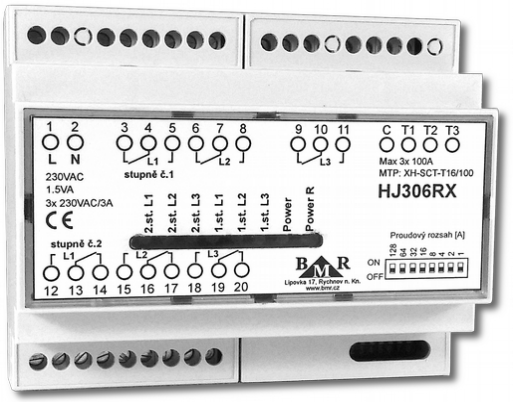
HJ103RX, HJ306RX

Maximum current controller

User and service manual



version 1.0

Content

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1. Safety instructions

Instrument comply the standard EN 61010-1: Safety requirements for electrical equipment for measurement, control, and laboratory use.

- Installation of the instrument can be done by qualified and authorised person only.
- Instrument should not be installed in the environment with increased humidity and close to explosive gases.
- Use the instrument in accordance instructions written in the user manual.
- Before the disconnection of CT measuring circuits assure that terminals of CT are short circuited.
- Installation and connection changes can be done without supply voltage only.
- Do not apply supply, measuring voltage and current higher that allowed.

2. Packaging content

- Maximum current controller HJ103RX / HJ306RX according the type
- Split core current transformer – 3 pieces
- User manual

3. Description

Device monitors AC current in all three phases via current measuring transformers and indicates current exceeding over set level via disconnecting appropriate relay output.

4. Split core CT

For current measurement HJ103RX/HJ306RX uses split core current transformers type SCT-T16/100 (100A/333mV).

5. Function

Current in all three measured phases is digitalized and from measured values is by DFT (Discrete Fourier Transformation) calculated effective current value. If this value is higher than current value set by DIP switch, measurement is repeated after 200 ms and if also this calculated value is higher than set value, step No. 1 is disconnected. During next measurement the fall of current after step No. 1 disconnection is captured and saved.

If the value of measured current is still higher than set value, then after 3 seconds the step No. 2 is disconnected too and fall of current is captured and saved.

Reconnection of appropriate step is realized in the case that measured current value minus fall of current of the step increased by 1 A is less than set current maximum.

During checking, if more than one step was disconnected, preference is given to the first disconnected stage. In case tat above mentioned condition is not valid for this stage, another stage is sequence is being checked.

This operation procedure eliminates controller reaction on short circuits and current transient events, which are present, for example, during the motor start-up. Applied measuring method assures perfect accuracy also for currents with distortion and non-sinusoidal wave.

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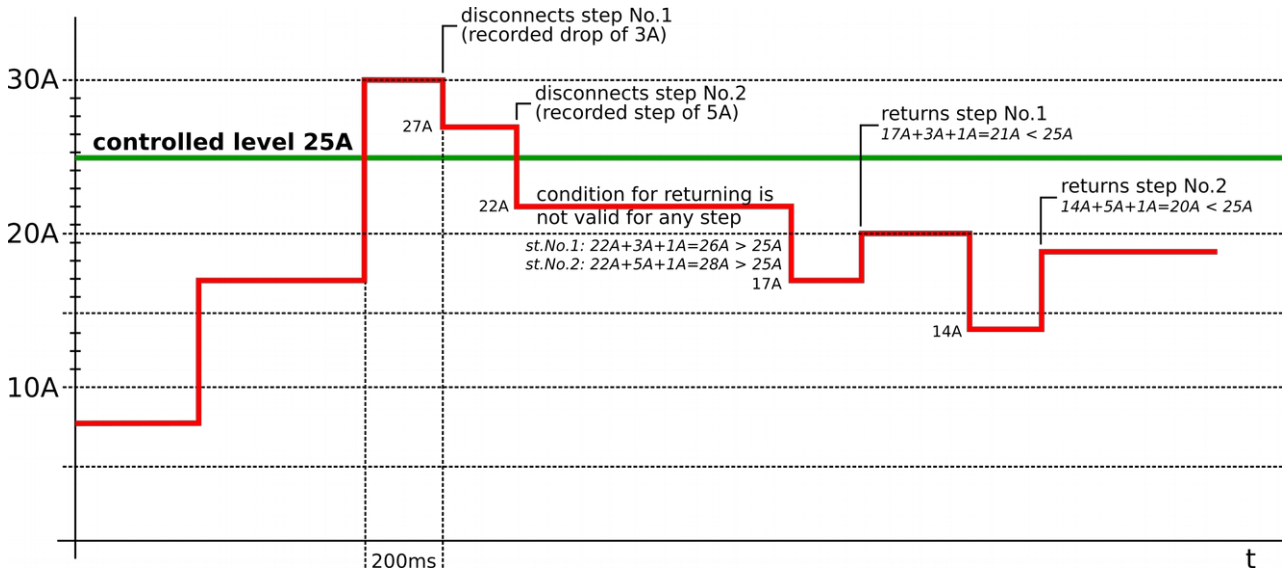


Picture 1: Principle of operations

6. Installation

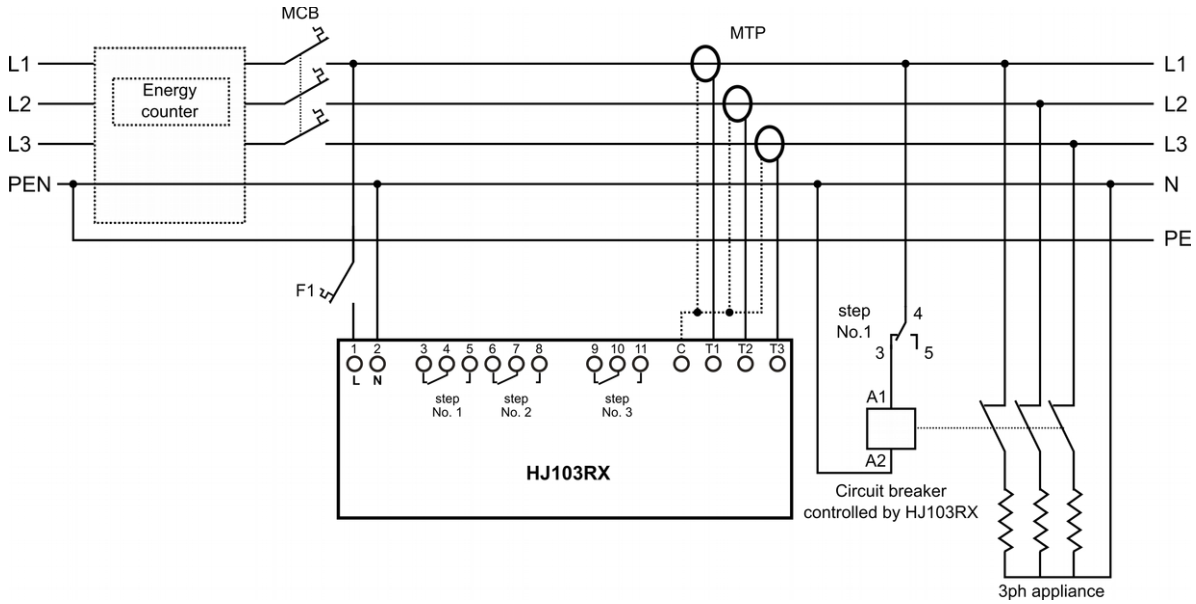
Installation of the HJRX instrument is simple. Instrument is designed to be installed on DIN rail with size of 6 standard DIN modules.

1. Install the device close to the main circuit breaker
2. Connect CTs to the instrument terminals according to connection diagram and device label. Locate the CTs on measured phase cables.
3. Connect break-type contacts K1 – K6 (according to the module) connect to control signal terminals of contactor circuit.
4. Set value of controlled current on the DIP switch according to table on device front panel. Resultant value is sum of particular DIP switch values at position ON. For example 25 A level equals combination 16 + 8 + 1.
5. Connect power supply voltage 230 VAC / 50 Hz to terminals No. 1 and 2.

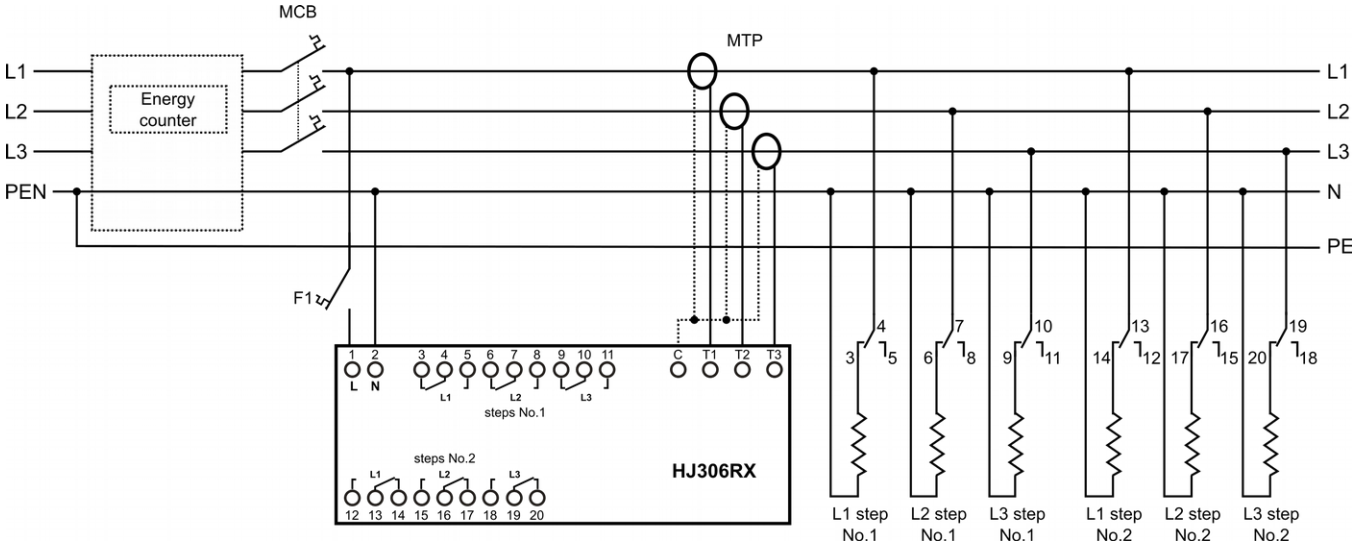
Caution:

This device is not designed to protect electrical circuits against the short-circuit and it does not react this way.

7. Connection



Picture 2: Connection of HJ103RX instrument



Picture 3: Connection of HJ306RX instrument

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8. Technical features

Parameter	Value
Supply voltage	230 V AC, (+10%,-15%)
Frequency	50 / 60 Hz
Split core CT type	SCT-T16/100 (100A / 333mV)
Maximum cable diameter for CT	16 mm
CT connection cable length	3 m
Measuring range of current input	100A
Measurement accuracy of current input	1%
Switching power of relay contacts	250 VAC / 3 A
Temperature limit	-10°C ... +60°C
Dimensions	105 x 90 x 60 mm
Weight	500g
Protection degree	IP20
Standards	

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