multi transducers

multi-line

- All 3-phase AC measurements, true RMS
- 3 programmable analog outputs (current can be indicated with signs as function of power direction)
- 1 programmable pulse output
- Display showing all measurements
- Optional serial output for all values
- 1-, 2- or 3-phase measurements

Application

The MTR-1 multi transducer is a microprocessor-based measuring unit providing measurement of all electrical values on a single phase or 3-phase network, showing the measurements on the built-in display and transmitting these as:

- 3 analog outputs and
- 1 pulse output and
- a serial output (option).

The MTR-1 can replace several transducers in all electrical measuring applications, and can be applied both as a normal transducer, where the analog output is connected to a local control system, and as a remote value reading unit, where all measured values are transmitted to the remote control system via the serial interface.

The MTR-1 can measure true RMS values on all network topologies with/without neutral and with both balanced and unbalanced load.

MTR-1 contains all necessary measuring circuits and presents all values on an LC display. Messages are presented in clear text, all measuring values in engineering units.

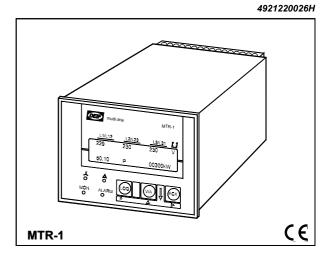
The MTR-1 is a flexible and menu-programmed unit, enabling the user easily to adapt the unit to the application in question. Programming procedures are password protected.

Standard functions

The unit is designed for measurement on a 3-phase or 1-phase network.

Measured and calculated values

- phase to neutral voltage (3-phase U_{max}, U_{min} and average)
- \bullet $\,$ phase to phase voltage (3-phase $U_{\text{max}},\ U_{\text{min}}$ and average)
- current (3-phase I and average) and direct. current.
- · active power
- reactive power
- apparent power



- COS-φ
- frequency

Each of the 3 analog outputs can be programmed to represent any of the above measurements, and the output signal can be programmed to the required scaling and type.

energy production (kWh) counter (not for billing purposes)

The open collector pulse output can be programmed to transmit any fixed number of pulses per produced kWh.

Options

Option A1: Remote value reading

- RS 232 remote value reading of all values measured by MTR-1.
- Siemens 3964, RK512 with standard telegram.

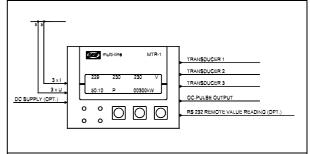
Option A2: Remote value reading

- RS 485 remote value reading of all values measured by MTR-1.
- Modbus standard telegram.

Other communication standards available on request.

Option B0: 12V DC power supply
Option B1: 24V DC power supply
Option B2: 48V DC power supply
Option B3: 110V DC power supply
Option B4: 220V DC power supply

Principle diagram



Type MTR-1

Technical specifications

Accuracy: Class 0.5, to IEC 688

Operating temp.: -20...70°C

(display, however: -20...60°C)

Climate: Class HSE, to DIN 40040

Measuring voltage: 100/110 (1)..450V AC (4) ±20%.

Consumption: max. 0.15VA per phase

Measuring current: -/1A or -/5A

Consumption: max. 0.1VA per phase

Overcurrent: max. 20 x I_n for 1 s -/1 A: max. 100 x I_n for 1 s -/5 A: max. 20 x I_n for 1 s

Meas. frequency: 30...70Hz

Auxiliary supply:

- Standard: 85...231V AC ±20%, max. 6W - Optional: 12-24-48-110-220V DC

+30/-25%, max. 6W

Open collector

output: Max. 30mA "ON" current.

Max. 27V "OFF" voltage.

Fuse: All voltage inputs should be protected

by a 2A fuse

Analog outputs: (0) 4...20mA or -20...0...20mA:

Max. load 400Ω .

Max. reading 32MW. See note 1.

Safety: To EN 61010-1. Installation Cat. III,

300V. Pollution degree 2.

Galvanic separation: Between open collector output and

remaining circuits.

Between analog outputs and remaining

circuits.

Between current inputs and remaining

circuits.

EMC: To EN 50081-1/2 and EN 50082-1/2.

Connections: Max. 2.5 mm² (supply, measuring

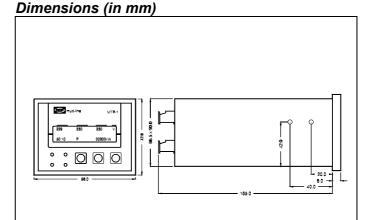
voltage and measuring current).
Max. 1.5 mm² (analog outputs, open collector output and optional serial

interface).

Protection: IP21. Front: IP52.

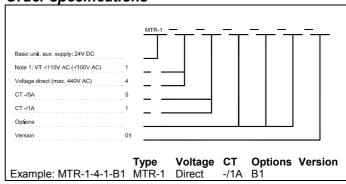
To IEC 529 and EN 60529.

Housing: To DIN 43700.



Order specifications

Weight: approx. 0.5 kg



Panel cut-out: 68 x 92 mm +0.5

Note 1: If max. reading is more than 32MW, please add version 01 in order specifications, <u>and</u> if Vt is more than 65kV, please also add version 01 in order specifications.





