer

**AKS-180-F-C901-VK2-PW**

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#### General Specifications

Application	Dynamic Inclinometer 2-Axes with Pitch and Roll
Measurement Range	Pitch $\pm 85^\circ$ , Roll $\pm 180^\circ$
Absolute Accuracy	$\pm 0.30^\circ$
Resolution	$0.01^\circ$
Repeatability	$\leq 0.05^\circ$
Dynamic Accuracy	$\pm 0.50^\circ$
Cycle Time Base Sensor	5 ms
Hysteresis	$\leq 0.05^\circ$
Device Orientation	Vertical

### Sold & Serviced By:



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### Electrical Specifications

Supply Voltage	9 - 30 VDC
Current Consumption	≤ 65 mA @ 10 V DC, ≤ 60 mA @ 24 V DC
EMC: Emitted Interference	DIN EN 61000-6-4
EMC: Noise Immunity	DIN EN 61000-6-2
Reverse Polarity Protection	Yes
Short Circuit Protection	Yes
MTTF	260 years @ 40 °C

### Environmental Specifications

Operating Temperature	-40 °C (-40 °F) - +75 °C (+167 °F)
Storage Temperature	-40 °C (-40 °F) - +85 °C (+185 °F)
Temperature Gradient	0.008°/ K
Protection Class	IP68/IP69K
Shock Resistance	≤ 100 g (half sine 6 ms, EN 60068-2-27)
Vibration Resistance	1.5 mm (10 Hz - 58 Hz) & ≤ 20 g (58 Hz to 2000 Hz)

### Mechanical Specifications

Housing Material	Die-Cast Aluminum Alloy
Potting Material	PUR (Polyurethane)
Weight	220 g (0.49 lb)



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### Interface

Interface	J1939
Settling Time	50 ms
Output Driver	Transceiver (ISO 11898), Galvanically Isolated by Opto-Coupl
Transmission Rate	125 Kbaud, 250 Kbaud, 500 Kbaud
Default Transmission Rate	250 kbaud
Default Node ID	C0h
Default PGN	PGN 65280 (Pitch, Roll, Acceleration x, Acceleration y) + PGN 65281 (Acceleration z, Gyro x, Gyro y, Gyro z)

### Electrical Connection

Connection Type	Connector 2 x M12 (m+f)
Connector 1	M12, Male, 5 pin, a coded
Connector 2	M12, Female, 5 pin, a coded

### Product Life Cycle

Product Life Cycle	New
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### Certification

Approval	CE + E1
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### Connection Plan

SIGNAL	CONNECTOR	PIN NUMBER
Power Supply	Connector 1	2
GND	Connector 1	3
CAN High	Connector 1	4
CAN Low	Connector 1	5
CAN GND	Connector 1	1
Power Supply	Connector 2	2
GND	Connector 2	3
CAN High	Connector 2	4
CAN Low	Connector 2	5
CAN GND	Connector 2	1

### Dimensional Drawing

[2D Drawing](#)

### Accessories

Connectors & Cables



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M12, 5pin A-Coded, Male  
5m PUR Cable, 5pin, A-Coded, f  
2m PUR Cable, 5pin, A-Coded, f  
Angled M12, 5pin A-Coded, Female  
2m PUR Cable, 5pin, A-Coded, m  
10m PUR Cable, 5pin, A-Coded, f  
5m PUR Cable, 5pin, A-Coded, m  
POS M12 5pin-A Female+5m PUR Cable  
10m PUR Cable, 5pin, A-Coded, m  
POS M12 5pin-A Female+2m PUR Cable  
POS M12 5pin-A Female+10m PUR Cable  
M12, 5pin A-Coded, Female  
More

**Got questions? Need an individual solution? We are here to help!**

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All dimension in [inch] mm. This drawing and the information contained is for general presentation purposes only. Please refer to the "Download" section for detailed technical drawings. © FRABA B.V., All rights reserved. We do not assume responsibility for technical inaccuracies or omissions. Specifications are subject to change without notice.

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