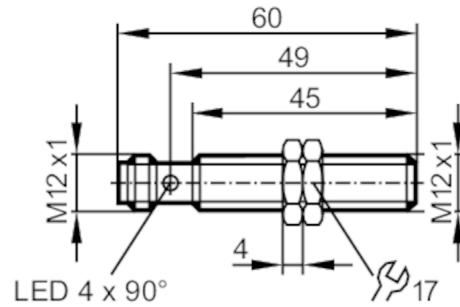


GF761S



Fail-safe inductive sensor

GIFK4003B2PS/SIL2/AM/US



Product characteristics

Electrical design		PNP
Enable zone	[mm]	0...1.5
Housing		Threaded type
Dimensions	[mm]	M12 x 1 / L = 60

Application

System		gold-plated contacts; Full-metal housing
Type of operation		permanent operation
Safety-related sub-function		safe state when properly undamped
Application		Use in mobile and harsh applications

Electrical data

Operating voltage	[V]	9...32 DC
Rated insulation voltage	[V]	60
Current consumption	[mA]	< 10; (24 V)
Protection class		III
Reverse polarity protection		yes
Max. power-on delay time	[ms]	500

Outputs

Electrical design		PNP
Max. voltage drop switching output DC	[V]	2.5
Number of OSSD outputs		2
Max. current load per OSSD output	[mA]	50
Output data		Interface type C class 1
Output voltage at 24 V		compatible with EN 61131-2 inputs type 1, 2
Short-circuit protection		yes
Overload protection		yes
Max. capacitive load CL_max	[nF]	20

Monitoring range

Enable zone	[mm]	0...1.5
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Safe switch-off distance sAs (sar) [mm]	6
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Accuracy / deviations

Correction factor	steel: 1 / stainless steel: 0.6 / brass: 0.7 / aluminum: 0.6 / copper: 0.3
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Reaction times

Response time when approaching the enable zone, turn-on time (ton) [ms]	20
Response time to safety request, turn-off time (toff) [ms]	20
Risk time / error handling time (toff max) [ms]	100

Operating conditions

Ambient temperature [°C]	-40...85
Max. height above sea level [m]	3000
Ionizing radiation	not permissible
Protection	IP 65; IP 66; IP 67; IP 68; IP 69K

Tests / approvals

EMC	industrial environments	
	EN 60947-5-3	
	EN 61000-4-2 ESD	6 kV CD / 8 kV AD
	EN 61000-4-3 HF radiated	20 V/m 80...1000 MHz
	EN 61000-4-3 HF radiated	10 V/m 1,4...2,0 GHz / 3 V/m 2,0...6,0 GHz
	EN 61000-4-4 Burst	2 kV
	EN 61000-4-5 Surge	2 kV
	EN 61000-4-6 HF conducted	10 V
	EN 61000-4-8	30 A/m 50/60 Hz / 1000 A/m 0 Hz
	EN 55011	class B
	Mobile applications	only for operation with central load-dump suppression (58 V) / not for active operation during motor start phase in 12 V systems
	ISO 10605 ESD	8 kV CD / 15 kV AD
	ISO 11452-2, ISO 11452-5 radiated immunity	100 V/m 400...3000 MHz
	ISO 7637-2, ISO 16750-2 conducted immunity	12 V / 24 V
	pulse	1 2a 2b 3a 3b 4 5b
Severity level	III III III III III III 58V	
Failure criterion	B A B A A C/B A/C	
EN 55025	class 3	
Shock resistance	EN 60068-2-27 Ea	100 g 11 ms half-sine; 3 shocks each in every direction of the 3 coordinate axes
Continuous shock resistance	EN 60068-2-27 Ea	40 g 6 ms; 4000 shocks each in every direction of the 3 coordinate axes
Fast temperature changes	EN 60068-2-14 Na	TA = -40°C; TB = 85°C; t1 = 45 min; t2 = 10 s 100 cycles
Vibration resistance	EN 60068-2-6 Fc	20 g (10...3000 Hz) / 50 sweep cycles per frequency; 1 octave per minute in 3 axes
	EN 60068-2-64 Fh	5.9 g RMS / effective acceleration for chassis mounting
	ISO 19014-3	5.7 g RMS / effective acceleration

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Salt spray test	EN 60068-2-52 Kb	severity level 5 (4 test cycles)
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Safety classification

Complies with the requirements	ISO 13849-1 Category 2, PL d
	IEC 61508 SIL 2, HFT 0, SC 2
Mission time TM [h]	≤ 87600
Mission time TM (additional indication)	industrial environments Temperature range -25...70 °C ≤ 175200
PFH [1/h]	< 1,5E-07

Mechanical data

Weight [g]	32.95
Housing	Threaded type
Mounting	flush mountable
Dimensions [mm]	M12 x 1 / L = 60
Thread designation	M12 x 1
Material	threaded sleeve: stainless steel (1.4404 / 316L); sensing face: stainless steel (1.4404 / 316L); LED window: PEI; LED sealing: PU; lock nuts: stainless steel (1.4404 / 316L)
Tightening torque [Nm]	15
Full-metal housing	yes

Displays / operating elements

Display	Display switching status	4 LED, yellow
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Accessories

Items supplied	lock nuts: 2
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Remarks

Remarks	meets the environmental and EMC requirements for operation in agricultural and forestry machinery, earthworks and construction machines as well as in industrial trucks
	can be used in applications up to SIL 2 in accordance with IEC 62061, MPL d in accordance with ISO 19014-3 and Ag PL d in accordance with ISO 25119
	Unless stated otherwise, all data refer to the reference target plate to IEC 60947-5-2 over the whole temperature range.
	(FE360 = ST37-2K) 12x12x1 mm
	the correction factors apply to an ambient temperature of 20°C
	do not use a correction factor for the safe switch-off distance sAs/(sar)

Pack quantity	1 pcs.
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Electrical connection - plug

Connector: 1 x M12; coding: A; Contacts: gold-plated



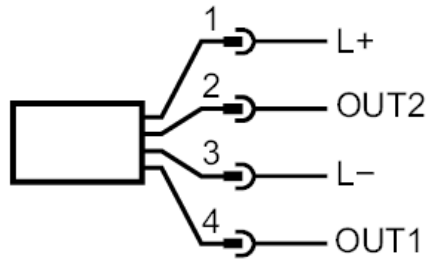
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Connection



1	L+	
2	OUT2	OSSD2
3	L-	
4	OUT1	OSSD1

OUT: Output