

1) not included in scope of delivery, 2) Distance to tape, 3) Tape, 4) LED function indicator, 5) Active measurement surface



### Basic features

<b>Additional features 01</b>	Real-time capable
<b>Application</b>	linear/rotary motion
<b>Approval/Conformity</b>	cURus CE TÜV EAC WEEE
<b>Measuring principle</b>	absolute measuring system
<b>Series</b>	S1G

### Electrical data

<b>Current consumption max. at 24 V DC</b>	70 mA
<b>Current consumption max. at 5 V DC</b>	220 mA
<b>Hysteresis H max.</b>	2 µm
<b>Operating voltage <math>U_b</math></b>	4.75...5.25 VDC/10...28 VDC
<b>Overvoltage protection</b>	no
<b>Periods</b>	2 mm
<b>Power consumption</b>	≤ 1.5 W (no load)
<b>Switch-on delay max.</b>	1000 ms
<b>Voltage-proof up to (GND to housing)</b>	500 V DC

### Display/Operation

<b>Function indicator</b>	Green LED LED yellow LED red
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### Electrical connection

<b>Connection</b>	Connector, M12x1-Male, 12-pin
<b>Connection version</b>	axial
<b>Polarity reversal protected</b>	no

### Environmental conditions

Altitude max.	2000 m
Ambient temperature	-20...70 °C
EN 55016-2-3, Radiation	Industrial areas
EN 60068-2-27, Continuous shock	150 g, 2 ms
EN 60068-2-27, Shock	100 g, 6 ms
EN 60068-2-6, Vibration	20 g, 10...2000 Hz
EN 60068-2-64, Noise	20 g, 5...2000 Hz
EN 61000-4-2, ESD	Severity Level 4
EN 61000-4-3, RFI	Severity Level 3
EN 61000-4-4, Burst	Severity Level 3
EN 61000-4-5, Surge	Severity Level 2
EN 61000-4-6, High-frequency fields	Severity Level 3
EN 61000-4-8 Magnetic fields	Severity Level 5
Ext. magnetic fields max., in operation	1 mT (no effect)
IP rating IEC 60529 (connector)	IP67
Relative humidity	≤ 90 %, non-condensing
Storage temperature	-25...85 °C
Temperature coefficient, overall system	10.5 ppm/K

### Functional safety

MTTFd	294 a
Mission Time	20 a
PFHd (EN 62061)	4 E-9 1/h
Performance Level	d
SIL (IEC 61508)	2
SIL CL (EN 62061)	2
Safety category (EN ISO 13849-1)	3
Type of the subsystem (EN/IEC 61508-2)	B

### Material

Housing material	Die-cast zinc, nickel plated, Chrome-plated
Housing material, surface protection	nickel plated Chrome-plated

### Mechanical data

Diameter min.	243 mm
Dimension	16 x 18.5 x 80.3 mm
Lateral offset (Y)	±0.5 mm
Mounting	Through-hole 4.3 mm
Pitch max.	±0.5 °
Pole width	2 mm
Procedure direction	Lengthwise to tape
Roll max.	±0.5 °
Tangential offset (X) max.	±0.5 mm
Weight	78 g
Yaw max. ±	0.2 °

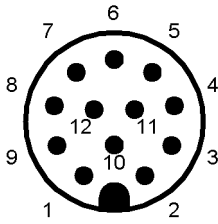
### Output/Interface

Bits, number	32 Bit
Clock	RS422 differential signal
Count direction	rising
Differential signals	yes
Error signal	yes
Interface	SSI Analog Sin/Cos (1 Vpp)
Interface coding	Binary
Preset	configurable via hardware PIN or software tool
Real-time signals	Analog, sin/cos
SSI clock frequency max.	1.3 MHz
SSI clock frequency min.	70 kHz
SSI data	1x error bit 3x null bit 28x position
Signal sequence	A before B = rising

### Range/Distance

Interpolation factor	2000
Measuring range	48 m
Non-linearity of sensor head, max.	±2 µm
Optimal read distance	0.4 mm
Read distance	0.01...0.8 mm
Repeat accuracy	≤ 1 µm
Resolution	1 µm
Traverse speed max., absolute interface	5 m/s
Traverse speed max., incremental interface	10 m/s

## Connector Drawings



## Wiring Diagrams

Pin	Signal
1	+B (+Cos)
2	-B (-Cos)
3	+Clk
4	-Clk
5	-DATA
6	+DATA

Pin	Signal
7	GND
8	V DC
9	-A (-Sin)
10	+A (+Sin)
11	PRESET
12	NC
Shield	Shield