BILFINGER

POWER SYSTEMS

BILFINGER MAUELL GMBH

smartRTU ME 4012 PA-N

ME 4012 PA-N IS A UNIVERSAL TELECONTROL DEVICE FOR ALL USES WHICH IS PRIMARILY INTENDED FOR MONITORING AND CONTROL TASKS IN WIND PARKS, LOCAL NETWORK STATIONS, GAS PRESSURE REGULATING STATIONS AND PUMPING STATIONS.

Universal smartRTU ME 4012 PA-N

FIELDS OF APPLICATION

- **10/20 kV Local Network Stations**
- **Water and Wastewater Pumping Stations**
- **Controlling and Monitoring of EEG Plants**
- **Gas Pressure Regulation Stations**
- **Industrial Energy Supply Systems**

SYSTEM FAMILY

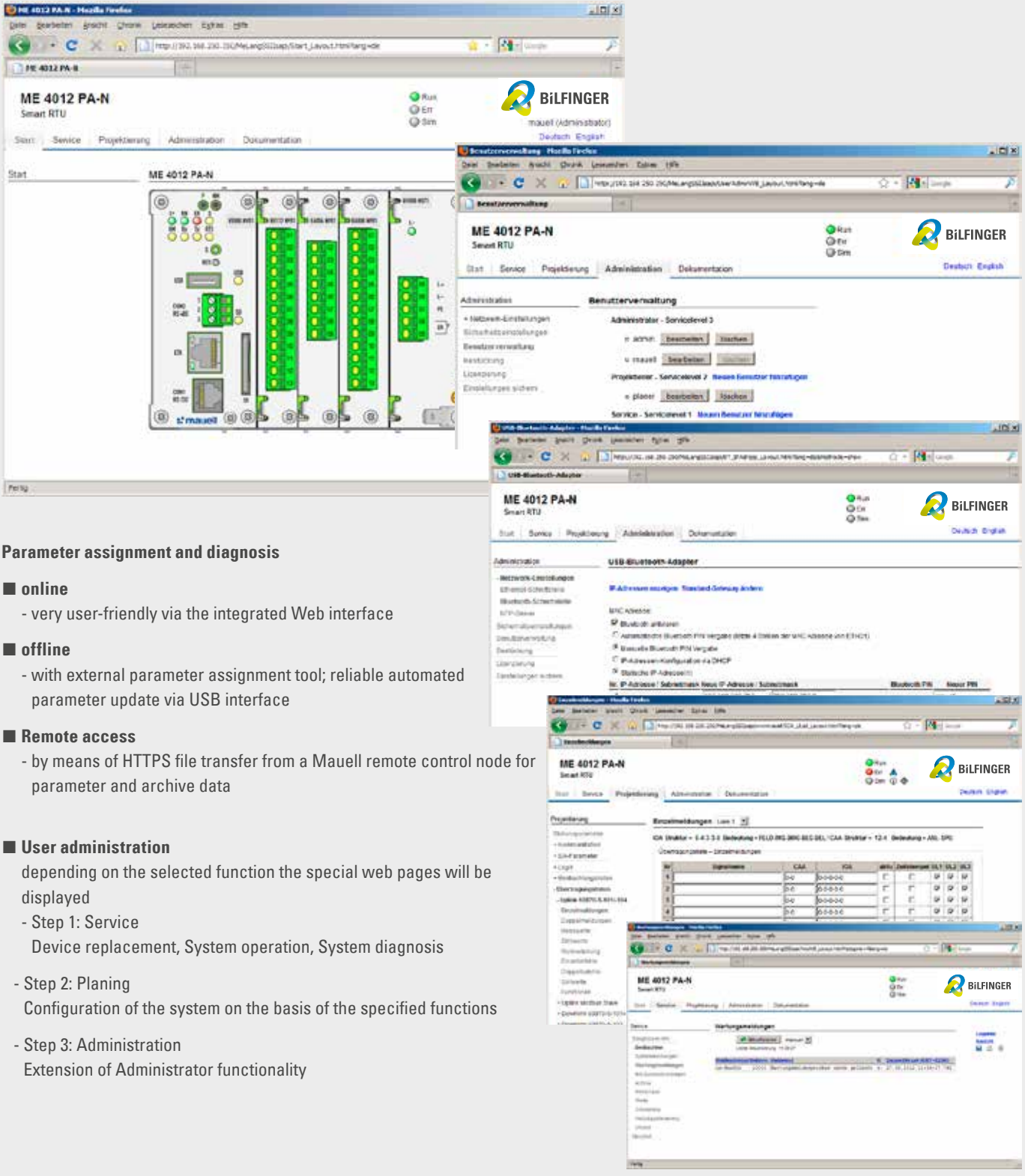
The smartRTU ME 4012 PA-N is part of our ME 4012 PA system family and has been specifically designed for telecontrol tasks in small applications.

ME 4012 PA-N is a universal telecontrol device for all uses which is primarily intended for monitoring and control tasks in wind parks, local network stations, gas pressure regulating stations and pumping stations.

The implementation of different interfaces enables the ME 4012 PA-N small telecontrol device to communicate with a control center or other substations via different data paths. Moreover, it allows the device to connect directly to different types of measuring and monitoring equipment. ME 4012 PA-N offers different types of system extent to meet individual customer needs.

All ME 4012 PA-N devices are equipped with an integrated Web server, which turns parameter assignment into a simple task using secure (HTTS) standard browser connections - additional configuration software is not required.

Parameter Assignment, Diagnosis and Service



Parameter assignment and diagnosis

■ **online**
- very user-friendly via the integrated Web interface

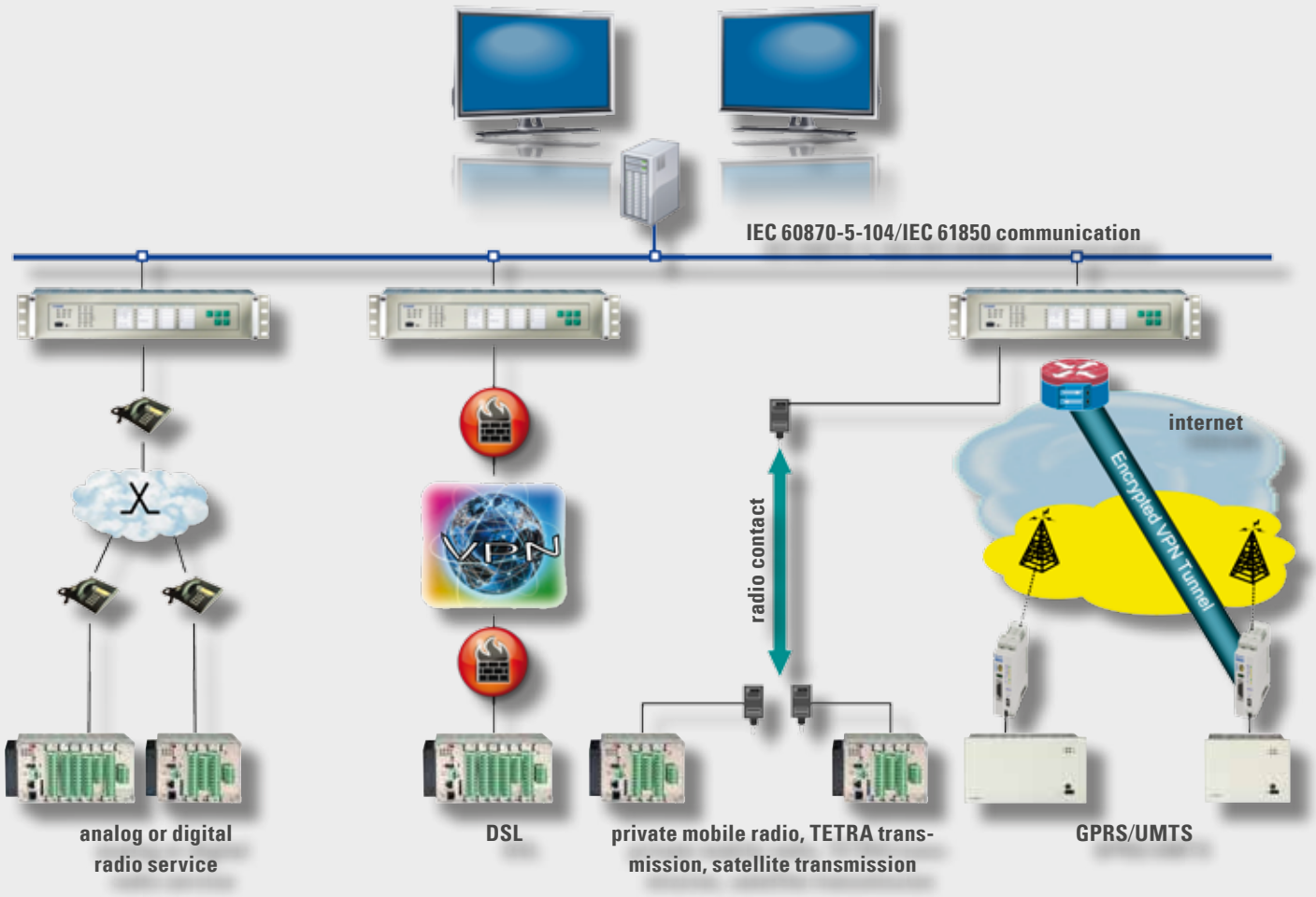
■ **offline**
- with external parameter assignment tool; reliable automated parameter update via USB interface

■ **Remote access**
- by means of HTTPS file transfer from a Mauell remote control node for parameter and archive data

■ **User administration**
depending on the selected function the special web pages will be displayed
- Step 1: Service
  Device replacement, System operation, System diagnosis
- Step 2: Planing
  Configuration of the system on the basis of the specified functions
- Step 3: Administration
  Extension of Administrator functionality

Concept via Secure and Integrated Web Server

IMPLEMENTED INTERFACES ALLOW THE ME 4012 PA-N-SUBSTATIONS TO COMMUNICATE WITH THE CONTROL CENTER VIA DIFFERENT DATA PATHS

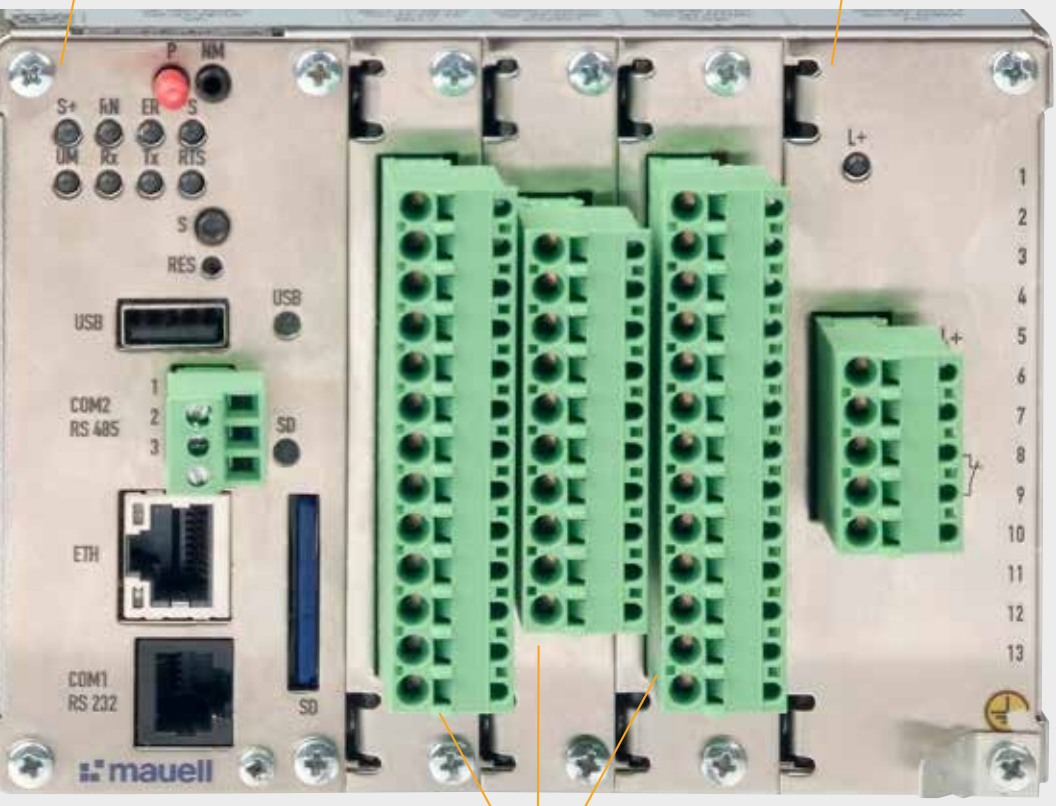


Equipped with an Ethernet RS 232 and RS 485 interface, ME 4012 PA-N allows various communication solutions to be implemented via different modems or routers based on the IEC 60870-5-101 or -104 transmission protocol or Modbus or transmission based on IEC 61850.

Features of the smartRTU ME 4012 PA-N

CPU card
- USB interface
- SD card slot
- Ethernet interface, e.g. IEC 60870-5-104
- RS 232 interface, e.g. IEC 60870-5-101
- RS 485 interface, e.g. for I/O equipment via Modbus

Voltage supply
- 110 V DC, 220 V DC, 230 V AC and 24 to 60 V DC, ± 20 %
- UPS optional



3 I/O card slots
- Extension module for 2 serial interfaces
- Binary input module with 12 inputs
- Binary Command (pulse) or message output module with 8 (6) outputs
- Latching relay output module with 6 NO contacts
- Short circuit proof semiconductor output module 24 V with 8 (11) outputs
- Analog I/O module with 3 inputs, 1 output and 1 Pt100
- Analog I/O module with 4 inputs and 2 outputs
- Analog I/O module with 3 inputs and 1 PT100
- Analog input or output module with 4 inputs or outputs
- Multiple I/O module with 6 inputs, 2 relay or semiconductor outputs, 1 value output
- Direct measurement 3× current and 3× voltage

Technical Data




Versions and Mounting	Flush-mounting, housing sizes for 3 or 5 I/O cards, Surface-mounting, DIN rail mounting, housing sizes 3, 6 or 12 I/O cards
Interfaces/protocols	1 × Ethernet (IEC 60870-5-104 server/client) or IEC 61850 Ed. 2 (client/server/GOOSE) 1 × RS 232 (IEC 60870-5-101 EE, Master, Slave) 1 × RS 485 (Modbus RTU Master/Slave or IEC -103 Master) USB port and SD card slot
Optional extension	1 × Ethernet interface over USB port 2 × RS 232 over additional communication card
Power supply	110 V DC, 220 V DC and 230 V AC 24 to 60 V DC, ± 20 % Auxiliary power supply 24 V DC, 12 W
Time setting	over NTP or IEC protocol
Binary I/O cards	for messages, count values and transformer steps
- 12 binary inputs	24, 48, 60, 110 and 220 V DC
- 8 binary command outputs	6 NO contacts (common rooted), 2 changeover contacts (common rooted)
- Binary command outputs	6 NO contacts, potential-free
- Latching relay outputs	6 NO contacts, internal readback contact, potential-free
- 8 (11) semiconductor outputs	24 V outputs, short circuit proof
- Multiple I/O module	6 binary inputs, 2 relay or semiconductor outputs, 1 value output
Analog I/O cards	for measuring and setpoint values
- Measured value I/O	4 × AI and 2 × AO, 0(4) - 20 mA
- Measured value I/O	3 × AI and 1 × AO, 0(4) - 20 mA, 1 × Pt100
- Measured value input	3 × AI and 1 × Pt100
- Measured value input	4 × AI 0(4) - 20 mA
- Measured value output	4 × AO 0(4) - 20 mA
- Direct measurement	3 × I_N = 1 or 5 A; 3 × U_N = 300 V_{eff}
Communication systems	GPRS modem DSL modem with firewall Leased or dial line modem
Data security	IPsec encryption and VPN tunnelling from telecontrol device to telecontrol device; Ethernet interfaces with internal firewall
External measuring equipment	Direct measurement of low-voltage from manufacturer Lumel or Janitza Earth fault/short-circuit indicator from manufacturer Horstmann or Eberle
Ambient Conditions	
- Storage temperature	–40 °C to +85 °C
- Ambient temperature	–10 °C to +60 °C
- Humidity class	F according to DIN 40 040, no condensation
Electromagnetic Compatibility (EMC)	
- Electromagnetic Immunity	IEC/DIN EN 61000
- Electromagnetic Emission	CISPR 11, DIN EN 55011
- Vibration and Shock	IEC/DIN EN 60068
- Electric Safety	DIN EN 50178 and IEC 60255-5

POWER SYSTEMS

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