COPELAND XH78T Temperature and Humidity Controller Instruction Manual

Contents

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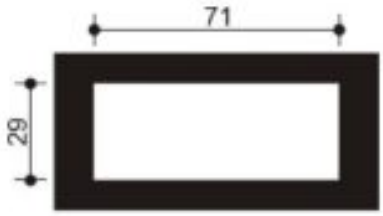
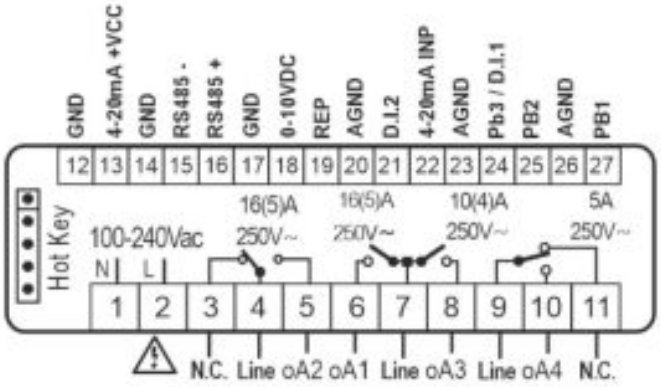
FULL TOUCH – XH78T





Manuals on Copeland Controls S.r.l. website:

CONTACT: dixell.service@copeland.com

PIN	Label	Description	PIN	Label	Description
12	4-20mA GND	Ground for 4-20mA sensor	20	AGND	Ground for digital inputs and remote display
13	4-20mA +VCC	Power supply for 4-20mA sensor	21	D.I.2	Digital input 2
14	GND	Ground for RS485 serial port	22	4-20mA INP	Analogue input for 4-20mA sensor
15	RS485-	Negative terminal for RS485 (-) serial port	23	AGND	Ground for analogue and digital inputs
16	RS485+	Positive terminal for RS485 (+) serial port	24	Pb3/D.I.1	Analogue input 3 (temperature only) / Digital input 1
17	GND	Ground for analogue output 0-10Vdc	25	Pb2	Analogue input 2 (temperature only)
18	0-10VDC	Analogue output 0-10Vdc	26	AGND	Ground for analogue and digital inputs
19	REP	Remote display	27	Pb1	Analogue input 1 (temperature only)

SAFETY INFO

- This manual is part of the product and should be kept near the instrument for easy and quick reference.

- The instrument shall not be used for purposes different from those described hereunder. It cannot be used as a safety device.
- Copeland Controls S.r.l. reserves the right to change the composition of its products, even without notice, ensuring the same and unchanged functionality.
- In case of failure or faulty operation contact the local distributor or “Copeland Controls S.r.l.” with a detailed description of the fault.
- The instrument must not be opened.
- Check the application limits and the correct power supply voltage before proceeding.
- Do not expose to water or moisture: use the controller only within the operating limits avoiding sudden temperature changes with high atmospheric humidity to avoid condensation
- Warning: disconnect the power supply and all other electrical connections before any kind of maintenance.
- Observe the maximum current value which can be applied to each relay (see Technical Data).
- Ensure that the wires for probes, loads and the power supply are separated and far enough from each other, without crossing or intertwining.

USER INTERFACE

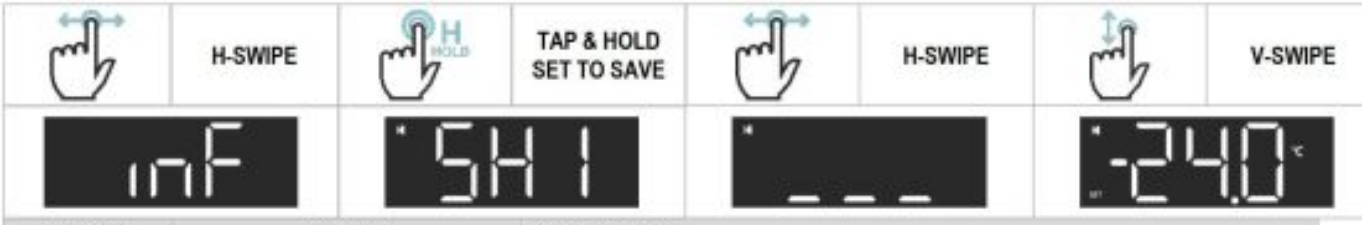
SCREEN	APPEARANCE	SCREEN	APPEARANCE
Home		Status Visualization	
Virtual Keyboard		Set Point Menu	

Programming Mode		Parameter Menu - ALL	
Parameter Menu - X9		Parameter Menu - Groups	
Upload Parameters		Download Parameters	
Device Locked		Info Menu	

SCREEN NAME	DESCRIPTION
Home	Show temperature value, measurement unit and active alarms only. It is the first screen after power on or after exit from other status.
Status Visualization	This screen shows activated functions and regulation outputs (compressor, ventilators) overlapped with temperature and/or humidity value
Virtual Keyboard	This screen shows available functions. Activated function will blink when this screen is visualized.
Setpoint menu	This screen enables the modification of setpoints: **St1** for temperature, **SH1** for humidity
Programming Mode	This screen enables the modification of parameters: **ALL**, **GrP** or "**X9**" mode can be used.
Hotkey Management	**UPL** = upload parameters from device to HOTKEY, **doL** = download parameters from HOTKEY to device
Info Menu	To scroll all I/O variables and status (probes, digital inputs, digital outputs, etc.)
Device Locked	V-Swipe from Home screen to lock or unlock the device

USER INTERACTION

HOME NAVIGATION	SET POINT TEMPERATURE	PROG MENU	PROG MENU - ALL
			
 H-SWIPE	 TAP & HOLD ANYWHERE	 TAP & HOLD ANYWHERE	 TAP & HOLD ANYWHERE
			
 H-SWIPE	 TAP & HOLD ANYWHERE	 H-SWIPE	 H-SWIPE
			
 H-SWIPE	 V-SWIPE	 H-SWIPE	 TAP & HOLD ANYWHERE
			



GESTURE	HOW-TO	DESCRIPTION
ONE TAP	Press a specific area of the screen with a finger for 1 sec	**Switch ON / Switch OFF:** when in Virtual Keyboard, use this to turn on/off a specific function. When in Programming mode, use this to select a parameter or a parameter value.
TAP and HOLD	Press anyplace of the surface with a finger for 1 or 3 sec (depending on parameter **bPt**)	**Enter / Save:** use this to enter programming mode or parameter menu and to save modifications. When in Virtual Keyboard, use this on the "ONOFF" to switch OFF and ON the device.
H-SWIPE	Drag a finger across surface, from left to right or from right to left	**Browse:** use horizontal swipe (right to left or left to right) to browse through HOME, Virtual Keyboard and Info View. When in Programming menu: use horizontal swipe to browse through parameter menu.
V-SWIPE	Drag a finger across surface, from top to bottom or from bottom to top (overlapping only one of the digits)	**Modify:** use vertical swipe (from top to bottom or bottom to top) to change a parameter value.

TECHNICAL SPECIFICATIONS

FEATURES	DESCRIPTION		
Housing	Self-extinguishing PC/PC+ABS		
Dimensions	Front 38x80 mm; case depth 81mm		
Mounting device	Panel, 71x29mm panel cut-out		
Degree of Protection	**NEMA – UL 50e**	Indoor use only, type 1 enclosure	
	IP-IEC/EN 60529	Front panel: IP66	Rear Housing: IP20
Power Supply	100 to 240VAC±10%, 50/60Hz		
Overvoltage Category	II		
Rated Power	100-240VAC: 3VA		
Rated Impulse Voltage	2500V		
Display	White display, LED type, 3 digits with decimal point and multi-function icons		
Buzzer	Internal, always present		
Software Class	A		
Terminal blocks / Terminal Connections	Plug-in or screw terminal block, wire section between 0,5 and 2,5 mm2 Max tightening force: 0.3 N/m for 3,5mm pitch, 0.4 N/m for 5,0mm pitch		
Data Storing	**Real Time Clock:** Data maintenance up to 6 months with lithium battery. **Other parameters:** internal flash.		
Type of Action	1.B		
Pollution Degree	2, non-condensing humidity		
Ambient Operating Temperature and Humidity	**IEC/EN**	0T55°C; 20-85 rH% (non-condensing humidity)	
	UL-CAN/CSA	-20T55°C; 20-85 rH% (non-condensing humidity)	
Shipping and storage temperature	-40T85°C; 20-85 rH% (non-condensing humidity)		
Resistance to Heat	UL 94 V-0		
Measurement range	**NTC:** -40T110°C, resolution 0.1°C or 1°C (selectable); **PT1000:** -100T150°C, resolution 0.1°C or 1°C (selectable); **PTC:** -50T150°C, resolution 0.1°C or 1°C (selectable) *4-20mA: 0.0 to 100.0% RH; resolution 0.5% RH with Copeland Controls S.r.l. probe models "XH20P"*		
Accuracy	NTC, PTC, PT1000: ±1% compared to the full scale 4-20mA: ±1% compared to the full scale		

FEATURES	DESCRIPTION			
Inputs	Up to 4 NTC, PTC or PT1000 (configurable); Up to 2 voltage free contacts			
	A 3-wire analogue input 4-20mA with onboard power supply; Terminal 2: max supply voltage = 12Vdc; max supply current = 25mA			
Relay Outputs		Nominal	UL	IEC
	oA1	SPST 16A, 250VAC	Resistive load 11A (NO), 240Vac, 30k cycles; Motor load 10FLA/60LRA (NO), 240Vac, 30k cycles; Pilot Duty B300 (NO), 6k cycles	10(4)A (NO), 240Vac, 100k cycles
	oA2	SPDT 16A, 250VAC	Resistive load 11A (NO), 240Vac, 30k cycles; Motor load 10FLA/60LRA (NO), 240Vac, 30k cycles; Pilot Duty B300 (NO), 6k cycles	10(4)A (NO), 240Vac, 100k cycles
	oA3	SPST 10A, 250VAC	Resistive load 4A (NO), 230Vac, 100k cycles; Pilot Duty C300 (NO), 100k cycles	4A (NO), 240Vac, 25k cycles
	oA4	SPDT 5A, 250VAC	Resistive load 5A (NO), 230Vac, 100k cycles; Motor load 4FLA/4LRA (NO), 100k cycles	5A (NO/NC), 240Vac, 100k cycles
Optional	oA4	SPST 5A, 250VAC	Resistive load 4A (NO), 240Vac, 100k cycles; Motor load 1/8HP (NO), 120/240Vac, 30k cycles; Pilot duty C300 (NO), 100k cycles	5A (NO), 240Vac, 100k cycles; 1(1)A (NO), 240Vac, 100k cycles
	oA4	SPDT 7A, 250Vac	Resistive load 5A (NO), 240Vac, 100k cycles; Motor load 4FLA/4LRA (NO), 240Vac, 100k cycles	5A (NC), 240Vac, 100K cycles; 5A (NO), 240Vac, 20K cycles
	oA1	SPST 16A inrush, 250VAC	Resistive load 11A, 240Vac, 50k cycles;	11A, 240Vac, 30k cycles

Maximum ampacity on terminal 7	9A (COM OA1 OA3)		
Analogue Outputs	1Ao	Frequency output; Supply max voltage=12Vdc; Max supply current=2mA; duty cycle 50%; 0 to 166 Hz Accuracy: ±1Hz compared to the full scale	A3: Freq A4: GND
	2Ao	0-10Vdc; Max supply current=5mA Accuracy: ±1% compared to the full scale	A1: V+ A2: GND
Remote Display	XH-REP	Max cable length: 10 m; Do not connect third party devices.	
I/O port	HOT-KEY: MAX voltage allowed is 5 VDC. DO NOT CONNECT ANY EXTERNAL POWER SUPPLY.		
Purpose of control	Operating control		
Construction of control	Built-in control, intended to be used in Class I or Class II equipment		
Approvals	R290/R600a: relays tested according to IEC EN60079:0 and IEC EN60079:15 IEC 60730-1; IEC 60730-2-9 UL 60730-1; UL 60730-2-9 CAN/CSA E60730-1; CAN/CSA E60730-2-9		

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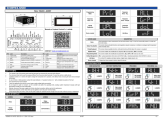
Documents / Resources

	COPELAND XH78T Temperature and Humidity Controller [pdf] Instruction Manual XH78T-QRG_EN.pdf, XH78T Temperature and Humidity Controller, XH78T, Temperature and Humidity Controller, Humidity Controller, Controller

References

- User Manual