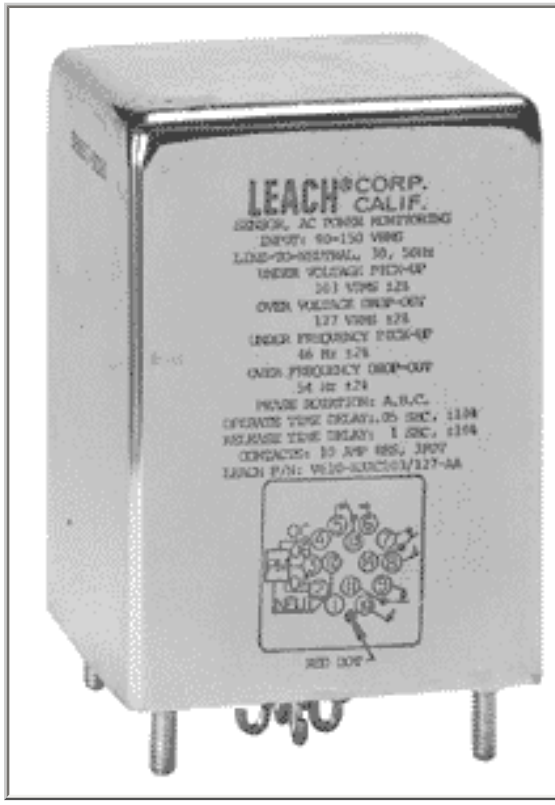
ENGINEERING DATA SHEET

SERIES V610

AC POWER MONITORING SENSOR
2 PDT OR 3 PDT, 10 AMP



FEATURES AND CHARACTERISTICS

- Contacts: 2 PDT or 3 PDT
- Hermetically sealed
- Weight: 27 oz. max.
- Sensing range: 90 to 150 Vrms
- Temperature range: -55°C to +125° C
- Custom units available

GENERAL SPECIFICATIONS

Input voltage	**90 to 150 Vrms, line to neutral 3 phase WYE**
Input frequency	**44 to 480 Hz**
Pick-up time delay	**50 to 10 ms ±10%**
Drop-out time delay	**50 to 10 ms ±10%**
Sensing accuracy	**Voltage ±2% to ±10%** **Frequency: ±2%** **based on a true sinusoidal input wave form**
Phase sequence sensing	**ABC**
Configuration and contact rating	**2 PDT, 2 Amps or 10 Amps; 3 PDT, 10 Amps**
Temperature range	**-55° C to + 125° C**
Maximum operating current per phase	**75 milliamperes RMS**
Voltage transients	**PER MIL-STD-704A, CAT.B**
Operating cycles at rated resistive load	**100,000 cycles min.**
Vibration	**0.06" D.A., 5 to 80 Hz, 20 g, 80 to 2000 Hz**
Shock	**50 g, 11 ± 1 ms, 1/2 sine, 3 axes**
Acceleration	**20 g in any axis**
Finish	**Tin Plate PER MIL-T-10727**
Detailed ordering information	**See next page**

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Options

V610 - B J A C - 100 / 120 - C A

Basic series designation: AC power monitoring sensor
1-Frequency trip points: 380 Hz and 420 Hz
2-Output Configuration: 2 PDT, 10 Amps Res, @28 Vdc
3-Time delay on pickup: .05 second ±10%
4-Time delay on dropout: 1 second ±10%
5-Under voltage trip point: 100 VRMS
6-Over voltage trip point: 120 VRMS
7-Temperature And Accuracy: -55° C to +85° C,±10%
8-Mounting Style And Terminals: Style A

1. **SERIES NUMBER**
   Indicates function, physical dimensions and weight
   V610-AC Power monitoring sensor,
   2.18 x 2.31 x 3.20 wt 27 oz. max.

2. **FREQUENCY TRIP POINT**

Code Letter	Trip Point Under Frequency	Trip Point Over Frequency
A	390	410
B	380	420
C	370	430
D	360	440
E	350	450
F	58	62
G	56	64
H	54	66
I	52	68
J	48	52
K	46	54
L	44	56

3. **OUTPUT CONFIGURATION, CONTACT RATINGS**
   MIL-R-39016 TYPE

   MIL-PRF-83536 TYPE
   J 2 PDT, Leach series J relay, 10 Amp resistive, @28 Vdc and 115 Vac, 400 Hz
   K 3 PDT, Leach series K relay, 10 Amp resistive, @28 Vdc and 115 Vac, 400 Hz
   NOTE: For additional data on contact ratings, contact the factory.

4. **TIME DELAY ON PICKUP**
5. **TIME DELAY ON DROPOUT**

Code Letter	Seconds	Seconds
A	.05	.05
B	.50	.50
C	1	1
D	2	2
E	5	5
F	10	10

6. **UNDER VOLTAGE TRIP POINT**
   Sensing range: 90 to 150 Vrms
   Specify trip point within indicated sensing range using three digits, e.g.
   Trip Point: 90 Vrms Specify: 090

7. **OVER VOLTAGE TRIP POINT**
   Sensing range: 90 to 150 Vrms
   Specify trip point within indicated sensing range using three digits, e.g.
   Trip Point: 124 Vrms Specify: 124

8. **TEMPERATURE RANGE AND ACCURACY**

Code Letter	Temp, Range	Trip Point Accuracy
A	-55° To +85° C	±2%
B	-55° To +85° C	±5%
C	-55° To +85° C	±10%
D	-55° To +125° C	±5%
E	-55° To +125° C	±10%
F	-55° To +71° C	±5%
G	-55° To +71° C	±10%

9. **MOUNTING STYLES AND TERMINALS**
   See next page

NOTES

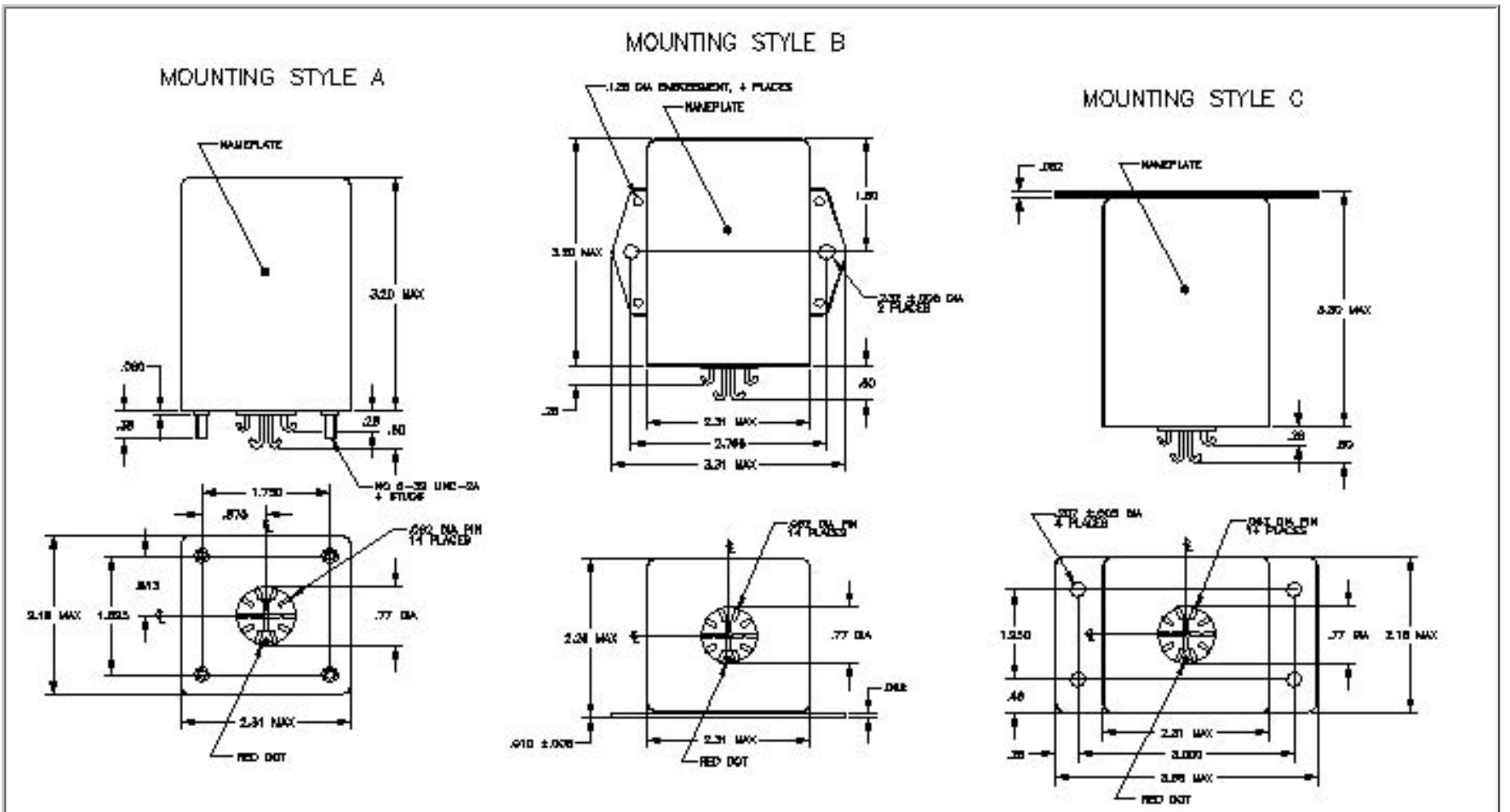
1. Operating Mode
   A. The output relay will energize when all of the following conditions exist:
      1. Each of the three phase voltages is within the under and over trip point limits
      2. The frequency is within the selected under and over trip point limits
      3. The phase rotation is ABC
      4. The pickup time delay period is completed
   B. The output relay will change to or remain in the de-energized state when any or all of the above conditions are not met (including an open circuit phase)
   C. The output relay will change state (energize or de-energize) after the selected time delay ±10%
   D. The time delays for pickup and dropout are independent and an internal signal from the sensing circuit to change the state of the relay always initiates a full time delay period

2. Dielectric Strength

Input to case	1,000 VRMS	
2 Amp contacts		10 Amp contacts
contacts to case	1,000 VRMS	contacts to case
1,250 VRMS		
Across open contacts	500 VRMS	Across open contacts
1,250 VRMS		

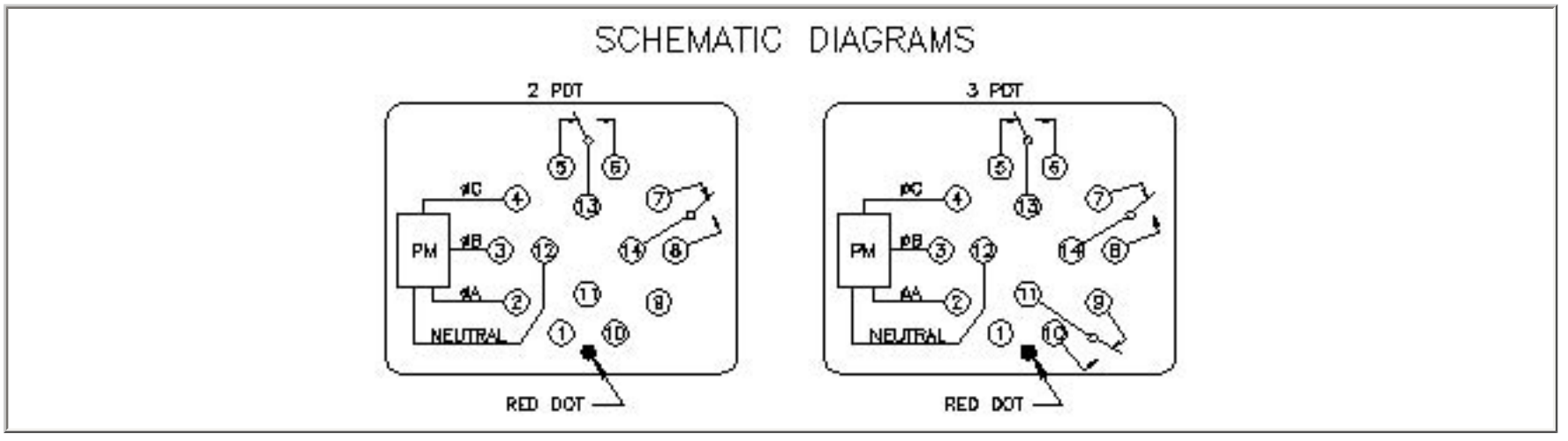
3. Hysteresis
   Units have a typical voltage hysteresis of 1% maximum and frequency hysteresis of 1 Hertz maximum to eliminate cycling due to small changes in voltage and/or frequency at each trip point.

4. Contact factory for power monitor sensor requirements such as frequency and voltage trip points and time delay values not covered in this publication.



Standard Tolerances: .xxx +.01, .xx ±.03

SCHEMATIC DIAGRAM



MOUNTING DIMENSIONS