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autoterm

COMFORT CONTROL

User's manual

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INTRODUCTION

Dear Customer!

Thank You for choosing control panel AUTOTERM Comfort Control! We are doing everything to make this product meet Your requirements, so its quality satisfies every customer.

Comfort Control is designed to be intuitive and comfortable to use, to ensure the best experience when it comes to controlling Your climate.

AUTOTERM Comfort Control is compatible with all AUTOTERM AIR and FLOW heaters.



Some older versions of PLANAR heaters may not support some of the functions.

In case of questions about compatibility with older products please contact Your local dealer or AUTOTERM Service center.

In case of any problems, we strongly recommend to contact certified service centres. Contact information and location of certified service centres can be found at our website www.autoterm.com.



Please read carefully this manual before operating the AUTOTERM heaters.

This manual contains needful information in order to use this product correctly.

Disregard of these instructions can void the warranty of the product, lead to damage of product and/or property and be a risk to health.



If the heater is handled and/or installed improperly, there is a possibility of a fire hazard and damage of property because fuel and electrical components are being used. **That is why all safety precautions, operation and installation instructions must be observed.**

For other languages of this manual, please see www.autoterm.com/manuals.

SAFETY INSTRUCTIONS



Risk to health and/or damage of product

-
- The heater may only be used for the purposes specified in its respective operation manual.
 - DO NOT use the heater in closed and/or poorly ventilated places (e.g. garage, workshop, etc.)
 - Do not step on the heater or put any objects on it and in it.
 - Do not put any body parts or items in to any of the air inlets or outlets of the heater.
 - For air heaters. Do not allow hot air to be blown directly at people, animals or heat sensitive objects.
 - To avoid burns, do not touch the exhaust lines and the heater while it is operating.
-



Risk of fire and explosion

- The heater is not designed for installation and use on any type of ADR transportation vehicle.
 - When refuelling heater must be shutdown. **Note: shutdown process can take up to 10 minutes.**
 - The vehicle where the heater is installed must be equipped with a fire extinguisher.
 - Do not cover the heater with clothing, pieces of fabric and so on, and do not place such objects in front of the air intake pipe or inlet and output of the heated air.
 - Do not use or install the heater in places, where flammable vapours or gases or large amounts of dust may form and accumulate.
 - Do not use or install the heater in places, where flammable and/or explosive items or substances are stored.
 - Avoid contact of any flammable objects with the heater's exhaust pipe.
-



Risk of damage due electrical nature

- Do not connect/disconnect any wiring of the heater while it is connected to the power supply or operating.
 - Do not connect the heater to the power circuit of the vessel, when the engine is operating and there is no battery.
 - The heater can be switched on again 15-20 seconds after disabling indications on the control panel, which means that the heater has shut down.
 - Length of the control panels wiring cannot exceed 15 meters.
-



Personnel certified by AUTOTERM is needed

- In case of faults in the operation of the heater, contact specialized repair organizations authorized by AUTOTERM.
-

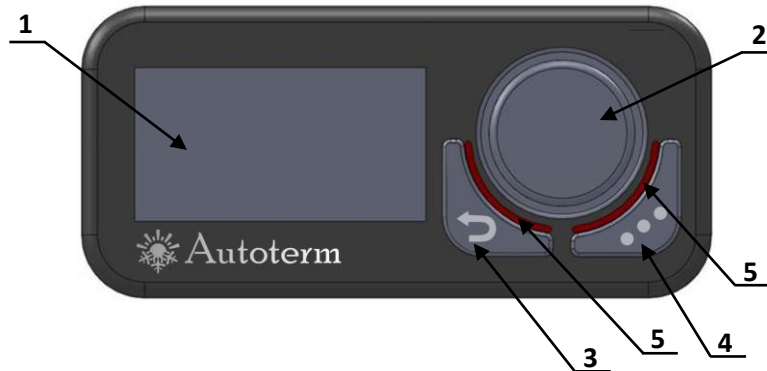
LIABILITY



Manufacturer is not liable for any damage as a result of installation and repairs by uncertified personnel and/or use of third-party parts and accessories without the approval of manufacturer.






In case of any problems, we strongly recommend to contact certified service centres. Contact information and location of certified service centres can be found at our website www.autoterm.com.

1. GENERAL INFORMATION



- 1. DISPLAY 3. BACK BUTTON 5. LED INDICATORS
- 2. ROTARY KNOB 4. QUICK BUTTON

1.1. DISPLAY

	<ul style="list-style-type: none"> • While in sleep mode: <ul style="list-style-type: none"> ○ display is inactive; ○ screensaver shows: <ul style="list-style-type: none"> – temperature; – current time and date; – symbol of set operation mode, if active. <p>Control panel goes in to sleep mode after the time of inactivity set in display settings.</p>
<p> Sleep mode is cancelled by pressing the knob or the back button.</p>	
	<ul style="list-style-type: none"> • While active display shows: <ul style="list-style-type: none"> ○ current time; ○ power supply voltage; ○ temperature; ○ set operation mode, if active; ○ active timers. <p>To access the main screen control panel has to be woken from sleep mode.</p>
<p> For air heaters temperature displayed depends on the temperature sensor selected. For liquid heaters temperature of the coolant is displayed.</p>	
<p> Description of each symbol and screen layouts can be found in their respective sections of the manual.</p>	

When an operation mode is active, respective symbol is displayed on the main screen (under the current time) and it works as a quick menu. By rotating the knob three options can be accessed:



- Active operation mode settings



- Shut off the heater



- Access the main menu

Confirm selection by pressing the knob.

1.2. ROTARY KNOB

The rotary knob is the main button for navigation through the interface.

- When control panel is active pressing the knob enters the main menu. After that pressing the knob confirms selected item or setting.
- Turning right selects next item or increases value of selected setting.
- Turning left selects previous item or decreases value of selected setting.
- While control panel is in sleep mode, turning the knob to either side allows to change the set temperature/power level of the active mode. Changes are applied without confirmation.

1.3. BACK BUTTON

Back button is used to return to the previous screen by pressing it once.

1.4. QUICK BUTTON

Quick button can be used to start or stop the heater without entering the main menu or quickly enabling or disabling timers.

- While heater is off, pressing the button once opens the *"Heating"* menu.
- While the heater is off, long-pressing the button for 2 seconds starts the heater with previous settings (Display message: *"Starting..."*).
- While the heater is operating, long-pressing the button for 2 seconds switches off the heater (Display message: *"Switching off..."*).
- While the heater is operating (and in sleep mode), pressing the button once opens the settings of the active operation mode. Changes are applied after confirmation.
- In the menu *"Timers"* pressing the button once enables/disables the selected timer (for this action timer has to be set beforehand).

1.5. LED INDICATORS

LED indicators are used to indicate the operating mode or status of the heater:

- RED – heater is working in heating mode;
- BLUE – heater is working in ventilation mode;
- GREEN – heater is switching off (purge mode);
- RED (blinking combined with display message) – an error has occurred;
- LIGHT GREEN (one blink every 5 seconds) – a timer has been enabled.


2. MOUNTING AND CONNECTION

Control panel can be mounted using screws or double-sided adhesive tape.

For mounting with screws, gently remove the back panel using a thin flat screwdriver, by prying it from the middle of one of the sides. Then screw the back panel to your desired surface.

For mounting with double-sided adhesive tape, before installation decrease the back of the control panel and the desired surface.

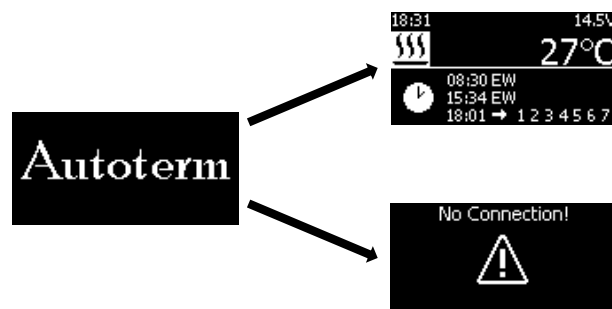



 To increase the length of control panels wiring, use only designated extension wirings.

When connected to the power supply control panel turns on automatically.

When turned on LED indicators light up, while showing AUTOTERM logos on the display.

Connection process takes approx. up to 20 seconds. If connection is established display shows main screen. If connection fails message “No connection!” is displayed.







 After disconnecting the control panel from the power supply time and date must be reset. Rest of the settings, such as set timers, remain saved.

3. OPERATION AND SETTINGS

3.1. MAIN MENU

Main menu can be accessed from main screen by pressing the rotary knob once. Navigate through the menu by turning the knob. To enter the selected menu, press the knob once.

TIMERS		Is used to set and enable/disable up to 3 timers.
HEATING		Is used to set different heating modes, depending on the connected heater.
VENTILATION		Is used to set ventilation mode (<i>except for AIR 8D and liquid heaters</i>).
SETTINGS		Is used to change general settings of the control panel and heater.

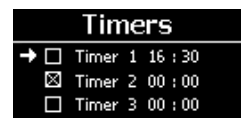
3.2. TIMERS

In “Timers” menu up to 3 timers can be set to start the heater at specific time in desired mode for desired duration.

To set timers select the “Timers” menu from the main menu by pressing the knob once.




Choose one of three timers by rotating the knob and pressing the knob once to confirm the selected timer.



Default values of the timers are: 0:00 – ED – Heating.



Quick button () can be used to enable/disable previously set timers.




After selecting a timer, choose to enable or adjust the timer by rotating the knob and pressing the knob once to confirm one of the options.




Editing the timer

Set the time of day for heater to start: <ul style="list-style-type: none"> • Set hours and confirm; • Set minutes and confirm. 	Start Time 01 : 20																						
Set working duration of the heater. Duration can be set from 30min to 720min* with increasing step of 5min. <i>*up to 120min for liquid heaters</i>	Set duration 45min																						
Set days for heater to start, where: <ul style="list-style-type: none"> • ED (Every Day) – heater starts every day of the week; • EW (Every Workday) – heater starts every day from Monday to Friday; • SEL (Select specific day) – heater starts only on specified days, where: <table border="0" style="margin-left: 20px;"> <tr> <td>1 – Monday</td> <td>3 – Wednesday</td> <td>5 – Friday</td> <td>7 – Sunday</td> </tr> <tr> <td>2 – Tuesday</td> <td>4 – Thursday</td> <td>6 – Saturday</td> <td></td> </tr> </table> 	1 – Monday	3 – Wednesday	5 – Friday	7 – Sunday	2 – Tuesday	4 – Thursday	6 – Saturday		<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> Select days ED Every day </div> <div style="text-align: center;"> Select days EW Every work day </div> <div style="text-align: center;"> Select days SEL Select specific day </div> <div style="text-align: center;"> Select days <table border="1" style="font-size: 8px;"> <tr> <td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td> </tr> <tr> <td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td> </tr> </table> Next </div> </div>	1	2	3	4	5	6	7	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1 – Monday	3 – Wednesday	5 – Friday	7 – Sunday																				
2 – Tuesday	4 – Thursday	6 – Saturday																					
1	2	3	4	5	6	7																	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																	

Set the operation mode for **air heaters**:

Select mode  Heat	Select mode  Heat and ventilate	Select mode  Only ventilate
• Heating mode	• Heat + Ventilation mode	• Ventilation mode

Set the operation mode for **liquid heaters**:

Select mode  Pre-heating	Select mode ECO Pre-heating
• Pre-heating mode	• ECO mode (only for FLOW 14D)

When all the parameters are set message “Saved” is shown on the display and the timer is enabled automatically. Enabled timers can be seen on the bottom part of the main screen. LED indicators will blink light green once every 5sec when timer is enabled.



3.3. HEATING

In "Heating" menu different operation modes for heating can be set, depending on the connected heater.

To set heater modes select the "Heating" menu from the main menu by pressing the knob once and then select one of the heating modes:



Temperature can be set in a range of 0°C up to 30°C, with step of 1°C.



Work time can be set by turning the knob in either direction, in a range of **30 min** up to **infinity** (or vice versa) by a step of:

- 5min up to 2h;
- 20min up to 12h;
- after 12h next step is ∞.



It is impossible to switch to any of heating modes while heater is operating in ventilation mode!

Heating modes for air heaters:

TEMPERATURE MODE	–	Heater will maintain set temperature by reducing the heating power, without shutting off the combustion process.
POWER MODE	–	Heater will operate constantly at set power level.
HEAT + VENTILATION	–	Heater will operate till the temperature is reached 1°C above the set temperature, shut off the combustion process and start to ventilate till the temperature drops 5°C below the set temperature. When temperature drops, heating starts again.
THERMOSTAT MODE	–	Heater will operate till the specified temperature is reached then shuts off the combustion process and ventilation. After the temperature drops by specified degrees heating will start again.

Setting Temperature mode

Select "Temperature mode" from the menu.



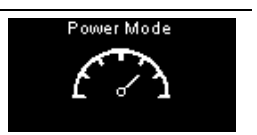
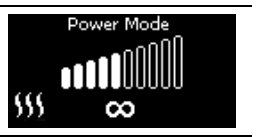

Set temperature and confirm.
Set work time and confirm.



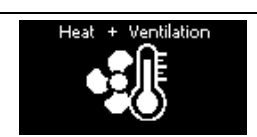
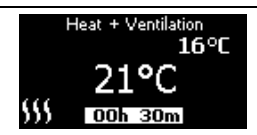
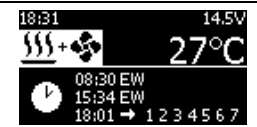
When mode is active, respective symbol is shown on the main screen



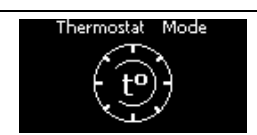


Setting Power mode

<p>Select "Power mode" from the menu.</p>	
<p>Set power level and confirm. Set work time and confirm.</p>	
<p>When mode is active, respective symbol is shown on the main screen</p>	

Setting Heat + Ventilation mode

<p>Select "Heat + Ventilation" from the menu.</p>	
<p>Set temperature and confirm. Set work time and confirm.</p>	
<p>When mode is active, respective symbol is shown on the main screen.</p>	

Setting Thermostat mode

<p>Select "Thermostat mode" from the menu.</p>	
<p>Set temperature and confirm. Set work time and confirm.</p>	
<p>When mode is active, respective symbol is shown on the main screen.</p>	

Default value for MAX temperature rise is 1°C and MIN temperature drop is 2°C. These settings can be changed in "Settings -> Heater -> Advanced -> Thermostat".







Heating modes for liquid heaters:

PRE-HEATING MODE	– Heater will operate till the certain coolant temperature is reached then shuts off the combustion process. After the temperature of the coolant drops heating will start again.
ECO MODE (only for FLOW 14D)	– Pre-heating mode with reduced power and fuel consumption. Temperature of the coolant is reached slower than in “Pre-heating mode.”
THERMOSTAT MODE (only for Flow 5)	– Heater will operate till the specified interior temperature is reached then shuts off the combustion process. After the temperature drops by specified degrees heating will start again. Temperature is read by control panel. <i>*for setting up “Thermostat mode” see instructions for AIR heaters.</i>



Default settings of the coolant temperature is 88°C for Flow 5 and 80°C for Flow 14D.
Default value for Flow 14D cannot be changed.
 Temperature drop of the coolant is 18°C for Flow 5 and 20°C for Flow 14D.

Setting Pre-heating or ECO mode

Select “Pre-heating” or “ECO” from the menu.		
Set work time and confirm.		
When mode is active, respective symbol is shown on the main screen		

3.4. VENTILATION

In “Ventilation” menu, heater can be set to ventilate air without the combustion process. Ventilation can be set at desired power level and duration.



To set ventilation mode select the “Ventilation” menu from the main menu by pressing the knob once.



Work time can be set by turning the knob in either direction, in a range of **30 min up to infinity** (or vice versa) by a step of:

- 5min up to 2h;
- 20min up to 12h;
- after 12h next step is ∞.



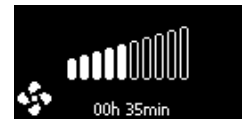
AUTOTERM FLOW liquid heaters and AUTOTERM AIR 8D air heater does not support ventilation mode!



It is impossible to switch to ventilation mode while heater is operating in one of the heating modes!

Setting Ventilation mode

Set power level and confirm.
Set work time and confirm.



When mode is active, respective symbol is shown on the main screen




4. SETTINGS

In the “Settings” menu general settings for control panel and advanced settings for the heater can be changed. Available settings are displayed depending on the connected heater.



To enter the “Settings” menu select it from the main menu by pressing the knob once and select one of the options.

 Turn the knob to change value, press the knob to confirm set value.

4.1. TIME/DATE


- Set the current time and date.

4.2. DISPLAY

- **LANGUAGE** – change the display language of the control panel.
- **UNITS** – Change displayed format of units. Metric (24h time format, °C) or Imperial (12h time format, °F).
- **BRIGHTNESS** – change the brightness level of the display.
- **SLEEP MODE** – change the time after which control panel goes to sleep mode. Enable/Disable screen saver.

4.3. HEATER (*for air heaters*)

- **TEMP. SENSOR** – change the temperature sensor by which the temperature is read:
 - **BY PANEL** – temp. sensor built in the control panel;
 - **BY HEATER** – temp. sensor built in the heater;
 - **EXTERNAL** – externally connected temp. sensor (*sold separately*). This option is visible only when external temp. sensor is connected.


 Temperature sensor cannot be changed while heater is operating in “Power mode” or “Thermostat mode”.

-
- **ADVANCED** – change advanced settings of the heater:


 - **SHUTDOWN VOLTAGE** – set voltage and time for battery protection. If the actual voltage of the power supply is lower than the set voltage for the set duration, heater shuts down and operation modes cannot be activated.

 - **THERMOSTAT** – change default values for temperature rise and drop for thermostat mode. MAX from 1°C to 3°C, MIN from 1°C to 7°C;

 - **INFO** – displays information about serial numbers and software versions:
 - Heater serial number (s/n)
 - Heater software version (s/w)
 - Total heater operating hours (w/t)
 - Control panel serial number (s/n)
 - Control panel software version (f/w)
-

 The “*INFO*” section cannot be accessed while heater is operating.

4.4. PRE-HEATER *(for liquid heaters)*

 Settings menu “*Pre-heater*” is disabled when Flow 5 is operating.
 For Flow 14D in “*Advanced*” settings only “*Info*” and “*Shutdown voltage*” options are available.

-
- **INFO** – displays the same information as for air heaters.

 - **AUXILIARY** – set and enable/disable auxiliary mode. When auxiliary mode is enabled, pre-heater starts when engine starts and maintains set temperature of the coolant. Temperature range for auxiliary mode is 75°C to 95°C.

 - **TEMPERATURE** – set default temperature for coolant in heating mode. Temperature range is 20°C to 95°C.

 - **ADVANCED** – change advanced settings of the pre-heater:
 - **THERMOSTAT** – enable/disable and configure thermostat mode;
 - **CIRCULATION** – when heating in thermostat mode, coolant pump will always continue to circulate the coolant, even when heater is switched off.
 - **HYSTERESIS** – change default values for temperature rise and drop for thermostat mode. MAX from 1°C to 3°C, MIN from 1°C to 7°C.

 - **START PUMP** – starts coolant pump for the purpose to bleed the system after installation. Pump is working while message “*Pump enabled*” is displayed. Pressing the back button, switches the pump off.

 - **SHUTDOWN VOLTAGE** – set voltage and time for battery protection (*same as for air heaters*).
-

-
- **FAN** – set and enable/disable activation of the interior fan. Set coolant temperature at which interior fan of the vehicle will activate. Temperature can be set in range of 30°C to 60°C. Default value is 40°C.
-



To activate the “*Fan*” function, after enabling it, heater must be disconnected and reconnected from the power supply.

Additional relay set is required for this option to work. Contact Your local dealer.

- **EXTERNAL START** – enable/disable external start. For this function to work grey and black wires of the control unit must be connected to the alarm system of the vehicle. See installation manual of the heater.
-

- **COOLANT PUMP** – enable/disable operation modes of the coolant pump:
 - **WAIT MODE** – When enabled, coolant pump will continue to operate after the heater in pre-heating mode has reached the set temperature and stops the heating process. If disabled, heater coolant pump will stop the circulation when heater stops the heating.
 - **WITH ENGINE** – When enabled, coolant pump starts when the engine of the vehicle starts. This option improves the circulation of the coolant.
-

- **PUMP TYPE** – select the type of the coolant pump depending on the coolant pump in use:
 - **BOSCH** – Pump operates using PWM signal.
 - **ADVERS** – Pump operates using DC.
-

4.5. LED

- Turn on or off the LED indicators.

4.6. RESET

- Reset the control panel to factory settings.

5. ERRORS AND MAINTANACE

In case of an error LED indicators blinks red once every 5 seconds and an error message is displayed depending on the fault and the heater connected.

Full discriptions of the fault codes can be found in the respective manual of the heater.



Maintenance and repair of the heater should only be performed by personnel trained and qualified by AUTOTERM.

ERROR MESSAGE	FAULT CODE BY HEATER		
	AIR HEATERS	FLOW 5	FLOW 14D
Air Ducting or Outlet!	1;2	-	
Service!	4; 5; 6; 9; 10; 13; 16; 27; 28		
	7; 11; 29; 32; 34; 36; 37	3; 24; 25; 26;	3
Overvoltage!		12	
Undervoltage!		15	
Low voltage!	35	-	
Fuel pump!	17	17; 22	17
No connection!	20; 30	20; 30; 50	20
Overheating!	31	1	1; 2
Heater Locked!	33	37	-
Check fuel system!	8; 78	29; 78	
Coolant pump/circuit!	-	14	

REMINDER!



To ensure reliable operation of the heater, it is required to start it once in 30 days on max heating power for 30 minutes including the warm seasons of the year, when heater is out of operation.



This action is necessary to remove any viscous film sediments on moving parts of the fuel pump. Failure to do so may lead to premature failure of the heater.

That is why AUTOTERM Comfort Control has a built-in reminder to start the heater for 30 minutes, if it has been out of operation for at least 30 days. After 30 days of inactivity since the last start red LED indicators blinks once every 5 seconds and message is displayed.



Accept the start by pressing the knob once. Decline the start by pressing the “Back” button once. In case of a decline, this message is repeated if the heater hasn’t been launched in any of the heating modes.



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air and liquid heaters