



Mod. Micro AST

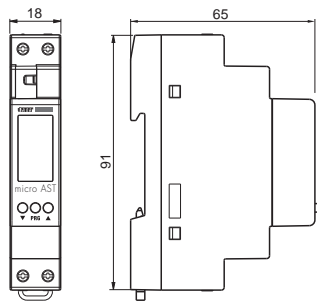
Vemer S.p.A.

I - 32032 Feltre (BL) • Via Camp Lonc, 16

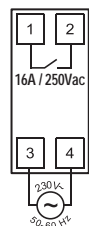
e-mail: info@vemer.it - web site: www.vemer.it



2 DIMENSIONS

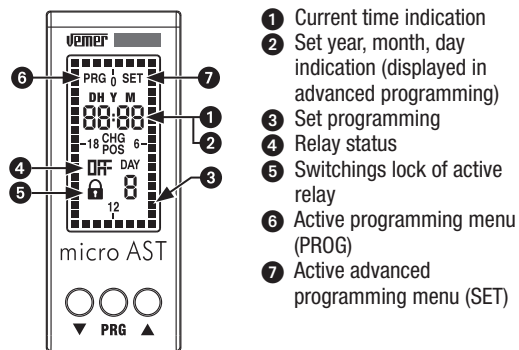


3 CONNECTION DIAGRAM



Note: the monostable relay switches only if the device is mains powered.

4 DISPLAY DESCRIPTION



Tripper OFF: relay OFF

Tripper ON: relay ON

5 INSTALLATION

- The device is provided with inserted date, hour and backup battery.
- Make the electrical connections as illustrated in section "Connection diagram". Once mains powered, the backlighting remains always on.
- For operating, the installation location must be set:
 - by pressing any key the instrument requires you to set the location (for Italy only the telephone area code, for the other states the geographic coordinates are required)
 - when the installation position is set, the device is able to calculate automatically the sunrise and sunset time and is ready to work. The device will turn on the load at the sunset and turn off it at the sunrise.

Note: if any position isn't set, the display will remain flashing and the relay will remain off.

1 User manual ASTRONOMICAL TWILIGHT SWITCH WITH TRIPPERS

Read all instructions carefully

The **Micro AST** is an astronomical twilight switch which allows the activation of a load between sunset and sunrise which are automatically calculated based on the geographical coordinates inserted (for Italy only the telephone area code).

The virtual trippers also allow you to program one or more night intervals during which the load remains off.

The cover on the front of the instrument allows battery replacement once depleted.

Micro AST is an electronic device that performs 1B type actions designed for use in place with over-voltage category III and pollution degree 2, as per standards EN 60730-1.

Code	Model	Description
VE762300	Micro AST	Astronomical twilight switch with trippers 1 DIN module

SAFETY WARNINGS

During product installation and operation it is necessary to observe the following instructions:

- The device must be installed by a qualified person, in strict compliance with the connection diagrams.
- Do not power the device if any part of it is damaged.
- The device must be installed and activated in compliance with current electric system standards.
- A protection device against over-currents should be installed in the electrical system, upstream of the device.
- Before accessing the connection terminals, verify that the leads are not live.
- After installation, inaccessibility to the connection terminals without appropriate tools must be guaranteed.
- In case of malfunction do not perform repairs and contact immediately the technical support.

TECHNICAL CHARACTERISTICS

- Power supply: 230 Vac (-15% ÷ +10%) 50/60 Hz
- Absorption: 5.5 VA (1 W)
- Output: normally open relay from 16 A / 250 Vac
- Terminals for max 4 mm² cables section
- Minimum interval for turning-off in the night: 30 minutes
- Summer/winter time automatic update (removable) depending on the geographical zone of installation
- Active backlighting display with mains power
- Replaceable CR-1632 type backup battery (duration: 4 years about)
- Operating temperature: -20 ÷ +50 °C
- Storage temperature: -10 ÷ +70 °C
- Operating humidity: 20÷90% non condensing
- Container: 1 DIN module
- Degree of protection: IP20
- Insulation: reinforced among accessible parts (frontal) and all other terminals

6 PROGRAMMING

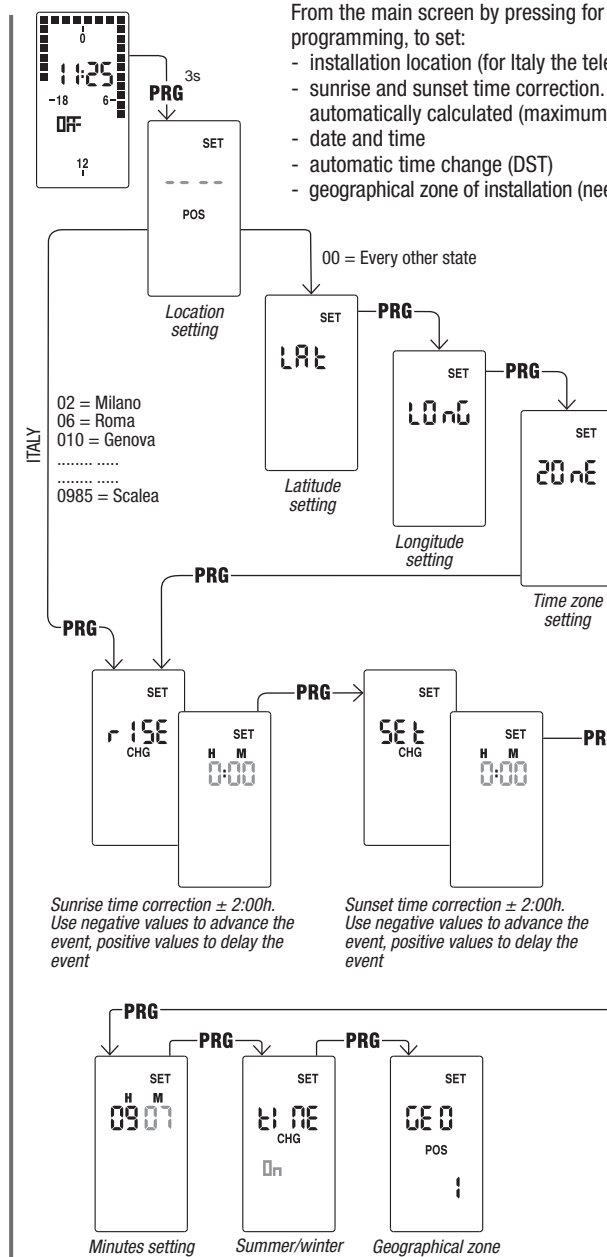
The programming consists of a single program to be repeated every day, according to which the output is in the ON position between the time of sunset and the time of sunrise and in the OFF position between sunrise and sunset.



Between sunset and sunrise it is possible to set one or more intervals with minimum duration of 30 minutes in which the load remains off:

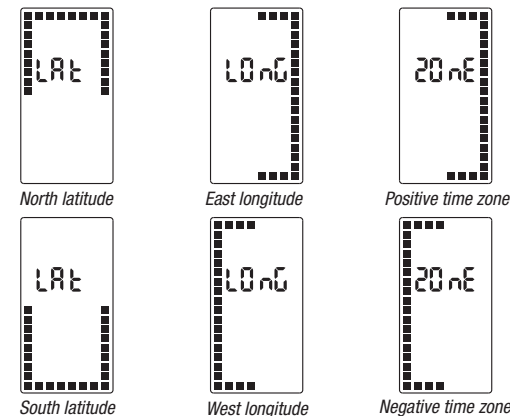
- from the main page press **PRG** key.
- the programming starts from the first tripper into the interval between sunset and sunrise
- press the key **▼** or **▲** to set the tripper (**▲** = relay on, **▼** = relay off) and press **PRG** to confirm and step up of 30 minutes (the next tripper)

7 ADVANCED PROGRAMMING



From the main screen by pressing for a long time (> 3 seconds) **PRG** key, it's possible to access to the advanced programming, to set:

- installation location (for Italy the telephone area code or geographical coordinates)
- sunrise and sunset time correction. This function is used to change the sunrise and sunset time that is automatically calculated (maximum correction ± 120 minutes)
- date and time
- automatic time change (DST)
- geographical zone of installation (needed to determine the passage from summer to winter time and vice versa).



Sunrise time correction $\pm 2:00h$. Use negative values to advance the event, positive values to delay the event

Sunset time correction $\pm 2:00h$. Use negative values to advance the event, positive values to delay the event

(*) Summer/winter time change

If the automatic update of summer time is active (on), the change occurs according to the set geographical zone:

Zone	Start DST (+1h)	End DST (-1h)
01 Europe	Last Sunday, March	Last Sunday, October
02 North America	Second Sunday, March	First Sunday, November
03 Australia	First Sunday, October	First Sunday, April
04 Chile	Second Sunday, October	Second Sunday, March
05 New Zealand	Last Sunday, September	First Sunday, April

Note: time change is fixed for all zones at 2:00 o'clock for the start of DST and at 3:00 o'clock for the end of DST.

(**) If the device is installed in Italy, geographical zone setting not required.

Note: from dawn to dusk no programming is performed and the relay is forced to remain in the off status.

Note: activation and deactivation of the load occur exactly at the sunset and sunrise time; the trippers corresponding to these times are ON.

Note: you can exit programming even if you don't press any key within the time-out (40 seconds if the device is mains powered, 10 seconds if powered by the backup battery). The modifications are still saved.

Display date, sunrise and sunset time

From the main page, by pressing the key **▲** it's possible to display the current date and the sunrise and sunset time.

Before each parameter an identification abbreviation is displayed for one second (dRtE for date, r ISE for sunrise and SEt for sunset). At the end the instrument returns to the main page.

8 RELAY MANUAL SWITCHING

To change manually the status of relay output (from ON to OFF or vice versa) press the **▼** key.

Attention: the status is maintained until new press of the **▼** key or until the next program switching.

To lock the current status of the relay and prevent its switchings, press for a long time (> 3 seconds) the key **▼**. In this condition the symbol **☐** is lit.

Unlocking is done by pressing for a long time (>3 seconds) the **▼** key.

9 DEPLETED BATTERY

When the backup battery is low, the device displays bRtE cHt alternating with the main page. In this condition, replace the battery as soon as possible, by accessing the battery compartment, to avoid that, in case of blackout, the date and time are lost.

In this condition, when mains power returns, the display will flash, the time start from 00:00 o'clock of 01.01.2016 and the relay stays in OFF position.

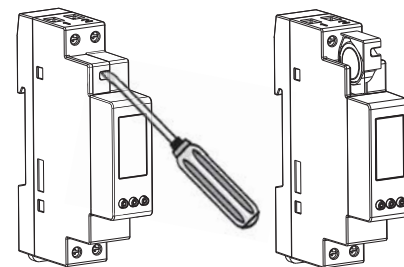
In this case, to resume the normal operating, set time and date.



Dispose of used batteries in accordance with the current legal provisions regarding the disposal of hazardous waste.

Attention: before you access the battery compartment, disconnect the power supply.

Attention: perform the operation in a maximum time of one minute in order not to lose date and time. Use only CR-1632 type battery.



10 DEFAULT PARAMETERS

The default of the parameters shows the device factory conditions:

- position: none
- geographical zone: 1 (Europe)
- summer time automatic change: active
- programming: ON at sunset, OFF at sunrise
- sunrise and sunset time adjust: 0

To perform the default, from the main screen press simultaneously for at least 3 seconds the keys **▲**, **PRG** and **▼** and, during dEF flashing, confirm by pressing **PRG** key.

Attention: if during dEF flashing you don't press any key within 5 seconds, the device returns to the main screen without resetting.

Note: after default, all the trippers will flash to indicate the lack of the position. Press any key to set the location (see box 5 – Installation).

REFERENCE STANDARDS

Compliance with Community directives:
2014/35/EU (LVD), 2014/30/EU (E.M.C.D.)
is declared in reference to the following harmonised standards:
• EN 60730-2-7