

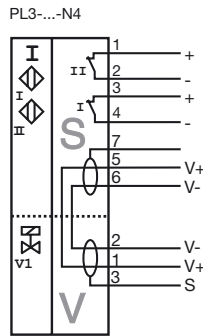
Model Number

PL3-F25-N4-K

Features

- For installation in housing
- PL3... with valve and screen connection
- Pluggable cage clamp terminals
- Valve LEDs disconnectable (wire jumper)
- EC-Type Examination Certificate TÜV99 ATEX 1479X

Connection

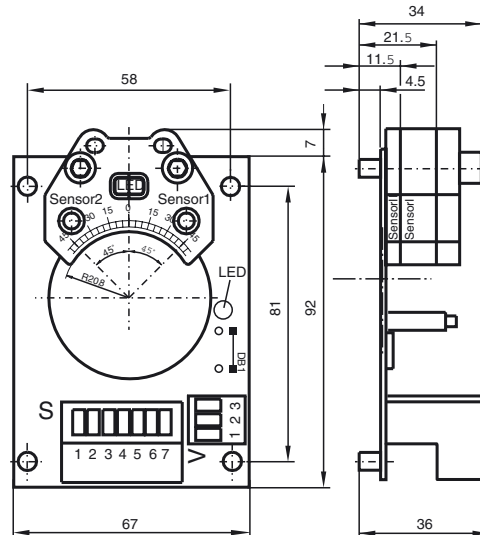


Accessories

- BT32**
Activator for F25 series
- BT32XS**
Activator for F25 series
- BT32XAS**
Activator for F25 series
- BT33**
Activator for F25 series
- BT34**
Activator for F25 series

Release date: 2011-07-29 08:33 Date of issue: 2012-02-03 104485_eng.xml

Dimensions



Technical Data

General specifications		DC	Dual NC
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_{AI}		0.5	
Reduction factor r_{304}		1	
Reduction factor r_{317}		1.2	
Nominal ratings			
Nominal voltage	U_o	8.2 V (R_i approx. 1 k Ω)	
Operating voltage	U_B	5 ... 25 V	
Switching frequency	f	0 ... 100 Hz	
Hysteresis	H	typ. 5 %	
Reverse polarity protected		reverse polarity protected	
Short-circuit protection		yes	
Suitable for 2:1 technology		yes, Reverse polarity protection diode not required	
Current consumption			
Measuring plate not detected		≥ 3 mA	
Measuring plate detected		≤ 1 mA	
No-load supply current	I_o	≥ 3 mA	
Indication of the switching state		LED, yellow	
Valve status indication		LED, yellow can be switched off by of DB1	
Ambient conditions			
Ambient temperature		-25 ... 100 °C (-13 ... 212 °F)	
Storage temperature		-40 ... 100 °C (-40 ... 212 °F)	
Mechanical specifications			
Connection (system side)		Cage tension spring terminals	
Core cross-section (system side)		up to 2.5 mm ²	
Connection (valve side)		Cage tension spring terminals	
Core cross-section (valve side)		up to 2.5 mm ²	
Housing material		PBT	
Sensing face		PBT	
General information			
Use in the hazardous area		see instruction manual	
Category		1G; 2G; 3G	
Compliance with standards and directives			
Standard conformity			
NAMUR		EN 60947-5-6:2000	
Electromagnetic compatibility		NE 21:2007	
Standards		EN 60947-5-2:2007 IEC 60947-5-2:2007	

ATEX 1G

Instruction

Manual electrical apparatus for hazardous areas

Device category 1G

for use in hazardous areas with gas, vapour and mist
94/9/EG

Directive conformity

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

 0102

Ex-identification

 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, Commissioning

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.

ATEX 2G

Instruction

Device category 2G

Directive conformity

Standard conformity

CE symbol

Ex-identification

EC-Type Examination Certificate

Appropriate type

Effective internal capacitance C_i Effective internal inductance L_i

General

Highest permissible ambient temperature

Installation, Commissioning

Maintenance

Special conditions

Protection from mechanical danger

Electrostatic charging

Lead insertion

Manual electrical apparatus for hazardous areas

for use in hazardous areas with gas, vapour and mist


94/9/EG

EN 60079-0:2006, EN 60079-11:2007

Ignition protection "Intrinsic safety"

Use is restricted to the following stated conditions

 0102

 II 1G Ex ia IIC T6

TÜV 99 ATEX 1479 X

PL.-F25.-N4...

≤ 100 nF ; a cable length of 10 m is considered. The value is applicable for the sensor circuit.

≤ 100 μ H ; a cable length of 10 m is considered. The value is applicable for the sensor circuit.

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.

The temperature ranges, according to temperature class, are given in the EC-Type Examination Certificate.

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.

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.

When used in the temperature range below -20 °C the sensor should be protected from knocks by the provision of an additional housing.

When used in group IIC non-permissible electrostatic charges should be avoided on the plastic housing parts.

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.

ATEX 3G (nL)

Instruction

Device category 3G (nL)

Directive conformity

Standard conformity

CE symbol

Ex-identification

Effective internal capacitance C_i Effective internal inductance L_i

General

Installation, Commissioning

Maintenance

Special conditionsMaximum permissible ambient temperature T_{Umax} at $U_i = 20$ V

- for $P_i=34$ mW, $I_i=25$ mA, T6
- for $P_i=34$ mW, $I_i=25$ mA, T5
- for $P_i=34$ mW, $I_i=25$ mA, T4-T1
- for $P_i=64$ mW, $I_i=25$ mA, T6
- for $P_i=64$ mW, $I_i=25$ mA, T5
- for $P_i=64$ mW, $I_i=25$ mA, T4-T1
- for $P_i=169$ mW, $I_i=52$ mA, T6
- for $P_i=169$ mW, $I_i=52$ mA, T5
- for $P_i=169$ mW, $I_i=52$ mA, T4-T1
- for $P_i=242$ mW, $I_i=76$ mA, T6
- for $P_i=242$ mW, $I_i=76$ mA, T5
- for $P_i=242$ mW, $I_i=76$ mA, T4-T1

Maximum values of the valve circuit

Protection from mechanical danger

Protection from UV light

Electrostatic charging

Lead insertion


Manual electrical apparatus for hazardous areas

for use in hazardous areas with gas, vapour and mist

94/9/EG

EN 60079-15:2005 Ignition protection category "n"

Use is restricted to the following stated conditions


 II 3G Ex nL IIC T6 X

 ≤ 100 nF ; A cable length of 10 m is considered.
The value is applicable for the sensor circuit.

 ≤ 100 μ H ; A cable length of 10 m is considered.
The value is applicable for the sensor circuit.

The apparatus has to be operated according to the appropriate data in the data sheet and in this instruction manual. The data stated in the data sheet are restricted by this operating instruction!

The special conditions must be observed!

Directive 94/9/EG is generally applicable only to the use of electrical apparatus operating at atmospheric conditions.

If the equipment is not used under atmospheric conditions, a reduction of the permissible minimum ignition energies may have to be taken into consideration.

Laws and/or regulations and standards governing the use or intended usage goal must be observed. The sensor must only be operated with energy-limited circuits, which satisfy the requirements of IEC 60079-15. The explosion group depends on the connected, energy-limited power supply circuits.

The maximum values of the connected, energy-limited valve circuits, must be observed. The sensor must be installed in a housing in such a way, that a protection class of at least IP20 is achieved in accordance with IEC 60529. The jumper, WJ, is detachable and must be completely removed to prevent contact with adjacent components.

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.

Each sensor circuit can be operated with the stated maximum values and with simultaneous operation of the valve circuits.

62 °C (143.6 °F)

64 °C (147.2 °F)

64 °C (147.2 °F)

59 °C (138.2 °F)

59 °C (138.2 °F)

59 °C (138.2 °F)

41 °C (105.8 °F)

41 °C (105.8 °F)

41 °C (105.8 °F)

29 °C (84.2 °F)

29 °C (84.2 °F)

29 °C (84.2 °F)

 $U_i = 32$ V; $I_i = 240$ mA; $C_i = 10$ nF; $L_i = 20$ μ H

The values are applicable to each valve circuit. A cable length of 10 m is taken into account.

The sensor must not be exposed to **ANY FORM** of 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.

The sensor and the connection cable must be protected from damaging UV-radiation. This can be achieved when the sensor is used in internal areas.

When used in group IIC non-permissible electrostatic charges should be avoided on the plastic housing parts.

The connecting cable must be protected from tension and torsional loading or installed in such a way, that an applied force of 30 N, acting 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.