

The PLS Series is a low cost phase sensitive control that provides an isolated contact closure when the proper A-B-C phase sequence is applied. Protects sensitive 3-phase equipment and equipment operators from reverse rotation. Designed to be compatible with motor overloads or other 3-phase equipment protection devices. Protection for equipment control centers where frequent reconnection or electrical code makes reverse rotation protection essential. Examples include: mobile refrigerated containers, construction equipment, hoists, pumps, conveyors, elevators and escalators.

For more information see:
Appendix B, page 166, Figure 19 for dimensional drawing.
Appendix C, page 168, Figure 13 for connection diagram.

Operation

The internal relay and LED are energized when the phase sequence is correct. The output relay will not energize if the phases are reversed. Reset is automatic upon correction of the fault.

Features:

- Protects against phase reversal
- Low cost protection, one unit for all sized motors
- 3-wire connection for delta or wye systems
- Octal base connect - industry standard wiring
- Isolated, SPDT output contacts
- Factory calibrated - no adjustments required

Approvals:   

Auxiliary Products:

- **Panel mount kit:** P/N: BZ1
- **Octal 8-pin socket:** P/N: OT08PC
- **3-phase fuse block/disconnect:** P/N: FH3P
- **2 Amp fuse:** P/N: P0600-11
- **Din rail:** P/N: C103PM (Al)

Available Models:

PLS120A
PLS240A
PLS480A

Order Table:

<u>Voltage</u>	<u>Part Number</u>
120VAC	PLS120A
208/240VAC	PLS240A
380/415VAC	PLS380A
440/480VAC	PLS480A

Specifications

Line Voltage	3-phase delta or wye with no connection to neutral		
Type	Nominal Voltage	Minimum Voltage	Maximum Voltage
	120VAC	95VAC	135VAC
	208/240VAC	175VAC	255VAC
	380/415VAC	310VAC	430VAC
	440/480VAC	380VAC	500VAC
AC Line Frequency	50/60 Hz		
Phase Sequence	ABC		
Response Times			
Pull-in	≤ 300ms		
Drop-out	≤ 50ms		
Output			
Type	Electromechanical relay, energized when the phase sequence is correct		
Form	Isolated SPDT		
Rating	120 & 240VAC	10A resistive @ 240VAC	
	380 & 480VAC	8A resistive @ 240VAC	

Maximum Voltage.....250VAC

Protection

Isolation Voltage 120 & 240VAC ... ≥ 1500V RMS input to output
380 & 480VAC ... ≥ 2500V RMS input to output

Mechanical

Mounting* Plug-in socket
Dimensions 3.2 x 2.39 x 1.78 in. (81.3 x 60.7 x 45.2 mm)
Termination Octal 8-pin plug-in

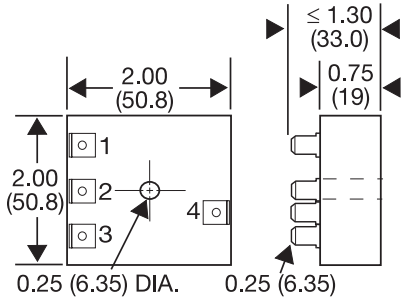
Environmental

Operating / Storage Temperature -40° to 55°C / -40° to 85°C
Weight ≅ 6 oz (170 g)

*CAUTION: Select an octal socket rated for 600VAC operation.

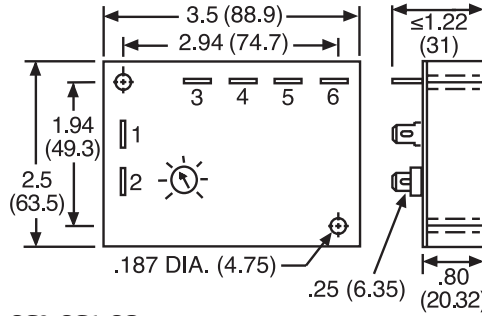
Appendix B - Dimensional Drawings

FIGURE 13



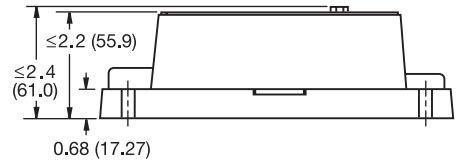
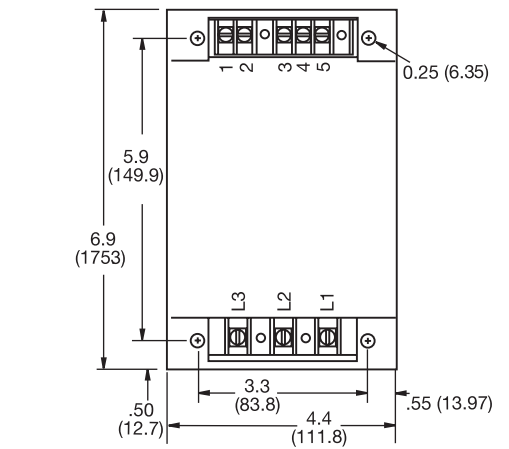
AF

FIGURE 14



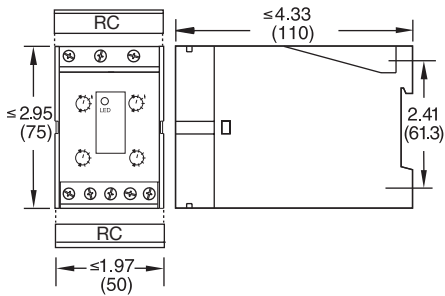
SC3; SC4; SQ

FIGURE 15



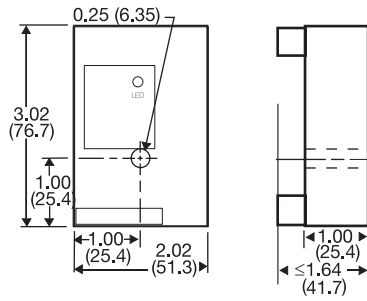
WVM

FIGURE 16



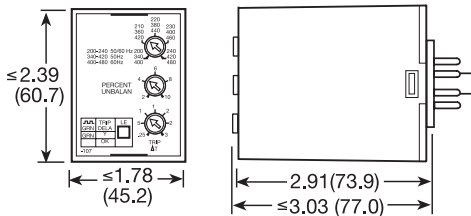
DLMU

FIGURE 17



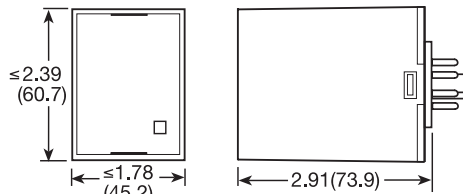
FB9L; HLMU; SCR9L

FIGURE 18



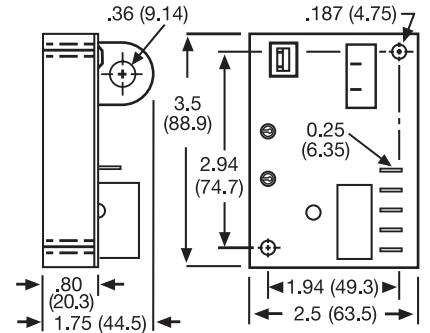
PLMU

FIGURE 19



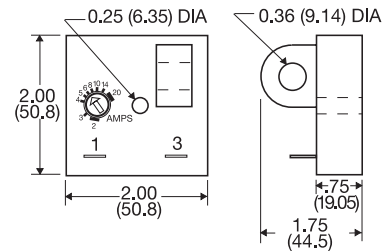
LLC4; LLC6; PLS

FIGURE 20



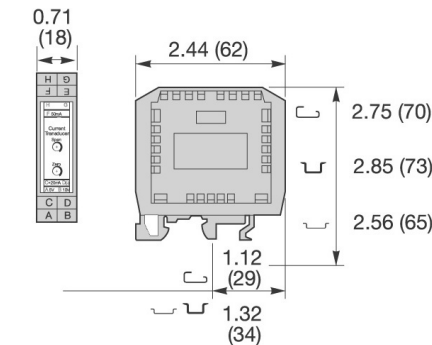
ECS; ECSW (ECS has spade connectors and ECSW has terminal board)

FIGURE 21



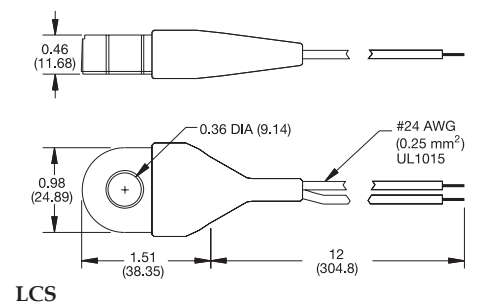
TCS; TCSA

FIGURE 22



DCSA

FIGURE 23

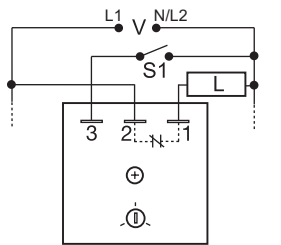


LCS

inches (millimeters)

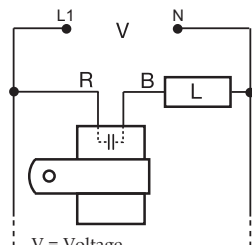
Appendix C - Connection Diagrams

FIGURE 1 - FSU1000 Series



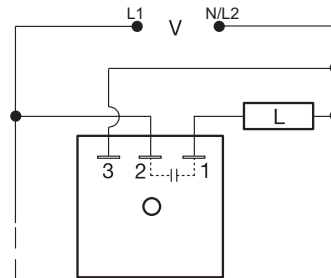
S1 = Optional low current switch
V = Voltage
L = Load

FIGURE 2 - FS100 Series



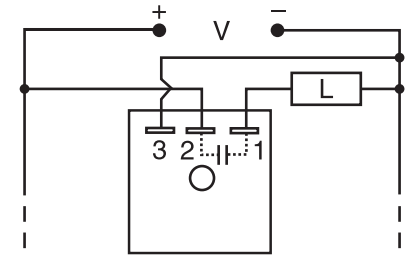
V = Voltage
L = Load
R = Red Wire
B = Black Wire

FIGURE 3 - FS100 Series



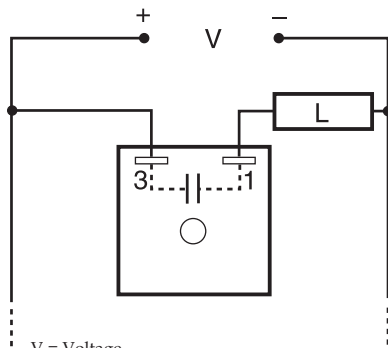
V = Voltage
L = Load

FIGURE 4 - FS200 Series



V = Voltage
L = Load

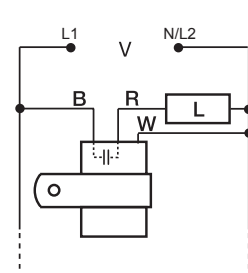
FIGURE 5 - FS300 Series



V = Voltage
L = Load

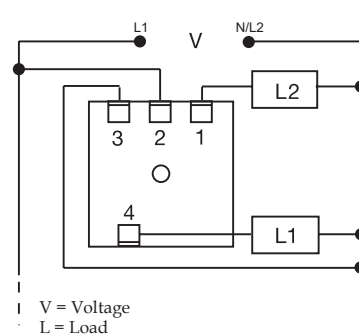
Note: Load may be in positive side.

FIGURE 6 - FS400 Series



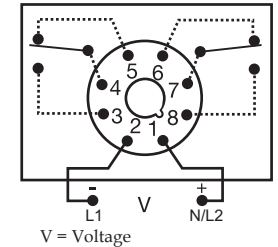
V = Voltage
L = Load
R = Red Wire
B = Black Wire
W = White Wire

FIGURE 7 - AF Series



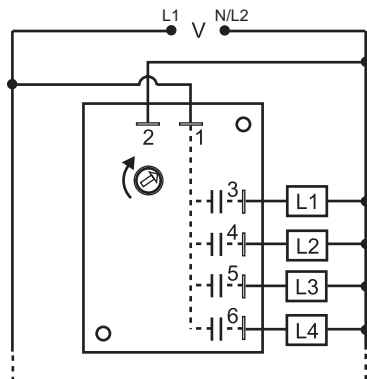
V = Voltage
L = Load

FIGURE 8 - FS500 Series



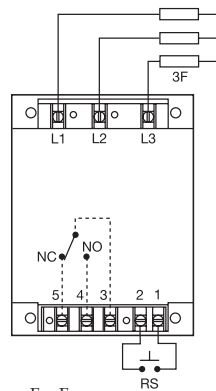
V = Voltage

FIGURE 9 - SC3/SC4 Series



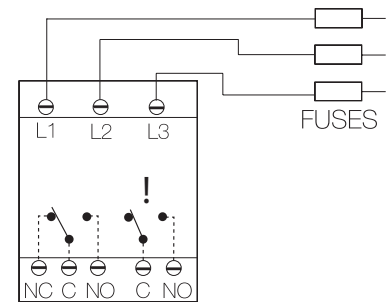
SC4 shown;
for SC3, terminal 6 & load L4 are eliminated.

FIGURE 10 - WVM Series



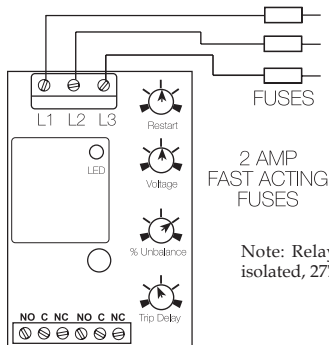
F = Fuses
NO = Normally Open
NC = Normally Closed
RS = Optional Remote Reset Switch
Relay contacts are isolated.
CAUTION:
2 amp max fast acting fuses must be installed externally in series with each input. (3)

FIGURE 11 - DLMU Series



L1, L2, L3 = Line Voltage Input
NO = Normally Open Contact
NC = Normally Closed Contact
C = Common, Transfer Contact
CAUTION: 2 amp max. fast acting fuses are recommended to protect the equipment's wiring. They are not required to protect the DLMU.
! = Select alarm contact connection as N.O. or N.C. when ordering; N.O. Shown.

FIGURE 12 - HLMU Series

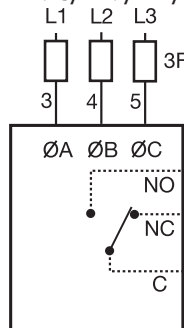


2 AMP FAST ACTING FUSES

Note: Relay contacts are isolated, 277VAC max.

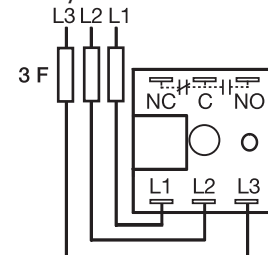
L1, L2, L3 = Line Voltage Input
NO = Normally Open Contact
NC = Normally Closed Contact
C = Common, Transfer Contact
CAUTION: 2 amp max. fast acting fuses are recommended to protect the equipment's wiring. They are not required to protect the HLMU.

FIGURE 13 - PLMU/PLM/PLR/PLS Series



F = Fuses
ØA = Phase A = L1
ØB = Phase B = L2
ØC = Phase C = L3
NO = Normally Open
NC = Normally Closed
2A fast acting fuses recommended for safety (not required)
Relay contacts are isolated.

FIGURE 14 - TVM/TVW Series



L1 = Phase A
L2 = Phase B
L3 = Phase C
NO = Normally Open
NC = Normally Closed
C = Common, Transfer Contact
Relay contacts are isolated.
F = 2A Fast acting fuses are recommended, but not required