ALARMS / EVENTS DISPLAY - SIGNALING DEVICE

AD 10

Operating Instructions – V1

www.osakasolutions.com

FOREWORD

This manual contains the information necessary for the product to be installed correctly and also instructions for its maintenance and use; we therefore recommend that the utmost attention is paid to the following instructions and to save it.

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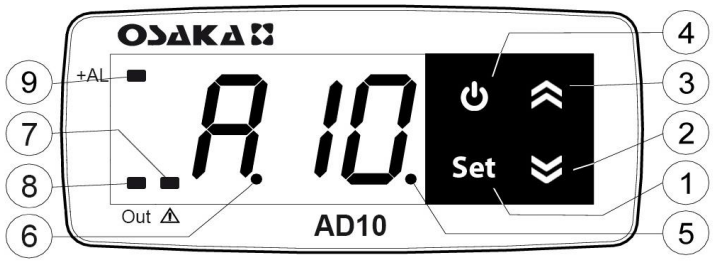
1 - INSTRUMENT DESCRIPTION

1.1 - GENERAL DESCRIPTION

The model AD 10 is an Alarms/events signalig device.
The Alarms / events are shown on the 3 digit display and can be detected by 10 digital inputs for voltage free contacts or voltage (24 VAC / VDC) whose operation is completely configurable.
The instrument can also be equipped with an internal relay and a buzzer that is the sound system for alarms.

1.2 - FRONT PANEL DESCRIPTION

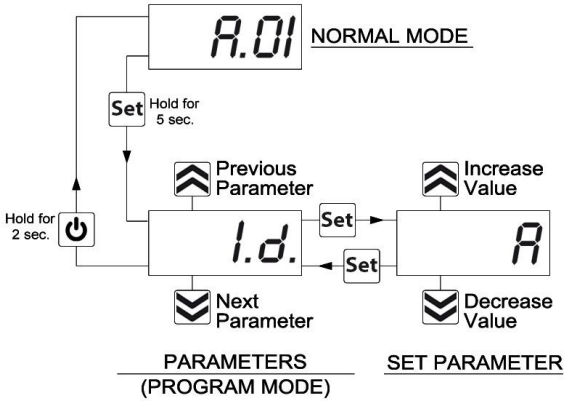


1 - Key SET : Used for programming the function parameters (hold pressed for 5 sec.)
In programming mode is used to enter in parameters edit mode and confirm the values. In programming mode it can be used together with the UP key to change the programming level of the parameters.
2 - Key DOWN : In programming mode is used for decreasing the values to be set and for selecting the parameters.
In normal mode it can also used for the aknowledgement/reset of memorized alarms.
3 - Key UP : In programming mode is used for increasing the values to be set and for selecting the parameters. In programming mode can be used togetherwith Key SET to change parameters level.
4 – Key ⏻ : In normal mode lets you can be uset to scroll quickly alarms messages bypassing the time "t.td"
In programming mode can be used to come back in normal mode (hold for 2 sec.).
5 - Led SET : In normal mode it serves to indicate when a key is pressed. In programming mode indicates the programming level of the parameters.
6 - Led OK : When "t.dS" = oF indicates that no Alarms/events are in progress
7 - Led ALARM : Indicates the Alarms/events status: active (on), silenced or memorized (flashing)
8 - Led Out : Indicates the output status
9 - + AL: Indicates more than one active Alarms/events

2 - PROGRAMMING

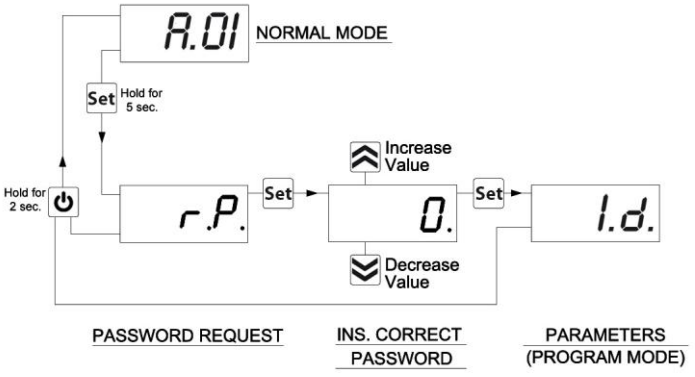
2.1 - STANDARD MODE PARAMETERS PROGRAMMING

To access the instrument's function parameters when password protection is disable, press the Key **SET** and keep it pressed for about 5 seconds, after which the display will visualised the code that identifies the first parameter.
Using the UP and DOWN keys, the desired parameter can be selected and pressing the P key, the display will alternately show the parameter code and its setting that can be changed with the UP and DOWN keys.
Once the desired value has been set, press the Key SET again: the new value will be memorised and the display will show only the code of the selected parameter.
Pressing the UP and DOWN keys, it is possible to select another parameter and change it as described.
To exit the programming mode, do not press any key for about 30 seconds, or keep the ⏻ key pressed for 2 sec. until it exits the programming mode.



2.2 - PARAMETER PROTECTION USING THE PASSWORD

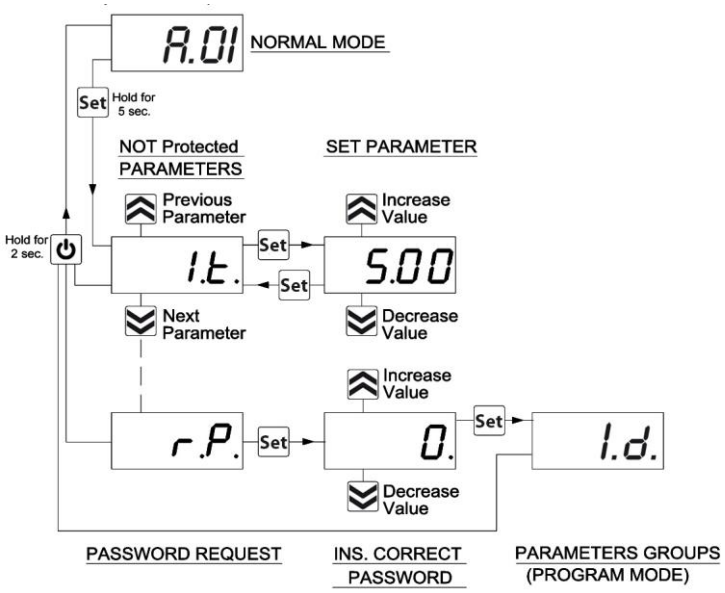
The instrument has a parameter protection function using a password that can be personalised, through the **"t.PP"** parameter.
If one wishes to have this protection, set the password number desired in the parameter "t.PP".
When the protection is activate, press the P key to access the parameters and keep it press for about 5 seconds, after which the display will show **"r.P"** .
At this point press P, the display show "0", using the UP and DOWN keys, set the password number programmed and press the Key SET.
If the password is correct, the display will visualise the code that identifies the first parameter and it will be possible to program the instrument in the same ways described in the previous section.
Protection using a password can be disabled by setting the parameter "t.PP" = oF.



Note: *If the Password gets lost, just swith off and on the instrument supply, push P key during the initial test and keeping the key pressed for 5 seconds.*
In this way it's possible to have access to all the parameters, verify and modify the par. "t.PP".

2.3 - CUSTOMIZED MODE PARAMETER PROGRAMMING (PARAMETERS PROGRAMMING LEVEL)

The password protection hides all the configuration parameters behind a factory set password to avoid unwanted changes being made to the programming of the controller.
To make a parameter accessible without having to enter the password when "t.PP" password protection is activate follows this procedure.
Enter the programming using the Password "t.PP" and select the parameter which is desired to be accessible with no password protection.
Once the parameter has been selected, if the SET led is blinking, this means that the parameter is programmable by entering the password (it's then "protected") if it's instead on, this means the parameter is programmable without password (not protected).
If you want to change the accessibility of the parameter push P key, keep it pressed and press together also the key UP.
The led SET will change its state indicating the new access level of the parameter (on = not protected; blinking = protected by password).
In case some parameters are not protected, when one tries to have access at the programming, the display will show all the parameters not protected and the par. **"r.P"** (through which will be possible to have access to the "protected" parameters.)



2.4 - RESET PARAMETERS TO DEFAULT VALUE/LEVEL

The instrument allows the reset of the parameters to values programmed in factory as default.
To restore to the values of default the parameters set the value **-48** to "r.P" password request.
Once confirmed the password with the Key SET the display it shows "---" for 2 sec. therefore the instrument effects the parameters reset**.**

3 - INFORMATION ON INSTALLATION AND USE

L 3.1 - PERMITTED USE

The devices are made as measuring and regulating equipment in accordance with EN60730-1 norm for operation up to an altitude of 2000 mts.
The use of equipment for standard applications not expressly provided in norm cited above, should provide all measurement and adjustments necessary protection.
The equipment must be adequately protected and away from liquids, dust, grease and dirt. They must be accessible only with the use of a right tool and safety system (except the front).
The devices can NOT be used in dangerous environments (flammable or explosive) without adequate protection.
It is recalled that the installer must ensure that the norm for electromagnetic compatibility is respected after implantation in the

installation of equipment, eventually using the right filters if is needed.
In case of failure or malfunction of measuring and control equipment that can create dangerous situations or damage to persons, things, animals or products (defrost food or changes in their ideal state), it is recalled that the facility should be equipped with electronic devices or electromechanical safety and warning system.
They should be placed outside the measuring and control equipments, possible protective devices, responding to specific safety requirements that are covered by the norm of the product or suggest the common sense.
For your own safety, is highly recommended fulfilling the instructions provided above.

3.2 - MECHANICAL MOUNTING

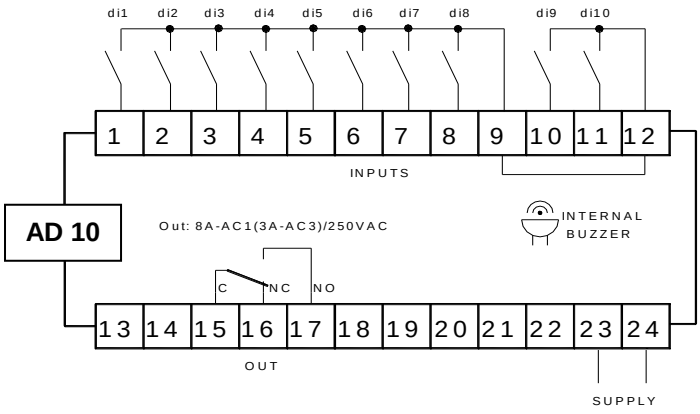
The instrument, in case 78 x 35 mm, is designed for flush-in panel mounting. Make a hole 71 x 29 mm and insert the instrument, fixing it with the provided special brackets. We recommend that the gasket is mounted in order to obtain the front protection degree as declared. Avoid placing the instrument in environments with very high humidity levels or dirt that may create condensation or introduction of conductive substances into the instrument. Ensure adequate ventilation to the instrument and avoid installation in containers that house devices which may overheat or which may cause the instrument to function at a higher temperature than the one permitted and declared. Connect the instrument as far away as possible from sources of electromagnetic disturbances such as motors, power relays, relays, solenoid valves, etc.

3.3 - ELECTRICAL CONNECTION

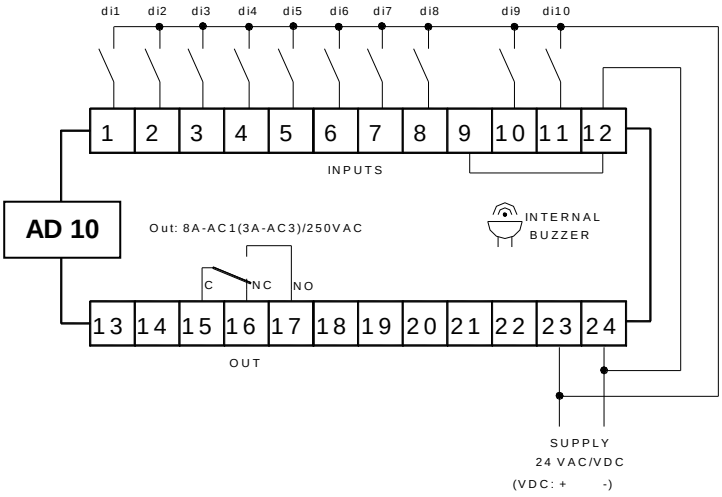
Carry out the electrical wiring by connecting only one wire to each terminal, according to the following diagram, checking that the power supply is the same as that indicated on the instrument and that the load current absorption is no higher than the maximum electricity current permitted. As the instrument is built-in equipment with permanent connection inside housing, it is not equipped with either switches or internal devices to protect against overload of current: the installation will include an overload protection and a two-phase circuit-breaker, placed as near as possible to the instrument, and located in a position that can easily be reached by the user and marked as instrument disconnecting device which interrupts the power supply to the equipment. It is also recommended that the supply of all the electrical circuits connected to the instrument must be protect properly, using devices (ex. fuses) proportionate to the circulating currents. It is strongly recommended that cables with proper insulation, according to the working voltages and temperatures, be used. Furthermore, the input cable of the probe has to be kept separate from line voltage wiring. If the input cable of the probe is screened, it has to be connected to the ground with only one side. We recommend that a check should be made that the parameters are those desired and that the application functions correctly before connecting the outputs to the actuators so as to avoid malfunctioning that may cause irregularities in the plant that could cause damage to people, things or animals.

3.4 - ELECTRICAL WIRING DIAGRAM

Inputs for Free voltage contacts model version.



Inputs for voltage signal (24 VAC/VDC) model version



4 - FUNCTIONS

4.1 - INPUTS CONFIGURATION

Each signal is detected by the status change of an input that can be configured to work through the following parameters:
“1.d” , “2.d”, “3.d” etc: determine the letter preceding the number for that inputs must be reported as active signal. These parameters are used to distinguish messages of some inputs like report alarms (eg, A.01, A.02) from others that may signal errors (eg E.03, "" E.04) or others who may signal functions in progress (eg F.05 "," F.06)
“1.L” , “2.L”, “3.L” etc: determine the logic operating of the digital inputs. If the input signal the event should contact closure connected to the parameter should be programmed = no, vice versa if you must report it to the opening of the contact connected to the parameter should be programmed = nc.
“1.t” , “2.t”, “3.t” etc: allow to delay (up to a maximum of 99min and 50sec.) the action of each inputs
“1.o” , “2.o”, “3.o” etc: Can establish whether the event should turn on the internal buzzer or other alerts through output relay. These parameters allow the buzzer to tie the activation and / or relay output to some reports only considered serious (eg. alarms or errors) that do not require other reports (eg. reports of functioning or minor anomalies).
Parameters can be programmed:
= 0 - no signal
= 1 - signal only by buzzer
= 2 - signal only by output
= 3 - signal by buzzer and by output
“1.A” , “2.A”, “3.A” etc: Can establish whether the reporting on the event should be memorized and therefore remain active even when the digital input is deactivated. When an event is memorized the label signal is flashing to indicate the condition of memorized event.

4.2 - DISPLAY OPERATION

Through par. **"t.dS"** it’s possible to set the standard display visualization with no Alarms/events signal.
If programmed = oF, the display visualization with no Alarms/events signal is off except the separationled between letter and number.
If programmed = no.A display in the absence of Alarms/events signal showing the label “no.A”.
If one event is active, the display always shows only the message scheduled to report.
If more events are active led +AL is lit to indicate that there are more alerts the operator and the display shows either all labels with interval programmed at par. **"t.td”.**
By pressing and releasing key ⏻ it’s possible to skip time "t.td" and and quickly view all active alerts.

4.3 - OUTPUTS AND BUZZER CONFIGURATION

The instrument output can be configured to activate via the parameters "1.o", "2.o", "3.o" etc.. = 2 or 3.
The output can be configured by par. **"t.tA"** for the following functions:
= At - to control a silenceable alarm device through a contact that is normally open, and then closed when the alarm sounds
= AL - to control an alarm that cannot be silenced through a contact that is normally open and closed when the alarm sounds.
= An - to control an alarm with a memory function through a contact that is normally open and closed when the alarm sounds (see alarm memory by par. 1.A" , "2.A", "3.A" etc).
= -At - to control a silenceable alarm device through a contact that is normally closed, and then open when the alarm sounds.
= -AL - control an alarm that cannot be silenced through a contact that is normally closed and open when the alarm sounds.
= -An - to control an alarm with a memory function through a contact that is normally closed and open when the alarm sounds
The buzzer can be configured to activate via the parameters "1.o", "2.o", "3.o" etc.. = 1 or 3.
The reporting of the Alarm/event through the buzzer and output can be delayed the time set in par. "t.to.
This allows using the display message (which is delayed by the par. "1.t", "2.t", "3.t" etc..) As a pre-alarm signal and the buzzer/output signal as a delayed alarm signal.

4.4 - SILENCE ALARMS AND AKNOWLEDGEMENT MEMORIZED ALARMS

The buzzer (if enable) is activated in alarm and can be disabled (alarm silencing) manually by pressing any key of the instrument.
If the output is configured as alarm silenced (t.tA "= At) when ativated it's also can switched off by pressing any key
The action of silencing the buzzer and the output is common to all alarms.
Any condition of alarm/event active it is expected to signal (buzzer and / or output) is indicated with the ALARM led on while the alarm silenced condition is indicated by the ALARM led flashing.
The instrument offers the possibility of arranging the alarm memory function via the parameters **"1.A" , "2.A", "3.A"** etc = y.
If ,par. "1.A" , "2.A", "3.A" etc = n the instrument cancels the alarm signal when the alarm status ends, if instead it is programmed =y , the instrument maintains the alarm/event label flashing when the alarm/event status ends.
To cancel the alarm memory signal, press and release key DOWN when the label of alarm/event memorized is on the display.
Deletion of memorized alarms must be performed for each alarm.
If the output is configured to operate as an memorized alarm (t.tA "= An) it will be activated at the first alarm/event and will be disabled when all the memorized alarms/events have been deleted.

5 - PROGRAMMABLE PARAMETERS TABLE

Here below is a description of all the parameters available on the instrument.

Par.		Description	Range	Def.	Note
1	**1.d**	Input 1 letter label message	A / E / C / F	A	
2	**1.L**	Function logic of input 1 no = norm. opened nc = norm. closed	no / nc	no	
3	**1.t**	Delay input 1	oF/ 0.01 ÷ 9.59 (min.sec) ÷ 99.5 (min.sec.x10)	oF	
4	**1.o**	Output/Buzzer activation by input 1 0 = no act. 1 = buzzer only 2 = output only 3 = buzzer + output	0 / 1 / 2 / 3	0	
5	**1.A**	Memory input 1	y / n	n	
6	**2.d**	Input 2 letter label message	A / E / C / F	A	
7	**2.L**	Function logic of input 2 no = norm. opened nc = norm. closed	no / nc	no	
8	**2.t**	Delay input 2	oF/ 0.01 ÷ 9.59 (min.sec) ÷ 99.5 (min.sec.x10)	oF	
9	**2.o**	Output/Buzzer activation by input 2 0 = no act. 1 = buzzer only 2 = output only 3 = buzzer + output	0 / 1 / 2 / 3	0	
10	**2.A**	Memory input 2	y / n	n	
11	**3.d**	Input 3 letter label message	A / E / C / F	A	
12	**3.L**	Function logic of input 3 no = norm. opened nc = norm. closed	no / nc	no	
13	**3.t**	Delay input 3	oF/ 0.01 ÷ 9.59 (min.sec) ÷ 99.5 (min.sec.x10)	oF	
14	**3.o**	Output/Buzzer activation by input 3 0 = no act. 1 = buzzer only 2 = output only 3 = buzzer + output	0 / 1 / 2 / 3	0	
15	**3.A**	Memory input 3	y / n	n	
16	**4.d**	Input 4 letter label message	A / E / C / F	A	
17	**4.L**	Function logic of input 4 no = norm. opened nc = norm. closed	no / nc	no	
18	**4.t**	Delay input 4	oF/ 0.01 ÷ 9.59 (min.sec) ÷ 99.5 (min.sec.x10)	oF	
19	**4.o**	Output/Buzzer activation by input 4 0 = no act. 1 = buzzer only 2 = output only 3 = buzzer + output	0 / 1 / 2 / 3	0	
20	**4.A**	Memory input 4	y / n	n	

21	**5.d**	Input 5 letter label message	A / E / C / F	A	
22	**5.L**	Function logic of input 5 no = norm. opened nc = norm. closed	no / nc	no	
23	**5.t**	Delay input 5	oF/ 0.01 ÷ 9.59 (min.sec) ÷ 99.5 (min.sec.x10)	oF	
24	**5.o**	Output/Buzzer activation by input 5 0 = no act. 1 = buzzer only 2 = output only 3 = buzzer + output	0 / 1 / 2 / 3	0	
25	**5.A**	Memory input 5	y / n	n	
26	**6.d**	Input 6 letter label message	A / E / C / F	A	
27	**6.L**	Function logic of input 6 no = norm. opened nc = norm. closed	no / nc	no	
28	**6.t**	Delay input 6	oF/ 0.01 ÷ 9.59 (min.sec) ÷ 99.5 (min.sec.x10)	oF	
29	**6.o**	Output/Buzzer activation by input 6 0 = no act. 1 = buzzer only 2 = output only 3 = buzzer + output	0 / 1 / 2 / 3	0	
30	**6.A**	Memory input 6	y / n	n	
31	**7.d**	Input 7 letter label message	A / E / C / F	A	
32	**7.L**	Function logic of input 7 no = norm. opened nc = norm. closed	no / nc	no	
33	**7.t**	Delay input 7	oF/ 0.01 ÷ 9.59 (min.sec) ÷ 99.5 (min.sec.x10)	oF	
34	**7.o**	Output/Buzzer activation by input 7 0 = no act. 1 = buzzer only 2 = output only 3 = buzzer + output	0 / 1 / 2 / 3	0	
35	**7.A**	Memory input 7	y / n	n	
36	**8.d**	Input 8 letter label message	A / E / C / F	A	
37	**8.L**	Function logic of input 8 no = norm. opened nc = norm. closed	no / nc	no	
38	**8.t**	Delay input 8	oF/ 0.01 ÷ 9.59 (min.sec) ÷ 99.5 (min.sec.x10)	oF	
39	**8.o**	Output/Buzzer activation by input 8 0 = no act. 1 = buzzer only 2 = output only 3 = buzzer + output	0 / 1 / 2 / 3	0	
40	**8.A**	Memory input 8	y / n	n	
41	**9.d**	Input 9 letter label message	A / E / C / F	A	
42	**9.L**	Function logic of input 9 no = norm. opened nc = norm. closed	no / nc	no	
43	**9.t**	Delay input 9	oF/ 0.01 ÷ 9.59 (min.sec) ÷ 99.5 (min.sec.x10)	oF	
44	**9.o**	Output/Buzzer activation by input 9 0 = no act. 1 = buzzer only 2 = output only 3 = buzzer + output	0 / 1 / 2 / 3	0	
45	**9.A**	Memory input 9	y / n	n	
46	**10.d**	Input 10 letter label message	A / E / C / F	A	
47	**10L**	Function logic of input 10 no = norm. opened nc = norm. closed	no / nc	no	
48	**10.t**	Delay input 10	oF/ 0.01 ÷ 9.59 (min.sec) ÷ 99.5 (min.sec.x10)	oF	
49	**10.o**	Output/Buzzer activation by input 10 0 = no act. 1 = buzzer only 2 = output only 3 = buzzer + output	0 / 1 / 2 / 3	0	
50	**10.A**	Memory input 10	y / n	n	
51	**t.dS**	Variable visualized Display normally operation without alarms/events active oF = display off (except central dp led) no.A = message no.A	oF / no.A	oF	
52	**t.td**	Time alternating messages if more than one	1 ÷ 30 sec.	2	
53	**t.to**	Output/Buzzer delay	oF/ 0.01 ÷ 9.59 (min.sec) ÷ 99.5 (min.sec.x10)	oF	
54	**t.tA**	Output function: At= Silenceable alarm (no) AL= Not silenceable alarm (no) An= Memorised alarm (no) -At= Silenceable alarm (nc) -AL= Not silenceable alarm (nc) -An= Memorised alarm (nc)	At / AL / An / -At / -AL / - An	AL	
55	**t.PP**	Access Password to parameter functions	oF ÷ 999	oF	

6 - PROBLEMS, MAINTENANCE AND GUARANTEE

6.1 - SIGNALLING

Message	Reason
.	No active Alarms/events signal with “t.dS”=oF
no.A	No active Alarms/events signal with “t.dS”=no.A

6.2 - CLEANING

We recommend cleaning of the instrument only with a slightly wet cloth using water and not abrasive cleaners or solvents.

6.3 - GUARANTEE AND REPAIRS

This device has a guarantee in form of repair or replacement by manufacturing defects in materials of 12 months from the date of purchase.
OSAKA SOLUTIONS automatically void this guarantee and is not liable for any damages deriving from:

- Use, installation, or use and handling undue, others than those described above and, in particular, differs from the safety requirements established by the regulations.
- Use in applications, machines or electrical panels that do not provide adequate protection against liquids, dust, grease and electric shocks to the installation conditions made.
- The inexperienced handling, and / or alteration of the product.
- The installation / use in applications, machines or electrical panels do not comply with the valid norm.

In case of defective product under warranty or out of that period, it should contact the post sales service to perform the necessary steps. Request document repair "RMA" (by mail or fax) and complete it, is necessary send the RMA and the device to SAT OSAKA by method prepaid.

7 - TECHNICAL DATA

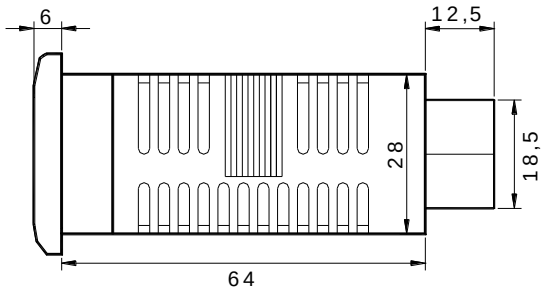
7.1 - ELECTRICAL DATA

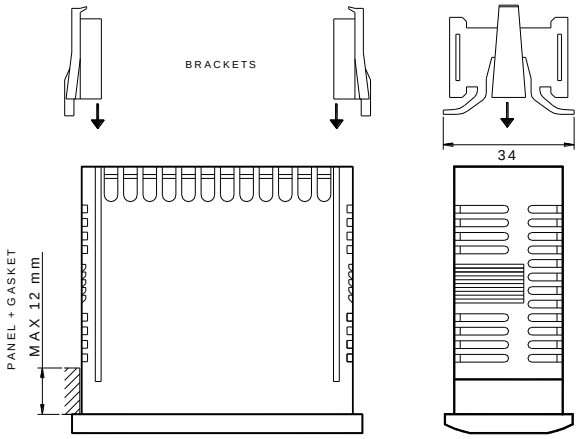
Power supply: 24 VAC/VDC, 100...240 VAC +/- 10%
Frequency AC: 50/60 Hz
Power consumption: 4 VA approx.
Input/s: 10 digital input for free voltage contacts or voltage inputs (24 VAC/VDC).
Output/s: 1 relay output SPDT (8A-AC1, 3A-AC3 250 VAC, 1/2 HP 250 VAC, 1/3 HP 125 VAC)
Electrical life for relay outputs: 100000 op.(om. VDE)
Action type: type 1.B (EN 60730-1)
Overvoltage category: II
Protection class : Class II
Insulation: Reinforced insulation between the low voltage part (supply and relay outputs) and front panel; Reinforced insulation between the low voltage section (supply and relay outputs) and the extra low voltage section (inputs); Reinforced between supply and relay outputs.

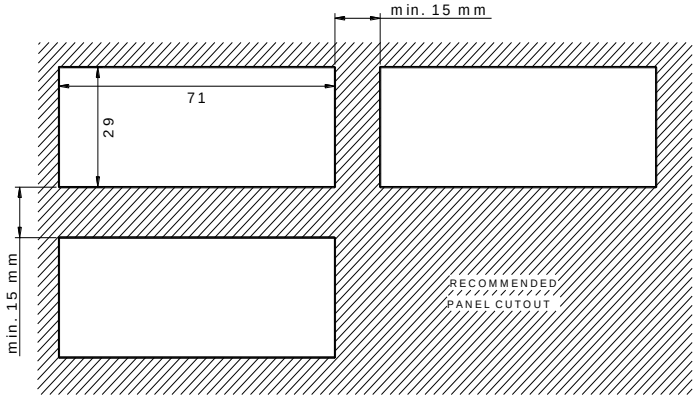
7.2 - MECHANICAL DATA

Housing: Self-extinguishing plastic, UL 94 V0
Heat and fire resistance category: D
Dimensions: 78 x 35 mm, depth 64 mm
Weight: 130 g approx.
Mounting: Flush in panel (thickness max. 12 mm) in 71 x 29 mm hole
Connections: 2,5 mm^2 screw terminals block or 2,5 mm^2 extractable screw terminals block
Degree of front panel protection : IP 65 mounted in panel with gasket
Pollution situation: 2
Operating temperature: 0 T 50 °C
Operating humidity: < 95 RH% without condensation
Storage temperature: -25 T 60 °C

7.3 - MECHANICAL DIMENSIONS, PANEL CUT-OUT AND MOUNTING [mm]







7.4 - FUNCTIONAL FEATURES

Display: 3 Digit Red (Blue optional) h 15,5 mm
Software class and structure : Class A
Compliance: ECC directive EMC 2004/108/CE (EN55022: class B; EN61000-4-2: 8KV air, 4KV cont.; EN61000-4-3: 10V/m; EN61000-4-4: 2KV supply, inputs, outputs; EN61000-4-5: supply 2KV com. mode, 1 KV\ diff. mode; EN61000-4-6: 3V), LV 2006/95/CE (EN 60730-1, EN 60730-2-7, EN 60730-2-9)