Bernecker Engineering
DI(FH) Günther Bernecker
Fichtenstr. 16
AUSTRIA-4611 Buchkirchen

www.Be.co.at
Tel:+43 / 676 / 40 55 144
email: mpm@be.co.at

Boosting Electronics®

MECHATRONIC

User manual

Part: MPM3P
MID approved
Three phase 4 wires energy meter
5(80)A, 10(100)A direct, DIN Rail
4TE, 70mm width,
Manual Revision: 1V04

Product Picture
MPM3P-1000

Sealable protection covers left showing without.
Covers are included standard in all meter types. Enclosure in anthracite grey RAL7016

Available types, order codes:
MPM3P-1000, 0,25-5(80)A 230VAC 50Hz, LCD green backlight, 1000IMP/kWh
EAN: 0729389737849 ASIN: xxxx

These types are available on special request, MOQ 250pcs:
MPM3P-400, 0,5-10(100)A 230VAC 50Hz, LCD green backlight, 400IMP/kWh

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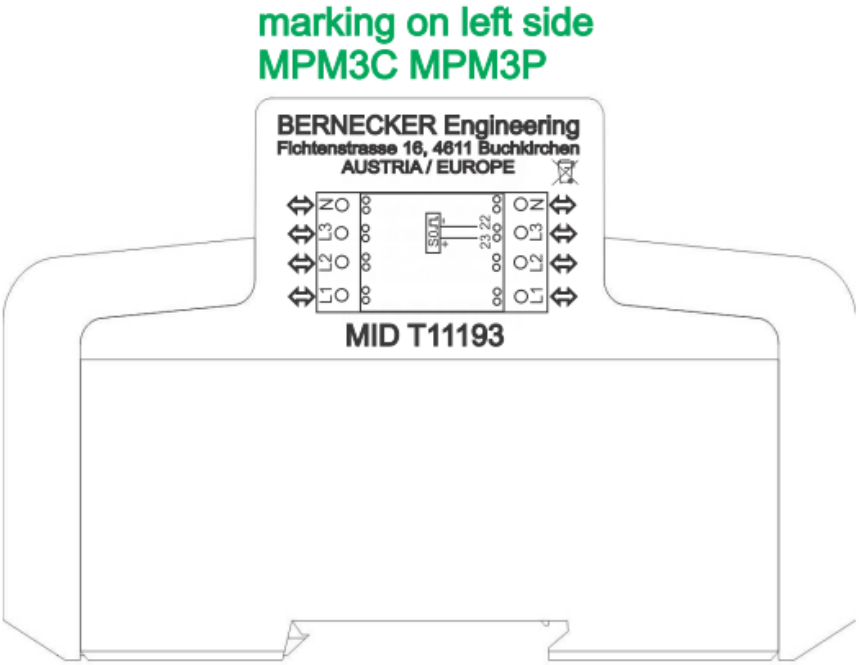
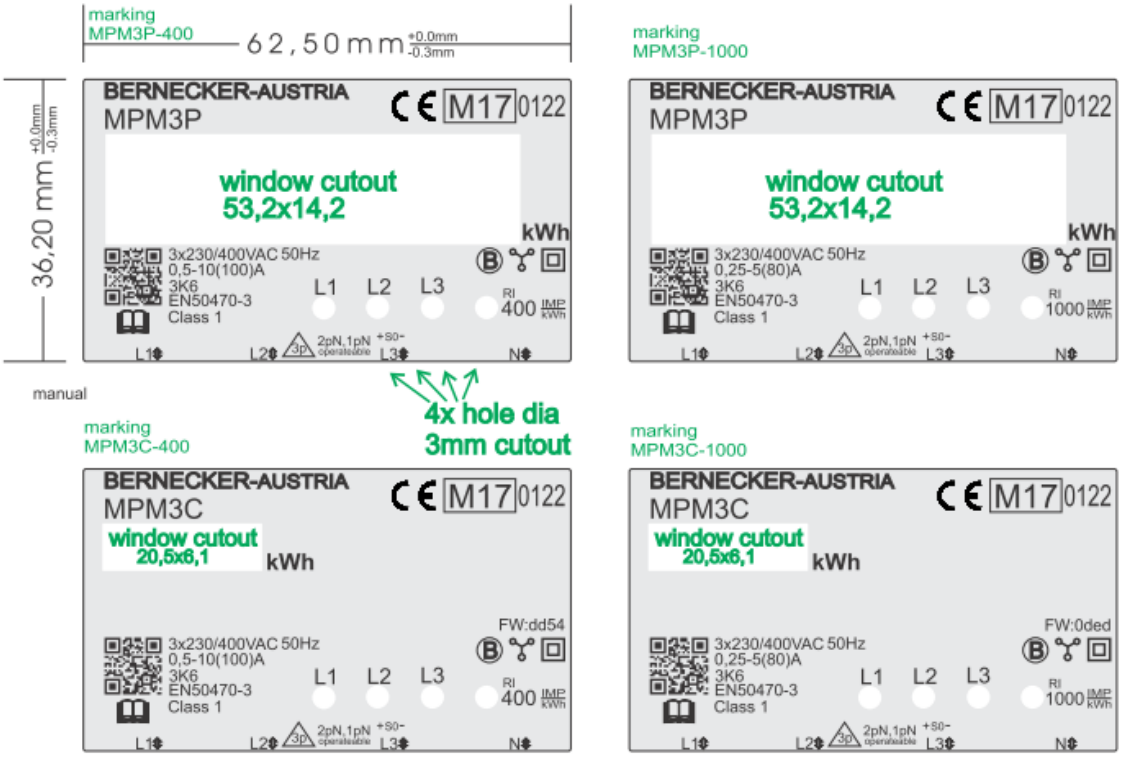
Front Sticker for MID approval





EAN: xxxx
ASIN: xxxx

Notes:

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Contents

1. Foreword

The MPM3P series meter is produced according to EN50470-3 and fulfils strict quality inspection.
Under normal conditions your product should give you years of benefit and pleasure. In case there is a problem with the energy meter you should contact your dealer immediately. All energy meters are sealed with a special seal. Once this seal is broken there is no possibility to claim for warranty. Therefore NEVER open meter by yourself or break the seal of the energy meter. The warranty time is 12 months after installation, and only valid for construction faults.

2. Installation

⚠ CAUTION
♦ Turn off all the power before working on it. ♦ Always use a properly rated voltage sensing device to confirm that power is off.
⚠ WARNING
♦ Installation should be performed by qualified personnel familiar with related procedures and regulations. ♦ Use insulating tools to install the meter. ♦ Fuse or thermal cut-off or single-pole circuit breaker can't be fitted on the supply line and not the neutral line. ♦ The case is sealed, do not broken it

- ✧ We recommend that the connecting wire which is used to connect the meter to the outside circuit should be sized according to local codes and regulations for the capacity of the circuit breaker or over current device used in the circuit.
- ✧ An external switch or a circuit-breaker should be installed on the inlet wire, which will be used as a disconnection device for the meter. And there it is recommended that the switch or circuit-breaker is near the meter so that it is more convenience for the operator. The switch or circuit-breaker should comply with the specifications of the building electrical design and all local regulations.
- ✧ An external fuse or thermal cut-off which will be used as a over-current protection device for the meter must be installed on the supply side wire, and it is recommended that the over-current protection device is near the meter so that it is more convenience for the operator. The over-current protection device should comply with the specifications of the buildings electrical design and all local regulations.
- ✧ This meter can be installed indoor directly, or in a meter box which is waterproof outdoor (IP67), subject to local codes and regulations.
- ✧ To prevent tampering, secure the meter with a padlock or a similar device.
- ✧ The meter has to be installed against a wall which is fire resistant.
- ✧ The meter has to be installed in a good ventilated and dry place.
- ✧ The meter has to be installed in a protection box when placed in dangerous or dusty environment.
- ✧ The meter can be installed and used after being tested and sealed with a letter press printing.
- ✧ The meter can be installed on a 35mm DIN rail.
- ✧ The meter should be installed in an available height so that it is easy to read.
- ✧ When the meter is installed in an area with frequent surges due to e.q. thunderstorms, welding machines, inverters etc, protect the meter with Surge Protection Devices.
- ✧ After finishing installation, the meter must be sealed to prevent tampering.

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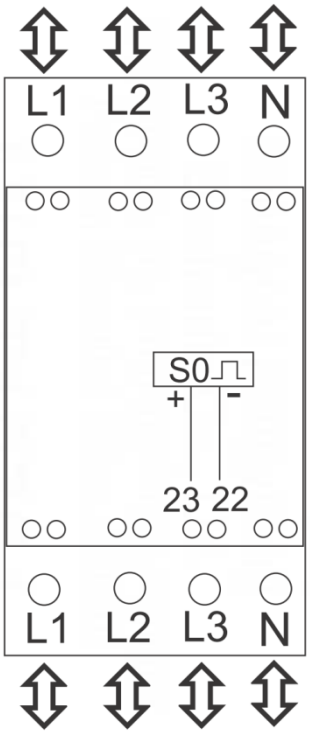
3. Connection

Connection of the wires should be done in accordance with the underneath connection diagram.

connection diagram	
L1	L1 phase wire IN,OUT
L2	L2 phase wire IN,OUT
L3	L3 phase wire IN,OUT
N	Neutral wire IN,OUT
22	active pulse ouput contact "-"
23	active pulse ouput contact "+"



Screw terminals L1,L2,L3,N:

maximum Torque is 1.2Nm !

Wire range 0.8-35(50)mm²

(cage opening size min. 7.5x8.0mm)

Screw terminals 20-35:

maximum Torque is 0.2Nm !

Wire range 0.12-1.5mm²

4. Display kWh

The display digit of MPM3P is 6+2 as default and can be customized into 7+1.

4.1. Consumption Indicator

L1 indicator: it will become yellow when there is current in phase A
L2 indicator: it will become green when there is current in phase B
L3 indicator: it will become red when there is current in phase C

The other indicator is for pulse output. When consumption happens; the LED will flash and display red. The more quickly LED flash, the more consumption there is.

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5. Performance criteria:

Operating humidity	≤ 75%
Storage humidity	≤ 95%
Operating temperature	-25°C - +55°C
Storage temperature	-30°C - +70°C
International standard	EN 50470-1 and EN 50470-3
Accuracy class	1
Protection against penetration of dust and water	IP51
Insulating encased meter of protective class	II

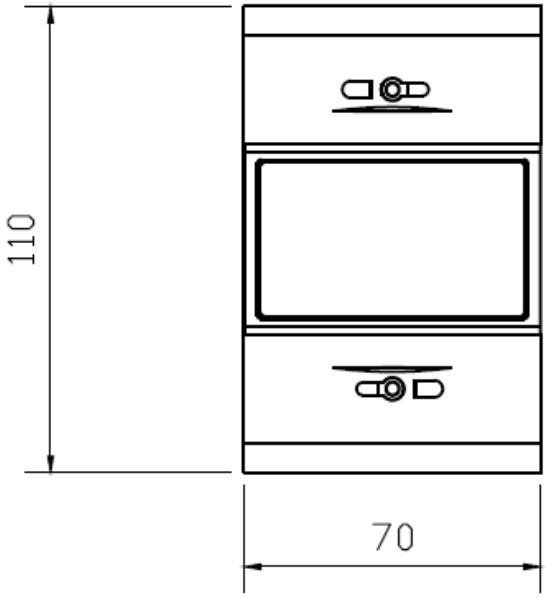
6. Meter specifications:

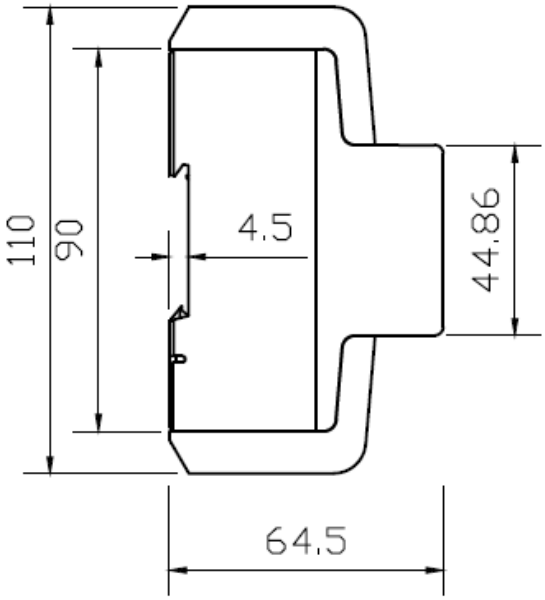
Meter type	MPM3P
Nominal voltage (Un)	3*230V/400 AC
Operational voltage	161-300V AC Insulation capabilities:
AC voltage withstand	4KV for 1 minute
Impulse voltage withstand	6KV – 1.2µS/50µs waveform
Basic current (Ib)	5A/10A
Maximum rated current (Imax)	80A for MPM3P-1000 100A for MPM3P-400
Operational current range	0.4% Ib- Imax
Over current withstand	30Imax for 0.01s
Operational frequency range	50Hz ±10%
Internal power consumption	≤2W /phase- ≤10VA/phase
Test output flash rate (RED LED)	1000imp/kWh for MPM3P-1000 400imp/kWh for MPM3P-400
Pulse output rate (pins 22 & 23)	1000imp/kWh for MPM3P-1000 400imp/kWh for MPM3P-400
Consumption indicator (RED LED)	Flashing at load running

6.1. Basic errors:

0.05Ib	Cosφ = 1	±1.5%
0.1Ib	Cosφ = 0.5L	±1.5%
	Cosφ = 0.8C	±1.5%
0.1Ib - Imax	Cosφ = 1	±1.0%
0.2Ib - Imax	Cosφ = 0.5L	±1.0%
	Cosφ = 0.8C	±1.0%

7. Dimension





Weight	0.380 kg (net) 0.400 kg (packed in carton)

7.1. Material

Front panel	PC inflammable retarding
Cover	ABS inflammable retarding
Base	ABS inflammable retarding

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8. Technical support

Problem	Check	Solution
No light for the consumption indicator.	Is there current ? Maybe there is a fault in the inside circuit.	Only when there has current, this LED will flash. . Please contact your technical supporter to replace this meter.
The register can't run.	Is there a power supply inside the meter? Is the operating power too low? Maybe there is a fault in the inside circuit.	Check that the power supply If the operating power is too low, the spacing interval of the pulses will take some more time, this is why it seems like the meter won't count. Please contact your technical supporter to replace this meter.
No pulse output.	Is the connecting correct ? Maybe there is a fault in the inside circuit.	Check correct connecting: connect 5-27V DC to connector 20 (anode), and the signal wire (S) to connector 21 (cathode). Please contact your technical supporter to replace this meter.
Pulse output rate wrong.	Maybe there is a fault in the inside circuit.	Please contact your technical supporter to replace this meter.

9. MID certificate

NMi

EU-type examination certificate

Number **T11193** revision 0
Project number 1901495
Page 1 of 1

Issued by	NMi Certin B.V., designated and notified by the Netherlands to perform tasks with respect to conformity modules mentioned in article 17 of Directive 2014/32/EU, after having established that the Measuring instrument meets the applicable requirements of Directive 2014/32/EU, to:
Manufacturer	Bernecker Engineering Fichtenstrasse 16 4611 Buchkirchen Austria
Measuring instrument	A static **Active Electrical Energy Meter**

Type	:	MPM3C, MPM3P
Manufacturer's mark or name	:	Bernecker Engineering
Reference voltage	:	3x230/400 V
Reference current	:	5 or 10 A
Destined for the measurement of	:	electrical energy, in a - three-phase four-wire network
Accuracy class	:	A or B
Environment classes	:	M1 / E2
Temperature range	:	-25 °C / +55 °C

Further properties are described in the annexes:
– Description T11193 revision 0;
– Documentation folder T11193-1.

Valid until 11 September 2027

Issuing Authority **NMi Certin B.V., Notified Body number 0122**
11 September 2017

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Head Certification Board

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INSPECTION RvA I 122