

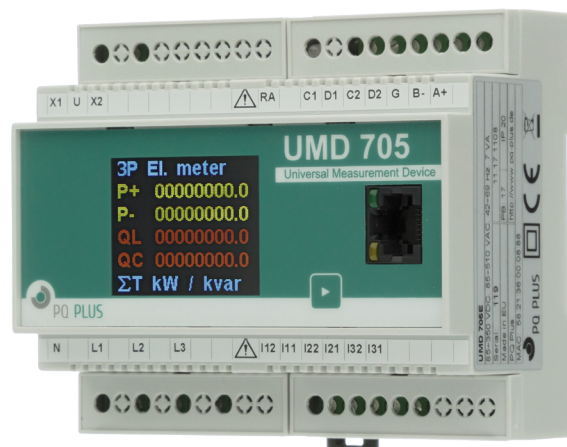
## UMD 705 – Measuring equipment for the DIN top hat rail also for CAT IV environments

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data sheet



### UMD 705

The UMD 705 is a compact network quality measurement device with data logger for installation on the DIN top hat rail. It measures 3-phase current and voltage with up to 3 tariffs in 4-quadrant operation and the work in class 0.2, as well as all usual network quantities, e.g. harmonics up to the 50th harmonic. It optionally maps the network quality according to EN 50160, EN 61000-2-2, EN 61000-2-4, EN 61000-2-12 with the PQ S firmware module. It has a large 512 MB memory. The device can be accessed via the Ethernet interface and live measured values can be observed using the web browser via the corresponding web server. This enables internet protocols to also be read in and PLC systems and building management systems to be connected easily. Digital inputs and outputs and a serial RS485 interface are integrated. The UMD 705 can also be used as a modbus master to connect up to 31 modbus slaves in network structures. The optional GO firmware module is used to activate oscilloscope functions for current and voltage, and to set trigger signals for limit value events. The 24 V variants have an internal buffer to bridge a power failure of up to 15 minutes.



### Application

The device is used in building automation and in the 24 V variant in CAT IV environments. A suitable CAT IV power unit is available in our accessories.

#### Standard

|                                     |                                         |                     |                                         |                                                              |                              |
|-------------------------------------|-----------------------------------------|---------------------|-----------------------------------------|--------------------------------------------------------------|------------------------------|
| <b>INPUTS</b><br><b>3U, 3I</b>      | <b>MEASUREMENT</b><br><b>U, I, P, Q</b> | <b>PF, cos, THD</b> | <b>+/-</b><br><b>Wh, varh</b>           | <b>HARMONICS</b><br><b>50</b>                                | <b>SUPPLY</b><br><b>230V</b> |
| <b>SAMPLING</b><br><b>25,6 kHz</b>  | <b>FLASH</b><br><b>512MB</b>            | <b>RS485</b>        | <b>STANDARDS</b><br><b>IEC 61557-12</b> | <b>STANDARDS</b><br><b>class 0.5S</b><br><b>IEC 62053-22</b> | <b>MODBUS</b>                |
| <b>CURRENT INPUT</b><br><b>X/5A</b> |                                         |                     |                                         |                                                              |                              |

#### Optional

|                                         |                                                             |                                      |                               |            |
|-----------------------------------------|-------------------------------------------------------------|--------------------------------------|-------------------------------|------------|
| <b>WEBSERVER</b>                        | <b>OUTPUTS</b><br><b>2x RELAY</b>                           | <b>USB</b>                           | <b>ETH</b>                    | <b>NTP</b> |
| <b>STANDARDS</b><br><b>EN 50160</b>     | <b>STANDARDS</b><br><b>class S</b><br><b>IEC 61000-4-30</b> | <b>SUPPLY</b><br><b>12V/24V/230V</b> | <b>INTERNAL</b><br><b>UPS</b> |            |
| <b>INPUTS/OUTPUTS</b><br><b>2x DIGI</b> | <b>FIRMWARE</b><br><b>GO</b>                                | <b>CAT IV</b>                        |                               |            |

| Supply voltage                 |              | Measurement voltage | Functions |                    |                        |                   |       | Communication |          |                       |     | Type        | Item number |
|--------------------------------|--------------|---------------------|-----------|--------------------|------------------------|-------------------|-------|---------------|----------|-----------------------|-----|-------------|-------------|
| 85 - 510 V AC<br>85 - 350 V DC | 20 - 75 V DC | 7 - 720 V LL        | CAT IV    | Internal buffering | Digital inputs/outputs | Memory size in MB | Clock | RS485         | Ethernet | Gateway Modbus master | USB |             |             |
| ●                              | -            | ●                   | -         | -                  | 2                      | 512               | ●     | ●             | -        | -                     | ●   | UMD 705CBM* | 11.17.1105  |
| -                              | ●            | ●                   | ●         | ●                  | -                      | 512               | ●     | ●             | -        | -                     | ●   | UMD 705CBM  | 11.17.3105  |
| ●                              | -            | ●                   | -         | -                  | 2                      | 512               | ●     | ●             | ●        | ●                     | -   | UMD 705E*   | 11.17.1104  |
| -                              | ●            | ●                   | ●         | ●                  | -                      | 512               | ●     | ●             | ●        | ●                     | -   | UMD 705E    | 11.17.3104  |

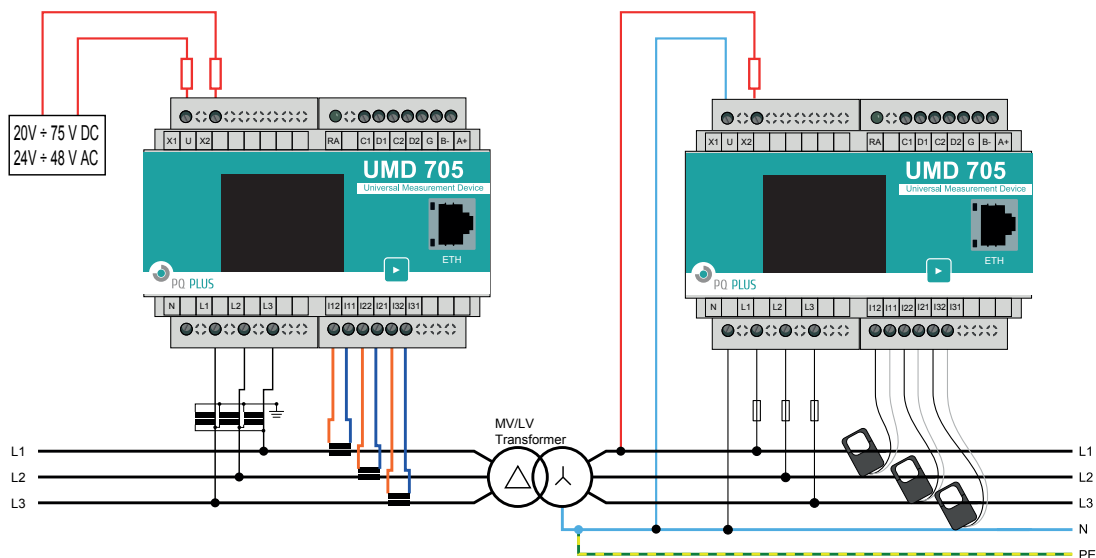
\* preferred types (short delivery times)

## Technical specifications - UMD 705

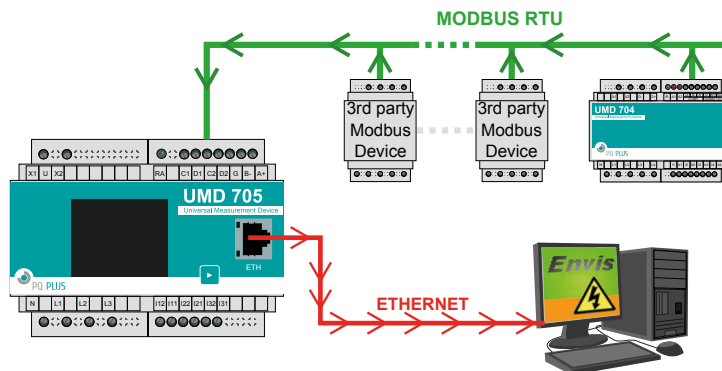
|                          |                                  | UMD 705CBM                                                                       |                              | UMD 705E                |  |
|--------------------------|----------------------------------|----------------------------------------------------------------------------------|------------------------------|-------------------------|--|
| Inputs and outputs       | Digital inputs/outputs           | 2 inputs/outputs*                                                                |                              | 2 inputs/outputs*       |  |
|                          | Analogue inputs/outputs          | None                                                                             |                              | None                    |  |
|                          | Relay inputs/outputs             | None                                                                             |                              | None                    |  |
|                          | Differential current inputs      | None                                                                             |                              | None                    |  |
|                          | Temperature inputs               | None                                                                             |                              | None                    |  |
| Communication            | Interfaces                       | RS485, USB                                                                       |                              | RS485, Ethernet         |  |
|                          | Communication protocols*         | Modbus RTU, Modbus TCP/IP, SMTP, SNMP, DHCP, JSON                                |                              |                         |  |
| Further functions        | Alarms                           | integrated logic: Limit values for exceeding/falling below freely defined values |                              |                         |  |
|                          | Internal temperature measurement | -40 - 80 °C                                                                      |                              |                         |  |
| Data logger              | Storage capacity and allocation  | 512 MB flash freely partitionable into several archives                          |                              |                         |  |
|                          | Measured value storage           | Freely configurable measured values with different averaging intervals           |                              |                         |  |
| Electrical connection    | Supply voltage                   | 230 V variant: 85 - 510 V AC / 85 - 350 V DCc                                    |                              |                         |  |
|                          |                                  | 24 V variant: 20 - 75 V DC                                                       |                              |                         |  |
|                          | Power input                      | 7 VA / 3.5 W                                                                     |                              |                         |  |
|                          | Overvoltage category             | 230 V variant: CAT III / 300 V                                                   | 24 V variant: CAT IV / 300 V |                         |  |
| Accuracy classes         |                                  | Voltage: Cl. 0.2                                                                 | Current: Cl. 0.5             | Frequency: Cl. 0.05     |  |
|                          |                                  | Active power: Cl. 1                                                              | Reactive power: Cl. 1        | Apparent power: Cl. 1   |  |
|                          |                                  | Harmonic oscillations: Cl. 2                                                     | Power factor: Cl. 0.5        | cos phi: Cl. 0.5        |  |
|                          |                                  | Real energy: Cl. 0.5S                                                            | Reactive energy: Cl. 2       | Apparent energy Cl. 0.5 |  |
| Measuring inputs         | Voltage                          | U L-N: 4 - 420 V AC                                                              |                              |                         |  |
|                          |                                  | U L-L: 7 - 720 V AC                                                              |                              |                         |  |
|                          | Overload voltage                 | Permanent U L-N: 1252 V AC / peak overload for max. 1 sec. U L-N: 2800 V AC      |                              |                         |  |
|                          | Input impedance voltage          | 7.84 MOhm                                                                        |                              |                         |  |
|                          | Input load voltage               | < 0.03 VA                                                                        |                              |                         |  |
|                          | Frequency                        | 40 ... 70 Hz (DC-500 mode: 0 ... 500 Hz)                                         |                              |                         |  |
|                          | Transformers                     | 3x 1 / 5 A                                                                       |                              |                         |  |
|                          | Overload current                 | Permanent: 10 AAC / peak overload for max. 1 sec: 90 AAC                         |                              |                         |  |
|                          | Input impedance current          | < 0.1 Ohm                                                                        |                              |                         |  |
|                          | Input load current               | < 0.001 VA                                                                       |                              |                         |  |
|                          | Sampling rate                    | 25.6 kHz                                                                         |                              |                         |  |
|                          | Harmonics per order              | 1st ... 50. for current and voltage                                              |                              |                         |  |
|                          | Measurement procedure            | IEC 61000-4-30 Cl. S                                                             |                              |                         |  |
| Mechanical attributes    | Operating temperature range*     | -25 - 70 °C at < 95 % relative humidity                                          |                              |                         |  |
|                          | Bearing temperature range        | -40 - 80 °C at < 95 % relative humidity                                          |                              |                         |  |
|                          | Protection class front / total   | IP 40 / IP 20                                                                    |                              |                         |  |
|                          | Dimensions WxHxD                 | 106 x 90 x 58 mm                                                                 |                              |                         |  |
|                          | Weight                           | 0.25 kg                                                                          |                              |                         |  |
| Internal real-time clock | Accuracy                         | +/- 2 s per day at 0 - 40 °C                                                     |                              |                         |  |
|                          | Possible synchronisation*        | NTP/SNTP; External GPS receiver; External pulses; System frequency; PC time      |                              |                         |  |
| FW Module                |                                  | PQ S: optional                                                                   | GO: optional                 | RCS: optional           |  |
|                          |                                  | MM: optional*                                                                    | UDP: optional*               |                         |  |
|                          |                                  |                                                                                  |                              |                         |  |

\* depending on the variant

## Typical connection variant - UMD 705



## Modbus master firmware - UMD 705



## Dimensional drawings - UMD 705

