Cross Reference RA Part Number PN-206948

INSTALLATION

The monitoring connections at the panel

The **MiniCAS II** supervision relay is installed in the pump panel and simply plugs into an eleven pin relay base. Six basic sensor connections are possible.

1. **Thermal switches with FLS**

   The pilot cores in the pump can be connected to the panel in either polarity.

2. **Thermal switches with FLS10**

   The pilot cores in the pump can be connected to the panel in either polarity.

3. **Thermal switches with CLS**

   The **CLS** sensor is diode protected. For this reason the pilot cores are required to be connected with the correct polarity (brown = +, black = –). Connected incorrectly the **MiniCAS II** supervision relay will indicate an open circuit (0 mA), i.e. with the amber supply LED and the red overtemperature LED both on. Connected correctly and reset, the amber LED **only** will be on.

4. **Thermal switches with CLS + FLS**

   The pilot cores in the pump cable are required to be connected with the correct polarity (brown = +, black = –), however, because the **FLS** will cause the **MiniCAS II** to indicate healthy, i.e. amber LED **ON**, even when incorrectly connected **CLS**, a current reading of the monitoring circuit must be taken when installing the pump. Correct polarity will indicate 15.0 mA; incorrect polarity will indicate 7.8 mA with healthy conditions.

5. **Thermal switches only**

   A 1000–1500 ohm resistor must be connected in series with the thermal overtemperature switches. A 1000 ohm resistor is enclosed in the package.

MiniCAS II supervision relay

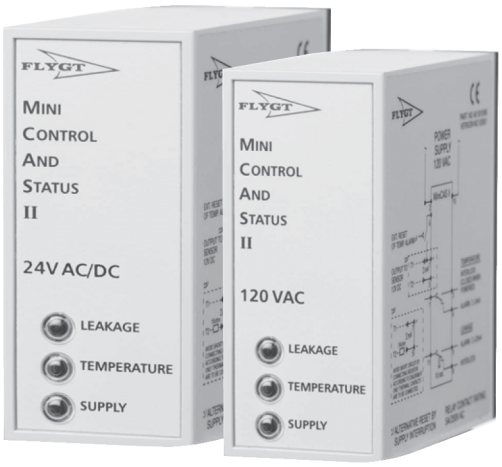
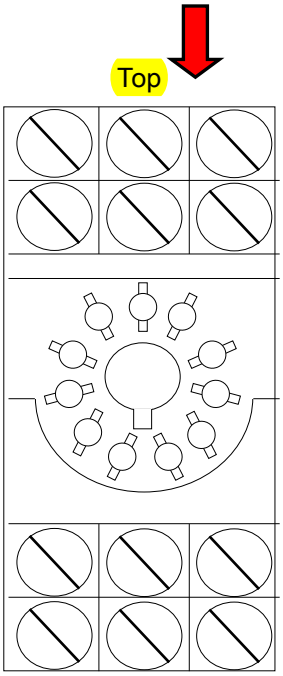


Figure 2

11 pin relay base



	EN 50042
1	11
2	A1
3	14
4	12
5	22
6	21
7	24
8	32
9	34
10	A2
11	31

Figure 3

Width 33 mm
Height 79 mm
Depth 75 mm

Part-no: 84 55 67

MiniCAS II supervision relay **11 pin relay base**

Part-nos:

- 83 58 57 (24 V AC/DC)
- 40 501098 (120 V AC)
- 40 501560 (230 V AC)

Variable frequency inverter controlled pumps/mixers

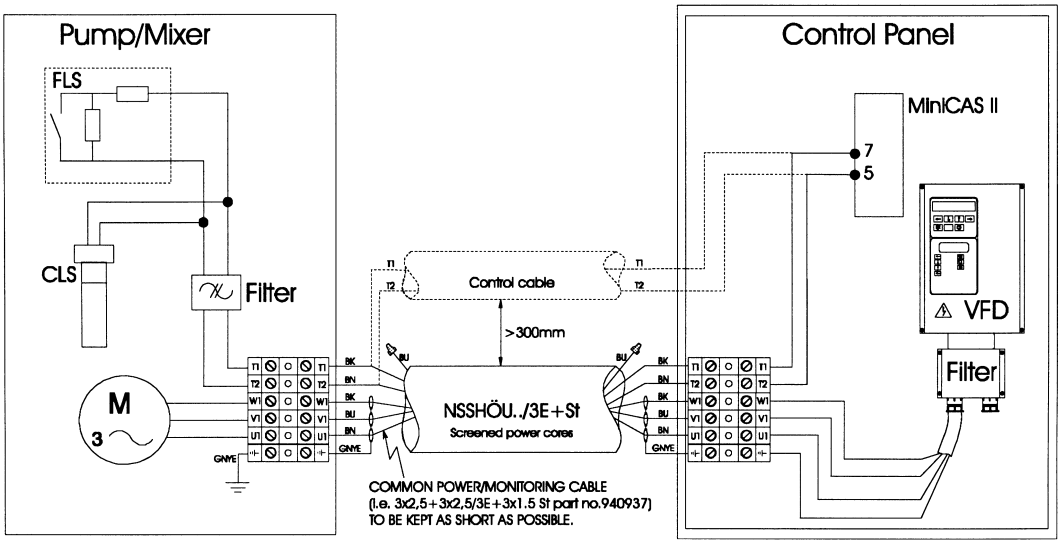


Figure 4

In installations utilizing variable frequency inverters for speed control of pumps, interference from a variable frequency drive (VFD) may cause nuisance tripping of monitoring equipment and the electronic sensor CLS.

VFD-interference does not affect FLS and FLS10.

Interference occurs when the pilot cores are in close proximity to the power cores.

The interference may be suppressed by connecting a suitable filter1 between the monitoring conductors (T1, T2) and ground (PE).

The filter should ideally be situated in the pump/mixer junction box.

Cables containing both power and pilot cores should be kept to a minimum length.

The power cable and control cable should be run in separate cable ducts with a distance of at least 300 mm between them.

Our pumps are CE-marked according to EMC-directive and the VFD that we buy from a subcontractor should also be CE-marked. In order to make the VFD pass the EMC-tests the interconnecting cable between pump and VFD has to be **screened.**

Table 1: Available filter kits:

Part no.	Will fit:
6046800	3102, 3127, 4430.
6046801	3085, 4410.
6046802	3140, 3152, 3170, 3201, 3300.
6046804	3231, 3306, 3312, 3351, 3356, 3400, 3501, 3602, 3800, 7045, 7061, 7081, 7101, 7115, 7121.
6616000	4630, 4640, 4650, 4660.
6616001	4670, 4680.

TECHNICAL DATA

MiniCAS II supervision relay

Operational principle:	Current Sensing
Approvals:	CE, C-UR (covering USA and Canada) and CSA
Environment:	–25 to 60°C (maximum 90% relative humidity)
Supply voltage 24 V AC/DC:	20-30 V AC (50-60Hz) 23.5–30 V DC
Supply voltage 120 V AC:	120 V AC (50-60 Hz)
Supply voltage 230 V AC:	230 V AC (50-60 Hz)
Relay contact rating:	250 V AC / 5A
Voltage to sensor:	12 V DC +/–5%
Values of operation:	3mA < **I** < 22 mA = OK condition **I** < 3 mA = High temperature (or interruption) **I** > 22 mA = Leakage (or short circuit), 10 s delay of alarm (**I** = *current measured by MiniCAS II*)
Power supply required:	5 VA

OPERATION

Leakage:

Changeover contacts	11–8 Normally closed for interlock 11–9 Closes for alarm
Automatic reset	
Red LED for indication – follows the relay	
Red indication lamp on:	Leakage
Red indication lamp off:	No leakage

Temperature:

Changeover contacts	1–3 Closes for interlock when energized 1–4 Normally closed for alarm
Manual reset (see below)	
Red indication lamp on:	Over temperature
Red indication lamp off:	Normal temperature

Reset of Temperature Alarm:

External reset is possible either by connecting terminals 6-7 with an external push button or by interrupting the supply voltage.

Note, in the 24 V version, Reset is also possible between 6-2.

DIMENSIONS:

Width	33 mm
Height	79 mm

Depth	75 mm

PART NOS:

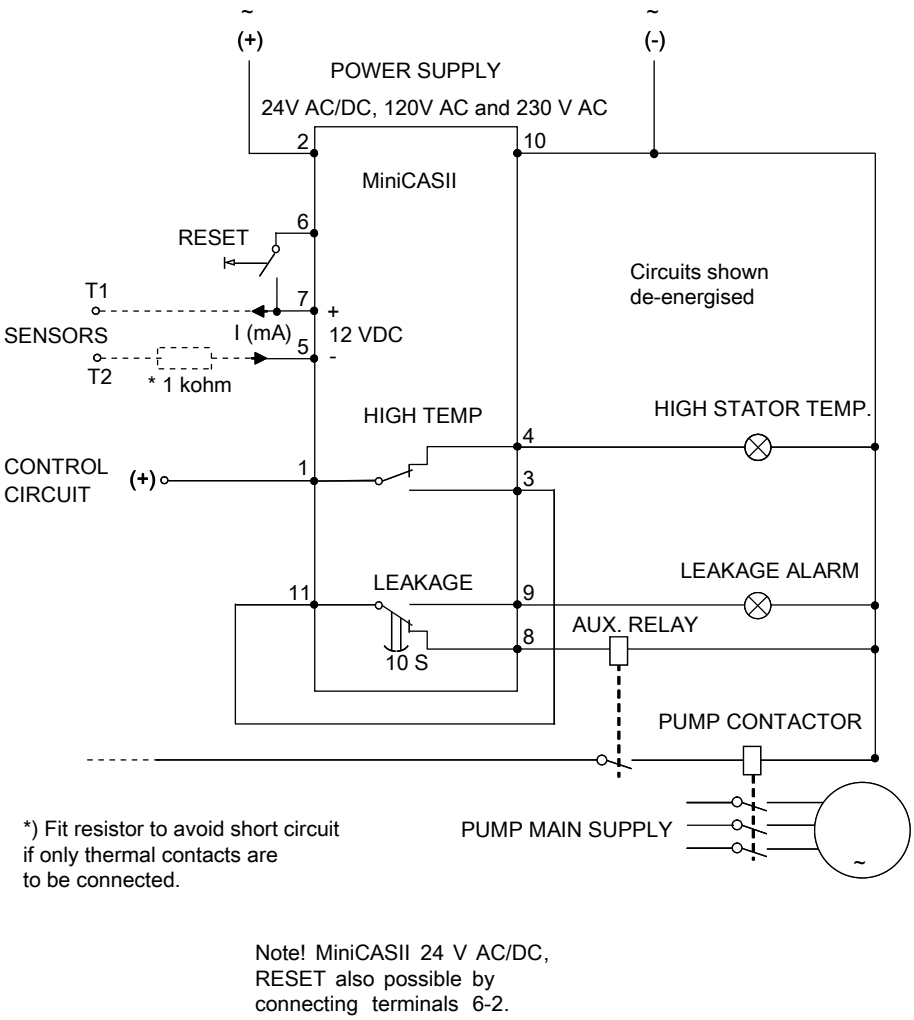
83 58 57 (24 V AC/DC)
40 501098 (120 V AC)
40 501560 (230 V AC)

CONNECTIONS

Leakage alarm will stop the pump

This installation can be used if the leakage alarm shall stop the pump.

It is recommended if the FLS sensor is used. The FLS is detecting liquid in the stator housing, which is critical and requires a quick stop of the pump.



Note! MiniCASII 24 V AC/DC, RESET also possible by connecting terminals 6-2.

Figure 11

Leakage alarm will not stop the pump (only warning)

This installation can be used if the leakage alarm shall not stop the pump but give a warning on the Mini- CASII.

It is recommended if FLS10 in inspection chamber or CLS is used. These sensors detect liquid in the inspection chamber (FLS10) and water in the oil (CLS), which is less critical than water in the stator housing.