PHONOTRONICA

DIGITAL CLOCK

DUAL – RATE THREE CHANNEL

PHONOTRONICA 2

PASSPORT

1. PURPOSE

The dual rate three channel digital clock of the “Phonotronica 2” type is designed to switch between different rate counters on dual-rate mono and three-phase electric meters according to the time zones specified by Ministry of Energy, and control street and park lighting at the same time.

2. TECHNICAL SPECIFICATIONS

- supply voltage 220V, 50Hz;
- time precision 0,5s / 24h;
- power consumption <2 VA;
- running reserve >150 h;
- commutation load capacity 12A/250V
- rated operating temperature -20 ^{o}C +55^{o}C
- protection rating IP 51
- protection class II

The clock has three independently working channels. One of them (Out 3) drives tariff counter, other two (Out 1 and Out 2) drive street and park lighting. The two channels send a signal (PHASE) switching the lamps on in the evening after sunset and another signal for switching them off in the morning (no PHASE) after sunrise. The time for switching on in the evening and switching off in the morning is adjusted automatically every day, controlled by a software application based on annual sunrise and sunset cycle data. One of these channels (Out 2) can be programmed to switch the lamps on and off at your choice in the morning and in the evening, or only mornings or evenings. The moment when the lamps are switched on in the evening or switched off in the morning is determined by sunrise and sunset, however the period in which lamps are switched off in the evening and on in the morning can be specified by entering hours for switching off in the evening after sunset and switching on in the morning before sunrise. Sunset and sunrise time can be changed in the database of the software application (both sunset and sunrise or separately) ± 60 minutes, depending on the geographical location of the controlled site and the time zone. Using the latest in timekeeping technology to make our clock - a single-chip microprocessor, a real-time timer and permanent multiple programmable memory allows extension of the scope of application - operation at more than one rates, weekly rates and management of supplementary devices along additional channels. Switching between summer and winter rates and back, as well as daylight saving time switching is automatic and it requires no further adjustment. In case of power failure the system can remain in standby mode for more than 10 days due to a high-capacity electric condenser - 0.22 F. The absence of batteries increases reliability and the device becomes virtually a maintenance-free instrument. Two setting buttons make it easy to set the time or load more information about rated hours and minutes, when and if that is necessary. The introduction of a new information is done by two push buttons / B1 and B2 /, situated next to each other under the cover of the clock. The setting is done in the following manner.

- 1 To set up the current hour;
- 2 To set up the current minutes;
- 3 To set up the current date;
- 4 To set up the current month;
- 5 To set up the current year;
- 6 To set up the hour of the start of tariff I; (1A) (Out 1)
- 7 To set up the minutes of the start of tariff I; (1B) (Out 1)
- 8 To set up the hour of the start of tariff II; (2A) (Out 1)
- 9 To set up the minutes of the start of tariff II; (2B) (Out 1)
- 10 To set up the hour of switch on of the Out 2 before sunrise; (3A)
- 11 To set up the minutes of switch on of the Out 2 before sunrise; (3B)
- 12 To set up the hour of switch off of the Out 2 after sunset; (4A)
- 13 To set up the minutes of switch on of the Out 2 after sunset; (4B)
- 14 To set up minutes ± 60 shift data for sunrise; (I)
- 14 To set up minutes ± 60 shift data for sunset; (II)
- Working conditions of the clock

At the last weekend in March the clock goes one hour up automatically and work by Summer time distribution (07.00 – 23.00), and at the last weekend in October the clock goes one hour down, and work in winter time distribution (06.00 – 22.00)

3. INSTALLATION AND MAINTENANCE.

The instalment and maintenance of the clock have to be done from people authorized by NEC. The connection of the clock to the mains supply and to the watt-hour meter is done according to a diagram shown on the internal side of the cover of the terminal block. The faults occurring during operation are corrected only from the technical staff of the electricity supply services. This product complies with the requirement of the Bulgarian standard BS EN61038. It is tested in the National Metrological Centre, and it is written, in the Governmental register under 4350. The manufacturer provides a guarantee service of the product for a period of 60 months from the date of sale.

ATTENTION: During exploitations it is not permitted to remove the seal from unauthorized person!

4. SAFEKEEPING AND TRANSPORTATION.

The clocks are safely kept packed in covered storage rooms under the following conditions:

- The temperature of the surrounding media from -25 ^{o}C to +75 ^{o}C;
- Relative humidity of the air up to 85 %;
- Absence of aggressive gases and vapours;

The transportation of the product is done in packages, in covered transport vehicles.

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