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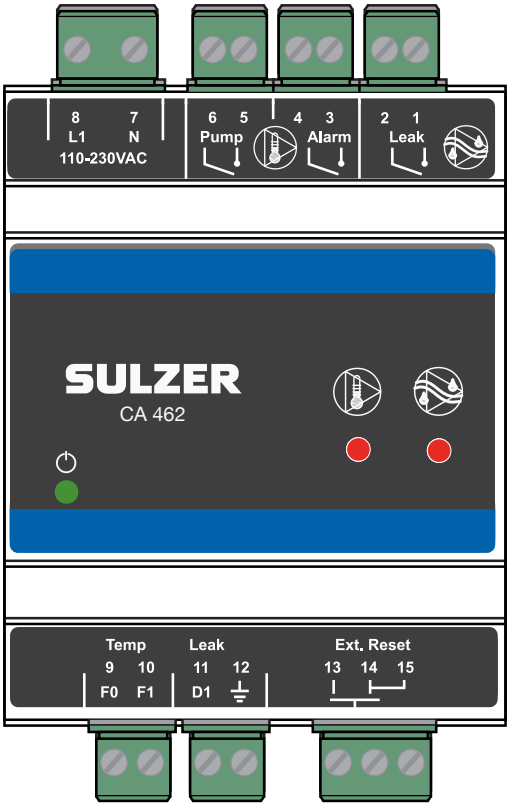
Temperature and leakage relay type ABS CA 462



81907004J (09/2023)

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Installation guide

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Temperature and leakage relay type ABS CA 462

1 TECHNICAL DATA

1.1 *Technical data CA 462*

Temperature input threshold (±10%)		> 3.3 kohm (PTC / Klixon)
Max PTC current		< 0.6 mA
PTC source voltage		12 VDC
Leakage sensor voltage		12 VDC
Max leakage sensor current		< 15 µA
Leakage detection threshold (±10%)		< 100 kohm
Leakage alarm delay		10 seconds
Ambient operating temperature		–20 to +50 °C (–4 to +122 °F)
Ambient storage temperature		–30 to +80 °C (–22 to +176 °F)
Degree of protection		IP20, NEMA: Type1
Housing material		PPO and PC
Mounting		DIN Rail 35 mm
Installation category		CAT II
Pollution degree		2
Flame rate		V0 (E45329)
Humidity		0–95% RH non-condensing
Dimensions		H x W x D: 108 x 70 x 58 mm (4.25 x 2.76 x 2.28 inch)
Power supply	***16907006***	110-230 VAC, 50 Hz/60 Hz
	16907007	18-36 VDC SELV or Class 2
Fuse		Max 10 A
Terminal wire size		Use copper (Cu) wire only. 0.2 - 2.5 mm^2 flexible core, stripped length 8 mm.
Terminal tightening torque		0.56 - 0.79 Nm (5 -7 lbs-in)
Power consumption		< 5 W
Max load alarm relays		250 VAC 3 Ampere resistive load
Altitude		Max 2000 MASL or 6562 ft. AMSL
Max load output pump blocking relay		250 VAC 6 Ampere resistive load
Compliance		CE, cSPus, UL

Attention If the unit is used in a manner not described in this document the protection provided by the equipment may be impaired.

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2 FUNCTION AND USAGE

CA 462 is a combined standalone leakage detection and temperature blocking relay for DIN rail mount.

2.1 *Function leakage*

In case of water leakage, the resistance between the sensor electrode and housing will decrease. If the resistance becomes less than 100 kohm (±10 %) between terminals 11 and 12, the relay contact on terminal 1 and 2 closes. The signal has to be stable for at least 10 seconds before the relay is been activated.

2.2 *Function temperature blocking*

If the temperature in the pump is rising and the terminal protector sets off, the CA 462 is blocking the pump without any delay.

Automatic reset

- ***if terminal 14 and 15 are open;*** pump starts automatically when the temperature is back to normal.

Manual reset

- ***if terminal 14 and 15 are bridged;*** manual reset has to be done by terminal 13 and 14 after the temperature is back to normal.

Table 1: Connection chart

Terminal	Description
1	Leakage alarm relay (NO)
2	Leakage alarm relay
3	High temperature alarm relay (NO)
4	High temperature alarm relay
5	Pump relay (NO) (Closed under normal operation)
6	Pump relay
7	Power supply (0 V **or** N)
8	Power supply (+24 VDC **or** L1)
9	Input from pump temperature sensor (PTC / Klixon)
10	Input from pump temperature sensor (PTC / Klixon)
11	Input from pump leakage probes
12	Connect to ground or pump chassis
13	Reset switch for high temperature alarm
14	Reset switch for high temperature alarm
15	Manual reset required if bridged to terminal 14*

* If bridged to terminal 14; manually reset is required after high temperature alarm *after* condition is back to normal. If **not** bridge; pump start automatically when condition is back to normal.

Table 2: Product reference

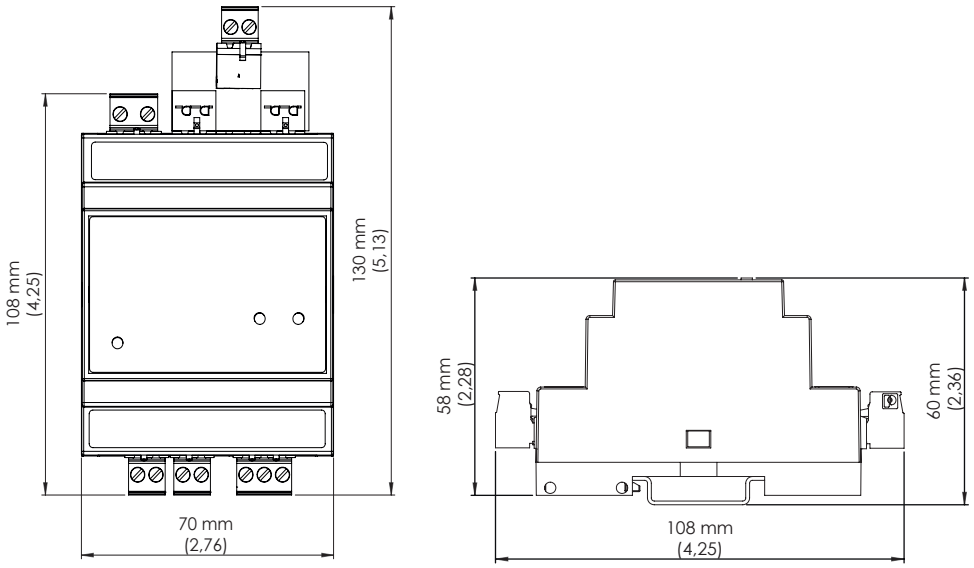
Article	Description
16907006	CA 462 110-230 VAC supply voltage
16907007	CA 462 18-36 VDC supply voltage

One item of Xylem MiniCas adapter is included in both 16907006 and 16907007.

Table 3: Logic table of relay

Alarm type	Alarm LED		Input state		Output relay state			Remark
	Tempera-ture	Leakage	Temp (9 & 10)	Leak (11 & 12)	Pump (5 & 6)	Alarm (4 & 3)	Leak (2 & 1)	
			closed	open	closed	open	open	Normal operation
Temperature	Yes	-	> 3.3 kohm	open	open	closed	open	Pump stops
Leakage	-	Yes	closed	< 100 kohm	closed	open	closed	Pump runs
Temp. + leak.	Yes	Yes	> 3.3 kohm	< 100 kohm	open	closed	closed	Pump stops

3 Dimensions



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4 CONNECTION DIAGRAM

4.1 *Electrical connection*

If several sensors are to be used from the pump, then they must be connected together.

Leakage: Sensors must be in parallel.
It is very important to have in mind that this practice avoids alarms to be distinguished. Sulzer highly recommends to use one module per signal to allow not only distinguishing but also acting in a different way according to the alarm category/severity.

Temperature (Klixon or PTC): Sensors must be in series.

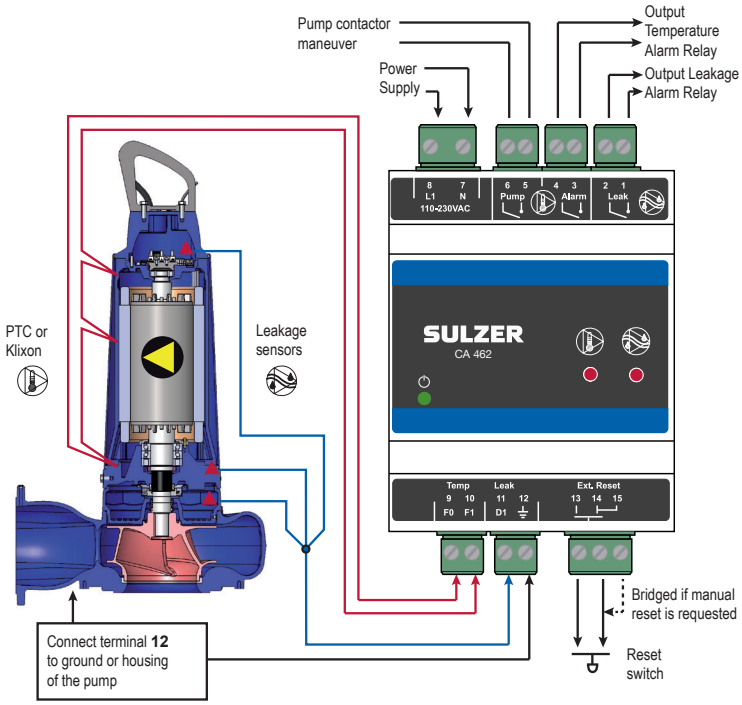

Figure 1 Electrical connection diagram

When several CA 462 units are used, the reset buttons cannot be wired together. The solution is to use one reset button to each unit or an external relay which control all the reset buttons as figure 2.

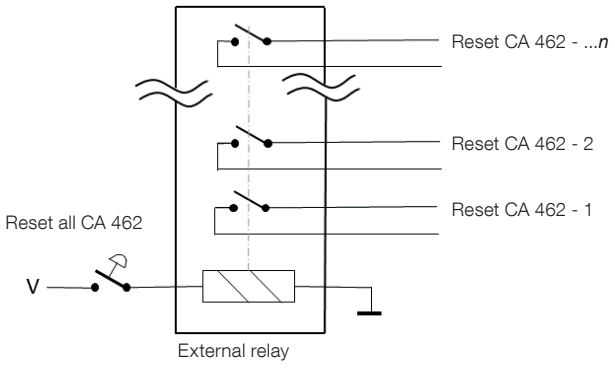

Figure 2 Connection of reset function for multiple CA 462 units

If pump is operated from a motor drive or frequency converter, special precautions are required.

The high electric noise level can distort electrical readings and in extension jeopardize functionality.
To avoid conducted electrical noise, follow best practices and manufacturer EMC compliance recommendations when installing frequency converters. Use shielded cables and 50 cm separation between power and signal cables. Ensure that the cables are also separated from each other in cabinets.

5 ACCESSORIES

5.1 *Xylem MiniCAS adapter*

Xylem MiniCAS adapter is included in P/N ***16907006*** and ***16907007***.
The MiniCAS adapter can also be ordered as a spare part, P/N ***16907009***.

5.1.1 Connection diagram MiniCAS adapter

Xylem MiniCAS adapter is a PCB with resistor network for interfac-
ing CA 462 to Xylem MiniCAS relay. The output to MiniCas is polarity independent.

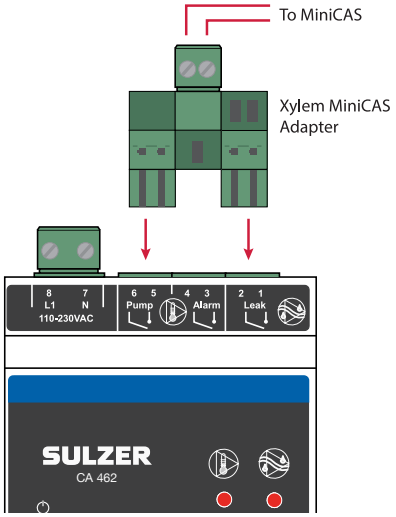

Figure 3 Connection diagram for MiniCAS adapter

Table 4: Logic diagram of output resistance related to the inputs

Temperature input	Seal leak input	Output resistance
OK	OK	Nominal (1500 Ω)
OK	Seal failure condition	LOW (400 Ω)
Over-temperature condition (open or disconnected)	OK or seal failure condition	HIGH (>4000 Ω)

6 CLEANING

How to clean the unit

Powers off the unit and only outside/front shall be cleaned by using a dry, soft cloth. A good choice would be the microfiber type of cloth and gently wipe the CA 462 unit on front in order not to scratch the overlay. If the dry cloth did not completely remove the dirt, do not press harder in an attempt to scrub it off. If necessary, moisten the cloth by adding a small amount of water with thin solution of mild detergent and try again. Never use detergent with polish or solvent which can have an impact of the plastic surface.

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