

INCLINATION SENSORS



NGK SERIES

Key-Features:

- Compact housing
- 1-axis or 2-axis inclination measurement
- Measuring ranges up to 360°
- Linearity up to 0.1°
- Output signal: voltage or current
- Protection class IP68/IP69K
- Temperature range: -40...+85 °C

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TECHNICAL DATA

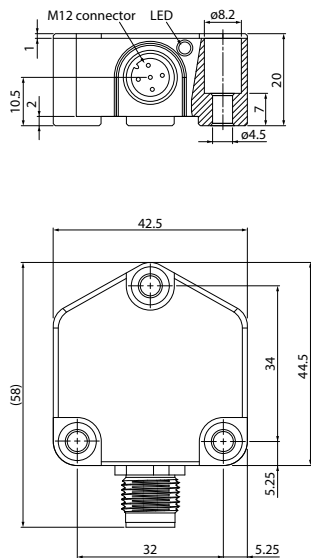
Order code	NGK1	NGK2
Number of measured axis	1	2
Measurement range	0...360°	-85...+85°
Linearity	±0.1°	
Repeatability	≤0.2°	
Accuracy (at 25 °C)	±0.1...±0.3°	±0.1...±0.7°
Resolution	Current: 0.01° internal sensor, 12 bit D/A converter Voltage: 12 bit	
Temperature coefficient	typ. ±0.006 %/K	
Course of the output signal		
Connection	Connector output M12 or cable output	
Protection class	IP68/IP69K	
Operating temperature	-40...+85 °C	
Shock (acc. to EN 60068-2-27)	1000 m/s ² , 6 ms	
Vibration (acc. to EN 60068-2-6)	100 m/s ² , 10...2000 Hz	
Housing	Plastic, PC	
Weight	~60 g	

ELECTRICAL DATA

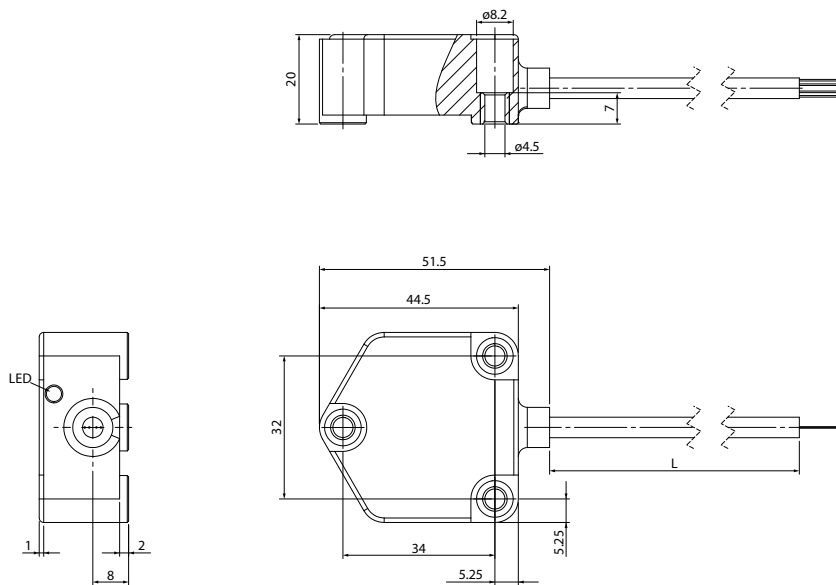
Output type	Current	Voltage	
Output	4...20 mA	0.1...4.9 V / 0.5...5 V / 0...5 V	0...10 V
Supply	10...30 VDC	10...30 VDC	15...30 VDC
Current consumption (no load)	-	max. 40 mA	
PowerON Time (until valid output value)	<0.5 s		
Load	at 10 VDC: max. 200 Ω at 24 VDC: max. 900 Ω at 30 VDC: max. 1200 Ω	-	
Setting time	<1 ms (R _{load} = 900 Ω, 25 °C)	<1 ms (R _{load} = 1000 Ω, 25 °C)	
Sampling rate	50 Hz (20 ms)		
Limit frequency (with Butterworth filter)	0.1 ... 10 Hz, 8th order		
Reverse polarity protection	Yes (supply voltage)		

TECHNICAL DRAWING

Version connector output

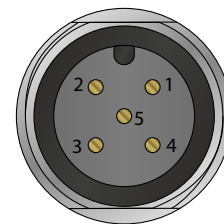


Version cable output



ELECTRICAL CONNECTION

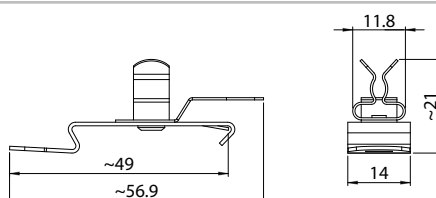
Function Version 1 axis	Function Version 2 axes	Cable output	Connector output	Connection cable KSP...
+V	+V	BN	1	BN
Signal _{Inverse}	Signal _{Y-Axis}	GY	2	WH
GND _{Supply}	GND _{Supply}	WH	3	BU
Signal	Signal _{X-Axis}	GN	4	BK
Teach	Teach	BU	5	GY



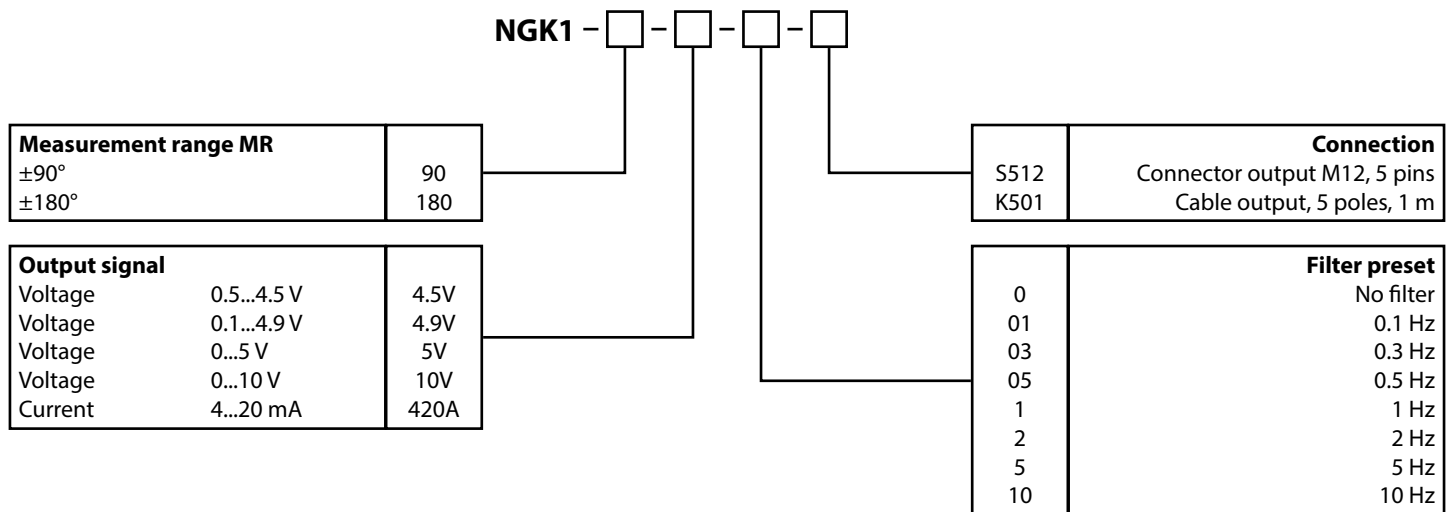
ACCESSORIES

EMC shield terminal NGK-EMV

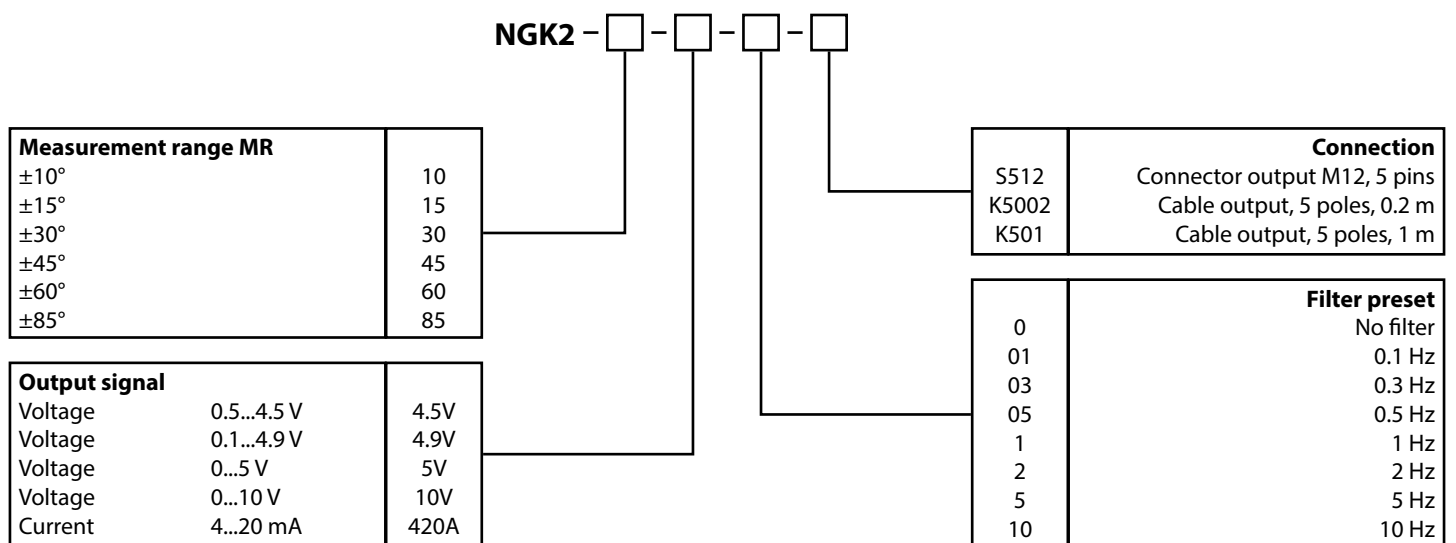
- EMC-compliant installation of the cable
- Top-hat rail mounting
- Spring steel, galvanized
- Shield diameter 3...12 mm



ORDER CODE - 1 MEASUREMENT AXIS



ORDER CODE - 2 MEASUREMENT AXES



ACCESSORIES

Cable with connector (female) M12, 5 poles, shielded, IP67

K5P2M-S-M12	2 m, straight connector
K5P5M-S-M12	5 m, straight connector
K5P10M-S-M12	10 m, straight connector

Teach and mounting accessories

NGK-EMV	EMC shield terminal
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Cable with connector (female) M12, 5 poles, shielded, IP67

K5P2M-SW-M12	2 m, angular connector
K5P5M-SW-M12	5 m, angular connector
K5P10M-SW-M12	10 m, angular connector

Digital displays for sensors with analog output, 2 channel

WAY-AX-S	touch screen, supply: 18...30 VDC
WAY-AX-AC	touch screen, supply: 115...230 VAC

For more information and options please refer to the [WAY-AX data sheet](#).

Subject to change without prior notice.