

CONTROL FOR COOLING STATIONS

THE EQUIPMENT IS MADE UP OF TWO MODULES, A DISPLAY OR COMMAND MODULE AND A CONTROL OR PROCESSING MODULE.

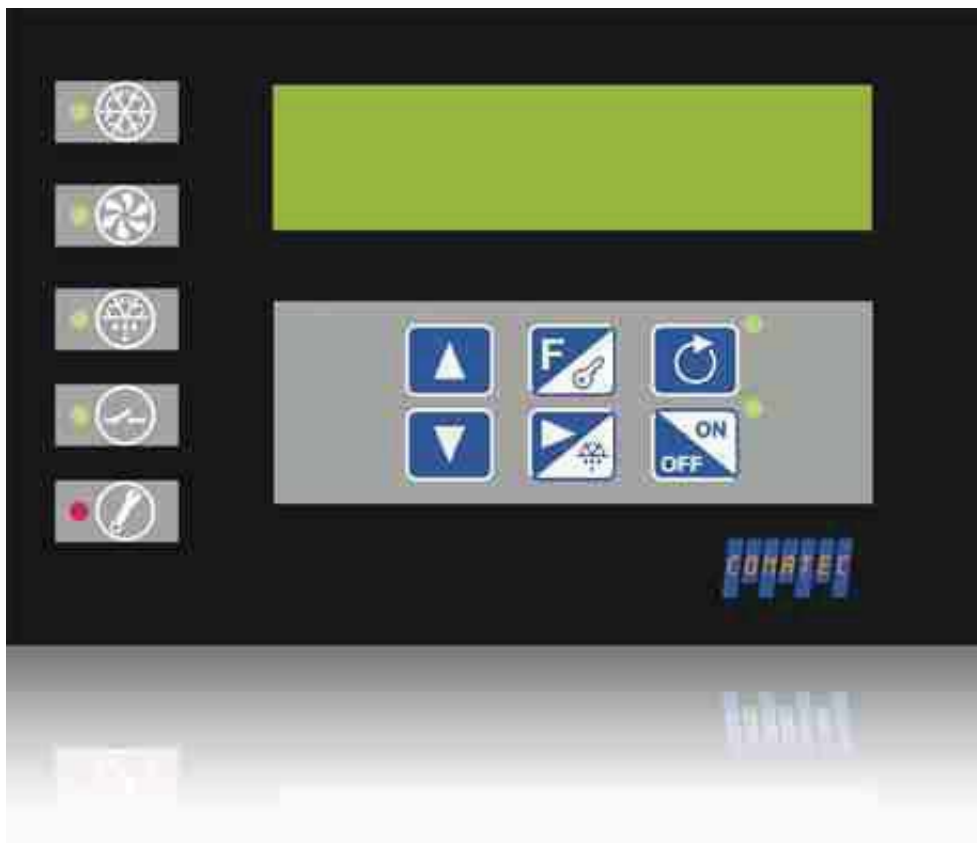
COMMAND AND CONTROL MODULES:

THE DISPLAY MODULE HAS TWO COMMUNICATION MODULES AND IS CAPABLE OF COMMANDING AND DISPLAYING THE SITUATION OF UP TO 4 CONTROLS THROUGH ONE OF THE COMMUNICATION LINES (RS-485) AND THROUGH THE OTHER COMMUNICATION LINE RS-485 OR RS-422 (SELECTABLE), THROUGH A MODBUS-RTU COMMUNICATIONS PROTOCOL IT CAN BE CONNECTED TO A NETWORK OF CONTROLLERS MONITORING THE DATA, THE HISTORY, THE BREAKDOWNS, STC, WITH A SW6000 SOFTWARE SYSTEM OR A GENERAL PURPOSE SCADA ON A PC.

THE CONTROL MODULE HAS DIFFERENT WAYS OF OPERATING:

1. ALLOWS FOR A VIEW OF EACH OF THE CONTROLS WHICH MAKE UP THE CHAMBER IN A SEQUENTIAL MANNER AND DURING A PRE-ESTABLISHED TIME WHEN THE CORRESPONDING FUNCTION IS ACTIVATED.
2. ALLOWS FOR THE SIMULTANEOUS ORDERING OF ALL THE CONTROLS IN A SIMPLE MANNER AS IF THE CONTROLS WHICH MAKE UP THE CHAMBER WERE A SINGLE PIECE OF EQUIPMENT.
3. ALLOWS FOR THE POSITIONING ON A CONTROL AND CONFIGURE IT AT WILL DEPENDING ON THE PASSWORDS AND PROTECTION INTRODUCED BY THE MANUFACTURER.
4. ALLOWS FOR THE REALIZATION OF ALL CONTROL OPTIONS SUCH AS THE START, STOP, THE REALIZATION OF PARTICULAR DEFROSTING OF EACH CONTROL, THE SEQUENTIAL STARTS, THE EQUALIZATION OF THE DISTRIBUTION OF HOURS OF COLD FOR EACH CONTROL, ...

THE CONTROL MODULE IS ALSO IN CHARGE OF ACTING ON THE OUTPUTS AND CONDUCTING MEASUREMENTS OF THE VARIABLES CORRESPONDING TO THE POWER OF THE INSTALLATION. IT IS MADE UP BY AN ELECTRONIC CARD WITH THE DIFFERENT INPUTS AND OUTPUTS OF THE NECESSARY SIGNALS.



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TECHNICAL CHARACTERISTICS OF THE CONTROL MODULE MECHANICAL

- Apparatus front 120x200mm.
- Depth 60mm.
- Front protection IP54.
- Polycarbonate front with an integrated tactile keyboard.

ELECTRICAL

- Power: 230VAC. +/-10% (50-60Hz.).
- Electrical consumption: 5VA.

ENVIRONMENTS

- Environmental operating temperature between 0 and 50°C.
 - Relative humidity of operation between 0 and 80% without condensation.
- DISPLAYS AND PILOT LIGHTS:**
- 2 line 12mm LCD display made up of 16 characters.
 - Six green pilot light and one red one to indicate the status.
- COMMUNICATIONS:**
- The equipment communicates in a Master-Slave format, the Master establishes the communication. The Master communicates with each specific Slave and said Slave returns a response. In the case of communicating with the PC, the Master will be the PC and in the case of communication with the CONTROLS, the Master will be the COLD-PAK 100 MANDO.

TECHNICAL CHARACTERISTICS OF THE PROCESSING MODULE MECHANICAL

- Apparatus front 150x200mm.
- Depth 80mm.

ELECTRICAL

- Power: 230VAC. +/-10% (50-60Hz.).
- Electrical consumption: 5VA.

ENVIRONMENTS

- Environmental operating temperature between 0 and 50°C.
 - Relative humidity of operation between 0 and 80% without condensation.
- SIGNAL INPUTS:**
- Three PT100 type inputs.
 - Protection against the breakage of the PT100 sensor incorporated. In the case of failure the variable shown is "----".
 - Conditions of reference: 220VAC. of power, 20°C of environment and 50% relative humidity, the typical error is less than or equal to ± 0.2 units +/- 0.1% scale range.
 - Two mA type inputs.
 - Voltage output > +12 VCC. Maximum charge 42mA. to feed two external converters, HUBA CONTROL 506 model or equivalents.
 - Internal resistance of 25 for the mA inputs.
 - Signal from a linearized temperature transmitter 4...20mA.
 - Protection against the breakage 4/20 loop (less than 2mA. or greater

than 22mA). Incorporated. In this case the variable shown is "----".

- Conditions of reference: 220VAC. of power, 20°C of environment and 50% relative humidity, the typical error is less than or equal to ± 0.2 units +/- 0.2% range total.
- Digital inputs.
- End of line remote cooling. If 220VAC. appears in the input the order to cool is detected. The treatment is different in the klixon inputs and break downs because of a lack of external power which would provoke a situation of permanent cold.
- Klixon limit switch. If 0VAC appears in the input. End of defrost.
- Breakdown limit switch. If 0VAC. appears in the input. Breakdown The detection time of these inputs is approximately 2 seconds.

CONTROL OUTPUTS

- A triac output of 0.2A. 220VAC. for the VSL output.
- A triac output of 0.2A. 220VAC. for the fan output.
- A triac output of 0.2A. 220VAC. for the defrost output.
- A triac output of 0.2A. 220VAC. for the OK output (no alarm).
- A triac output of 0.2A. 220VAC. for the auxiliary output.

COMMUNICATIONS:

- Communications line between the CONTROL MODULE and the RS485 type CONTROL modules.
- The equipment communicates in a Master-Slave format, the Master establishes the communication. The Master communicates with each specific Slave and said Slave returns a response. In this case the CONTROLS will be Slaves and the Master will be the COMMAND. The protocol used is MODBUS.

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