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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 AIR 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 <u>www.autoterm.com</u>.



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



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 <u>www.autoterm.com/manuals</u>.

of product and/or property and be a risk to health.

SAFETY INSTRUCTIONS

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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

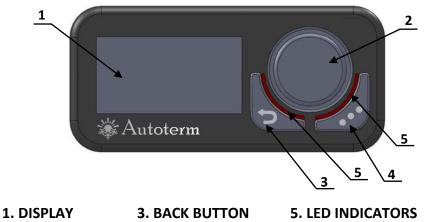


Manufacturer is not liable for any damage as a result of installation and repairs by uncertified personnel and/or use of third-party parts and accessories without the approval of manufacturer.

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 <u>www.autoterm.com</u>.



1. GENERAL INFORMATION



2. ROTARY KNOB 4. QUICK BUTTON

1.1. DISPLAY

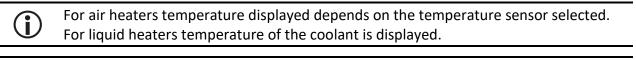
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555 26°C 9:45 04.09.2020 Fri	 While in sleep mode: display is inactive; screensaver shows: temperature; current time and date; symbol of set operation mode, if active.
	Control panel goes in to sleep mode after the time of inactivity set in display settings.

Sleep mode is cancelled by pressing the knob or the back button.

18:31 14.5∨ 333 27°C 08:30 EW 15:34 EW 15:34 EW	 While active display shows: current time; power supply voltage; temperature; set operation mode, if active; active timers.
18:01 → 1234567	To access the main screen control panel has to be woken from sleep
	mode.



Description of each symbol and screen layouts can be found in their respective sections of the manual.



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





• 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 degrease the back of the control panel and the desired surface.



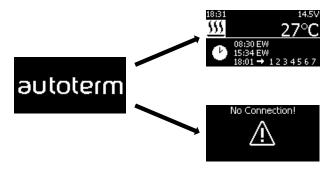
To increase the length of control panels wiring, use only designated extension wirings.

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

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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 form 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	<u>555</u>	Is used to set different heating modes, depending on the connected heater.	
VENTILATION	6 1 1	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.

	Tim	1e	rs	
→ 🗆	Timer	1	16:30	
\boxtimes	Timer	2	00:00	
	Timer	3	00:00	

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

Quick button (

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.

Timer 1 → Enable ← Adjust



Editing the timer

Set the time of day for h	neater to start:			Start Time
Set hours and co	onfirm;			01:20
 Set minutes and 	confirm.			
Set working duration of	the heater.		S	et duration
Duration can be set from		with increasing step op to 120min for liqu		45 min
Set days for heater to st	art, where:	Select	days S	elect days
• ED (Every Day) – he week;	ater starts every day		D y day E	EW Every work day
• EW (Every Workday) -	- heater starts every d			
Monday to Friday;		Select		elect days
• SEL (Select specific a specified days, where		-	EL pecific day	3 4 5 6 7
1 – Monday	3 – Wednesday	5 – Friday	7 – Sunday	
2 – Tuesday	4 – Thursday	6 – Saturday		
Set the operation mode Select mode 555	Sele	ect mode	Select	mode
Heat	Heata	ind ventilate	Only ven	tilata

Heat	Heat an	nd ventilate C	Only ventilate
 Heating mode 	 Heat + Ver 	ntilation mode 🛛 🔹 Ven	ntilation mode
Set the operation mode for li	quid heaters:		
Select mode		Select mod	le
555		ECO	
Pre-heating		Pre-heating	
 Pre-heating r 	node	 ECO mode (only for 	or 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 connceted 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:

		Heater will maintain set temperature by reducing the heating		
TEMPERATURE MODE		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 <i>"Temperature mode"</i> from the menu.	Temperature Mode
Set temperature and confirm. Set work time and confirm.	Temperature mode 16°C 21°C \$\$\$\$ 00h 30m
When mode is active, respective symbol is shown on the main screen	18:31 14.5V 27°C 08:30 EW 15:34 EW 18:01 → 1 2 3 4 5 6 7



Setting Power mode

Select <i>"Power mode"</i> from the menu.	Power Mode
Set power level and confirm. Set work time and confirm.	
When mode is active, respective symbol is shown on the main screen	18:31 14.5V <u>18:31</u> 27°C 08:30 EW 15:34 EW 18:01 → 1 2 3 4 5 6 7

Setting Heat + Ventilation mode

Select <i>"Heat + Ventilation"</i> from the menu.	Heat + Ventilation
Set temperature and confirm. Set work time and confirm.	Heat + Ventilation 16°C 21°C 555 00h 30m
When mode is active, respective symbol is shown on the main screen.	18:31 14.5V <u>18:31</u> 27°C 08:30 EW 15:34 EW 18:01 → 123 4567

Setting Thermostat mode

Select <i>"Thermostat mode"</i> from the menu.	Thermostat Mode
Set temperature and confirm. Set work time and confirm.	Thermostat mode 16°C 21°C t° <u>coch 30m</u>
When mode is active, respective symbol is shown on the main screen.	18:31 14.5V 27°C 08:30 EW 15:34 EW 18:01 → 1 2 3 4 5 6 7

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:

 Heater will operate till the certain coolant temperatur PRE-HEATING MODE – then shuts off the combustion process. After the tempe coolant drops heating will start again. 		
ECO MODE (only for FLOW 14D)	Pre-heating mode with reduced power and fuel consu- Temperature of the coolant is reached slower than in "Pre-h mode."	-
THERMOSTAT MODE (only for Flow 5)	 by specified degrees heating will start again. Temperature is read h 	



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

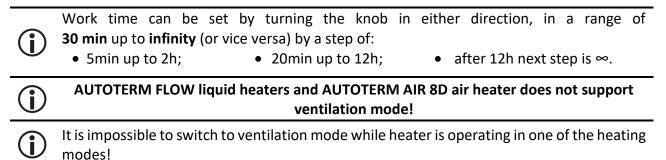
Select <i>"Pre-heating"</i> or <i>"ECO"</i> from the menu.	Pre-heating	Pre-heating SSS ECO
Set work time and confirm.	Pre-heating SSS SSS COOM 30m	\$\$\$\$ \$\$\$ \$\$\$ \$\$\$ \$\$\$ \$\$\$ \$\$\$ \$ \$ \$ \$ \$
When mode is active, respective symbol is shown on the main screen	18:31 14.5∨ 11 27°C 15:34 EW 15:34 EW 18:01 → 1234567	18:31 14.5V ECO 27°C 08:30 EW 15:34 EW 18:01 → 1234567 1234567

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.



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

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• 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)

٠	• TEMP. SENSOR – change the temperature sensor by which the temperature is read:			
	0	BY PANEL	-	temp. sensor built in the control panel;
	0	BY HEATER	_	temp. sensor built in the heater;
	0	EXTERNAL	-	externally connected temp. sensor <i>(sold separately)</i> . 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	• SHUTDOWN – set voltage and time for battery protection.			
VOLTAGE	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	 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; 			
o INFO	• INFO – displays information about serial numbers and software versions:			
 Heater 	 serial number (s/n) Control panel serial number (s/n) Software version (s/w) Control panel software version (f/w) Deater operating hours (w/t) 			
The "INFO" section cannot be accessed while heater is operating.				

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

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

For Flow 14D in "Advanced" settings only "Info" and "Shutdown voltage" available.

• INFO	 displays the same information as for air heaters. 	
• AUXILIARY	AUXILIARY – set and enable/disable auxiliary mode. When auxiliary mode enabled, pre-heater starts when engine starts and maintains temperature of the coolant. Temperature range for auxiliary mo 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 <i>"Pump enabled"</i> is displayed. Pressing the back button, switches the pump off. 	
 SHUTDOWN VOLTAGE 	set voltage and time for battery protection (same as for air heaters).	



 set and enable/disable activation of the interior fan. Set coolant FAN 0 temperature at which interior fan of the vehicle will activate. Temperature can be set in rage a of 30°C to 60°C. Default value is 40°C. To activate the "Fan" function, after enabling it, heater must be disconnected and (i) 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 0 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: 0 • 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. When enabled, coolant pump starts when the engine of the WITH ENGINE vehicle starts. This option improves the circulation of the coolant. PUMP TYPE select the type of the coolant pump depending on the coolant 0 pump in use: BOSCH Pump operates using PWM signal. - DC 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.

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

	FAULT CODE BY HEATER		
ERROR MESSAGE	AIR HEATERS	FLOW 5	FLOW 14D
Air Ducting or Outlet!	1;2	-	
Service!	4; 5; 6; 9; 10; 13; 16; 27; 28		
Service	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.

