PROTECTION AND MEASURING BLOCKS

BPM32ST-T, 3BMPIM-T

• individual protection and measuring block

The protection and measuring blocks of BPM32ST-T, 3BMPIM-T types are meant for carrying out the branchings of single-phase low voltage consumers. They are provided with differential combined/automatic circuit breaker (cut out) and device for protection against industrial frequency overvoltages.

Functions:

- The connection of the consumer installation to the supplier installation
- Active electric energy measuring
- Protection against overload, shortcircuit and residual differential currents on the consumer electric energy general supply line
- Protection against industrial frequency overvoltages produced at the consumer due to the accidental breakdown of the null conductor
- Protection against electrocution due to the direct touch of the circuits and the equipments mounted in the block box that are normally under voltage
- The possibility of re-supply made by the consumer in case the protection operates at a residual current in the consumer installations.

The protection and measuring blocks comply with the technical requirements provided by IEC/EN 60439-1, IEC/EN 60439-3 standards; the automatic circuit breaker complies with IEC/EN 61009 standard, and the device for protection against overvoltage at null breakdown complies with SF 78 firm standard.

NOTE: The protection and measuring blocks meet the requirements from the technical specification S.T. no. 3, last edition, issued by S.C. ELECTRICA S.A. Romania.

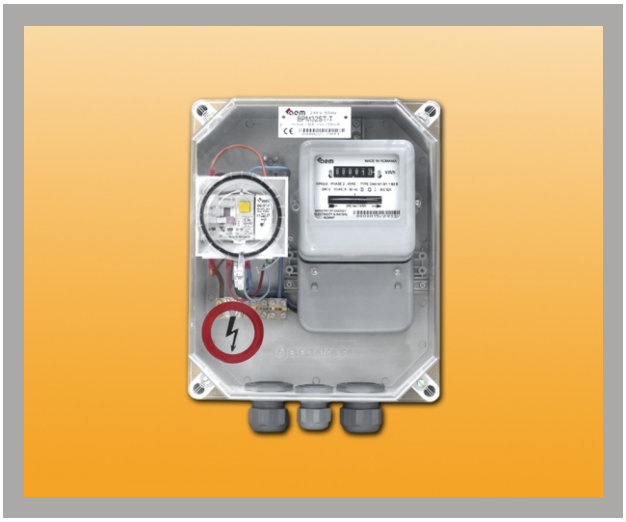
TECHNICAL CHARACTERISTICS

General electrical characteristics

Operating rated voltage:	230 V
Frequency:	50 Hz
Rated current:	6 - 40 A

Technical characteristics of the *combined differential/ automatic bipolar circuit breaker*

- Insulated rated voltage	660 Va.c.
- Rated current, fixed value:	6, 10, 13, 16, 20, 25, 32, 40 A
- Operating position signalling out and test button	
- Release at overvoltage with thermal releasers and release at shortcircuit with electromagnetic releasers, with B, C operating characteristics (according toIEC/EN 60898)	
- Rated differential residual current:	300 mA
- Breaking capacity:	10 kA
- Execution:	bipolar with manual operation, IP20 protection degree



- Operating temperature: (-25...40)°C
- Resistance to mechanical wear: min. 40000 operations (20000 cycles)
- Resistance to electrical wear: min. 8000 operations (4000 cycles)
- Possibility of sealing the coupling device in case of supply breakdown.

Technical characteristics of *the device for protection against industrial frequency overvoltages*

- It is provided with test button
- Insulation rated voltage: 660 Va.c.
- Does not operate (does not release) at voltage peaks of 300 V 50 ms, due to commutation overvoltages
- Operates at a supply voltage Ua: (50...400) V with a release time 0.2 s, namely:
  - operates at a voltage of 270 V ± 10 V
  - operates at a null retum voltage of 50 V ± 5 V
  - operates at the reverse of the phase with the operating null
  - operates at the auxiliary socket breakdown (Rpa) or in case of an inadequate auxiliary socket.
- In all the cases when the device operates and causes the circuit breaker release, the operation is optically signalled out (mechanical flag)
- Operates with an auxiliary ground plate, Rpa < 2 kW

NOTE: Technological ground plate, PTP3, with the resistance (Rpa) of about 300 can also be offered on request. The technological ground plate is not part of the delivery kit, it shall be ordered separately.

Climatic characteristics

- Operating temperature range:	(-40...70)°C
- Storage and transport temperature:	(-50...80)°C
- Relative humidity 20°C:	max. 95%

Construction

- Alternative voltage for dielectric properties testing:	4 kV
- Normal protection degree:	IP54 or, optionally IP65
- Max. cross section of the connecting conductors:	35 mm^2 Ømax=7mm)
- Weight:	approx. 2.9 kg (BPM32ST-T)

The block is executed of high quality materials by means of performant technologies.
A good anti-corrosive protection is ensured to the whole product.

The cover is executed of electroinsulating fireproof plastic material of polycarbonate type. It is mechanically resistant, and it also resists to the action of the sun and ozone. **The base** ensures the block fixing on the panel by means of screws places inside the enclosure that are no longer accessible following the cover mounting. The fixing screws and the adherent dowels are part of the delivery kit. The rails for the single-phase electric meter and circuit breaker, as well as the terminals for the electric connections and Pg29 and Pg21 sealing glands through which there pass the electric connections are all mounted on the base. The block is provided with terminals for the phase (F), protection and neuter (PEN) conductors, and for the auxiliary socket (PA). PEN terminals enables separating the neuter (N), and the protection (PE).
The cover is fixed on the base by means of sealable screws and a tightening gasket. The cover is transparent. A sealable cover which enables the access of the subscriber is mounted on it at the buttons of the circuit breaker. This last cover can be both sealed and locked.

The automatic circuit breaker (the branch cut out) is of bipolar type. It is provided with built-in releasers for protection against load overcurrents and shortcircuit, and a device for protection against residual differential current. The circuit breaker is used coupled with the device for protection against industrial frequency overvoltages, with releaser. Other customized automatic circuit breakers are also available.

The device for protection against industrial frequency overvoltage is meant to protect household installations and consumers against accidental dangerous overvoltages due to the null breakdown, only together with the automatic circuit breaker with differential protection with fixed rated current and with the releaser.

Mounting accessories
The frame BPM32-5.0, for pole mounting. It is mounted on the pole by means of a stainless steel tape, 22x1 mm.

NOTE: The mounting accessories are not part of the delivery kit. They shall be ordered separately.

SYMBOLS:

The symbol for the protection and measuring block, the basic option, without the electric meter is the following: **BPM32ST-T** - protection and measuring block provided with built-in bipolar circuit breaker provided with releasers for protection against load overcurrents and shortcircuit and device for protection against residual differential current and device for protection against industrial frequency overvoltages with releasers.

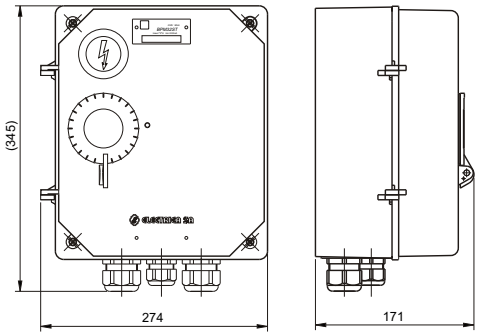
The block equipped with the electric meter has the following symbols: **3BMPIM-T** - single-phase integrated measuring and protection block equipped with active electric energy meter with built-in bipolar circuit breaker provided with releasers for protection against load overcurrents and shortcircuit and device for protection against residual differential current, and device for protection against industrial frequency overvoltages with releaser.

NOTE: On request, the protection and measuring block can also be equipped with different configurations, e.g. without the device for protection against overvoltages, or only with the automatic circuit breaker. In such a case the product code shall be filled in with a letter/group of letters.

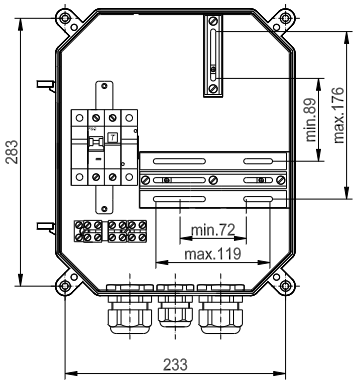
OVERALL AND MOUNTING DIMENSIONS:

Protection and measuring block

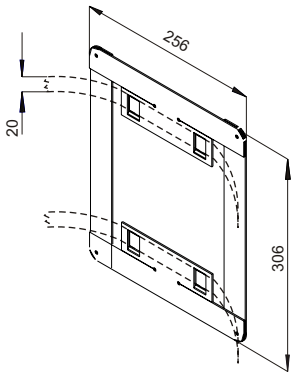
Overall dimensions



Mounting dimensions



Frame BPM32-5.0 for pole mounting



CONNECTING DIAGRAM:

TN diagram, option 2