

# 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:

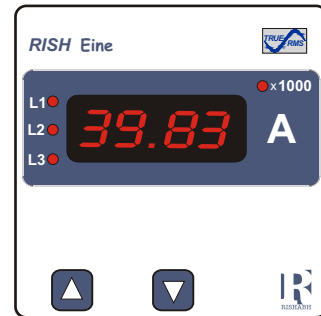
14mm ultra bright 4 digits LED display.

### 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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## 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))	0.025%/°C for Voltage
	0.05%/°C for Current

### Display update rate:

Response time to step input	1 sec approx.
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### 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 b. Phase –Neutral Voltage VL2 c. Phase –Neutral Voltage VL3 d. Line-Line Voltage VL1L2 e. Line-Line Voltage VL2L3 f. Line-Line Voltage VL3L1 g. System Voltage
2) 3 Phase 3 wire	a. Line-Line Voltage VL1L2 b. Line-Line Voltage VL2L3 c. Line-Line Voltage VL3L1 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 b. Phase Current IL2 c. Phase Current IL3 d. System Current

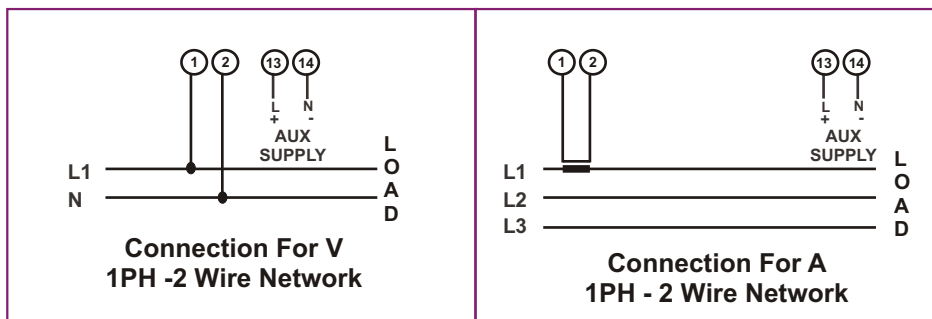
### C) Rish Eine V

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 IL1

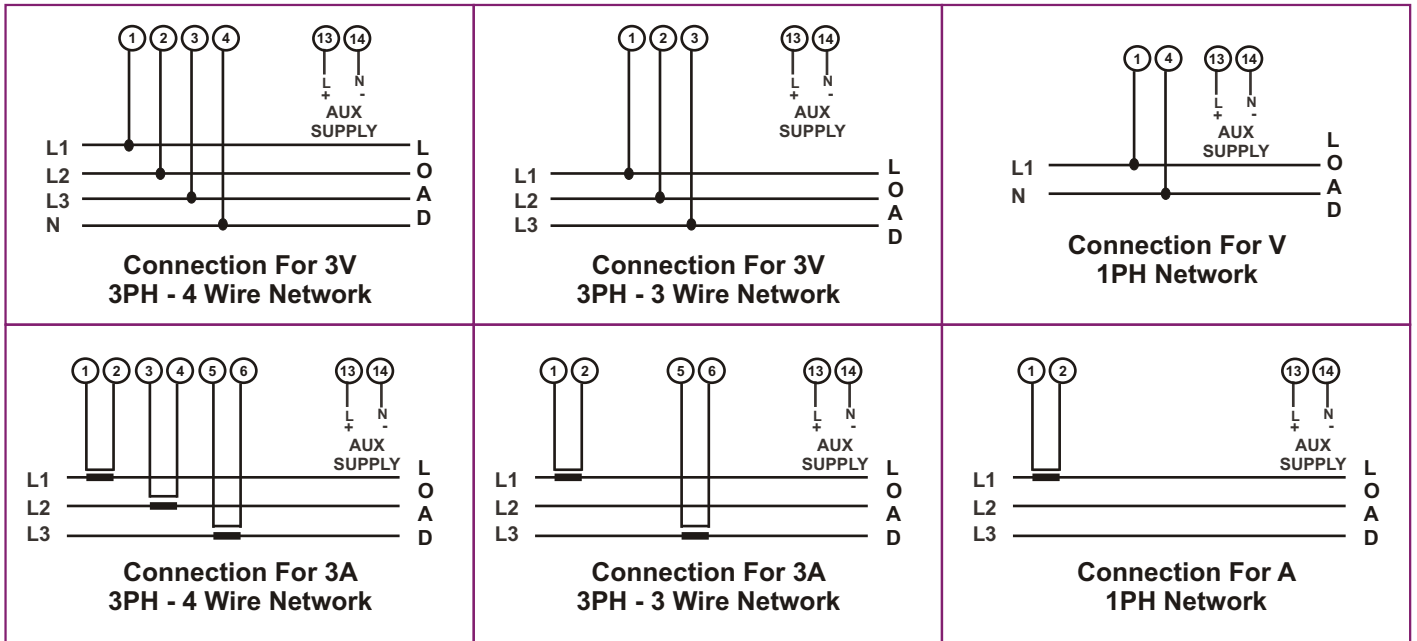
## Connection Diagram:



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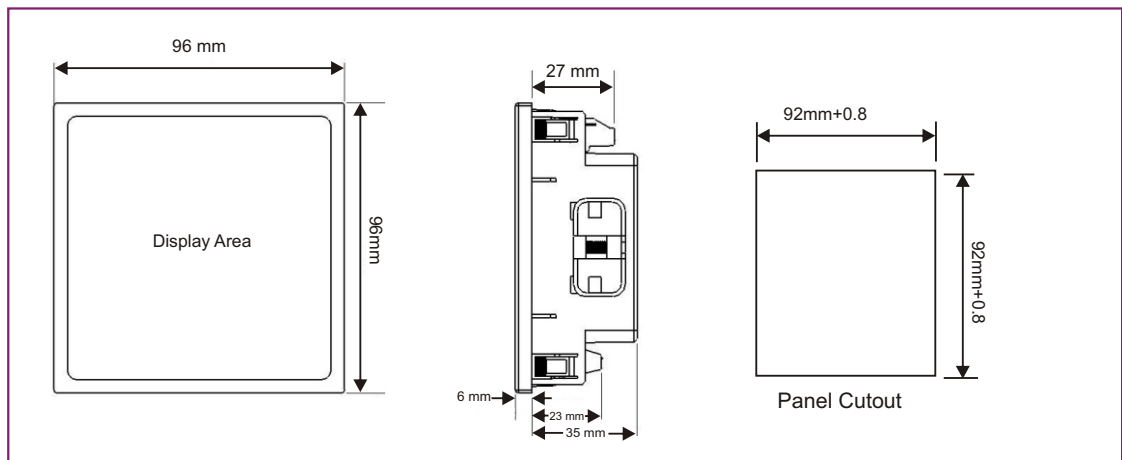
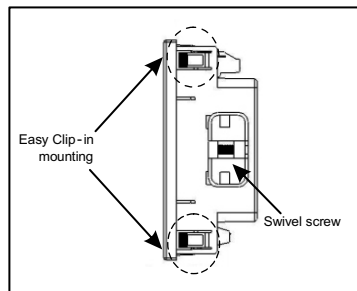
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## Installation:

Easy Clip in Installation on Panel:



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## Rish Eine Voltage DPM:

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

## Rish Eine Current DPM:

Ordering information	Ordering Code
<b>System Type</b>	
3 Phase (Programmable as 4 wire or 3 wire on site)	3A
1 Phase	A
<b>Input Current</b>	
1A	1
5A	5
<b>Input Frequency</b>	
50Hz	50
60Hz	60
<b>Auxiliary Voltage</b>	
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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