

# DPM with ModbusRTU

December 2, 2020

## Purpose

The DPM is a single and three phase voltage monitor that verifies that the line voltage is within the parameters selected by the operator. Typically, the relay output is connected into the control circuit to disable equipment when the line voltage goes outside the selected parameters to avoid or minimize damage to equipment (motors, blowers, compressors, pumps, etc.)

The ModbusRTU feature also allows the DPM to communicate the operational information to equipment controls and building automation systems. This allows use of the data to more efficiently operate equipment and alert operators on the status of the line voltages.



## Operation

With the supply voltage applied to the DPM, the DPM will monitor the line voltages (single or three phase). If the voltages are within the operator selectable parameters, the output relay will be energized. If the line voltages drift outside the selectable parameters, the output relay will be de-energized with the opportunity to disconnect sensitive equipment from the line voltage until the problem is corrected.

The ModbusRTU option allows the line voltages and all of the settings to be transferred to a controller or building automation system. The communications allows for all of the current line voltages and set point to be communicated via ModbusRTU. The DPM also allows for the controller to select/change the line voltage the DPM is being set for.

## Specifications

### Line Voltage:

Single Phase: 115 to 277VAC, 1Ø, 50/60Hz

Three Phase: 200 to 600VAC, 3Ø, 50/60Hz

### Supply voltage:

DC: 12VDC & 24VDC

AC: 24VAC, 120VAC & 240VAC, 1Ø

Display: 16 Character, 2 Line, LCD back lighting

Adjustments: Membrane Buttons & Display

Modbus Unit Addresses: 1 to 247 (Default unit address is 49)

Over/Undervoltage: Adj. 7% to 15%

Phase Imbalance: 3% to 10%

Phase Rotation: A – B – C

### Delays:

Trip Delays: Adj. 2 Sec. to 10 Sec.

Reset Delays: Adj. Manual Reset to 5 Minutes

Power Consumption: 2.1VA

Output Contacts: SPDT (Single Pole Double Throw)

10 Amps @ 120VAC

6 Amps @ 277VAC

1/8HP @ 12/277VAC

5 Amps @ 30VDC

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Communications Output: Modbus-RTU

Accuracy:  $\pm 1\%$

Baud Rate: 19.2K

Parity: None

Data: (Function Code 3) **Register Address** **Units**

Voltage Selected 0x0000 (22 selectable voltages)

L1-L2 (S1-S2) 0x0001 1.0 Volt

L2-L3 0x0002 1.0 Volt

L3-L1 0x0003 1.0 Volt

Average Voltage 0x0004 1.0 Volt

% Imbalance 0x0005 0.1%

Output 0x0006 0=Off

1=On

Crest Factor 0x0007 1% (100 is no error)

(Contact factory for complete set of register addresses and values.)

Termination:

Line Voltage: (3) 0.25" Push-On Tabs or Pluggable Blocks

Output Contacts: (3) 0.187" Push-On Tabs or Pluggable Blocks

Supply Voltage: (2) 0.187" Push-On Tabs or Pluggable Blocks

ModBus: (3) Pluggable Terminal Block

Packaging: Surface mounting with Epoxy fill  
5" x 3" x 2"

## Part Number

Model: DPM- (Digital Phase Monitor)

Supply Voltage: 12D, 24C, **24A**, 120A & 240A

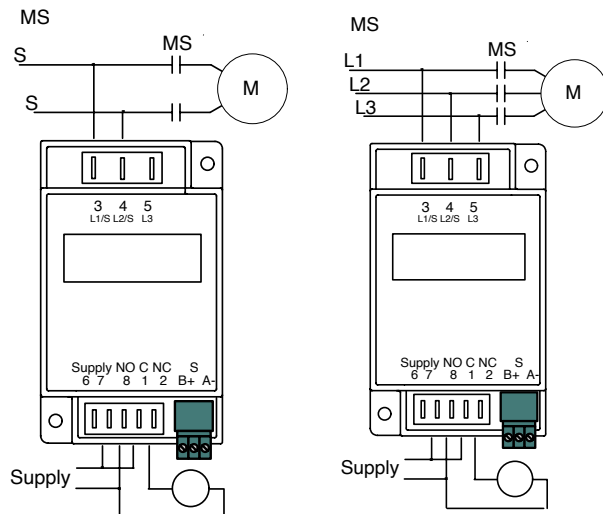
Output: **MRTU** (Modbus- RTU)

Termination: **Block or Tabs**

Special: -xxxx:

Example: **DPM-24A-MRTU-T**

## Connection



## Dimensional Drawing

