**3. INSTALLATION**

The controller must be installed in a place protected from vibrations, water and corrosive gases, and where the ambient temperature does not surpass the values specified in the technical data.

In order for the panel mounting controllers to be suitable, the housing must be N5 protection; the housing should be installed properly between the apparatus and the perimeter of the panel cut-out where it is to be fitted. In order to give a correct reading, the sensor has to be installed in a place without heat influences other than the temperature that’s to be measured or controlled.

**3.1 FASTENING UNITS FOR PANEL MOUNTING**

To fit the panel, place the fasteners 1 over the sliders 2 as shown in the figure. Move the fasteners in the direction of the arrow. By pressing tab 3, the fasteners may be moved in the opposite direction of the arrow.

**3.2 FASTENING UNITS FOR DIN RAIL MOUNTING**

Relays

- Relay 4 ALARM for alarms.
- Relay 3 FAN to control the fans in versions of 3 or more relays.
- Relay 2 DEF for the defrost in operation, in versions of 2 relays.
- Relay 1 COOL permanent: Refrigeration COOL relay (compressor) is energised.

Panel mounting

- Panel mounting controllers to be suitable having IP65 protection, the gasket should be installed properly between the apparatus and the perimeter of the panel cut-out where it is to be fitted. In order to give a correct reading, the sensor has to be installed properly between the apparatus and the perimeter of the panel cut-out where it is to be fitted.

**6. FRONT PANEL FUNCTIONS**

The reference = 6 means a version with a digital input.

**6.1 PANEL MOUNTING MODELS**

LEDs:

- **COOL LED** - Refrigeration COOL relay (compressor) is energised.
- **FAN LED** - Control FAN relay is energised.
- **DEF LED** - Alarm detected, relay de-energised, but display maintained.
- **PR LED** - Percentage time inside rating conditions (%).
- **H2 LED** - Time elapsed from the last defrost (hours).
- **H1 LED** - Defrost duration time (minutes).
- **tLP LED** - Partial time with control relay (compressor) energised.
- **tPo LED** - Percentage time inside rating conditions (%).
- **Un LED** - Unit in operation.

**6.2 D2K RAIL MOUNTING MODELS**

LEDs:

- **COOL LED** - Refrigeration COOL relay (compressor) is energised.
- **FAN LED** - Control FAN relay is energised.
- **DEF LED** - Alarm detected, relay de-energised, but display maintained.

**7. FUNCTION AKOTIM**

Programming this function in P2 of parameters you can display (limitable by password) L5 the data of the last complete cycle.

**8. PARAMETERS TRANSFER**

AKO-5003 A portable server without supply to which, the parameters programmed in AKOTIM powered units with centralised system for display, logging, alarms, management from PC software. This makes a centralised system for display, logging, alarms, management from PC software.

**9. PC COMMUNICATION**

**AKO-80024**

Software for controllers and data loggers using a PC/graphic computer.
12. MENUS, PARAMETERS AND MESSAGES

The values in the Def. columns are for factory set. If a need is presented by means of the PI programming parameter (it will automatically take the values listed in Def. column).

<table>
<thead>
<tr>
<th>Level 1</th>
<th>Menus</th>
<th>Parameter</th>
<th>Description</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Default</th>
</tr>
</thead>
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<tr>
<td>1.00</td>
<td>SIMULTANEOUSLY</td>
<td>MENU</td>
<td>LEVEL 1</td>
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<td>1023</td>
<td>0</td>
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<tr>
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<td>SIMULTANEOUSLY</td>
<td>Level 1 Menus</td>
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<td>0</td>
</tr>
<tr>
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<td>SIMULTANEOUSLY</td>
<td>Level 2 Menus</td>
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<td>0</td>
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<tr>
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<td>SIMULTANEOUSLY</td>
<td>Level 3 Menus</td>
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<td>0</td>
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<tr>
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<td>SIMULTANEOUSLY</td>
<td>Parameters</td>
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<tr>
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<td>Messages</td>
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</tr>
</tbody>
</table>

11. PROGRAMMING

ADJUSTING THE SET POINT TEMPERATURE

The set point default value is 0°C.

Press the DISPLAY SET POINTS key for at least 5 seconds, to display the current temperature value and the LED “EP” will start flashing.

Press the key “|” to adjust the SET POINT to the required value.

Press the ACCEPT keys to set the new value. When this operation is carried out, the controller will automatically return to the current temperature display status.

PARAMETERS

The parameters should only be programmed or modified by personnel who are familiar with the operating and maintenance characteristics of the equipment where it is applied.

Level 1 Menus

- Press the “|” key to access the next menu and the “|” key to return to the previous one.

Level 1 Values

- To display the current value of any parameter, press the “|” key simultaneously for at least 10 seconds. The LED “EP” will keep flashing until the parameter is displayed, it can be modified by pressing the “|” keys.

- Press the ACCEPT keys to set the new value. When this operation is carried out, the program returns to Level 2 (press the “|” key to return to Level 1 menu).

NOTE: The key is pressed for 25 seconds in any of the previous steps, the controller will automatically return to the current temperature display status.

Level 2 Values

- To display the current value of any parameter, press the “|” key simultaneously for at least 10 seconds. The LED “EP” will keep flashing until the parameter is displayed, it can be modified by pressing the “|” keys.

- Press the ACCEPT keys to set the new value. When this operation is carried out, the program returns to Level 3 (press the “|” key to return to Level 2 menu).

Level 3 Values

- To display the current value of any parameter, press the “|” key simultaneously for at least 10 seconds. The LED “EP” will keep flashing until the parameter is displayed, it can be modified by pressing the “|” keys.

- Press the ACCEPT keys to set the new value. When this operation is carried out, the program returns to Level 3 (press the “|” key to return to Level 2 menu).

Note: The key is pressed for 25 seconds in any of the previous steps, the controller will automatically return to the current temperature display status without modifying any of the parameter values.