MB-3I-1 transducer is designed to measure the strength of alternating current or direct current and to transmit the data via RS-485 port using MODBUS RTU protocol.

The module is designed to work with current transformer with 5 A secondary current. The module continuously measures the current flowing through the measurement inputs. Readout of recorded current strength and setting of all communication parameters are carried out through RS-485 port using the MODBUS RTU communication protocol.

Power up is indicated by a green LED U light. Valid data exchange between the module and the second device is indicated by yellow LED Tx light. The transducer measures the effective value of TrueRMS current, which ensures high accuracy even with distorted flow.

Parity adopts adequate value: NONE - 0; EVEN - 1; ODD - 2.

Transmission rate [bit/s] is given in the form of an integer divided by 100, for example transmission rate of 57600 bit/s is written as 576, 115200 bit/s is written as 1152.

Transmission rate [bit/s] is written as 96; 1152; 1920; 2304; 2880; 38400; 57600; 115200.

Transmission rate of 15Hz is given in the form of integer divided by 100, for example transmission rate of 15Hz is written as 150, 30Hz is written as 300, 60Hz is written as 600.

Range of base addresses: 0÷238

Range of residual addresses: 0÷238

Multi-position code switch is located under the front casing. Removed the front casing with a 3mm flat screwdriver by gently prying the tabs on the sides of the housing. With 3mm flat screwdriver move the rotary switch on the selected digit as a partial address (range 0÷9). When the setting is done, reattach the front casing, paying particular attention to correctly fit LEDs in to mounting holes.

According to the law on waste, electro can be thrown in the trash or abandoned at the occasion of the purchase of new equipment (in accordance with the principle of old-for-new, regardless of brand). Electro coming from households free of charge and can be disposed of at the end of collection, as well as to store the document of the purchase of new equipment, which is a number between 0÷9. The sume of these two values designate a partial address (range 0÷9). When the setting is done, reattach the front casing, paying particular attention to correctly fit LEDs in to mounting holes.

In response to the "read ID" command (code 17), we get a packet of information about module: code 0xEC in the "Slave ID" field; text "PU-1Mv1.2" in the "Additional Data" field.

Network address settings

The module can receive network addresses in the range 1÷247. The network address of the module is set in a combined way: using the MODBUS protocol user sets the base address, which is a number between 1÷238 and using a multi-position switch he sets the residual address, which is a number between 0÷9. The sum of these two values designate a network address (e.g. 1÷67; 70÷87; 238÷247).

Multi-position code switch is located under the front casing. Removed the front casing with a 3mm flat screwdriver by gently prying the tabs on the sides of the housing. With 3mm flat screwdriver move the rotary switch on the selected digit as a partial address (range 0÷9). When the setting is done, reattach the front casing, paying particular attention to correctly fit LEDs in to mounting holes.
Description IN/OUT

<table>
<thead>
<tr>
<th>10</th>
<th>12</th>
<th>11</th>
<th>11'</th>
</tr>
</thead>
<tbody>
<tr>
<td>L1</td>
<td>1</td>
<td>3</td>
<td>L1'</td>
</tr>
<tr>
<td>L2</td>
<td>4</td>
<td>6</td>
<td>L2'</td>
</tr>
<tr>
<td>L3</td>
<td>7</td>
<td>9</td>
<td>L3'</td>
</tr>
</tbody>
</table>

1-3 L1 current circuit
4-6 L2 current circuit
7-9 L3 current circuit
10-12 module power supply
11-11' RS-485 serial port

Measurement channel is galvanically separated from the converter power input and the RS-485 communication port. RS-485 is not separated from the power supply.

Installation

General guidelines:
* Use of surge protectors and interference filters is recommended (e.g. OP-230 F&F).
* Use of shielded twisted wires is recommended for connecting the unit to another device.
* If using shielded cables, ground the shield on one side only and as close to the device as possible.
* The ends of the signal line must be completed with termination modules LT-04 (F&F).
* Do not run signal cables parallel and in direct proximity to high and medium-voltage line.
* Do not install the unit in direct proximity to high power receivers, electromagnetical measuring devices, appliances with phase power adjustment and any other devices that can create interferences.

Reset communication settings

Under cover is available code switch.
1. Take OFF the power.
2. Remove front panel.
3. Set “9” on the switch.
4. Take ON the power and within 3 sec switch to “1”.

Technical data

- Supply voltage: 9÷30V DC
- Maximum power consumption: 50mA
- True RMS measurement range: 0÷5A AC / 285V AC
- Max. load current of measurement input: 10A AC
- Measurement error: ±0.5%
- Register readout precision: 0.1A
- Sampling rate: 10Hz
- IN->OUT breakdown voltage: >2.1kV
- Port: RS-485
- Communication protocol: Modbus RTU
- Operating mode: SLAVE
- Working temperature: -20÷+50°C
- Relative humidity: 85% for +30°C
- Terminal: 2,5mm² screw terminals
- Tightening torque: 0.4Nm
- Protection level: 1 module (18 mm) IP20

Indirect measurement of the three-phase current network using the current transformers.