SAE IT-SYSTEMS

Intelligence in a Mobile Case

Our mobile telecontrol case for identifying possible overloads in the low voltage network

Identify hotspots in your local grid

“Top-Down” from high voltage via medium voltage to low voltage at the end customer: In the past, distribution networks were planned and implemented according to the clear direction of load flow. Transformers, lines and protective devices were sized based on the loads to be supplied, typical load profiles, statistical simultaneity factors, as well as a significant safety factor.

The steady increase of feed-in power from renewable energies, electromobility and the growth in heat pumps now frequently push distribution and low-voltage networks to their limits. Critical operating states and overloads can arise there, as the classic network calculation models and assumptions are based on constant load flows, rather than actually results from the new consumers and energy generators. The mobile telecontrol case can quickly assist with temporary low-voltage measurements to help you detect and analyze anomalies. In addition, the mobile telecontrol case provides important information for the planning and validation of construction measures and commissioning.

Uncomplicated, fast and simple

Virtually all network operators are faced with the challenge of creating transparency in the low voltage levels without being able to equip all resources with stationary measurement technology. A rollout of stationary LV metering for all stations would usually be neither economically nor organizationally feasible..

One solution is our mobile measuring equipment, with which the most important parameters can be checked quickly and reliably. This not only allows problems with the equipment to be identified at an early stage, but also enables customers' connection requests for wallboxes, PV systems and heat pumps to be processed more efficiently.
The heart of the mobile solution is the FW-5-GATE-4G telecontrol device with PM-1-R modules for connecting Rogowski coils, for parallel measurement of up to 3 low-voltage feeders. The measured values can be transmitted directly to the control center via IEC 60870-5-104 protocol or to the cloud via MQTT. There they are displayed live. The measurement case thus helps to locate strategically important points in the network where permanent monitoring of the low voltage makes sense. Flat gripping magnets make it particularly easy and quick to attach the measurement box for short-term use.

This basic product can be adapted to the requirements of different applications by specific additions. For example, we can also develop a solution for you that can measure up to 12 low-voltage feeders. In addition to 4G communication technology, a 450 MHz version (CDMA) is also available (LTE 450 is in preparation).

Advantages of the SAE telecontrol case

- Transport equipment safely and easily
- Simple and fast attachment of the very compact measurement box thanks to flat grip magnets and plug-in connections
- Up to 3 low-voltage outputs (L1, L2, L3 & N) can be measured
- The case is pre-parameterized, only few own adjustments necessary
- Data transmission via LTE, for example via IEC 60870-5-104 to the control center or via MQTT to a cloud
- Easily identify critical "hotspots" in low-voltage networks in order to permanently retrofit measurement technology there
- Extensive parameterization and diagnostic options thanks to setIT
- Archiving of data on SD card possible

Note: separate SIM-card required

SAE-FW-5-GATE-4G:
Powerful / LTE modem.

PM-1:
Power measurement module for recording relevant network variables in low and medium voltage systems

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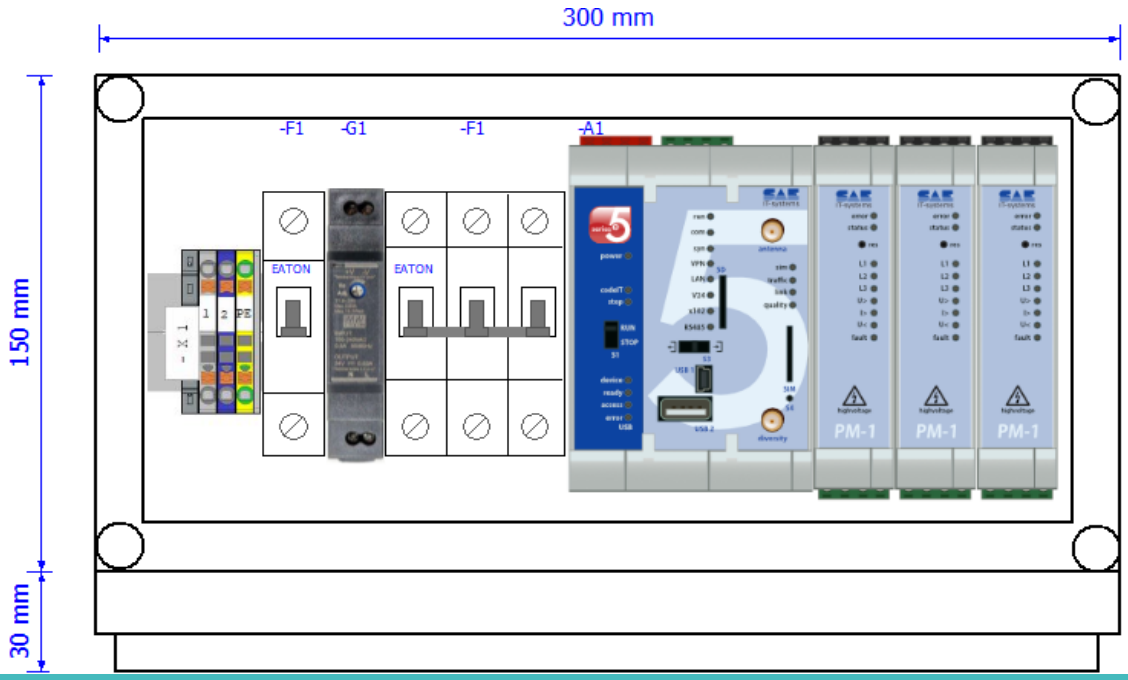
Technical Data

Structure of the mobile telecontrol case (individual configuration available on request)



Main features	Telecontrol case with FW-5-GATE-4G-2
Structure	FW-5-GATE-4G-2, PM-1-R (up to 3), power supply, automatic circuit breakers
Interfaces	LTE IoT mobile modem 4G/3G/2G, 3GPP rel11 cat1, 2 MISO antennas 2 x Ethernet-LAN 10/100BaseTx (max. 64 connects) 2 x RS-485 interfaces 1 x RS-232/V.24 interface
FW-5 module	PM-1-R terminal · Special module to measure power with Rogowski coils in LV/MV networks · 4 currents I1, I2, I3, IN via Rogowski coils up to 4000 A · 3 voltages LV direct 230 V AC or MV via transformer · 100 V/110 V- power P, Q, S of the phases and total · Voltages U1eff/U2eff/U3eff, U12, U23, U31, Øueff · Currents Iges, I1eff/I2eff/I3eff/Ineff · Frequency, power factor PF
Connections	Rogowski coil for PM-1-R Ø95-3M on plug with bayonet lock Voltage taps for bus bar
Protocols	Communication according to IEC 60870-5-101/-104, Modbus RTU/TCP - Further drivers and expansion modules possible as an option. MQTT
Housing	Wall cabinet with flat gripper magnets Dimensions: 275x125x146 mm (WxHxD) Outdoor case for storage and transport

Product variations / options	
Case with 1x PM-1-R	316000004001
Case with 3x PM-1-R	316000004000
Rogowski coils, measurements for L1, L2, L3 & N	316000004005
Rogowski coils measurements for L1, L2, L3	316000004006

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