Electrical installation solutions for buildings – Technical details
Control and automation

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Control and automation technical details
ATe electro-mechanical time switches

How to program AT2 - AT2-R - AT2-7R and AT2e AT2e-R AT2e-7R

Time setting

Programming

Manual mode
Control and automation technical details
ATE electro-mechanical time switches

Operating principle
The ATe electro-mechanical time switches enable to control the circuit opening/closing according to a daily or weekly program or to manually set permanent ON/OFF operation.

Application environments
The ATe electro-mechanical time switches are particularly indicated in any environment and situation where it is necessary to program system load operation according to a daily or weekly frequency (shop lighting system, public buildings, heating systems, irrigation systems, etc.).

Example of installation
As shown in the diagrams, one of the possible applications is to mount the AT2e-7R electro-mechanical time switch inside the power supply circuit of a golf field. In this case the device programming enables the daily activation of the irrigation system at a preset time.
Control and automation technical details

ATE electro-mechanical time switches

Operating principle
The AT72e electro-mechanical switches enable to control the circuit opening/closing according to a daily or weekly program or to manually set permanent ON/OFF operation.

Example of installation
One of the possible applications is to use the AT72e-R to command the heating activation at specific times during the day, allowing energy saving.

Application environments
The AT72e electro-mechanical time switches are particularly indicated in any environment and situation where it is necessary to program system load operation according to a daily or weekly frequency (lighting system, heating systems, venting systems, etc.).
Innovations
• Holiday management with the possibility of programming them in various periods throughout the year
• Product warranty management: the internal clock and battery start at the first installation
• Menu programming with 4 simple keys
• Minimum switching time is 1 second
• Multilingual menu with 11 language choices

• Connected load maintenance management: According to the “count down”, it sends an alert on the display after a set number of operating hours
• Zero load switching to guarantee higher load relay working life.
• Running reserves of 6 years from the first start-up guaranteed by the lithium battery

Furthermore, the PLUS and SYNCHRO

D KEY programming key to run programs saved on the key, program transfer from time switch to key and vice versa to read programs on key.

D SW programming software lets you to quickly, simply and easily create complex programs from your desktop. Once created, the program can be printed or saved to file.

The D DCF77 antenna that receives the DCF77 radio synchronisation signal transmitted by the atomic clock installed c/o Mainflingen, near Frankfurt, increases digital clock precision.

The GPS antenna that receives time from the Global Positioning System, that offers a more accurate value than land transmissions in addition to the possibility of receiving the signal anywhere in the world.
## Control and automation technical details

### D Line digital time switches

#### Displays

<table>
<thead>
<tr>
<th>D1</th>
<th>D2</th>
<th>D1 PLUS D1 SYNCHRO</th>
<th>D2 PLUS D2 SYNCHRO</th>
</tr>
</thead>
</table>

#### Programming menu without programming key

<table>
<thead>
<tr>
<th>Languages</th>
<th>Menu</th>
<th>Standard/Random prot.</th>
<th>Cyclic program</th>
<th>Holiday program</th>
<th>Program list</th>
<th>Delete</th>
<th>Manual overriding</th>
</tr>
</thead>
<tbody>
<tr>
<td>Italian</td>
<td></td>
<td>Standard prog Random prog Cyclic prog Holiday prog Prog list Delete Manual Options</td>
<td>Input - program no. - channel (dual channel only) - day - hour on HH:MM:SS - hour off HH:MM:SS - end/yearly Verify Edit Copy</td>
<td>Input - program no. - channel (dual channel only) - day - time on - time off - end/yearly Verify Edit Copy Cancel</td>
<td>Verify Edit Copy Cancel Single prog All programs Holiday</td>
<td>Channel (dual channel only) Auto Permanent on/off Temp on/off</td>
<td></td>
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<tr>
<td>English</td>
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#### Options

<table>
<thead>
<tr>
<th>Options</th>
<th>Date/time</th>
<th>Auxiliary input</th>
<th>Maintenance</th>
<th>Hour counter</th>
<th>Backlight</th>
<th>Guaranty</th>
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</thead>
<tbody>
<tr>
<td>Language Date/time Month Day Year</td>
<td>Aux input * Maintainance Hour counter Time HH:MM:SS</td>
<td>Channel (dual channel only)</td>
<td>C1 000000 C2 000000 (dual channel only)</td>
<td>C1 000000 C2 000000 (dual channel only)</td>
<td>Permanent on/off Timer 6 sec</td>
<td>Days 0000</td>
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<tr>
<td>Backlight</td>
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</tbody>
</table>

* not allowed for SYNCHRO type
Control and automation technical details

D Line digital time switches

Programming menu with programming key

Languages
Italiano
English
Deutsch
Français
Español
Swedish
Portugues
Dutch
Polish
Russian
Greek

Menu
Standard prog
Random prog
Cyclic prog
Holiday prog
Prog list
Delete
Manual
Options

Standard/Random prog.
Input
- program no.
- channel (dual channel only)
- day
- hour on
HH:MM:SS
- hour off
HH:MM:SS
- end/yearly
Verify
Edit
Copy
Cancel

Cyclic program
Input
- program no.
- channel (dual channel only)
- day
- time on
- time off
- end/yearly
Verify
Edit
Copy
Cancel

Holiday program
Input
- program no.
- channel (dual channel only)
- hour off
HH:MM:SS
- hour on
HH:MM:SS
- end/yearly
Verify
Edit
Copy
Cancel

Program list
Verify
Edit
Copy
Cancel

Delete
Single prog
All programs
Holiday

Manual overriding
Channel (dual channel only)
Auto
Permanent on/off
Temp on/off

Options
Language
Date/time
Aux input *
Maintenance
Hour counter
Backlight
Guaranty
EMD memory key

Date/time
Year
Month
Day
Time
HH:MM:SS
Summer/winter time

Auxiliary input
Channel (dual channel only)
Permanent on/off
Temp on/off
Timer on/off

Maintenance
C1 000000
C2 000000
(dual channel only)

Hour counter
C1 000000
C2 000000
(dual channel only)

Backlight
Permanent on
Permanent off
Timer 6 sec

Guaranty
Days 0000

EMD memory key
Run on EMD
Save on EMD
Copy on clock
EMD read
Save holiday only
Copy holiday only
Erase EMD

* not allowed for SYNCHRO type

D DCF77 mounting diagram

1
2
3
IP65
Control and automation technical details
D Line digital time switches

**Programming key**
Allows to run a program in EMD external memory automatically, to save the programs in the clock or to create programs using the D SW software, on the EMD external memory or vice versa. Furthermore, the holiday programs can be loaded and unloaded on D KEY.

**DCF77 antenna**
Operating principle:
This antenna receives scheduled messages broadcasted from the Frankfurt on Main (Germany) based DCF77 emitter. Thanks to this signal, the time switches are automatically setted to: hour, date and proper daylight saving time. The broadcast power is 50 kW and the range is approximately 2500 kilometers from Frankfurt on Main. The signal is sometimes received intermittently and not in all locations, especially in countries far enough from the D DCF77 emitter. For optimal signal reception the arrow marked side of the antenna must be rotated towards Frankfurt on Main.
**Control and automation technical details**

D Line digital time switches

**GPS antenna**

Operating principle:
The Global Positioning System provides an accurate location and time information for an unlimited number of people in all weather, day or night, anywhere in the world.
The synchronization received from GPS is far more precise regarding to terrestrial broadcast.

The GPS system relays upon time from satellite based atomic clocks, constantly controlled and corrected from a ground stations network.
The time is derived from different sources simultaneously, the digital time switches can automatically compensate for propagation delays and other problems by providing more precise values than terrestrial.
Control and automation technical details
D Line digital time switches

Operating principle
The D2 two-channel digital time switches enable to open and close circuits according to a daily or weekly program, controlling single loads or group ones even when they require different time controls with a common time reference. In this example, the digital time switch D2 allows the operation of heating as well as lighting systems of a church when services are performed; when no service is performed, the device only controls the heating system.

Application environments
The D2 two-channel digital time switches are particularly indicated in environments and situations requiring the management of multiple loads according to a time program flexible enough to include or exclude their application based on the day of the week (offices, schools, public areas, etc.).

Example of installation
As shown in the diagrams, one of the possible applications is to mount the D2 two-channel digital time switch inside the power supply circuit of a church, where in the days when no service is performed only the heating system is activated (programmed on one of the two channels) at a preset time, while on Sundays and when services are performed the lighting system is also switched on (through a program on the second channel). According to the controlled system power, the activation is performed by an ESB contactor.
Control and automation technical details
E 232 staircase lighting time-delay switches

E 232E-230 Multi 10, 8/230 Multi 10

Operating principle
Activated by a pulse command through a pushbutton, the E 232 staircase light switch turns on the installation’s lights for a time T1. In order to avoid an unexpected darkness, the Multi10 devices are equipped with a switch-off warning (double flash).

Application environments
Installation of the E 232 staircase lighting with switch-off warning functionality is ideal wherever the lighting must be timed and unexpected darkness must be avoided (staircases and passageways in public places, cellars, garages, etc.).

Example of installation
One of possible applications of the E 232E-230 Multi 10 staircase switch is in the staircase lighting plant of a multistory building. Pushing the push-button, the timer of the E 232E-230 Multi 10 switch turns on the lights for a settable T1 time. At the end of the time the device gives a prewarning by blinking that the set time expires. The user can restart the timer again by pressing the button.

DIN 18015-2 provides that “that the automatic disconnection of lighting equipment fitted in staircases of apartment buildings must provide for warning signals, e.g. dimming, in order to avoid sudden unexpected darkness”.

[Diagram of control and automation technical details]
Control and automation technical details
E 234 CT-D electronic timers

Technical diagrams

Load limit curves

AC load (resistive)

DC load (resistive)

Derating factor F
for inductive AC load

Contact lifetime
Remarks

Legend

Control supply voltage not applied / Output contact open
Control supply voltage applied / Output contact closed
A1-Y1/B1 Control input with voltage-related triggering

Terminal designations on the device and in the diagrams
The 1st c/o contact is always designated 15-17/18.
The 2nd c/o contact is designated 25-27/28.
The n/o contacts of the star-delta timers are designated with 17-18 and 17-28.
Control supply voltage is always applied to terminals A1-A2.

Function of the yellow LED
The yellow LED R glows as soon as the output relay energizes and turns off when the output relay de-energizes.

ON-delay
(Delay on make)
CT-ERD, CT-MFD
This function requires continuous control supply voltage for timing.
Timing begins when control supply voltage is applied.
The green LED flashes during timing. When the selected time delay is complete, the output relay energizes and the flashing green LED turns steady. If control supply voltage is interrupted, the output relay de-energizes and the time delay is reset. Control input A1-Y1/B1 of the CT-MFD is disabled when this function is selected.

OFF-delay with auxiliary voltage
(Delay on break)
CT-AHD, CT-MFD
This function requires continuous control supply voltage for timing. If control input A1-Y1/B1 is closed, the output relay energizes immediately. If control input A1-Y1/B1 is opened, the time delay starts. The green LED flashes during timing. When the selected time delay is complete, the output relay de-energizes and the flashing green LED turns steady. If control input A1-Y1/B1 recloses before the time delay is complete, the time delay is reset and the output relay does not change state. Timing starts again when control input A1-Y1/B1 re-opens. If control supply voltage is interrupted, the output relay de-energizes and the time delay is reset.
Impulse-ON
(Interval)
CT-VWD, CT-MFD
This function requires continuous control supply voltage for timing. The output relay energizes immediately when control supply voltage is applied and de-energizes after the set pulse time is complete. The green LED flashes during timing. When the selected pulse time is complete, the flashing green LED turns steady. If control supply voltage is interrupted, the output relay de-energizes and the time delay is reset. Control input A1-Y1/B1 of the CT-MFD is disabled when this function is selected.

Impulse-OFF with auxiliary voltage
(Trailing edge interval)
CT-MFD
This function requires continuous control supply voltage for timing. If control supply voltage is applied, opening control input A1-Y1/B1 energizes the output relay immediately and starts timing. The green LED flashes during timing. When the selected pulse time is complete, the output relay de-energizes and the flashing green LED turns steady. Closing control input A1-Y1/B1, before the time delay is complete, de-energizes the output relay and resets the time delay. If control supply voltage is interrupted, the output relay de-energizes and the time delay is reset.

Flasher, starting with the ON time
(Recycling equal times, ON first)
CT-EBD, CT-MFD
Applying control supply voltage starts timing with symmetrical ON & OFF times. The cycle starts with an ON time first. The ON & OFF times are displayed by the flashing green LED, which flashes twice as fast during the OFF time. If control supply voltage is interrupted, the output relay de-energizes and the time delay is reset. Control input A1-Y1/B1 of the CT-MFD is disabled when this function is selected.

Flasher, starting with the OFF time
(Recycling equal times, OFF first)
CT-MFD
Applying control supply voltage starts timing with symmetrical ON & OFF times. The cycle starts with an OFF time first. The ON & OFF times are displayed by the flashing green LED, which flashes twice as fast during the OFF time. If control supply voltage is interrupted, the output relay de-energizes and the time delay is reset. Control input A1-Y1/B1 of the CT-MFD is disabled when this function is selected.
Control and automation technical details
E 234 CT-D electronic timers

**1.** Pulse former (Single shot)
CT-MFD

This function requires continuous control supply voltage for timing.
Closing control input A1-Y1/B1 energizes the output relay immediately and starts timing. Operating the control contact switch A1-Y1/B1 during the time delay has no effect. The green LED flashes during timing. When the set ON time is complete, the output relay de-energizes and the flashing green LED turns steady. After the ON time is complete, it can be restarted by closing control input A1-Y1/B1. If control supply voltage is interrupted, the output relay de-energizes and the time delay is reset.

**2.** Pulse generator, starting with the ON or OFF time
(Recycling unequal times, ON or OFF first)
CT-TGD

This function requires continuous control supply voltage for timing.
Applying control supply voltage, with open control input A1-Y1/B1, starts timing with an ON time first. Applying control supply voltage, with closed control input A1-Y1/B1, starts timing with an OFF time first. The ON & OFF times are displayed by the flashing green LED, which flashes twice as fast during the OFF time. The ON & OFF times are independently adjustable. If control supply voltage is interrupted, the output relay de-energizes and the time delay is reset.

Now, the transition time t2 starts. When the transition time is complete, the second output contact energizes the delta contactor connected to terminals 17-28. The delta contactor remains energized as long as control supply voltage is applied to the unit.

**Star-delta change-over**
(Star-delta starting)
CT-SDD, CT-SAD

This function requires continuous control supply voltage for timing.
Applying control supply voltage to terminals A1-A2, energizes the star contactor connected to terminals 17-18 and begins the set starting time t1. The green LED flashes during timing. When the starting time is complete, the first output contact de-energizes the star contactor.
Control and automation technical details
T1, T1 PLUS, T1 POLE, TWA-1 and TWA-2 twilight switches

Main features

DIN-Rail version
- 2 indication leds: one for contact status and one for threshold
- Four different types of LUX range adjustment
- Adjustable switching delay
- Preset with 10 LUX from factory
- Screw-less version
- 1 module width

Pole/wall version
- Innovative design for direct installation on a pole/wall
- Quick and easy to install, thanks to the simple wiring and ease of adjustment
- Laser etched connection diagram on the back of the product
- Integrated brightness sensor preset at 10 LUX from factory
- Adjustable threshold value from 2 to 200 LUX
- Switching delay of 30 sec. ±10% for ON and 40 sec. ±10% for OFF
- Unlosable screw terminals
- Protection degree IP65

Astronomical version
- Astronomical and time programming
- Holiday program
- Automatic summer and winter time change
- 56 stored memory locations
- Opportunity to correct the astronomical time up to ±120 min
- 1 or 2 changeover contacts
- Latitude adjustment range from +90° North to -90° South.
- Longitude adjustment range from 180° East to 180° West.
- Manual and permanent override, activated with one touch on the front of the device
- Clear display of contact status
- Unlosable hinged window
- Keypad security lock with PIN code to prevent interference by unauthorised persons
- PC software for quick and easy programming
- Wiring diagram printed on the side of the product
Control and automation technical details
T1, T1 PLUS, T1 POLE, TWA-1 and TWA-2 twilight switches

T line

T1 operating principle

T1 PLUS operating principle

T1 POLE
Control and automation technical details
T1, T1 PLUS, T1 POLE, TWA-1 and TWA-2 twilight switches

TWA-1 and TWA-2

Keys
1 menu : selection of operating mode.
    auto : mode of running according to the program selected.
    prog : new for programming mode.
    modif : to modify an existing program.
    : checking of the program.
    : modification of time, date and selection of
      the winter/summer timechange mode  
    astro : astronomical mode.
    : indicates that the channel is in astronomical mode.
    + and - : navigation or setting of values.
    (TWA-1)
    C1  C2  (TWA-2) : in auto mode, selection of overrides,
    enter : to validate flashing information on display.
    to return to the previous step.

Programming example

Ex: Rome

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<th>Longitude 12° EAST</th>
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<tr>
<td>Latitude 41° NORTH</td>
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<tr>
<td>+1 Universal Date</td>
</tr>
<tr>
<td>Time = +1 hour</td>
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Ex: Rome

<table>
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<td>Time = +1 hour</td>
</tr>
</tbody>
</table>
Control and automation technical details

T1 twilight switch

Operating principle
The diagram shows an example of the installation of the T1 twilight switch in the lighting system of a commercial building. When the external light falls below a certain level (e.g. during the evening when the shop is closed), the device switches on the window lights and the shop sign. The lights can be switched off late evening to reduce power consumption thanks to the AT1 switch timer.

Application environments
The installation of the T1 twilight switch with an AT electro-mechanical timer is particularly useful in settings and situations where energy saving is a prime concern (shops, office corridors and public passageways, car parks, parks, etc.).

Example of installation
As shown in the diagrams, one of the possible applications is the installation of a T1 twilight switch in the lighting system of a commercial building. When the external light falls below a certain level (e.g. when the shop is closed), the twilight switch switches on the window lights and the sign. The lights can be switched off late evening to reduce power consumption thanks to the AT1 switch timer which keeps the circuit open until the next morning. When the external light returns to above the threshold value, the twilight switch relay returns to the open position.
Control and automation technical details

T1 PLUS twilight switch

Operating principle
The diagram shows an example of the installation of the T1 PLUS twilight switch in the lighting system of a greenhouse. When the external light exceeds a certain level (e.g. during the warmest hours of the day, i.e. early afternoon), the device activates the shading system, e.g. roller blinds. Thanks to the option to advance or delay the activation-deactivation time, the T1 PLUS can also maintain the roller blinds closed in the case of passing clouds.

Application environments
The installation of the T1 PLUS twilight switch is particularly useful in settings and situations where lighting control is required for locations where there are consistently high brightness values, thus guaranteeing substantial savings in energy consumption (greenhouses, arcades, photovoltaic plants, etc.).

Example of installation
As shown in the diagrams, one of the possible options is to install a T1 PLUS twilight switch in the lighting system of a greenhouse. When the external light exceeds a certain level (for example during peak hours in the early afternoon) the twilight switch activates the roller blinds, protecting the plants in the greenhouse against burning by the strong sunlight. When the external light returns to below the threshold value, the twilight switch relay opens the blinds to allow the sunlight to pass through.
Control and automation technical details
T1 POLE twilight switch

Operating principle
The diagram shows an example of the installation of the pole-mounted T1 POLE twilight switch for motorway lighting systems. When the external light falls below a certain level, 10 lux for example, the device switches on the lights present in tunnels, service areas, near to junctions, etc. The lights are then switched off by the T1 POLE in the morning when the 10 lux value is exceeded.

Application environments
The installation of the T1 POLE twilight switch is particularly suitable for controlling public street lighting, thanks to the fact that they can be installed on poles, lamp standards, etc.

Example of installation
As shown in the diagrams, one of the possible applications is the installation of a T1 POLE twilight switch in the motorway lighting system. When the external light falls below a certain level (for example at sunset), the pole-mounted twilight switch switches on the lights to provide the correct lighting for the setting. At sunrise, the external brightness exceeds the threshold value and the twilight relay returns to the open position.
Control and automation technical details
TWA twilight switch

Operating principle
The installation of an astronomical twilight switch in a system is a particularly useful addition for settings and situations in which light sources, or other environmental conditions, can cause changes in the brightness level and falsify the reading.
In these cases, the TWA-1 and TWA-2 astronomical switches can control the lighting system according to the sunrise and sunset times of the geographic zone in which the system is installed.

Application environments
The installation of the TWA-1 and TWA-2 astronomical twilight switches is particularly suitable for applications in which the operation of a twilight switch with external probe can be falsified or compromised by external agents (such as environmental pollution, overexposure to light, vandalism, etc.).

Example of installation
Atmospheric pollution is one of the causes of a reduction in the level of environmental light. Dust deposits on the external probe of a traditional twilight switch can compromise the operation of the device, preventing it from automatically switching off the controlled lighting system in the presence of external light.
As shown in the example, this problem can be solved by installing a TWA-1 astronomical twilight switch that controls the lighting system according to the level of light calculated from the preset longitude and latitude parameters.
Control and automation technical details
THS modular thermostats

Controls and indicators

THS-C, THS-W

Yellow LED: “Sensor short-circuit indication”

Green LED: “Load state indication”

Temperature regulation knob
(scale differs depending on the model)

THS-S

Green LED: cooling
load state indication

Green LED: heating
load state indication

Cooling temperature setpoint knob
Adjustment range: +20 °C to +60 °C

Heating temperature setpoint knob
Adjustment range: 0 °C to +10 °C

Mode of operation

When the THS-C detects a temperature below the programmed setpoint, it closes contact 1 until the temperature returns above the setpoint. It then reopen the contact, and when the temperature again drops below the differential, the cycle is repeated.

THS-W operates in a similar manner, but the relay closes contact 5 when the temperature exceeds the programmed setpoint.

Sensor installation

The THS-1 and THS-4 remote temperature sensors (supplied separately) are waterproof and encapsulated in silicone rubber. They have an operating temperature range between -30°C and +130°C and are respectively 1.5 and 4 meters long.
Control and automation technical details

THS modular thermostats

As shown in the figure, the THS-S switches on:
• The fan or air conditioner when the temperature in the panel exceeds the maximum setpoint programmed with the upper knob.
• The heating device when the panel temperature falls below the minimum setpoint programmed with the lower knob.

Sensor installation
The remote temperature sensor is waterproof and able to withstand temperatures in the range from -30°C to +85°C; it has a maximum connection length of 100m.
Control and automation technical details
THS modular thermostats

Operating principle
Modular thermometers let you control and keep a heating or cooling element at a set temperature, comparing the value read by the sensor with the one set by the user. The THS range can thus guarantee switchboard operating reliability, perfect product conservation in refrigerated counters or cells, promote greenhouse production, optimise drying cycles, etc.

Application environments
THS thermostat installation is thus the best way to regulate temperature in automation and distribution switchboards, in heating systems, in industrial applications or to control refrigerator systems, greenhouses, dryers or isothermal folding portals.

Example of installation
As shown in the diagrams, one of the possible applications consists in the installation of a THS-S modular thermostat inside an automation or distribution switchboard where the temperature must be kept at a set value. Thanks to the THS-S thermostat, you can thus control the temperature, permitting cooling regulations between +20 °C and +60 °C and anti-condensation between 0 °C and +10 °C. Furthermore, you can manage up to 3kW of point heaters without having to use any external contactors to manage the load.
Control and automation technical details

RAL overload relays

Load release

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Main circuit breaker

Shunt trip (230 V a.c.) in case of circuit-breaker tripping

Lights

Dedicated socket

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**Main circuit breaker**

**Shunt trip (230 V a.c.) in case of circuit-breaker tripping**

**Lights**

**Dedicated socket**
Control and automation technical details
RAL overload relays

Operating principle
The RAL overload alarms constantly compare the maximum preset power consumption value to effective system power consumption. Approaching allowed threshold, they signal to disconnect one of the loads through acoustic alarm avoiding the main circuit breaker tripping. Connecting the undervoltage release to the appropriate contact, the RAL overload alarms provide an acoustic alarm and simultaneously opens the circuit-breaker protecting one or more not primary loads.

Application environments
The installation of the RAL overload alarms is suitable for any environment and situation in order to avoid power consumption which could trip the limiting circuit breaker of the system.

Example of installation
As shown in the diagrams, one of the possible applications is the installation of the RAL overload alarms in the domestic system where the electric oven and washing machine are simultaneously switched on increasing the power consumption. When the power consumption approaches the preset threshold values, an acoustic alarm is activated and the washing machine switches off automatically through an undervoltage release.
Control and automation technical details

RAL overload relays
Control and automation technical details
LSS1/2 load shedding switch

Single-phase wiring diagram for non-priority loads with 16 A or more current consumption

Single-phase wiring diagram

Balanced three-phase wiring diagram

L1
L2
L3
TA/5A
380 V
220 V

Le1
Le2

PL
NPL1
NPL2
Control and automation technical details
LSS1/2 load shedding switch

Operating principle
LSS1/2 load shedding switches are used in case of exceeding of consumption threshold allowed in the system by switching off in sequence one or two loads, if necessary. At preset intervals and until current consumption is not below the reference level, the switch tries to reset the disconnected loads.

Application environments
The installation of the LSS1/2 load shedding switches is suitable for any environment and situation where it is necessary to control electric energy consumption within consumption limits allowed in the system.

Example of installation
As shown in the diagrams, one of the possible applications is the installation of the LSS1/2 load shedding switches in a printing office system, where the conditioning switch-on causes the exceeding of the energy consumption threshold defined with the supplying company by contract. The LSS1/2 load shedding switch preserves printing machines operation by switching off one or two primary loads automatically (i.e. night conditioning and lighting), where ON red leds indicate temporary OFF. After a preset interval, the switch checks that current consumption values fall within the limits again trying to reset the previously disconnected loads.
Control and automation technical details
LSS1/2 load shedding switch