DPM PGDA / PGDV / PGD3A / PGD3V
1 / 3 PHASE PROGRAMMABLE

Analogue Meters With Moving - Iron Movement
Applications:
The digital panel meter DPM have been designed for industrial applications, which frequently require precise and on site adjustment of the display range. It can be used in industrial automation and for laboratory uses.

DPM measures important electrical parameters in 3 phase 4 Wire, 3 phase 3 Wire and single phase Network & replaces the multiple analog panel meters.

Salient Features:
- Fast & Easy Installation on panel without any need of external swivel screws (clip-in mounting for 96x96 size only)
- True RMS measurement.
- 4 Digits ultra bright LED Display (up to 9999).
- On site Programmable CT/PT Ratios.
- User selectable CT Secondary 1A/5A.
- User selectable PT Secondary from 100 VLL to 500 VLL.
- User selectable 3ph3wire / 3ph4wire / single phase Network.
- Wide auxiliary Power Supply which can accept any input between 40V-~300V AC/DC.
- Storage of MIN / MAX values.

Product Features:
True RMS measurement
The instrument measures distorted waveform up to 15th Harmonic.

On site programmable PT/CT ratios:
It is possible to program primary of external potential Transformer (PT) for Voltage DPM & primary of external Current Transformer (CT) for Current DPM on site via front panel keys by entering into Programming mode.

User selectable CT Secondary 5A/1A
The secondary of external Current Transformer (CT) can be programmed on site to either 5A or 1A for Current DPM using front panel keys.

User selectable PT Secondary
The secondary of external Potential Transformer (PT) can be programmed on site from 100 VLL to 500 VLL for Voltage DPM using front panel keys.

Higher Security
Provides Security with user programmable password protection.

User selectable CT Primary
The Primary of current transformer can be programmed on site from 1A to 999kA for Current DPM using front panel keys.

User selectable PT Primary
The Primary of Potential transformer can be programmed on site from 60 VLN to 999 kVLL for single Phase Voltage DPM & 100VLL to 999 kVLL for three Phase Voltage DPM using front panel keys.

User selectable 3 phase 3Wire or 4Wire or Single phase Network
User can program on site the network connection as either 3 Phase 3 Wire or 4 Wire or single phase network using front panel keys.

Onsite selection of Auto scroll / Fixed Screen
User can set the display in auto scrolling mode or fixed screen mode using front panel keys.

4 digits LED display (up to 9999):
14mm or 20mm ultra bright 4 digits LED display.

Function keys:
Using two function keys it is possible to Display various parameters in Current and Voltage DPM. These function keys are also used for programming Password, Network selection, CT/PT Primary & Secondary values, Reset min/max values, Auto ON/OFF mode selection.

Screen No. storage
In case of power failure, the instrument memorizes the last screen stored. For every 1 min. the instrument stores the screen no. in the non-volatile memory.

Min Max storage of parameters possible
The instrument stores minimum and maximum values for System Voltage(in case of PGDV / PGD3V) and System Current (in case of PGDA / PGD3A). Every 60 sec stored values are updated.

Low back depth
The instrument has very low back depth (behind the panel) of less than 54mm for 96x96 and 68mm for 48x96 type DPM.

Available in two different Sizes:
DPM is available in two different sizes 96x96 and 48x96.

Enclosure Protection for dust and water:
Conforms to IP 50 (for front face) & IP 20 (for back) as per IEC60529.

EMC Compatibility
Compliance to International standard IEC 61326.
- Interference Emission : IEC 61326-1  : 2005, Class A
- Interference Immunity : IEC 61326-1  : 2005
- Electrostatic discharge (ESD) : IEC 61000-4-2 -- 4kV/8kV contact/air.
- EM Field : IEC 61000 --4 -- 3 V/m (80 MHz to 1 GHz)
- Surge : IEC 61000 --4 -- 2 kV (50 ns, 5 kHz)
- Conducted RF : IEC 61000 --4 -- 3 V (150 kHz to 80 MHz)
Technical Specifications

Input Voltage (PGDV / PGD3V):

- Nominal input voltage (AC RMS): 290 VLN, 500 V L-L
- Max continuous input voltage: 120% of rated value
- Nominal input voltage burden: < 0.3 VA approx. per phase.
- System PT secondary values: 290 VLN, programmable on site.
- System PT primary values: 500 V L-L, programmable on site.

Input Current (PGDA / PGD3A):

- Nominal input current: 5 A AC RMS
- System CT secondary values: 1 A & 5 A programmable on site.
- System CT primary values: From 1 A up to 999 kA
- Max continuous input current: 120% of rated value
- Nominal input current burden: < 0.2 VA approx. per phase

Auxiliary Supply:

- External Aux: 40 V – 300 V AC/DC (± 5 %)
- Frequency range: 45 to 65 Hz
- VA burden: 3 VA Approx.

Overload Withstand:

- Voltage: 2 x rated value for 1 second, repeated 10 times at 10 seconds intervals
- Current: 20 x rated value for 1 second, repeated 5 times at 5 min intervals

Operating Measuring Ranges:

- Voltage Range: 10…120% of rated value
- Current Range: 10…120% of rated value
- Frequency: 45…65 Hz

Reference conditions for Accuracy:

- Reference temperature: 23°C ±1.2°C
- Input waveform: Sinusoidal (distortion factor 0.005)
- Input frequency: 50 or 60 Hz ±2%
- Auxiliary supply voltage: Rated Value ±1%
- Auxiliary supply frequency: Rated Value ±1%

Accuracy:

- Voltage: ±0.5% of range + 1 Digit (10…100% of Nominal value)
- Current: ±0.5% of range + 1 Digit (10…100% of Nominal value)

Influence of Variations:

- Temperature coefficient: 0.025% /°C for Voltage
- 0.05%/°C for Current (for rated value range of use (0…50°C))

Display update rate:

- Response time to step input: 1 sec approx.

Applicable Standards:

- EMC: IEC 61326-1: 2005
- Safety: IEC 61010-1-2001, Permanently connected use
- IP for Water & Dust: IEC60529

Safety:

- Pollution degree: 2
- Installation category: III
- High Voltage Test: 3.3 kV AC, 50 Hz for 1 minute between Aux. and measuring inputs.

Environmental:

- Operating temperature: 0 to +50°C
- Storage temperature: -25°C to +70°C
- Relative humidity: 0%…90% non condensing
- Warm up time: Minimum 3 minute
- Shock: 15 g in 3 planes
- Vibration: 10…55 Hz, 0.15mm amplitude

Enclosure:

- Front: IP 50
- Back: IP 20

Dimensions and Weights:

- a) 96x96 DPM
  - Bezel size: 96 mm x 96 mm DIN 43 718
  - Panel cut-out: 92 ±0.8 mm x 92 ±0.8 mm
  - Overall depth: 55 mm
  - Weight: 310 gm. Approx.

- b) 48x96 DPM
  - Bezel size: 96 mm x 48 mm DIN 43 718
  - Panel cut-out: 92 ±0.8 mm x 43.5 ±0.6 mm
  - Overall depth: 68 mm
  - Weight: 250 gm. Approx.
Parameters measured and displayed:

**A) PGD3V**

<table>
<thead>
<tr>
<th>Network type</th>
<th>Displayed Parameter</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) 3 Phase 4 wire</td>
<td>a. Phase –Neutral Voltage VR</td>
</tr>
<tr>
<td></td>
<td>b. Phase –Neutral Voltage VY</td>
</tr>
<tr>
<td></td>
<td>c. Phase –Neutral Voltage VB</td>
</tr>
<tr>
<td></td>
<td>d. Line-Line Voltage VRY</td>
</tr>
<tr>
<td></td>
<td>e. Line-Line Voltage VYB</td>
</tr>
<tr>
<td></td>
<td>f. Line-Line Voltage VBR</td>
</tr>
<tr>
<td></td>
<td>g. System Voltage V</td>
</tr>
<tr>
<td></td>
<td>h. Max. system voltage V</td>
</tr>
<tr>
<td></td>
<td>i. Min. system voltage V</td>
</tr>
<tr>
<td>2) 3 Phase 3 wire</td>
<td>a. Line-Line Voltage VRY</td>
</tr>
<tr>
<td></td>
<td>b. Line-Line Voltage VYB</td>
</tr>
<tr>
<td></td>
<td>c. Line-Line Voltage VBR</td>
</tr>
<tr>
<td></td>
<td>d. System Voltage V</td>
</tr>
<tr>
<td></td>
<td>e. Max. system voltage V</td>
</tr>
<tr>
<td></td>
<td>f. Min. system voltage V</td>
</tr>
<tr>
<td>3) 1 Phase 2 wire</td>
<td>a. Phase –Neutral Voltage V</td>
</tr>
<tr>
<td></td>
<td>b. Max voltage V</td>
</tr>
<tr>
<td></td>
<td>c. Min voltage V</td>
</tr>
</tbody>
</table>

**B) PGD3A**

<table>
<thead>
<tr>
<th>Network type</th>
<th>Displayed Parameter</th>
</tr>
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<tbody>
<tr>
<td>1) 3 Phase 4 wire</td>
<td>a. Phase Current AR</td>
</tr>
<tr>
<td></td>
<td>b. Phase Current AY</td>
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<tr>
<td></td>
<td>c. Phase Current AB</td>
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<tr>
<td></td>
<td>d. System Current A</td>
</tr>
<tr>
<td></td>
<td>e. Max. system Current A</td>
</tr>
<tr>
<td></td>
<td>f. Min. system Current A</td>
</tr>
<tr>
<td>2) 1 Phase 2 wire</td>
<td>a. Phase Current A</td>
</tr>
<tr>
<td></td>
<td>e. Max. Phase Current A</td>
</tr>
<tr>
<td></td>
<td>f. Min. Phase Current A</td>
</tr>
</tbody>
</table>

**Connection Diagram:**

**A) For 96x96 DPM (PGD3V / PGD3A)**

![Connection Diagram](attachment:image.png)
For 96x96 DPM (PGDV / PGDA)

*Note: For Measurement of parameters in PGD3V DPM Voltage must be present between terminal 2 & 11 for single phase or 3 phase 4 wire network and between terminal 2 & 5 or 2 & 8 for 3 phase 3 wire network. And for PGD3A DPM current must be present between terminal 1 & 3 for 3 phase 4 wire or 3 phase 3 wire or single phase network.

B) For 48x96 DPM (PGD3V / PGD3A)

For 48x96 DPM (PGDV / PGDA)

*Note: For Measurement of parameters in PGD3V LD DPM Voltage must be present between terminal 1 & 6 for single phase or 3 phase 4 wire network and between terminal 1 & 3 or 1 & 5 for 3 phase 3 wire network. And for PGD3I LD DPM current must be present between terminal 5 & 6 for 3 phase 4 wire or 3 phase 3 wire or single phase network.
Installation

Easy Clip in Installation on Panel for 96 x 96 size:

A) For 96x96 DPM

B) For 48x96 DPM
### Ordering Information

<table>
<thead>
<tr>
<th>Parameter Type</th>
<th>Display Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single Phase Current</td>
<td>14mm Display digit height (available in 96x96 size only)</td>
</tr>
<tr>
<td>3 Phase Current</td>
<td>20mm Display digit height</td>
</tr>
</tbody>
</table>

**Order Code Example:**

**PROGRAMMABLE DPM– 48x96 - PGD3A – 14mm**

**PROGRAMMABLE DPM, 48x96 Low Depth, 3 Phase Current, 14mm display digit height, Aux. – 40-300V AC/DC**

### Standard Product:

<table>
<thead>
<tr>
<th>Ordering Information</th>
<th>Product Code</th>
</tr>
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<tbody>
<tr>
<td>DPM 96x96 (14mm) : 3PH 3/4W, I/P – 100 to 500 VLL, Aux. 40V – 300V AC/DC</td>
<td>P6530010RIS</td>
</tr>
<tr>
<td>DPM 96x96 (20mm) : 3PH 3/4W, I/P – 100 to 500 VLL, Aux. 40V – 300V AC/DC</td>
<td>P6530010RIS</td>
</tr>
<tr>
<td>DPM 96x96 (14mm) : 3PH 3/4W, I/P – 5A/1A, Aux. 40V – 300V AC/DC</td>
<td>P6532010RIS</td>
</tr>
<tr>
<td>DPM 96x96 (20mm) : 3PH 3/4W, I/P – 5A/1A, Aux. 40V – 300V AC/DC</td>
<td>P6533010RIS</td>
</tr>
<tr>
<td>DPM 48x96 (14mm) : 3PH 3/4W, I/P – 100 to 500 VLL, Aux. 40V – 300V AC/DC</td>
<td>P6535010RIS</td>
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<tr>
<td>DPM 48x96 (14mm) : 3PH 3/4W, I/P – 5A/1A, Aux. 40V – 300V AC/DC</td>
<td>P6536010RIS</td>
</tr>
<tr>
<td>DPM 48x96 (14mm) : 1PH, I/P – 60 to 290 VLN, Aux. 40V – 300V AC/DC</td>
<td>P6530510RIS</td>
</tr>
<tr>
<td>DPM 6x96 (20mm) : 1PH, I/P – 60 to 290 VLN, Aux. 40V – 300V AC/DC</td>
<td>P6531510RIS</td>
</tr>
<tr>
<td>DPM 96 x96 (14mm) : 1PH, I/P – 5A/1A, Aux. 40V – 300V AC/DC</td>
<td>P6532510RIS</td>
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<tr>
<td>DPM 96 x96 (20mm) : 1PH, I/P – 5A/1A, Aux. 40V – 300V AC/DC</td>
<td>P6533510RIS</td>
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<tr>
<td>DPM 48 x96 (14mm) : 1PH, I/P – 60 to 290 VLN, Aux. 40V – 300V AC/DC</td>
<td>P6535510RIS</td>
</tr>
<tr>
<td>DPM 48 x96 (14mm) : 1PH, I/P – 5A/1A, Aux. 40V – 300V AC/DC</td>
<td>P6536510RIS</td>
</tr>
</tbody>
</table>