EBERLE ATR 4500 Surface Mounted Digital Temperature Controller Instruction Manual

EBERLE

Operating Instructions
ATR 4500
ATR 4800

Contents

ATR 4500 Surface Mounted Digital Temperature Controller

Important!
The device may only be opened by an electrically skilled person and must be installed as shown on the circuit diagram on the device and in these instructions. The existing safety regulations must be followed.
The relevant installation measures must be taken to achieve the requirements of protection class II. This independently mountable electronic device is used to control the temperature in dry and enclosed rooms only, with normal environment. This device conforms to EN 60730, it operates according to type 1Y.

Areas of Use

The electronic temperature controllers ATR 4100/4500/4800 can be used to control the floor and room temperature. The products are suitable for water-based and (with usage of external contactor/relay) for electric heating systems.

Installation site

- The controller should be mounted in a place in the room that is easy to access for operation.
- Mounting height: approx. 1.5 m above the floor.
- Preference should be given to installation on an internal wall.
  Avoid external walls and draughts from windows and doors.
- Ensure that the room's normal convection air reaches the controller freely without restriction. The controller should therefore not be mounted inside shelf units or behind curtains and similar coverings.
- Extraneous heat has a negative influence on the control accuracy.
- Direct sunshine, proximity to televisions, radios and heaters, lamps, stoves and heating pipes must be avoided.

Electrical connection / mounting

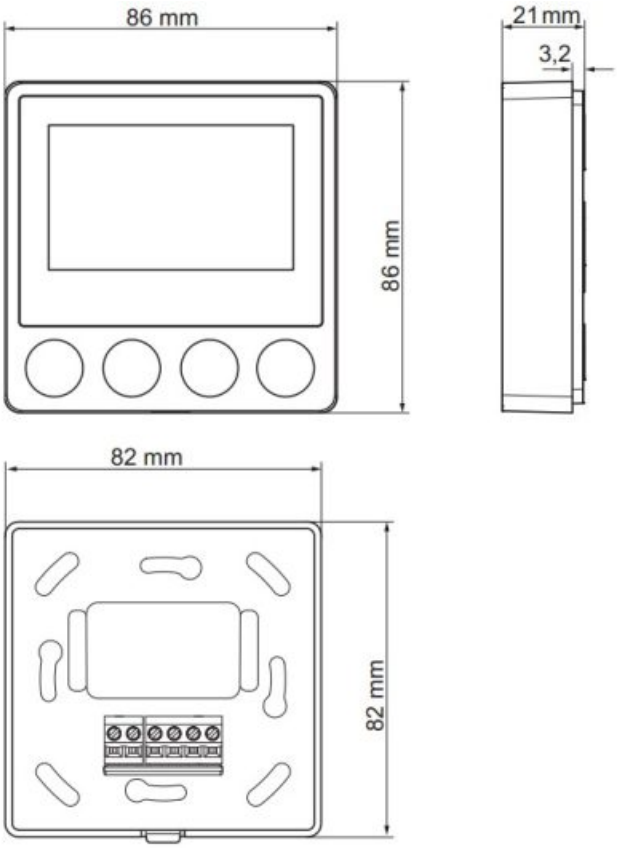
Installation in the following steps:

1. Connect the backplate terminals according to the circuit dia- gram (see laser marking on backplate or these

instructions)

2. Snap the front part onto the backplate

Dimensions



Wiring diagrams

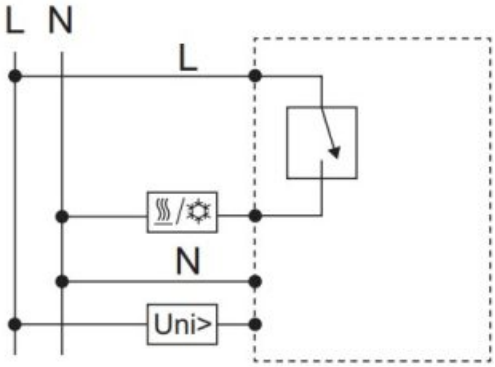
Abbreviations

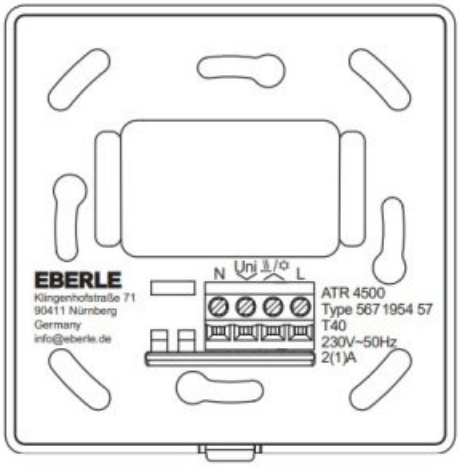
L	= outer conductor (phase)
N	= neutral conductor
Uni	= Universal input (H/C | setback | presence)
	= Heating load connection
	= Heating / Cooling load connection

Attention ⚠

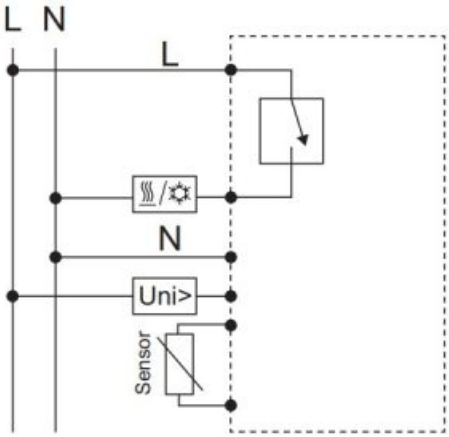
Risk of fatal injury, due to electric shock. The appliance is not safety extra-low voltage device (SELV). The sensor cables are connected to 230 V AC mains voltage. Only use sensors with insulated cables. Failure to do so may result in serious injury or death.

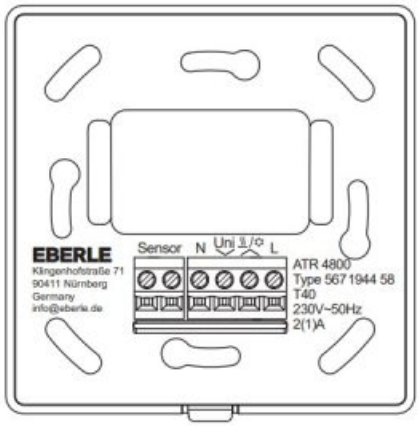
ATR 4500





ATR 4800





Technical data

	ATR 4500	**ATR 4800**
Article number	567 1954 57 600	567 1944 58 600

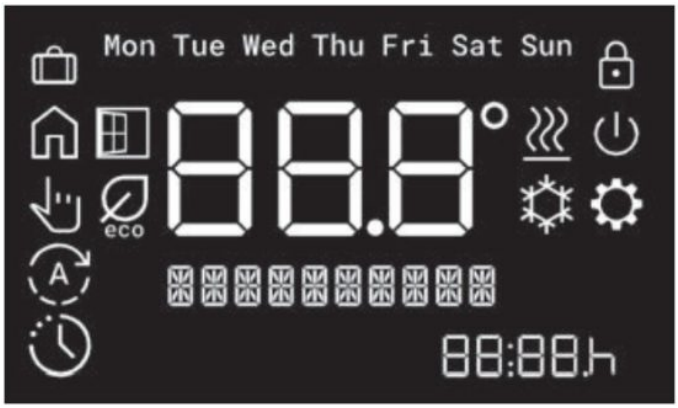
Supply voltage	230 V AC, 50 Hz	230 V AC, 50 Hz
Temperature setting range	5 … 30 °C	5 … 30 °C 10 … 40 °C
Output	Triac	Triac
No of switchable actuators	6 thermal actuators – 3 W each (18 W)	6 thermal actuators – 3 W each (18 W)
Display	PMVA black with backlight	PMVA black with backlight
Stand-by consumption	< 0,5 W	< 0,5 W
Control algorithm	PWM or ON/OFF selectable	PWM or ON/OFF selectable
PWM cycle time	5.. 20 min selectable	5.. 20 min selectable
Hysteresis	0,1 K or 0,5 K selectable	0,1 K or 0,5 K selectable
Universal input	Heating/ Cooling Change-over or S etback or Presence selectable	Heating/ Cooling Change-over or Se tback or Presence selectable
Frost protection	5 °C	5 °C 10 °C for floor control
Valve protection	Duration and timing adjustable	Duration and timing adjustable
EN 50559 temp. limit	5 min / 60 min if activated	5 min / 60 min if activated
Floor probe	–	Example: F 193 720, NTC, Length 4 m, Max. extension: 50 m Probe value selectable via menu
Setpoint range limitation	Via user menu	Via user menu
Window open detection	Temp. drop & duration adjustable vi a menu	Temp. drop & duration adjustable via menu
Heating schedules	Timer	Auto / Holiday / @Home / Timer
Parametrization	Installer & User menu directly at de vice	Installer & User menu directly at device
Ambient temperature	0 … 40 °C	0 … 40 °C
Storage temperature	–25 … 60 °C	–25 … 60 °C
Overvoltage category	III	III
Rated pulse voltage	4 kV	4 kV
Voltage / current for EMC emission testing	230 V, 0.1A	230 V, 0.1A
Protection class w/ appropriate instal- lation measu res	II	II
Degree of protection	IP 30	IP 30
Pollution degree	2	2

Temperature ball intendation test	75 °C	75 °C
Energy class (acc. EU 811/2013)	IV = 2 %	IV = 2 %
Eco design directive LOT 20	F(x) correction para- meters upon r equest	F(x) correction para- meters upon re quest

Universal input

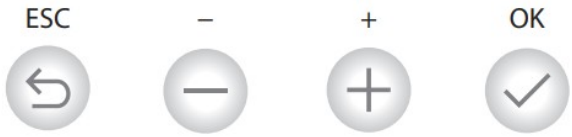
The function of the universal input can be set in the Installer Menu (Heating/Cooling change-over OR Setback OR Presence) When the H/C input is energized (230 V), the device switches to Cooling Mode.
When the setback input is energized (230 V), the device switches to Unoccupied Mode (Unoccupied temperature is settable via User Menu).
When the presence input is energized (230 V), the controller switches to Occupied Mode.
AUTO/HOLIDAY/@HOME/TIMER selections are ignored while the device is in Unoccupied Mode.

Display



	Measured Temperature
	Day of the week (ATR 4800)
	Current time (ATR 4800) or TIMER duration
	Text line

	Heating		At home
	Cooling		Manual
	Lock mode		Auto
	Off mode		Timer
	Settings		Window open
	Holiday		Eco Mode



Normal Operation

Change setpoint with [+] or [–] Press [Esc] or [OK] for mode selection, info and menu entry Scroll with [+] or [–]

INFO	Scroll with [+]/[–] through the displayed options: Next upcoming event Holiday start Holiday end AUTO schedule AT HOME schedule
AUTO	Start AUTO mode, weekly schedule set under User Menu 2, item 01 is applied
MANUAL	Manual operation, setpoint change via [+] or [–], no schedules active
AT HOME	Start AT HOME mode, schedule for the day set under User Menu 2, item 02 is applied
TIMER	Selected setpoint is applied for selected timer durati- on, once time expired, device goes b ack to previous mode and latest specified setpoint before timer was started
MENU	Entry for User Menu Level 1, User Menu Level 2 and Installer Menu

Manual override
Even during a currently active mode/schedule or absence mode, the setpoint can be changed manually at any time using [+]/[–].
The manually changed setpoint value remains active until the next event occurs. Example: In AUTO mode, the manually changed setpoint value remains active until the next timed event of the AUTO schedule. From the next event onwards, the AUTO schedule continues to be applied as defined.
Manual override is indicated by the hand symbol in addition to the active mode symbol.

Installer Presets (depending on application)

Selection after first start of device or via menu

	Use case / Heating system	ATR 4500	ATR 4800
P2	Hydronic Underfloor Heating – Room	●	●
P3	Hydronic Radiator – Room	●	●
P4	Blow convector – Room (Attention: Use only with external relay)	●	●
P5	Electrical Radiator, Infrared – Room (Attention: Use only with external relay)	●	●
P6	Hydronic Underfloor Heating – Limiter	–	●
P7	Electrical Underfloor heating – Floor (Attention: Use only with external relay)	–	●
P8	Electrical Underfloor Heating – Limiter (Attention: Use only with external rel ay)	–	●

	Function description	P2	P3	P4	P5	P6	P7	P8
02	Application type (Control sensor)	Room sensor	Room sensor	Room sensor	Room sensor	Room sensor with floor limit	Floor probe	Room sensor with floor limit
03	Floor probe type (resistance in Ohm)	–	–	–	–	33 k	33 k	33 k
04	Min. floor limit in °C	–	–	–	–	10	10	10
05	Max. floor limit in °C	–	–	–	–	40	40	40
06	Control method	PWM 20 Min	PWM 10 Min	2 point control 0,5 K	2 point control 0,5 K	PWM 20 Min	PWM 5 Min	2 point control 0,5 K
	2 point control: On/Off time in min	–	–	2	2	–	–	2
07	Actuator type	Normally closed valve	Normally closed valve	–	–	Normally closed valve	–	–
08	Universal input configuration	Heating/Cooling	Heating/Cooling	Setback input	Setback input	Heating/Cooling	Setback input	Setback input
09	Optimum Start	Yes	Yes	Yes	Yes	Yes	Yes	Yes
10	Valve protection	Yes	Yes	No	No	Yes	No	No
	Valve protection – Max. idle time in days	14	14	–	–	14	–	–
	Valve protection – Min. exercise time in min	3	3	–	–	3	–	–
11	Temporal limit acc. to EN 50559	No	No	No	Yes	No	Yes	Yes
12	Window open detection	No	No	No	No	No	No	No
13	Frost protection	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Menu

User Settings Menu level 1

User Menu item	Function description	Options	Default values	ATR 4500	ATR 4800
01	HOLIDAY settings	Delete holiday – once upcoming holiday has been specified Set temp with start and end date	–	–	●
02	Heating OFF	No – Cancel and return Yes – Output always off	No	●	●
03	Key lock To disable press [OK] & [ESC] for 5 s	No – Cancel and return YES – Enable – Any button press without effect	No	●	●
04	Access protection To disable press [OK] & [ESC] for 5 s	No – Cancel and return YES – Enable, manual setpoint change only (no menu access)	No	●	●
05	On time of load	h/week – display of how many hours per week the load has been active h/30 days – display of how many hours per 30 days the load has been active h/year – display of how many hours per year the load has been active	–	–	●
06	Display brightness in idle Device goes to idle after 60 s without button-press	0 % 10 % 25 % 50 % 75 % 100 %	0%	●	●
07	Unoccupied Setpoint (Heating only)	min. setpoint … max. setpoint	18	●	●

User Settings Menu level 2

User Menu item	Function description	Options	Default values	ATR 4500	ATR 4800
01	AUTO settings	Change existing schedule – only available once a schedule has been specified Preset 1 – Weekly heating program @work 5 days/week Preset 2 – Weekly heating program @home Custom – creation of weekly program from scratch – 6 events/day	–	–	●
02	AT HOME settings	Specification of schedule for 1 day – max 6 events (temperature & time)	–	–	●
03	Min. setpoint	5 … 30 °C (room control range) 10 … 40 °C (floor control range)	room: 5 °C floor: 10 °C	●	●
04	Max. setpoint	5 … 30 °C (room control range) 10 … 40 °C (floor control range)	room: 30 °C floor: 40 °C	●	●
06	Room sensor correction	–5.0 … +5.0 K	0 K	●	●
07	Clock Setting	Year ➔ month ➔ day ➔ time	–	–	●
08	Auto daylight saving time	No – disable Yes – enable auto daylight saving time	Yes	–	●
09	Language	German, English, French, Italian	German	●	●
10	Firmware info	Firmware version		●	●
88	Reset User data	No: Cancel and return Yes: Long hold [OK] to confirm	No	●	●

Installer Settings

Access Code for Installer settings: 32

Code Validity: 5 min after first entry

Default values depending on selected preset (see overview presets)

Menu item	Function description	Options	ATR 4500	ATR 4800
01	Preset selection	Preset 02 Hydronic UFH – Room Preset 03 Hydronic Radiator – Room Preset 04 Blow Convector – Room Preset 05 Electrical Radiator, Infrared – Room Preset 06 Hydronic UFH – Limiter Preset 07 Electrical UFH – Floor Preset 08 Electrical UFH – Limiter	●	●
02	Application type (control sensor)	ROOM – Room sensor (internal) FLOOR – Floor probe (external) LIMITER – Room sensor with floor limit	–	●
03	Floor probe type	No – No floor probe fitted 2 kOhm 10 kOhm 12 kOhm 15 kOhm 33 kOhm	–	●
04	Min. floor limit in °C	10 … 39	–	●
05	Max. floor limit in °C	11 … 40	–	●
06	Control method	PWM ➔ 20 min, 15 min, 10 min, 5 min 2 point control ➔ 0.5 K Hysteresis ➔ ON/Off time 1…10 min 0.1 K Hysteresis	●	●
07	Actuator type	nC: normally closed valves no: normally open valves	●	●
08	Universal input configuration	HEAT/COOL – Automatic Heat/Cool changeover depending on input status HEAT ONLY – Output off in Cool Mode SETBACK – Unoccupied Mode when input is energized PRESENCE – Unoccupied Mode when input is de-energized DEACTIVATE – Ignore input signals	●	●
09	Optimum start	No – disable YES – enable optimum start (Heating/Cooling will start in adaptive way to have reached demanded temperature at specified event time	–	●
10	Valve protection	No – Disable YES – Enable à Max. idle time: 0…14 days à Min exercise time: 0 …10 min	●	●
11	Temporal limit acc. to EN50559	No – Disable YES – Enable (5 Min off time per hour)	●	●
12	Window open detection	No – Disable YES – Enable ➔ WOD Threshold 0.1…5.0 K ➔ WOD Guard period: 0 … 9 min ➔ WOD ➔ event duration: 10 … 90 min	●	●
13	Frost protection	No – Disable YES – Enable (Min temp: 5 °C ROOM/LIMITER, Min temp: 10 °C FLOOR)	●	●
99	Ex-factory reset	No – Cancel & go back YES – Long hold [OK] to confirm	●	●

AUTO Schedule Presets

Preset 1 – At work 5 days / week
Monday – Thursday

Event / Schaltzeit	1	2	3	4
Zeit	06h00	08h30	17h00	22h00
Sollwert	21,5 °C	19,0 °C	21,5 °C	18,0 °C

Friday

Event / Schaltzeit	1	2	3	4
Zeit	06h00	08h30	17h00	23h00
Sollwert	21,5 °C	19,0 °C	21,5 °C	18,0 °C

Saturday

Event / Schaltzeit	1	2
Zeit	08h00	23h00
Sollwert	21,5 °C	18,0 °C

Sunday

Event / Schaltzeit	1	2
Zeit	08h00	22h00
Sollwert	21,5 °C	18,0 °C

Preset 2 – At home 7 days/week
Monday – Thursday

Event / Schaltzeit	1	2
Zeit	06h00	22h00
Sollwert	21,5 °C	18,0 °C

Friday

Event / Schaltzeit	1	2
Zeit	06h00	23h00
Sollwert	21,5 °C	18,0 °C

Saturday

Event / Schaltzeit	1	2
Zeit	08h00	23h00
Sollwert	21,5 °C	18,0 °C

Sunday

Event / Schaltzeit	1	2
Zeit	08h00	22h00
Sollwert	21,5 °C	18,0 °C

Error indication

The device indicates a temperature sensor error as follows.

In case of the error indication, please check the proper functioning of the connected probe.

This product should not be disposed of with household waste. Please recycle the products where facilities for electronic waste exist. Check with your local authorities for recycling advice.

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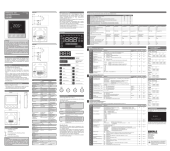
Documents / Resources

	EBERLE ATR 4500 Surface Mounted Digital Temperature Controller [pdf] Instruction Manual 5671954 57 600, 5671944 58 600, ATR 4500 Surface Mounted Digital Temperature Controller, ATR 4500, Surface Mounted Digital Temperature Controller, Mounted Digital Temperature Controller, Digital Temperature Controller, Temperature Controller, Controller

References

- User Manual