

**selec****VAF36A / VAF39A**

Operating Instructions



VAF36A



VAF39A

**SPECIFICATIONS**

<b>Display</b>	<b>VAF36A</b> : 3 rows of 3 digit, Liquid Crystal Display 0.56 inch digit height <b>VAF39A</b> : 3 rows of 3 digit, seven segment LED display 0.56 inch digit height
<b>LED Indications (VAF39A)</b>	LED indications for all measuring parameter (V, I, F)
<b>LCD Indications (VAF36A)</b>	I) LCD indications for all measuring parameter (V, I, F) II) Bargraph indicates amount of % current Present in the system (Independent of key press)
<b>Wiring Input</b>	: 3Ø-3 wire & 3Ø-4 wire system
<b>Rated Input Voltage</b>	: 11 to 300V AC (L-N); 19 to 519V AC (L-L)
<b>Frequency Range</b>	: 50 / 60 Hz
<b>Rated Input Current</b>	: Nominal 5A (Min-50mA, Max-6A)
<b>CT Primary</b>	: 5A to 10,000A (Programmable for any value)
<b>CT Secondary</b>	: 5A (Fixed)
<b>PT Primary</b>	: 100V to 500kV (Programmable for any value)
<b>PT Secondary</b>	: 100 to 500V AC (L-L) (Programmable for any value)
<b>RPM</b>	: 1350 - 1950 [ Pole : 4 (Range : 2 - 98, selectable in steps of 2), Frequency: 45 - 65Hz ]
<b>Run Hour</b>	: 0 - 99999.9 hr
<b>Burden</b>	: 0.5VA @ 5A per phase

Parameters	Phase	Unit
Voltage (True RMS)	All phase to phase, phase to neutral & average	V, kV
Current (True RMS)	All phases & average	A, kA
Frequency	Frequency of present phase	Hz
Run Hour	—	H-M
RPM	—	—

**ACCURACY TABLE**

Measurement	Accuracy
Voltage $V_{L-N}$	$\pm 0.5\%$ of F.S. $\pm 2$ digit
Voltage $V_{L-L}$	$\pm 0.5\%$ of F.S. $\pm 2$ digit
Average Voltage $V_{L-N}$	$\pm 0.5\%$ of F.S. $\pm 2$ digit
Average Voltage $V_{L-L}$	$\pm 0.5\%$ of F.S. $\pm 2$ digit
Current	$\pm 1\%$ of F.S. $\pm 2$ digit
Average current	$\pm 1\%$ of F.S. $\pm 2$ digit
Frequency	$\pm 0.1\text{Hz} \pm 1\text{digit}$
Run Hour	$\pm 1\%$
RPM	$\pm 0.5\%$

<b>Resolution</b>	: 1. For current & voltage, resolution depends on CT and PT primary setting 2. For RPM, resolution is 0.1 3. For Run Hour, resolution is 0.1hr
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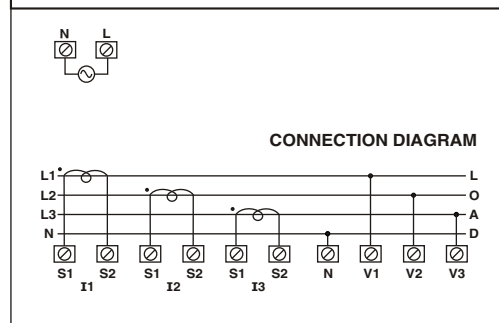
<b>Auxiliary Supply Range</b>	: 230V AC ( $\pm 20\%$ ) , 50Hz 110V AC ( $\pm 20\%$ ), 60Hz
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<b>Temperature</b>	: Operating: 0 to 50°C Storage : -20 to 75°C
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<b>Humidity</b>	: Upto 85% RH (non-condensing)
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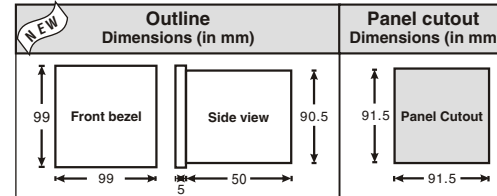
<b>Mounting</b>	: Panel Mounting
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<b>Weight</b>	: VAF36A: 310 gms VAF39A: 320 gms
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**TERMINAL CONNECTIONS****MECHANICAL INSTALLATION**

For installing the meter

1. Prepare the panel cutout with proper dimensions as shown below :



2. Push the meter into the panel cutout. Secure the meter in its place by pushing the clamp on the rear side. The clamps must be secured in diagonally opposite slots.

3. For proper sealing, tighten the screws evenly with required torque.

4. Screw clamp tightening torque = 0.1N-m

**CAUTION :**

The equipment in its installed state must not come in close proximity to any heating sources, caustic vapors, oils, steam, or other unwanted process by products.

**EMC Guidelines :**

1. Use proper input power cables with shortest connections and twisted type.
2. Layout of connecting cables shall be away from any internal EMI source.

**AUTOMATIC / MANUAL MODE DESCRIPTION**

Press VAF (●) button for 3 seconds to toggle between Automatic &amp; Manual mode.

**Note :** By default unit operates in automatic mode. In automatic mode online pages scroll automatically at the rate of 5 seconds per page. In automatic mode when any key is pressed, unit temporarily switches to manual mode and the appropriate page is displayed, also if no key is pressed for 5 sec, unit resumes automatic mode.

**CONFIGURATION**

There are 3 dedicated keys with symbols marked as ●, ▲, ▼. Use these 3 keys to enter into configuration menu / change setting.

**Note :** The settings should be done by a professional, after going through this users manual and after having understood the application situation.

For the configuration setting mode :

- Press ▲ + ▼ key for 3 sec to enter or exit from the configuration menu.
- Press ▲ or ▼ key to scroll through the setting pages.
- Press ● + ▼ or ● + ▲ keys to decrement or Increment (change) the parameter setting.

**FRONT PANEL DESCRIPTION****ONLINE PAGE DESCRIPTION**

There are 3 dedicated keys labelled as V, I, VAF. Use these 3 keys to read meter parameters. Simply press these keys to read the parameters.

KEY PRESS	ONLINE PAGE DESCRIPTION
Press "VAF"	<b>For 3Ø-4 wire system :</b> <b>The first screen :</b> Displays Line to Neutral Voltage, Current, Frequency of first phase. <b>The second Screen :</b> Displays Line to Neutral Voltage, Current, Frequency of second phase. <b>The third Screen :</b> Displays Line to Neutral Voltage, Current, Frequency of third phase. <b>The fourth Screen :</b> Displays Average Line to Neutral Voltage, Average Current of three phase & Frequency. <b>The fifth Screen :</b> Displays Average Line to Line Voltage, Average Current of three phase & Frequency.
Press "I / h"	<b>For 3Ø-3 wire system :</b> <b>The first screen :</b> Displays Line to Line Voltage, Current, Frequency of first phase. <b>The second Screen :</b> Displays Line to Line Voltage, Current, Frequency of second phase. <b>The third Screen :</b> Displays Line to Line Voltage, Current, Frequency of third phase. <b>The fourth Screen :</b> Displays Average Line to Line Voltage, Average Current of three phase & Frequency.
Press "I / h" for 3sec	<b>The first screen :</b> Displays phase Current of three phase. <b>Note :</b> To return back to <b>current</b> page, press "I / h" for 3sec.
Press "V / r"	<b>The first screen :</b> Displays Line to Neutral Voltage of three phase. <b>The second screen :</b> Displays Line to Line Voltage of three phase. <b>Note :</b> For 3 Ø 3 wire system, only the second screen will be available.
Press "V / r" for 3sec.	Displays RPM. <b>Note :</b> To return back to <b>voltage</b> page, press "V / r" for 3sec.

## SAFETY PRECAUTIONS

All safety related codifications, symbols and instructions that appear in this operating manual or on the equipment must be strictly followed to ensure the safety of the operating personnel as well as the instrument.

If the equipment is not used in a manner specified by the manufacturer it might impair the protection provided by the equipment.

**CAUTION :** Read complete instructions prior to installation and operation of the unit.

**CAUTION :** Risk of electric shock.

## WIRING GUIDELINES

### WARNING :

- To prevent the risk of electric shock power supply to the equipment must be kept OFF while doing the wiring arrangement.
- Wiring shall be done strictly according to the terminal layout. Confirm that all connections are correct.
- Use lugged terminals.
- To eliminate electromagnetic interference use of wires with adequate ratings and twists of the same in equal size shall be made.
- Cable used for connection to power source must have a cross section of  $1.5\text{mm}^2$ . These wires shall have current carrying capacity of 6A.

### MAINTENANCE

- The equipment should be cleaned regularly to avoid blockage of ventilating parts.
- Clean the equipment with a clean soft cloth. Do not use Isopropyl alcohol or any other cleaning agent.

## INSTALLATION GUIDELINES

### CAUTION :

- This equipment, being built-in-type, normally becomes a part of main control panel and in such case the terminals do not remain accessible to the end user after installation and internal wiring.
- Conductors must not come in contact with the internal circuitry of the equipment or else it may lead to a safety hazard that may in turn endanger life or cause electrical shock to the operator.
- Circuit breaker or mains switch must be installed between power source and supply terminals to facilitate power 'ON' or 'OFF' function. However this switch or breaker must be installed in a convenient position normally accessible to the operator.
- Before disconnecting the secondary of the external current transformer from the equipment, make sure that the current transformer is short circuited to avoid risk of electrical shock and injury.

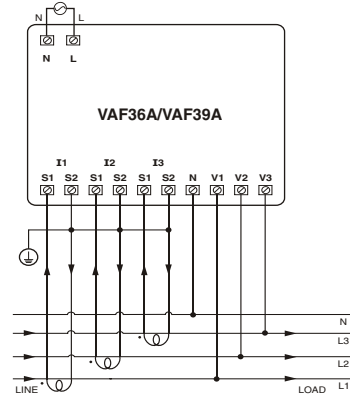
### CAUTION :

- The equipment shall not be installed in environmental conditions other than those mentioned in this manual.
- The equipment does not have a built-in-type fuse. Installation of external fuse of rating 275V AC/ 1Amp for electrical circuitry is highly recommended.

## TYPICAL WIRING DIAGRAM

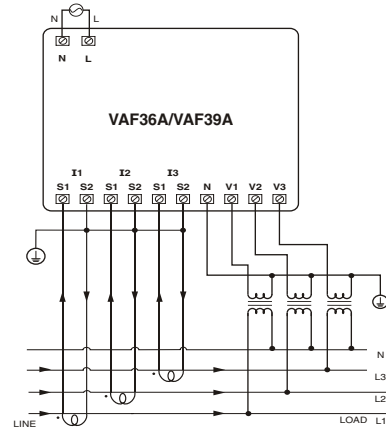
### 3 Phase - 4 Wire

3  $\emptyset$  - 4 wire, 3 CT's



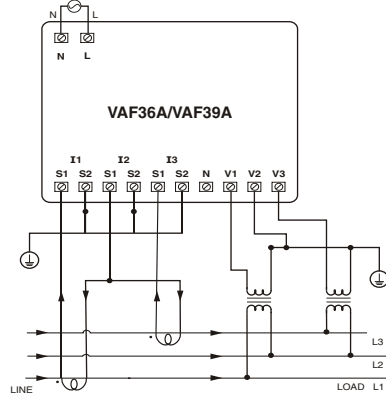
### 3 Phase - 4 Wire

3  $\emptyset$  - 4 wire, 3 CT's & 3 PT's



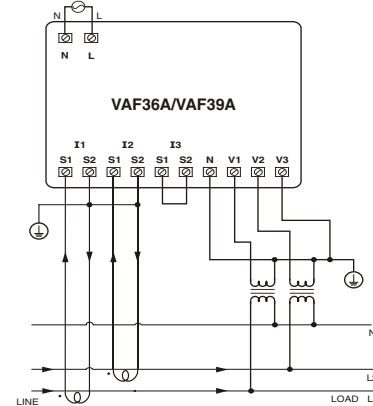
### 3 Phase - 3 Wire

3  $\emptyset$  - 3 wire, 2 CT's & 2 PT's



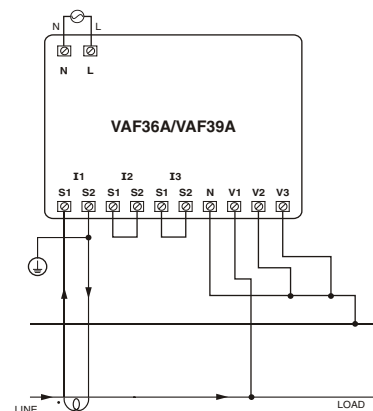
### 2 Phase - 3 Wire

2  $\emptyset$  - 3 wire, 2 CT's & 2 Pt's



### 1 Phase - 2 Wire

1  $\emptyset$  - 2 wire, 1 CT



( specifications are subject to change as development is a continuous process. )

**Selec Controls Pvt. Ltd., India**

Tel. No : 91-22-28476443/1882

Fax. No : 91-22-28471733 | Toll free : 1800 227 353

E-mail : sales@selec.com | Website : www.selec.com

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