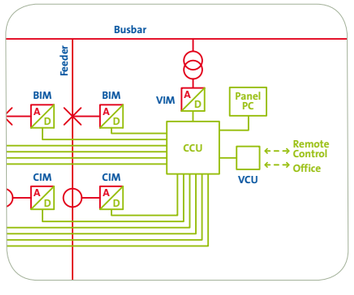
Versatile Communication Unit (VCU)
Gateway to connect SA*Sensor* to your intelligence

The Versatile Communication Unit (VCU) is the gateway that not only connects the SA*Sensor*®'s Central Control Units with the remote control centre for remote operation and maintenance, but also with the office for continuous access to all digital information from the substation.

The Versatile Communication Unit (VCU) is the serial media convertor that connects the substation with the remote control centre for remote operation and maintenance, but also with the office for continuous access to all digital information from the substation.

The configuration of the VCU depends on the requirements. It can include RS232 ports for connection to e.g. remote control centres (RCC), UTP ports for connection to e.g. the Wide Area Network (WAN) and ST fiber optic ports to enable 100Base-FX Ethernet communication with the SA*Sensor* processing units.
Optionally, the VCU can have a connection for the external GPS (Global Positioning System) antenna, to be used for absolute time accuracy.



VCU106
The VCU106 for example, is equipped with one RS-232 communication port, one UTP port and 6 x duplex fiber optic communication ports.

The VCU is designed to be maintenance free.

Connecting an external GPS antenna to the VCU will result in absolute time accuracy

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Versatile Communication Unit (VCU)
Public infrastructure – secure connections

Robust and maintenance free

The VCU is designed for an expected technical and functional long lifetime. The power supply and communication ports are fully protected against all kinds of erroneous situations.

Fiber optic communication

Communication from the VCU to the CCUs is with fiber optic cables via 100Base-FX Ethernet. Signals transmitted via fiber optic cables are unaffected by interference. Additionally the fibers guarantee electrical isolation and transmission over long distances.

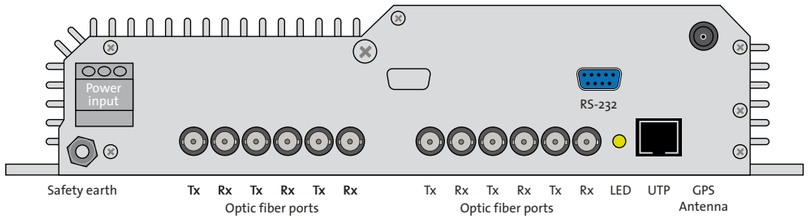
Enables absolute time accuracy with GPS antenna

A GPS (Global Positioning System) antenna can be connected to the VCU for absolute time accuracy. This absolute time accuracy is important for various functions executing in the processing units or protection relays.

The VCU connects SASensor with the remote control centre

Versatile Communication Unit (VCU)

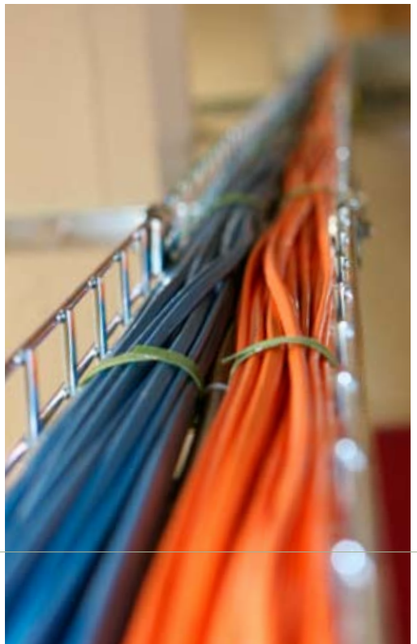
The Interface with the outside world



Serial media convertor

VCU is the serial media convertor for the copper connections to the "world", suitable for all kinds of data communication via e.g. modem, UMTS, GPRS, PLCC.

The VCU box is placed in a wall mounted sheet steel cabinet with one front door. All cabling, such as power supply cable, fiber optic cables and data communication cables are fed into the cabinet from the bottom.



Cabinet	
Type wall cabinet	RITTAL CM5110.500
Dimensions cabinet (H x W x D)	600 x 800 x 400 mm
Protection	IP55

VCU box	
Dimensions (H x W x D)	200 x 324.7 x 67.4 mm
Weight	2.5 kg

Power supply input	
DC input range	38 V ... 138 V
Tripping value MCB	1 A @ 110 Vdc
Max. power consumption	14 W
Hold-up time	> 50 ms
DC input protection	Reverse input polarity
Max. surge current	6.5 kA (8/20 µs)
Max. leakage voltage	0.3 mA

Connections	
Fiber optic ports	100Base-FX Ethernet
Interface ports	RS-232, UTP

UTP port	
Interface	100Base-TX Ethernet
Connector type	RJ-45

RS-232 port	
Interface	RS-232
Connector type	DB9-male
Used data signals	RXD, TXD, GROUND
Max. speed	115 200 baud

Electromagnetic compatibility			
Test	*Standard*	*Enclosure*	*PSU*
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
Surge	IEC 61000-4-5		2 kV LE, 1 kV LL
RF immunity conducted	IEC 61000-4-6	10 V	10 V
PF magnetic field	IEC 61000-4-7	100 A/m cont 1000 A/m for 1 s	
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 1.05 kV DM
Ripple	IEC 61000-4-17		12% Un

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

Climatic conditions			
Test	*Standard*	*Enclosure*	*PSU*
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*
Vibration	IEC 60068-2-6	Class 1	
Shock	IEC 60068-2-31	Class 1	

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