0701 FCU Operator Panel Hotel 802601

Use of the application program

Product family: Heating, Air conditioning, Ventilation
Product type: FanCoilUnit Control Elements
Manufacturer: Siemens

Name: FCU Operator Panel Hotel UP 237F
DELTA i-system
Order no.: 5WG1 237-2FB_1

Name: FCU Operator Panel Hotel UP 252F
DELTA profil
Order no.: 5WG1 252-2FB_1

Name: FCU Operator Panel Hotel UP 254F
DELTA style
Order no.: 5WG1 254-2FB_1

Commissioning

Before commissioning a FCU (Fan-Coil Unit) Operator Panel Hotel by means of the ETS (engineering tool software), it must be attached to a bus transceiver module (BTM) UP 117/11.

The BTM UP 117/11 serves to supply the operator panel with power and receives and transmits data via the _instabus_.

The openings for the pushbutton for toggling between normal mode / addressing mode and for the LED displaying normal mode / addressing mode are visible once the rotary knob (to adjust the setpoint) has been removed.

Note: The bus transceiver module UP 117/11 and the associated DELTA frame are not supplied and must be ordered separately.

Functional description

Pushbutton

Via the pushbutton of an FCU operator panel hotel, the room user can set the fan speed level by pressing the button briefly several times (until the LED of the desired fan speed level illuminates) and even switch off the fan (if he doesn´t like its noise or the air-stream) or switch it back to the automatic fan speed control mode. Each time the button is released after a push, the illuminated LED for displaying the fan speed level moves one step further to the right or left position and will change the direction after having reach the farest right or left position.

After an interval of 2 seconds following the last button activation, the fan speed level preset by the room user is transmitted to the FCU controller (FCC). If the button is activated again during this interval, the interval until the value is transmitted recommences.

Adjustment of the LED from the "Auto" position leads to the fan control being switched from automatic to manual operation, and adjustment to the "Auto" position, from manual to automatic operation.

If fan speed "0" is selected, the fan is switched off and any open valve is closed, i.e. the room is neither heated nor cooled. This is recognizable by the fact that neither of the LEDs for displaying heating or cooling operation illuminates. If, for example, the room temperature falls beneath the frost alarm threshold whilst the fan is switched off, the FCU controller automatically opens the heating valve and switches the fan to automatic operation.

Rotary knob

The rotary knob of the FCU operator panel hotel serves to set the room temperature setpoint in the range from 16...26°C.

LED displays

The clear-to-view and self-explanatory user interface contains besides the pushbutton and the rotary knob 5 yellow light-emitting diodes (LEDs) for displaying the automatic fan speed control (Auto) by the FCU controller or the current fan speed level adjusted by the room user, and 2 green LEDs for displaying whether the heating valve or the cooling valve is open, therefore whether the room is being heated or cooled.

Room operating mode

Any actuation of the pushbutton or the rotary knob will automatically start the transmission of a telegram „Comfort mode = ON" as at this time a person must be in the room.

If the FCU controller is switched to any other operating mode than „Comfort mode" (i.e. „Comfort mode = OFF) the user of the room can recognize it by the fact that neither the LED for heating nor for cooling mode is illuminated.

Behaviour at bus voltage failure

In case of a bus voltage failure there will be no action initiated by the operator panel.

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Behaviour at bus voltage recovery

At bus voltage recovery the current status values (control value of PI controller, status of comfort mode and fan status) are queried from the FCU controller (FCC) after a waiting period of 2s to 15s (depending on the physical address), accepted and displayed. The "read" flags of the objects 23, 31 and 17 of the FCC must therefore be set. Furthermore, the position of the potentiometer to adjust the set point value will be queried and the corresponding value will be send to the FCC.

Communication objects

Linking the communication objects of FCU controller REG 540 and operator panel

The following table shows which communication objects of the Fan-Coil Unit Controller REG 540 have to be linked with those of the operator panel hotel by a common group address.

FCU Controller REG 540		FCU Operator Panel	
No.	Object name	No.	Object name
4	Base setpoint tempe-rature	0	Setpoint of room temp.
23	Control value of PI controller	1	Status heating / cooling mode
9	ON command for comfort mode	2	Comfort mode
31	Status of comfort mode	3	Status of comfort mode
16	Toggling to automatic mode	7	Fan automatic mode
17	Fan status	8	Fan status
15	Manual operation of fan	9	Fan rotational speed

FCU Operator Panel Hotel, communication objects

	no.	Object name	Function	Type	C	R	W	T	U
	01.01.001	0701 FCU Operator Panel Hotel 802601	5WG1 237-2FB_1	Siemens					
	0	Setpoint of room temp.	EIS 5001 (16-26°C)	2 Byte	✓	✓		✓	
	1	Status heating / cooling mode	Positioning value of PI regula	2 Byte	✓		✓	✓	✓
	2	Comfort mode	On / Off	1 Bit	✓	✓		✓	
	3	Status of comfort mode	On / Off	1 Bit	✓		✓	✓	✓
	7	Fan automatic mode	On / Off	1 Bit	✓			✓	
	8	Fan status	Automatic / manual mode	1 Bit	✓		✓	✓	✓
	9	Fan rotational speed	0% ... 100%	1 Byte	✓			✓	

Note:

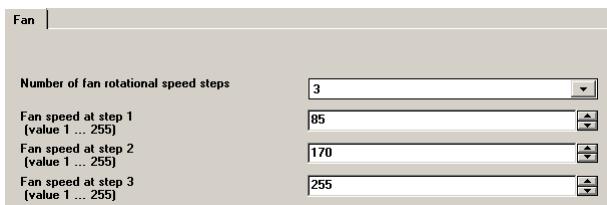The view of the objects can be influenced by the user, therefore the view shown above may vary.

Maximum number of group addresses: 40
Maximum number of assignments: 40

Obj	Object name	Function	Type	Flags
0	Setpoint of room temp.	EIS 5001 (16-26°C)	2 Byte	CRT
This object contains the current setpoint value. The setpoint value, which is set by the rotary knob, is transferred after a modification and a waiting period of approximately 2 s to the FCC. If a new setpoint value adjustment occurs again during the waiting period, the waiting period starts anew. Note: This object must be linked with object 4 of the FCC.				
1	Status heating/ cooling mode	Positioning value of PI controller	2 Byte	CWTU
Via object 1 "Status heating/cooling mode" the FCU operator panel can query from the FCC the positioning value, respectively the FCC transmits it to the FCU operator panel. The positioning value of PI controller is used for the control of the two green LEDs for display of heating and cooling mode.				
2	Comfort mode	On / Off	1 Bit	CRT
Any operation of the pushbutton or the rotary knob will automatically lead to the transmission of the object "Comfort mode" with the object value "1" (i.e. Comfort mode = ON) to the FCC.				
3	Status of comfort mode	On / Off	1 Bit	CWTU
If the value "0" (comfort mode = OFF) is received through the object 3 "Status of comfort mode", both LEDs for the indication of heating or cooling mode will be turned off.				
7	Fan automatic mode	On / Off	1 Bit	CT
If the fan speed level is set to "Auto" through the pushbutton, the value "1" is transmitted through this object to the FCC as up from then the FCC shall control the fan speed level automatically.				
8	Fan status	Automatic / manual mode	1 Bit	CWTU
If the value "0" is received through this object, the LED "Auto" will be switched off to indicate that the automatic speed level control has been switched off. If the value "1" is received, it is turned on.				
9	Fan rotational speed	0 ... 100%	1 Byte	CT
After a waiting period of approx. 2 s the value configured to a fan speed level is transmitted through the object 9 "Fan speed". This is done as soon as the room user indicates by releasing the pushbutton (acknowledging the turned on LED) that he desires the indicated fan speed level.				

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Parameters

Parameter window „Fan"

Parameter	Settings
Number of fan rotational speed steps	1 2 **3**
This parameter is used to adjust the number of fan speed steps. If the number is smaller than 3, the illuminated LED for the fan speed level display will move upon a button push only up to the max. fan speed level and then it goes back to the left. If this parameter is set to less than 3 only the corresponding number of the following parameters will be displayed.	
Fan speed at step 1 (value 1 ... 255)	**85**
Through this parameter the desired relative fan speed in level 1 is adjusted as a value between 1 and 255, whereby the value 255 is equivalent to the max. possible revolutions per minute.	
Fan speed at step 2 (value 1 ... 255)	**170**
Through this parameter the desired relative fan speed in level 2 is adjusted as a value between 1 and 255, whereby the value 255 is equivalent to the max. possible revolutions per minute.	
Fan speed at step 3 (value 1 ... 255)	**255**
Through this parameter the desired relative fan speed in level 3 is adjusted as a value between 1 and 255, whereby the value 255 is equivalent to the max. possible revolutions per minute.	

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