



Data Sheet

RISH EINE



Measure



Control



Record



Analyze



Optimize

Application:

The digital panel meter **PROGRAMMABLE RISH Eine** 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.

PROGRAMMABLE RISH Eine 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 CT/PT Secondary.
- User selectable 3ph3wire or 3ph4wire Network.
- Three auxillary Power Supply available 40V – 300V AC DC, 20-60V DC / 20-40V AC.
- Available in size - 96x96,48X96

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 from on site 100 VLL to 999 kVLL for Voltage DPM (3V) and 57.5 VLN to 999 kVLN for Voltage DPM (V) using front panel keys.

User selectable CT Secondary

The Secondary of current transformer can be programmed on site to 1A or 5A for Current DPM using front panel keys.

User selectable PT Secondary

The Secondary of Potential transformer can be programmed on site from 100 VLL to 500 VLL for Voltage DPM (3V) and 57.5 VLN to 300VLN for Voltage DPM (V) using front panel keys.

4 digits LED display

14mm ultra bright 4 digits LED display.

User selectable 3 phase 3Wire or 4Wire Network(for 3A/3V)

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

External CT Connection (3PH Nano CT)

External 3 PH Nano CT Connection enables Easy, fast and error free Installation. 1.5 meter long cable is provided with CT.

User selectable CT Primary (3PH Nano CT)

The Primary of current transformer can be programmed on site from 63A/ 125A/ 250A for Current DPM using front panel keys.



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Onsite selection of Auto scroll / Fixed Screen(for 3A/3V)

User can set the display in auto scrolling mode or fixed screen mode using front panel keys.

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, CT/PT Secondary 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 40mm.

Enclosure Protection for dust and water:

Conforms to IP 50 (for front face) & IP 20 (for back).

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 kVLLN.
- 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 - 288V L-N , Line-Line 100-500V L-L(For 3V)
Phase –Neutral 57.5 - 300V L-N(For V)
Phase –Neutral 600VL-N(Only for V(fixed))

Max continuous input voltage
Nominal input voltage burden

120% of rated value
< 0.3 VA approx. per phase.
< 0.4 VA approx. (For 600VLN(1phase))

System PT primary values

100VLL to 999kVLL programmable on site for 3 - Phase Voltage (3V).
57.5VLN to 999kVLN programmable on site for 1 - Phase Voltage (V).

Input Current:

Nominal input current Ranges
System CT primary values
Max continuous input current
Nominal input current burden

1A or 5A AC RMS or 100mA AC RMS (External 3 phase Nano CT)
From 1A up to 999kA (for 1 or 5 Amp) or 63A, 125A, 250A (Nano CT)
120% of rated value (optional 150% of rated value)
< 0.3 VA approx. per phase
< 0.1VA (Nano CT)

Overload Indication:

“-oL-”
(If input is greater than 125% of secondary value for Voltage and 125% (optional 155%) of secondary value for current)

Auxiliary Supply:

AC DC Auxiliary Supply

40-300V AC-DC (±5%)
20-40V AC / 20-60V DC

Frequency range
VA burden

45 to 65 Hz
< 3 VA Approx
1 VA Approx at 24V AC/DC

Overload Withstand:

Voltage
Current

2x rated value for 1 second, repeated 10 times at 10 second intervals
4x rated value for 1 second, repeated 5 times at 5 min intervals



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Technical Specifications:

Operating Measuring Ranges:

Voltage Range	10 ... 120% of rated value
Current Range	10 ... 120% of rated value (optional 10 ... 150% of rated value)
Current Range	5 ... 120% (External 3phase Nano CT)
Frequency	45...65 Hz

Reference conditions for Accuracy:

Reference temperature	23°C +/- 2°C
Input waveform	Sinusoidal (distortion factor 0.005)
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
Input Frequency	50 Hz / 60 Hz

Accuracy:

Voltage	±1.0% of Nominal value (Optional ±0.5% Available)
Current	±1.0% of Nominal value (Optional ±0.5% Available)

Influence of Variations:

Temperature coefficient : (for rated value range of use (0...50°C))	0.025%/°C for Voltage 0.05%/°C for Current
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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	2.2 kV AC, 50Hz for 1 minute.

Environmental:

Operating temperature	0 to +55°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(IP 54 on request).
Back	IP 20.

Approbations:

CE, RoHS



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Dimensions and Weights:

a) 96x96 DPM

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

b) 48x96 DPM

Bezel size (DIN 43 718)	48 mm x 96 mm.
Panel cut-out	43.5 + 0.6 mm x 92 + 0.8 mm.
Overall depth	68 mm.
Weight	250 gm. Approx.

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 3 Phase 3 wire is not applicable for Rish Eine 3A with 100mA input	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 VL

D) Rish Eine A

Network type	Displayed Parameter
1 Phase 2 wire	Phase Current IL



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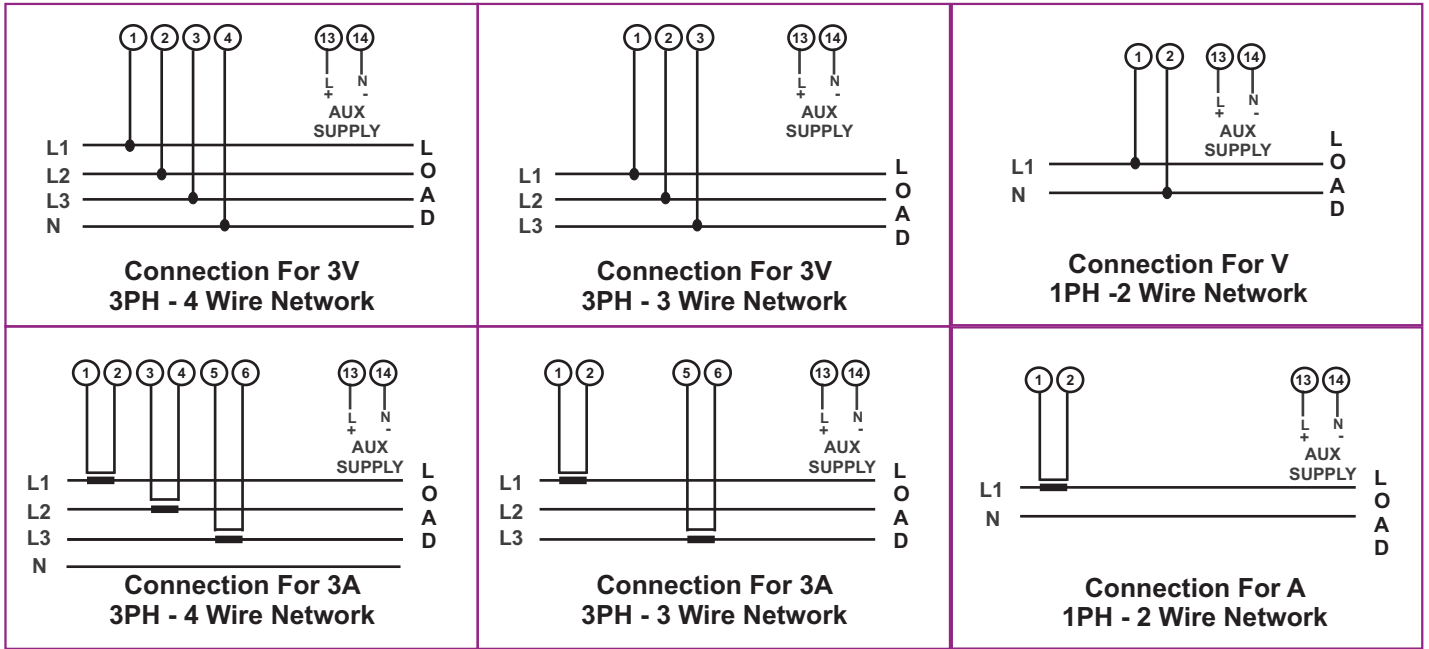
Optimize

Connection Diagram:

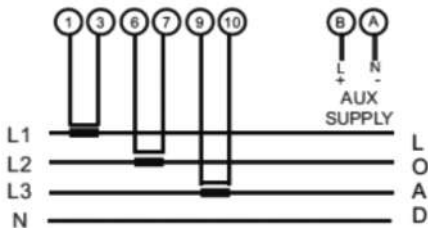
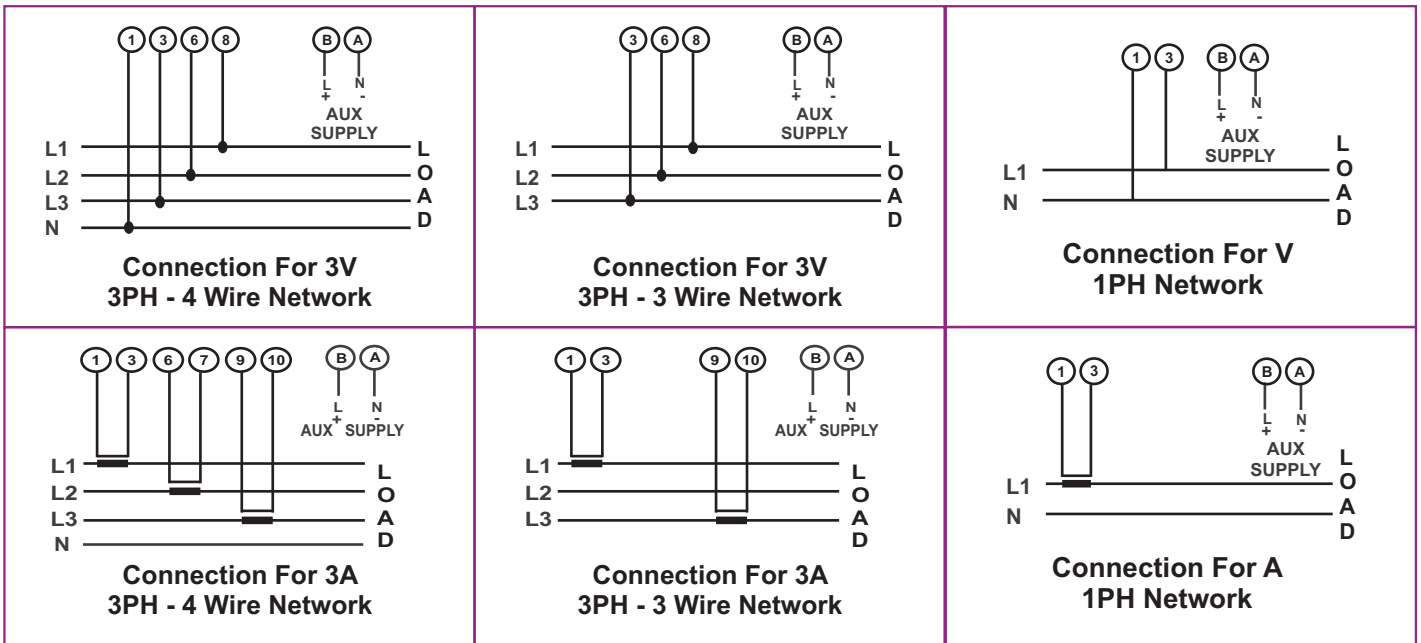
Data Sheet

RISH EINE

A) For 96x96 DPM



B) For 48x96 DPM



Connect external current transformer secondary of Nano CT to meter as shown below.

1-COM

6-COM

9-COM

3-1S1

7-2S1

10-3S1

Note: Com terminals of meter are internally shorted. No need to be short externally



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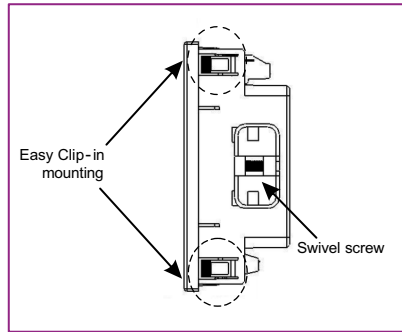
Analyze



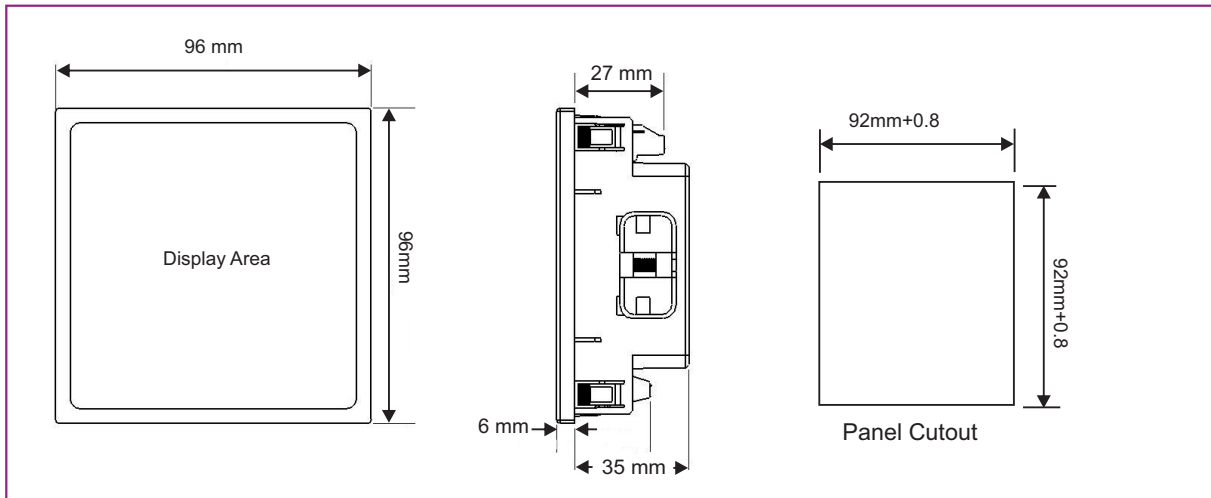
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Installation:

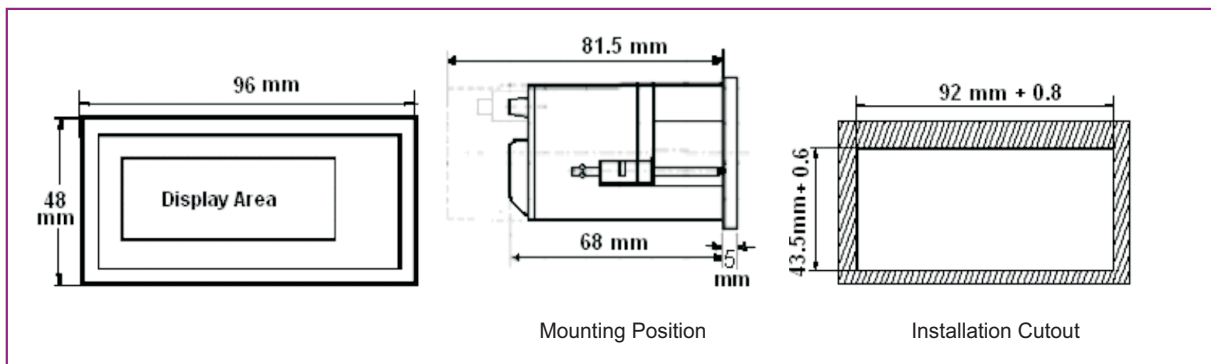
Easy Clip in Installation on Panel for 96x96 DPM:



A) For 96x96 DPM



A) For 48x96 DPM



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Ordering codes :

Ordering Information	EP99-	X	X	X	XX	X	X	X	X	000000
Size	96X96	G								
	48X96	E								
System	1 Phase		1							
	3 Phase		3							
Type	AC Voltmeter			V						
	AC Ammeter			K						
Input	600V L-N (Fixed input)				8A					
	57.5-300V L-N (1 Phase Onsite programmable)				8B					
	100-500V L-L (3 Phase Onsite programmable)				8C					
	1/5A (Onsite programmable)				8D					
	100mA AC (Fixed input for nano CT-available with 48 x 96mm size only)				8F					
Power Supply	40-300V AC/DC					H				
	20-40VAC / 20-60VDC					L				
Accuracy Class	Class 1.0						1			
	Class 0.5						5			
IP Protection	Standard IP50							0		
	Optional IP54 (On request - chargeable)							1		
Test Certificate	Not Required								0	
	Required - (On request - chargeable)								1	



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