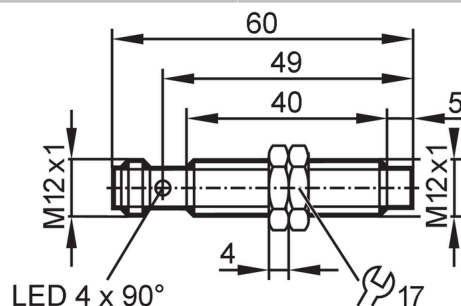


GF854S



Fail-safe inductive sensor

GIFK4004-2PO/SIL2/US



Product characteristics

Electrical design	PNP
Output function	2 x OSSD (A1 and A2)
Enable zone [mm]	> 6
Housing	Threaded type
Dimensions [mm]	M12 x 1 / L = 60

Application

Special feature	gold-plated contacts
Type of operation	permanent operation
Safety-related sub-function	safe state when damped correctly
Application	Use in mobile and harsh applications

Electrical data

Operating voltage [V]	8...32 DC
Rated insulation voltage [V]	60
Current consumption [mA]	< 20
Protection class	III
Reverse polarity protection	yes
Max. power-on delay time [ms]	1000

Outputs

Electrical design	PNP
Output function	2 x OSSD (A1 and A2)
Max. voltage drop switching output DC [V]	2.5; (30 mA)
Minimum load current [mA]	1
Permanent current rating of switching output DC [mA]	50
Switching frequency DC [Hz]	10
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



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Monitoring range		
Enable zone	[mm]	> 6
Safe switch-off distance s(ao)	[mm]	< 3
Accuracy / deviations		
Correction factor		steel: 1 / stainless steel: 0.7 / brass: 0.4 / aluminum: 0.4 / copper: 0.3
Hysteresis	[% of Sr]	1...10
Reaction times		
Response time to safety request	[ms]	5
Response time when approaching the enable zone	[ms]	5
Risk time (response time for safety-related faults)	[ms]	100
Operating conditions		
Ambient temperature	[°C]	-40...85
Max. relative air humidity	[%]	50; (70 °C; <70 °C: >50 %)
Max. height above sea level	[m]	5000
Ionizing radiation		not permissible
Protection		IP 65; IP 67; IP 68; IP 69K; (with ifm socket duly screwed on)

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Chemical media

test according to ISO 16750-5	
the following media were tested for 22 hours at 60 °C	Coolants
	(HoughtonHocut4480
	Oemeta
	HYCUT ET 46)
The following media were tested for 22 hours at 75 °C	hydraulic fluids
	(Fuchs Renoling B15 VG 46 HLP
	Total BiohydranTMP 4HEES
	Fuchs Hydrotherm 46 M HFC)
	transmission oils
	(Fuchs TITAN ATF 3353 Dexron III)
	diesel
	biodiesel
	urea
	(AdBlue)
	brake fluid
	(K2 TURBO DOT 4)
the following media were tested for 22 hours at 23 °C	corrosion protection
	(Sonax special preservation wax)
	cold cleaner
	(Sonax cold cleaner S)
	ammonia-based cleaner
	(Weco Dr. Webers Salmiak-Konzentrat (concentrated ammonium chloride))
	battery acid
the following media were tested for 2 hours at 23 °C	wheel rim cleaner
	(Sonax Xtreme Plus)
the following media were tested for 10 minutes at 23 °C	premium-grade petrol lead-free



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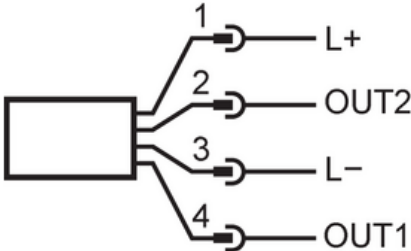
Tests / approvals							
EMC	industrial environments						
	EN 60947-5-3						
	EN 61000-4-2 ESD	6 kV CD / 8 kV AD					
	EN 61000-4-3 HF radiated	20 V/m					
	EN 61000-4-4 Burst	2 kV					
	EN 61000-4-5 Surge	2 kV					
	EN 61000-4-6 HF conducted	10 V					
	EN 61000-4-8	30 A/m 50/60 Hz / 1000 A/m 0 Hz					
	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					
	ISO 7637-2, ISO 16750-2 conducted immunity	12 V / 24 V					
	pulse	1	2a	3a	3b	4	5b
	Severity level	III	III	III	III	III	58V
	Failure criterion	B	B	B	A	A	C/B A
	EN 55025						
Vibration resistance	EN 60068-2-6 Fc	20 g (10...3000 Hz) / 50 sweep cycles per frequency; 1 octave per minute in 3 axes					
Broadband noise	EN 60068-2-64 h	5,9 g (10...2000 Hz) / effective acceleration for chassis mounting					
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 = 30 min; t2 = 10 s 100 cycles					
Salt spray test	EN 60068-2-52 Kb	severity level 5 (4 test cycles)					
Safety classification							
Complies with the requirements	ISO 13849-1: 2015 Category 2, PL d						
	IEC 61508 SIL 2						
	IEC 62061 SIL 2						
Mission time TM	[h]	≤ 87600					
Mission time TM (additional indication)		industrial environments Temperature range -25...70 °C ≤ 175200					
PFH	[1/h]	< 5E-08					
Mechanical data							
Weight	[g]	86.8					
Housing		Threaded type					
Mounting		non-flush mountable					
Dimensions	[mm]	M12 x 1 / L = 60					
Thread designation		M12 x 1					
Material		threaded sleeve: brass white bronze coated; sensing face: LCP; LED window: PEI; lock nuts: brass white bronze coated					
Tightening torque	[Nm]	< 7					

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Displays / operating elements		
Display	Display switching status	4 LED, yellow
Accessories		
Items supplied	lock nuts: 2	
Remarks		
Remarks	material for secure mounting not supplied; fixing must be done by the user	
	meets the environmental and EMC requirements for operation in agricultural and forestry machinery, earthworks and construction machines as well as in industrial trucks	
	When used in industrial trucks, the screen of the connection cable has to be connected to the sensor.	
	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	
Pack quantity	1 pcs.	
Electrical connection - plug		
Connector: 1 x M12; coding: A; Contacts: gold-plated		
		
Connection		
		
1	L+	
2	OUT2	OSSD2
3	L-	
4	OUT1	OSSD1
OUT: Output		