



Data Sheet

RISH DELTA VAF NX



Measure



Control



Record



Analyze



Optimize

RISH Delta VAF measures important electrical parameters in 3 phase 4 wire, 3 phase 3 wire, 1 phase 2 wire and 1 phase 3 wire (split-phase) network. It displays many parameters at a glance. It measures electrical parameters like Voltage, Current, Frequency & power factor. The instrument has one optional built in relay output which can be configured as limit output. MODBUS RTU over RS-485 is built in for remote monitoring and configuration.

Product Features

True RMS measurement

- The instrument measures distorted waveform up to 15th harmonic

Front panel keys

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

Storage of parameters

The instrument stores minimum and maximum values of System Voltage, System Current. Also Run Hour, ON Hours, number of AUX interrupts are stored

Display

- 3 Line, 4 Digit bright Red LED display and indication LEDs
- Display can be configured for automatic scrolling of parameters or manual scrolling through keys as per requirement and application of user

On site programmable

It is possible to program primary, secondary of external potential transformer (PT) & primary, secondary of external current transformer (CT) Autoscroll via front panel keys and MODBUS

MODBUS (RS485) Output:

- RS485 output enables the instrument to transmit all the measured parameters over standard MODBUS protocol
- The instrument can be configured baud rate, Device address via Keys & MODBUS communication

Limit (Alarm) Output

- Potential free 1NO contact
- Fully configurable trip point, hysteresis, on and off delays for Limit Output operation

Compliance to International Safety standards

Compliance to International Safety standard IEC 61010-1:2017

Auxiliary supply

- Higher Auxiliary power supply with voltage range 60V-300V AC/DC
- Lower Auxiliary power supply with voltage range 20V-60V AC/DC

EMC Compatibility

Compliance to International standard IEC 61326



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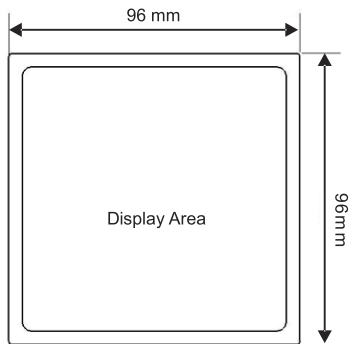


Analyze

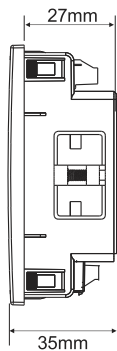


Optimize

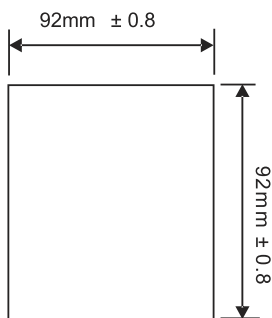
Dimensions Details:



Front View



Side View



Panel Cutout

Technical Specifications:

Input Voltage:

Nominal input voltage (AC RMS)

System PT secondary values

System PT primary values

288.68VLN (500VLL)

100VLL to 500VLL programmable on site.

100VLL to 1200kVLL programmable on site.

(1000MVA maximum power per phase)

(1200kVLL when CT primary ≤ 1002A)

Max continuous input voltage

120% of nominal value

Overload Indication

"-ol-" >121% of Nominal value

Nominal input voltage burden

< 0.1VA approx. per phase

Overload Withstand

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

Input Current

Nominal input current

1A / 5A onsite programmable

System CT primary values

From 1A to 9999A

(1000 MVA maximum power per phase)

(9999A when PT primary ≤ 120kVLL)

Max continuous input current

120% of nominal value

Overload Indication

"-OL-" >121% of Nominal value

Nominal input current burden

< 0.3VA approx. per phase

Overload Withstand

20 x rated value for 1 second, repeated 5 times at 5 minute intervals

Auxiliary Supply

Higher Auxiliary supply range

60-300V AC/DC (230V nominal)

Lower Auxiliary supply range

20-60V AC/DC

Aux Supply frequency

45 to 65 Hz range

Auxiliary Supply burden

< 4VA approx (230V nominal).

Operating Measuring Ranges

Current

5 ... 120% of nominal value

Voltage

10 ... 120% of nominal value

Power Factor

0.5 Lag ... 1 ... 0.5 Lead

Frequency

40Hz to 70Hz

Reference Conditions for Accuracy

Reference temperature

23°C +/- 2°C

Influence of temperature

0.025%/°C for Voltage & 0.025%/°C for Current

Input Waveform

Sinusoidal (distortion factor 0.005)

Input frequency

50/60 Hz ± 2%

Voltage Range

10... 120% of nominal Value

Current Range

5 ... 120% of nominal Value

Power Factor

40 ... 120 % of nominal Value of Voltage

40 ... 120% of nominal Value of Current

Display update rate

Response time to step input

1 sec approx.



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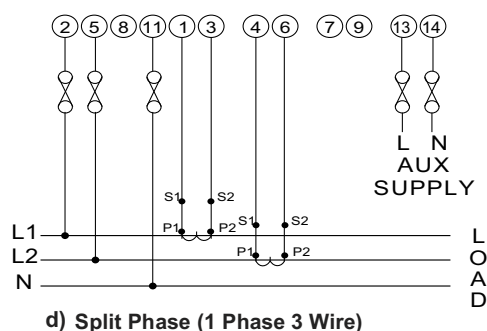
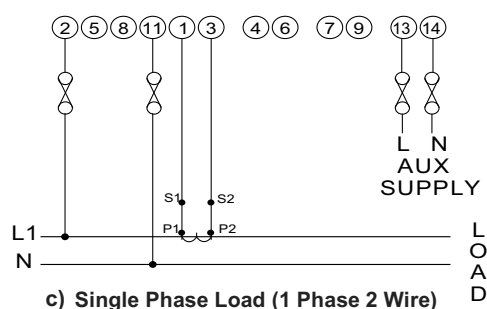
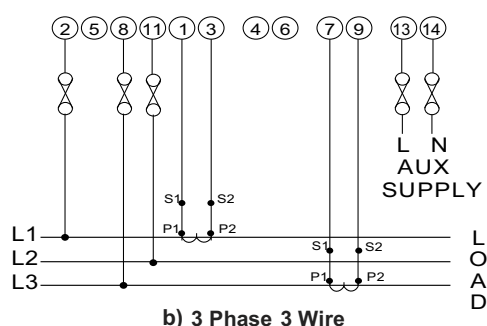
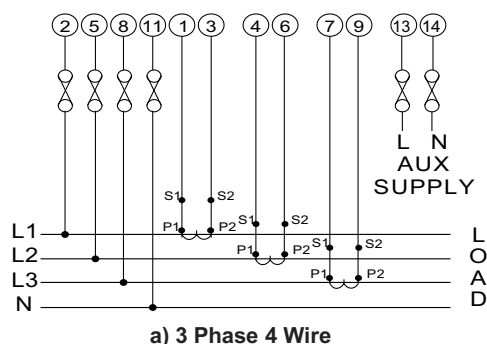
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Electrical Connections:

Network Types :



It is recommended that the wires used for connections to the instrument should have lugs crimped at the end. That is, the connections should be made with Lugged wires for secure connections.

Technical Specifications:

Accuracy

Voltage	± 0.5% of Nominal value
Current	± 0.5% of Nominal value
Frequency	± 0.1% of mid frequency
Power Factor	±2°

Applicable Standards

EMC	IEC 61326 - 1, Table 2
Immunity	IEC 61000-4-2, 4-3, 4-4, 4-5, 4-6, 4-8, 4-11
Emission	CISPR 11
Safety	IEC 61010-1:2017
IP for water & dust	IEC 60529

Isolation

Pollution degree	2
Installation category	III
High voltage test :	
• All Circuit Vs Surface	3.5 kV RMS, 50Hz, 1min
• Input / AUX Vs Others	3.3 kV RMS, 50Hz, 1min
• Input Voltage Vs Input Current	2.2 kV RMS, 50Hz, 1min
• Input Vs AUX	3.3 kV RMS, 50Hz, 1min
• RS485 Vs Relay	2.2 kV RMS, 50Hz, 1min

Environmental

Operating temperature	-10 to +60°C
Storage temperature	-25 to +70°C
Relative humidity	0... 95% RH (non condensing)
Warm up time	Minimum 3 minute
Shock (As per IEC60068-2-27)	Half sine wave, Peak acceleration 30gn (300 m/s ²), duration 18ms.
Vibration	10 ... 150 ... 10 Hz, 0.15mm amplitude
Number of Sweep cycles,	10 per axis,
Enclosure	IP 20 (Terminal side) and IP 54 (Front side)

Interfaces

Relay	250 VAC, 5AAC 30VDC, 5A DC
MODBUS	RS485, Baud rate : 4.8k, 9.6k, 19.2k, 38.4k 57.6k bps (Response time > 200ms)

Installation

Mechanical Housing	Lexan 940 (polycarbonate), Flammability Class V-0 acc. to UL 94, self extinguishing, non dripping, free of halogen
Mounting Position	Panel Mounted (96X96)
Connection Element	Conventional screw type terminal with indirect wire terminals (Screw Torque: 0.5N.m)
Connection Terminal	4mm ² solid or 2.5mm ² stranded cable
Weight	250 Gram Approx.



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Measured Parameter System wise:

✓ : Available

x : Not Available

Sr. No.	Parameter	3 Phase 4 Wire	3 Phase 3 Wire	1 Phase 2 Wire	1 Phase 3 Wire
1	System Volts	✓	✓	✓	✓
2	System Current	✓	✓	✓	✓
3	Voltage L1	✓	x	✓	✓
4	Voltage L2	✓	x	x	✓
5	Voltage L3	✓	x	x	x
6	Voltage L12	✓	✓	x	✓
7	Voltage L23	✓	✓	x	x
8	Voltage L31	✓	✓	x	x
9	Current L1	✓	✓	✓	✓
10	Current L2	✓	✓	x	✓
11	Current L3	✓	✓	x	x
12	Frequency	✓	✓	✓	✓
13	System Power Factor	✓	✓	✓	✓
14	Power Factor L1	✓	x	✓	✓
15	Power Factor L2	✓	x	x	✓
16	Power Factor L3	✓	x	x	x
17	RPM	✓	✓	✓	✓
18	Min and Max System Voltage	✓	✓	✓	✓
19	Min and Max System Current	✓	✓	✓	✓
20	Run Hour	✓	✓	✓	✓
21	ON Hour	✓	✓	✓	✓
22	Number of Interruptions	✓	✓	✓	✓
23	Neutral Current	✓	x	x	x

Ordering Information :

Ordering Information	DE10-	3	3	01	02	X	X	5	0000
Product Type	Delta VAF NX								
System Type	3 Phase (On site configurable as 1 / 3 Phase)								
Input voltage	100-500VLL 50/60Hz								
Input Current	CT-1/5A								
Output Option	NONE					Z			
	RS485					M			
	1 Relay Output					S			
	RS485 + 1 Relay Output					R			
Auxiliary Supply	20-60VAC/DC						L		
	60-300 AC/DC						H		
Accuracy	Class 0.5								

Order Code Example : DE10-330102RH50000

Rish Delta VAF NX- Input 100-500VLL 50/60Hz, 1/5A, With RS485 + 1 Relay Output, Aux 60-300V AC/DC



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Specifications may change without prior notice



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