Inductive sensor

PL4-F25-N4-S

For installation in housing PL4... with 2 valve connections
Screw terminals

CE
0102

General specifications	
Switching element function	DC Dual NC
Rated operating distance s_n	3 mm
Installation	embeddable mountable
Output polarity	NAMUR
Assured operating distance s_a	0 ... 2.43 mm
Reduction factor r_{Al}	0.5
Reduction factor r_{Cu}	0.4
Reduction factor r_{304}	1
Reduction factor r_{St37}	1.2
Reduction factor r_{Brass}	0.63
Nominal ratings	
Nominal voltage U_o	8.2 V (R_i approx. 1 kΩ)
Operating voltage U_B	5 ... 25 V
Switching frequency f	0 ... 100 Hz
Hysteresis H	typ. 5 %
Reverse polarity protected	reverse polarity protected
Current consumption	
Measuring plate not detected	≥ 3 mA
Measuring plate detected	≤ 1 mA
Indication of the switching state	LED, yellow
Valve status indication	LED, yellow
Ambient conditions	
Ambient temperature	-25 ... 100 °C (-13 ... 212 °F)
Storage temperature	-40 ... 100 °C (-40 ... 212 °F)
Mechanical specifications	
Connection (system side)	screw terminals
Core cross-section (system side)	up to 2.5 mm^2
Connection (valve side)	screw terminals
Core cross-section (valve side)	up to 2.5 mm^2
Housing material	PBT
Sensing face	PBT
Note	Installation in housing
General information	
Use in the hazardous area	see instruction manuals
Category	1G; 2G
Compliance with standards and directives	
Standard conformity	
NAMUR	EN 60947-5-6:2000
Electromagnetic compatibility	NE 21:2007

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ATEX 1G

Instruction	**Manual electrical apparatus for hazardous areas**
Device category 1G	for use in hazardous areas with gas, vapour and mist
Directive conformity	94/9/EG
Standard conformity	EN 60079-0:2006, EN 60079-11:2007, EN 60079-26:2007 Ignition protection "Intrinsic safety" Use is restricted to the following stated conditions
CE symbol	CE 0102
Ex-identification	Ex II 1G Ex ia IIC T6
EC-Type Examination Certificate	TÜV 99 ATEX 1479 X
Appropriate type	PL.-F25.-N4...
Effective internal capacitance C_i	≤ 100 nF A cable length of 10 m is considered. The value is applicable for the sensor circuit.
Effective internal inductance L_i	≤ 100 µH A cable length of 10 m is considered. The value is applicable for the sensor circuit.
General	The apparatus has to be operated according to the appropriate data in the data sheet and in this instruction manual. The EC-Type Examination Certificate has to be observed. The special conditions must be adhered to! Directive 94/9/EG and hence also EC-Type Examination Certificates apply in general only to the use of electrical apparatus under atmospheric conditions. The use in ambient temperatures of > 60 °C was tested with regard to hot surfaces by the mentioned certification authority. If the equipment is not used under atmospheric conditions, a reduction of the permissible minimum ignition energies may have to be taken into consideration.
Highest permissible ambient temperature	The temperature ranges, according to temperature class, are given in the EC-Type Examination Certificate. Note: Use the temperature table for category 1 !!! The 20 % reduction in accordance with EN 1127-1:2007 has already been accounted for in the temperature table for category 1.
Installation, Comissioning	Laws and/or regulations and standards governing the use or intended usage goal must be observed. The intrinsic safety is only assured in connection with an appropriate related apparatus and according to the proof of intrinsic safety. The associated apparatus must satisfy the requirements of category ia. Due to the possible danger of ignition, which can arise due to faults and/or transient currents in the equipotential bonding system, galvanic isolation of the power supply and signal circuit is preferable. Associated apparatus without electrical isolation must only be used if the appropriate requirements of IEC 60079-14 are met. The jumper, WJ, is detachable and must be completely removed to prevent contact with adjacent components.
Maintenance	No changes can be made to apparatus, which are operated in hazardous areas. Repairs to these apparatus are not possible. Only changes specifically described in these operating instructions are allowed.

Special conditions

Protection from mechanical danger	When used in the temperature range below -20 °C the sensor should be protected from knocks by the provision of an additional housing.
Electrostatic charging	When used in group IIB/IIC non-permissible electrostatic charges should be avoided on the plastic housing parts..
Lead insertion	The connection cables should either be fixed when laid and mechanically protected or installed in such a way, that a force of 30 N applied in the direction of the cable inlet for one hour, does not lead to any visible displacement of the cable connections, even though the cable sheathing is displaced, see also IEC 60079-11. Depending on the type of installation, a suitable cable in accordance with Type A oder B of IEC 60079-14, must be used.

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ATEX 2G

Instruction	**Manual electrical apparatus for hazardous areas**
Device category 2G	for use in hazardous areas with gas, vapour and mist
Directive conformity	94/9/EG
Standard conformity	EN 60079-0:2006, EN 60079-11:2007 Ignition protection "Intrinsic safety" Use is restricted to the following stated conditions
CE symbol	CE 0102
Ex-identification	Ex II 1G Ex ia IIC T6
EC-Type Examination Certificate	TÜV 99 ATEX 1479 X
Appropriate type	PL.-F25.-N4...
Effective internal capacitance C_i	≤ 100 nF ; a cable length of 10 m is considered. The value is applicable for the sensor circuit.
Effective internal inductance L_i	≤ 100 µH ; a cable length of 10 m is considered. The value is applicable for the sensor circuit.
General	The apparatus has to be operated according to the appropriate data in the data sheet and in this instruction manual. The EC-Type Examination Certificate has to be observed. The special conditions must be adhered to! Directive 94/9/EG and hence also EC-Type Examination Certificates apply in general only to the use of electrical apparatus under atmospheric conditions. The use in ambient temperatures of > 60 °C was tested with regard to hot surfaces by the mentioned certification authority. If the equipment is not used under atmospheric conditions, a reduction of the permissible minimum ignition energies may have to be taken into consideration.
Highest permissible ambient temperature	The temperature ranges, according to temperature class, are given in the EC-Type Examination Certificate.
Installation, Comissioning	Laws and/or regulations and standards governing the use or intended usage goal must be observed. The intrinsic safety is only assured in connection with an appropriate related apparatus and according to the proof of intrinsic safety. The jumper, WJ, is detachable and must be completely removed to prevent contact with adjacent components.
Maintenance	No changes can be made to apparatus, which are operated in hazardous areas. Repairs to these apparatus are not possible. Only changes specifically described in these operating instructions are allowed.
Special conditions	
Protection from mechanical danger	When used in the temperature range below -20 °C the sensor should be protected from knocks by the provision of an additional housing.
Electrostatic charging	When used in group IIC non-permissible electrostatic charges should be avoided on the plastic housing parts.
Lead insertion	The connection cables should either be fixed when laid and mechanically protected or installed in such a way, that a force of 30 N applied in the direction of the cable inlet for one hour, does not lead to any visible displacement of the cable connections, even though the cable sheathing is displaced, see also IEC 60079-11. Depending on the type of installation, a suitable cable in accordance with Type A oder B of IEC 60079-14, must be used.

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ATEX 3G (nL)

General

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