

PRODUCT CODE

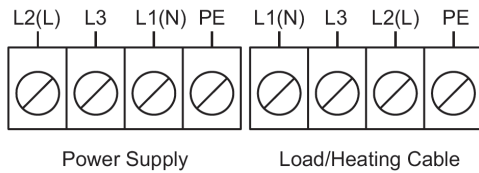
USET03

PRODUCT DESCRIPTION

The USET03 is a controller designed for high weather resistance, IP66 / NEMA 4X. It is simple to set up and even simpler to use. It is for wall mounting, and can be placed outdoors



TERMINAL CONNECTIONS



Connect the power supply and load wires to the terminals depending on the type of net you have present, eg. three-wire or phase to neutral system.

1- Power Supply

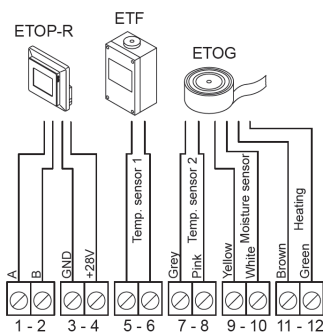
North America: 3~ 120/208 VAC, 3~277/480 VAC, ~ 120/240 VAC ±10%, 60 Hz

2- Load/heating cable

North America
3 x 8310W at 3~ 277/480 VAC, 3 x 30A
3 x 3600W at 3~ 120/208 VAC, 3 x 30A
3600W at ~ 120 VAC, 30A
7200W at ~ 240 VAC, 30A

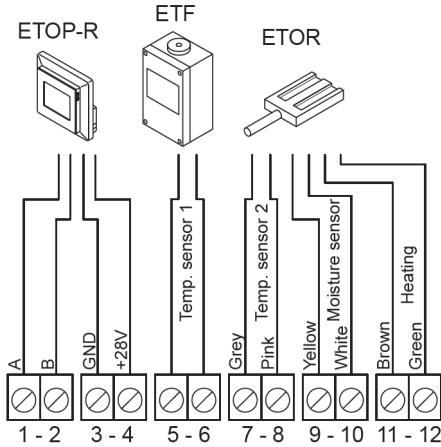
3- Sensor Connections

Terminal Connections USETOG, USETOP-R, USETF

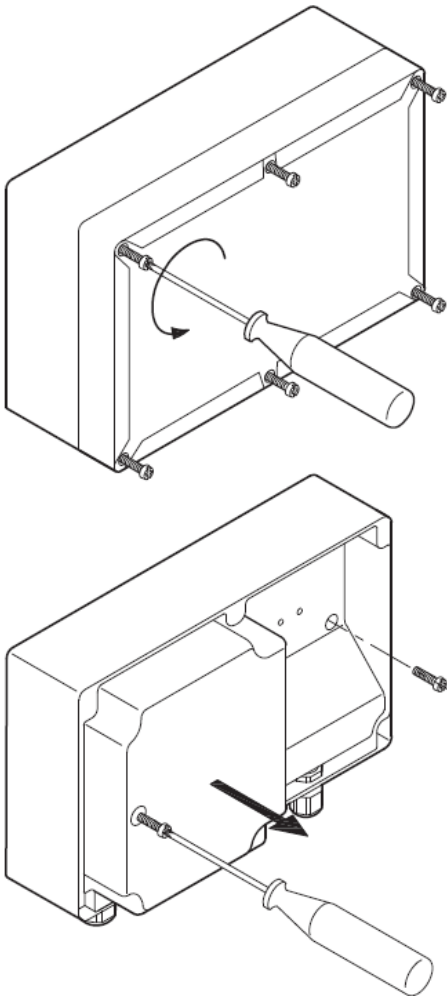


Connect the wires for the sensors and the remote control panel to the terminals, depending on the type of sensors required in the system.

Terminal Connections USET0R, USET0P-R, USETF



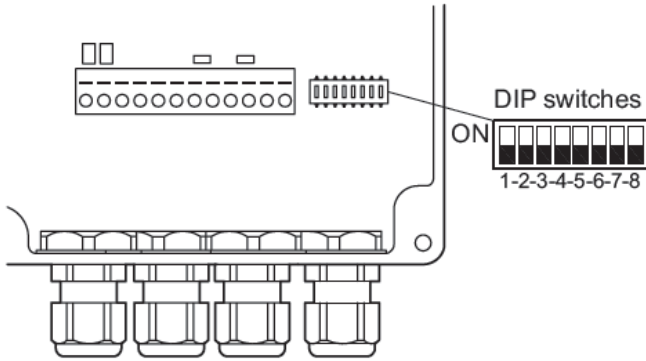
MOUNTING THE CONTROLLER



1. Open the controller/ unscrew the clear lid.
2. Use the drilling template included in the Quick Guide, to mark the mounting holes.
3. Mount the controller on a straight wall (screws not included). Use 6 screws maximum 4 mm / size 7.
4. Open the controller and remove the inner cover to get access to the terminals.
5. Remove the plugs in the cable glands used.
6. Mount the cables through the cable glands and tighten the glands.

Important! Use the correct cable sizes and make sure the cable glands are tight around the cables to maintain the proper protection level (IP66/NEMA4x).

DIP SWITCHES



Afterrun time: DIP switches 1-4 (minimum 2 hours). All DIP switch settings here can be combined for the afterrun as required.

DIP 1-4 = off: 2 hours minimum afterrun time.

DIP 1 = on: +1 hour to min. afterrun time

DIP 2 = on: +2 hour to min. afterrun time

DIP 3 = on: +4 hour to min. afterrun time

DIP 4 = on: +8 hour to min. afterrun time

DIP 1-4 = on: 17 hours maximum afterrun time (2+1+2+4+8=17hours.)

Moisture Sensor Type: DIP switch 5. Choose the sensor type, used in the system.

DIP 5 = off: USETOG sensor

DIP 5 = on: USETOR sensor

Moisture Sensor Sensitivity: DIP switches 7-8. Choose the required sensitivity as a combination of DIP switch 7 and 8.

DIP 7 = off and DIP 8 = off: Minimum

DIP 7 = on and DIP 8 = off: Low

DIP 7 = off and DIP 8 = on: Normal

DIP 7 = on and DIP 8 = on: Maximum

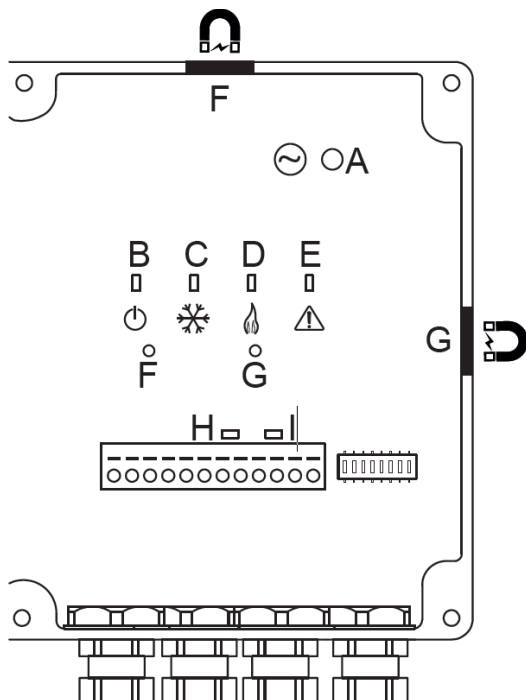
Note: DIP switch 6: NOT USED

RECOMMENDED SETTINGS

DIP	ON / OFF Setting	Description
1	OFF	Afterrun time: 2 hours
2	OFF	
3	OFF	
4	OFF	
5	OFF	Moisture sensor type: ETOG sensor
6		Not used
7	OFF	
8	ON	Moisture sensor sensitivity: normal





OPERATIONS




LED OVERVIEW






















GENERAL OPERATION MODE AND TEST MODE





PUSH BUTTONS AND MAGNETIC SENSORS HAVE EQUIVALENT FUNCTIONS.





















Push button	Magnetic sensor	LED
	Top	 Flashes for 2 sec.
	Right side	 Flashes for 2 sec.

	LED ON
	LED Flashing
	Power ON

Symbol / LED colour	LED	Operation mode Function	Test Mode Function
A  Green LED		Power connected	Power connection
B  Green LED		System active	System active
C  Green LED		Temperature within specified range	Internal temp sensor within specified range
D  Green LED		Heating active	External temp sensor 1 within specified range
		Forced heat active	NA
E  Red LED		Error detected	NA
		Test mode active	Test mode active
F  Button or top magnetic sensor		System ON / OFF Start: Push / swipe Stop: Hold for 3 sec.	Test mode Start: Push / swipe Stop: Hold for 3 sec.
G  Button or right-side magnetic sensor		Forced heat Start: Push / swipe Stop: Hold for 3 sec.	Test mode Start: Push / swipe Toggle: Push / swipe
H  Green LED		NA	External temp sensor 2 within specified range
I  Green LED		NA	Sensor detects moist
		NA	Sensor does not detect moist

ACTIVATE TEST MODE

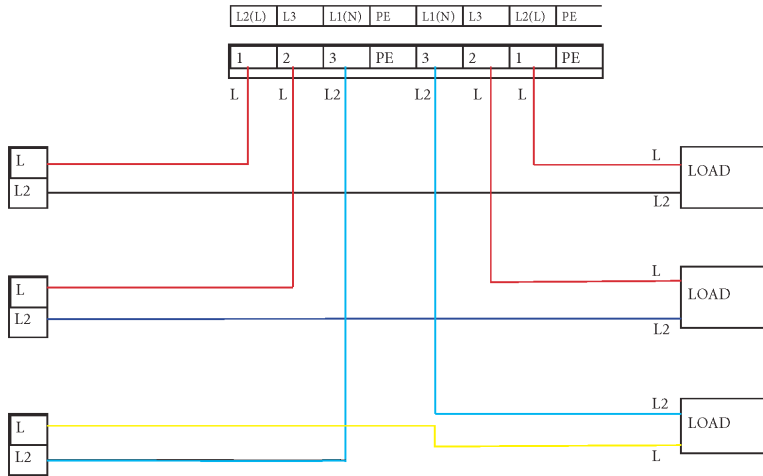
	Buttons	Magnetic sensors
Start test mode by	Pushing both  and  buttons for 3 sec.	Holding magnets on both magnetic sensors for 3 sec.
Toggle through test mode status by	Pushing  button	Swiping magnet on right-side magnetic sensor
Exit test mode at any time by	Pushing  button for 3 sec.	Holding magnet on top magnetic sensor for 3 sec.

	A	B	C	D	E	F	I	Heating Element	
								Moist	Relay
Idle State	●	●							
Detecting State	●	●					●	×	
Melting State	●	●	●					×	×
Afterrun State	●	●		●					×
Forced Heat State	●	●				●			×
Moist testing	●	●					 ●	×	
T1, Internal temp. sensor	●	●	●						
T2 -External temp. sensor 1	●	●		●					
T3 - External temp. sensor 2	●	●				●			

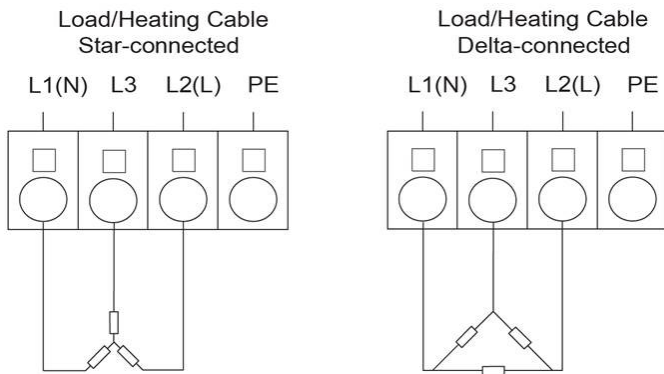
TECHNICAL SPECIFICATIONS

Purpose of control	Electrical Ice and snow melting
Method of mounting	Wall mounting
Supply voltage	3~ 120/208 VAC, ±10% 60 Hz
	3~ 277/480 VAC, ±10% 60 Hz
	~ 120/240 VAC, ±10% 60 Hz
Max. pre-fuse	30 A
Enclosure rating	IP 66
Nema	Class 4X
Wire size, terminals (power in/out)	0.75-10 mm ² / 20 AWG - 4 AWG
Wire size, terminals (low voltage)	0.2-2.5 mm ² / 24 AWG - 12 AWG
Cable size, MS 13.5 glands (signal, Modbus)	5-12 mm
Cable size, MS 16 glands (mains, load)	8-14 mm
Output voltage to remote control panel	28 VDC, 35mA
Output voltage to heating element for moist sensor	28 VDC, 125mA
Max. Load/supply	3x8310W at 3~ 277/480 VAC, 3x30A
	3x3600W at 3~ 120/208 VAC, 3x30A
	3600W at ~ 120 VAC, 30A
	7200W at ~ 240 VAC, 30A
Standby consumption	approx. 1.25 W @ 230 VAC
Ambient air humidity	10-95% non condensing
Ambient operating temp.	-50/+50°C (-58/+122 °F)
Control temperature range	-30/+30°C (-22/+86 °F)
Storage/transport temp.	-50/+70°C (-58/+158 °F)
Dimensions	H/162, W/252, D/90 mm
	H/6.38, W/9.92, D/3.40 in
Weight	1,500 g
Control pollution	degree 2
Overvoltage	category III
Type of action	1.B
Software class	A
Rated impulse voltage	4kV
Ball pressure temperature (TB)	125°C
Classification	Class I

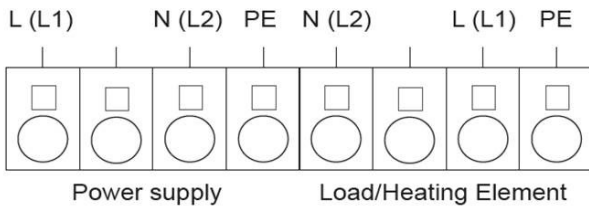
WIRING DIAGRAM



3-PHASE WIRING DIAGRAM



1~ or 2~ 120; 208; (240) Volt



3~ 120; 208; 277; 480 Volt

