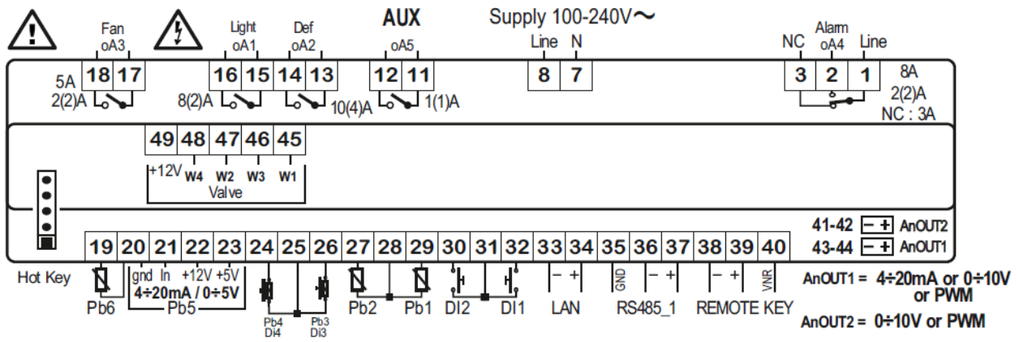
COPELAND

XM756D and CT760

1 ELECTRICAL CONNECTIONS

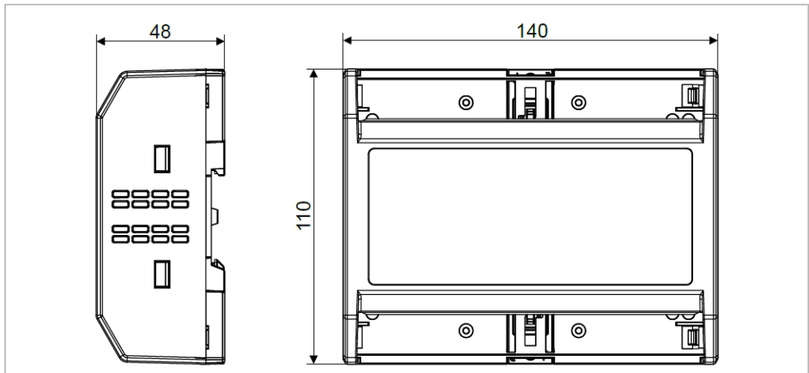


PIN	Label	Description
1	Line	Digital output 4: Common
2	Alarm	Digital ouput 4: normally closed
3	NC	Digital ouput 4: normally open
7	N	100-240V power supply: Neutral
8	Line	100-240V power supply: Line
11	AUX	Digital output 5: Common
12	AUX	Digital output 5: normally open
13	Def	Digital output 2: Common
14	Def	Digital output 2: normally open
15	Light	Digital output 1: Common
16	Light	Digital output 1: normally open
17	Fan	Digital output 3: Common
18	Fan	Digital output 3: normally open
19	Pb6-In	Analogue input 6 (temperature only)
20	GND	Ground for analogue input 5 and 6
21	Pb5-In	Analogue input 5 (temperature, current or ratiometric)
22	Pb5-12V	+12Vdc/20mA output for 4-20mA pressure transducer
23	Pb5-5V	+5Vdc/10mA output for ratiometric pressure transducer
24	Pb4-In	Analogue input 4 (temperature only)
25	GND	Ground for analogue input 3 and 4
26	Pb3-In	Analogue input 3 (temperature only)
27	Pb2-In	Analogue input 2 (temperature only)
28	GND	Ground for analogue input 1 and 2
29	Pb1-In	Analogue input 1 (temperature only)
30	DI2-In	Digital input 2 (free voltage)
31	GND	Ground for digital input 1 and 2
32	DI1-In	Digital input 1 (free voltage)
33	LAN -	Digital ouput 1: normally open
34	LAN +	High voltage power supply: Neutral
35	RS485 (GND)	Ground terminal for RS485 serial port
36	RS485 (-)	Negative terminal for RS485 (-) serial port
37	RS485 (+)	Positive terminal for RS485 (+) serial port
38	Remote key (-)	Negative terminal for Remote keyboard (-)
39	Remote key (+)	Positive terminal for Remote keyboard (+)
40	Remote key (VNR)	Supply for remote keyboard
41	AnOUT2 (-)	Analog output 2 ground
42	AnOUT2 (+)	Analog output 2 Signal (+)
43	AnOUT1 (-)	Analog output 2 ground
44	AnOUT1 (+)	Analog output 2 Signal (+)
45	W1	PIN for first coil for the stepper valve
46	W1	PIN for first coil for the stepper valve
47	W2	PIN for second coil for the stepper valve
48	W2	PIN for second coil for the stepper valve
49	+12V	12V to supply coils of stepper valve

2 SAFETY INFO

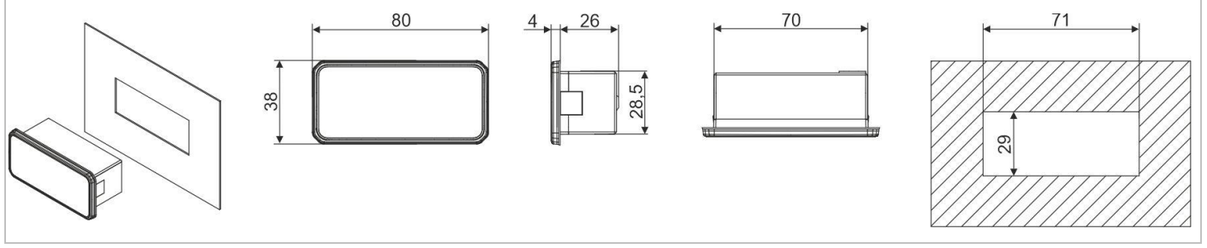
- This manual is part of the product and should be kept near the instrument for easy and quick reference.
- The instrument shall not be used for purposes different from those described hereunder. It cannot be used as a safety device.
- Copeland Controls S.r.l. reserves the right to change the composition 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.
- Strictly follow the safety instructions before opening the box.
- 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.
- Only authorised and qualified personnel may have access to the devices and to the wiring supporting communication protocols.

3 DIMENSIONS AND MODUNTING

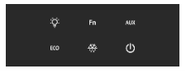


Manuals on Copeland Controls S.r.l. website:

CONTACT: dixell.service@copeland.com



4 USER INTERFACE

SCREEN	APPEARANCE	SCREEN	APPEARANCE
Home		Status Visualization	
Virtual Keyboard		Temperature Set Point	
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.
Temperature Setpoint	This screen enables the modification of the Temperature Set Point value.
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

5 USER INTERACTION

HOME NAVIGATION	SET POINT TEMPERATURE	PROG MENU	PROG MENU - ALL
			
 H-SWIPE	 TAP ANYWHERE	 TAP ANYWHERE	 TAP ANYWHERE
			
 H-SWIPE	 V-SWIPE	 H-SWIPE	 H-SWIPE
			
 H-SWIPE	 TAP SET TO SAVE	 H-SWIPE	 TAP ANYWHERE
			
 H-SWIPE		 H-SWIPE	 V-SWIPE
			
			 TAP SET TO SAVE
			

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 more than 3 sec	**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.

6 TECHNICAL SPECIFICATIONS

CT760 - KEYBOARD	DESCRIPTION		
Housing	Self-extinguishing polycarbonate		
Dimensions	Front 80x38mm, case depth 26mm		
Mounting device	Panel, 71x29 mm panel cut-out; panel thickness 0.7 ÷1.0mm; Insertion force: 40-60N		
Degree of Protection	**EN 60529**	Rear Housing: IP20	Front panel: IP54
Power Supply	From XM756D power module, 3 wires, 0,5-2.5mm²		
Display	3 digits, red LED, 20,4 mm high		
Buzzer	Internal, always present		
Max distance between controller and keyboard	10m		

XM756D – MAIN CONTROLLER	DESCRIPTION	
Housing	Self-extinguishing polycarbonate	
Dimensions	140x110x48mm (w x h xd)	
Mounting device	DIN rail	
Degree of Protection	**EN 60529**	IP20 (whole controller)
Power Supply	100 to 240VAC ±10%, 50/60Hz	
Overvoltage Category	III	
Rated Power	100-240VAC 50/60 Hz : 20VA	
Rated Impulse Voltage	4000V	

XM756D – MAIN CONTROLLER	DESCRIPTION				
Software Class	A				
Terminal blocks / Terminal Connections	**Low voltage signals:** Screw or Disconnectable terminal block, wire section between 0,5 and 2,5 mm²; Max tightening force: 0.4 N/m **High Voltage signals:** Plug-in or Screw terminal block, wire section between 1,5 and 2,5 mm²; Max tightening force: 0.5 N/m				
Data Storing	**Real Time Clock:** data maintenance up to 6 months with removable non-rechargeable lithium battery. **Other parameters:** internal flash.				
Type of Action	1.B				
Pollution Degree	2, non-condensing humidity				
Ambient Operating Temperature and Humidity	**IEC/EN:** 0T50°C; 20-85 rH% (non-condensing humidity) **UL/CSA:** -10T50°C; 20-85 rH% (non-condensing humidity)				
Shipping and storage temperature	-40T85°C; 20-85 rH% (non-condensing humidity) -20T70°C; 20-85 rH% (non-condensing humidity) – controller with RTC				
Resistance to heat	UL 94 V-0				
Measurement range	**NTC, NTC_US:** -40T110°C, resolution 0.1°C or 1°C (selectable) **PTC:** -50T150°C, resolution 0.1°C or 1°C (selectable) **PT1000:** -100T150°C, resolution 0.1°C or 1°C (selectable)				
Accuracy	**NTC, PTC, PT1000:** ±1% compared to the full scale				
Inputs	Up to 6 NTC, NTC_US, PTC or PT1000 (configurable); max distance 10m Up to 2 voltage free contacts; max distance 10m 1 4-20mA or 0-5V; max distance 10m				
Relay Outputs	**OUTPUT**	**TERMINALS**	**RATING UL 60730**	**RATING IEC/EN 60730**	**RATING IEC/EN 60335**
	oA5	11-12	Resistive load 1A, 240V, 30K cycles Pilot duty D300, 30K cycles Motor load 1FLA/6LRA, 230Vac, 30K cycles	1(1)A, 240V, 100K cycles	1(1)A, 240V, 100K cycles
	oA3	17-18	Resistive load 5A, 240V, 30K cycles Motor load 1/2HP, 240V, 30K cycles Pilot duty B300, 6K cycles	5A, 240V, 60K cycles 2(2)A, 240V, 100K cycles	5A, 240V, 100K cycles 2(2)A, 240V, 100K cycles
	oA4 (NO)	1-2	Resistive load 8A, 240V, 100K cycles Motor load 1/2HP, 240V, 30K cycles Pilot duty B300, 6K cycles	8A, 240V, 60K cycles 2(2)A, 240V, 100K cycles	8A, 240V, 100K cycles 2(2)A, 240V, 100K cycles
	oA4 (NC)	1-3	Resistive load 3A, 240V, 30K cycles Pilot duty B300, 6K cycles	3A, 240V, 30K cycles	3A, 240V, 30K cycles
	oA2	13-14	Resistive load 10A, 240V, 100K cycles Motor Load 10FLA/60LRA, 230Vac, 30K cycles Pilot Duty B300, 30K cycles	10(4)A, 240V, 100K cycles	10(4)A, 240V, 100K cycles
	oA1 (standard relay)	15-16	Resistive load 8A, 240V, 100K cycles Motor Load 8LA/48LRA, 240V, 30K cycles Pilot Duty B300, 30K cycles	8(4)A, 240V, 100K cycles	8(4)A, 240V, 100K cycles
	oA1 (inrush relay)	15-16	Resistive load 8A, 240V, 50K cycles Motor Load 8FLA/48LRA, 240V, 30K cycles Pilot Duty B300, 30K cycles	8(2)A, 240V, 100K cycles	8(2)A, 240V, 100K cycles
Unipolar Valve	Max current: 400mA; Max distance between XM756D and valve: 10m				
Analogue Outputs	**1Ao**	**Frequency output:** Supply voltage=12Vdc; Max supply current=5mA; duty cycle 50%; 0 to 166 Hz **Accuracy:** ±1Hz compared to the full scale **Current output:** 4-20mA; Max load 100 ohm **Voltage output:** 0-10Vdc; Max supply current=5mA; Min load 2 K ohm **Accuracy**: ±2% compared to the full scale			
	2Ao	**Frequency output:** Supply voltage=12Vdc; Max supply current=5mA; duty cycle 50%; 0 to 166 Hz **Accuracy:** ±1Hz compared to the full scale **Voltage output:** 0-10Vdc; Max supply current=5mA; Min load 2 K ohm **Accuracy**: ±2% compared to the full scale			
I/O port	**HOT-KEY:** Output voltage is 5 VDC **DO NOT CONNECT ANY EXTERNAL POWER SUPPLY.**				
Purpose of control	Operating control				
Construction of control	Electronic automatic Incorporated 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 Additionally evaluated to: clauses 22, 24, 29, 30 Annex N of 60335-2-40 and IEC 60335-2-89 in conjunction with IEC/EN 60335-1				

COPELAND

Copeland Controls S.r.l.
Z.I. Via dell'Industria, 27 - 32016 Alpago (BL) ITALY
Tel. +39 0437 9833 r.a. - copeland.com - dixell@copeland.com