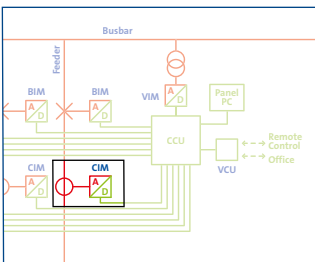
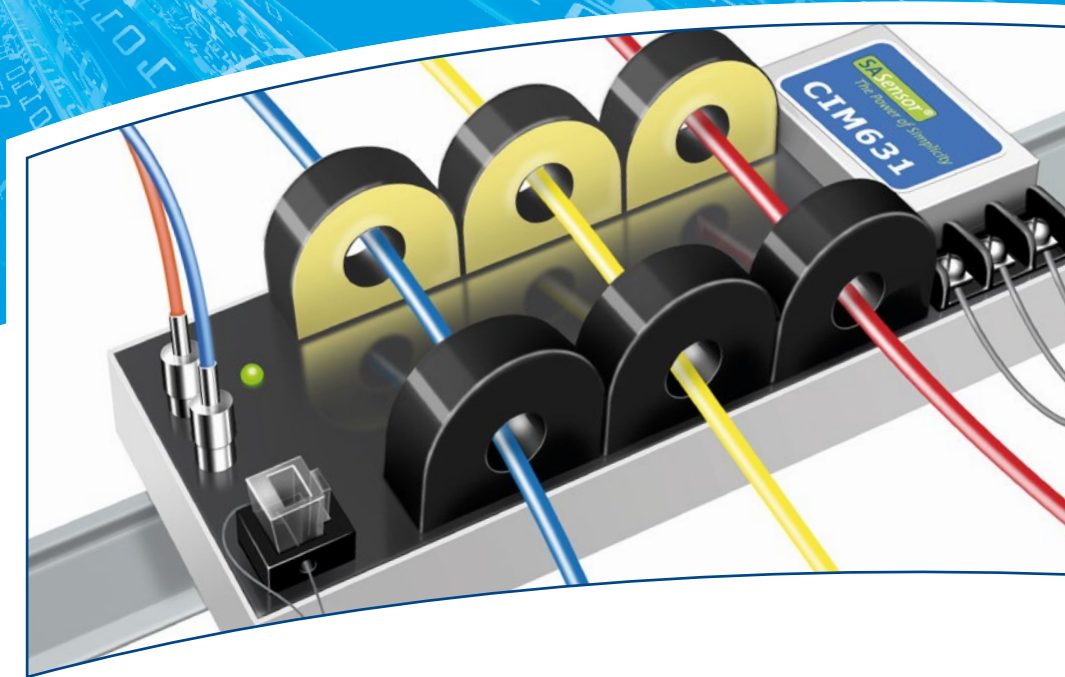




Current Interface Module (CIM631)

One device for short-circuit and metering currents



The SASensor Current Interface Module can be connected to all conventional current transformers.

The Current Interface Module (CIM) measures and digitises the three phase current supplied by the secondary winding of a conventional current transformer (CT). The digitised signals from the CIM contain all information of the original secondary current over their full dynamic range.

The measuring range is defined from 1 mA to 500 A (secondary). The guaranteed accuracy is defined from 10 mA to 275 A. To facilitate the extreme wide value range, the CIM is equipped with two input cores per phase. The first (M) core is called the measurement input and the second core (P) is called the protection input. The CIM631 communicates by fibre optic Ethernet to the SASensor Control Units.

The CIM631 features:

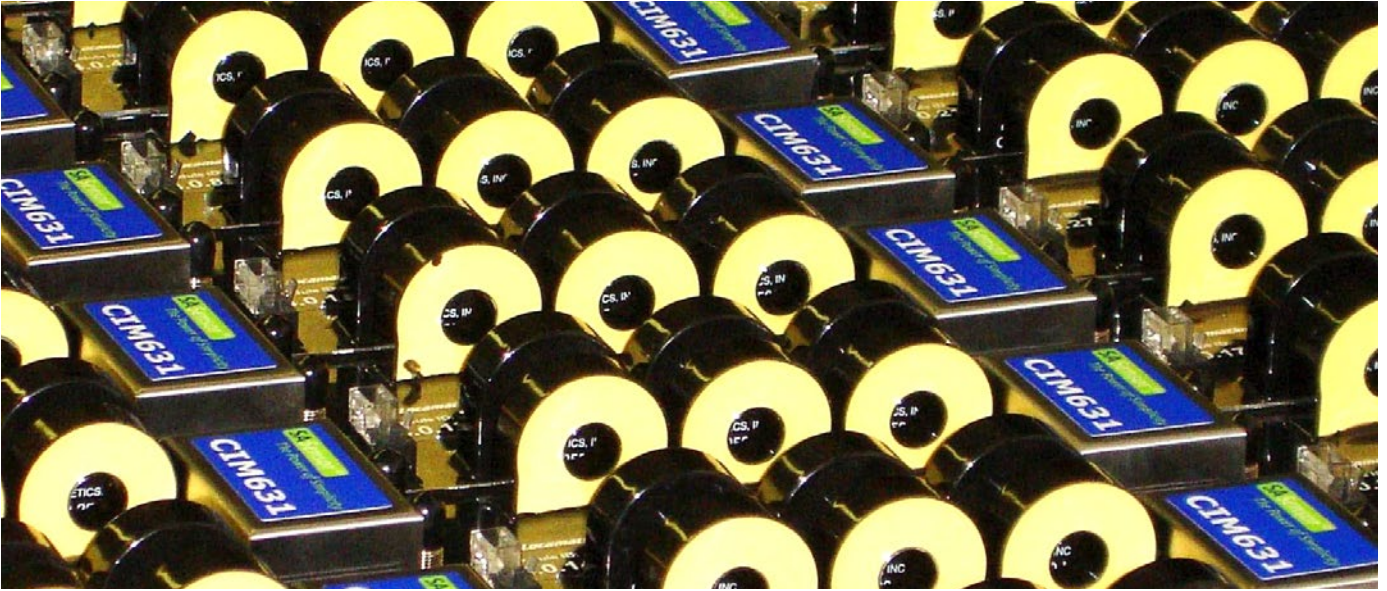
- Three phase current inputs to obtain 3-phase and calculated neutral measurements.

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

Current Interface Module (CIM631)

Robust design for long life

SASensor®



CIM631's waiting in the factory to be calibrated.

Designed for an optimized operational life

The CIM is robust; designed for long life and ready for future application functions. The installed base of interface modules can remain untouched even when new functions are required. This saves cost and risk of primary outage, time consuming engineering and site installation work.

Three phases

The CIM is connected to conventional current transformers (CTs). The secondary side of the CTs is wired contact-less through the input cores of the CIM. No extra termination is created, thus improving the reliability of the connection.

Full range, Accurate & Dynamic

The CIM is equipped with double AD-converters to obtain a large measurement range from 1 mA to 500 A. The dynamic specification of the CIM enable functions like power quality measurements, protection functions and disturbance recording. The CIM is calibrated to compensate for value and phase errors. This makes the CIM suitable for metering applications.



Current Interface Module (CIM631)

High precision in measuring, monitoring and protection

Protection and high precision measurement in one device

The CIM has two current input channels per phase: Protection current input and Measurement current input. The inputs consist of input cores that enable contactless measurements over the full dynamic range.

From signal processing point of view the inputs are identically handled in the software. The measuring ranges are different with a reasonable area of overlap.

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

The secondary wiring of a conventional protection current transformer can be lead through both CT's on the CIM631. This enables the CIM631 to measure the current over both the measurement and the protection range.

Protection current input

High range Protection inputs with

- dynamic range from 100 mA - 500 A.
- typical accuracy defined from 500 mA - 275 A.

Measurement current input

Low range Measurement inputs with

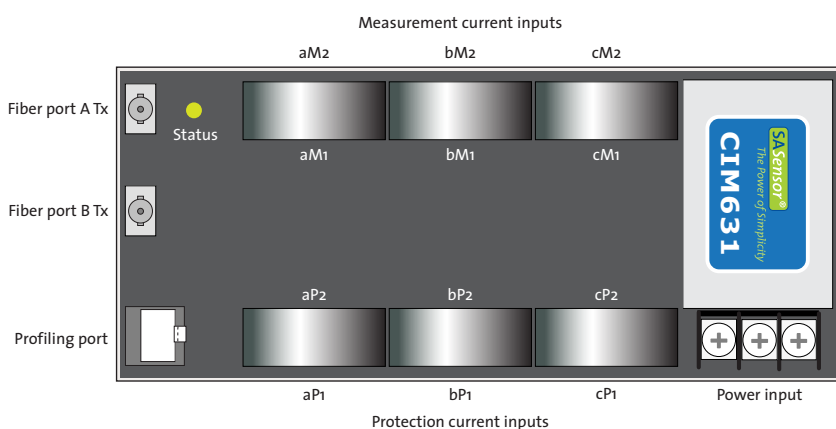
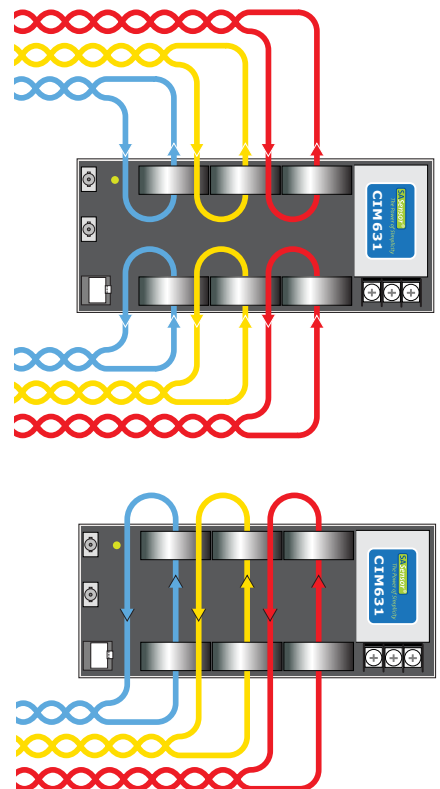
- dynamic range from 1 mA - 7.2 A.
- typical accuracy defined from 10 mA - 7.0 A.

No time sync

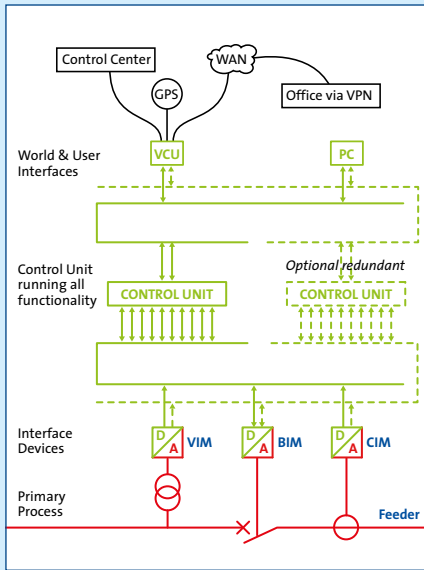
The CIM works with a free running clock. Internal time delays are measured during calibration. Functional software in the computing device will resample the raw data and compensate for time delays.

Simplex fiber optic connection

The connection of the CIM to the SASensor Control Units is done with a transmitting single Ethernet fiber. The CIM631 has 2 ethernet ports to cater for redundant Control Units.



SASensor - Current Interface Module (CIM631)



In a redundant system one CCU can be turned off for repair or replacement without any degradation of functionality or shutdown of the substation.



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Current inputs	
Number of phases	3
Current inputs	Contact-less (wire through)
Bandwidth	10 ... 3840 Hz (-3dB)
Measurement inputs:	
* Dynamic range	1 mA ... 7.2 A
* Accuracy defined	10 mA ... 7.0 A
Protection inputs:	
* Dynamic range	100 mA ... 500 A
* Accuracy defined	500 mA ... 275 A

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 terminal
DC input protection	Insensitive for input polarity
Hold-up time	50 ms

Mechanical	
Dimensions (L x W x H)	192 x 88 x 54 mm
Weight	0.75 kg

Electromagnetic compatibility				
Test	Standard	Enclosure	PSU	CT IN
Electrostatic discharge	IEC 61000-4-2	8 kV contact 15 kV air		
RF immunity radiated	IEC 61000-4-3	10 V/m, 80 ... 2000 MHz		
Fast transient	IEC 61000-4-4	4 kV	4 kV	4 kV
Surge 1.2/50 µs	IEC 61000-4-5		4 kV LL, 2 kV LE	
Surge 1.2/50 µs	IEC 62052-11			4 kV LL, 4 kV LE
RF immunity conducted	IEC 61000-4-6		10 V @ 0.15 MHz ... 80 MHz	10 V @ 0.15 MHz ... 80 MHz
PF magnetic field	IEC 61000-4-8	400 A/m continuously, 1000 A/m for 3 seconds		
Voltage Dips	IEC 61000-4-29		<ul style="list-style-type: none"> Un - 40 % : 200 ms, performance criterion C Un - 70 % : 500 ms, performance criterion C Un - 100% : 20 ms 	
Voltage Interruptions	IEC 61000-4-29		Un - 100 % : 5000 ms	
Voltage Variations	IEC 61000-4-29		+35 % continuously -20 % continuously	
Damped Oscillatory Wave	IEC 61000-4-12		2.5 kV CM 1.0 kV Differential Mode, both @ 100 kHz, 1 MHz	2.5 kV CM 1.0 kV Differential Mode, both @ 100 kHz, 1 MHz
Ripple	IEC 61000-4-17		15% Un	

Electromagnetic emission				
Test	Standard	Enclosure	PSU	CT IN
Radiated	IEC 61000-6-4	CISPR22, Class A @ 30 ... 1000 MHz		
Conducted	IEC 61000-6-4		CISPR22, Class A @ 30 ... 1000 MHz	

Climatic conditions				
Test	Standard	Enclosure	PSU	CT IN
Operating temperature	IEC 60068-2-1 IEC 60068-2-2		-10 ... +55 °C, 72 hours	
Storage temperature	IEC 60068-2-1 IEC 60068-2-2		-25 ... +70 °C, 72 hours	
Damp Heat Static	IEC 60068-2-78	+40 °C max, 93% humidity		
Damp Heat Cyclic	IEC 60068-2-30	+55 °C max, 6 cycles		

Mechanical conditions				
Test	Standard	Enclosure	PSU	CT IN
Vibration	IEC 60255-21-1		Class 1	
Shock	IEC 60255-21-1		Class 1	

