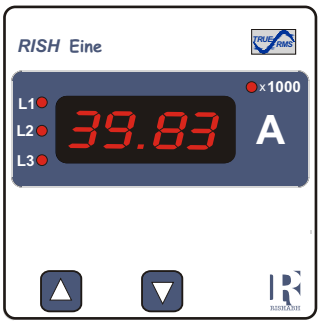
# PROGRAMMABLE *RISH Eine V / A*

## Application:

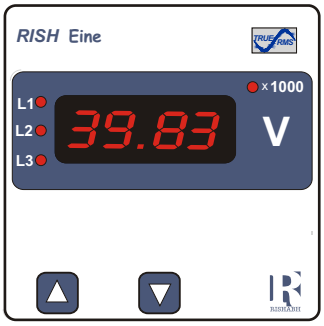
The digital panel meters ***RISH Eine*** DPM have been designed for industrial applications, which frequently require precise and on-site adjustment of the display range. It can be used in industrial automation and for laboratory uses.

***RISH Eine*** 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 with the help of external swivel screws.
- True RMS measurement.
- 4 Digits ultra bright LED Display.
- User selectable CT/PT Primary.
- User selectable 3ph3wire or 3ph4wire Network.
- Two auxillary Power Supply available 40V – 300V AC DC or 80-250V AC.




## Products Features:

**True RMS measurement**

The instrument measures distorted waveform up to 15th Harmonic.

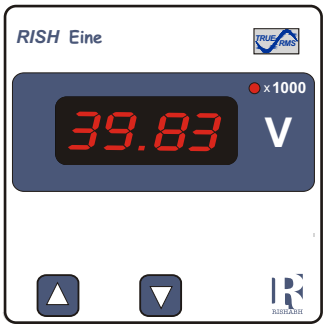



**User selectable CT Primary**

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 100VLL to 999kVLL for Voltage DPM using front panel keys.




**4 digits LED display:**

14mm ultra bright 4 digits LED display.

**User selectable 3 phase 3Wire or 4Wire Network**

User can program on site the network connection as either 3 Phase 3 Wire or 4 Wire 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.


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**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 Network selection, CT/PT Primary values, Auto Scroll 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.

**Low back depth**
The instrument has very low back depth (behind the panel) of less than 35mm.

**Enclosure Protection for dust and water:**
Conforms to IP 50 (for front face) or IP 65 option (for front with seal) & 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 : IEC 61000-4-2 -- 4kV/8kV contact/air. (ESD)
- EM Field : IEC 61000-4-3 -- 10 V/m (80 MHz to 1 GHz)
  – 3 V/m (1.4 Ghz to 2 GHz)
  -- 1 V/m (2 GHz to 2.7 GHz)
- Burst : IEC 61000-4-4 -- 2 kV (5/50 ns, 5 kHz)
- Surge : IEC 61000-4-5 -- 1 kVLL / 2 kVLN.
- Conducted RF : IEC 61000-4-5 -- 3 V (150 kHz to 80 MHZ)
- Rated Power Frequency magnetic Field : IEC 61000-4-8 -- 30 A/m
- Voltage dip : IEC 61000-4-11 -- 0% during 1 cycle.
  -- 40% during 10/12 cycles.
  -- 70% during 25/30 cycles.
- Short interruptions : IEC 61000-4-11 –
  0% during 25/30 cycles.
  25 cycles for 50 Hz test.
  30 cycles for 60 Hz test.

## Technical Specifications:

**Input Voltage:**

| | | | | |
|---|---|---|---|---|
| Nominal input voltage Ranges (AC RMS) (to be specified while ordering) | Phase –Neutral | 57.7-70V L-N , 70.1-139V L-N 139.1-277V L-N | Line-Line | 100-120V L-L 120.1-240V L-L 240.1-480V L-L |
| Max continuous input voltage | 120% of rated value | | | |
| Nominal input voltage burden | < 0.3 VA approx. per phase. | | | |
| System PT primary values | 100VLL to 999kVLL programmable on site. | | | |

**Input Current:**

| | |
|---|---|
| Nominal input current Ranges | 1A or 5A AC RMS (to be specified while ordering) |
| System CT primary values | From 1A up to 999kA (for 1 or 5 Amp ) |
| Max continuous input current | 120% of rated value |
| Nominal input current burden | < 0.2 VA approx. per phase |

**Overload Indication:** "-oL-"
(If input is greater than 125% of secondary value )

**Auxiliary Supply:**

| | |
|---|---|
| AC DC Auxiliary Supply | 40-300 V AC-DC(±5%) |
| AC Auxiliary Supply | 80- 250V AC |
| 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 second intervals |
| Current | 20x 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 |


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International :- exp.marketing@rishabh.co.in
www.rishabh.co.in

## Technical Specifications:

**Reference conditions for Accuracy:**

| | |
|---|---|
| Reference temperature | 23°C +/- 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% |
| Voltage Range | 20...100% of Nominal Value |
| Current Range | 10...100% of Nominal Value |

**Accuracy:**

| | |
|---|---|
| Voltage | ±1.0% |
| Current | ±1.0% |

**Influence of Variations:**

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

**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, 50Hz 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 | 15g in 3 planes |
| Vibration | 10... 55 Hz, 0.15mm amplitude |

**Enclosure:**

| | |
|---|---|
| Front | IP 50. |
| Front with seal (Option) | IP 65. |
| Back | IP 20. |

**Dimensions and Weights:**

| | |
|---|---|
| Bezel size | 96 mm x 96 mm DIN 43 718. |
| Panel cut-out | 92 +0.8 mm x 92 + 0.8 mm. |
| Overall depth | 40 mm. |
| Weight | 310 gm. Approx. |



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## Various Input Voltage Ranges:

| Input Voltage |
|---|
| 110V L-L (63.5V L-N) |
| 230V L-L (133V L-N) |
| 415V L-L (239.6V L-N) |

## Various Input Current Ranges:

| Input Current |
|---|
| 1A |
| 5A |

## Parameters measured and displayed:

### A) Rish Eine 3V

| Network type | Displayed Parameter |
|---|---|
| 1) 3 Phase 4 wire | a. Phase –Neutral Voltage VL1<br>b. Phase –Neutral Voltage VL2<br>c. Phase –Neutral Voltage VL3<br>d. Line-Line Voltage VL1L2<br>e. Line-Line Voltage VL2L3<br>f. Line-Line Voltage VL3L1<br>g. System Voltage |
| 2) 3 Phase 3 wire | a. Line-Line Voltage VL1L2<br>b. Line-Line Voltage VL2L3<br>c. Line-Line Voltage VL3L1<br>d. System Voltage |

### B) Rish Eine 3A

| Network type | Displayed Parameter |
|---|---|
| 1) 3 Phase 4 wire and 3 Phase 3 Wire | a. Phase Current IL1<br>b. Phase Current IL2<br>c. Phase Current IL3<br>d. System Current |

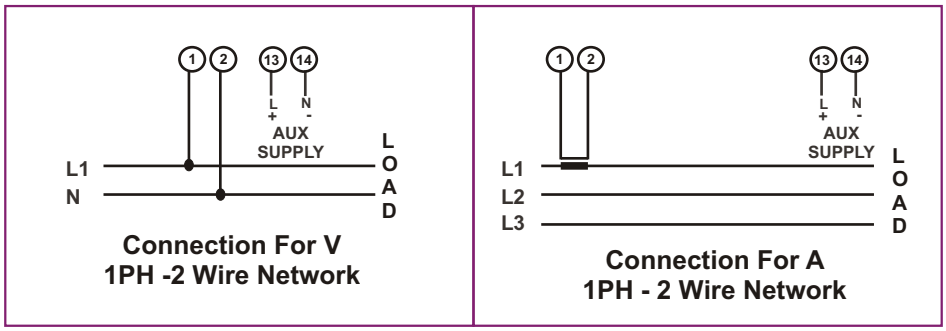
### C) Rish Eine V

| Network type | Displayed Parameter |
|---|---|
| 1 Phase 2 wire | Phase –Neutral Voltage V |

### D) Rish Eine A

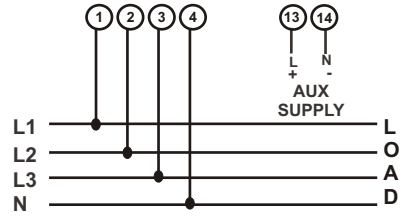
| Network type | Displayed Parameter |
|---|---|
| 1 Phase 2 wire | Phase Current II1 |

## Connection Diagram:

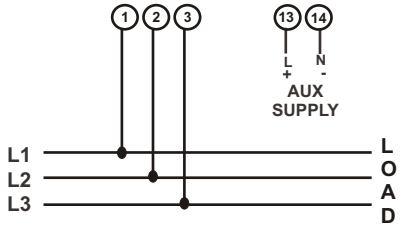



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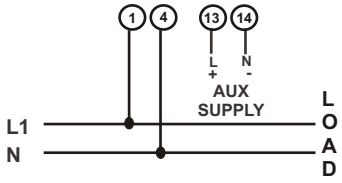
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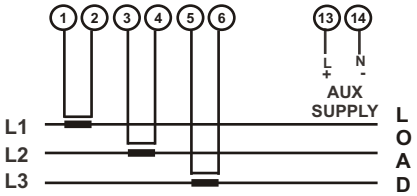

**Connection For 3V**
**3PH - 4 Wire Network**



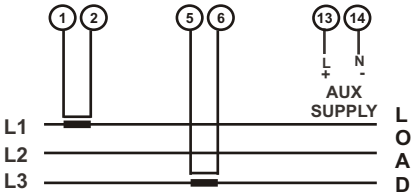

**Connection For 3V**
**3PH - 3 Wire Network**



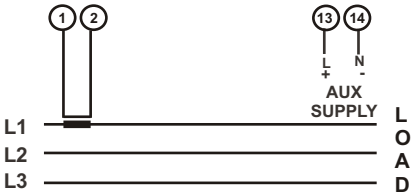

**Connection For V**
**1PH Network**




**Connection For 3A**
**3PH - 4 Wire Network**



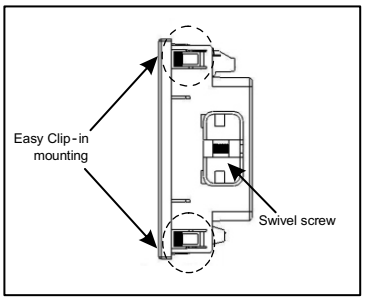

**Connection For 3A**
**3PH - 3 Wire Network**

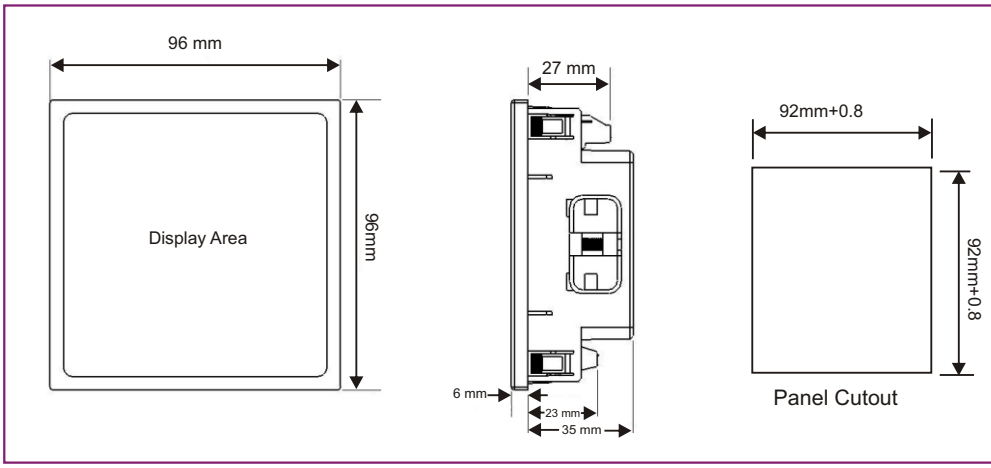



**Connection For A**
**1PH Network**

## Installation:

Easy Clip in Installation on Panel:






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## Rish Eine Voltage DPM:

| Ordering information | Ordering Code |
|---|---|
| | |
| **System Type** | |
| 3 Phase (Programmable as 4 wire or 3 wire on site) | 3V |
| 1 Phase | V |
| | |
| **Input Voltage** | |
| 110V L-L (63.5V L-N) | 110 |
| 230V L-L (133V L-N) | 230 |
| 415V L-L (239.6V L-N) | 415 |
| | |
| **Input Frequency** | |
| 50Hz | 50 |
| 60Hz | 60 |
| | |
| **Auxiliary Voltage** | |
| 40-300 V AC-DC(±5%) | AD |
| 80-250V AC | L |

## Rish Eine Current DPM:

| Ordering information | Ordering Code |
|---|---|
| | |
| **System Type** | |
| 3 Phase (Programmable as 4 wire or 3 wire on site) | 3A |
| 1 Phase | A |
| | |
| **Input Current** | |
| 1A | 1 |
| 5A | 5 |
| | |
| **Input Frequency** | |
| 50Hz | 50 |
| 60Hz | 60 |
| | |
| **Auxiliary Voltage** | |
| 40-300 V AC-DC(±5%) | AD |
| 80-250V AC | L |

**Order Code Example:**

For Voltage DPM:
**RISH Eine Voltage 3V-110-50-AD**
i.e Rish Eine Voltage DPM, 3 Phase, 110 VLL input voltage, 50 Hz, 40-300 V AC-DC Auxiliary Supply.

For Current DPM:
**RISH Eine Current 3A-1-60-L**
i.e Rish Eine Current DPM, 3 Phase, 1 Ampere input current, 60 Hz, 80-250 V AC Auxiliary Supply.


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