



# Data Sheet

## RISH OPTIMA VAF

Multi-Function Digital Panel Meter



Measure



Control



Record



Analyze



Optimize



**RISH OPTIMA VAF** measures important electrical parameters in 3 phase 4 Wire, 3 phase 3 Wire and 1 phase Network & replaces the multiple analog panel meters. It measures electrical parameters like AC Voltage, AC Current, Frequency & many more. The instrument also has an optional limit switch.

### Applications:

- Distribution Panels
- Electrical load monitoring
- Genset, Test Benches and Laboratories
- Motor Control Panels

### Product Features:

#### True RMS measurement:

- ▶ Measures distorted waveform up to 15th Harmonic.

#### Onsite programmable:

- ▶ Onsite Programmable System Configuration 3PH4W / 3PH3W and Single phase.
- ▶ Onsite Programmable CT ratios and PT ratios

#### Limit Switch (Optional):

- ▶ Potential free, very fast acting relay contact configurable as limit (alarm) switch. The instrument will trip the relay if the programmed parameter exceeds the programmed Trip Limits.

#### 3 line 3 digits Ultra Bright LED display:

- ▶ Simultaneous display of 3 different parameters.

#### Run Hour, ON Hour, Number of Interruptions:

- ▶ Run Hour records the number of hours load is connected. ON Hour is the period for which the auxiliary supply is ON. Number of Interruptions indicates the number of times the Auxiliary Supply was interrupted.

#### RPM Measurement:

- ▶ The instrument display Rotation per minutes for generator applications. Number of poles can be set on site depending upon application requirement.

#### Storage of Parameters possible

- ▶ The instrument stores minimum and maximum values for System Voltage, System Current, Run Hour, ON Hour & number of Interrupts. Every 60 sec stored values are updated.

#### Low Back Depth:

- ▶ The instrument has very low back depth (behind the panel) of less than 55 mm.

#### Parameter Screen recall:

- ▶ In case of power failure, the instrument memorizes the last displayed screen.

#### Onsite selection of Auto scroll / Fixed Screen

- ▶ User can set the display in auto scrolling mode or fixed screen mode locally via front panel keys by entering into Programming mode.

#### Enclosure Protection for dust and water:

- ▶ Conforms to IP 54 (front face) as per IEC60529

#### Compliance to International Safety standards

- ▶ Compliance to International Safety standard IEC 61010-1- 2010

#### EMC Compatibility

- ▶ Compliance to International standard IEC 61326



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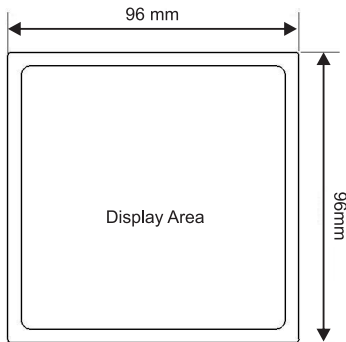


Analyze



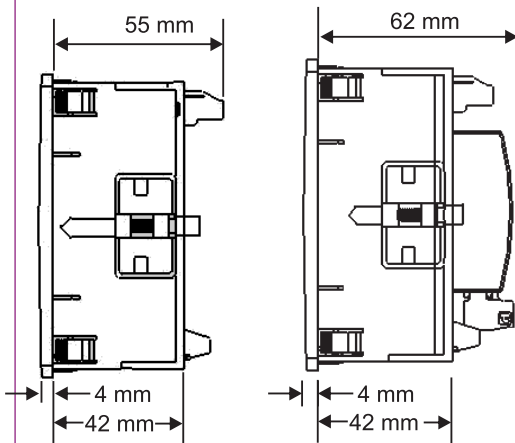
Optimize

### Dimensions Details:

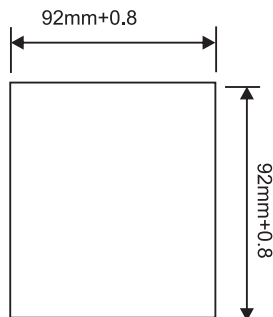


Front View

With optional Limit switch.



Side View



Panel Cutout

### Technical Specifications:

#### Input Voltage:

Nominal input voltage (AC RMS)	100 V <sub>L-L</sub> - 500 V <sub>L-L</sub> (57.7 V <sub>L-N</sub> - 290 V <sub>L-N</sub> )
System PT primary values	100 VLL to 799 kVLL programmable on site.
System PT secondary values	100 VLL to 500 VLL programmable on site.
Max continuous input voltage	120% of Nominal value

#### Input Current:

Nominal input current	1A / 5A AC RMS
System CT primary values	From 1A up to 799 kA programmable on site.
System CT secondary values	1A / 5A Programmable at site.
Max continuous input current	120% of Nominal value

#### Auxiliary Supply:

External Aux	40 V – 300V AC-DC (± 5 % ) or 20 V – 40V AC / 20 V – 60V DC
Aux supply frequency	45 to 65 Hz range

#### VA Burden:

Nominal input voltage burden	< 0.3 VA approx. per phase
Nominal input current burden	< 0.2 VA approx. per phase
Auxiliary Supply burden	< 4 VA approx

#### Operating Measuring Ranges:

Current	5... 120% of Nominal value
Voltage	10... 120% of Nominal value
Frequency	45 - 65 Hz

#### Reference Condition for Accuracy:

Reference Temperature	23°C +/- 2°C
Input Frequency	50/60 Hz ±2%
Current	10... 100% of Nominal value
Voltage	20... 100% of Nominal value
Auxiliary Supply Voltage	Nominal Value ±1%
Auxiliary Supply Frequency	Nominal Value ±1%

#### Accuracy:

Voltage	±1.0% of Nominal Value
Current	±1.0% of Nominal Value
Frequency	±0.5% of Mid Frequency



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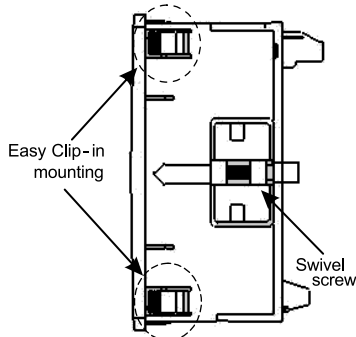


Analyze



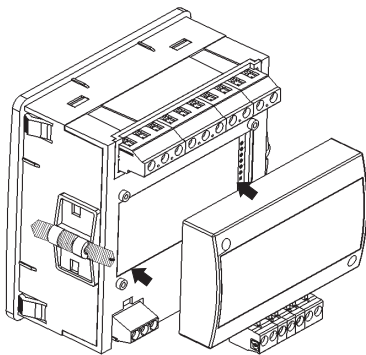
Optimize

### Installation:



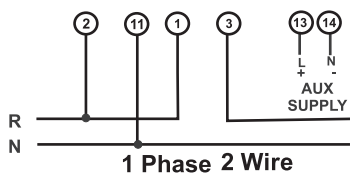
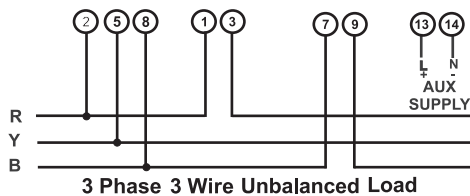
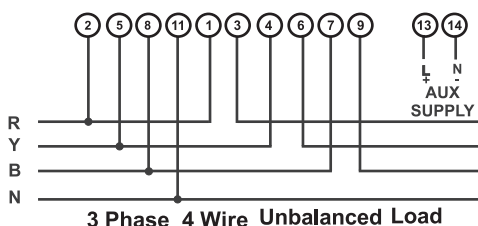
Panel Thickness : 1 - 3 mm for self clicking,  
1 - 6 mm for swivel screws.

Easy Clip in Installation on Panel.



Optional Limit Switch pluggable module.

### Electrical Connection:



### Technical Specifications:

#### Overload Withstand:

Voltage	2 x Nominal value for 1 second, repeated 10 times at 10 second intervals
Current	20x Nominal value for 1 second, repeated 5 times at 5 min intervals

#### Influence of Variations:

Temperature coefficient :	0.05%/°C
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#### Display update rate:

Response time to step input	1 sec approx.
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#### Applicable Standards:

EMC	IEC 61326
Immunity	IEC 61000-4-3. 10V/m min – Level 3 industrial Low level
Safety	IEC 61010-1-2010 , Permanently connected use
IP for water & dust	IEC60529
Pollution degree:	2
Installation category:	III
High Voltage Test	
3510V AC r.m.s,	for 1 minute between Enclosure Vs Power supply + All measuring input
2210V AC r.m.s,	for 1 minute between Power supply Vs All measuring input
	for 1 minute between Input Voltage Vs Input Current
	Input Current Vs Input Current

#### Environmental

Operating temperature	-10 to +55°C
Storage temperature	-20 to +65°C
Relative humidity	0... 90% non condensing
Warm up time	Minimum 3 minute
Shock	15g in 3 planes
Vibration	10... 150 ... 10 Hz, 0.15mm amplitude

#### Interfaces

Relay(Optional)	240 VAC ,5 A Configured as Limit Switch
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## RISH OPTIMA VAF

### Display Parameter:

✓ : Available

\* : Not Available

Sr No	Displayed Parameters	3 Phase 4Wire	3Phase 3Wire	Single Phase 2W
1.	System Voltage	✓	✓	*
2.	Voltage R–N	✓	*	✓
3.	Voltage Y–N	✓	*	*
4.	Voltage B–N	✓	*	*
5.	Voltage R–Y	✓	✓	*
6.	Voltage Y–B	✓	✓	*
7.	Voltage B–R	✓	✓	*
8.	System Current	✓	✓	*
9.	Current R	✓	✓	✓
10.	Current Y	✓	✓	*
11.	Current B	✓	✓	*
12.	Frequency	✓	✓	✓
13.	RPM	✓	✓	✓
14.	Max (System Voltage / System Current)	✓	✓	✓
15.	Min (System Voltage / System Current)	✓	✓	✓
16.	Run Hour	✓	✓	✓
17.	On Hour	✓	✓	✓
18.	Number of Auxiliary Interruptions	✓	✓	✓

### Ordering Information:

Ordering information	Ordering Code <i>RISH Optima VAF</i>
<b>System Type (Connection network)</b>	
3 Phase (programmable as 4 Wire or 3 Wire on site)	3
1 Phase	1
<b>Auxiliary Supply Voltage</b>	
40 - 300 V AC DC $\pm$ 5%	HA
20 - 40 V AC / 20 - 60 V DC	LA
<b>Optional:</b>	
With Limit output	L
Without Limit output	NL

### Order Code Example:

**RISH OPTIMA VAF – 3 - HA - L**

**RISH OPTIMA VAF**, three Phase, external higher aux (40V – 300V AC/DC  $\pm$  5%), with Limit Output.



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