

STANDARD models are specifically designed for applications requiring a considerable number of outputs relays. High load switching power and various functions with keypad shortcuts.

Model	Power supply	PROBES	DIGITAL INPUTS	FORMAT	RELAYS	RS-485	ECO MODE
TTK-301-S	230V	1(NTC/PTC)	–	SLIM	1	NO	NO
TK-301-S2	120V	1(NTC/PTC)	–	SLIM	1	NO	NO
TK-301-SC	230V	1(NTC/PTC)	–	SLIM	1	YES	NO
TK-301-SC2	120V	1(NTC/PTC)	–	SLIM	1	YES	NO
TK-112	12/24V	1(NTC/PTC)	–	STANDARD	1	NO	NO
TK-301	230V	1(NTC/PTC)	up to 2	STANDARD	1	NO	YES
TK-301-C	230V	1(NTC/PTC)	up to 2	STANDARD	1	YES	YES
TK-302	230V	Up to 2(NTC/PTC)	up to 2	STANDARD	2	NO	YES
TK-302-C	230V	Up to 2(NTC/PTC)	up to 2	STANDARD	2	YES	YES
TK-312	12/24V	Up to 2(NTC/PTC)	up to 2	STANDARD	2	NO	YES
TK-322	120V	Up to 2(NTC/PTC)	up to 2	STANDARD	2	NO	YES
TK-303	230V	Up to 2(NTC/PTC)	up to 2	STANDARD	3	NO	YES
TK-313	12/24V	Up to 2(NTC/PTC)	up to 2	STANDARD	3	NO	YES
TK-323	120V	Up to 2(NTC/PTC)	up to 2	STANDARD	3	NO	YES
TK-303-C	230V	Up to 2(NTC/PTC)	up to 2	STANDARD	3	YES	YES
TK-304	230V	Up to 2(NTC/PTC)	up to 3	STANDARD	4	NO	YES
TK-314	12/24V	Up to 2(NTC/PTC)	up to 3	STANDARD	4	NO	YES
TK-324	120V	Up to 2(NTC/PTC)	up to 3	STANDARD	4	NO	YES
TK-304-C	230V	Up to 2(NTC/PTC)	up to 3	STANDARD	4	YES	YES
TK-301-R	90-240V	Up to 2(NTC/PTC)	up to 2	STANDARD	1	YES	YES
TK-302-RC	90-240V	Up to 2(NTC/PTC)	up to 2	STANDARD	2	YES	YES
TK-303-RC	90-240V	Up to 2(NTC/PTC)	up to 2	STANDARD	3	YES	YES
TK-304-RC	90-240V	Up to 2(NTC/PTC)	up to 3	STANDARD	4	YES	YES

install size 71mm*29mm controller size 78.5*34.5mm*74mm

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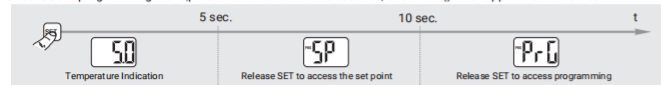
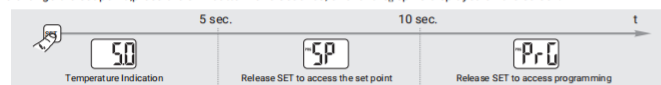
Display resolution: 0.1°C 1°C or 1°F
Accuracy: ±1°C (-20°C ~ -30°C), ±2°C (51°C ~ 70°C),
others ±3°C
or ±2°F (-40°F ~ 122°F), ±4°F (123°F ~ 158°F),
others ±6°F
Probe type: NTC (10KΩ/25°C, B value 3435K)
PTC (KTY81-120)

Light	Symbol	state	Meaning
Set light	set	Permanently on	Parameter setting
		off	Status of temperature measuring and controlling
Compressor light		Permanently on	Compressor active
		off	Compressor turn off
		Flashing	A delay
Defrost light		Permanently on	Defrost active
		off	Defrost turn off

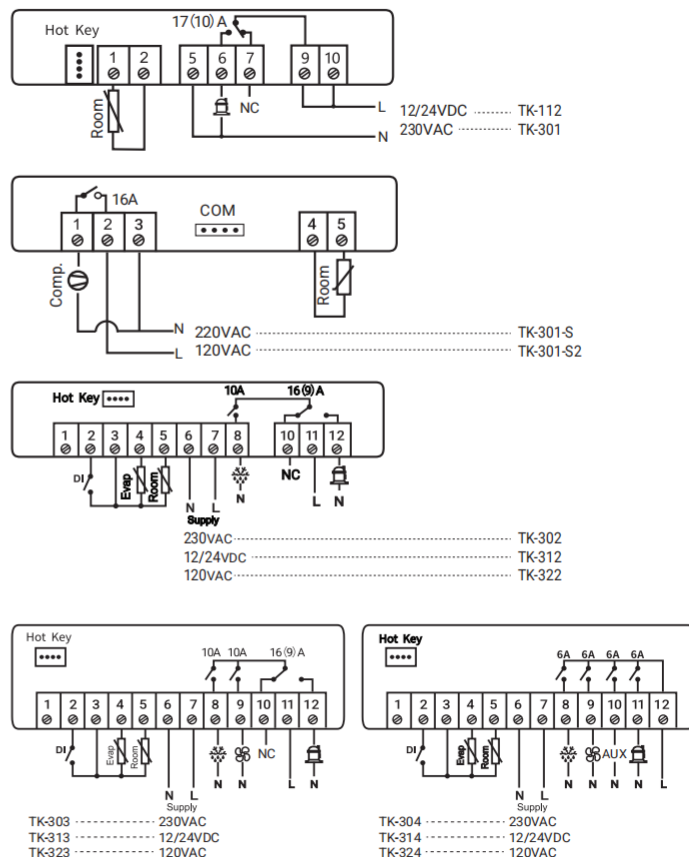
SET | key
Press for 5 seconds to modify the set point (SP).
Press for 10 seconds to go to the programming menu.
In the programming menu, go to the level displayed or accept the new value while setting a parameter.

 | key
Pressing for 5 seconds starts/stops defrosting.
In programming menu, allows you to scroll through the various levels or, during the setting of a parameter, to change the value.

 | key
Pressing for 5 seconds activates Standby mode, pressing for 2 seconds returns the equipment to normal mode. In Standby mode, the equipment performs no actions and only the m indicator is displayed on the screen.
In programming menu, allows you to scroll through the various levels or, during the setting of a parameter, to change the value.



notes.If the access code function has been set as keypad lock (P2=2),or as parameter access block(P2=1),when trying to access either of the two functions,users will be prompted to enter the access code programmed in L5.If the code entered is not correct, the unit will revert to displaying the temperature.



TK-301-TK-301-TK-302								
TK-302-TK-313-TK-323								
TK-302-TK-312-TK-322								
TK-301-TK-301-TK-301-G2								
Level 1 Menu and description								
E	Level 2	Control	Level 3 Description	Range	Def.	Values		
C9	Temperature Adjustment (Set Point)	NTC	-50.0~99.9 °C / 58.0F~-210F	*	°C/°F	O	O	O
C0	Calibrating probe 1 (Offset)	PTC	-50.0~150°C / 58.0F~-302°F			O	O	O
C1	Probe 1 differential (Histeresis)		-20.0~-20.0	0	°C/°F	O	O	O
C2	Upper blocking of the set point (cannot be set below this value)	NTC	C3=99.9/210F C3=150.0/302°F	99.9 (210F) ---	°C/°F	O	O	O
C3	Lower blocking of the set point (cannot be set below this value)	PTC	C3=150.0/302°F C3=-50.0 (-58F) ~ C2	---	°C/°F	O	O	O
C4	Type of delay for protection of the compressor O=OffON (since the last disconnection); I=Off -ON-ON-OFF (since O=OffON)		0-1	0		O	O	O
C5	Protection delay time (value of the option selected in parameter C4)		0-120	0	min	O	O	O
C6	Status of COOL relay with probe fault; 0=OFF; 1=ON; 2=Average based on last 24 hours prior to probe fault; 3=On Off as per C7 and C8		0-2	2		O	O	O
C7	Time relay ON in case of faulty probe (If C7=0 and C8=0, the relay will turn OFF)		0-120	10 min		O	O	O
C8	Time relay OFF in case of fault of probe 1 (If C8=0 & C7=0, the relay will turn OFF)		0-120	5 min		O	O	O
C9	Maximum duration of fast freezing mode (D=off)		0-48	24 h.		O	O	O
C0	range set point (SP) in fast freezing mode, when it reaches this point SP + C10 returns to normal. (SP-C12 => C2) (D=off)		-50.0 (~58F) ~ (C3-SP) -50.0 (~58F)	°C/°F		O	O	O
C11	Length of inactivity at digital input to activate ECO mode(only if P10 or P11 is active before alarm occurs)		0-24	2 h.		O	O	O
C12	Change set point (SP) in ECO mode (SP+C12 C2) (D=off)		(C2-SP)	2	°C/°F	O	O	O
EP	Exit to Level 1					O	O	O
DEF	Level 2 Defrost Control (If P10= Direct, cold)							
	Level 3 Description		Range	Def.	Values			
d0	Defrost frequency (Time between two starts)		0-96	6	h.	O	O	O
d1	Maximum defrost duration (D=defrost deactivated)		P=255	30	min	O	O	O
d2	Type of message during defrost; 0=Current temperature; 1=Target temperature		20000/I/2	2	/	O	O	O
d3	Maximum duration of message (time added at the end of the defrost)		0-59	0	min	O	O	O
d4	Defrost end temperature (probe 2) (If P4= 1)		-50(-58F)~99.9(211F)	R(46F)	°C/°F	O	O	O
d5	Defrost an equipment start-up D=No, First defrost as per d6, 1=YES, First defrost as per d6		0-1	0		O	O	O
d6	Defrost start delay on equipment start-up		0-255	0	min	O	O	O
d7	Defrost type; 0=Resistors, 1=Inverted cycle 2=Two-stage equipment, P4 must be programmed B zero)		0-1	0		O	O	O
d8	Calculated time between defrost periods; 0=Total actual time; 1=Sum of times between defrosts		0-1	0		O	O	O
d9	Is time at end of defrost (compressor and fans off) (If P4= 1)		0-255	1	min	O	O	O
EP	Exit to Level 1					O	O	O
Fan	In 2-relay modes P6 must be set to 0							
	Level 3 Description		Range	Def.	Values			
F0	Fan shut-down temperature as per probe 2 (If P4= 1)		-50(-58F)~99.9(211F)		°C/°F	O	O	O
F1	Probe 2 differential (If P4= 1)		0-120.0	2	°C/°F	O	O	O
F2	Stop fans when stopping compressor D=No, 1=Yes		0-1	1		O	O	O
F3	Fan status during defrost; 0=Off; 1=On		0-1	0		O	O	O
F4	turbing delay after defrost (If F3=ON will only operate if it is higher than 0)		0-99	3	min	O	O	O
F5	Stop fans on opening the door D=No, 1=Yes (Requires a digital input)		0-1	0		O	O	O
EP	Exit to Level 1					O	O	O
AL	Alarm control (Visual)							
	Level 3 Description		Range	Def.	Values			
A0	Configuration of temperature alarms; 0=R relative to SP; 1=Absolute		0-1	0		O	O	O
A1	Maximum alarm probe 1 (must be greater than SP)	NTC	A2=-99.9(211F) A2=-130(302°F)	99.9(211F) -	°C/°F	O	O	O
A2	Minimum alarm probe 1 (must be less than SP)	PTC	-50(-58F)	-50(-58F)	°C/°F	O	O	O
A3	Temperature alarm delay during start-up		0-120	0	min	O	O	O
A4	Temperature alarm delay after completion of a defrost		0-99	0	min	O	O	O
A5	Temperature alarm delay after reaching the value of A1 or A2		0-99	30	min	O	O	O
A6	External alarm / Severe external alarm delay when receiving digital input signal		0-120	0	min	O	O	O
A7	Deactivation delay of the external alarm / Severe external alarm when the signal of the digital input disappears (P10 or P11=2 or 3)		0-120	0	min	O	O	O
A8	No warning if defrost is terminated by time-out D=No, 1=Yes		0-1	0		O	O	O
A9	Alarm relay polarity D=Relay ON in alarm (OFF no alarm) 1=Relay OFF		0-1	0		O	O	O
A10	Temperature Alarm Differential (A1 and A2)		0-20.0	1	°C/°F	O	O	O
A12	Door open alarm delay (If P10 or P11=1)		0-120	2		O	O	O
EP	Exit to Level 1					O	O	O
CNF	Level 2 General Status							

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TK-304/TK-314/TK-324				
TK-303/TK-313/TK-323				
TK-302/TK-312/TK-322				
TK-301/TK-301-3/TK-301-5/2				
	Level 3	Description	Range	Def. Values
P0		Type of operation 0=Direct, Cold;1=Inverted, Heat	0-1	0
P1		Delay of all functions on receiving electrical power	0-255	0 min
P2		Access code (password) functioning, 0=inactive; 1=Block access to parameters; 2=Keyboard lock	0-2	0
P4		Selection of type of inputs: 1=1 probe + 2 digital inputs; 2=2 probes +1 digital input; 3=3 probes (1)	1-3	1
P5		Address (only systems with built-in communications)	1-255	1
P6		Configuration of AUX relay 1=2nd Defrost (1) 2=Alarm 3=Light 4=Pump down 5=Master Defrost	1-5	1
P7		Temperature display mode 0= Integer °C 1=One decimal in °C 2=Integer °F 3=One decimal in °F	0-3	1
P8		Probe to be displayed (as per parameter P4)	1-3	1
P9		Visualization of all the probes in sequence, 1=Probe 1; 2=Probe 2;	0-1	0
P10		Selection of probe type 0=NTC; 1=PTC	0-1	0
P11		Configuring digital input 1 0= Off 1=Door contact 2=External alarm 3=Severe external alarm 4=Slave defrost 5=Act. ECO mode by pushbutton 6=Act. Fast Freezing 7= Low pressure switch 8=Remote	0-9	0
P12		Configuring digital input 1 0= Off 1=Door contact 2=External alarm 3=Severe external alarm 4=Slave defrost 5=Act. ECO mode by pushbutton 6=Act. Fast Freezing 7= Not used 8=Remote defrost	0-9	0
P13		Digital input polarity 1 0=Energised on closed contact, 1=Energised on open contact	0-1	0
P14		Digital input polarity 1 0=Energised on closed contact, 1=Energised on open contact	0-1	0
P14		Maximum start-up time after pump down	0-120	0 Sec
P15		Maximum pump down time	0-15	0 min
P19		Lights in ECO Mode (P6=3) 0=ON; 1=OFF	0-1	0
EP		Exit to Level 1		0
sd	Level 2	Access and information control		
	Level 3	Description	Range	Def. Values
L5		Access code (Password) request	0-99	0
PU		Program version (Information)	-	-
Pv		Program version (Information)	-	-
EP		Exit to Level 1		0
EP		Exit Programming		0

8. DEFAULT CODE

Code	Description		
L5	Access code (Password) request	D	
dEF	ndicates a defrost is underway. (Only if parameter d2=2)	D	
E1	Probe 1 faulty (open circuit, crossover or temperature outside the probe limits)	D	A
E2	Probe 2 faulty (open circuit, crossover or temperature outside the probe limits)	D	A
E3	Probe 3 faulty (open circuit, crossover or temperature outside the probe limits)	D	A
AH	Flashing: maximum temperature alarm on probe 1 (A1)	D	A
AL	Flashing: minimum temperature alarm on probe 1 (A2)	D	A
AE	External alarm activated (only if parameter P10 or P11=2)	D	A
AES	Severe external alarm activated (only if parameter P10 or P11=3)	D	
Adt	Defrost time-out alarm (only if parameter A8=1)	D	
Pd	Pump down malfunction error (Stop)	D	
LP	Pump down malfunction error or (Start-up)		
PAb	Door open alarm (Only if P10 or P11=1 and as per time at A12)		

D: Displays the message on the display; A: Activates the alarm relay (if available)

9 - Appendix 1 Character Set:

