



TECHNICAL SPECIFICATIONS		
Model	Voltage	Power
Power supply	E 230 V~ (+10%, -15%), 50/60 Hz A 115 V~ (+10%, -15%), 50/60 Hz L 115 to 230 V~ (+10%, -15%), 50/60 Hz H 12 to 24 V~ (+10%, -15%), 50/60 Hz	3 VA, 25 mA - max. 3 VA, 50 mA - max. 6 VA, 50 mA - max. 3 VA, 300 mA - max.
Insulation	E, A, H insulation in reference to very low voltage parts insulation from relay outputs	reinforced 6 mm in air, 8 on surface 3750 V insulation primary 3 mm in air, 4 on surface 1250 V insulation
Inputs	S1 NTC or PTC depending on the model S2 NTC or PTC depending on the model D11 free contact, contact resistance < 10 Ω, closing current 6 mA NTC or PTC, S3 depending on the model D12 free contact, contact resistance < 10 Ω, closing current 6 mA NTC or PTC, S4 depending on the model D13 free contact, contact resistance < 10 Ω, closing current 6 mA NTC or PTC, S5 depending on the model	Use only the transformer TRA12VDE00 with 315 mA slow-blow fuse in the secondary 12 Vdc: 12 to 18 Vdc 24 Vdc: 12 to 30 Vdc 12 Vdc: 12 to 18 Vdc 50/60 Hz 3 VA, 300 mA - max.
Relay outputs	depending on the model	externally guaranteed by safety transformer reinforced 6 mm in air, 8 on surface 3750 V insulation
Probe type	Std. CAREL NTC NTC high temperature PTC std. CAREL (specific model)	10 kΩ ± 25 °C, -50/150 °C range measurement error: 1 °C in the -50/150 °C range 50 kΩ ± 25 °C, -40/150 °C range measurement error: 1.5 °C in the -20/115 °C range 1.5 °C in the -20/115 °C range 4 °C in the -20/115 °C range 985 Ω ± 25 °C, range da -50/150 °C measurement error: 2 °C in the -50/150 °C range 4 °C in the -50/150 °C range

(\*) Relay not suitable for fluorescent loads (neon lights, ...) that use starters (ballasts) with phase-shift capacitors. Fluorescent lamps with electronic control devices or without phase-shift capacitors can be used, within the operating limits specified for each type of relay.

Connections	Type of connection	Cross-section	Maximum current
fixed screw-on	removable for screw blocks	for wires from 0.5 to 2.5 mm <sup>2</sup>	12 A
faston with crimped contacts	cross-section of the wires for probes and digital inputs	from 0.5 to 2.5 mm <sup>2</sup>	from 20 to 13 AWG
cross-section of the wires for the power and loads	from 1.5 to 2.5 mm <sup>2</sup>	from 15 to 13 AWG	

Case	plastic	dimensions	110 x 70 x 60 mm
Mounting	DIN rail	using side fastening brackets	drilling template for front panel dimensions 45 x 70 mm
Display	digits	3 digit LED	display range from -99 to 999
Keypad	4 rubber silicon buttons	indicated by graphic icons on the display	
Infrared receiver	available depending on the model		
Clock with backup battery	available depending on the model		
Buzzer	available on all the models		
Package	IRxxxxxxx: blank singol: 1 or 5 multiple; K kit with probes		
Clock	error at 25 °C	±10 ppm (±5.3 min/year)	
Operating temperature	error in the range -10/160 °C	-50 ppm (±27 min/year)	
Operating humidity	error in the range -10/160 °C	< ±5 ppm (±2.7 min/year)	
Storage humidity	error in the range -10/160 °C	typical 6 months (max. 8 months)	
Front panel index of protection	2 normal	recharge time typical 5 hours (< max. 8 hours)	
Environmental pollution	PTI of the insulating material	OL.H power supply -10/155 °C	
Period of electric stress across insulating parts	long	E.A power supply -10/150 °C	
Category of resistance to fire	category D and category B (UL 94-V0)		
Class of protection against voltage surges	category II		
Rated impulse voltage	2500 V		
Type of connections and disconnections	1B relay contacts (micro-disconnection)		
Construction of control	incorporated control, electronically		
Classification according to protection against electric shock	Class II, by appropriate incorporation		
The control is either to be hand-held or is intended for a hand-held operation	no		
Software class and structure	class A		
Front panel cleaning	use only neutral detergents and water		
Serial interface for CAREL network	external, available on all models		
Interface for repeater display	external, available on models with H, L and 0 power supply		
Maximum distance between interface and display	10 m		
Programming key	available on all models		

The IR33 DIN range fitted with the standard CAREL NTC probe is compliant with standard EN 13485 on thermometers for measuring the air temperature in applications on units for the conservation and sale of Safety standards: compliant with the European reference standards. Precautions for installation:

- the connection cables must guarantee insulation up to 85 °C, with a current of less than 8 A. Above 8 A, cables rated to 105 °C must be used.
- adequately secure the conn. cables to the outputs so as to avoid contact with very low voltage components.

AWG	Sez. (mm <sup>2</sup> )	Corrente A	AWG	Sez. (mm <sup>2</sup> )	Corrente A
24	0.21	0.8	20	0.52	2.1
23	0.26	1	19	0.65	2.6
22	0.33	1.3	18	0.82	3.2
21	0.41	1.6	17	1.1	4.3
	0.5	2	16	1.31	5.3
			15	1.65	6.8
			14	2.1	9
			13	2.63	12.8
			12	3.31	16.1

Symbol	Code	Parameter	Models	UOM	Type	Min	Max	Def.
ST	ST	Temperature set point	MSYF	°C/F	F	r1	r2	0.0
rd	rd	Control delta	SYF	°C/F	F	0.1	20	2.0
rm	rm	Dead band	SYF	°C/F	C	0.0	60	4.0
rr	rr	Reverse differential for control with dead band	SYF	°C/F	C	0.1	20	2.0
r1	r1	Minimum set point allowed	MSYF	°C/F	C	-50	-12	-50
r2	r2	Maximum set point allowed	MSYF	°C/F	C	r1	200	60
r3	r3	Operating mode	SYF	flag	C	0	2	0
r4	r4	Automatic night-time set point variation	MSYF	°C/F	C	-20	20	3.0
r5	r5	Enable temperature monitoring	MSYF	flag	C	0	1	0
rt	rt	Temperature monitoring interval	MSYF	hours	F	0	999	-
rH	rH	Maximum temperature read	MSYF	°C/F	F	-	-	-
rL	rL	Minimum temperature read	MSYF	°C/F	F	-	-	-

Symbol	Code	Parameter	Models	UOM	Type	Min	Max	Def.
c0	c0	Comp., fan and AUX delay on start-up in dead band	SYF	min	C	0	15	0
c1	c1	Minimum time between successive starts	SYF	min	C	0	15	0
c2	c2	Minimum compressor OFF time	SYF	min	C	0	15	0
c3	c3	Minimum compressor ON time	SYF	min	C	0	15	0
c4	c4	Duty setting	SYF	min	C	0	100	0
cc	cc	Continuous cycle duration	SYF	hours	C	0	15	0
c5	c5	Alarm bypass after continuous cycle	SYF	hours	C	0	250	2
c7	c7	Maximum pump down time	SYF	s	C	0	900	0
c8	c8	Comp. start delay after open PD valve (factory default: 0, not visible from display)	SYF	s	C	0	60	5
c9	c9	Enable autostart function in PD	SYF	flag	C	0	1	0
c10	c10	Select Pump down by time or pressure	SYF	flag	C	0	1	0
c11	c11	Second compressor delay	SYF	s	C	0	250	4

**Avvertenze importanti**  
Il prodotto CAREL è un prodotto avanzato, il cui funzionamento è specificato nella documentazione tecnica fornita col prodotto o scaricabile, anche anteriormente all'acquisto, dal sito internet www.Carel.com.  
Il cliente (costruttore, progettista o installatore dell'equipaggiamento finale) si assume ogni responsabilità e rischio in relazione alla fase di configurazione del prodotto per il raggiungimento dei risultati previsti in relazione all'installazione e/o equipaggiamento finale specifico.  
La mancanza di tale fase di studio, la quale è richiesta/indicata nel manuale d'uso, può generare malfunzionamenti nei prodotti finali di cui CAREL non potrà essere ritenuta responsabile.  
Il cliente finale deve usare il prodotto solo nelle modalità descritte nella documentazione relativa al prodotto stesso.  
La responsabilità di CAREL in relazione al proprio prodotto è regolata dalle condizioni generali di contratto CAREL editate nel sito www.Carel.com e/o da specifici accordi con i clienti.

**Important warnings**  
The CAREL product is a state-of-the-art product, whose operation is specified in the technical documentation supplied with the product or can be downloaded, even prior to purchase, from the website www.Carel.com.  
The client (builder, developer or installer of the final equipment) assumes every responsibility and risk relating to the phase of configuration of the product in order to reach the expected results in relation to the specific final installation and/or equipment. The lack of such phase of study, which is requested/indicated in the user manual, can cause the final product to malfunction of which CAREL can not be held responsible.  
The final client must use the product only in the manner described in the documentation related to the product itself. The liability of CAREL in relation to its own product is regulated by CAREL's general contract conditions edited on the website www.Carel.com and/or by specific agreements with clients.

**Smaltimento del prodotto**  
L'apparecchiatura (o il prodotto) deve essere oggetto di raccolta separata in conformità alle vigenti normative locali in materia di smaltimento.  
**Disposal of the product**  
The appliance (or the product) must be disposed of separately in accordance with the local waste disposal legislation in force.

Icon	Function	ON	Normal operation	blink	Startup
COMPRESS	compressor ON	comp. ON	fan request	fan request	fan request
FAN	defrost in progress	defrost not required	defrost request	defrost request	defrost request
DEFROST	auxiliary output AUX active	auxiliary output AUX active	anti-sweat heater function active	anti-sweat heater function active	anti-sweat heater function active
AUX	ALARM	delayed external alarm (before the expiry of the time 'A7')	no alarm present	alarms in normal operation (eg. high/low temp.) or alarm from ext. digital input immediate or delayed	clock alarm
CLOCK	CLOCK	at least one timed defrost has been set	no timed defrost is present	clock alarm	ON if Real-Time Clock present
LIGHT	auxiliary output LIGHT ACTIVE	auxiliary output LIGHT NOT ACTIVE	anti-sweat heater function active	anti-sweat heater function active	anti-sweat heater function active
SEVICE	HACCPC	HACCPC function	HACCPC function	HACCPC alarm (HA and/or HF) not enabled	HACCPC alarm (HA and/or HF) not enabled
CONTINUOUS CYCLE	enabled	not enabled	request	request	request

**Buttons on the keypad**  
Press the button alone Pressing together with other buttons

Button	Function	Effect
Prog	pressed for more than 5 s	accesses the menu for setting the type "F" (configuration) or downloading the parameters
Mute	pressed for more than 5 s together with the UP/AUX button	enables/disables the continuous cycle operation
Def	pressed for more than 5 s together with the DOWN/DEF button	enables/disables the manual defrost
Set	pressed for more than 5 s together with the SET button	accesses the menu for setting the type "C" parameters (configuration) or downloading the parameters
Down/Def	pressed for more than 5 s together with the DOWN/DEF button	enables/disables the manual defrost
Up/Aux	pressed for more than 5 s together with the UP/AUX button	enables/disables the continuous cycle operation

**Summary of operating parameters** (UOM = Unit of measure, Def. = Default value).

Symbol	Code	Parameter	Models	UOM	Type	Min	Max	Def.
Pw	Pw	Password	MSYF	-	C	0	200	22
/2	/2	Measurement stability	MSYF	-	C	1	15	4
/3	/3	Probe display response	MSYF	-	C	0	15	0
/4	/4	Virtual probe	MSYF	-	C	0	100	0
/5	/5	Select °C or °F	MSYF	flag	C	0	1	0
/6	/6	Display decimal point	MSYF	flag	C	0	1	0
/I	/I	Display on internal terminal	MSYF	-	C	1	7	1
/E	/E	Display on external terminal	MSYF	-	C	0	6	0
/P	/P	Select type of probe	MSYF	-	C	0	2	0
/A2	/A2	Configuration of probe 2 (S2)	YF	-	C	0	4	2
/A3	/A3	Configuration of probe 3 (S3/D1)	MSYF	-	C	0	4	0
/A4	/A4	Configuration of probe 4 (S4/D2)	MSYF	-	C	0	4	0
/A5	/A5	Configuration of probe 5 (S5/D3)	MSYF	-	C	0	4	0
/c1	/c1	Calibration of probe 1	MSYF	°C/F	C	-20	20	0.0
/c2	/c2	Calibration of probe 2	MSYF	°C/F	C	-20	20	0.0
/c3	/c3	Calibration of probe 3	MSYF	°C/F	C	-20	20	0.0
/c4	/c4	Calibration of probe 4	MSYF	°C/F	C	-20	20	0.0

Symbol	Code	Parameter	Models	UOM	Type	Min	Max	Def.
S1	S1	Temperature set point	MSYF	°C/F	F	r1	r2	0.0
rd	rd	Control delta	SYF	°C/F	F	0.1	20	2.0
rm	rm	Dead band	SYF	°C/F	C	0.0	60	4.0
rr	rr	Reverse differential for control with dead band	SYF	°C/F	C	0.1	20	2.0
r1	r1	Minimum set point allowed	MSYF	°C/F	C	-50	-12	-50
r2	r2	Maximum set point allowed	MSYF	°C/F	C	r1	200	60
r3	r3	Operating mode	SYF	flag	C	0	2	0
r4	r4	Automatic night-time set point variation	MSYF	°C/F	C	-20	20	3.0
r5	r5	Enable temperature monitoring	MSYF	flag	C	0	1	0
rt	rt	Temperature monitoring interval	MSYF	hours	F	0	999	-
rH	rH	Maximum temperature read	MSYF	°C/F	F	-	-	-
rL	rL	Minimum temperature read	MSYF	°C/F	F	-	-	-

Symbol	Code	Parameter	Models	UOM	Type	Min	Max	Def.
HA1	HA1	Date/time of penultimate HA event	MSYF	-	C	-	-	-
HA2	HA2	Date/time of third-to-last HA event	MSYF	-	C	-	-	-
HF1	HF1	Date/time of penultimate HF event	MSYF	-	C	-	-	-
HF2	HF2	Date/time of third-to-last HF event	MSYF	-	C	-	-	-
Hd	Hd	HACCPC alarm delay	MSYF	min	C	0	250	0

Symbol	Code	Parameter	Models	UOM	Type	Min	Max	Def.
td1	td1	Defrost time band 1	SYF	-	C	-	-	-
d_	d_	Day	SYF	days	C	0	11	0
h_	h_	Hour	SYF	hours	C	0	23	0
n_	n_	Minute	SYF	min	C	0	59	0
td2	td2	Defrost time band 2	SYF	-	C	-	-	-
td3	td3	Defrost time band 3	SYF	-	C	-	-	-
td4	td4	Defrost time band 4	SYF	-	C	-	-	-
td5	td5	Defrost time band 5	SYF	-	C	-	-	-
td6	td6	Defrost time band 6	SYF	-	C	-	-	-
td7	td7	Defrost time band 7	SYF	-	C	-	-	-
td8	td8	Defrost time band 8	SYF	-	C	-	-	-
ton	ton	Light/aux on time band / Set point variance	SYF	-	C	-	-	-
d_	d_	Day	SYF	days	C	0	11	0
h_	h_	Hour	SYF	hours	C	0	23	0
n_	n_	Minute	SYF	min	C	0	59	0
toF	toF	Light/aux off time band / Set point variance	SYF	-	C	-	-	-
d_	d_	Day	SYF	days	C	0	11	0
h_	h_	Hour	SYF	hours	C	0	23	0
n_	n_	Minute	SYF	min	C	0	59	0
lc	lc	RTC date/time setting	MSYF	-	C	-	-	-
y_	y_	Year	MSYF	years	C	0	99	0
M_	M_	Month	MSYF	months	C	1	12	1
d_	d_	Day of the month	MSYF	days	C	1	31	1
u_	u_	Day of the week	MSYF	days	C	0	7	6
h_	h_	Hour	MSYF	hours	C	0	23	0
n_	n_	Minute	MSYF	min	C	0	59	0

Symbol	Code	Parameter	Models	UOM	Type	Min	Max	Def.
d1	d1	Display of defrost probe 1	MSYF					