Cross References to Rockwell Part # PP6901

ITT | Flygt

MiniCAS

Monitoring and Controls | Issued: 11/04 | Supersedes: 6/96

Description:

The MiniCAS modules are relays especially designed by Flygt to simultaneously supervise pump motor thermal switches and Flygt pump leakage detectors FLS (Stator housing) and/or CLS (Water-in-oil) installed in each small to medium Flygt pump (Models 3085 through 3300) or mixer (Series 4600).

The MiniCAS is using only two wires for two or more sensors connected in series and actually includes two current sensitive mini-relays. The principle of operation is: a 12 VDC voltage is sent to the pump sensors and the current through the input circuit is fed through the current mini-relays. One mini-relay is an overcurrent relay, the other is an undercurrent relay.

• If a normally closed thermal switch, installed into the stator winding, opens due to overheating, or one of the connecting leads is broken, the undercurrent relay will de-energize, changing its contacts status. The MiniCAS will shut down the pump.

• If the leakage sensor (FLS or CLS) is activated, the current through the sensor will increase and the overcurrent relay will be energized, changing the status of its contacts . The MiniCAS will send a "Leakage" signal or shut down the pump, depending on the MiniCAS external connections.

Flygt offers MiniCAS relays in two interchangeable variants:

- MiniCAS II with external manual reset after an overtemperature tripping.
- MiniCAS II/FUS with a "Manual/Auto Reset" selector switch, which allows the pump to restart in "Auto Reset" position after the stator cools down and the thermal switches re-close. (See Technical Data next page).

MiniCAS II - Technical Data:

Operation Principle:	Current sensing
Environment:	0-50°C (32-123°F) max 90% RH
Supply Voltages:	20-30 VAC 50-60 Hz, or 120VAC 50-60 Hz
Relay Contact Rating:	8 Amps @ 250 VAC
Voltage to Sensor:	12 VDC ±5%
Values of Operation:	3 mA<I<22 mA = OK conditions. I<3 mA = High temp. (or broken wire). I>22 mA = Leakage (or short circuit). (I = DC current measured by the MiniCAS II).
LED Indicators:	Yellow LED: for Supply Voltage presence indication. Red LED: for Overtemperature indication. Red LED: for Leakage indication.
Reset:	Manual - for Overtemperature by interrupting power supply or pushing external push-button (NO), connected between terminals 6 and 2 (not supplied with the unit). Automatic - for Leakage
Physical Size:	Width: 33mm (1.33") Height: 79mm (3.11") Depth: 75mm (2.95")
Part Number:	83 58 57 (MiniCAS II - 24V) 40-50 10 98 (MiniCAS II - 120V) 14-40 70 97 (Socket) - optional

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MiniCAS II/FUS-120 Technical Data

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MiniCAS II/FUS-120 Technical Data:

Operation Principle:	Current sensing
Environment:	-20 to 65°C (-4 to 149°F)
Supply Voltage:	120 VAC 50-60 Hz ±10%, 24 VAC ±10%, 24 VDC ±10%
Relay Contact Rating:	10 Amps @ 120 VAC
Voltage to Sensor:	12 VDC ±10%
Values of Operation:	3.0 mA<I<22 mA = OK conditions. I ≤ 3.0 mA = High temp. ±5%(or interrupt). I ≥ 22.0 mA = Leakage ±5% (or short circuit). (I = current measured by the MiniCAS II/FUS). Green LED On = Supply Voltage present. Green LED Off = No Supply Voltage present.

Leakage

Contact:	Form "C" 10 A @ 120 VAC (N.C. contact for interlocking)
Reset:	Automatic (N.O. contact for alarm)
LED Indicators:	Red LED On = Leakage indicated Red LED Off = No leakage indicated

Temperature

Contact:	Form "C" 10 A @ 120 VAC (N.C. contact for interlocking, N.O. contact for alarm)
Reset:	Manual - by interrupting the supply for 1 sec. or by setting the toggle switch in the "Manual" mode. Automatic - by setting the toggle switch in the "Auto Reset" mode.
LED Indicators:	Red LED On = Over-temperature indicated. Red LED Off = No Over-temperature indicated
Physical Size:	Width: 2.125" Height: 4.250" Depth: 3.470" (+ socket depth)
Part Number:	14-40 71 29 (MiniCAS II/FUS -120) 14-40 70 97 (Socket, 11-pin) - optional
Approvals:	UL - File E101681

Wiring Diagram MiniCAS II/FUS-120

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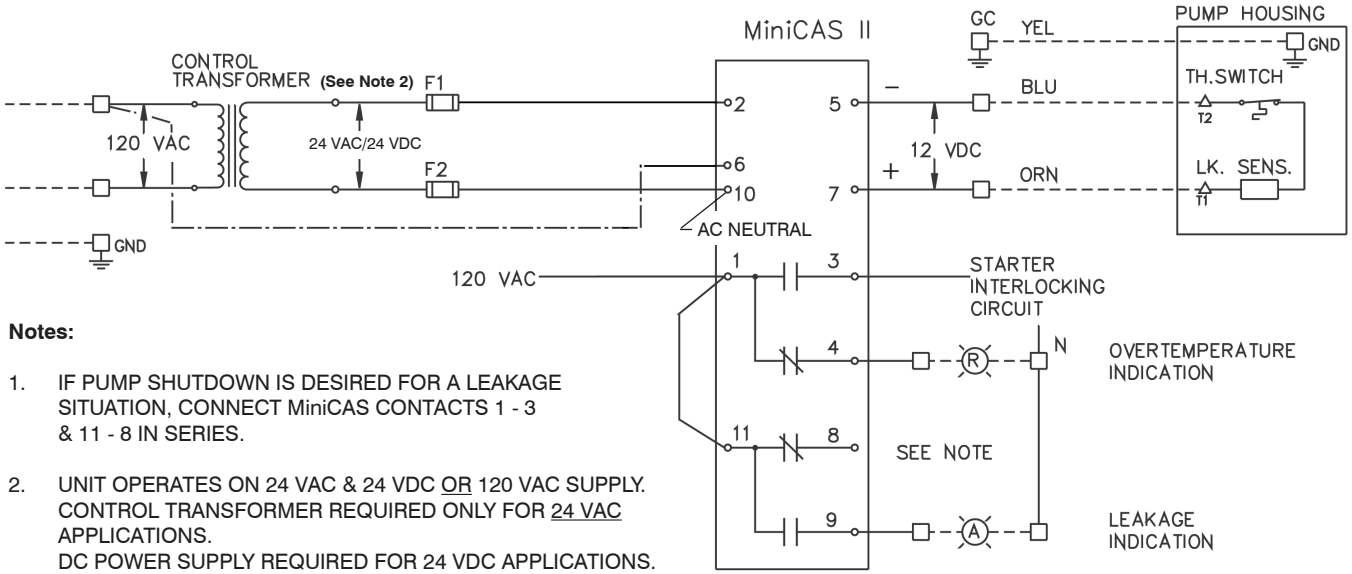
Wiring Diagram (MiniCAS II/FUS-120)



Notes:

1. IF PUMP SHUTDOWN IS DESIRED FOR A LEAKAGE SITUATION, CONNECT MiniCAS CONTACTS 1 - 3 & 11 - 8 IN SERIES.

2. UNIT OPERATES ON 24 VAC & 24 VDC OR 120 VAC SUPPLY. CONTROL TRANSFORMER REQUIRED ONLY FOR 24 VAC APPLICATIONS.
   DC POWER SUPPLY REQUIRED FOR 24 VDC APPLICATIONS.

Mode of Operation

In normal conditions, when the MiniCAS - 120 is powered, the green LED is 'ON' and the relay contact status is as follows:

- Overtemperature relay contacts: 1-3 closed, 1-4 open;
- Leakage relay contacts: 11-8 closed, 11-9 open.

If an overtemperature condition occurs, the overtemperature Red LED will turn on, the unit will turn the pump off and lock it out.
Relay contact status:

- Overtemperature relay contacts: 1-3 open, 1-4 closed;
- Leakage relay contacts: 11-8 closed, 11-9 open.

The power to the pump can be restored after the stator temperature has decreased to a point of safe operation and the thermal switches are closed. When the overtemperature condition resets, the overtemperature Red LED will turn off. The MiniCAS-120 can be reset either manually or automatically.

Note:
When selecting the "Automatic Reset" mode, the control panel should include a latching type circuit for over-temperature alarm display. This circuit will retain the information that an overtemperature situation has occurred and the operator should check the possible cause for motor overtemperature.

If a leakage is detected, after a 5 sec. delay, an alarm will be activated or the pump will be shut down and the leakage Red LED will turn on. Relay contact status:

- Overtemperature relay contacts: 1-3 closed, 1-4 open;
- Leakage relay contacts: 11-8 open, 11-9 closed.

Once the leakage condition is removed, power is restored to the pump and the Leakage Red LED will turn off automatically, leakage relay contacts will be reset.