

## MODEL 27

# True RMS Current Monitor



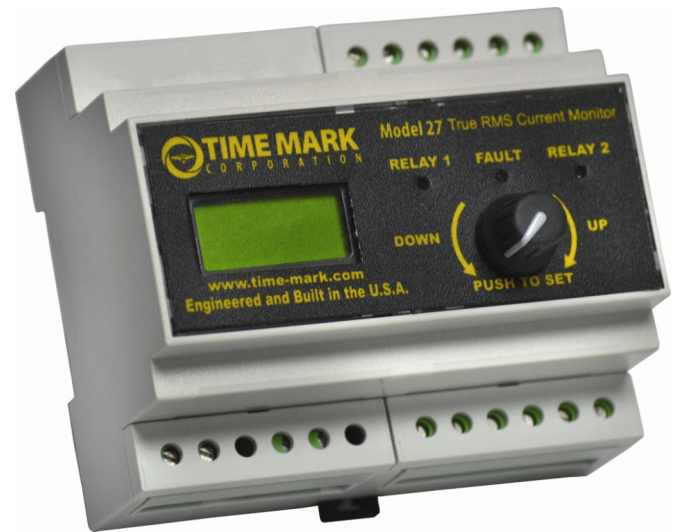
- User selectable relay operation options
- Low or High Trip with independent delays or disabled
- User programmable
- Can be restored to factory settings or calibrated using a True RMS Multimeter in the field
- Model 27SG has silver with gold flash contacts for low current.

## DESCRIPTION

**Model 27 True RMS Current Monitor** has a display that shows the current with an accuracy of +/- 0.5%. The display is updated every second and re-initialized every 30 seconds.

This unit has a user selectable relay option for High-Low or DPDT. It can also be user-selected to energize on fault or de-energize on fault. The user can select automatic or manual restart on the Model 27. The SG version of the Model 27 has silver with gold flash contacts for low current applications.

**Model 27 True RMS Current Monitor** can be either calibrated using a True RMS Multimeter or can be restored to factory defaults in the field.



## UL SPECIFICATIONS\*

Model	27 and 27SG
<b>Input</b>	
AC Current Range	0.5A - 1200A with External CT 0.5A - 5A at Terminals
Amps	5A
Frequency	50/60Hz (400Hz optional with jumper)
DC Power	24 Volts, 2 watts
<b>Output</b>	240V AC, 10A, Resistive 120V AC, 4A, General Use 240V AC, 2A, General Use C300, Pilot Duty

## OTHER SPECIFICATIONS

Model	27 and 27SG
Max Voltage on Current Terminals	600V
Start-up Delay	5 secs. Min. or Automatic reset delay setting (to allow for solid lock)
Output Contacts	SPDT x 2 10 Amps @ 240VAC
Repeat Accuracy	± 0.5 % (fixed conditions)
Reset Type	Manual or Automatic
Expected Relay Life	Mech: 10 million operations Elec: 100,000 min. at rated load
Operating Temp	-20°F to +130°F
Humidity Tolerance	0-97% w/o condensation
Enclosure Material	Lexan 920 Polycarbonate UL 94 V-0 1.5 mm UL E45329
Mounting	DIN Rail 35mm
Weight	8.5 oz.

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# MODEL 27

# True RMS Current Monitor

READ ALL INSTRUCTIONS BEFORE INSTALLING, OPERATING OR SERVICING THIS DEVICE.  
KEEP THIS DATA SHEET FOR FUTURE REFERENCE.

## GENERAL SAFETY

POTENTIALLY HAZARDOUS VOLTAGES ARE PRESENT AT THE TERMINALS OF THE MODEL 27.  
ALL ELECTRICAL POWER SHOULD BE REMOVED WHEN CONNECTING OR DISCONNECTING WIRING.  
THIS DEVICE SHOULD BE INSTALLED AND SERVICED BY QUALIFIED PERSONNEL.

## Installation Instructions

### INSTALLATION AND SETUP

#### Controls:

Rotary encoder with switch. Pressing the encoder switch will display the set points. Pressing the encoder switch for more than 5 seconds will enter the setup mode. Pressing switch displays the next menu item. Holding down the switch during setup mode will sequence through menus with 1 second intervals. Rotating the knob clockwise increases the value and counter-clockwise will decrease value.

For non-value options, rotating the knob either way will change the options on the display.

#### Setup Options: (Press encoder for at least 5 seconds to enter setup)

#### High current: (Factory Enabled: Set Point = 5A, 5S Delay)

Enable/Disable: (If disabled, set point and delay are skipped)

Set Range: Low Set + 1% to 1200A in 0.5A steps  
High trip delay: 0 to 20.0 seconds in 0.1Sec steps

#### Low current: (Factory Enabled: Set Point = 1A, 5S Delay)

Enable/Disable (If disabled set point and delay are skipped)

Set Range: 1A to High Set -1% in 0.5A steps  
Low trip delay: 0 to 20.0 seconds in 0.1Sec steps

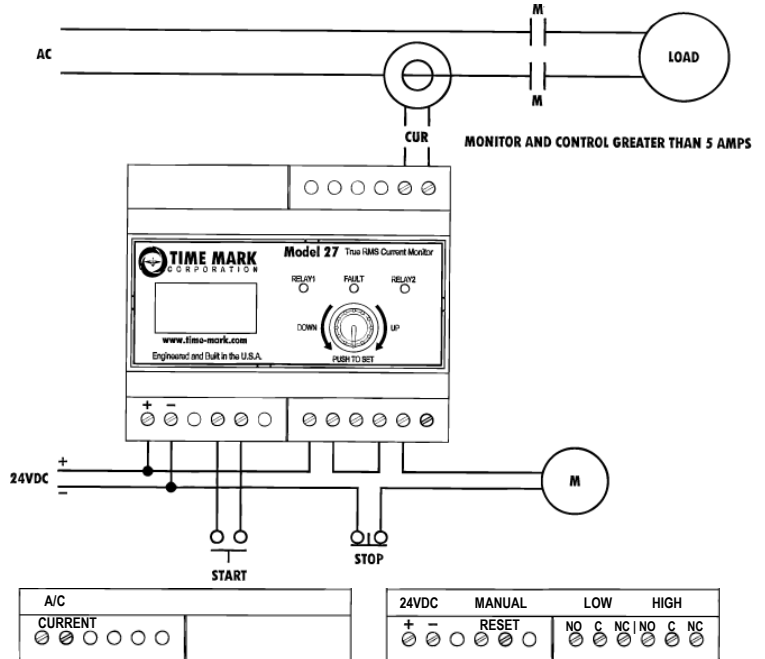
#### Relay operation: (Factory = HI-LO)

Current High/Low option:  
Separate High/Low relays  
DPDT  
Other faults DPDT

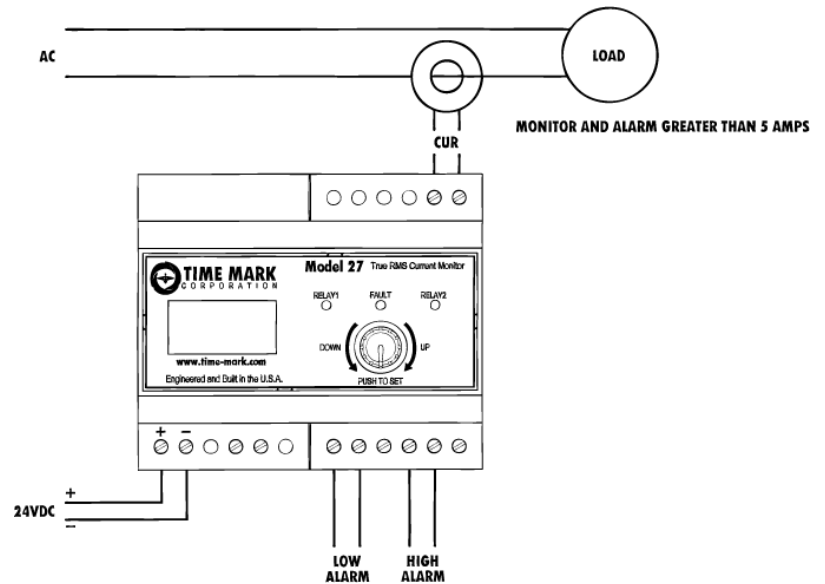
#### Relay operation on fault:

De-energize on fault  
Energize on fault

### TYPICAL APPLICATION—MONITOR AND CONTROL > 5A



### TYPICAL APPLICATION—MONITOR AND ALARMS > 5A



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## Installation Instructions

### INSTALLATION AND SETUP (Continued)

#### High/Low Hysteresis range: (Factory Enabled: Set Point = 5%)

As a % of set point 1 to 15% in 1% increments  
*HSP=High Set Point, LSP=Low Set Point,  
Hy=Hysteresis*

#### High trip:

Unit will trip at HSP and recover at HSP+  
(Hy\*HSP).

#### Low trip:

Unit will trip at LSP and recover at LSP+  
(Hy\*LSP).

#### External CT ratio (Default = 5:5)

5:5 to 1200:5

#### Start-up delay: (Default = 6S)

2 to 15 seconds

The device will set the relays to the normal state for the start-up time. After the start-up time, if the current is in the normal range, the relays will stay in the normal state. If the current is not within the normal range, the relays will be set to the fault state

#### Restart: (Default = Automatic)

Automatic or Manual

Automatic – After a high or low fault, the device will start the restart timer. When the timer times out, the unit will perform a restart.

Manual - Closing an external switch will reset the unit

If Manual, High restart and restart delay are skipped.

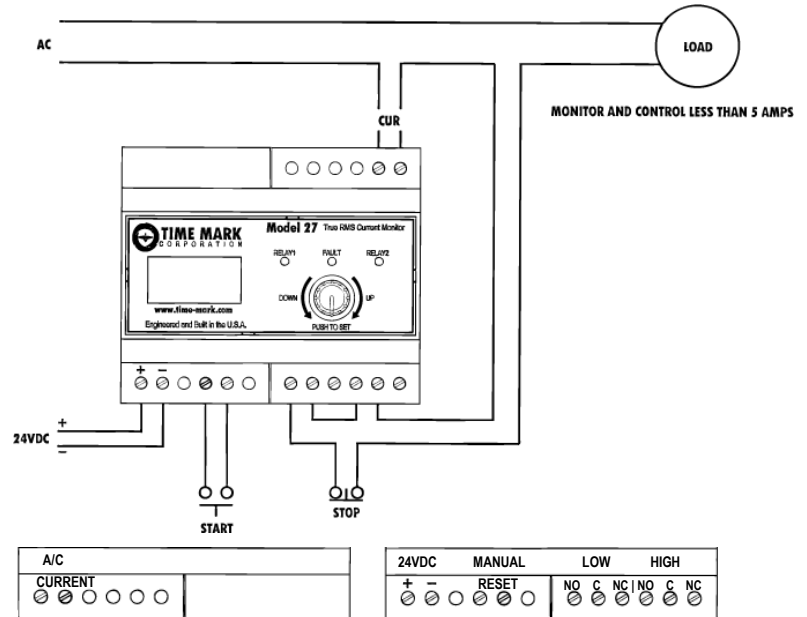
High or No High Restart when Automatic: (Default = High Restart)

High Restart – Device will restart after a high trip.

No High Restart – Device will not start after a high trip but will restart after low trip.

Automatic Restart Delay range: (Default = 6 Mins)  
1 to 300 Minutes in 1 Minute steps

### TYPICAL APPLICATION—MONITOR AND CONTROL < 5A



### INSTALLATION AND SETUP (Continued)

#### Exit from Setup options

Repeat Setup

Press encoder to begin setup from beginning.  
(High Enable)

Exit & No Save

Press encoder to exit setup. Any changes are discarded.

Exit & Save

Press encoder to exit setup and save changes. Unit will begin using new settings.

#### Start up delay:

5 Seconds Minimum (To allow for solid lock) or Start up Delay setting. Relays will remain energized during start up delay.

Unit can be re-calibrated in field with a Digital Multimeter (True RMS preferred)

Factory settings can be restored in field.

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## Installation Instructions

### MODIFYING DISPLAYED CURRENT

If measured amperage is different than the Model 27's displayed current, follow this procedure:

- 1) Measure the actual current
- 2) Check the secondary current of the CT with a clamp-on type of Ammeter
- 3) If the ratio is different from the theoretical current that should be available from the CT, you can change the CT ratio on the Model 27 to display the true reading of the current.

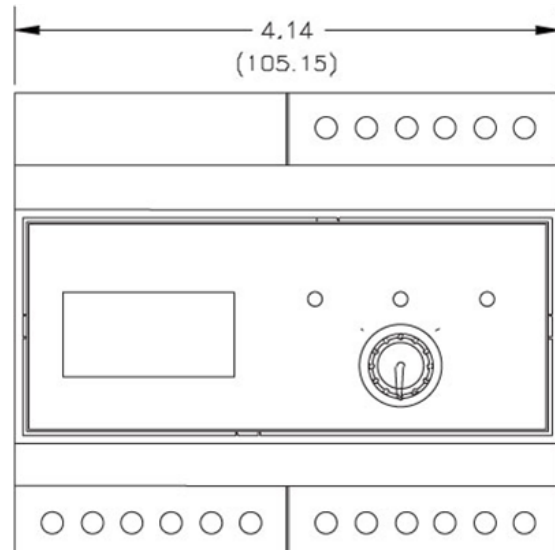
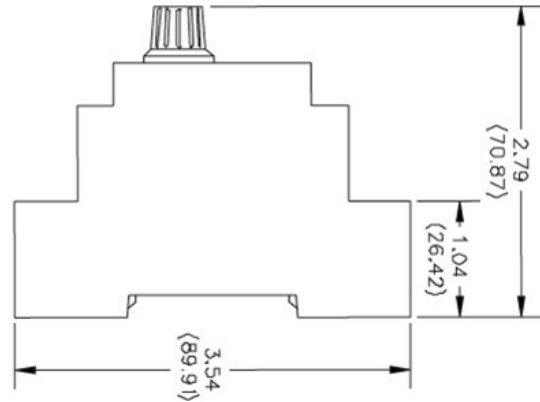
### OPTIONAL 400HZ FREQUENCY SETUP

To change the Model 27 from the factory default 50/60Hz frequency to 400Hz, simply remove the blank cover plate (without holes) and move the jumper from 50/60Hz to 400Hz. Replace the cover plate when completed.

### UNIT FIELD RESTORE FACTORY SETTINGS AND RECALIBRATION

- 1) From a powered down condition. Place a current meter in series with the test current. Apply the current to the unit first.
- 2) Press and hold the Encoder switch while applying the DC power to the unit. As soon as the splash screen appears release the button. The display will show "No Rest Fac". Rotate encoder to change option to "Yes" to restore factory settings. Press the Encoder switch.
- 3) The display will show the phase Current. Rotate encoder to change the reading on the display to be what is on the meter. When readings match press the Encoder switch.
- 4) The unit will return to normal operation.

### DIMENSIONS



### WARRANTY

This product is warranted to be free from defects in materials and workmanship for one year. Should this device fail to operate, we will repair it for one year from the date of manufacture. For complete warranty details, see the *Terms and Conditions of Sales* page in the front section of the Time Mark catalog or contact Time Mark at 1-800-862-2875.

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