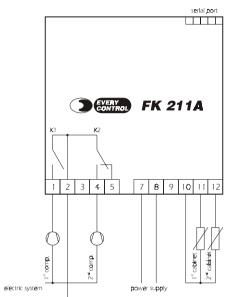
and screw brackets (on the right-hand side, by request); if you are using screw brackets,

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 first cabinet temperature.

2.2 Second cabinet probe showing

If you have to show the second cabinet temperature:

• press (•

If you have to quit the procedure:

2.3 How to silence the buzzer

If you have to silence the buzzer:

• press

2.4 How to activate the defrost by hand

If you have to activate the defrost by hand:

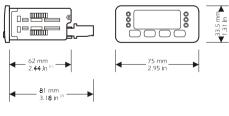
FK 211A

ON-OFF digital controller for static refrigerating units with two compressors Version 1.00 of 15th July 2003 File fk211ae v1.00.pdf PT EVERY CONTROL S.r.I. This Company belongs to EVCO group Via Mezzaterra 6, 32036 Sedico Belluno ITALY Phone 0039-0437-852468 • Fax 0039-0437-83648 ENGLISH info@everycontrol.it • www.everycontrol.it

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).



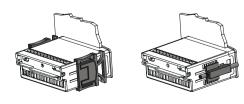
(1) maximum depth with screw terminal blocks (by request)

1/2

Sheet

 \triangleleft

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



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



or do not operate for 4 s



(† * * press



3.1 H	ow to set the working	setpoint
lf you hav	ve to modify the first workin	g setpoint value:
 press 	set and ♠∰ or ↓	(3)
• do not	operate for 2 s	
lf you hav	ve to modify the second wa	rking setpoint value:
 release 	set and	press it again during the
		first working setpoint
		modification, then
 press 	★★ or ↓	(4)
(3) you ca	an set the first working setpoint betw	een the limits you have set with the
param	eters r1A and r2A	
(4) you c	an set the second working setpoint b	etween the limits you have set with
the pa	arameters r1b and r2b.	
4 C	ONFIGURATION PARAM	IETERS
4.1 H	ow to set the configura	ntion parameters
Configura	ation parameters are arrang	ed on two levels.
lf you hav	ve to gain access the first lev	/el:
If you hav • press	ve to gain access the first lev	rel: for 4 s 🏹: the instrument
 press 		for 4 s
 press 	(♠∰)and (♥)	for 4 s
 press If you have press 	★★ and ↓	for 4 s : the instrument will show PA
 press If you have press 	 ★☆ and ↓ ve to select a parameter: ★☆ or ↓ 	for 4 s : the instrument will show PA
 press lf you have press lf you have press 	 ★☆ and ↓ ve to select a parameter: ★☆ or ↓ ve to modify the value of the 	for 4 s : the instrument will show P A e parameter:
 press lf you have press lf you have press lf you have 	 ★☆ and ↓ ve to select a parameter: ★☆ or ↓ ve to modify the value of the set and ★☆ or ↓ 	for 4 s : the instrument will show P A e parameter:
 press lf you have press lf you have press lf you have 	 ♠∰ and ♥ we to select a parameter: ♠∰ or ♥ we to modify the value of the (set) and ♠∰ or ♥ we to gain access the second 	for 4 s : the instrument will show P A e parameter:
 press lf you have press lf you have press lf you have press gain acc 	 ♠∰ and ♥ we to select a parameter: ♠∰ or ♥ we to modify the value of the second se	for 4 s : the instrument will show P A e parameter: d level: for selecting P A for setting "-19 "
 press lf you have press lf you have press lf you have grain acc press 	Image: We to select a parameter: Image: We to select a parameter: Image: We to modify the value of the second sec	for 4 s : the instrument will show P A e parameter: d level: for selecting P A
 press lf you have press lf you have press lf you have gain ace press press press 	 ★☆ and ↓ ve to select a parameter: ★☆ or ↓ ve to modify the value of the second for the s	for 4 s : the instrument will show P A e parameter: d level: for selecting P A for setting "-19 "
 press lf you have press press lf you have press gain ace press press press press press 	 ♠∰ and ♥ we to select a parameter: ♠∰ or ♥ we to modify the value of the set of and ♠∰ or ♥ we to gain access the second access the first level ♠∰ or ♥ set and ♠∰ or ♥ set and ♠∰ or ♥ set and ♠∰ or ♥ we to quit the procedure: 	for 4 s : the instrument will show P A e parameter: d level: for selecting P A for setting " -19 " for 4 s : the instrument
 press lf you have press press lf you have press gain ace press press press press press 	 ♠∰ and ♥ ve to select a parameter: ♠∰ or ♥ ve to modify the value of the second second for the second fo	for 4 s : the instrument will show P A e parameter: d level: for selecting P A for setting " -19 " for 4 s : the instrument

	5 SI	GNALS		
tpoint	5.1 Si	gnals		
setpoint value:	LED		MEANING	
)	out 1	First compressor LED		
		if it is lighted, the first c	ompressor will be ON	
ng setpoint value:		if it flashes, a first comp	ressor delay will be runn	ing (look at the param-
ress it again during the		eters C0A, C1A, C2A ar	nd C4A)	
rst working setpoint	out 2	Second compressor LEE	D	
nodification, then		if it is lighted, the secor	nd compressor will be ON	1
)		if it flashes, a second	compressor delay will be	e running (look at the
the limits you have set with the		parameters C0b, C1b, (C2b and C4b)	
	*	Defrost LED		
een the limits you have set with		if it is lighted, the defro	st will be running	
	°F	Fahrenheit degree LED		
TERS		if it is lighted, the unit	of measure of the temp	erature showed by the
on parameters		instrument is Fahrenhe	it degree	
on two levels.	°c	Celsius degree LED		
		if it is lighted, the unit	of measure of the temp	erature showed by the
or 4 s 💦: the instrument		instrument is Celsius de	egree	
vill show PA				
	6 A	LARMS		
	6.1 A	larms		
parameter:	CODE	REASONS	REMEDIES	EFFECTS
	E 2	there is the corruption	switch off the power	• you can not gain
evel:	corrupted	of the configuration	supply of the instru-	access the setting
	memory	data of the memory of	ment: unless the alarm	procedures
or selecting P A	data	the instrument	disappears, you will	 all outputs will be

E 2 there is the corruption of the configuration supply of the instru- access the setting procedures data of the memory of ment: unless the alarm disappears, you will have to change the instrument • vou can not gain access the setting procedures data the instrument disappears, you will have to change the instrument • all outputs will be forced OFF first • the kind of first cabi • look at the parameter • the first compressor first connected is not • test the integrity of the probe • the probe probe right • test the instrument- • C3A it the connection instrument- • test the instrument- • all will immediately end • the connection instrument- • test wrong • the defrost will	CODE REASONS			
corrupted of the configuration supply of the instru- access the setting memory data of the memory of ment: unless the alarm procedures data the instrument disappears, you will - all outputs will be have to change the in- forced OFF strument • look at the param- • the first compressor first net probe you have eter /0 will be forced to the cabinet connected is not • test the integrity of status you have set probe right • test the instrument- C3A probe plays up probe connection • if the defrost is run- • the connection in- strument-first cabinet ately end probe is wrong • the defrost will • the defrost will	CODE	REASONS	REMEDIES	EFFECTS
memory data of the memory of data of the memory of data of the memory of ment: unless the alarm disappears, you will procedures data the instrument disappears, you will • all outputs will be forced OFF first • the kind of first cabi- • look at the param- • the first compressor first • onnected is not • test the integrity of • the probe probe right • test the instrument- C3A ithe first cabinet • test the instrument- C3A probe plays up probe connection • if the defrost is running, it will immediately end • the defrost will • the defrost will • the defrost will	62	there is the corruption	switch off the power	• you can not gain
data the instrument disappears, you will have to change the in- strument • all outputs will be forced OFF E • the kind of first cabie net probe you have cabinet • look at the param- eter /0 • the first compressor will be forced to the status you have set ithe probe grobe right • test the integrity of the probe • status you have set with the parameter alarm • the first cabinet probe plays up • test the instrument- probe connection C3A • the connection in- strument-first cabinet probe is wrong • if the defrost is run- ning, it will immedi- ately end • the defrost will	corrupted	of the configuration	supply of the instru-	access the setting
have to change the in- forced OFF strument • the kind of first cabi- • look at the param- • the first compressor first net probe you have eter /0 will be forced to the cabinet connected is not • test the integrity of status you have set probe right • test the instrument- C3A probe plays up probe connection • if the defrost is running, it will immediately end • the connection in- strument-first cabinet • the defrost will	memory	data of the memory of	ment: unless the alarm	procedures
strument F [] • the kind of first cabi • look at the param- net probe you have • the first compressor first net probe you have eter /0 will be forced to the cabinet connected is not • test the integrity of the probe status you have set probe right • test the instrument- probe plays up • test the instrument- probe connection • test the instrument- probe connection • if the defrost is run- ning, it will immedi- ately end • the defrost will • the defrost will • the defrost will	data	the instrument	disappears, you will	 all outputs will be
E D • the kind of first cabi- net probe you have • look at the param- eter /0 • the first compressor first net probe you have eter /0 will be forced to the status you have set probe right • test the integrity of the probe status you have set alarm • the first cabinet probe plays up • test the instrument- probe connection C3A • the connection in- strument-first cabinet probe is wrong • if the defrost is run- ning, it will immedi- ately end • the defrost will			have to change the in-	forced OFF
first net probe you have eter /0 will be forced to the cabinet connected is not +test the integrity of status you have set probe right the probe with the parameter alarm +the first cabinet +test the instrument- C3A probe plays up probe connection - if the defrost is run- • the connection in- strument-first cabinet ately end • the connection - the defrost will			strument	
cabinet connected is not • test the integrity of status you have set probe right the probe with the parameter alarm • the first cabinet • test the instrument- C3A probe plays up probe connection • if the defrost is running, it will immediately end • the connection in- strument-first cabinet ately end • probe is wrong • the defrost will	E 0	 the kind of first cabi- 	 look at the param- 	 the first compressor
probe right the probe with the parameter alarm • the first cabinet • test the instrument- probe plays up probe connection • if the defrost is run- • the connection in- strument-first cabinet probe is wrong • the defrost will	first	net probe you have	eter /0	will be forced to the
alarm • the first cabinet • test the instrument- probe plays up probe connection • if the defrost is run- ning, it will immedi- ately end • the defrost will	cabinet	connected is not	 test the integrity of 	status you have set
probe plays up probe connection • if the defrost is run- • the connection in- ning, it will immedi- strument-first cabinet ately end probe is wrong • the defrost will	probe	right	the probe	with the parameter
the connection in- strument-first cabinet probe is wrong the defrost will	alarm	• the first cabinet	 test the instrument- 	СЗА
strument-first cabinet ately end probe is wrong • the defrost will		probe plays up	probe connection	 if the defrost is run-
probe is wrong • the defrost will		• the connection in-		ning, it will immedi-
		strument-first cabinet		ately end
		probe is wrong		• the defrost will
never be activated				never be activated

A7b	0	15	h

2

second temperature alarm exclusion time since the end of the defrost (since the end of d3, it is important if A1 b and/or A2b \neq 0)

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) (6)
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 $(1 = YES)^{(7)}$

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)

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

(6) if the parameter r3A and/or the parameter r3b have value 1, you have to set the parameter d3 with value 0

(7) if at the moment of the defrost activation the first cabinet temperature is below the value "first working setpoint + r0A", the instrument will not show temperatures above that value; if at the moment of the defrost activation the first cabinet temperature is above the value "first working setpoint + r0A", the instrument will not show the increases of the temperature (if the increase takes place below the value "first working setpoint + r0A", the instrument restores the normal operation once the defrost ends and the first cabinet temperature.

	• the first cabinet tem-	• test the temperature	
	perature is outside	close to the probe (it	
	the limits allowed by	has to be between	
	the working range	the limits allowed by	
	of the instrument	the working range)	
ΕI	• the kind of second	 look at the param- 	• the second com-
second	cabinet probe you	eter /0	pressor will be
cabinet	have connected is	• test the integrity of	forced to the status
probe	not right	the probe	you have set with
alarm	• the second cabinet	• test the instrument-	the parameter C3b
	probe plays up	probe connection	• if the defrost is run-
	• the connection in-	• test the temperature	ning, it will immedi-
	strument-second	close to the probe (it	ately end
	cabinet probe is	has to be between	• the defrost will
	wrong	the limits allowed by	never be activated
	• the second cabinet	the working range)	
	temperature is out-		
	side the limits al-		
	lowed by the work-		
	ing range of the in-		
	strument		
AL I	the first room tempera-	test the temperature	no effects
first lower	ture is outside the limit	close to the first probe	
or upper	you have set with the	(look at the parameters	
tempera-	parameter A1A or A2A	A0A, A1A and A2A)	
ture alarm			
8£2	the second room tem-	test the temperature	no effects
first lower	perature is outside the	close to the second	
or upper	limit you have set with	probe (look at the pa-	
tempera-	the parameter A1b or	rameters A0b, A1b and	
ture alarm	A2b	A2b)	

The instrument shows the indications above alternated with the first cabinet tempera-

ture, except the indication "E2" (it flashes) and "E0" (it is alternated with the indication

"---") 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 mm² (0.38 sq in, power supply, inputs and outputs) or screw terminal blocks with pitch 5 mm (0.19 in, by request) for cables up to 2.5 mm² (0.38 sq in, power supply, inputs and outputs), 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: 12 Vac/dc, 50/60 Hz, 1.5 VA (standard model) or 12-24 Vac/dc, 50/60 Hz, 1.5 VA (by request).

Alarm buzzer: included.

Measure inputs: 2 (first cabinet and second cabinet probe) for PTC or NTC probes.

Working range: from -50 to 150 °C (-58 to 302 °F) for PTC probe, from -40 to 110 °C

(-40 to 230 °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 3-digit display 13.2 mm (0.51 in) high, output status indicators,

defrost status indicator, temperature unit of measure indicators.

Outputs: 2 relays: one 10 A @ 250 Vac relay for one 1/2 HP @ 230 Vac compressor

control (NO contact) and one 8 A @ 250 Vac relay for one 1/2 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 configurer/cloner

system CLONE and supervision system RICS).

8 WORKING SETPOINT AND CONFIGURATION PARAMETERS

8	8.1	Working setpoint							
L	ABEL	MIN.	MAX.	U.M.	DEF.	WORKING SETPOINT			
		r1A	r2A	°C/°F ⁽⁵⁾	0	first working setpoint			
		r1b	r2b	°C/°F ⁽⁵⁾	0	second 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.	MEASURE INPUTS
/1A	-99	99	°C/°F ⁽⁵⁾	0	first cabinet probe calibration (you have to set eight points for adjusting one degree)
/1b	-99	99	°C/°F ⁽⁵⁾	0	second cabinet probe calibration (you have to set eight points for adjusting one degree)

LABEL	MIN.	MAX.	U.M.	DEF.	FIRST REGULATOR
r0A	1	15	°C/°F (5)	2	hysteresis (differential, it is relative to the first working setpoint)
LABEL	MIN.	MAX.	U.M.	DEF.	SECOND REGULATOR

8.3 Second level parameters

°C/°F ⁽⁵⁾

2

15

r0b

LABEL	MIN.	MAX.	U.M.	DEF.	MEASURE INPUTS
/0	1	3	_	1	kind of probe (1 = PTC, 3 = NTC)
/1A	-99	99	°C/°F ⁽⁵⁾	0	first cabinet probe calibration (you have to set eight points for adjusting one degree)
/1b	-99	99	°C/°F ⁽⁵⁾	0	second cabinet probe calibration (you have to set eight points for adjusting one degree)
/8	0	1	_	1	temperature unit of measure ($0 = Fahrenheit degree, 1 = Celsius degree$)

hysteresis (differential, it is relative to the second working setpoint)

LABEL	MIN.	MAX.	U.M.	DEF.	FIRST REGULATOR
r0A	1	15	°C/°F ⁽⁵⁾	2	hysteresis (differential, it is relative to the first working setpoint)
r1A	-99	r2A	°C/°F ⁽⁵⁾	-50	minimum value you can assign to the first working setpoint
r2A	r1A	99	°C/°F ⁽⁵⁾	50	maximum value you can assign to the first working setpoint
r3A	0	1	-	0	cooling or heating action (0 = cooling action)

LABEL	MIN.	MAX.	U.M.	DEF.	FIRST COMPRESSOR PROTECTION
COA	0	15	min	0	minimum delay between you turn the instrument ON and the first activation of the first
					compressor
C1A	0	15	min	5	minimum delay between two activation of the first compressor in succession
C2A	0	15	min	3	minimum delay between the first compressor gets OFF and the following activation

C3A	0	1	—	0	first compressor status during the first cabinet probe alarm ($0 = it$ will be forced OFF, $1 = it$ will
					be forced ON)
C4A	0	1	-	0	fixed delay since the first compressor gets ON and OFF (1 = YES, for 3 s)

LABEL	MIN.	MAX.	U.M.	DEF.	FIRST ALARM (first cabinet temperature)
A0A	1	15	°C/°F ⁽⁵⁾	2	hysteresis (differential, it is relative to A1A and A2A, it is important if A1A and/or A2A \neq 0)
AIA	-99	0	°C/°F ⁽⁵⁾	-10	lower first temperature alarm threshold (it is relative to the first working setpoint,
					0 = it will never be activated)
A2A	0	99	°C/°F ⁽⁵⁾	10	upper first temperature alarm threshold (it is relative to the first working setpoint,
					0 = it will never be activated)
АЗА	0	15	h	2	first temperature alarm exclusion time since you turn the instrument ON (it is important if
					A1A and/or A2A \neq 0)
A7A	0	15	h	2	first temperature alarm exclusion time since the end of the defrost (since the end of d3, it is
					important if A1A and/or A2A ≠ 0)

LABEL	MIN.	MAX.	U.M.	DEF.	second regulator
r0b	1	15	°C/°F ⁽⁵⁾	2	hysteresis (differential, it is relative to the second working setpoint)
r1b	-99	r2A	°C/°F (5)	-50	minimum value you can assign to the second working setpoint
r2b	r1A	99	°C/°F ⁽⁵⁾	50	maximum value you can assign to the second working setpoint
r3b	0	1	_	1	cooling or heating action (0 = cooling action)

LABEL	MIN.	MAX.	U.M.	DEF.	second compressor protection
C0b	0	15	min	0	minimum delay between you turn the instrument ON and the first activation of the second
					compressor
C1b	0	15	min	0	minimum delay between two activation of the second compressor in succession
C2b	0	15	min	0	minimum delay between the second compressor gets OFF and the following activation
C3b	0	1	_	0	second compressor status during the second cabinet probe alarm (0 = it will be forced OFF,
					1 = it will be forced ON)
C4b	0	1	—	0	fixed delay since the second compressor gets ON and OFF $(1 = YES, for 3 s)$

LABEL	MIN.	MAX.	U.M.	DEF.	SECOND ALARM (second cabinet temperature)
A0b	1	15	°C/°F ⁽⁵⁾	2	hysteresis (differential, it is relative to A1b and A2b, it is important if A1b and/or A2b \neq 0)
Alb	-99	0	°C/°F ⁽⁵⁾	-10	lower second temperature alarm threshold (it is relative to the second working setpoint,
					0 = it will never be activated)
A2b	0	99	°C/°F ⁽⁵⁾	10	upper second temperature alarm threshold (it is relative to the second working setpoint,
					0 = it will never be activated)
A3b	0	15	h	2	second temperature alarm exclusion time since you turn the instrument ON (it is important
					if A1b and/or A2b ≠ 0)