

TP = Undervoltage Setpoint
R = Reset Point

The KVM Series is a single-phase undervoltage monitor designed to protect sensitive equipment against brownout undervoltage conditions. The compact design and encapsulated construction make the KVM an excellent choice for OEM equipment.

For more information see:
Appendix B, page 165, Figure 1 for dimensional drawing.
Appendix C, page 169, Figure 16 for connection diagram.

Operation

The output relay is energized and the LED glows green when the input voltage is above the reset voltage threshold. If the input voltage drops below the undervoltage setpoint, the output relay and LED will de-energize. The output relay will remain de-energized as long as the input voltage is below the reset voltage. Reset is automatic when the input voltage returns to a normal range.

Features:

- Economical single-phase brownout/undervoltage protection
 - Isolated, 8A, SPDT output contacts
 - Protects sensitive 110 to 120VAC or 220 to 240VAC loads
 - Adjustable low voltage trip point
 - LED Indicator
- Approvals:

Auxiliary Products:

- **Quick connect to screw adaptor:**
P/N: P1015-18
- **Female quick connect:**
P/N: P1015-64 (AWG 14/16)
- **DIN rail:** P/N: C103PM (Al)
- **DIN rail adaptor:** P/N: P1023-20

Available Models:

- KVM4
- KVM6

Order Table:

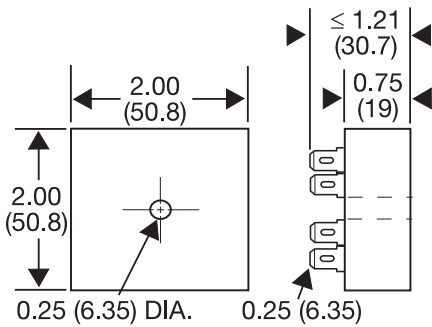
<u>Undervoltage Setpoint</u>	<u>Maximum Line Voltage</u>	<u>Part Number</u>
78 to 99VAC	132VAC	KVM4
156 to 199VAC	264VAC	KVM6

Specifications

Line Voltage	Single phase	Life	Mechanical - 1×10^6 ; Electrical - 1×10^5
Type	Single phase	LED Indicator	Glows green when output is energized
Input Voltage	110 to 120VAC or 220 to 240VAC	Protection	
AC Line Frequency	50/60 Hz	Surge	IEEE C62.41-1991 Level A
Power Consumption	2.5W @ 132VAC; 4.5W @ 264VAC	Circuitry	Encapsulated
Power Off Reset Time	$\leq 150\text{ms}$	Isolation Voltage	$\geq 1500\text{V RMS}$ input to output
Undervoltage Detection		Insulation Resistance	$\geq 100\text{ M}\Omega$ minimum
Undervoltage Setpoint	KVM4.....78 to 99VAC	Mechanical	
	KVM6.....156 to 199VAC	Mounting	Surface mount with one #10 (M5 x 0.8) screw
Undervoltage Reset Point	KVM4.....Fixed at 104VAC	Dimensions	2 x 2 x 1.21 in. (50.8 x 50.8 x 30.7 mm)
	KVM6.....Fixed at 209VAC	Termination	0.25 in. (6.35 mm) male quick connect terminals
Repeatability	$\pm 0.5\%$ under fixed conditions	Environmental	
	$\pm 1\%$ over temperature range	Operating / Storage Temperature	-25 to 55°C / -40 to 85°C
Voltage Sensing Accuracy	$\pm 2\%$ at 25°C	Humidity	95% relative, non-condensing
Output		Weight	2.6 oz (74 g)
Type	Electromechanical relay		
Form	SPDT		
Rating	8A resistive @ 120VAC, 1/3 hp @ 120/240VAC		

Appendix B - Dimensional Drawings

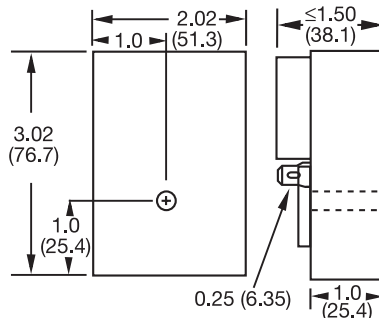
FIGURE 1



0.25 (6.35) DIA. 0.25 (6.35)

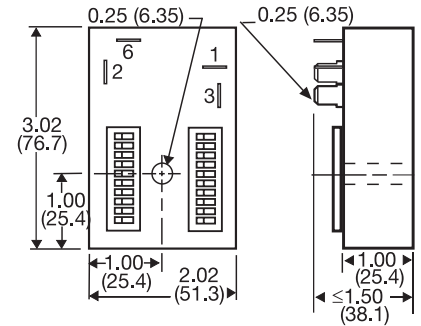
CT; ESD5; ESDR; FS100; FS200; FS300; KR3; KR9;
KRDB; KRDI; KRDM; KRDR; KRDS; KRPD; KRPS;
KSD1; KSD2; KSD3; KSD4; KSDB; KSDR; KSDS;
KSDU; KSPD; KSPS; KSPU; KVM; T2D; TA; TAC1;
TAC4; TDU; TDUB; TDUI; TDUS; TL; TMV8000;
TS1; TS2; TS4; TS6; TSB; TSD1; TSD2; TSD3; TSD4;
TSD6; TSD7; TSDB; TSDR; TSDS; TSS; TSU2000

FIGURE 2



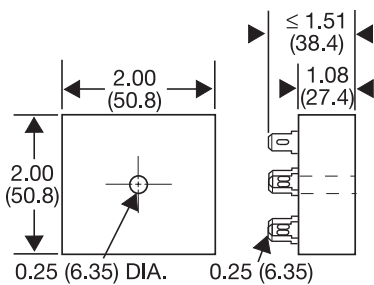
HLV; HRD3; HRD9; HRDB; HRDI;
HRDM; HRDR; HRDS; HRID; HRIS;
HRIU; HRPD; HRPS; HRPV; HRV; RS

FIGURE 3



HSPZ

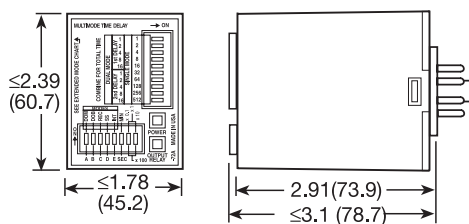
FIGURE 4



FA; FS; FSU1000*; NHPD; NHPS; NHPV;
NLF1*; NLF2*; PHS*; PTHF*; SIR1; SIR2;
SLR1*; SLR2*; TH1; TH2; THC; THD1;
THD2; THD3; THD4; THD7; THDB; THDM;
THDS; THS

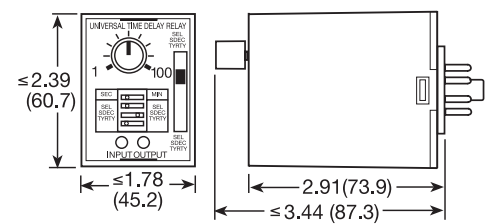
*If unit is rated @ 1A, see Figure 1

FIGURE 5



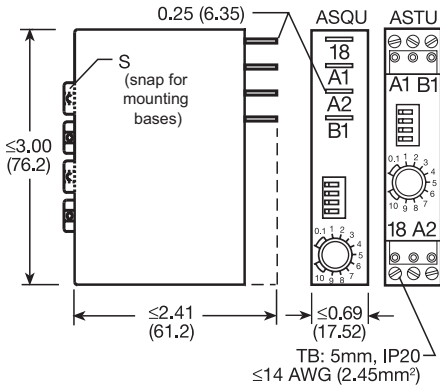
TRDU

FIGURE 6



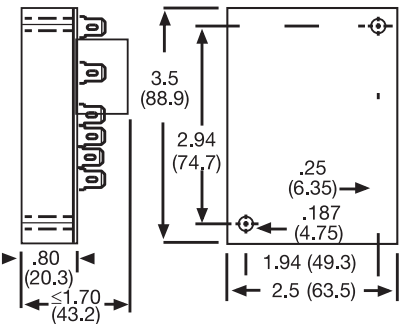
TRU

FIGURE 7



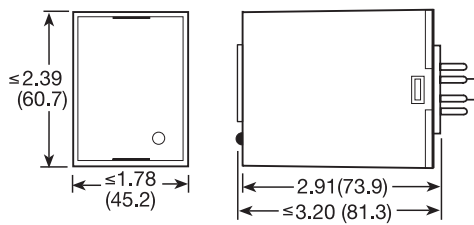
ASQU; ASTU; DSQU; DSTU

FIGURE 10



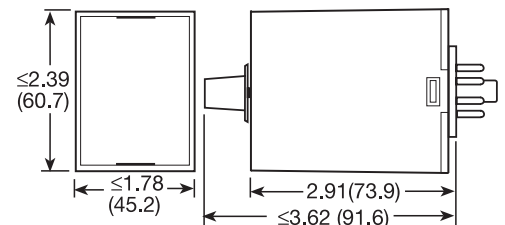
ERD3; ERDI; ERDM

FIGURE 8



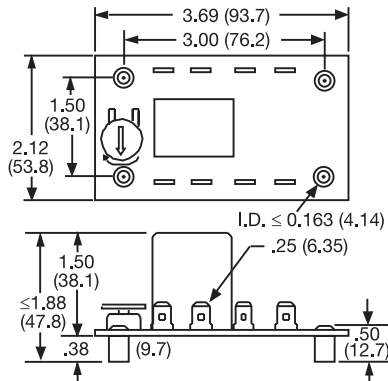
PLM; PLR; TDB; TDBH; TDBL; TDI; TDIH;
TDIL; TDM; TDMB; TDMH; TDML; TDR;
TDS; TDSH; TDSL

FIGURE 9



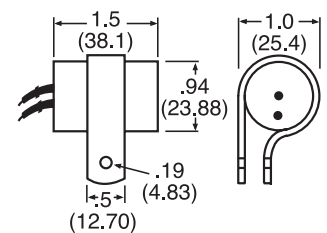
FS500; PRLB; PRM; PRLS; TRB; TRM; TRS

FIGURE 11



ORB; ORM; ORS

FIGURE 12

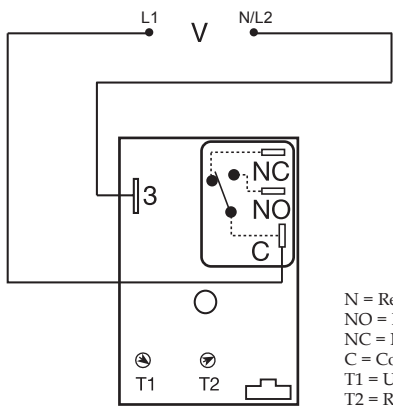


FS100; FS400

inches (millimeters)

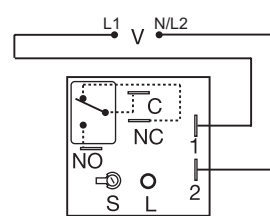
Appendix C - Connection Diagrams

FIGURE 15 - HLV Series



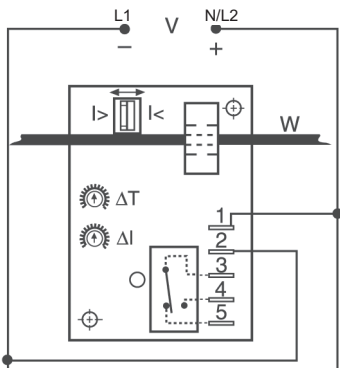
N = Relay contacts are non-isolated.
 NO = Normally Open
 NC = Normally Closed
 C = Common
 T1 = Undervoltage Trip Point
 T2 = Restart Delay

FIGURE 16 - KVM Series



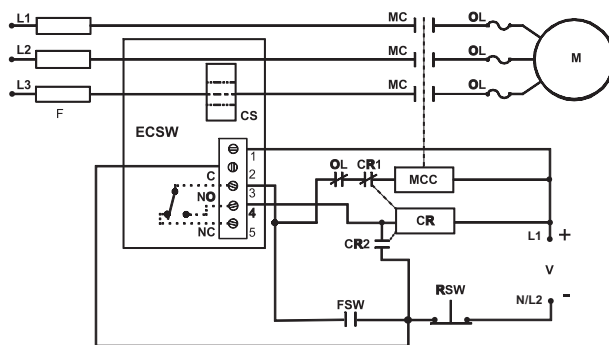
V = Voltage
 L = LED
 S = Undervoltage Setpoint
 NO = Normally Open
 NC = Normally Closed
 C = Common, Transfer Contact

FIGURE 17 - ECS Series

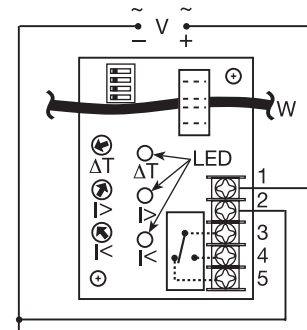


V = Voltage
 W = Insulated Wire Carrying Monitored Current
 I> = Overcurrent
 I< = Undercurrent
 Relay contacts are isolated.

FIGURE 18 - ECSW Series

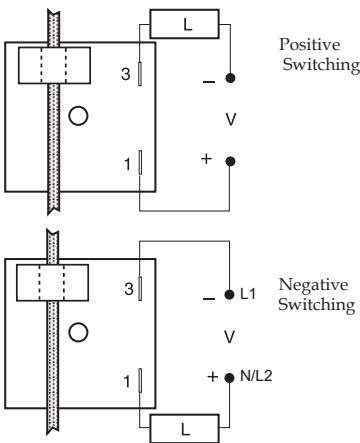


MC = Motor Contactor
 M = Motor
 F = Fuses
 OL = Overload
 RSW = Reset Switch
 FSW = Fan or Float Contacts
 CR = Control Relay
 CS = Current Sensor
 MCC = Motor Contactor Coil



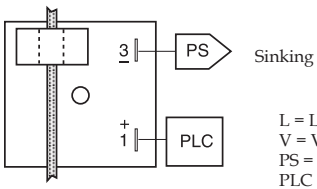
V = Voltage
 I> = Adjustable Overcurrent
 I< = Adjustable Undercurrent
 W = Monitored Wire
 ΔT = Adjustable Trip Delay

FIGURE 19 - TCS Series



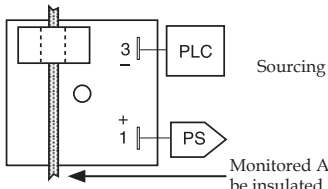
Positive Switching

Negative Switching



Sinking

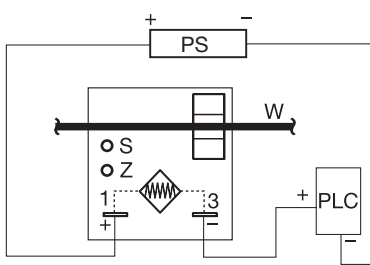
L = Load
 V = Voltage
 PS = Power Supply
 PLC = PLC Digital Input Module



Sourcing

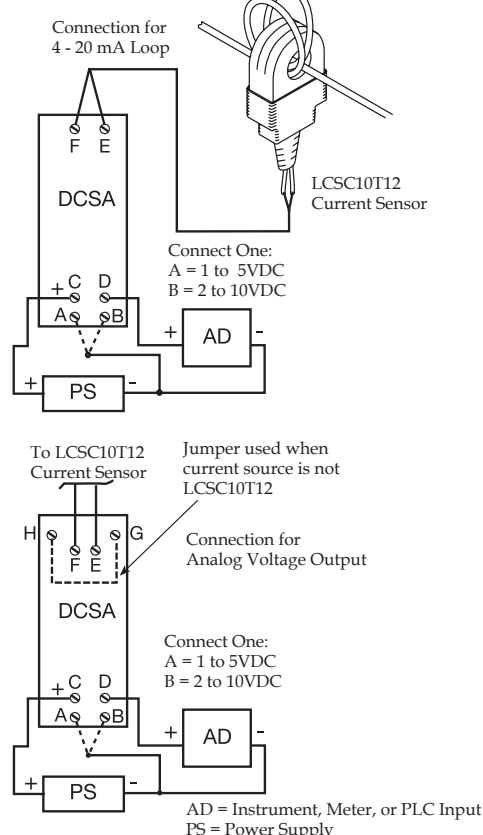
Monitored AC conductor must be insulated.

FIGURE 20 - TCSA Series



4... 20 mA
 PS = Power Supply
 Z = Zero Adjust
 S = Span Adjust
 W = Insulated Wire Carrying Monitored Current
 PLC = PLC Analog Input or Meter Input

FIGURE 21 - DCSA Series



Connection for 4 - 20 mA Loop

LCSC10T12 Current Sensor

Connect One:
 A = 1 to 5VDC
 B = 2 to 10VDC

Jumper used when current source is not LCSC10T12

Connection for Analog Voltage Output

Connect One:
 A = 1 to 5VDC
 B = 2 to 10VDC

AD = Instrument, Meter, or PLC Input
 PS = Power Supply