The net-line FW-5-GATE RTU is designed especially for communication-intensive applications in telecontrol, substation control and automation technology. It is based on the successful net-line FW-5. In order to offer more communication possibilities in an even smaller space, integrated inputs/outputs have been omitted. The FW-5-GATE can of course also be supplemented with expansion modules and interface units. It offers cost-effective solutions for intelligent secondary distribution networks and smart metering through further interfaces with SML/IEC 62056-21 meter integration, among others. An integrated temperature sensor measures the station temperature.

Typical applications
- Intelligent secondary unit substation with integration of power measurement terminal, earth fault/short circuit indicators and network analysis systems
- Smart meter integration in energy management systems and remote meter reading control centres
- Intelligent measurement for wide area tension control in distribution networks
- Bay unit in transformer substations with link to protective equipment
- Monitoring of infrastructure systems and pipe-bound media

net-line FW-5-GATE overview
Small maintenance-free field device in synthetic housing for DIN rail mounting with 2 independent Ethernet LAN 10/100BaseTx, 2 RS-485 field and meter interfaces and 1 RS-232/V.24. Integration with IEC 61850, DNP3, IEC 60870-5-101/-104, -103 protective equipment, Modbus. Meter link via IEC 62056-21, SML or S0 pulse. PLC programming via IEC 61131-3 Configuration via LAN, USB, memory stick or micro SD card. 24 V DC. Via expansion module PS-60: 24 V DC to 60 V DC

Expansion with external modem modules e.g. SWT-12/SWT-96 or dial-up modem. Expansion with up to 12 I/O modules.
The basic system can be expanded according to individual requirements and has impressive dielectric strength:

- 2 Ethernet LAN TCP/IP connections
- 2 RS-485 field interfaces
- CL/S0 meter interface in FW-5-GATE-cl
- RS-232/V.24 interface
- Temperature sensor, -20° to 100° C

The net-line series supports impressively fast setup and high level of compatibility thanks to the innovative and well-established setIT parameterisation software.

The optional soft PLC codeIT offers additional flexibility and allows many kinds of PLC programs to be implemented.

Local meter integration is made via a second LAN link with SML protocol or via the additional serial interface with IEC 62056-21 protocol. In the CL variant, S0 meter pulse detection can also be used.

As well as 15-minute load profiles being provided for billing in the meter control centre, the data required for load control and forecast calculations can also be supplied to power system management e.g. in 1-minute measurement periods. Addressing using the OBIS data model and identification by means of the device-specific server ID allow a very quick mapping of extensive information of the four quadrant meters, including the voltages, currents and powers in setIT. Conversion factors and overflow thresholds can be stored here to display the values in a suitable manner. setIT also performs standard mathematical procedures e.g. to calculate an average MV level for LV wide area control.
### Overview of the expansion modules
The net-line FW-5-GATE can be extended with up to 12 expansion modules. Various modules with different capacities at inputs/outputs allow flexible process integration which meets your requirements. With the TBUS-T and TBUS-R accessories, the EUs can also be placed remotely from the base system. For higher power supply requirements, above the capacities of the basic unit, the power supply module PWR-1 can be added. All modules have the dimensions of 225 × 105 × 115 mm (W×H×D).

### Signals and commands
- **8DO**: 8 commands
- **8DI**: 8 signals
- **8DI2AI**: 8 signals, 2 measurands

### Measurands and set points
- **4AI**: 4 measurands
- **2AO**: 2 set points
- **4AO**: 4 set points

### Modules for special tasks
- **4DI4DO**: 4 signals, 4 measurands
- **RES-1**: 4 S0 pulse inputs, 2 measurands, 4 commands
- **VPP-1***: 6 signals, 2 measurands, 5 commands, 2 set points
- **PM-1**: Power measurement terminal
- **PM-2**: Power measurement terminal
- **ISO-1***: Leakage detection

### Command termination
- **DSO-1**: 6 commands, 6 check-back signals
- **DSO-2**: 4 commands, 2 check-back signals

### Online
- **PDPS-1**: Profibus-DP slave

### Other accessories
- **PWR-1**: Power booster with larger capacities
- **TBUS-T**: T-BUS extension transmitter
- **TBUS-R**: T-BUS extension receiver

### Product variants & accessories

- **FW-5-GATE**
  - 2 Ethernet/LAN interfaces,
  - 2 RS-485 field & meter link,
  - 1 RS-232/V.24 interface

- **FW-5-GATE cl**
  - 2 Ethernet/LAN interfaces,
  - 1 RS-485 field interface,
  - 1 CL/S0 meter interface/pulse inp.
  - 1 RS-232/V.24 interface

- **FW-5-GATE-4G**
  - Variant without integrated I/O on the base unit with 2nd Ethernet interface and additional interface for smart meter read out
  - 4G/LTE mobile router

- **FW-5-GATE-450**
  - Variant without integrated I/O on the base unit with 2nd Ethernet interface and additional interface for smart meter read out
  - 450 MHz CDMA radio module

- **PS-60**
  - Power supply module,
  - 24 to 60V DC

* from FW-5-GATE with series5e technology