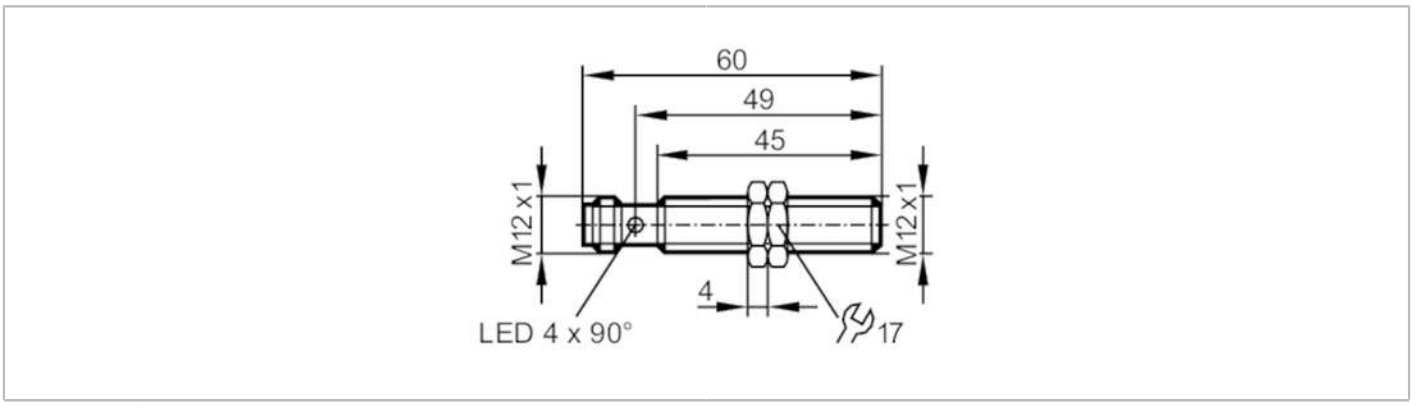
GF761S

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		
Special feature		Gold-plated contacts; Full-metal housing
Type of operation		permanent operation
Safety-related sub-function		safe state when undamped correctly (s > sAs (sar))
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
Detection zone		
Enable zone	[mm]	0...1.5

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Safe switch-off distance sAs (sar) [mm]		6
Accuracy / deviations		
Correction factor		steel: 1 / stainless steel: 0.6 / brass: 0.7 / aluminium: 0.6 / copper: 0.3
Response 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
Ionising 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 change	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, 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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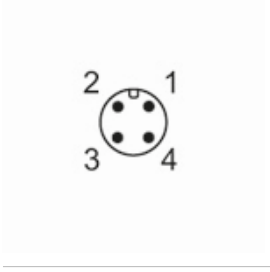
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Salt spray test		EN 60068-2-52 Kb	severity level 5 (4 test cycles)
UL approval		Ta	-40...70 °C
		Enclosure type	Type 1
		power supply	Limited Voltage/Current
		UL approval no.	A064
		File number UL	E174191
Safety classification			
Complies with the 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	
Materials		threaded sleeve: stainless steel (316L/1.4404); sensing face: stainless steel (316L/1.4404); LED window: PEI; LED Sealing: PU; lock nuts: stainless steel (316L/1.4404)	
Tightening torque	[Nm]	15	
Full-metal housing		yes	
Displays / operating elements			
Display		Display switching status	4 LED, yellow
Accessories			
Items supplied		lock nuts: 2	
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.	

Electrical connection - plug

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

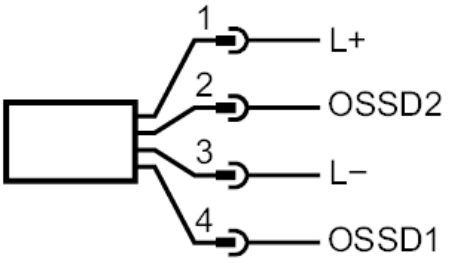


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Connection



1	L+
2	OSSD2
3	L-
4	OSSD1