Pump Controllers

Pump Controllers are innovative products for controlling a single pump or multiple pumps. Some models can be used to detect pump seal leaks and motor overheating on submersible pumps. Other models can be used as a five-channel pump controller or five-channel switch to support all popular industry standard multi-pump configurations.

Product Selection Matrix

MODEL	UL508	Isolated Relays	1 Input	2 Inputs	5 Inputs	4.7 - 100 kΩ Adjustable	10 kΩ Fixed	Form C Isolated Relay	Form C Relay	Form A Relay	Selectable Inverted Logic	Duplex	Triplex	Quadplex	Simplex
PC-102-CICI-DL	●	●		●		●		●●			●	●			
PC-102-CICI-LT	●	●		●		●		●●			●	●			
PC-105	●	●			●		●		●	●*	●	●	●	●	
PC-100-LLC-CZ	●			●		●		●	●						
PC-200-LLC-CZ	●			●		●		●	●						
PC-100-LLC-GM	●			●		●		●	●						
PC-200-LLC-GM	●			●		●		●	●						
460-15-100-LLS	●		●			●				●●					●
460-15-100-SLD	●		●			●				●●	●				●
201-100-SLD	●		●			●		●	●						●

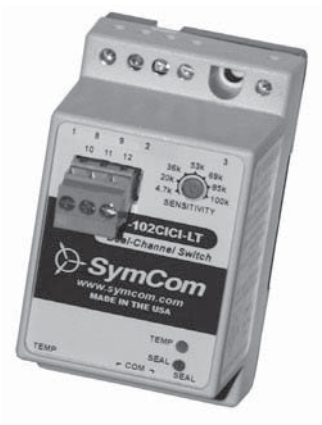
∗ Denotes 4 relays
●● Denotes 2 relays

MODEL	Duplex Pumping	DPDT	Manual Switch
ALT-(xxx)-S	●		
ALT-(xxx)-S-SW	●		●
ALT-(xxx)-X	●		
ALT-(xxx)-X-SW	●		●
ALT-100-1-SW	●	●	●
ALT-200-1-SW	●	●	●
ALT-100-3-SW	●		●
ALT-200-3-SW	●		●
50R-400-ALT	●		●

Pump Controller

Model PC-102

*either a **dual seal-leak detector (-DL)** or **seal-leak & over-temperature detector (-LT)**, adjustable seal-leak sensitivity*



The PC-102

-DL is a dual seal-leak detector. The inputs are used to sense seal failures on pumps. When water is detected, the associated output relay is energized. The input logic may be selected to be direct or inverted by using DIP switches on the side of the device.

-LT is a seal-leak and over-temperature detector. The seal-leak input is used to sense seal failures on submersible pumps while the temperature input is used to detect motor overheating. Both can be configured to suit the probes of your choice. DIP switches on the side of the unit allows the operator to select direct logic or inverted logic for the seal input, and to configure the unit for automatic or manual reset after an over-temperature trip.

Both units have two form-C isolated output relays and two LEDs, which illuminate when each associated output relay is energized.

The sensitivity adjustment (4.7k-100kOhms) allows you to define the input impedence at which the output relays will change state. The sensitivity for the over-temperature detector can be set to 4k Ohms with use of the DIP switches.

This unit may not be compatible with Flygt pumps.

For more information see:
See Appendix A, page 69, Figure 11 for dimensional drawing.
See Appendix B, page 78, Figures 35 & 36 for typical wiring diagrams.

Features:

- Compact design
- Finger-safe terminals
- DIN rail or surface mountable
- Two Form C isolated contacts with LED status indicators
- Invertible relay logic
- Configurable over-temperature reset (PC-102CICI-LT)

Approvals: UL

Available Models:

PC-102CICI-DL
PC-102CICI-LT

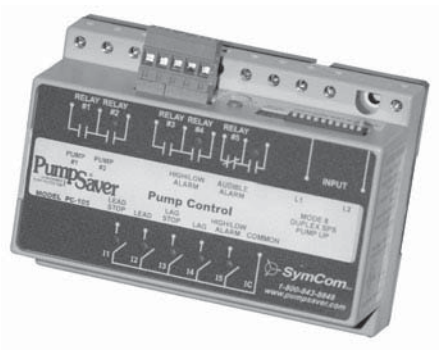
Specifications

Input Characteristics	
Supply Voltage	120VAC nominal
Frequency	50/60Hz
Functional Characteristics	
Probe Sense Voltage	5vdc pulsed
Sensitivity	4.7k-100kΩ
Sensitivity (for temp)	Selectable 4kΩ with DIP switches
Input Logic	Direct or inverted
Debounce Time Delay	0.5 or 2 seconds
Output Characteristics	
Relay Output Rating (2 Form C isolated)	
Pilot Duty	180VA @ 120VAC, C150
General Purpose	5A @ 240VAC
General Characteristics	
Temperature Range	-20° to 55°C (-4° to 131°F)
Maximum Input Power	2 W
Depluggable Connector	Phoenix Contact-Series MSTB plugs
Output Relay Status Indicators	LEDs
Terminal Torque	6 in.-lbs.
Wire range	12-20 AWG
Standards Passed	
Electrostatic Discharge (ESD)	IEC 61000-4-2, Level 3, 6kV contact, 8kV air.
Radio Frequency Immunity (RFI)	IEC 61000-4-3, Level 3, 10V/m
Fast Transients	IEC 61000-4-4, Level 3, 4kV input power 2kV inputs/outputs
Safety Marks	
UL	UL508 (File #E68520)
Dimensions	3.5" H X 2.084" W X 2.350" D (88.9 x 52.93 x 59.69mm)
Weight	0.9 lb. (14.4 oz., 408.23 g)
Mounting Method	35mm DIN rail or Surfact Mount (#6 or #8 screws)

Pump Controller

Model PC-105

pump controller with ***duplex, triplex or quadplex functionality or 5-channel relay***



The PC-105
is a 5-channel pump controller designed to handle multiple pump applications. Alternatively, it can operate as a 5-channel switch.

The PC-105's control functions support all of the popular industry-standard multi-pump pump-up and pump-down configurations.

It can indicate low, high and out-of-sequence alarms and use alternating and non-alternating pump control. The non-alternating pump can be used as a jockey pump or emergency pump.

Using the built-in DIP switches, individual pumps can be disabled when taken out of service for repair or maintenance.

For more information see:
See Appendix A, page 70, Figure 13 for dimensional drawing.

Features:

- Low, high and out-of-sequence alarms
- Variable time delay / lag pump delay from 2-255 seconds
- Duplex SPS (separate pump stop) pump control
- Duplex, triplex or quadplex pump control
- Pump-up or pump-down functions
- External silence, reset and alternation configuration
- Five-channel relay configuration
- DIN rail or surface mountable

Approvals:

Available Models:

PC-105

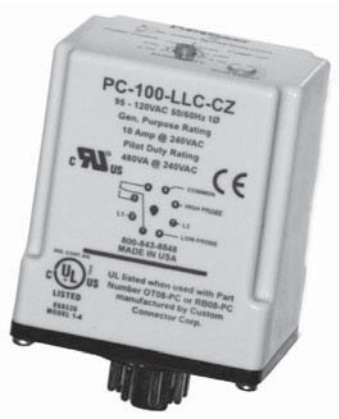
Specifications

Input Characteristics
Supply Voltage 120VAC
Frequency 50*/60Hz
Output Characteristics
Relay Output Rating
Pilot Duty ..... 480VA @ 240VAC, B300
General Purpose ..... 7A @ 240VAC
General Characteristics
Temperature Range ..... -20° to 55°C (-4° to 131°F)
Maximum Input Power ..... 4 W
Wire range ..... 12 to 20 AWG
Terminal Torque ..... 6 in.-lbs. (max.)
Pump In-rush delay ..... 2 seconds
Standards Passed
Electrostatic Discharge (ESD) ..... IEC 61000-4-2, Level 3, 6kV contact, 8kV air.
Radio Frequency Immunity (RFI) ..... IEC 61000-4-3, Level 3, 10V/m
Fast Transients ..... IEC 61000-4-4, Level 3, 4kV input power
2kV inputs/outputs
Safety Marks
UL ..... UL508 (File #E68520)
Dimensions ..... 3.703" W x 5.025" L x 2.35" H
(94.06 x 127.64 x 59.69mm)
Weight ..... 1.2 lbs. (19.2 oz., 544.31 g)
Mounting Method ..... 35 mm DIN rail or Surface Mount (#6 or #8 screws)

*Note: 50Hz will increase all delay timers by 20%.

Pump Controller Model PC-xxx-LLC-CZ / PC-xxx-LLC-GM

***liquid level control**, 8-pin plug-in for two probe inputs with SPDT output*



Must use Model OT08 socket for UL Rating!

The PC-xxx-LLC-CZ & PC-xxx-LLC-GM are liquid level control relays used to control conductive liquid pumping operations in a pump-up or pump-down application. The units come in two different voltage ranges (see specs below).

The units have an adjustable sensitivity knob (4.7k to 100k ohms) that is set according to the resistance level at which you want the probes (sold separately) to sense the conductive liquid. The units have a built-in debounce time delay that prevents the relay from energizing if the probe resistance momentarily goes above or below the sensitivity setpoint (due to liquid splashing in the tank).

The units operate their internal relay based on inputs from a high and low probe and a common reference (when a conductive tank is used) or common probe (when a non-conductive tank is used).

For more information see:
See Appendix A, page 68, Figure 8 for dimensional drawing.
See Appendix B, page 78, Figures 37 & 38 for typical wiring diagrams.

PC-xxx-LLC-GM
• Compatible with Gems' Series 16M general purpose control
PC-xxx-LLC-CZ
• Compatible with Crouzet's PNR & PNRU series liquid level control

Features:

- One unit serves pump-up and pump-down applications
- Adjustable sensitivity knob (4.7 to 100Kohms)
- Debounce time delay (2 seconds)
- Single or dual probe inputs (plus a common reference)

Approvals:

Auxiliary Products:

- 8-pin octal socket (P/N: CT0T08-PC)

Available Models:

PC-100-LLC-CZ
PC-200-LLC-CZ
PC-100-LLC-GM
PC-100-LLC-GM-OT (sold with OT08 socket)
PC-200-LLC-GM
PC-200-LLC-GM-OT (sold with OT08 socket)

Specifications

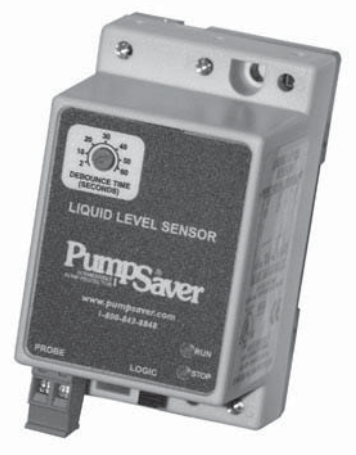
Input Characteristics
Supply Voltage
PC-100-LLC-CZ, PC-100-LLC-GM 95-120VAC
PC-200-LLC-CZ, PC-200-LLC-GM 190-240VAC
Frequency 50/60Hz
Functional Characteristics
Probe Sense Voltage ..... 5vdc pulsed
Debounce Time Delay ..... 2 seconds
Probe Sensitivity ..... 4.7k to 100k Adjustable
Output Characteristics
Output Contact Rating
Pilot Duty ..... 480VA @ 240VAC
General Purpose ..... 10A @240VAC
General Characteristics
Temperature Range ..... -40° to 70°C (-40° to 158°F)
Maximum Input Power ..... 5 W

Standards Passed
Electrostatic Discharge (ESD) ..... IEC 61000-4-2, Level 3, 6kV contact, 8kV air.
Radio Frequency Immunity (RFI) 150MHz, 10V/m
Fast Transients ..... IEC 61000-4-4, Level 3, 2kV input power and controls
Safety Marks
UL (OT08 octal socket required) ..... UL508 (File #E68520)
CE IEC60947-6-2
Dimensions ..... 1.75"H x 2.375"W x 4.125"D (44.45 x 60.33 x 104.78mm)
Weight ..... 0.65 lb. (10.4 oz., 294.84 g)
Mounting Method ..... DIN rail or surface mount (plug into OT08 socket)
Socket Available ..... Model OT08 (UL Rating 600V)
The 600V socket can be surface mounted or installed on DIN Rail.

Liquid Level Sensor

Model 460-15-100-LLS

*single-channel **liquid level sensor**, din rail mount, adjustable debounce timer*



The Model 460-15-100-LLS is a liquid level sensor to detect the presence of conductive liquids. A probe is mounted at the desired tank level and connected to the PumpSaver®. When the probe is submersed, the PumpSaver's output contacts will change state as soon as the debounce time expires. The adjustable debounce timer is intended to prevent nuisance actuating due to waves or splashing in the tank.

Relay logic can be inverted so the PumpSaver's output contacts change state when the probe is no longer submersed. This makes the unit versatile for use in pump-up and pump-down applications.

For more information see:
See Appendix A, page 69, Figure 11 for dimensional drawing.
See Appendix B, page 79, Figure 39 for typical wiring diagrams.

Features:

- DIN rail or surface mountable
- Unique probe protection algorithm
- Invertible relay logic for use in pump-up and pump-down applications
- Adjustable debounce timer
- Microcontroller based
- 2 relay contacts
- LED status indicators

Approvals:

Available Models:

460-15-100-LLS

Specifications

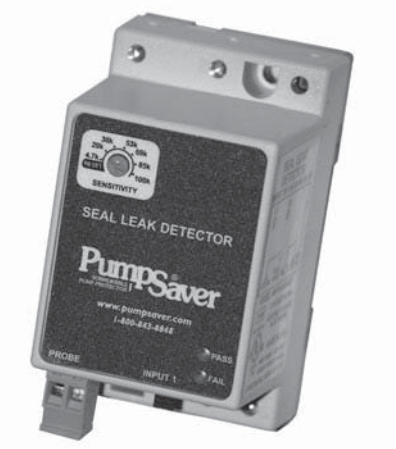
Input Characteristics
Control Voltage . . . . . 110/120VAC nominal
Frequency 50*/60Hz
Sensitivity 100kΩ
Functional Characteristics
Probe Sense Voltage . . . . . 5vdc pulsed
Debounce Time Delay . . . . . 2-60 seconds
Output Characteristics
Output contact Rating – (Two Form A - DPST)
Pilot Duty . . . . . 360VA @ 240VAC
General Purpose . . . . . 8A @ 240VAC
General Characteristics
Ambient Temperature Range
Operating . . . . . -40° to 70°C (-40° to 158°F)
Storage . . . . . -40° to 80°C (-40° to 176°F)
Maximum Input Power . . . . . 2 W
Class of Protection . . . . . IP20, NEMA 1 (finger safe)
Relative Humidity . . . . . 10-95%, non-condensing per IEC 68-2-3
Terminal Torque . . . . . 6 in.-lbs.
Wire . . . . . 12-20 AWG
Standards Passed
Electrostatic Discharge (ESD) . . . . . IEC 61000-4-2, Level 3, 6kV contact, 8kV air
Radio Frequency Immunity, Radiated . . . . . 150MHz, 10 V/m
Fast Transient Burst IEC . . . . . 61000-4-4, Level 3, 3.5kV input power and controls
Surge
IEC . . . . . IEC 61000-4-5, Level 3, 4kV line-to-line; Level 4, 4kV line-to-ground
ANSI/IEEE . . . . . C62.41 Surge and Ring Wave Compliance to a level of 6kV line-to-line
Hi-Potential Test . . . . . Meets UL508 (2 x rated V + 1000 V for 1 min.)
Safety Marks
UL . . . . . UL508 (File #E68520)
CE . . . . . IEC 60947
Enclosure . . . . . Polycarbonate
Dimensions . . . . . 3.5″ H X 2.084″ W X 2.350″ D (88.9 x 52.93 x 59.69mm)
Weight . . . . . 1 lb. (16 oz., 453.59 g)
Mounting Method . . . . . 35mm DIN rail or Surfact Mount (#6 or #8 screws)

*Note: 50Hz will increase all delay timers by 20%

Seal-Leak Detector

Model 460-15-100-SLD

single-channel seal-leak detector, din rail mount, *adjustable sensitivity setpoint*



The Model 460-15-100-SLD is a seal-leak detector to sense seal failures on submersible pumps. A microcontroller-based relay that monitors the shaft seal of a submersible pump motor. A resistive probe is installed in the seal cavity. If water leaks into the pump, the resistance measured by the probe decreases. When the resistance drops below the sensitivity setpoint, the unit will trip and the relay contacts will change state. Output relay logic can be reversed by removing an external jumper. The unit will automatically reset when a fault is cleared.

For more information see:
See Appendix A, page 69, Figure 11 for dimensional drawing.
See Appendix B, page 79, Figure 40 for typical wiring diagrams.

Features:

- DIN rail or surface mountable
- Unique probe protection algorithm
- Invertible relay logic
- 4.7k to 100kΩ adjustable sensitivity
- Microcontroller based
- 2 relay contacts
- LED status indicator

Approvals:

Available Models:

460-15-100-SLD

Specifications

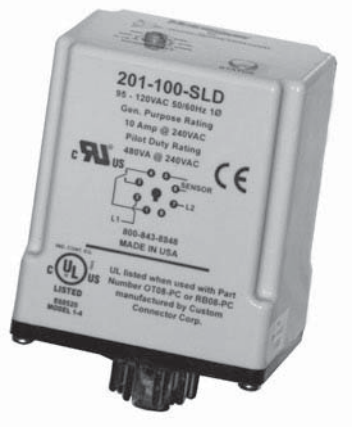
Input Characteristics
Control Voltage . . . . . 110/120VAC nominal
Frequency 50*/60Hz
Functional Characteristics
Sensitivity 4.7k-100kΩ
Output Characteristics
Output contact Rating – (Two Form A - DPST)
Pilot Duty . . . . . 360VA @ 240VAC
General Purpose . . . . . 8A @ 240VAC
General Characteristics
Ambient Temperature Range
Operating . . . . . -40° to 70°C (-40° to 158°F)
Storage . . . . . -40° to 80°C (-40° to 176°F)
Maximum Input Power . . . . . 2 W
Class of Protection . . . . . IP20, NEMA 1 (finger safe)
Relative Humidity . . . . . 10-95%, non-condensing per IEC 68-2-3
Terminal Torque . . . . . 6 in.-lbs.
Wire . . . . . AWG 12-20 AWG
Standards Passed
Electrostatic Discharge (ESD) . . . . . IEC 61000-4-2, Level 3, 6kV contact, 8kV air
Radio Frequency Immunity, Radiated . . . . . 150MHz, 10 V/m
Fast Transient Burst IEC . . . . . 61000-4-4, Level 3, 3.5kV input power and controls
Surge
IEC . . . . . IEC 61000-4-5, Level 3, 4kV line-to-line; Level 4, 4kV line-to-ground
ANSI/IEEE . . . . . C62.41 Surge and Ring Wave Compliance to a level of 6kV line-to-line
Hi-Potential Test . . . . . Meets UL508 (2 x rated V + 1000 V for 1 min.)
Safety Marks
UL . . . . . UL508 (File #E68520)
CE . . . . . IEC 60947
Enclosure . . . . . Polycarbonate
Dimensions . . . . . 3.5″H x 2.084″W x 2.35″D (88.9 x 52.93 x 59.69mm)
Weight . . . . . 1 lb. (16 oz., 453.59 g)
Mounting Method . . . . . 35mm DIN rail or Surfact Mount (#6 or #8 screws)

*Note: 50Hz will increase all delay timers by 20%

Seal-Leak Detector

Model 201-100-SLD

***single-channel seal-leak detector, 8-pin socket mount**, adjustable sensitivity point*



Must use Model OT08 socket for UL Rating!

The Model 201-100-SLD is an 8-pin plug-in style seal-leak detector to sense seal failures on submersible pumps. A microcontroller-based relay that monitors the shaft seal of a submersible pump motor. A resistive probe is installed in the seal cavity. If water leaks into the pump, the resistance measured by the probe decreases. When the resistance drops below the sensitivity setpoint, the unit will trip and the relay contacts will change state. The unit will automatically reset when a fault is cleared.

For more information see:
See Appendix A, page 68, Figure 8 for dimensional drawing.
See Appendix B, page 79, Figure 41 for typical wiring diagrams.

Features:

- LED status indicator
- Compact plug-in design
- DIN rail or surface mountable via octal base

Approvals:

Auxiliary Products:

- 8-pin octal socket (P/N: CT0T08-PC)

Available Models:

201-100-SLD

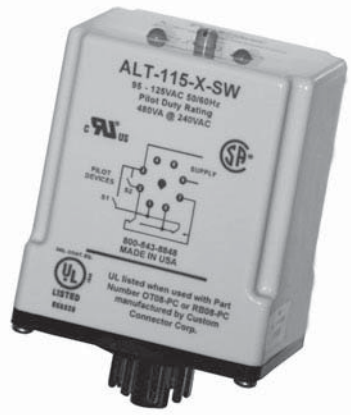
Specifications

Input Characteristics
Control Voltage . . . . . 110/120VAC nominal
Frequency 50/60Hz
Functional Characteristics
Sensitivity 4.7k-100kΩ
Output Characteristics
Output contact Rating – SPDT
Pilot Duty . . . . . 480VA @240VAC
General Purpose . . . . . 10A @240VAC
General Characteristics
Ambient Temperature Range
Operating . . . . . -40° to 70°C (-40° to 158°F)
Storage . . . . . -40° to 80°C (-40° to 176°F)
Maximum Input Power . . . . . 5 W
Relative Humidity . . . . . 10-95%, non-condensing per IEC 68-2-3
Standards Passed
Electrostatic Discharge (ESD) . . . . . IEC 61000-4-2, Level 3, 6kV contact, 8kV air
Radio Frequency Immunity, Radiated 150MHz, 10V/m
Fast Transient Burst . . . . . 61000-4-4, Level 3, 3.5kV input power and controls
Surge
IEC . . . . . IEC 61000-4-5, Level 3, 4kV line-to-line; level 4, 4kV line-to-ground
ANSI/IEEE . . . . . C62.41 Surge and Ring Wave Compliance to a level of 6kV line-to-line
Hi-Potential Test . . . . . Meets UL508 (2 x rated V + 1000V for 1 min.)
Safety Marks
UL (OT08 octal socket required) . . . . . UL508 (File #E68520)
CE . . . . . IEC 60947-6-2
Enclosure . . . . . Polycarbonate
Dimensions . . . . . 1.750" H x 2.375" W x 4.125" D (with socket) (44.45 x 60.325 x 104.775mm)
Weight . . . . . 0.7 lb. (11.2 oz., 317.51 g)
Mounting Method . . . . . DIN rail or surface mount (plug into OT08 socket)

Alternating Relay

Model ALT

8-pin plug-in, single or dual float input, with or without manual switch



The Model ALT

alternating relays are used to alternate between two loads. The ALT is commonly used in duplex pumping applications to balance the runtime of both pumps.

The Model ALT-S

is used in single high-level float applications. When the float switch opens, the alternating relay changes state, forcing the other pump to run the next time the float closes.

The Model ALT-X

has an internal cross-connected relay and is used in dual high-level float applications. These floats are commonly referred to as lead and lag floats. The pumps alternate as in the ALT-S version but the cross-connected relay configuration allows both pumps to run simultaneously when both the lead and lag floats are closed.

These relays are also available with a built-in switch (SW option) that is used to manually force one of the pumps to run every time the float switch is closed. This is helpful when a pump has been removed for repair or for test purposes. In the case of the Model ALT-X-SW, the switch essentially forces one pump to be the lead pump, while still allowing the second to run when both floats are closed. All Model ALT relays have a built-in debounce feature that prevents the relay from changing state if the switch or float contact bounces momentarily.

For more information see:
See Appendix A, page 68, Figure 8 for dimensional drawing.
See Appendix B, page 79, Figures 42 & 43 for typical wiring diagrams.

Must use Model OT08 socket for UL Rating!

Features:

- Alternate between two loads
- Debounce time delay
- Optional built-in manual/auto switch
- SPDT or cross-wire connected DPDT

Approvals:

Auxiliary Products:

- 8-pin octal socket (P/N: CT0T08-PC)

Available Models:

ALT-24-S
ALT-24-S-SW
ALT-115-S
ALT-115-S-SW
ALT-115-X
ALT-115-X-SW
ALT-230-S
ALT-230-S-SW
ALT-230-X
ALT-230-X-SW

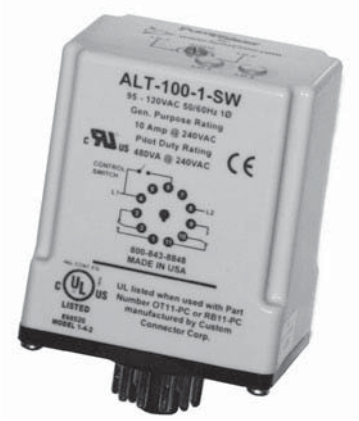
Specifications

Input Characteristics
Supply Voltage
24VAC 20-26VAC
115VAC 95-125VAC
230VAC 195-250VAC
Supply Current 40mA
Functional Characteristics
Debounce Time Delay . . . . . 0.5 second
Control Input Impedance (min).)
24. . . . . 10kΩ
115. . . . . 56kΩ
230. . . . . 100kΩ
Output Characteristics
Output Contact Rating . . . . . 480VA @ 240VAC
General Characteristics
Temperature Range . . . . . -40° to 50°C (-40° to 122°F)
Maximum Input Power . . . . . 5 W
Safety Marks
UL (OT08 octal socket required) . . . . . UL508 (File #E68520)
CSA. . . . . C22.2 No. 14 (File #46510)
Dimensions . . . . . 1.750″ H x 2.375″ W x 4.125″ D (with socket)
(44.45 x 60.325 x 104.775mm)
Weight . . . . . 0.38 lb. (6.08 oz., 172.67 g)
Mounting Method . . . . . DIN rail or surface mount (plug into OT08 socket)
Socket Available . . . . . Model OT08 (UL Rating 600V)

The 600V socket can be surface mounted or installed on DIN Rail.

Alternating Relay — Model ALT-xxx-1-SW / ALT-xxx-3-SW

11-pin plug-in for single float input with DPDT output / 8-pin plug-in for three float input with dual load output



The Model ALT-xxx-1-SW and ALT-xxx-3-SW are used to alternate between two loads and are commonly used in duplex pump-up and pump-down applications to balance the runtime of both pumps.

The ALT-xxx-1-SW alternating relays are 11-pin octal base plug-ins, available in two different single-phase voltage ranges. The ALT-100-1-SW is used for 95-120VAC applications and the ALT-200-1-SW is used for 190-240VAC applications. Both models are designed for a single float input and feature two isolated Form C relays (DPDT) outputs with two LEDs to indicate the energized loads.

The ALT-xxx-3-SW alternating relays are 8-pin octal base plug-ins, available in two different single-phase voltage ranges. The ALT-100-3-SW is used for 95-120VAC applications and the ALT-200-3-SW is used for 190-240VAC applications. Both models are designed for three float inputs (lead, lag and stop floats). The lead and lag floats actuate latching relays that release when the stop float actuates. The units feature two LEDs to indicate the energized load(s).

The ALT relays have a built-in debounce time delay that prevents the relay from changing state if the float momentarily bounces, and they have a built-in switch to manually force a specific load (pump) to operate each time the input float closes. This is helpful when performing periodic maintenance or pump repair.

For more information see:
See Appendix A, page 68, Figure 8 for dimensional drawing.
See Appendix B, pages 79 & 80, Figures 44 & 45 for typical wiring diagrams.

Must use Model OT08 or OT11 socket for UL Rating!

Features:

- Debounce time delay
- LED load indicators
- Built-in switch to manually force a specific load (pump) to operate

Approvals: UL, CE

Auxiliary Products:

- 8-pin octal socket (P/N: CT0T08-PC)

Available Models:

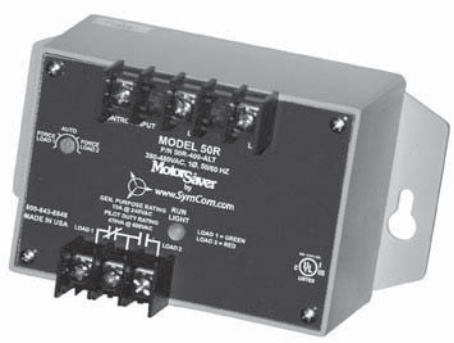
ALT-100-1-SW
ALT-200-1-SW
ALT-100-3-SW
ALT-200-3-SW

Specifications

Input Characteristics
Supply Voltage
ALT-100-1-SW, ALT-100-3-SW 95-120VAC
ALT-200-1-SW, ALT-200-3-SW 190-240VAC
Frequency 50/60Hz
Functional Characteristics
Debounce Time Delay
ALT-100-1-SW, ALT-200-1-SW ..... 1 second
ALT-100-3-SW, ALT-200-3-SW ..... 5 seconds
Output Characteristics
Output Relay (DPDT)
Pilot Duty ..... 480VA @ 240VAC
General Purpose ..... 10A @ 240VAC
General Characteristics
Temperature Range ..... -40° to 70°C (-40° to 158°F)
Maximum Input Power ..... 5 W
Standards Passed
Electrostatic Discharge (ESD) ..... IEC 61000-4-2, Level 3, 6kV contact, 8kV air
Radio Frequency, Radiated 150MHz, 10V/m
Fast Transient Burst ..... IEC 61000-4-4, Level 3, 3.5kV input power and controls
Safety Marks
UL (OT08 or OT11 octal socket required) ..... UL508 (File #E68520)
CE ..... IEC 60947-6-2
Dimensions ..... 1.750" H x 2.375" W x 4.125" D (with socket) (44.45 x 60.325 x 104.775mm)
Weight ..... 0.65 lb. (10.4 oz., 294.84 g)
Mounting Method ..... DIN rail or surface mount (plug into OT08 or OT11 socket)
Sockets Available
Model OT08 ..... UL Rating 600V
Model OT11 ..... UL Rating 300V
The sockets can be surface mounted or installed on DIN Rail.

Model 50R-400-ALT

480VAC application, panel mount



The Model 50R-400-ALT

alternating relays are used to alternate between two loads, most commonly in duplex pumping and compressor applications to balance the runtime of both loads.

When used in single float applications, the alternating relay changes state after the float switch opens*, forcing the other pump to run the next time the float closes. When used in dual float applications, the alternating relay will allow both pumps to run simultaneously when the lead and lag floats are both closed.

An adjustment knob provides the option to force one pump to run every time the float switch is closed. This is helpful when one pump has been removed for repair or for test purposes.

A built-in debounce feature prevents the alternating relay from changing state if the float contact bounces momentarily.

For more information see:
See Appendix A, page 68, Figure 7 for dimensional drawing.
See Appendix B, page 80, Figure 46 for typical wiring diagrams.

* The alternating relay will not switch states while current is flowing. Switching will only occur after current has been sensed, followed by loss of current for the duration of the debounce time delay.

Features:

- Alternates between two loads
- Solid-state reliability
- Debounce time delay
- Compatible with single or dual float applications

Approvals:

Available Models:

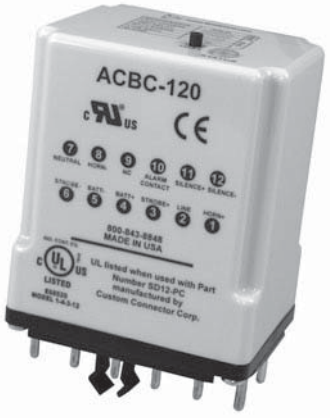
50R-400-ALT

Specifications

Input Characteristics
Supply Voltage 380-480VAC
Supply Current 40mA
Functional Characteristics
Control Input Impedance (min) 1MΩ
Output Characteristics
Output Contact Rating
Pilot Duty . . . . . 470VA @ 600VAC
General Purpose 10A
Debounce Time Delay . . . . . 1 second
General Characteristics
Maximum Input Power . . . . . 5 W
Terminal
Torque . . . . . 7 in.-lbs.
Wire Size 12-18AWG
Safety Marks
UL . . . . . UL508 (File #E68520)
CE . . . . . IEC 60947
Dimensions . . . . . 2.93″H x 5.27″W x 2.95″D
(74.4 x 133.9 x 74.9mm)
Weight . . . . . 0.98 lb. (15.68 oz., 444.52 g)
Mounting Method . . . . . #8 screws

Alarm Controller/Battery Charger — Model ACBC-120

Alarm Controller and Battery Charger for pump control panels



The Model ACBC-120 is a dual purpose alarm controller/battery charging unit. When there is a loss of 120VAC power, the ACBC-120's primary function as an alarm controller activates. When this power loss occurs, input power is switched to a 12VDC, lead-acid, rechargeable backup battery and a 12VDC alarm consisting of a strobe light and/or a horn is activated. The horn follows a 2 second on/2 second off pattern with a "horn silence" option to turn the sound off. An LED indicator on the unit also signals that the device has entered the alarm mode.

When 120VAC input is present the alarm circuit can be tested and the unit's secondary function as a 12VDC backup battery charger is activated. In fast charge mode, the unit has the capability to source up to 100mA of charging current. However, the device normally charges at a current of 14mA in maintenance mode. The alarm circuit can be tested by pressing the "test" button located on the front of the unit or by activating an external switch via the "alarm contact" pin.

The device has the ability to signal low battery voltage if the voltage drops below 10.5VDC. The device can also detect if no battery is present or if the battery is connected backwards. In either of these cases, the ACBC-120 will signal a battery error and will not attempt to charge.

For more information see:
See Appendix A, page 68, Figure 8 for dimensional drawing.
See Appendix B, page 80, Figure 47 for typical wiring diagrams.

Must use Model SD12 socket for UL Rating!

Features:

- Controls 12VDC alarm circuit (strobe light and/or horn)
- Maintains 12VDC battery charge (fast charge mode and maintenance mode)
- Trip delay timer
- Battery fault detection and reverse polarity protection
- LED indicates unit's status
- Press-to-test capability

Approvals: UL

Available Models:

ACBC-120
ACBC-120-SD (sold with SD12 socket)

Specifications

Input Characteristics

Supply Voltage	
AC Input Voltage	120V ±10%
Frequency	50/60Hz
AC Input Current	0.018A (max.) 0.003 (typical)
AC Input Power	2.4W (max.) fast charge current 0.4W (typical) maint. charge current

Functional Characteristics

Battery Charging Characteristics	
Acceptable Battery Type	12V lead-acid rechargeable
Fast Charge Current	100mA ±10%
Maintenance Charge Current	14mA ±50%
Low Battery Alert Level	10.5V

Output Characteristics

Strobe Light Alarm Output	12VDC@1A (max.)
Horn Alarm Output	12VDC@1A (max.)

General Characteristics

Temperature Range	-40° to 60°C (-40° to 140°F)
Standards Passed	
Electrostatic Discharge (ESD)	IEC 61000-4-2, Level 3, 6kV contact, 8kV air
Radio Frequency, Radiated	150MHz, 10V/m
Fast Transient Burst	IEC 61000-4-4, Level 4, 4kV input lines; 4kV signal lines
Safety Marks	
UL (SD12 socket required)	UL508 (File #E68520)
Dimensions	1.750" H x 2.375" W x 4.125" D (with socket) (44.45 x 60.325 x 104.775mm)
Weight	0.7 lb. (11.2 oz., 317.51 g)
Mounting Method	Surface mount with #8 or #10 screws (plug into SD12 socket)

Sockets Available	
Model SD12-PC	UL Rating 600V