



# Data Sheet

## RISH EINE NX

3 Ph Ammeter / Voltmeter With Touch Key



Measure



Control



Record



Analyze



Optimize

## Application

The programmable Digital Panel Meter Rish Eine NX have been designed for industrial application, which frequently require precise and on-site adjustment of the display range. It can be used in industrial automation and for laboratory uses.

## Product Features

### True RMS measurement

The instrument measures distorted waveform upto 15<sup>th</sup> harmonic.

### User Selectable 3Ph4Wire, 3Ph3Wire and single phase network

### Display parameters

Voltage VLN, VLL or Line current or System Voltage or Current.

### Attractive look with two touch keys

Using two key, it is possible to go to desired parameter on screen instantly.

Two keys are also useful for easy setup navigation and changing setup parameters

### 1 line 4 digits LED display

1 Line 4 digits seven segment LED display for simultaneous reading of voltage or current.

### Potential Free Relay Contact (Optional)

User selectable relay output. Relay output can be configured as Limit (Alarm) switch or Timer output to operate relay in cyclic manner

### Display Autoscroll

Display auto scroll enables user to see all parameters without key operation. On site selection of auto/manual scrolling.

### On site programmable PT parameters (For volt DPM)

Potential Transformer (PT) primary and secondary is programmable on site through front panel keys and MODBUS. PT Primary value ranging from 100 VLL to 999k VLL. PT Secondary value ranging from 100 VLL to 500 VLL

### On site programmable CT parameters (For Ammeter)

Current Transformer (CT) primary and secondary is programmable on site through front panel keys and MODBUS. CT Primary value ranging from 1A to 9999A. CT Secondary value ranging from 1A/5A.

### Communication

Optional Isolated multi baud rate RS485 (MODBUS) output for remote viewing, configuration and external logging.

### Auxiliary supply

Higher Auxiliary power supply with voltage range 60V-300V AC/DC.

### Enclosure Protection for dust and water

Conforms to IP 50 (for front face) & IP 20 (for back) & as per IEC60529.

### EMC Compatibility

Compliance to IEC61326.

### Fast & Easy Installation on panel with click fit arrangement



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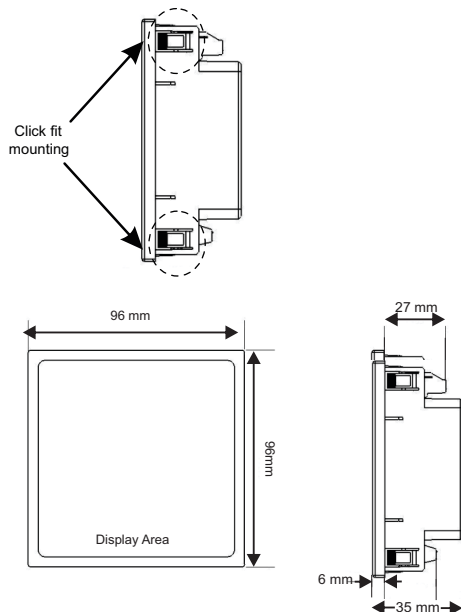


Analyze



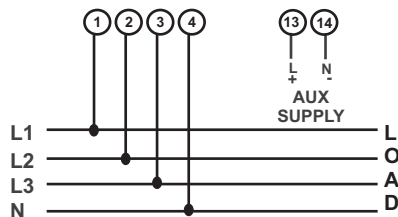
Optimize

### Dimensions Details

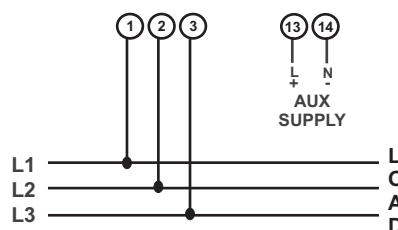


### Electrical Connection

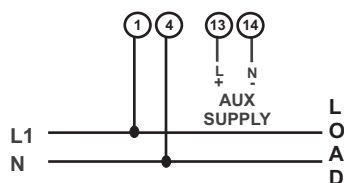
For Voltage DPM



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



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



**Connection For  
1PH - 2 Wire Network**

### Technical Specifications:

#### Operating Measuring Ranges

|               |                                                       |
|---------------|-------------------------------------------------------|
| Voltage Range | 11 -- 346V <sub>LN</sub> (19 --- 600V <sub>LL</sub> ) |
| Current Range | For 1A (30mA-1.2A) & For 5A (55mA-6A)                 |
| Frequency     | 40...70 Hz                                            |

#### Input Voltage (for Volt DPM)

|                                |                                                     |
|--------------------------------|-----------------------------------------------------|
| Nominal Input voltage (AC RMS) | 57.7-288V <sub>LN</sub> (100V..500V <sub>LL</sub> ) |
| Max continuous input voltage   | 120% of Nominal volt of Primary(OL>1.21xPTP)        |
| Input voltage burden           | 0.3 VA approx per Phase at 230VAC                   |

#### Input Current (for Ammeter)

|                              |                                                  |
|------------------------------|--------------------------------------------------|
| Nominal Input current        | 1A / 5A per Phase                                |
| Max continuous input current | 120% of Nominal current of Primary (OL>1.21xCTP) |
| Input current burden         | 0.3 VA approx per Phase                          |

#### Auxiliary Supply

|                            |               |
|----------------------------|---------------|
| Higher AC-DC External Aux. | 60-300V AC/DC |
| Frequency range            | 45 to 65 Hz   |
| VA burden                  | 5 VA Approx   |

#### Overload With stand

|         |                                                                              |
|---------|------------------------------------------------------------------------------|
| Voltage | 620V <sub>LL</sub> for 1 second, repeated<br>10 times at 10 second intervals |
| Current | 2 x 5A value for 1 second, repeated<br>5 times at 5 second intervals         |

#### 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   | Nominal Value ±1%                    |
| Auxiliary supply frequency | Nominal Value ±1%                    |

#### Display update rate

|                             |                    |
|-----------------------------|--------------------|
| Response time to step input | Less than 1 second |
|-----------------------------|--------------------|

#### Accuracy

|         |                                                  |
|---------|--------------------------------------------------|
| Voltage | ± 1.0% (As Per Nominal Voltage Set) (opt. ± 0.5) |
| Current | ± 1.0 % of 1A/5A (opt. ± 0.5)                    |

#### Influence of Variations

|                                  |                         |
|----------------------------------|-------------------------|
| Temperature coefficient          | 0.025% / °C for Voltage |
| (for range of use (0°C to 55°C)) | 0.05% / °C for Current  |

#### Applicable Standards

|                     |                                             |
|---------------------|---------------------------------------------|
| EMC                 | IEC 61326-1 (Table-2)                       |
| Safety              | IEC 61010-1-2010, Permanently connected use |
| IP for water & dust | IEC 60529                                   |



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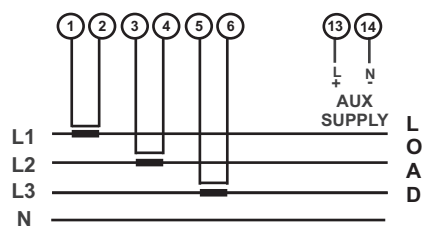
Analyze



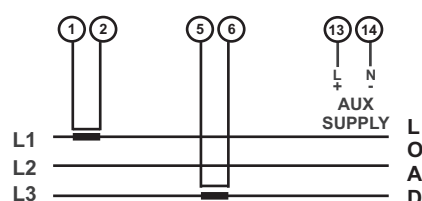
Optimize

### Electrical Connection

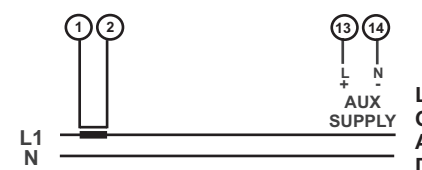
#### For Current DPM



Connection For  
3PH - 4 Wire Network



Connection For  
3PH - 3 Wire Network



Connection For  
1PH - 2 Wire Network

### Technical Specifications

#### Interfaces (Optional)

Relay

MODBUS

250 V AC, 5 A AC / 30V DC, 5A DC

RS485, max.1200m

Baud rate : 4.8, 9.6,19.2, 38.4, 57.6kBPS

#### Environmenta

Operating temperature

0°C to +55°C

Storage temperature

-25°C to +70°C

Relative humidity

0... 90% non condensing

Warm up time

Minimum 3 minute

Shock

Half sine wave, Peak acceleration

30gn (300 m/s<sup>2</sup>)

Vibration

10... 55 Hz, 0.15mm amplitude

#### Enclosure

Front

IP 50

Back

IP 20

#### Dimensions

Housing dimensions

96 x 96 x 40 mm

Panel cut-out

92.8 x 92.8 mm

#### Safety

Pollution degree

2

Installation category

III

High Voltage Test

2kV AC, 50Hz for 1 minute between  
aux. and measuring input

#### Weight

200gm Approx.

### Electrical Parameters:

| Sr No. | Parameters          | 3 Phase 4 Wire |         | 3 Phase 3 Wire |         | 1 Phase 2 Wire |         |
|--------|---------------------|----------------|---------|----------------|---------|----------------|---------|
|        |                     | Voltmeter      | Ammeter | Voltmeter      | Ammeter | Voltmeter      | Ammeter |
| 1      | System Voltage      | ✓              |         | ✓              |         | ✓              |         |
| 2      | System Current      |                | ✓       |                | ✓       |                | ✓       |
| 3      | Volts L1-N          | ✓              |         |                |         | ✓              |         |
| 4      | Volts L2-N          | ✓              |         |                |         |                |         |
| 5      | Volts L3-N          | ✓              |         |                |         |                |         |
| 6      | Volts L1-2          | ✓              |         | ✓              |         |                |         |
| 7      | Volts L2-3          | ✓              |         | ✓              |         |                |         |
| 8      | Volts L3-1          | ✓              |         | ✓              |         |                |         |
| 9      | Current L1          |                | ✓       |                | ✓       |                | ✓       |
| 10     | Current L2          |                | ✓       |                | ✓       |                |         |
| 11     | Current L3          |                | ✓       |                | ✓       |                |         |
| 13     | Timer No. of cycles | ✓              | ✓       | ✓              | ✓       | ✓              | ✓       |
| 14     | Relay Limit         | ✓              | ✓       | ✓              | ✓       | ✓              | ✓       |



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## Ordering Information :

|                            |                                         |   |   |   |    |   |   |   |   |   |     |
|----------------------------|-----------------------------------------|---|---|---|----|---|---|---|---|---|-----|
| Ordering Information       | ED99-                                   | G | 3 | X | XX | H | X | X | X | X | 000 |
| Product Type               | AC DPM - 3 Phase - RISH Eine NX         |   |   |   |    |   |   |   |   |   |     |
| Size                       | 96 X 96mm                               |   |   |   |    |   |   |   |   |   |     |
| System Type(Programmable)  | 3 Phase (1Phase/ 3Phase)                |   |   |   |    |   |   |   |   |   |     |
| Input Type                 | AC Voltmeter                            |   |   | V |    |   |   |   |   |   |     |
|                            | AC Ammeter                              |   |   | A |    |   |   |   |   |   |     |
| Input Range (Programmable) | 100-500VLL 50/60Hz (AC Voltmeter)       |   |   |   | 8C |   |   |   |   |   |     |
|                            | 1/5A 50/60Hz (AC Ammeter)               |   |   |   | 8D |   |   |   |   |   |     |
| Auxiliary Supply           | 60-300V AC/DC                           |   |   |   |    |   |   |   |   |   |     |
| Accuracy                   | Class 1                                 |   |   |   |    |   | 1 |   |   |   |     |
|                            | Class 0.5                               |   |   |   |    |   | 5 |   |   |   |     |
| IP Protection              | Standard - IP50                         |   |   |   |    |   |   | 0 |   |   |     |
|                            | Optional - IP54 (On request-Chargeable) |   |   |   |    |   |   | 2 |   |   |     |
| Test certificate           | Not Required                            |   |   |   |    |   |   |   | 0 |   |     |
|                            | Required (On request-Chargeable)        |   |   |   |    |   |   |   | 1 |   |     |
| Options                    | Basic                                   |   |   |   |    |   |   |   |   | Z |     |
|                            | Advanced (1-Relay Output and Modbus)    |   |   |   |    |   |   |   |   | R |     |

## Order Code Example : ED99-G3V8CH521Z000

RISH Eine NX- 3Phase, Size 96X96mm, Input 100-500VLL 50/60Hz, Aux supply 60-300V AC/DC, Accuracy 0.5, with IP54, with Test certificate



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RISHABH



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