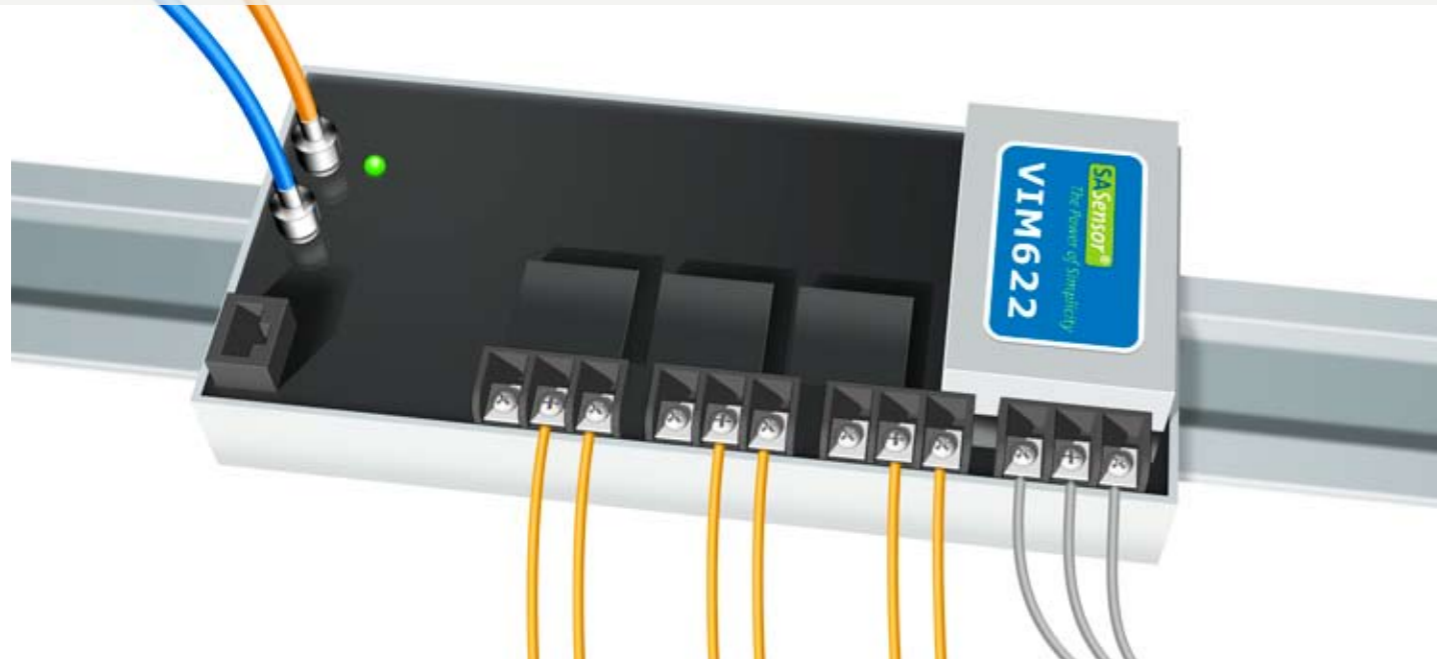


## Voltage Interface Module (VIM) Accurate voltage measurements



The Voltage Interface Module (VIM) measures and digitizes the three phase voltages supplied by the secondary windings of a conventional voltage transformer (VT). The digitized signals from the VIM contain all information of the original secondary voltages over their full dynamic range.

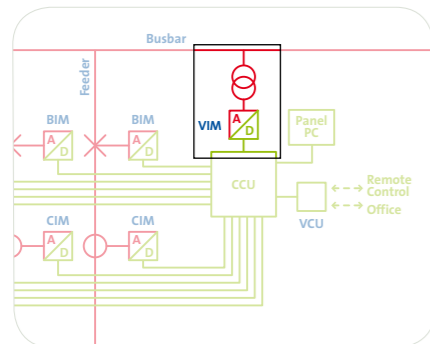
The Voltage Interface Module (VIM) is connected to the substation's conventional voltage transformers. It communicates by fiber optic Ethernet to the SASensor computing devices.

The VIM features:

- Three phase voltage inputs to obtain 3-phase and neutral measurements.

- Two ports of 100Base-FX Fast Ethernet with ST connectors for optical fibre with only one strand for transmit.
- Power supply capable for a wide input AC and DC voltage range.
- Status LED.

The VIM is designed for long life and maintenance free operation.



The SASensor Voltage Interface Module can be connected to all conventional voltage transformers.

## Voltage Interface Module (VIM) Robust design for long life

### Designed for optimized operational life

The VIM is robustly designed for a long life and is ready for future application functions. The overwhelming functional properties will not limit future functions executing in the SASensor computing devices. The installed base of interface modules can remain untouched even if new functions are required. This saves the cost and risks of primary outage, time consuming engineering and site installation work.

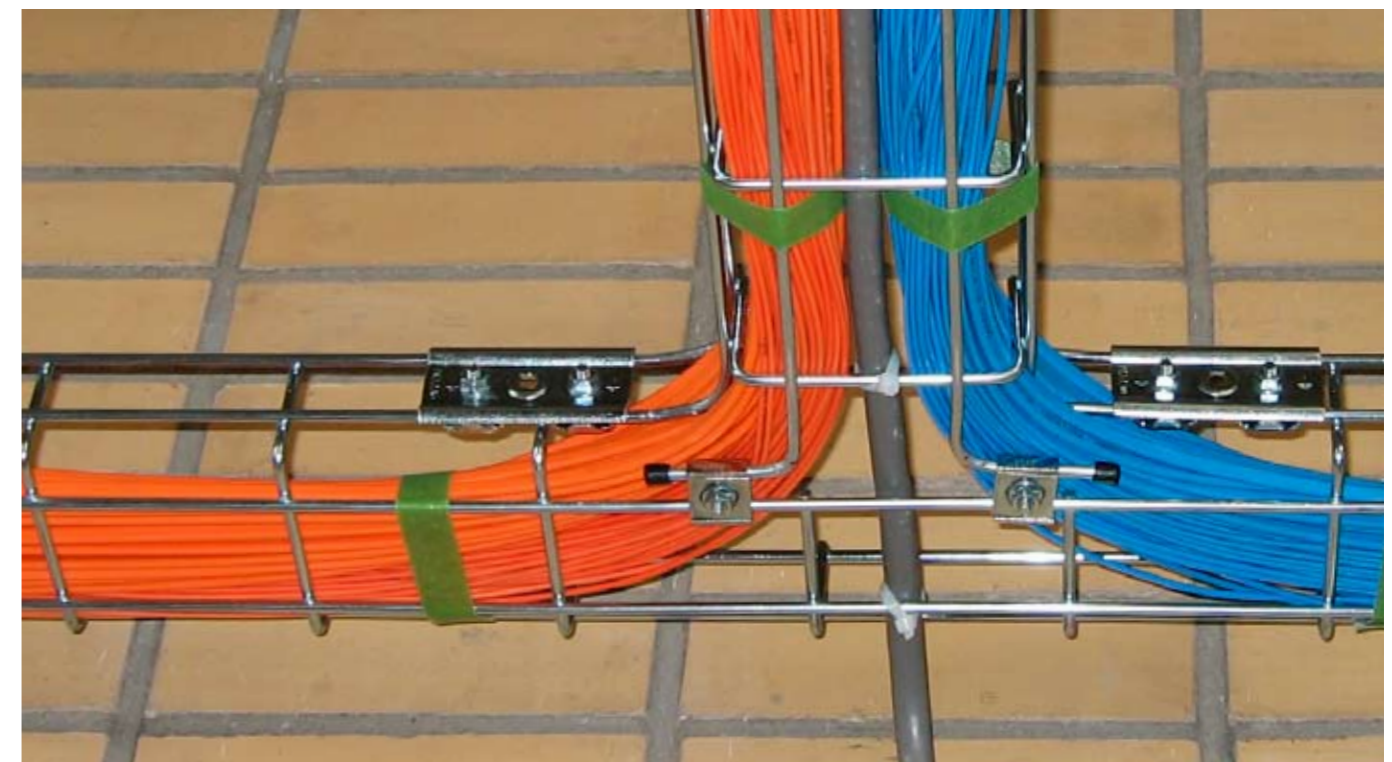
### Easy connection for star, delta and three single phase configurations

The VIM is connected to conventional voltage instrument transformers (VTs). It can be used in star, delta and three single-phase configurations.

### Full range, Accurate & Dynamic

The measuring range of the VIM is from 0 to 300Vac. The dynamic specification of the VIM enable functions like power quality measurements, protection functions and disturbance recording. The VIM is calibrated to compensate for value and phase errors. This makes the VIM suitable for revenue metering applications.

All SASensor modules are provided with dual redundant Ethernet fiber ports



# Voltage Interface Module (VIM)

## Compensation of value and phase errors

### All voltage measurements in one device

Three voltage input terminal strips to cater for all possible connections like, star, delta and three single-phase configurations.

The VIM holds its own calibration tables to compensate for non-linearity in value and phase displacement over the specified temperature, frequency and defined measurement range.

#### Secondary voltage input

- dynamic range from 10 mV - 187 Vac.
- typical accuracy defined from 100 mV - 187 Vac.

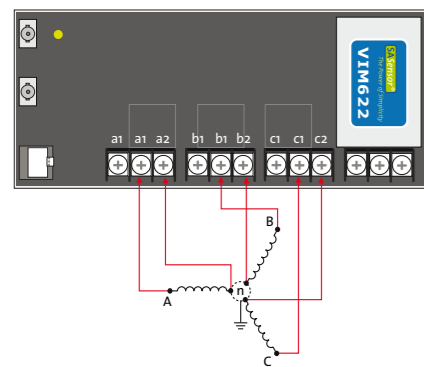
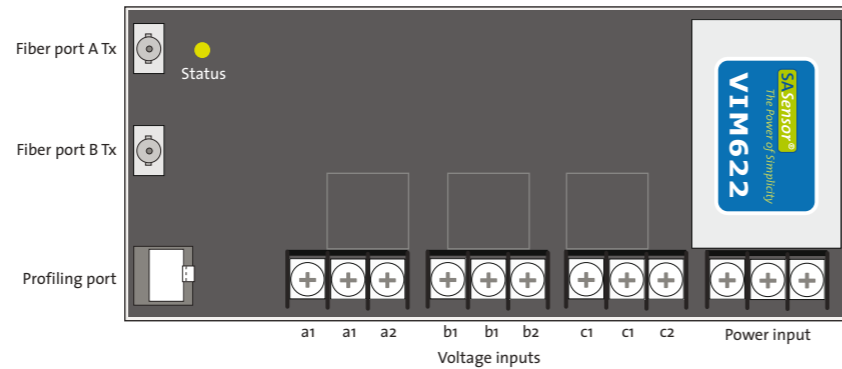
Outside the defined accuracy range, the measurements values are more indicative due to noise in the low area and influence of saturation in the high range.

### No time sync

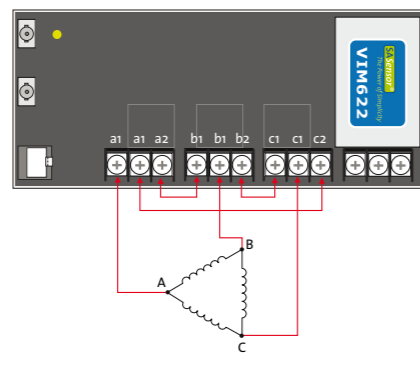
The VIM works with a free running clock. Internal time delays are measured during calibration. Functional software in the computing device will resample the raw data and compensate for time delays.

#### Simplex fiber optic connection

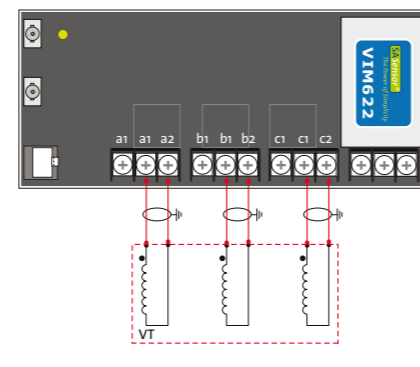
The connection of the VIM to the SASensor computing devices is just a transmitting single Ethernet fiber. The Ethernet port is dual redundant to cater for redundancy of the computing devices.



Star or Line-to-Neutral configuration



Delta or Line-to-Line configuration



Three single-phase configuration

Voltage inputs	
Number of phases	3
Connector type	3-Pole screw contact
Measuring range	0 ... 300 V
Bandwidth	10 ... 3840 Hz (-3 dB)
High rms potential (Diëlectric)	≥ 3000 V
Burden	≤ 0.5 VA

Power supply input	
DC input range	38 V ... 275 V
AC input range	88 V ... 265 V
Frequency	DC, 50 Hz and 60 Hz
Max. power consumption	2 W
Connector type	3-Pole screw contact
DC input protection	Insensitive for input polarity
Hold-up time	50 ms
Frequency	DC, 50 Hz and 60 Hz

Mechanical	
Dimensions (L x W x H)	194 x 88 x 45 mm
Required height	110 mm
Weight	0.65 kg

Electromagnetic compatibility				
Test	Standard	Enclosure	PSU	VT IN
Electrostatic discharge	IEC 61000-4-2	6 kV contact 8 kV air		
RF immunity radiated	IEC 61000-4-3	10 V/m		
Fast transient	IEC 61000-4-4	4 kV	4 kV	4 kV
Surge	IEC 61000-4-5		2 kV LE, 1 kV LL	4 kV LE, 2 kV LL
RF immunity conducted	IEC 61000-4-6	10 V	10 V	10 V
PF magnetic field	IEC 61000-4-7	100 A/m cont		
Dips	IEC 61000-4-11		0, 30, 60 %	
Interruptions	IEC 61000-4-11		100 %	
Variations	IEC 61000-4-11		+35 ... -20%	
100 kHz, 1 MHz oscillatory wave	IEC 61000-4-12 IEC 61000-4-18		2.5 kV CM 1.0 kV DM	2.5 kV CM 1.0 kV DM
Ripple	IEC 61000-4-17		12% Un	

Electromagnetic emission				
Test	Standard	Enclosure	PSU	VT IN
Radiated	IEC 61000-6-4 CISPR 22		Class A	
Conducted	IEC 61000-6-4 CISPR 22		Class A	

Climatic conditions				
Test	Standard	Enclosure	PSU	VT IN
Operating temperature	IEC 60068-2-1 IEC 60068-2-2		0 ... +55 °C	
Storage temperature	IEC 60068-2-1 IEC 60068-2-2		-10 ... +70 °C	
Humidity	IEC 60068-2-78		+40°C, 93% r.h., 10 days	

Mechanical conditions				
Test	Standard	Enclosure	PSU	VT IN
Vibration	IEC 60068-2-6		Class 1	
Shock	IEC 60068-2-31		Class 1	

