

EYB 250-256: Room operating unit for ecos individual-room controllers

Used as a temperature sensor and for operating an individual-room controller (ecos EYE 200 to EYE 206).

Housing (76 × 76 mm) of fire-retardant thermoplastic, pure white (RAL 9010). Depending on the type: with adjuster for setpoint correction, with a button and 3 LEDs for 3 room-occupancy levels, with a button and 4 LEDs for 4 fan speeds or with 4 buttons and LCD for setpoint correction, display of actual value, room occupancy, fan speeds, window contacts and dew-point alarm. Terminals 3 × 1.5 mm². Cable inlet at rear. Standard version: with black baseplate.

Type	Setpoint correction	Room occupancy	Ventilator speeds	Display	Supply	Weight [kg]
EYB 250 F201	–	–	–	–	via EYE	0.1
EYB 251 F201	+/- 2 K	–	–	–	via EYE	0.1
EYB 252 F201	+/- 2 K	0 – ½ – 1	–	3 LEDs	via EYE	0.1
EYB 253 F201	+/- 2 K	–	auto-1-2-3	4 LEDs	via EYE	0.1
EYB 254 F201	+/- 2 K	0 – ½ – 1	auto-1-2-3	7 LEDs	via EYE	0.1
EYB 256 F101	+/- 2 K	0 – 1	0-auto-1-2-3	LCD	via EYE	0.1

Measuring range of sensor	0...40 °C	Perm. ambient temperature	0...45 °C
EYB 256 Measuring range	0...40 °C	Permissible ambient humidity	< 85 %rh
Range displayed	10...35 °C		without condensation
Setpoint indicator	0..10V=16..25,5°C	Ambient class	IEC 60721 3K3
Resolution	0.1 K	Protection class	III
		Degree of protection	IP 30 (EN 60529)
Time constant	15 min	Wiring diagram	A07045 / A10382
Connection	3-wire (4-wire)	Dimension drawing	M07634
Max. length of cable	100 m	Fitting instructions	MV 505448
Setpoint correction	variable		MV 505741
LED for room occupancy	0 yellow; 2-1 green	EYB 256	MD 94.250
LED for fan speeds	0 yellow; 3-2-1 green	Declaration of materials used	
		Complies with:-	
		EMC directive 89/336/EEC	EN 61000-6-1/ EN 61000-6-2
			EN 61000-6-3/ EN 61000-6-4

Variants (as F . . 1 but with white baseplate)

- EYB 250 F202**
- EYB 251 F202**
- EYB 252 F202**
- EYB 253 F202**
- EYB 254 F202**
- EYB 256 F102**

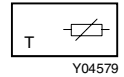
Accessories

- 0303124 000*** Recessed junction box
- 0313347 001*** Intermediate cover plate (RAL 9010)

* Dimension drawing or wiring diagram are available under the same number



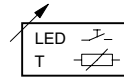
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Y04579



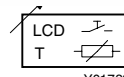
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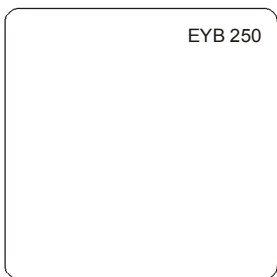


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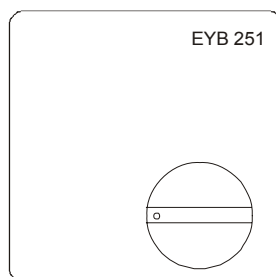


Y01732

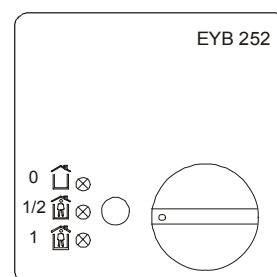
Frontal view



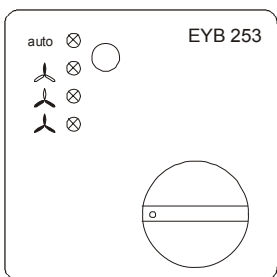
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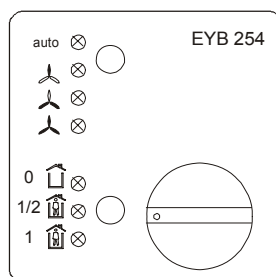
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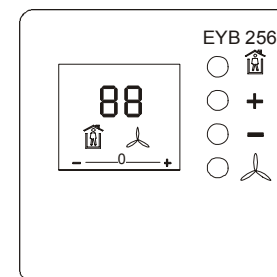
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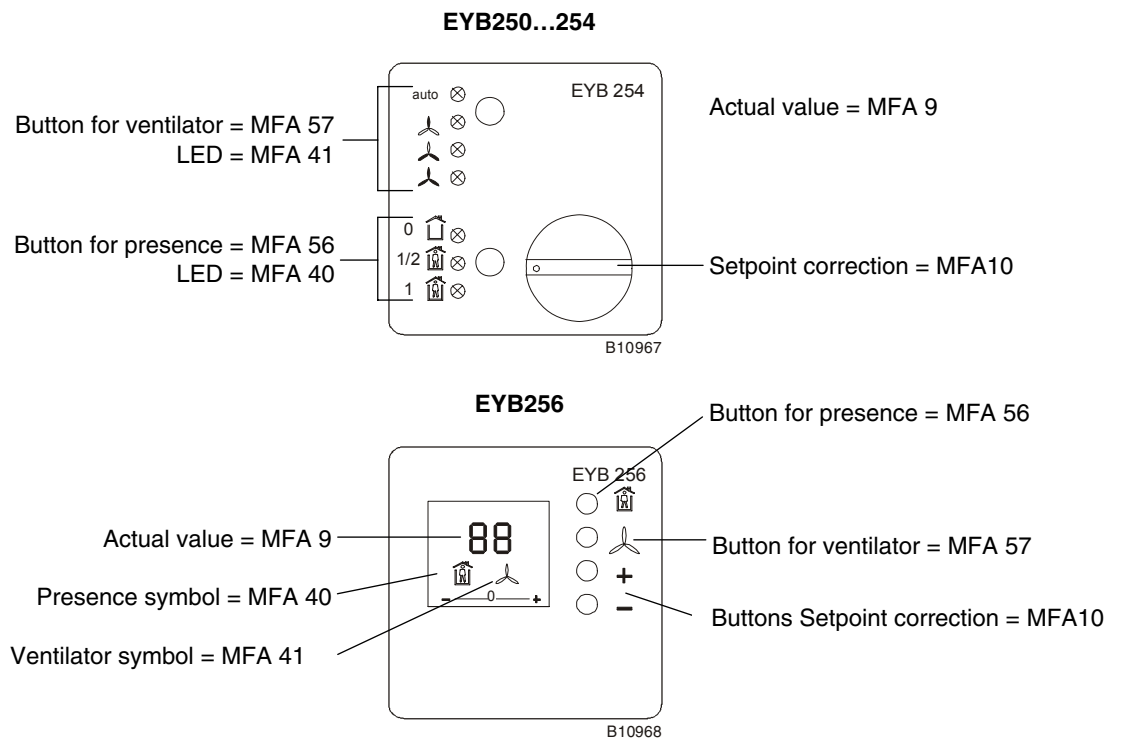


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Addresses (MFA) of EYB 250...254 and EYB 256



Engineering notes

The EYB 25 . room operating units are designed for fitting on walls.

Additional information for type EYB256

Indication of actual value/setpoint in the display.

In the basic circuitry, the actual value (MFA 9) is shown in the display. If the user wants to view the setpoint (control parameter) of the *ecos*, this can be effected via a 0-10 V d.c. signal. This signal is fed to terminal X1/4. When this function is used, the direct display of the actual value in the EYB is no longer available.

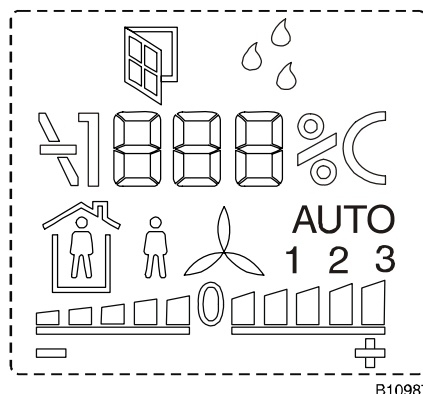
If the user wants the actual value and setpoint to be displayed, this can be done by modifying the program in the *ecos*. The 0-10 V signal then equates to either the actual value or the setpoint.

The LCD range is then restricted: 0-10 V = 16°C – 25.5°C.

The keys for setpoint correction (MFA 10) must be used for this, since they are directly assigned to the bars in the LCD.

Linear correction is required for the capture of the actual value (cf. 'Linear correction').

Feedback on the LCD



The room operating unit has an LCD with a multi-functional display.

- Indicator for 'window open'
- Indicator for 'dew point breached'
- Indicator for room temperature
- Indicator for operating mode (presence/absence)
- Indicator for ventilator mode manual/auto with speeds 0 - 1 - 2 - 3
- Indicator for setpoint correction +/- 5 steps; size of step can be parameterised









Feedback commands for ventilator and dew-point symbols

Apart from the two buttons for the setpoint correction, any other button can be used to switch the fan speeds. Ideally, this should be the button with **MFA 57**.

The indicator in the LCD must be activated via the *ecos* program.

Activation for both the fan-speed and the dew-point symbols is effected via **MFA 41**.

Commands 1, 2 and 3 control the fan-speed symbol, command 4 controls the dew-point symbol. A control logic program for the MFA 41 should be programmed accordingly in the *ecos*.

Bef. 1	Bef. 2	Bef. 3	Bef. 4	Anzeige	
				Bef. 1-3	Bef. 4
0	0	0	0	 AUTO	
1	0	0	0	 1	
0	1	0	0	 2	
1	1	0	0	 AUTO 1	
0	0	1	0	 3	
1	0	1	0	 AUTO 3	
0	1	1	0	 AUTO 2	
1	1	1	1		

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Feedback commands for presence and window symbols





Apart from the two buttons for the setpoint correction, any other button can be used to switch the operating mode/presence. Ideally, this should be the button with **MFA 56**.

Here again, the indicator in the LCD must be activated via the *ecos* program.

Activation for both the presence and the window symbols is effected via **MFA 40**.

Command 1 controls the presence symbol, command 2 the window symbol.

A control logic program for MFA 40 should be programmed accordingly in the *ecos*.

Bef. 1	Bef. 2	Anzeige	
		Bef. 1	Bef. 2
0	0		
1	0		
1	1		

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Linear correction for various values with different ecos microprogram versions

Actual value of temperature Xi (MFA 9)

The indication of the actual value (Xi) is not a real feedback signal from the ecos, but is rather the measurement result in the room operating unit that is sent directly for displaying in the LCD. The sensor is an NTC element with 10 kOhm at 25°C.

Because the sensor is an NTC element, the MFA 9 must be linearised in the ecos as follows:-

$$a = + 0.1175$$

$$b = + 4.8140$$

Setpoint correction dXs (MFA 10)

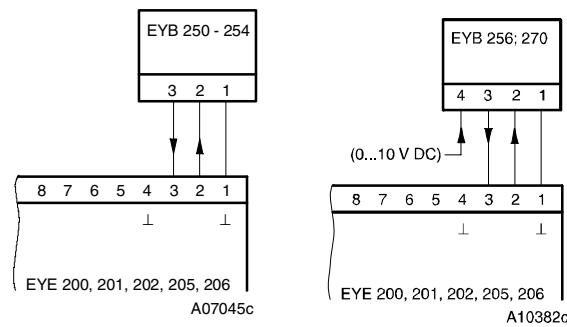
Linearisation is dependent on the desired correction value.

MFA 10 Linearisation correction factors Index <=G		
Range	a	b
+/- 1,0 °K	0,00348	-0,55
+/- 1,5 °K	0,005	-0,7
+/- 2,0 °K	0,00662	-0,952
+/- 2,5 °K	0,008333	-1,22
+/- 3,0 °K	0,010043	-1,487
+/- 3,5 °K	0,011753	-1,754
+/- 4,0 °K	0,013463	-2,001
+/- 4,5 °K	0,015173	-2,248
+/- 5,0 °K	0,016883	-2,495

MFA 10 Linearisation correction factors Index >=H		
Range	a	b
+/- 1,0 °K	0,2	-0,1
+/- 1,5 °K	0,29	-0,16
+/- 2,0 °K	0,38	-0,24
+/- 2,5 °K	0,48	-0,29
+/- 3,0 °K	0,57	-0,34
+/- 3,5 °K	0,67	-0,4
+/- 4,0 °K	0,775	-0,4
+/- 4,5 °K	0,85	-0,505
+/- 5,0 °K	0,96	-0,53

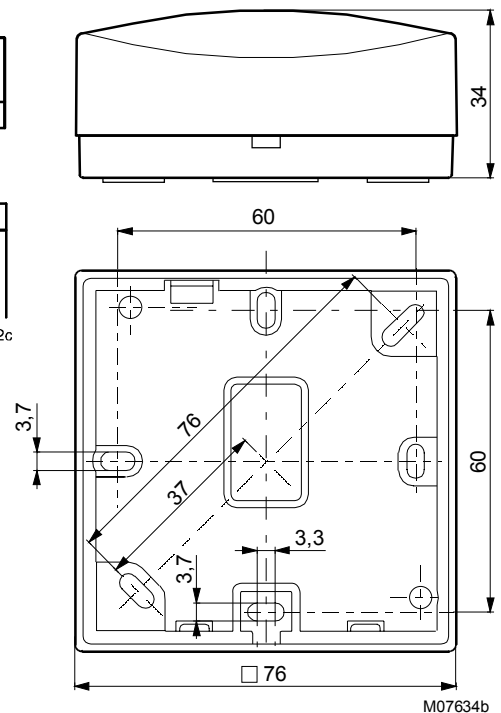
N.B.: On leaving the comfort mode (presence = 0), the setpoint correction is automatically set to zero.

Wiring diagram



In cases where the industry standard (EN 61000-6-2) has to be met, the power cables should be no longer than 30 m.

Dimension drawing



Accessories

