

## EasyTronic EC

### Operating Instructions



Room temperature  
controller for:

- TopVent® TH
- TopVent® TC
- TopVent® CH
- TopVent® CC
- TopVent® TV
- TopVent® TW

4 220 796-en-01



**1 Use** **3**

1.1 Intended use. . . . . 3

**2 Basic principles** **4**

2.1 Operating elements . . . . . 4

2.2 Switching on and off. . . . . 5

2.3 Setting date and time . . . . . 5

2.4 Keyboard locking . . . . . 5

**3 Operation** **6**

3.1 Setting the room temperature . . . . . 6

3.2 Setting the fan speed . . . . . 6

3.3 Setting the air distribution. . . . . 6

3.4 Setting the operating mode . . . . . 7

3.5 Alarms . . . . . 7

3.6 Week programme. . . . . 8

**4 Modbus** **10**

4.1 Parameters for controller status . . . . . 10

4.2 Operating parameters . . . . . 11

**5 Installation** **14**

5.1 Installation . . . . . 14

5.2 Electrical installation. . . . . 14

5.3 Configuration . . . . . 15

# 1 Use

## 1.1 Intended use

The EasyTronic EC is a room temperature controller with timer for TopVent® TH, TC, CH, CC, TV recirculation units and TopVent® TW air curtains. It fulfils the following functions:

- Recording the room temperature with the integrated temperature sensor
- Connection option for external room temperature sensor
- Room temperature control in on/off mode
- Lowering of the room temperature setpoint value via week programme
- Unit control depending on a door contact switch
- Manual adjustment of the fan speed
- Manual adjustment of air distribution with the Hoval Air-Injector from vertical to horizontal (for TopVent® TH, TC, CH, CC)
- Signal for switching a pump or a valve
- Fan off delay in cooling mode
- External heating/cooling changeover
- Alarm display
- Connection to the building management system via Modbus RTU

It may only be used in dry, dust-free rooms (protection rating IP 30).

Intended use also includes compliance with the operating instructions. Any usage over and above this use is considered to be not as intended. The manufacturer can accept no liability for damage resulting from improper use.

EasyTronic EC	
Power supply	110...230 VAC
Power consumption	max. 1.3 W
Temperature range	0...50 °C
Protection rating	IP 30, class 2

Table 1: EasyTronic EC technical data

Room temperature sensor ET-R (option)	
Temperature range	-30...+70 °C
Protection rating	IP 65

Table 2: Room temperature sensor ET-R technical data

## 2 Basic principles

### 2.1 Operating elements

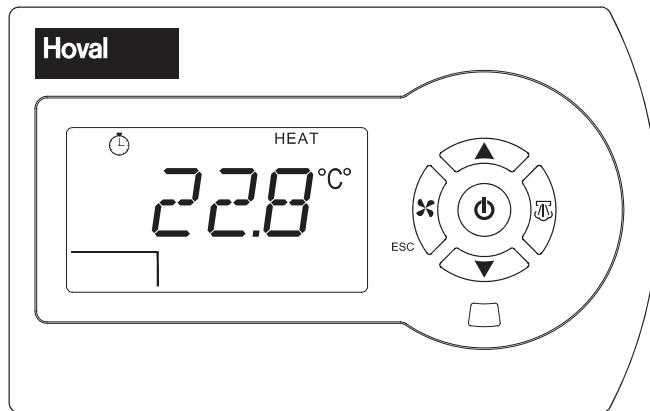


Fig. 1: EasyTronic EC

Key	Function
	<ul style="list-style-type: none"><li>■ Switching on and off</li><li>■ Navigation</li><li>■ Confirmation</li></ul>
	<ul style="list-style-type: none"><li>■ Changing the setpoint</li><li>■ Navigation</li><li>■ Modifying values</li></ul>
	<ul style="list-style-type: none"><li>■ Setting the fan speed</li><li>■ ESC function in navigation</li></ul>
	<ul style="list-style-type: none"><li>■ Setting the air distribution</li></ul>

Table 3: Key assignment

## 2.2 Switching on and off

- Press the  button until 'ON' or 'OFF' is displayed.

If the device is switched off, all of the outputs are deactivated. The display shows whether the controller was switched off manually or by Modbus:



*NR* ....Switched off manually

*Nod* ...Switched off by Modbus

## 2.3 Setting date and time

Parameter	Description	
<i>Y--r</i>	Year	2012 - 2100
<i>M--h</i>	Month	1 - 12
<i>dRY</i>	Day	1 - 31
<i>Hr.</i>	Time (hour)	0 - 23
	Time (minute)	0 - 59

- Press the  and  buttons together.



- The following screen is displayed:
- Press the  button to enter the menu.
- Use the  or  button to select the parameter to be modified.
- Modify parameter:
  - Press the  button and then press the  or  button to change the value.
  - Press the  button to save the value.
- To exit the menu, press the  button or wait for 120 s.



The device will switch between summer and winter time automatically.

## 2.4 Keyboard locking

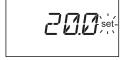
- To lock the keyboard, press the buttons , ,  at the same time.
- The display shows *LK* for 1 second.

In locked condition no operation is possible via the keyboard. When any button is pressed, the display shows *LK* for 1 second.

- To unlock the keyboard, press the buttons , ,  again.
- The display shows *NLK* for 1 second.

## 3 Operation

### 3.1 Setting the room temperature

- Press the  or  button.
- The current set value and the icon 'set' are displayed: 
- Change the value using the  or  buttons.
- The device automatically saves the change and returns to automatic operating mode after 4 seconds.

The change always applies to the currently valid setpoint:

- Unit in heating mode → Room temperature setpoint heating
- Unit in cooling mode → Room temperature setpoint cooling



The setpoint is valid in normal mode. In ECO mode and in setback mode:  
 – the setpoint heating is decreased by 5 °C  
 – the setpoint cooling is increased by 5 °C

### 3.2 Setting the fan speed

- Press the  button.
- The  icon and the current set value for the fan speed start flashing on the display. 
- Change the value using the  or  buttons.
- The device automatically saves the change and returns to automatic operating mode after 4 seconds.

### 3.3 Setting the air distribution



This function is only for TopVent® TH, TopVent® TC, TopVent® CH and TopVent® CC units with Air-Injector.

- Press the  button.
- The  icon and the current set value for the air discharge direction start flashing on the display. 
- Change the value using the  or  buttons. The following applies:  
 0 % ... vertical discharge direction  
 100 % ... horizontal discharge direction
- The device automatically saves the change and returns to automatic operating mode after 4 seconds.

### 3.4 Setting the operating mode

- To open the menu, press the  and  buttons together.
- Use the  or  button to select the parameter ***M0d***.

Parameter	Description
<b><i>M0d</i></b>	<b><i>nOrR</i></b> = <b>Normal operation without week programme</b> Continuous operation with room temperature setpoint heating or cooling
	<b><i>Eco</i></b> = <b>Week programme</b> Switching between normal operation and ECO mode according to programmed time zones (see section 3.6). In ECO mode the setpoint heating is decreased and the setpoint cooling is increased.
	<b><i>HOLy</i></b> = <b>Setback operation</b> Continuous operation with decreased setpoint heating or increased setpoint cooling (e.g. during holidays).

- Selecting the operating mode:
  - Press the  button and then press the  or  button to change the value.
  - Press the  button to save the value.
- To exit the menu, press the  button or wait for about 10 seconds.

### 3.5 Alarms

In case of an alarm the  symbol flashes on the display.

- Press the  and  buttons together.
- Press the  button to navigate to the alarms screen:

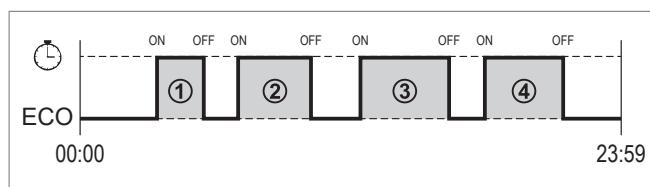


noAL \_\_\_\_ No alarm  
 AL-F \_\_\_\_ Fan  
 AL-d \_\_\_\_ Feedback Air-Injector  
 E... \_\_\_\_ Room temperature sensor

Contact Hoval customer service to have faults rectified.

### 3.6 Week programme

Use the week programme to set operating times for normal mode (on/off depending on the room temperature setpoint) and ECO mode (with reduced setpoint -5 °C). It is possible to use up to max. 4 time zones for normal mode per day.



Normal mode (within time zones)  
**ECO** ECO mode (outside time zones)

#### Setting time zones

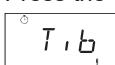
- Press the and buttons together. The following screen is displayed:



- Press the button to navigate to the following screen:



- Press the button. The following screen is displayed:



with a flashing '1' for time zone 1.

- Press the or button to select the time zone to be modified (1-4).
- Press the button. The screen displays the day (Mon, Tue, Wed, Thu, Fri, Sat, Sun).
- Press the or button to select the desired day.
- Press the button. The screen displays the day, the number of the time zone and the start time (ON):



- Press the or button to select the hour and press the button to save the setting.
- Press the or button to select the minute and press the button to save the setting.
- The screen displays the day, the number of the time zone and the end time (OFF).
- Press the or button to select the hour and press the button to save the setting.
- Press the or button to select the minute and press the button to save the setting.
- Press the button to return to the zone selection menu.
- Set another time zone or press the button to exit the menu.

### Copying time zones

- Press the and buttons together. The following screen is displayed:



- Press the button to navigate to the following screen:



(SOURCE:DESTINATION)

- Press the button. The source flashes.
- Press the or button to select the day to be copied.
- Press the button. The destination flashes.
- Press the or button to select the copy destination.
- Press the button.
- To exit the menu, press the .

Parameter	Description
Mo	Monday
Tu	Tuesday
We	Wednesday
Th	Thursday
Fr	Friday
Sa	Saturday
Su	Sunday
MF	Monday - Friday (copy destination)
SS	Saturday - Sunday (copy destination)



Factory setting:  
Time zone 1 from 08:00 to 17:00, daily from Monday to Friday

## 4 Modbus

The EasyTronic EC can be integrated into the building management system via Modbus RTU. The Modbus slave protocol is implemented in the controller. It uses an RS485 interface for communication with a Modbus master.

The parameters are accessible as holding registers. Read and write operations must be carried out with the appropriate function codes (FC 03 / 06 / 16).

Up to 125 variables can be read in one operation. Depending on the baud rate, select a suitable timeout between the read operations:

- Baud rate 38400 ..... 1.0 s
- Baud rate 19200 / 9600 ..... 1.5 s
- Baud rate 4800 / 2400 ..... 2.0 s

### 4.1 Parameters for controller status

Register	Address	Parameter	Description	Min	Max	R/W
207	206	DAMPER_FEEDBACK_AI3	Feedback Air-Injector actuator ⓘ displayed value = Volt × 100 (for ex.: 655 = 6.55 V)	-999	9999	R
208	207	STATE_REL_FAN	Enable fan 0 = deactivated / 1 = activated	0	1	R
209	208	STATE_REL_PUMP_VALVE	Enable pump/valve 0 = deactivated / 1 = activated	0	1	R
213	212	OUT_SUPPLY_FAN	Fan control signal ⓘ displayed value = Volt × 10 (for ex.: 80 = 8.0 V)	0	100	R
214	213	OUT_DAMPER	Air-Injector control signal ⓘ displayed value = Volt × 10 (for ex.: 80 = 8.0 V)	0	100	R
216	215	WORKING_TEMP	Actual value room temperature ⓘ displayed value = °C × 10 (for ex.: 200 = 20 °C) In the event of a fault, the following values are displayed: ■ Sensor open: -200 ■ Sensor in short circuit: 970	-200	900	R
219	218	CURRENT_WORKING_SET	Currently valid room temperature setpoint, depending on operating mode and operating state ⓘ displayed value = °C × 10 (for ex.: 200 = 20 °C)	see parameters	see parameters	R
220	219	FLAG_STA_WORKING	Heating/cooling changeover 0 = heating / 1 = cooling	0	1	R
221	220	FLA_CURRENT_MODE_REG	Current operating mode 0 = normal operation without week programme 1 = normal operation within week programme 3 = ECO mode 4 = setback operation	0	4	R
223	222	YEAR	Current year	2012	2100	R
224	223	MONTH	Current month	1	12	R
225	224	DAY	Current day	1	31	R
226	225	DAY_NAME	Current weekday 0 = Su / 1 = Mo / 2 = Tu / 3 = We / 4 = Th / 5 = Fr / 6 = Sa	0	6	R
227	226	HOUR	Current hour	0	23	R
228	227	MIN	Current minute	0	59	R
229	228	SEC	Current second	0	59	R
230	229	FLAG_DOOR_POSITION	Door contact 0 = door open / 1 = door closed	0	1	R
231	230	FLAG_ALARM_FAN	Alarm Fan 0 = no alarm / 1 = alarm	0	1	R
232	231	FLAG_ALARM_DAMPER	Alarm Air-Injector 0 = no alarm / 1 = alarm	0	1	R

Table 4: Modbus parameters for controller status

## 4.2 Operating parameters

Register	Address	Parameter	Description	Default	Min	Max	R/W
600	599	SUN_HOUR_ON_1	Start of Sunday hour timer period 1	0	0	23	R/W
601	600	SUN_MIN_ON_1	Start of Sunday minute timer period 1	0	0	59	R/W
602	601	SUN_HOUR_OFF_1	End of Sunday hour timer period 1	0	0	23	R/W
603	602	SUN_MIN_OFF_1	End of Sunday minute timer period 1	0	0	59	R/W
604	603	SUN_HOUR_ON_2	Start of Sunday hour timer period 2	0	0	23	R/W
605	604	SUN_MIN_ON_2	Start of Sunday minute timer period 2	0	0	59	R/W
606	605	SUN_HOUR_OFF_2	End of Sunday hour timer period 2	0	0	23	R/W
607	606	SUN_MIN_OFF_2	End of Sunday minute timer period 2	0	0	59	R/W
608	607	SUN_HOUR_ON_3	Start of Sunday hour timer period 3	0	0	23	R/W
609	608	SUN_MIN_ON_3	Start of Sunday minute timer period 3	0	0	59	R/W
610	609	SUN_HOUR_OFF_3	End of Sunday hour timer period 3	0	0	23	R/W
611	610	SUN_MIN_OFF_3	End of Sunday minute timer period 3	0	0	59	R/W
612	611	SUN_HOUR_ON_4	Start of Sunday hour timer period 4	0	0	23	R/W
613	612	SUN_MIN_ON_4	Start of Sunday minute timer period 4	0	0	59	R/W
614	613	SUN_HOUR_OFF_4	End of Sunday hour timer period 4	0	0	23	R/W
615	614	SUN_MIN_OFF_4	End of Sunday minute timer period 4	0	0	59	R/W
616	615	MON_HOUR_ON_1		8	0	23	R/W
617	616	MON_MIN_ON_1		0	0	59	R/W
618	617	MON_HOUR_OFF_1	Period 1 Monday	17	0	23	R/W
619	618	MON_MIN_OFF_1		0	0	59	R/W
620	619	MON_HOUR_ON_2		0	0	23	R/W
621	620	MON_MIN_ON_2		0	0	59	R/W
622	621	MON_HOUR_OFF_2	Period 2 Monday	0	0	23	R/W
623	622	MON_MIN_OFF_2		0	0	59	R/W
624	623	MON_HOUR_ON_3		0	0	23	R/W
625	624	MON_MIN_ON_3		0	0	59	R/W
626	625	MON_HOUR_OFF_3	Period 3 Monday	0	0	23	R/W
627	626	MON_MIN_OFF_3		0	0	59	R/W
628	627	MON_HOUR_ON_4		0	0	23	R/W
629	628	MON_MIN_ON_4		0	0	59	R/W
630	629	MON_HOUR_OFF_4	Period 4 Monday	0	0	23	R/W
631	630	MON_MIN_OFF_4		0	0	59	R/W
632	631	TUE_HOUR_ON_1		8	0	23	R/W
633	632	TUE_MIN_ON_1		0	0	59	R/W
634	633	TUE_HOUR_OFF_1	Period 1 Tuesday	17	0	23	R/W
635	634	TUE_MIN_OFF_1		0	0	59	R/W
636	635	TUE_HOUR_ON_2		0	0	23	R/W
637	636	TUE_MIN_ON_2		0	0	59	R/W
638	637	TUE_HOUR_OFF_2	Period 2 Tuesday	0	0	23	R/W
639	638	TUE_MIN_OFF_2		0	0	59	R/W
640	639	TUE_HOUR_ON_3		0	0	23	R/W
641	640	TUE_MIN_ON_3		0	0	59	R/W
642	641	TUE_HOUR_OFF_3	Period 3 Tuesday	0	0	23	R/W
643	642	TUE_MIN_OFF_3		0	0	59	R/W
644	643	TUE_HOUR_ON_4		0	0	23	R/W
645	644	TUE_MIN_ON_4		0	0	59	R/W
646	645	TUE_HOUR_OFF_4	Period 4 Tuesday	0	0	23	R/W
647	646	TUE_MIN_OFF_4		0	0	59	R/W
648	647	WED_HOUR_ON_1		8	0	23	R/W
649	648	WED_MIN_ON_1		0	0	59	R/W
650	649	WED_HOUR_OFF_1	Period 1 Wednesday	17	0	23	R/W
651	650	WED_MIN_OFF_1		0	0	59	R/W
652	651	WED_HOUR_ON_2		0	0	23	R/W
653	652	WED_MIN_ON_2		0	0	59	R/W
654	653	WED_HOUR_OFF_2	Period 2 Wednesday	0	0	23	R/W
655	654	WED_MIN_OFF_2		0	0	59	R/W

Register	Address	Parameter	Description	Default	Min	Max	R/W	
656	655	WED_HOUR_ON_3	Period 3 Wednesday	0	0	23	R/W	
657	656	WED_MIN_ON_3		0	0	59	R/W	
658	657	WED_HOUR_OFF_3		0	0	23	R/W	
659	658	WED_MIN_OFF_3		0	0	59	R/W	
660	659	WED_HOUR_ON_4	Period 4 Wednesday	0	0	23	R/W	
661	660	WED_MIN_ON_4		0	0	59	R/W	
662	661	WED_HOUR_OFF_4		0	0	23	R/W	
663	662	WED_MIN_OFF_4		0	0	59	R/W	
664	663	THU_HOUR_ON_1	Period 1 Thursday	8	0	23	R/W	
665	664	THU_MIN_ON_1		0	0	59	R/W	
666	665	THU_HOUR_OFF_1		17	0	23	R/W	
667	666	THU_MIN_OFF_1		0	0	59	R/W	
668	667	THU_HOUR_ON_2	Period 2 Thursday	0	0	23	R/W	
669	668	THU_MIN_ON_2		0	0	59	R/W	
670	669	THU_HOUR_OFF_2		0	0	23	R/W	
671	670	THU_MIN_OFF_2		0	0	59	R/W	
672	671	THU_HOUR_ON_3	Period 3 Thursday	0	0	23	R/W	
673	672	THU_MIN_ON_3		0	0	59	R/W	
674	673	THU_HOUR_OFF_3		0	0	23	R/W	
675	674	THU_MIN_OFF_3		0	0	59	R/W	
676	675	THU_HOUR_ON_4	Period 4 Thursday	0	0	23	R/W	
677	676	THU_MIN_ON_4		0	0	59	R/W	
678	677	THU_HOUR_OFF_4		0	0	23	R/W	
679	678	THU_MIN_OFF_4		0	0	59	R/W	
680	679	FRI_HOUR_ON_1	Period 1 Friday	8	0	23	R/W	
681	680	FRI_MIN_ON_1		0	0	59	R/W	
682	681	FRI_HOUR_OFF_1		17	0	23	R/W	
683	682	FRI_MIN_OFF_1		0	0	59	R/W	
684	683	FRI_HOUR_ON_2	Period 2 Friday	0	0	23	R/W	
685	684	FRI_MIN_ON_2		0	0	59	R/W	
686	685	FRI_HOUR_OFF_2		0	0	23	R/W	
687	686	FRI_MIN_OFF_2		0	0	59	R/W	
688	687	FRI_HOUR_ON_3	Period 3 Friday	0	0	23	R/W	
689	688	FRI_MIN_ON_3		0	0	59	R/W	
690	689	FRI_HOUR_OFF_3		0	0	23	R/W	
691	690	FRI_MIN_OFF_3		0	0	59	R/W	
692	691	FRI_HOUR_ON_4	Period 4 Friday	0	0	23	R/W	
693	692	FRI_MIN_ON_4		0	0	59	R/W	
694	693	FRI_HOUR_OFF_4		0	0	23	R/W	
695	694	FRI_MIN_OFF_4		0	0	59	R/W	
696	695	SAT_HOUR_ON_1	Period 1 Saturday	0	0	23	R/W	
697	696	SAT_MIN_ON_1		0	0	59	R/W	
698	697	SAT_HOUR_OFF_1		0	0	23	R/W	
699	698	SAT_MIN_OFF_1		0	0	59	R/W	
700	699	SAT_HOUR_ON_2	Period 2 Saturday	0	0	23	R/W	
701	700	SAT_MIN_ON_2		0	0	59	R/W	
702	701	SAT_HOUR_OFF_2		0	0	23	R/W	
703	702	SAT_MIN_OFF_2		0	0	59	R/W	
704	703	SAT_HOUR_ON_3	Period 3 Saturday	0	0	23	R/W	
705	704	SAT_MIN_ON_3		0	0	59	R/W	
706	705	SAT_HOUR_OFF_3		0	0	23	R/W	
707	706	SAT_MIN_OFF_3		0	0	59	R/W	
708	707	SAT_HOUR_ON_4	Period 4 Saturday	0	0	23	R/W	
709	708	SAT_MIN_ON_4		0	0	59	R/W	
710	709	SAT_HOUR_OFF_4		0	0	23	R/W	
711	710	SAT_MIN_OFF_4		0	0	59	R/W	
721	720	ANALOG_INPUT1_FUNC	Specification Room temperature sensor 0 = internal sensor / 1 = external sensor	M05	0	0	1	R/W
733	732	BASIC_HEAT_SET	Room temperature setpoint heating <sup>1)</sup>	I05	200	60	500	R/W
734	733	BASIC_COOL_SET	Room temperature setpoint cooling <sup>1)</sup>	I06	250	60	500	R/W
739	738	HOL_SET_ADJUST	Temperature offset for setback operation <sup>1)</sup>	I11	50	10	100	R/W

Register	Address	Parameter	Description	Default	Min	Max	R/W	
740	739	DO-HYST	Temperature hysteresis for on/off 1)	I12	10	5	20	R/W
754	753	ECO_SET_ADJUST	Temperature offset for ECO mode <sup>1)</sup>	I26	50	10	100	R/W
755	754	DAYLIGHT-SAVING-TIME	Summer/winter time changeover 0 = no automatic changeover 1 = automatic changeover Europe 2 = automatic changeover USA	I27	1	0	2	R/W
757	756	MODBUS_BAUD	Baud rate 1 = 2400 / 2 = 4800 / 3=9600 / 4=19200 / 5 = 38400	I29	4	1	5	R/W
758	757	MODBUS-PARITY	Parity 0 = none / 1 = odd / 2 = even	I30	2	0	2	R/W
759	758	MODBUS_ADDRESS	Appliance address	I31	1	1	247	R/W
780	779	ON_OFF_VIA_MODBUS	Appliance on/off via Modbus 0 = off / 1 = on		1	0	1	R/W
781	780	FAN_SPEED_SELECTION	Fan speed (%)		0	0	100	R/W
782	781	DAMPER_POSITION_SELECTION	Air distribution with the Air-Injector (%)		0	0	100	R/W
784	783	MODE_FASCE	Operating mode 0 = normal operation without week programme 1 = week programme 2 = setback operation		1	0	2	R/W
785	784	YEAR-SET	Year to set		2012	2012	2100	R/W
786	785	MONTH_SET	Month to set		1	1	12	R/W
787	786	DAY_SET	Day to set		1	1	31	R/W
788	787	HOUR_SET	Hour to set		0	0	23	R/W
789	788	MIN_SET	Minute to set		0	0	59	R/W
790	789	ABI_CLOCK_SET_FROM_MODBUS	Time takeover from the BMS <b>!</b> Update the clock via Modbus: First set the date and time (registers 785-789). Then set the register 790 to 1. The settings made are then automatically loaded into the appliance clock and register 790 resets to 0.		0	0	1	R/W
791	790	LOCK-KEYBOARD	Keyboard locking 0 = unlocked / 1 = locked		0	0	1	R/W

1) **!** displayed value = °C × 10 (for ex.: 200 = 20 °C)

Table 5: Operating parameters

#### Modbus communication alarm

If parity or checksum errors occur frequently when receiving messages, a communication alarm is displayed. The symbol  flashes on the display. Contact Hoval customer service.

## 5 Installation

### 5.1 Installation

#### Installation site of EasyTronic EC / Room temperature sensor ET-R (option)

- On the wall in the occupied area, at a height of about 1.5 m
- Not near sources of heat or cold (windows, doors, machines, etc.)
- Protected from sunlight

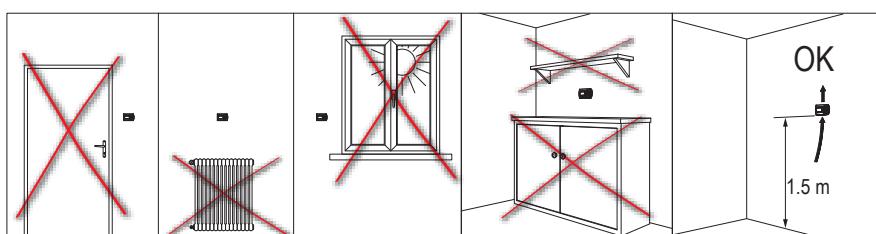


Fig. 2: Installation site of the temperature sensor

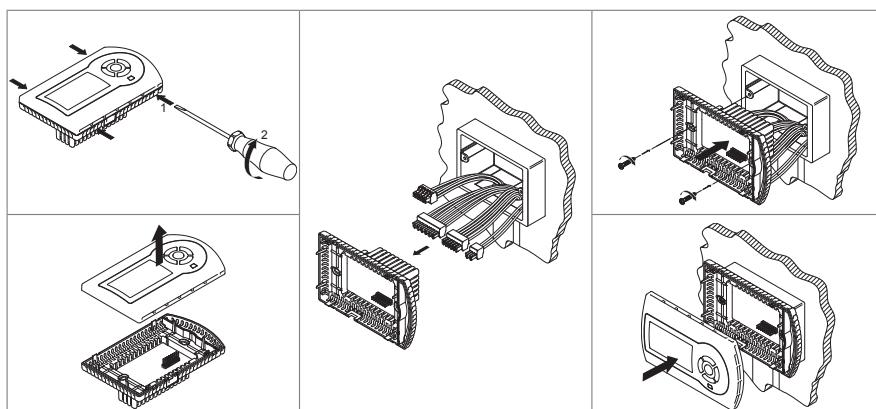


Fig. 3: Installation of the EasyTronic EC in a flush-mounted box (spacing between mounting holes 83.5 mm) or on the supplied base

### 5.2 Electrical installation

- The electrical installation must only be carried out by a qualified electrician.
- Observe all relevant regulations.
- Electrical installation to be carried out according to wiring diagram.



#### Attention

Danger of damaging the units due to electrostatic discharge.  
Observe precautions for handling electrostatic sensitive devices.

### 5.3 Configuration

Modify the setting of the following parameters if the local conditions do not correspond to the standard setting:

Parameter	Description
C01	<b>Measuring the room temperature</b> 0 = Temperature sensor integrated in the controller (standard setting) 1 = External temperature sensor
C02	<b>Setting the air distribution</b> 0 = Without Air-Injector (standard setting) 1 = With Air-Injector

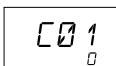
- Press the  and  buttons together. The following screen is displayed:



- Press the button  to navigate to the following screen:



- Press the  button and then the  button until the value **28** is displayed.
- Press the  button. Parameter C01 is displayed:



- Use the  or  button to select the parameter to be modified.
- Modify parameter:
  - Press the  button and then the  or  buttons to select its value.
  - Press the  button to save the value.
- To exit the menu, press the  button or wait for about 120 s until the device returns to automatic operating mode.

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