

# RMM-683-02

## multifunction network parameter meters



NEW

- **Multifunction meters** - with LCD for monitoring True RMS parameters, suitable for EMS applications

- Compatible with systems: 1-phase 2-wire, 3-phase 3-wire, 3-phase 4-wire
- Voltage measurement: 11...300 V AC (L-N), 19...519 V AC (L-L)
- Measurement of max./min. power demand, imported/exported energy
- % THD up to level 40 • **Accuracy class 0.2S**
- RS-485 communication Modbus RTU protocol • Ethernet on RS-485
- Recognitions, certifications, directives: RoHS,

### Input circuit

|                                    |                                                                                                                                                                                                                                                         |
|------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Type of measurement                | True RMS                                                                                                                                                                                                                                                |
| Sampling rate                      | 156 samples/cycle                                                                                                                                                                                                                                       |
| Electrical connections             | 1Ø - 2 wire (L-N), 1Ø - 2 wire (L-L)<br>3Ø - 3 wire (delta), 3Ø - 4 wire (wye)                                                                                                                                                                          |
| Data update rate                   | 1 s                                                                                                                                                                                                                                                     |
| Input voltage                      | <ul style="list-style-type: none"> <li>• PT primary</li> <li>• PT secondary</li> <li>• rated voltage</li> <li>• measured voltage</li> <li>• impedance</li> <li>• frequency range</li> <li>• VA burden</li> </ul>                                        |
| Input current                      | <ul style="list-style-type: none"> <li>• CT ratings primary</li> <li>• CT ratings secondary</li> <li>• rated current</li> <li>• measured current</li> <li>• short circuit withstand capacity</li> <li>• frequency range</li> <li>• VA burden</li> </ul> |
| Auxiliary supply voltage           | 40...300 V AC/DC 45...65 Hz                                                                                                                                                                                                                             |
| <b>Output/measuring circuit</b>    |                                                                                                                                                                                                                                                         |
| Pulse output                       | <ul style="list-style-type: none"> <li>• voltage range</li> <li>• current capacity</li> <li>• pulse width</li> <li>• pulse weight</li> </ul>                                                                                                            |
| Device ID & parity                 | 1...247 & none, odd, even                                                                                                                                                                                                                               |
| Communication interface & protocol | RS-485 port & Modbus RTU                                                                                                                                                                                                                                |
| Data types                         | float & integer                                                                                                                                                                                                                                         |
| Transmission                       | <ul style="list-style-type: none"> <li>• mode</li> <li>• distance</li> <li>• speed</li> </ul>                                                                                                                                                           |
| Stop bits                          | 1 or 2                                                                                                                                                                                                                                                  |
| <b>Accuracy</b>                    | <ul style="list-style-type: none"> <li>• voltage (L-N, L-L), current</li> <li>• frequency</li> <li>• power</li> <li>• power factor</li> <li>• energy</li> <li>• max./min. kW</li> <li>• max./min. kVA</li> <li>• max./min. kVAR</li> </ul>              |
| Isolation                          | 2 kV RMS                                                                                                                                                                                                                                                |
| <b>Display data</b>                |                                                                                                                                                                                                                                                         |
| Display type                       | LCD negative (blue)                                                                                                                                                                                                                                     |
| Digits                             | <ul style="list-style-type: none"> <li>• electrical parameters</li> <li>• energy display</li> </ul>                                                                                                                                                     |
| Digit height                       | 12,446 mm                                                                                                                                                                                                                                               |
| Bargraph                           | current representation                                                                                                                                                                                                                                  |
| Resolution                         | <ul style="list-style-type: none"> <li>• energy</li> <li>• power, voltage, current</li> <li>• power factor</li> <li>• frequency</li> </ul>                                                                                                              |

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## General data

|                                                        |                                                                                                            |
|--------------------------------------------------------|------------------------------------------------------------------------------------------------------------|
| Dimensions (L x W x H)                                 | 96 x 96 x 46 mm                                                                                            |
| Weight                                                 | approx. 350 g                                                                                              |
| Ambient temperature<br>(non-condensation and/or icing) | <ul style="list-style-type: none"> <li>• storage -20...+75 °C</li> <li>• operating -10...+55 °C</li> </ul> |
| Protection category                                    | panel: IP 65      cover: IP 20      EN 60529                                                               |
| Relative humidity (non-condensation)                   | up to 85%                                                                                                  |
| Operating altitude                                     | 0...2 000 m                                                                                                |
| Overvoltage category                                   | III                                                                                                        |
| Insulation pollution degree                            | 2                                                                                                          |
| Auxiliary supply                                       |                                                                                                            |
| • supply voltage                                       | 40...300 V AC/DC 45...65 Hz                                                                                |
| • power consumption                                    | < 6 VA / 2 W                                                                                               |
| <b>EMC according to Directive 2014/30/EU</b>           |                                                                                                            |
| EMC (emissions)                                        | CISPR 11                                                                                                   |
| Immunity to:                                           | IEC 61326-1, IEC 61010 edition 3.0 cat. III, protection class II                                           |
| • electrostatic discharge (IEC 61000-4-2)              | class A                                                                                                    |
| • radiated field (IEC 61000-4-3)                       | class A                                                                                                    |
| • electrical fast transient / burst (IEC 61000-4-4)    | class A                                                                                                    |
| • surge (IEC 61000-4-5)                                | class A                                                                                                    |
| • conducted (IEC 61000-4-6)                            | class A                                                                                                    |
| • power frequency magnetic fields (IEC 61000-4-8)      | class A                                                                                                    |
| • voltage dips (IEC 61000-4-11)                        | class B                                                                                                    |

## Description

Features of meters **RMM-683-02**:

- 3Ø True RMS (voltage, current),
- 3Ø power (active, reactive, apparent),
- energy (active, reactive, apparent) (import/export),
- max./min. demand current & power,
- MFM in accuracy class 0.2S,
- in-built real-time clock (RTC),
- data logging (8 MB),
- variants: with RS-485, with Ethernet + RS-485,
- in-built 2DI, 2DO,
- available modules: 2DI+4RO, 2DI+2DO+1AI+1AO, 2AI+2AO+1DO
- suppression current,
- % THD up to level 40.

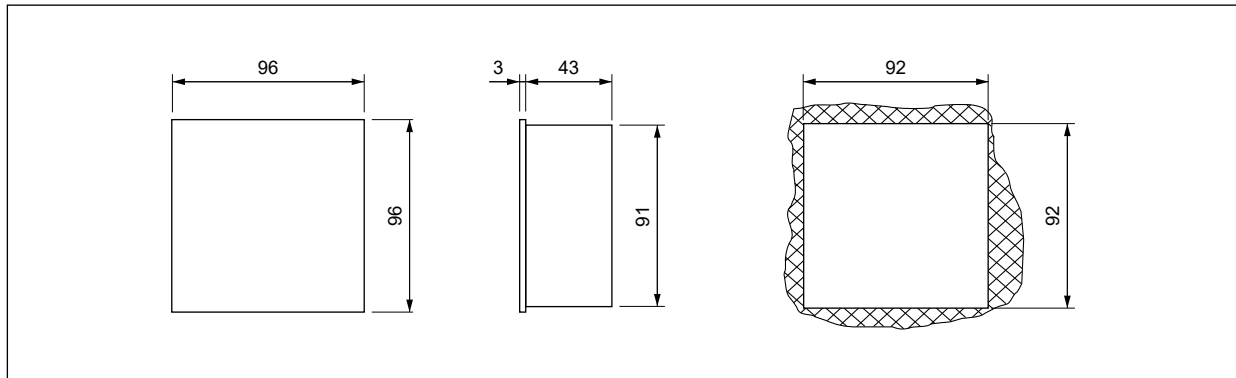
## Mounting

Meters **RMM-683-02** are designed for direct mounting on panel. Operational position - vertical. **Connections:** max. cross section of the cables (at 75 °C): 0,2...0,75 mm<sup>2</sup> (24...18 AWG), max. tightening moment for the terminal: 0,68...0,79 Nm.

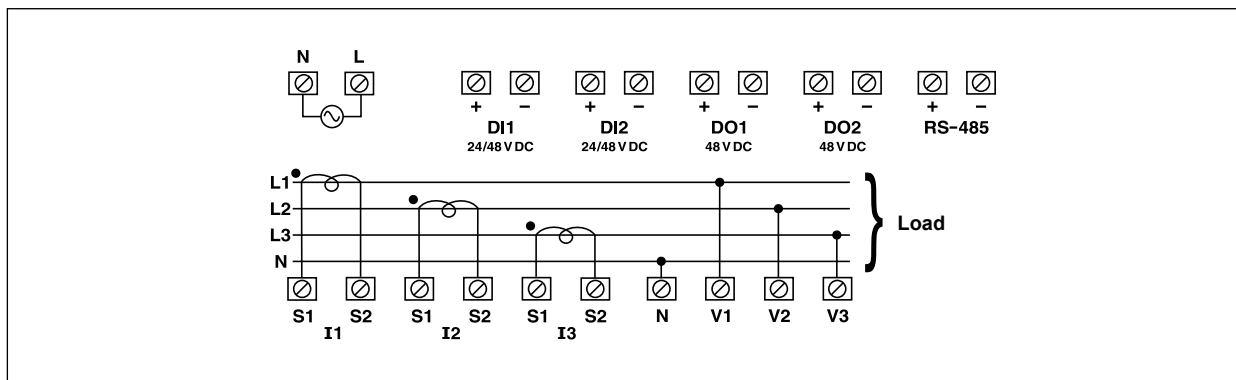
# RMM-683-02

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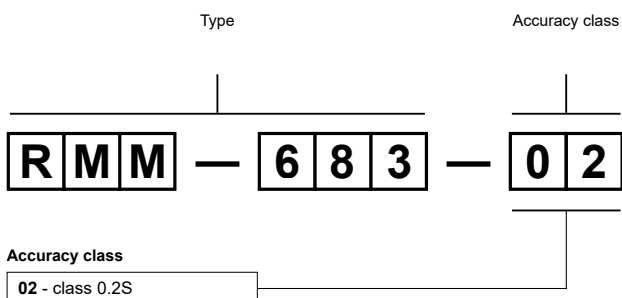
### Dimensions, opening on panel mounting



### Connection diagram



### Ordering codes



Example of ordering codes:

**RMM-683-02** meter **RMM-683-02**, on panel mounting, multifunction (electric parameters measurement in network AC), accuracy class 0.2S

#### PRECAUTIONS:

1. Ensure that the parameters of the product described in its specification provide a safety margin for the appropriate operation of the device or system and never use the product in circumstances which exceed the parameters of the product. 2. Never touch any live parts of the device. 3. Ensure that the product has been connected correctly. An incorrect connection may cause malfunction, excessive heating or risk of fire. 4. In case of any risk of any serious material loss or death or injuries of humans or animals, the devices or systems shall be designed so to equip them with double safety system to guarantee their reliable operation.