

Partner



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CAVI SCALDANTI – RESISTENZE ELETTRICHE – TERMOREGOLAZIONE
HEATING CABLES- HEATING ELEMENTS – TERMOREGULATION

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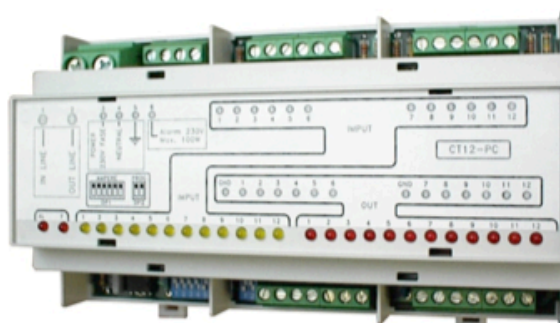
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CT12-PC-A Module for the control of 12 resistive zones with logic cycles and Power limit. Line control with internal transducer 10KW 230V or external transducer X/5.

Device suitable to control via static relays the resistive heating cables for the control of the ambient and surface temperature.

Controls the draw level of the APPLIANCE to ensure to remain within the limits of deliverable power and use it fully when available. Setting of the maximum level of energy available via DIP-switches, 12 inputs for thermostats and 12 outputs for static relay.



TECHNICAL SPECIFICATIONS:

DIMENSIONS L.158 P.70 H.90

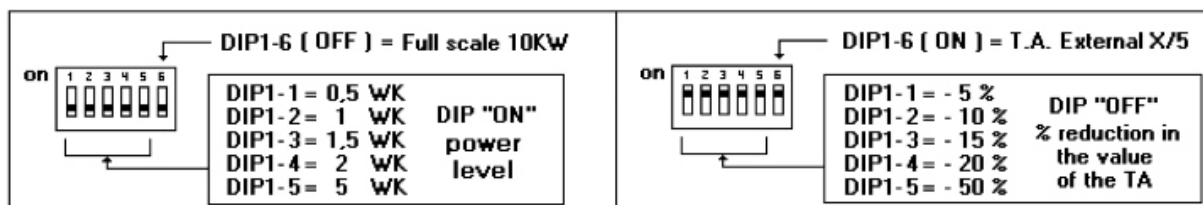
- CHECK OF THE APPLIANCE CURRENT WITH SETTING OF THE MAXIMUM USABLE POWER (DIP.1-2-3-4-5),
- ACTIVATION OF THE LOADS ON THE BASIS OF THE INPUTS USED WITH THREE CONTROL METHODS: THE FIRST USES ROTATION WITH OVERLAP OF THE LOADS PLUS SEARCH FOR POSSIBLE LOADS. THE SECOND USES ROTATION WITH LOAD OVERLAP. THE THIRD USES PRIORITY ENGAGEMENT FROM 1 TO 12 LOADS, ALL THREE WITHIN THE LIMIT OF POWER SET.
- ALARM RELATED TO POWER LIMIT EXCESS WITH AVAILABLE OUTPUT 230VAC max.150W.
- DIAGNOSTICS FOR LOAD VERIFICATION.

A) SETTING OF THE POWER LEVEL THAT CAN BE USED WITH 10KW INTERNAL TRANSDUCER:

With the DIP1-6 (OFF) you can set the scale of 10KW. The maximum level of usable power is set using the remaining DIP1 with the following value: the value of dip1-1 is 0.5KW, the value of 2 is 1KW, the value of 3 is 1.5KW, the value of 4 is 2KW, and the value of 5 is 5KW. They are engaged in such a way as to obtain a total value of power that goes from a minimum of 0.5KW to a maximum of 10KW.

SETTING OF THE POWER LEVEL THAT CAN BE USED WITH THE USE OF EXTERNAL T.A X/5:

With DIP1-6 (ON) you enable the connection of an external T.A.X/5 for the control equal or greater than 10KW. The T. A. should be connected to the terminals (IN LINE) and (OUT LINE). With the remaining DIP1 you can set the level reduction as a percentage of the current value of the T.A. used. If you set to "OFF" the dip1-1, you subtract 5%, with 2 you subtract 10%, with 3 you subtract 15%, with 4 you subtract 20%, with 5 you subtract 50%.



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B) THREE CONTROL METHODS:

Setting 1) ROTATION WITH OVERLAP + SEARCH FOR POSSIBLE LOADS DIP2-1 (ON) and DIP2-2 (OFF):

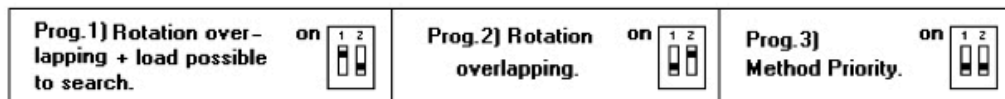
The device checks for the presence of the inputs (230V AC) and performs a rotation control of the loads required via the control of static relays, starting from the first and engaging immediately all the possible loads. If a load is encountered where the value added to those already activated exceeds the set power level, it will not be engaged. The search for a load with the smallest value still activable continues for all the outputs which are still available. When this search is finished, the loads will remain active for 120sec. This continuous cycle starts from the next zone.

The total load is always measured and adapted to the needs of the APPLIANCE restarting with the engagement of possible loads.

Setting 2) ROTATION WITH OVERLAP DIP2-1 (OFF) and DIP2-2 (ON): The device behaves as prog.1 stopping at the last load engaged without continuing the search for a possible load with smaller value for possible engagement.

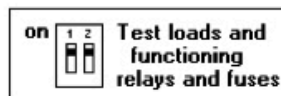
The total load is always measured and is adapted to the need of the APPLIANCE.

Setting 3) PRIORITY DIP2-1 (OFF) and DIP2-2 (OFF): The device checks for the presence of the inputs (230V AC) and engages all the loads required starting from the first (the most important) and stopping at the last possible one. The total load is always measured and removed immediately if the APPLIANCE exceeds the current threshold set, the possible load is again engaged. The update takes place automatically every 120 sec.



C) DIAGNOSTICS METHOD OF LOAD PRESENCE/FAULT OF RELAY AND FUSE.

It is possible at any time of the work cycle, setting all the DIP2 to "ON" to perform the control of the existing loads. The device engages in sequence with periods of 1 sec, channel by channel, leaving on the leds of the zones where a fault is detected.
NB: The test is carried out even without the contacts of the thermostats, therefore the unused zones give rise to an alarm not to be considered.
You can return to the concerned program at any time.



ALARM FUNCTION:

The device via an internal relay outputs 230V AC for a max. auxiliary load of 150W for different signalling uses.

The alarm occurs when the value of the power exceeds the set threshold after having tried the reduction by removing the outputs to the static relays. It is automatically reset.

D) LOAD THERMOSTATS SETTING:

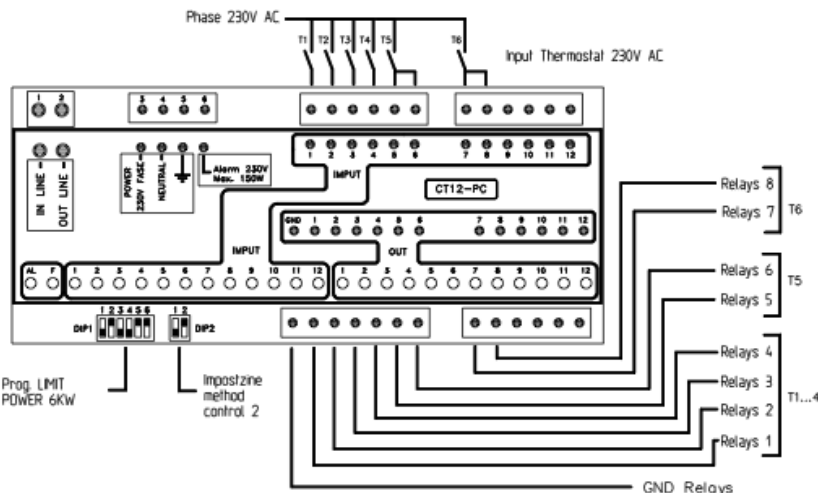
Each controlled input activates the relevant output taking into account the draw of the appliance and the type of method. Joining multiple inputs, it is possible to control multiple loads with a single contact, and then set depending on the need.

NB: If the contact of the thermostat is quite far (over 10mt.) from the control unit, it is recommended the use of a double cable. One is used to bring the phase to the input and the other is connected to neutral as shield. The purpose is to prevent activations due to the current induced by other phase cables.

Example of thermostat/load combination:

With the thermostat T1,2,3,4 one enters the inputs 1, 2, 3 and 4. With the respective logical outputs 1, 2, 3 and 4 one controls the static relays for the control of the four zones. With the thermostat T5 one enters the inputs 5 and 6. With the respective logical outputs 5 and 6 one controls the static relays for the control of the two zones. With the thermostat T6 one enters the inputs 7 and 8. With the respective logical outputs 7 and 8 one controls the static relays for the control of the two remaining zones.

The example also shows the setting of the power level, in this case 6KW and the type of program used, in this case the no 2 (rotation with overlap).



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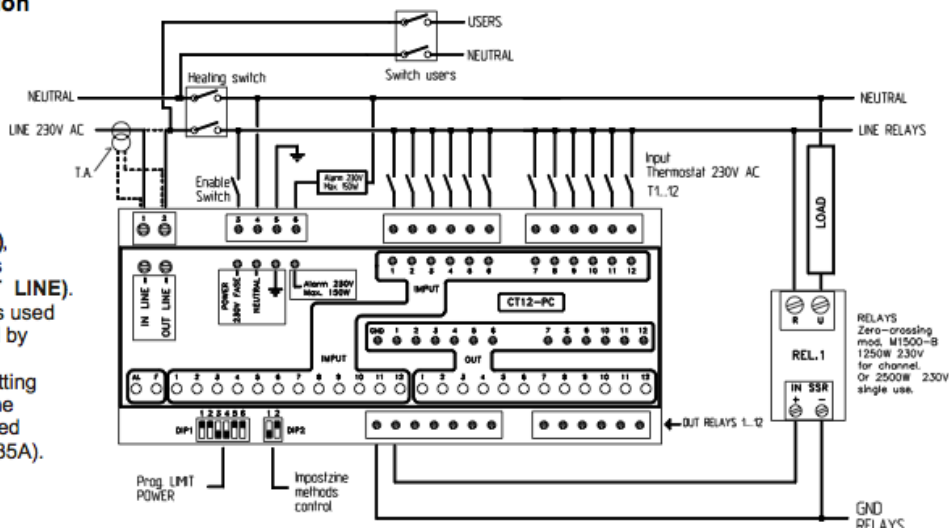
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Generic electrical connection

Note: Connecting the external amperometric transformer (T.A.), you must not bring other cables to terminal 1 (LINE) and 2 (OUT LINE). And the line tested by the T.A. is used directly for both loads controlled by relays and by the APPLIANCE. The example also shows the setting of the power limit, in this case the nominal value of the T.A. is limited by 30% (e.g. T.A. 50/5 -30% = 35A).



Technical specifications:

- Power supply 230V AC 7VA
- Maximum power managed (including the APPLIANCE) with internal transducer 10KW 230V AC. Possibility of external connection of a T. A. X/5 for equal or higher powers.
- No. 12 optoisolated inputs 230V AC 0.2 VA.
- No. 12 logical outputs for static relay 15V DC 20mA.
- Alarm output 230V MAX. 150W to Neutral.
- DIP1 with 6 positions to set power limit.
- DIP2 with 2 positions to select the methods for control and diagnostic of loads/relays and fuses.
- No. 26 leds for visual diagnostics of control trend.
- Cycle time 120 Sec.
- Response time for adaptation to the appliance 1sec.

Dimensions

