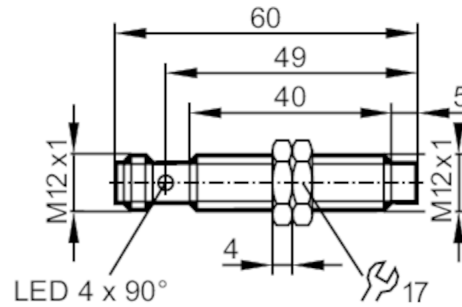


GF854S



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

| | |
|-----------------------------|--------------------------------------|
| System | 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 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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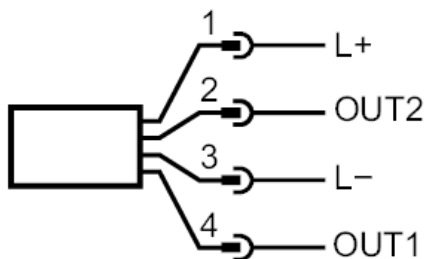
| Displays / operating elements | |
|-------------------------------|---|
| Display | Display switching status 4 LED, yellow |
| Accessories | |
| Items supplied | lock nuts: 2 |
| Remarks | |
| Remarks | <p>material for secure mounting not supplied; fixing must be done by the user</p> <p>meets the environmental and EMC requirements for operation in agricultural and forestry machinery, earthworks and construction machines as well as in industrial trucks</p> <p>When used in industrial trucks, the screen of the connection cable has to be connected to the sensor.</p> <p>Unless stated otherwise, all data refer to the reference target plate to IEC 60947-5-2 over the whole temperature range.</p> <p>(FE360 = ST37-2K) 12x12x1 mm</p> |
| 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