

LABEL	MIN.	MAX.	U.M.	DEF.	DEFROST
d0	0	99	h	8	defrost interval (0 = the defrost will never automatically be activated)
d3	0	99	min	30	defrost length (0 = the defrost will never be activated)
d4	0	1	—	0	defrost activation every time you turn the instrument ON (1 = YES)
d5	0	99	min	0	delay between you turn the instrument ON and the defrost activation (it is important if d4 = 1)
d6	0	1	—	1	freeze of the temperature showed by the instrument during the defrost (1 = YES) <sup>(5)</sup>
d8	0	15	h	1	upper temperature alarm exclusion time since the end of the defrost (since the end of d3, it is important if A2 ≠ 0) <sup>(6)</sup>

LABEL	MIN.	MAX.	U.M.	DEF.	ALARMS
A0	1	15	°C/°F <sup>(4)</sup>	2	hysteresis (differential, it is relative to A1 and A2, it is important if A1 and/or A2 ≠ 0)
A1	-99	0	°C/°F <sup>(4)</sup>	-10	lower temperature alarm threshold (it is relative to the working setpoint, 0 = it will never be activated)
A2	0	99	°C/°F <sup>(4)</sup>	10	upper temperature alarm threshold (it is relative to the working setpoint, 0 = it will never be activated)
A3	0	15	h	2	upper temperature alarm exclusion time since you turn the instrument ON (it is important if A2 ≠ 0) <sup>(6)</sup>
A6	0	99	min	5	temperature alarm exclusion time (it is important if A1 and/or A2 ≠ 0) <sup>(7)</sup>

LABEL	MIN.	MAX.	U.M.	DEF.	SERIAL NETWORK (EVCOBUS)
L1	1	15	—	1	instrument address
L2	0	7	—	0	instrument group
L4	0	3	—	1	baud rate (0 = 1,200 baud, 1 = 2,400 baud, 2 = 4,800 baud, 3 = 9,600 baud)

(4) the unit of measure depends on the parameter /8

(5) if at the moment of the defrost activation the cabinet temperature is below the value "working setpoint + r0", the instrument will not show temperatures above that value; if at the moment of the defrost activation the cabinet temperature is above the value "working setpoint + r0", the instrument will not show the increases of the temperature (if the increase takes place below the value "working setpoint + r0", look at the previous case); the instrument restores the normal operation once the defrost ends and the cabinet temperature falls below the freeze temperature

(6) if the lower temperature alarm takes place during the count of the delay, this last will be cleared

(7) if the temperature alarm does not disappear at the end of the time you have set with the parameter A3, it will further be excluded for the time you have set with the parameter A6.

# FK 201T

ON-OFF digital controller for static refrigerating units

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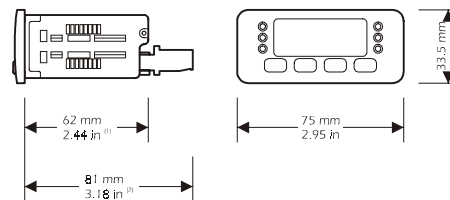
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ENGLISH

## 1 PREPARATIONS

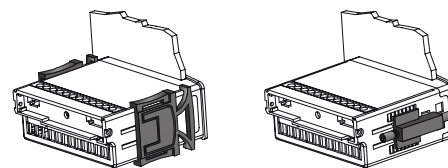
### 1.1 How to install the instrument

Panel mounting, panel cut out 71 x 29 mm (2.79 x 1.14 in), with click brackets (they are supplied by the builder) or screw brackets (by request).



(1) maximum depth with screw terminal blocks (by request)

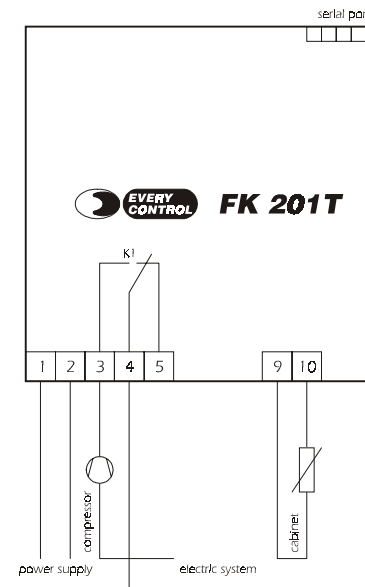
(2) maximum depth with extractable terminal blocks (standard model).



installation with click brackets (on the left-hand side, they are supplied by the builder)

and screw brackets (on the right-hand side, by request); if you are using screw brackets, you have to moderate the clamping torque, in order not to damage the box and screw brackets.

## 1.2 Electrical connection



## 2 OPERATION

### 2.1 Preliminary information

During the normal operation the instrument shows the cabinet temperature.

### 2.2 How to silence the buzzer

If you have to silence the buzzer:

▪ press

### 2.3 How to activate the defrost by hand

If you have to activate the defrost by hand:

▪ press for 4 s

## 3 WORKING SETPOINT

### 3.1 How to set the working setpoint

If you have to modify the working setpoint value:

▪ press and or <sup>(3)</sup>

(3) you can set the working setpoint between the limits you have set with the parameters r1 and r2.

## 4 CONFIGURATION PARAMETERS

### 4.1 How to set the configuration parameters

Configuration parameters are arranged on two levels.

If you have to gain access the first level:

- press  and  for 4 s : the instrument will show *PR*









If you have to select a parameter:

- press  or 

If you have to modify the value of the parameter:

- press  and  or 

If you have to gain access the second level:



- gain access the first level
- press  or  for selecting *PR*
- press  and  or  for setting “-19”
- press  and  for 4 s : the instrument will show *PR*

If you have to quit the procedure:

- press  and  for 4 s  or do not operate for about 60 s.

## 5 SIGNALS

### 5.1 Signals

LED	MEANING
	Compressor LED if it is lighted, the compressor will be ON if it flashes, a compressor delay will be running (look at the parameters C0, C1, C2 and C4)
	Defrost LED if it is lighted, the defrost will be running

## 6 ALARMS

### 6.1 Alarms

CODE	REASONS	REMEDIES	EFFECTS
<i>E2</i> corrupted memory data	there is the corruption of the configuration data of the memory of the instrument	switch off the power supply of the instrument: unless the alarm disappears, you will have to change the instrument	<ul style="list-style-type: none"> <li>you can not gain access the setting procedures</li> <li>the compressor will be forced OFF</li> </ul>

<i>EO</i> cabinet probe alarm	<ul style="list-style-type: none"> <li>the kind of cabinet probe connected is not right</li> <li>the cabinet probe plays up</li> <li>the connection instrument-cabinet probe is wrong</li> <li>the cabinet temperature is outside the limits allowed by the working range of the instrument</li> </ul>	<ul style="list-style-type: none"> <li>look at the parameter /0</li> <li>test the integrity of the probe</li> <li>test the instrument-probe connection</li> <li>test the temperature close to the probe (it has to be between the limits allowed by the working range)</li> </ul>	<ul style="list-style-type: none"> <li>the compressor will be forced to the status you have set with the parameter C3</li> <li>if the defrost is running, it will immediately end</li> <li>the defrost will never be activated</li> </ul>
<b>cabinet temperature</b> lower or upper temperature alarm	<ul style="list-style-type: none"> <li>the cabinet temperature is outside the limit you have set with the parameter A1 or A2</li> </ul>	<ul style="list-style-type: none"> <li>test the temperature close to the probe (look at the parameters A0, A1 and A2)</li> </ul>	no effects

The instrument shows the indications above flashing and the buzzer utters an intermittent beep.

## 7 TECHNICAL DATA

### 7.1 Technical data

**Box:** self-extinguishing grey.

**Size:** 75 x 33.5 x 81 mm (2.95 x 1.31 x 3.18 in) the model with extractable terminal blocks (standard model), 75 x 33.5 x 62 mm (2.95 x 1.31 x 2.44 in) the model with screw terminal blocks (by request).

**Installation:** panel mounting, panel cut out 71 x 29 mm (2.79 x 1.14 in), with click brackets (they are supplied by the builder) or screw brackets (by request).

**Frontal protection:** IP 65.

**Connections:** extractable terminal blocks with pitch 5 mm (0.19 in, standard model) for cables up to 2.5 mm<sup>2</sup> (0.38 sq in, power supply, input and output) or screw terminal blocks with pitch 5 mm (0.19 in, by request) for cables up to 2.5 mm<sup>2</sup> (0.38 sq in, power supply, input and output), 5 poles single line male connector with pitch 2.5 mm (0.09 in, serial port).

**Ambient temperature:** from 0 to 55 °C (32 to 131 °F; 10 ... 90% of relative humidity without condensate).

**Power supply:** 230 Vac, 50/60 Hz, 1.5 VA (standard model) or 115 Vac,

50/60 Hz, 1.5 VA (by request).

**Alarm buzzer:** included.

**Measure inputs:** 1 (cabinet probe) for PTC or NTC probes.

**Working range:** from -50 to 99 °C (-58 to 99 °F) for PTC probe, from -40 to 99 °C (-40 to 99 °F) for NTC probe.

**Setpoint range:** from -99 to 99 °C (-99 to 99 °F).

**Resolution:** 1 °F with unit of measure in Fahrenheit, 1 °C with unit of measure in Celsius.

**Display:** one red LED 2-digit display 13.2 mm (0.51 in) high, output status indicator, defrost status indicator.

**Outputs:** one 10 A @ 250 Vac relay for one ½ HP @ 230 Vac compressor control (change-over contact).

**Kind of defrost:** stopping the compressor.

**Defrost control:** defrost interval and defrost length (automatic and by hand).

**Serial port:** TTL with EVCOBUS communication protocol (for the configurator/cloner system CLONE and supervision system RICS).

## 8 WORKING SETPOINT AND CONFIGURATION PARAMETERS

### 8.1 Working setpoint

LABEL	MIN.	MAX.	U.M.	DEF.	WORKING SETPOINT
r1	r2		°C/°F <sup>(4)</sup>	2	working setpoint

### 8.2 First level parameters

LABEL	MIN.	MAX.	U.M.	DEF.	PASSWORD
PA	-99	99	—	0	password

LABEL	MIN.	MAX.	U.M.	DEF.	REGULATOR
r0	1	15	°C/°F <sup>(4)</sup>	2	hysteresis (differential, it is relative to the working setpoint)

### 8.3 Second level parameters

LABEL	MIN.	MAX.	U.M.	DEF.	MEASURE INPUTS
/0	1	4	—	1	kind of probe (1 = PTC, 2 = reserved, 3 = NTC, 4 = reserved)
/1	-99	99	°C/°F <sup>(4)</sup>	0	cabinet probe calibration (you have to set eight points for adjusting one degree)
/8	0	1	—	1	temperature unit of measure (0 = Fahrenheit degree, 1 = Celsius degree)

LABEL	MIN.	MAX.	U.M.	DEF.	REGULATOR
r0	1	15	°C/°F <sup>(4)</sup>	2	hysteresis (differential, it is relative to the working setpoint)
r1	-99	r2	°C/°F <sup>(4)</sup>	-50	minimum value you can assign to the working setpoint
r2	r1	99	°C/°F <sup>(4)</sup>	50	maximum value you can assign to the working setpoint

LABEL	MIN.	MAX.	U.M.	DEF.	COMPRESSOR PROTECTION
C0	0	15	min	0	minimum delay between you turn the instrument ON and the first compressor activation
C1	0	15	min	5	minimum delay between two compressor activation in succession
C2	0	15	min	3	minimum delay between the compressor gets OFF and the following activation
C3	0	1	—	0	compressor status during the cabinet probe alarm (0 = it will be forced OFF, 1 = it will be forced ON)
C4	0	1	—	0	fixed delay since the compressor gets ON and OFF (1 = YES, for 3 s)