

DIMENSIONAL DATA

OVERALL DIMENSIONS

The dimensions are expressed in millimetres and inches (third-scale drawing).

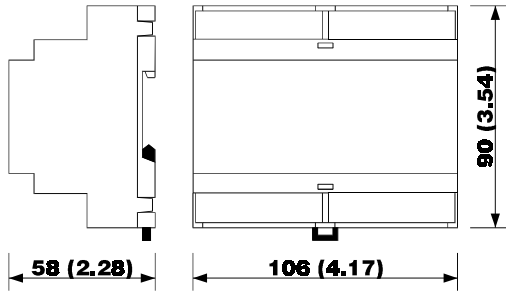


Fig. 3
ds66me.wmf

INSTALLATION

WITH THE FIXING SYSTEM SUGGESTED BY THE BUILDER

On DIN EN 50022 standard rail according with DIN 43880 norms (third-scale drawing).

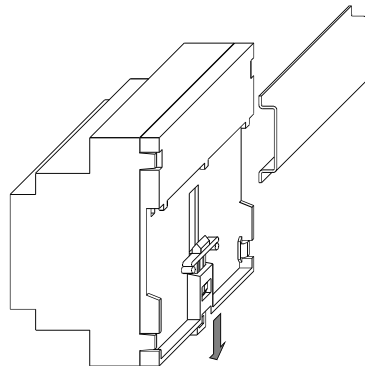


Fig. 4
ms66m.wmf

ELECTRICAL CONNECTION

CONNECTIONS TO DERIVE

Instance of typical application.

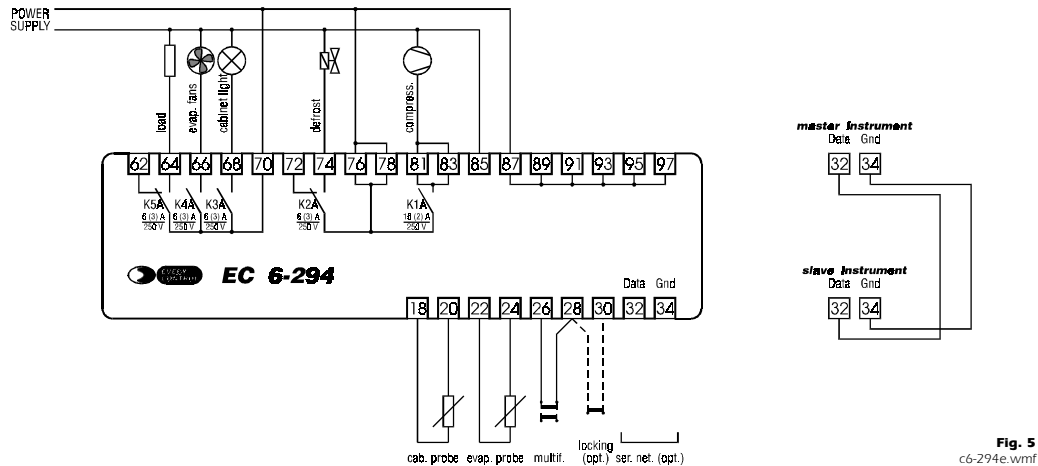


Fig. 5
c6-294e.wmf

BUILDER DATA

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EC 6-294

ON-OFF digital controller for one 1½ HP compressor, evaporator fans, defrost (for temperature-time), cabinet light and ON-OFF outputs management

Operating instructions

Version 1.00 of November the twenty-ninth 2002

File ec6294e_v1.00.pdf

PT

IMPORTANT:

The use of this new instrument is easy; but for safety reasons, it is important read these instructions carefully before the installation or before the use and follow all additional informations.

It is very important keep these instructions with the instrument for future consultations.



Fig. 1
f6-294.wmf

GENERAL INFORMATIONS

WHAT IS THE USE

EC 6-294 is an ON-OFF digital controller studied for refrigerating systems management which basic characteristics are the one 1½ HP compressor, evaporator fans, defrost (for temperature-time), cabinet light and ON-OFF outputs management and the "ON STAND-BY" key; besides, the instrument is provided with one multifunction digital input configurable to interact on the outputs activity (it presents a request of a defrost cycle, it forces the cabinet light output to the status ON, etc.).

In factory the instrument gets preset to accept at the measure inputs PTC/NTC probes used in refrigeration field at the moment.

EC 6-294 is available in the 106 x 90 mm (4.17 x 3.54 in., 6 DIN modules) case and it is studied for DIN standard rail installation.

GETTING STARTED

INSTALLATION

EC 6-294 was studied for DIN EN 50022 standard rail installation according with DIN 43880 norms (the overall dimensions are related in Fig. 3, the fixing system suggested by the builder is related in Fig. 4).

ADDITIONAL INFORMATIONS

- verify if the using conditions (ambient temperature, humidity, etc.) are within the limits indicated by the builder (see the chapter TECHNICAL DATA)
- install the instrument in a location with a suitable ventilation, to avoid the internal overheating of the instrument
- do not install the instrument near surfaces that can obstruct the air-grating (carpets, covers, etc.), heating sources (radiators, hot air ducts, etc.), locations subject to direct sunlight, rain, humidity, excessive dust, mechanical vibrations or bumps, devices with strong magnets (microwave ovens, big speakers, etc.)
- according with the safety norms, the protection against possible contacts with electrical parts and parts protected with functional insulation only must be ensured through a correct installation procedure of the instrument: all parts that ensure the protection must be fixed so that they can not be removed if not with a tool.

ELECTRICAL CONNECTION

EC 6-294 is provided with three screw terminal blocks for cables up to 2.5 mm² (0.38in.², for the connection to the power supply, inputs and outputs) located on the instrument frontal panel (the connections to derive are related in Fig. 5 and they are checkable on the polyester label stuck on the instrument case).

ADDITIONAL INFORMATIONS

- if the instrument is brought from a cold to a warm location, the humidity may condense inside the instrument; wait about an hour before supply the instrument
- verify if the operating power supply voltage, electrical frequency and power of the instrument correspond to the local power supply (see the chapter TECHNICAL DATA)
- do not supply more instruments with the same transformer
- if the instrument is installed on a vehicle, its power supply must be derived directly from the battery of the vehicle
- give the instrument a protection able to limit the current absorbed in case of failure
- the instrument remains connected to the local power supply as long as the terminals 85 and 87 are derived to the local power supply, even if the instrument is apparently turned off
- if the instrument is supplied from low voltage use low voltage loads
- give the probes a protection able to insulate them against possible contacts with metal parts or use insulated probes
- give the outputs a protection able to protect them against short circuit and overload do not try to repair the instrument; for the repairs apply to highly qualified staff
- if you have any questions or problems concerning the instrument please consult Every Control (see the chapter BUILDER DATA).

USE

PRELIMINARY INFORMATIONS

After derived the connections related in Fig. 5, the instrument repropose the last settings stored.

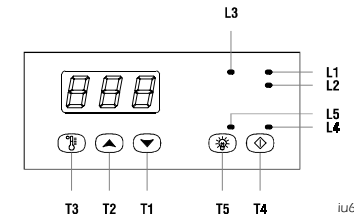


Fig. 2
iu6294.wmf

Keeping pushed for two seconds at least the key T4 the instrument turning ON (status ON) or turning OFF (status STAND-BY), except during the working setpoint setting and the configuration parameters setting procedures; the LED L4 is associated to the instrument status, it is turned ON during the status STAND-BY and it is turned OFF during the status ON.

During the status STAND-BY the display is turned OFF and all outputs are forced to the status OFF.

During the status ON, in the course of the normal functioning the instrument displays the temperature read by the cabinet probe; if an alarm should be active the instrument displays the alarm code flashing and the buzzer utters an intermittent beep as long as the cause that has given it does not disappear (see the chapter SIGNALS AND ALARMS); pressure on the key T1 during an alarm permits to silence the buzzer.

EC 6-294 is provided with one working setpoint and with some configuration parameters that get stored in a non volatile memory and that permit to set the instrument according with one's requirements (see the chapter CONFIGURABILITY).

The output K 1A is associated to the compressor and to the working setpoint, it remains activated continuously as long as the temperature read by the cabinet probe reaches the working setpoint and when it rises above the working setpoint of the hysteresis value (differential) the output gets reactivated, except during a defrost and a dripping.

Passed the defrost interval from the moment of the instrument start or from the moment in which the instrument presents a request of a defrost cycle, if the conditions permit it (the temperature read by the evaporator probe must be below the defrost stopping setpoint) the instrument automatically presents the following request of a defrost cycle.

A defrost cycle provides three phases (defrost, dripping and evaporator fans stoppage) connected in cascade since the end of one automatically determines the passage to the following one.

The output K 2A is associated to the defrost and it remains continuously activated during the defrost as long as the temperature read by the evaporator probe reaches the defrost stopping setpoint when the defrost ends and the instrument automatically moves to the dripping; if the instrument was set to manage defrost to resistances (electrical) during a defrost the compressor output gets forced to the status OFF; if the instrument was set to manage hot gas defrost (reversal of cycle) during a defrost the compressor output remains continuously activated.

Passed the dripping length from the moment of the defrost end the instrument automatically moves to the evaporator fans stoppage; during a dripping the compressor output gets forced to the status OFF.

Passed the evaporator fans stoppage length from the moment of the dripping end the defrost cycle ends; during an evaporator fans stoppage the evaporator fans output activation gets disabled.

If the conditions permit it (the temperature read by the evaporator probe must be below the defrost stopping setpoint) keeping pushed the key T2 for four seconds at least the instrument presents a request of a defrost cycle.

The output K 3A is associated to the cabinet light: pushing and releasing the key T5 the output

gets activated or deactivated, except during the working setpoint setting and the configuration parameters setting procedures; the LED L5 is associated to the output status, it is turned ON when the output is activated and it is turned OFF when the output is deactivated.

The output K 4A is associated to the evaporator fans and to the output deactivation setpoint, it remains continuously activated as long as the temperature read by the evaporator probe reaches the output deactivation setpoint, when it falls below the output deactivation setpoint of the hysteresis value (differential) the output gets reactivated and during the status OFF of the compressor output the output gets forced to the status OFF, except what established with the parameters of the family F.

The output K 5A is associated to the instrument status: it is forced to the status ON during the status ON and it is forced to the status OFF during the status STAND-BY.

Activating the multifunction digital input and the locking digital input (available on request instead of a relay output) the instrument interacts on the outputs activity according what established with the parameters of the family I.

WORKING SETPOINT SETTING (WORKING TEMPERATURE)

To modify the working setpoint value keep pushed the key **T3** (the instrument displays the actual value) and at the same time push and release over and over the key **T1** or **T2** as long as the instrument displays the desired value (keeping pushed the key **T1** or **T2** the value gets decreased or increased more quickly); after the modification release the key **T3** last; during the pressure of the key **T3** the LED L1 flashes quickly to indicate that a working setpoint setting procedure is running (to the release of the key **T3** the instrument automatically turns out from the working setpoint setting procedure).

ADDITIONAL INFORMATIONS

- for the whole period of a corrupted memory data alarm the access to the working setpoint setting procedure is refused
- the working setpoint is programmable within the limits established with the parameters r1 and r2
- the working setpoint value gets stored in a non volatile memory even if a lack of power supply happens.

CONFIGURATION PARAMETERS SETTING

Configuration parameters are arranged on two levels, to protect the most tricky settings against undesirable violations and they are arranged in families that can be recognized through the initial letter of the label.

To gain access to the first level keep pushed at the same time for four seconds at least the keys **T1** and **T2** (passed four seconds the instrument displays the label **PA**).

To select a parameter of the first level push and release over and over the key **T1** or **T2** as long as the instrument displays the label of the desired parameter.

To modify the parameter value keep pushed the key **T3** (the instrument displays the actual value) and at the same time push and release over and over the key **T1** or **T2** as long as the instrument displays the desired value (keeping pushed the key **T1** or **T2** the value gets decreased or increased more quickly); after the modification release the key **T3** last (to the release of the key **T3** the instrument displays the label of the parameter again).

To gain access to the second level enter inside the first level and select the label **PA**.

Keep pushed the key **T3** (the instrument displays the actual value) and at the same time push and release over and over the key **T1** or **T2** as long as the instrument displays -19 (keeping pushed the key **T1** or **T2** the value gets decreased or increased more quickly); after the modification release the key **T3** last (to the release of the key **T3** the instrument displays the label **PA** again); keep pushed at the same time for four seconds at least the keys **T1** and **T2** (passed four seconds the instrument displays the first parameter of the second level).

To select a parameter of the second level push and release over and over the key **T1** or **T2** as long as the instrument displays the label of the desired parameter.

To modify the parameter value keep pushed the key **T3** (the instrument displays the actual value) and at the same time push and release over and over the key **T1** or **T2** as long as the instrument displays the desired value (keeping pushed the key **T1** or **T2** the value gets decreased or increased more quickly); after the modification release the key **T3** last (to the release of the key **T3** the instrument displays the label of the parameter again).

To turn out from the configuration parameters setting procedure keep pushed at the same time for four seconds at least the keys **T1** and **T2** or do not operate with the keys for fifty seconds at least (time-out exit).

ADDITIONAL INFORMATIONS

- for the whole period of a corrupted memory data alarm the access to the configuration parameters setting procedure is refused
- the modification of the parameter A value has not immediate effect; to obtain this effect, after the modification turn OFF and turn ON again the instrument
- the modification of a parameter value which unit of measure is the hour or the minute or the second has not immediate effect; to obtain this effect it must not be executed during the course of the value
- the modification of the parameters u1, u2, u3, u4 and u5 value has immediate effect; to avoid damages to the connected users, it must be executed during the status STAND-BY
- the configuration parameters values get stored in a non volatile memory even if a lack of power supply happens.

NETWORK USE

PRELIMINARY INFORMATIONS

On request the instrument can be preset to work in a serial network of instruments (slaves) managed from a master instrument in order to implement some resources in the slaves instruments in correspondence with the implementation of the same resources in the master instrument (compressor output status during the normal functioning, presentation of a request of a defrost cycle, etc.).

After derived the connections related in Fig. 5, the master instrument repropose the last settings stored (see the chapter USE), the resources management of the slaves instruments locally happens (see the chapter USE), except what established with the parameters of the family n.

CONFIGURABILITY

WORKING SETPOINT

LABEL	MIN.	MAX.	U.M.	ST.	WORKING SETPOINT
r1	r2	(*)	0		working setpoint

It establishes the temperature associated to the compressor output.

CONFIGURATION PARAMETERS

LABEL	MIN.	MAX.	U.M.	ST.	PASSWORD
PA	-55	99	---	0	password (\$)

It is the password that permits to gain access to the second level.

LABEL	MIN.	MAX.	U.M.	ST.	MEASURE INPUTS
/0	1	4	---	1	kind of probe

It establishes the kind of probe that the instrument must recognize to its measure inputs, as indicated:

1 = PTC probe 2 = reserved
3 = NTC probe 4 = reserved.

/1	-55	+99	(*)	/8	0	calibration (\$)
----	-----	-----	-----	----	---	------------------

It establishes a threshold to add algebraically to the signals coming from the measure inputs (for instance to correct the signals).

/2	0	6	---	3	digital filter
----	---	---	-----	---	----------------

It establishes a time constant to apply to the signals coming from the measure inputs, as indicated:

0 = 0 sec. 1 = 0.4 sec.
2 = 1.2 sec. 3 = 3.0 sec.
4 = 8.0 sec. 5 = 19.8 sec.
6 = 48.0 sec.

/8	0	1	---	1	unit of measure
----	---	---	-----	---	-----------------

It establishes the unit of measure with which the temperature gets displayed, as indicated:

0 = the unit of measure is the Fahrenheit degree
1 = the unit of measure is the Celsius degree.

/A	0	1	---	1	evaporator probe enabling
----	---	---	-----	---	---------------------------

It establishes if to enable the evaporator probe, as indicated:

0 = the evaporator probe is disabled
1 = the evaporator probe is enabled.

LABEL	MIN.	MAX.	U.M.	ST.	ON-OFF TEMPERATURE REGULATOR ASSOCIATED TO THE WORKING SETPOINT AND TO THE COMPRESSOR OUTPUT
-------	------	------	------	-----	--

r0 +1 +15 (*) +2 hysteresis (differential) (\$))

It establishes the hysteresis (differential) relative to the working setpoint.

r1	-55	+99	(*)	-50	minimum working setpoint programmable
----	-----	-----	-----	-----	---------------------------------------

It establishes the minimum working setpoint programmable; the instrument automatically verifies if the value established with the parameter r1 is below the maximum working setpoint programmable established with the parameter r2.

r2	-55	+99	(*)	+50	maximum working setpoint programmable
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It establishes the maximum working setpoint programmable; the instrument automatically verifies if the value established with the parameter r2 is above the minimum working setpoint programmable established with the parameter r1.

LABEL	MIN.	MAX.	U.M.	ST.	COMPRESSOR OUTPUT PROTECTION
-------	------	------	------	-----	------------------------------

C0 0 240 (**) 1 disabling time to the output activation from the instrument start

It establishes the time that disables the output activation from the moment of the instrument start.

C1	0	240	(**)	5	disabling time to the output activation from the previous activation
----	---	-----	------	---	--

It establishes the time that disables the output activation from the moment of the previous output activation.

C2	0	240	(**)	3	disabling time to the output activation from the previous deactivation
----	---	-----	------	---	--

It establishes the time that disables the output activation from the moment of the previous output deactivation.

C4	0	1	---	0	disabling time to the output activation and deactivation
----	---	---	-----	---	--

It establishes if to disable the output activation and deactivation for a fixed time, as indicated:

0 = inactive
1 = the output activation and deactivation get disabled for 3 sec.

C5	1	240	(**)	10	cycle time for the output activation during a cabinet probe failure alarm
----	---	-----	------	----	---

It establishes the cycle time for the output activation due to the contribution of the percentage established with the parameter C6 during a cabinet probe failure alarm.

C6	0	100	%	50	percentage of the cycle time during which the output gets activated during a cabinet probe failure alarm
----	---	-----	---	----	--

It establishes the percentage of the cycle time established with the parameter C5 during which the output must remain continuously activated in the course of the cycle time during a cabinet probe failure alarm, except what established with the disabling times to the compressor output activation.

LABEL	MIN.	MAX.	U.M.	ST.	DEFROST REGULATOR
-------	------	------	------	-----	-------------------

d0 0 99 (**) 8 defrost interval

It establishes the time interval that pass from the moment of the instrument start or from the moment in which the instrument presents a request of a defrost cycle to the moment in which the instrument automatically presents the following request of a defrost cycle.

If the parameter d0 has value 0 the instrument never automatically presents a request of a defrost cycle, except what established with the parameter d4.

Display: 3-digit display 12.5 mm (0.49 in.) high red LED display with automatic minus sign, output status indicators, instrument status indicator.

Outputs: five relays of which one 16 (2) A @ 250 Vac relay for one 1½ HP @ 250 Vac compressor (NO contact) management, three 6 (3) A @ 250 Vac relays for evaporator fans (NO contact), defrost system management (change-over contact) and for cabinet light control (NO contact) and one 6 (3) A @ 250 Vac relay associated to the instrument status (change-over contact).

Kind of defrost managed: to resistances (electrical) and to hot gas (reversal of cycle), automatic, manual and remote.

Defrost management: for interval, stopping temperature and maximum length.

HOW TO ORDER

CODING SYSTEM

Instrument name: EC 6-294.
Desired measure input: P (for PTC/NTC probes).
Desired power supply: 220 (230 Vac).

d1 0 1 --- 1 kind of defrost

It establishes the kind of defrost that the instrument must manage, as indicated:

- 0 = to resistances (electrical)
- 1 = to hot gas (reversal of cycle).

d2 -55 +99 (*) +2 defrost stopping setpoint

It is significant exclusively if the parameter /A has value 1, it establishes the temperature to which a defrost gets stopped and it is referred to the evaporator probe.

d3 1 99 (**) 15 defrost maximum length

It establishes the defrost maximum length.

Passed the defrost maximum length from the moment in which the instrument activates a defrost cycle, if the temperature read by the evaporator probe is below the setpoint established with the parameter d2 the defrost ends.

d4 0 1 --- 0 defrost cycle at the instrument start

It establishes if the instrument automatically must present a request of a defrost cycle at the moment of the instrument start, as indicated:

- 0 = inactive
- 1 = the instrument automatically presents a request of a defrost cycle at the moment of the instrument start.

d5 0 99 (**) 0 delay to a defrost cycle activation from the instrument start

It is significant exclusively if the parameter d4 has value 1 or if the parameter i0 has value 1, it establishes the delay with which the instrument automatically presents a request of a defrost cycle from the moment of the instrument start and from the moment of the multifunction digital input activation.

A manual presentation of a request of a defrost cycle during the count of the delay established with the parameter d5 clears the delay.

d6 0 1 --- 1 locking of the displayed temperature from a defrost cycle activation

It establishes if to lock the displayed temperature from the moment in which the instrument activates a defrost cycle, as indicated:

- 0 = inactive
- 1 = during a defrost, a dripping and as long as the temperature read by the cabinet probe reaches the working setpoint, the instrument displays the temperature read by the cabinet probe in the moment in which the instrument activates a defrost cycle.

d7 0 15 (**) 2 dripping length

It establishes the dripping length.

d9 0 1 --- 0 disabling times to the compressor output activation override

It is significant exclusively if the parameter d1 has value 1, it establishes if to clear the disabling times to the compressor output activation in the moment in which the instrument presents a request of a defrost cycle, as indicated:

- 0 = inactive
- 1 = in the moment in which the instrument presents a request of a defrost cycle the disabling times to the compressor output activation get cleared.

dA --- --- (*) --- evaporator probe reading (S)

It permits to display the temperature read by the evaporator probe.

dB 0 1 --- 0 times base

It establishes the unit of measure of the parameters expressed in time intervals, except for the parameters L3 and n4, as indicated:

- 0 = the unit of measure of the parameter d0 is the hour and the unit of measure of the parameters C0, C1, C2, C5, d3, d5, d7, A3, A5, A6, A7, F5, i4 and i5 is the minute
- 1 = the unit of measure of the parameter d0 is the minute and the unit of measure of the parameters C0, C1, C2, C5, d3, d5, d7, A3, A5, A6, A7, F5, i4 and i5 is the second.

LABEL MIN. MAX. U.M. ST. ALARM REGULATOR

A0 +1 +15 (*) +2 hysteresis (differential)

It establishes the hysteresis (differential) relative to the parameters A1 and A2.

A1 -55 0 (*) 0 lower temperature alarm set relative to the working setpoint

It establishes a threshold to add algebraically to the working setpoint; the value so obtained establishes the temperature below which the lower temperature alarm gets activated and it is referred to the cabinet probe.

If the parameter A1 has value 0 the lower temperature alarm never gets activated.

A2 0 +99 (*) 0 upper temperature alarm set relative to the working setpoint

It establishes a threshold to add algebraically to the working setpoint; the value so obtained establishes the temperature above which the upper temperature alarm gets activated and it is referred to the cabinet probe.

If the parameter A2 has value 0 the upper temperature alarm never gets activated.

A3 0 240 () 120 disabling time to the temperature alarm activation from the instrument start**

It establishes the time that disables the temperature alarm activation from the moment of the instrument start.

A5 -1 120 () 30 disabling time to the buzzer activation for the multifunction digital input alarm indication**

It is significant exclusively if the parameter i0 has values different to 0, it establishes the time that disables the buzzer activation for the multifunction digital input alarm indication from the moment in which the multifunction digital input alarm happens.

If the parameter A5 has value -1 during a multifunction digital input alarm the buzzer gets not activated.

A6 0 240 () 5 disabling time to the temperature alarm activation**

It establishes the time that disables the temperature alarm activation from the moment in which the temperature alarm happens.

A7 0 240 () 15 disabling time to the temperature alarm activation from the defrost cycle end**

It establishes the time that disables the temperature alarm activation from the moment of the

defrost cycle end.

LABEL MIN. MAX. U.M. ST. EVAPORATOR FANS REGULATOR ASSOCIATED TO THE EVAPORATOR FANS OUTPUT

F1 -55 +99 (*) -1 output deactivation setpoint

It is significant exclusively if the parameter /A has value 1 and if the parameter F7 has value 3 or 4, according with the modality established with the parameter F6, it establishes the temperature to which the output gets deactivated and it is referred to the evaporator probe.

F2 +1 +15 (*) +2 hysteresis (differential)

It is significant exclusively if the parameter /A has value 1 and if the parameter F7 has value 3 or 4, it establishes the hysteresis (differential) relative to the parameter F1.

F4 0 2 --- 0 output functioning during the defrost and the dripping

It establishes the output functioning during a defrost and a dripping, as indicated:

- 0 = during a defrost and a dripping the output gets forced to the status OFF
- 1 = during a defrost and a dripping the output gets forced to the status ON
- 2 = the output functioning during a defrost and a dripping gets established with the parameter F7.

F5 0 15 () 2 evaporator fans stoppage length**

It establishes the stoppage length.

F6 0 1 --- 0 kind of output deactivation setpoint

It is significant exclusively if the parameter /A has value 1 and if the parameter F7 has value 3 or 4, it establishes the kind of output deactivation setpoint that the instrument must manage, as indicated:

- 0 = absolute (the output deactivation setpoint establishes the temperature to which the output gets deactivated)
- 1 = relative to the temperature read by the cabinet probe (the value obtained subtracting the absolute value of the output deactivation setpoint to the temperature read by the cabinet probe establishes the temperature to which the output gets deactivated).

F7 0 4 --- 4 output functioning during the normal functioning

It establishes the output functioning during the normal functioning, as indicated:

- 0 = during the normal functioning the output gets forced to the status OFF
- 1 = during the normal functioning the output gets forced to the status ON
- 2 = during the normal functioning the output gets forced to the status ON and during the status OFF of the compressor output the output gets forced to the status OFF
- 3 = during the normal functioning the output is associated to the setpoint established with the parameter F1, it remains continuously activated as long as the temperature read by the evaporator probe reaches the setpoint established with the parameter F1 and when it falls below the setpoint established with the parameter F1 of the hysteresis value (differential) established with the parameter F2 the output gets reactivated
- 4 = during the normal functioning the output is associated to the setpoint established with the parameter F1, it remains continuously activated as long as the temperature read by the evaporator probe reaches the setpoint established with the parameter F1, when it falls below the setpoint established with the parameter F1 of the hysteresis value (differential) established with the parameter F2 the output gets reactivated and during the status OFF of the compressor output the output gets forced to the status OFF

LABEL MIN. MAX. U.M. ST. DIGITAL INPUTS

i0 0 5 --- 4 action given during the multifunction digital input activation

It establishes the action given during the multifunction digital input activation, as indicated:

- 0 = inactive
- 1 = if the conditions permit it (the temperature read by the evaporator probe must be below the setpoint established with the parameter d2) activating the multifunction digital input the instrument presents a request of a defrost cycle
- 2 = during the multifunction digital input activation the cabinet light output gets forced to the status ON
- 3 = during the multifunction digital input activation the compressor output, except what established with the disabling times to the compressor output activation and the cabinet light output get forced to the status ON
- 4 = during the multifunction digital input activation the compressor and evaporator fans outputs get forced to the status OFF and the cabinet light output gets forced to the status ON
- 5 = during the multifunction digital input activation the evaporator fans output gets forced to the status OFF and the cabinet light output gets forced to the status ON.

If the parameter i0 has value 2, 3, 4 or 5 pressure on the key **T5** during a multifunction digital input alarm does not modify the cabinet light output status but it is indicated from the turning ON (if before the multifunction digital input alarm activation the cabinet light output was deactivated) or from the flashing (if before the multifunction digital input alarm activation the cabinet light output was activated) of the LED **L5**.

If the parameter i0 has value 3 or 4 the multifunction digital input alarm activation that happens during a defrost cycle interacts on the compressor output status from the moment of the defrost cycle end.

i1 0 1 --- 0 kind of contact of the multifunction digital input

It establishes the kind of contact of the multifunction digital input, as indicated:

- 0 = NO contact
- 1 = NC contact.

i2 0 2 --- 0 action given during the locking digital input activation (®)

It establishes the action given during the locking digital input activation, as indicated:

- 0 = inactive
- 1 = during the locking digital input activation the compressor output gets forced to the status OFF
- 2 = during the locking digital input activation the compressor output gets forced to the status OFF, from the moment of the locking digital input deactivation the compressor output activation gets disabled for the time established with the parameter i5, in the moment in which the compressor output gets reactivated the instrument increases a locking digital input alarms counter, when the locking digital input alarms counter reaches the number established with the parameter i3 the compressor output gets definitively forced to the status OFF (instrument locking); to obtain the instrument unlocking turn OFF and turn ON again the instrument.

communication

n0	0	2	—	0	instrument functioning in the network (®)
n1	0	8	—	0	instrument address (®)
n3	0	1	—	0	enabling to work as slave instrument (§) (®)
n4	0	240	sec.	0	delay to the resources implementation in the slave instrument (®)
nA	0	15	—	0	resources to implement in the slave instrument (®)

Additional informations:

- the symbol (§) indicates that the parameter is of the first level
- the symbol (*) indicates that the unit of measure depends from the parameter /8
- the symbol (®) indicates that the parameter is available on request only
- the symbol (***) indicates that the unit of measure depends from the parameter db.

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EC 6-294





Quick reference

ENGLISH

WORKING SETPOINT SETTING

The working setpoint is programmable within the limits established with the parameters **r1** and **r2**.



To modify the working setpoint value:

- keep pushed the key 
 - the instrument displays the actual value
 - the compressor LED flashes quickly
- push and release the key  or  as long as the instrument displays the desired value
 - the working setpoint value gets increased or decreased
- after the modify release the key  last
 - the instrument automatically turns out from the working setpoint setting procedure.



CONFIGURATION PARAMETERS SETTING

Configuration parameters are arranged on two levels.




To gain access to the first level:


- keep pushed for four seconds at least the keys  and 
 - passed four seconds the instrument displays the label **PA**

To select a parameter:







- push and release the key  or  as long as the instrument displays the label of the desired parameter

To modify a parameter value:



- keep pushed the key 
 - the instrument displays the actual value
- push and release the key  or  as long as the instrument displays the desired value

- the parameter value gets increased or decreased
- after the modify release the key  last
 - the instrument displays the label of the parameter again

To gain access to the second level:

- enter inside the first level and select the label **PA**
- keep pushed the key 
 - the instrument displays the actual value
- push and release the key  or  as long as the instrument displays **-19**
 - the label value gets increased or decreased
- after the modify release the key  last
 - the instrument displays the label **PA** again
- keep pushed for four seconds at least the keys  and 
 - passed four seconds the instrument displays the first parameter of the second level

To turn out from the configuration parameters setting procedure:

- keep pushed for four seconds at least the keys  and  or do not operate with the keys for fifty seconds at least.

WORKING SETPOINT

Label	Min.	Max.	U.m.	Stand.	Working setpoint
r1	r2	(*)	0	working setpoint	

CONFIGURATION PARAMETERS

Label	Min.	Max.	U.m.	Stand.	Password
PA	-55	99	—	0	password (§)

Label	Min.	Max.	U.m.	Stand.	Measure inputs
/0	1	4	—	1	kind of probe

/1	-55	+99	(*)/8	0	calibration (§)
/2	0	6	—	3	digital filter

/8	0	1	—	1	unit of measure
/A	0	1	—	1	evaporator probe enabling

Label Min. Max. U.m. Stand. ON-OFF temperature regulator associated to the working setpoint and to the compressor output

r0	+1	+15	(*)	+2	hysteresis (differential) (§)
r1	-55	+99	(*)	-50	minimum working setpoint programmable

r2	-55	+99	(*)	+50	maximum working setpoint programmable
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Label	Min.	Max.	U.m.	Stand.	Compressor output protection
C0	0	240	(**)	1	disabling time to the output activation from the instrument start

C1	0	240	(**)	5	disabling time to the output activation from the previous activation
C2	0	240	(**)	3	disabling time to the output activation from the previous deactivation

C4	0	1	—	0	disabling time to the output activation and deactivation
C5	1	240	(**)	10	cycle time for the output activation during a cabinet probe failure alarm

C6	0	100	%	50	percentage of the cycle time during which the output gets activated during a cabinet probe failure alarm
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Label	Min.	Max.	U.m.	Stand.	Defrost regulator
d0	0	99	(**)	8	defrost interval

d1	0	1	—	1	kind of defrost
d2	-55	+99	(*)	+2	defrost stopping setpoint

d3	1	99	(**)	15	defrost maximum length
d4	0	1	—	0	defrost cycle at the instrument start

d5	0	99	(**)	0	delay to a defrost cycle activation from the instrument start
d6	0	1	—	1	locking of the displayed temperature from a defrost cycle activation

d7	0	15	(**)	2	dripping length
d9	0	1	—	0	disabling times to the compressor output activation override

dA	—	—	(*)	—	evaporator probe reading (§)
db	0	1	—	0	times base

Label	Min.	Max.	U.m.	Stand.	Alarm regulator
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A0	+1	+15	(*)	+2	hysteresis (differential)
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A1	-55	0	(*)	0	lower temperature alarm set relative to the working setpoint
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A2	0	+99	(*)	0	upper temperature alarm set relative to the working setpoint
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A3	0	240	(**)	120	disabling time to the temperature alarm activation from the instrument start
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A5	-1	120	(**)	30	disabling time to the buzzer activation for the multifunction digital input alarm indication
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A6	0	240	(**)	5	disabling time to the temperature alarm activation
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A7	0	240	(**)	15	disabling time to the temperature alarm activation from the defrost cycle end
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Label Min. Max. U.m. Stand. Evaporator fans regulator associated to the evaporator fans output

F1	-55	+99	(*)	-1	output deactivation setpoint
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F2	+1	+15	(*)	+2	hysteresis (differential)
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F4	0	2	—	0	output functioning during the defrost and the dripping
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F5	0	15	(**)	2	evaporator fans stoppage length
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F6	0	1	—	0	kind of output deactivation setpoint
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F7	0	4	—	4	output functioning during the normal functioning
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Label	Min.	Max.	U.m.	Stand.	Digital inputs
i0	0	5	—	4	action given during the multifunction digital input activation

i1	0	1	—	0	kind of contact of the multifunction digital input
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i2	0	2	—	0	action given during the locking digital input activation (@)
i3	0	15	—	0	number of locking digital inputs alarm enough to give the instrument locking (@)

i4	0	240	(**)	0	time required to clear the locking digital inputs alarm counter (@)
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i5	0	15	(**)	0	disabling time to the compressor output activation from the previous locking digital input deactivation (@)
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Label	Min.	Max.	U.m.	Stand.	User-output configuration
u1	0	6	—	0	user to associate to the output K 1A (@)

u2	0	6	—	1	user to associate to the output K 2A (@)
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u3	0	6	—	2	user to associate to the output K 4A (@)
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u4	0	6	—	3	user to associate to the output K 3A (@)
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u5	0	6	—	5	user to associate to the output K 5A
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Label Min. Max. U.m. Stand. Connection in a serial network with EVCOBUS protocol communication

L1	1	15	—	1	instrument address
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L2	0	7	—	0	instrument group
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L3	7	240	sec.	30	time-out link
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L4	0	3	—	1	baud rate
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Label	Min.	Max.	U.m.	Stand.	Connection in a serial network with EVCONET protocol
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