

DigiTherm Digital Temperature Controller

Installation & Operation



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Introduction	2
Important safety instructions	2
Overview	3
Specifications	4
Control cycle and updating data.....	4
Display.....	4
Temperature	4
Timer.....	4
Active heating element indication.....	5
Current temperature.....	5
User interface	6
Buttons.....	6
User menu.....	6
Operation	7
Common operation.....	7
Temperature selection.....	7
Timer operation.....	8
Slow warmup process.....	8
Celsius/Fahrenheit selection.....	9



WARNING

Read and understand this manual before operating the controller. Failure to understand instructions and safety precautions could result in an accident causing injury or be fatal.

Introduction

The DigiTherm temperature controller is a durable, compact and easy to use temperature controller for a range of heating products.

The controller has a compact design and is easily mounted to heating products.

The DigiTherm controller also comes in an external version for use with various heating elements with PT100 sensor. The external controller has identical easy to use interface.

The controllers can be used to control temperature on a large variety of products, e.g. industrial heating blankets, drum heaters, and IBC container heaters.

This user manual is valid for both versions of the DigiTherm Controller.

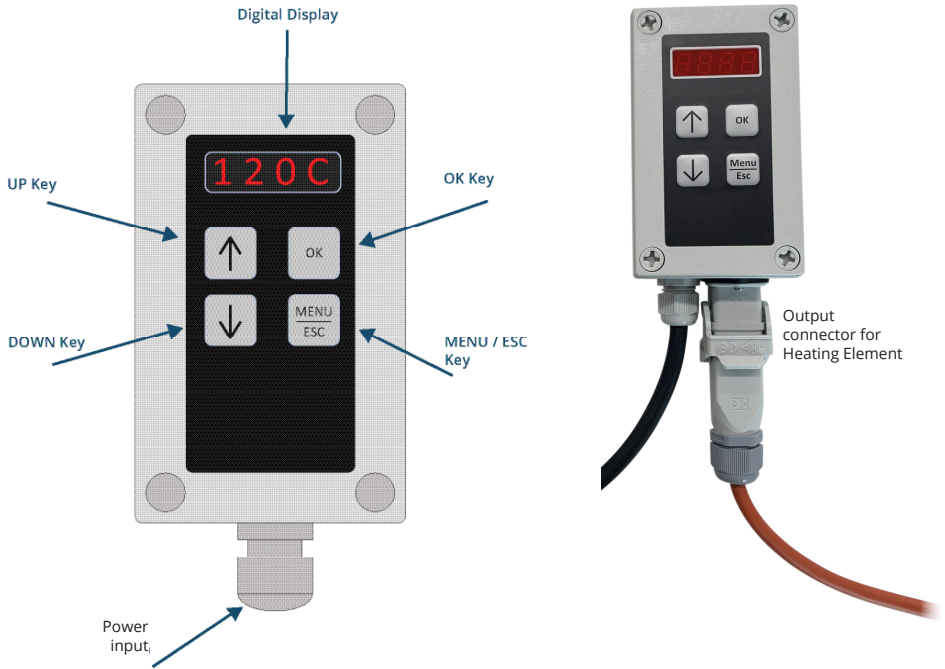
Important safety instructions

- Always inspect the controller before use.
- Never handle the installed heater while in operation. Always disconnect the power and let the heating product cool down before handling.
- Never immerse the heater or controller into liquids.
- Do not try to repair damaged or faulty controllers or heating products. Contact the manufacturer for repairs and maintenance.
- Disconnect the heater when not in use.
- Please refer to the specific heating product manual for instructions on how to use it with the controller.
- When using the External DigiTherm, do not place it on top of the heating element when in use.



Failure to operating under the above instructions may result in injuries and can be fatal.

Overview



Parameter	Specification	Additional information
Display	4 digit 7-segments.	see more information below
UP/Down Key	Change temperature threshold, menu item or menu item value.	see more information below
OK Key	Select menu item/Confirm change.	see more information below
MENU/ESC Key	Menu/Escape button.	see more information below
Power input		AC Power connection.
Output for connector for Heating Element	Pin layout: 1 & 2 Power 3 & 5 Sensor	For connecting to a heating element.

Specifications

Control cycle and updating data

Item	Min.	Typ.	Max.	Unit
Display refresh rate	30	-	60	Hz
Display blink	-	2	-	Hz
Scan Key	-	10	-	ms
Key hold, Key timeout	-	5	-	s
Read temperature	-	1	-	s
Load on/off	-	10	-	ms
Hysteresis	-	3	-	°C

Environment

IP40 rated (IP54 optional).

Sensor type

Type K for DigiTherm mounted on heating element with internal wiring.
PT100 for External DigiTherm with connector for heating elements.

Safety

Protection Class II - Double insulated.

The controllers also support earth connection if available.

Temperature

The controller supports both Celcius and Fahrenheit. They are displayed as follows.



12.0°C



12.0°F

Timer

The timer is displayed as a format [hh:mm], so that 99:59 as shown below would be 99 hours and 59 minutes.



99:59

Active heating element indication

While the heating element is active and powered on the last dot on the display will light up. Other data will still be displayed also, depending on mode of operation.



Heating element active



Heating element active

Current temperature/Selected temperature threshold

When current temperature is shown on the display the dot under the degree symbol will light up. When selected temperature threshold (setpoint) is shown the same dot will be off.



Dot on:
Displaying current
measured temperature



Dot off:
Displaying selected
temperature threshold
(setpoint)




Please note! When externally measuring surface temperature while using a heating blanket or drum heater the result can deviate from the measured temperature shown on the controller due to insulation, sensor placement, and measuring delay.



The heated wires are located throughout the blanket and if a temperature sensor is placed close to a wire, the temperature shown will be significantly higher than on the display. This is normal and not an error.

User interface

Buttons




Key	Description
	Selects the menu (see "User menu" below for details).
	Enters the current menu item or confirms the current setting.
	Adjust value currently show on the display [menu/setpoint/timer/...].

User menu


Menu	Description
A1	Adjust temperature threshold (setpoint).
A2	Not in use.
A3	Set timer. Disable the timer by setting the value to: "00:00".
A4	Set delta temperature/min. Disable by setting the value to: "0.0".
A5	Select °C (Celcius) or °F (Fahrenheit).

Operation



Common operation

Press  and select a menu item by pressing  



Press  to enter the selected menu item.



Press the arrow buttons to changes the current value for each menu item. The display will be flashing when the selected value differs from the stored value.

Press  to confirm and store the displayed value or press  to cancel and return to the stored value.

Temperature selection



Press  and move to the A1 menu item and press 

Use the arrow buttons to select the desired temperature threshold (setpoint).


Press  to confirm and store the displayed value or press  to cancel and return to the stored value.

Timer operation

A timer can be set which will automatically shut of the heating process after a selected amount of time. Setting the time to 00:00 or disconnecting and reconnecting the power will disable the timer.

Press  and move to the A3 menu item and press .



Use the arrow buttons to select the desired timeout [hh:mm].

Press  to confirm and store the displayed value or press  to cancel and return to the stored value.



Slow warmup

The slow warmup is used to make the temperature increase slowly, until the temperature threshold is reached. The value in the slow warmup menu item (A4) limits how much the temperature can rise in degrees pr. minute [°C/min].



Setting the value to "0.0" °C/min will disable the slow warmup process and return the controller to normal mode.

Press  and move to the A4 menu and press .



Use the arrow buttons to select the desired maximum temperature rise pr. minute [°C/min].

Press  to confirm and store the displayed value or press  to cancel and return to the stored value.

Celsius/Fahrenheit selection

Press  and move to the A5 menu and press .

Use the arrow buttons to select Celsius or Fahrenheit.

Press  to confirm the selection or  to cancel.

Troubleshooting



Error codes	Description
00	Relay broken.
01	Over temperature.
11	Temperature sensor connection is open (no sensor connectet).
12	Temperature sensor is short-circuited to GND.
14	Temperature sensor is short-circuited to supply voltage (VCC).
21, 22, and 24	Internal controller error.

Notes:

Related heating products

Drum heaters
for food stuff



Base Drum heaters



Insulation jackets



IBC heaters



Heating blankets

