

BIT2OC11

We thank you for choosing an LAE controller. Before proceeding to the installation of the BIT20, please read this instructions sheet carefully: only in this way you will obtain maximum performances and safety.

1. INSTALLATION

1.1 The BIT20 has got a size of 110x87x55 mm; it must be secured to the panel with three screws or rivets to be inserted into the suitable slots. Protection is IP30, therefore please locate the unit in a position ensuring that no liquid infiltrates and damages the unit.

1.2 The unit must work with ambient temperature between $-10^{\circ}\dots+50^{\circ}\text{C}$ and 15%...80% relative humidity. To reduce the effects of electro-magnetic interference, locate the probe cable and the unit as away as possible from power lines.

1.3 Probe, power supply and output must be connected strictly according to the indications appearing on the board; the cables can pass through the hole on the unit side. For supply voltage and maximum load please read the label inside the enclosure.

Caution: where delicate or valuable products have to be maintained under strict conditions, please use a different controller for limit and alarm functions.

2. CONTROL PARAMETERS

The adaptation of the BIT20 to the system that it controls is achieved through the control parameters. BIT20 allows an accurate setting of the main control parameters via dipswitches, enhanced by some other fixed control values. The adjustable control parameters are:

A) **Setpoint:** to select the setpoint range, move just one of the *range* selectors to YES ($-35\dots-20$; $-19\dots-4$; $-3\dots+12^{\circ}\text{C}$). After having done this, by moving one or more of the *setpoint modification* selectors to YES (+ $\frac{1}{2}$), you add the value reported on their side to the setpoint range minimum limit, obtaining in this way the actual setpoint value (see Figure 1)

B) **Hysteresis:** the on switching differential starts from 1°K minimum to which, through the relevant switches, you may add up to 7°K . The thermostat hysteresis is therefore adjustable from 1 (all NO) to 8°K (all YES) in 1°K steps.

C) **Defrost frequency:** the number of defrosts per 24 hours ranges from a maximum of 7 and a minimum of 1 per day. Setting all switches to NO excludes defrost.

D) **Defrost duration:** duration ranges from a fixed minimum of 10 minutes (all switches NO) to a maximum of 80 minutes (all YES) in 10 minute steps.

In Figure 1 some examples of the possible combinations appear.

3. TEMPERATURE CONTROL

Temperature control is based on the comparison between temperature TA and the current setpoint. The refrigerator on switching temperature is determined by adding the selected hysteresis to the setpoint. Ex.: setpoint= -20 ; hysteresis=04, relay off with TA= -20°C and on with TA= -16°C .

The actual compressor cut-in is only possible when the minimum 3 minute off time has elapsed since the last cutout. If probe TA fails, then an automatic compressor run time selection takes place, depending on the setpoint. For setpoints lower than -10°C , the compressor is always on, differently it works at 40% (3 minutes ON, 4 minutes OFF).

4. DEFROST

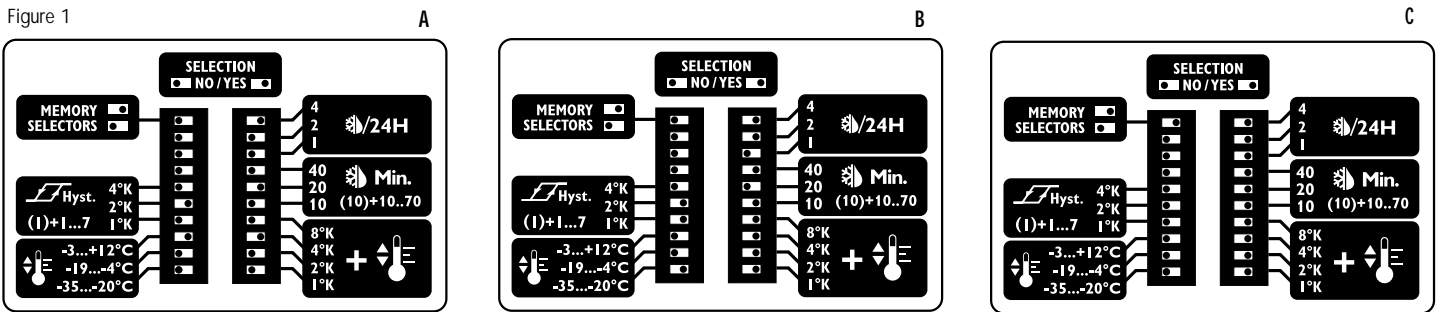
Off cycle defrost takes place automatically when the built-in timer matches the time needed to obtain the selected defrost spread over 24 hours. For example: by setting 4 defrosts per day, defrost will be started every 6 hours. This timer is cleared when the unit is powered up and every time defrost starts. Defrost lasts for the time set via the dipswitches plus 2 minutes extra time. Defrost may also be induced manually, by pressing the button located on the control unit.

WARRANTY

LAE electronic Srl warrant that their products are free of any defects in workmanship and materials for a period of 1 (one) year from date of production shown on the enclosure. LAE electronic Srl shall only repair or replace those products of which defects are due to LAE electronic Srl and recognised by their technicians. LAE electronic Srl are not liable for damages resulting from malfunctions of the products.

Defects due to exceptional operating conditions, misapplication and/or tampering will void the warranty.

All transport charges for returning the product to the manufacturer, after prior authorisation by LAE electronic Srl, and for the return to the purchaser are always for the account of the purchaser.



A. Operating mode = SELECTORS; Setpoint = +1°C (-3+4); Hysteresis = 3°C (1+2); Defrost frequency = 4/24 hours; Defrost duration = 30 minutes (10+20).

B. Operating mode = SELECTORS; Setpoint = -20°C (-35+1+2+4+8); Hysteresis = 4°C (1+1+2); Defrost frequency = 6/24 hours (2+4); Defrost duration = 60 minutes (10+10+40).

C. MEMORY: OPERATING MODE NOT PERMITTED!

WIRING DIAGRAM

