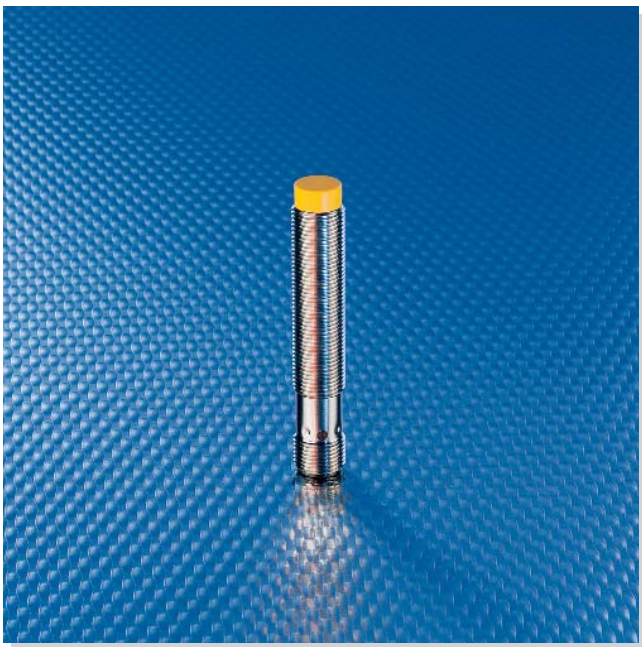
product news

ifm electronic

Position sensors and object recognition

Fail-safe inductive sensor directly detects metal.



Detection without magnetic target or coded actuator.

- **Suitable for operator and machine safety.**
- **Reliable end position monitoring on moving machine parts.**
- **Connection of the sensors to safety PLCs, bus systems and logic modules possible.**
- **Increased machine uptime and safety.**
- **Certified to IEC 62061 SILcl2, complies with IEC 61508 SIL2.**

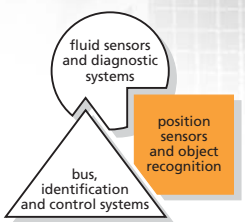
TÜV certified | cULus approval | SIL 2

Requirement profiles for the fail-safe sensor:

Reliable positioning on rotary indexing tables and machine tools. Reliable triggering of slow travel or switching off in end positions for presses, gantry robots and actuators. Reliable area monitoring for robots.

The fail-safe sensor increases the uptime and safety of your installation and can be connected to approved evaluation units.

Costly maintenance can be dispensed with due to wear-free operation. Faults such as coil break are diagnosed and the sensor passes into the defined safe state. In case of a cross fault between the supply voltage and an output the fail-safe sensor can switch off the other output when there is a safety request.



Inductive safety applications are special applications which require a non-contact and safe detection of a metal object.

Type / design	Enable zone [mm]	Current rating [mA]	Protection rating	Residual error probability (to IEC 61508)	Operating temperature [°C]	Order no.
M12 connector · Output function 2 PNP no (OSSD)						
M12 / nf	0.5...4	100	IP 65 / IP 67	$PFD_{avg} < 1 \times 10^{-3}$ / $PFH_D < 1.0 \times 10^{-7}$/h	-25...70	**GF711S**

Evaluation unit

Type	Description	Order no.
	Safety relay	**G1501S**

Accessories for G1501S

Type	Description	Order no.
	Screw terminals Set with 5 COMBICON screws	**E11929**
	Cage clamps Set with 5 COMBICON screws	**E11930**

Connectors and splitter boxes

Type	Description	Order no.
	M12 socket, 2 m black, PUR cable	**EVC001**
	M12 socket, 5 m black, PUR cable	**EVC002**
	M12 socket, 2 m black, PUR cable	**EVC004**
	M12 socket, 5 m black, PUR cable	**EVC005**

Technical data (extract)

Certified to IEC 62061 SILcl2 Complies with the requirements to IEC 61508 SIL2		
Operating voltage	[V]	24 DC (19.2...30 DC)
Short-circuit protection		•
Reverse polarity protection		•
Operating mode		Permanent operation (maintenance-free)
Service life T	[h]	87600 (10 years)
Test interval T1	[h]	= service life T
Status indication	LED	
Switching status Operating voltage		yellow green

Category is history – now there is SIL and PL.

In the past you were familiar with categorisation to EN 954-1, this has been replaced by SIL and IEC 62061 and PL to ISO 13849-1.

The qualitative approach is no longer sufficient so the quantitative approach has been added. The standards IEC 62061 and ISO 13849-1 now consider also the average probability of failure of components (called probabilistic approach).

The new approaches have been developed also because the EN 954-1 did not take into account the time behaviour (e.g. test interval, life time).

These characteristics of the sensors or the individual components are described in the Safety Integrity Level (SIL 1-3) and the Performance Level (PL a-e).

ifm offers you "safe" assistance, today as well as in the future. **www.ifm-electronic.com/safe**

You can find more information on the standards at: www.zvei.org or www.vdma.org