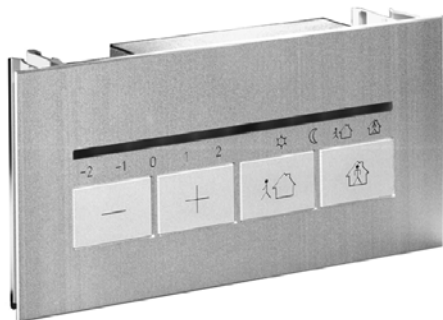


**DELTA millennium Temperature Controller IKE 250**
**5WG1 250-8AB01**

## Product and Application Description



The temperature controller IKE 250 is a DELTA millennium *instabus EIB* channel device for installation channel mounting.

Via the built-in bus coupling unit the application programs can send switching commands to actuators (e.g. electrothermal actuators).

The following DELTA millennium channel system device components are available:

### Channel

Channel bottom part AP	5WG1 195-3AB01
Channel top part AP	5WG1 197-8AB01

### Modules

Push button IKE 281 single	5WG1 281-8AB01
Push button IKE 281 double	5WG1 282-8AB01
Push button IKE 281 4-fold	5WG1 284-8AB01
Temperature controller IKE 250	5WG1 250-8AB01
Socket cover	5WG1 198-8AB01
Base module	5WG1 195-8AB41

### Accessories

Earthing kit	5WG1 195-8AB11
Wall mounting cover	5WG1 195-8AB31
Cable clamp	5WG1 195-8AB41
Dismounting tools	5WG1 195-8AB01

The temperature controller IKE 250 can be labelled according to the individual requirements of the user.

With the ETS (EIB Tool Software) the application program is selected, its parameters and addresses are assigned appropriately and downloaded to the built-in bus coupling unit.

## Enclosures

- 1 x temperature controller IKE 250
- 1 x stranded non-fused earthed conductor
- 1 x earthing clamp channel bottom part
- Operation- and installation guide

## Application programs

### 20 S2 temperature controller 904401

- heating, heating and cooling, service station
- temperature controller with base setpoint selection via parameter settings and/or via the bus
- parameters for setpoint values, extended comfort mode, room temperature measurement, type of control
- comfort/standby mode can be set via push buttons at the device and/or via the bus
- night mode can be set via the bus
- frost/heat protection can be set via the bus
- dew point alarm can be activated via the bus
- toggling between heat/cool is possible setpoint and actual temperatures can be read out via the bus
- separate control value output for heat and/or cool
- operating state (controller status) can be read out via the bus
- PI-controller / two-step controller
- communication object for external sensor

## Installation Instructions

- The device may be used for permanent interior installation in dry locations and be mounted in the designated channel only



### WARNING

- The device must be mounted and commissioned by an authorised electrician.
- The bus cable must be anchored by the provided cable clamp.
- The device must not be connected to 230 V.
- Surfaces must be earthed by a stranded non-fused earthed conductor mounted at the device's back side.
- All covers and modules have to be mounted with the attachment mark from the left side (see figure 5).
- The prevailing safety rules must be heeded.
- The device must not be opened. A device suspected to be faulty should be returned to the local Siemens office.

## Technical specifications

### Power supply

via *instabus EIB*

### Control elements

- Operating buttons:  
The tasks can be carried out via 4 short depression buttons 28,5 x 19 mm arranged in series. With the first button (from the left side) the set temperature can be reduced, with the 2nd one it can be increased. The 3rd button is used for activating the operating mode "absent" (standby) and the 4th button for toggling to "present" (comfort). Number of switching cycles: >25.000 operations
- Learning button:  
for switching between normal / addressing mode

### Display elements

- Operation LEDs:  
9 of 10 sections of a red luminous strip 120 x 3 mm can be illuminated by LEDs behind the sections. The selected offset of the set temperature is displayed by the first 5 sections. The remaining sections display the following:
  6. unengaged
  7. frost protection
  8. night reduction
  9. absent (standby)
  10. present (comfort)
- Red programming-LED:  
for displaying mode, built in the learning button
  - programming LED on: addressing mode, on receiving the physical address the device automatically returns to
  - programming LED off: normal operating mode

### Temperature sensor

- Measuring range -10 °C...+50 °C
- Resolution: 0,38 °C
- Accuracy  
between approx. 20 °C to approx. 30 °C: +/- 0,8 °C
- Accuracy at the range limits: +/- 1,2 °C
- Temperature setpoint adjustment via the left pair of push buttons: -2 °C to +2 °C in 5 steps

### Connections

- bus line: bus connection block instabus EIB
- for mounting the overvoltage protection the provided apparent plug-in socket should be used
- 2 x strength anchorage clamps for 2 bus cables each
- earthing protection of the surfaces by a stranded non-fused earthed conductor connected at the device's back side with a 6,3 mm plug-in connector

### Mechanical specifications

- surface: aluminium, anodised E6-EV1
- housing: plastic
- dimensions: 166 x 80 x 41 mm (W x H x D)
- weight: approx. 300 g
- mounting: slipped onto the matching channel bottom part

### Electrical safety

- fouling class (according to IEC 664-1): 2
- protection (according to EN 60529): IP 20
- protection class (according to IEC 1140): I, the conductive surfaces must be included in the protection
- overvoltage class (according to IEC 664-1): III
- bus: safety extra low voltage SELV DC 24 V
- device complies with  
EN 50090-2-2 and IEC 664-1: 1992

### Reliability

rate of failure: 800 fit at 40 °C

### Electromagnetic compatibility

complies with  
EN 50081-1, EN 50082-2 and EN 50090-2-2

### Environmental specifications

- climatic conditions: EN 50090-2-2
- ambient temperature operating: - 5 ... + 45 °C
- ambient temperature non-op.: - 25 ... + 70 °C
- relative humidity (non-condensing): 5 % to 93 %

### Certification

EIB certificate

### CE norm

complies with the EMC regulations (residential and functional buildings), and low voltage regulations

## Location and Function of the Display and Operator Elements

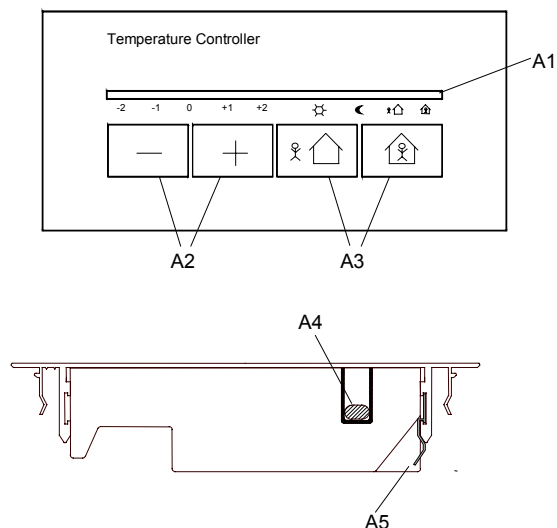


Figure 1: Location of the Display and Operator Elements

- A1 Display LEDs
- A2 Operational buttons
- A3 Buttons for selecting the operational mode
- A4 Learning button with built-in programming LED
- A5 Terminal for plug-in connector for connecting the stranded non-fused earthed conductor

## Mounting

### General description

The temperature controller IKE 250 must be mounted only in the designated DELTA channel device channels. The module's first-rate aluminium surface can be easily scratched by hard objects or tools. That's why you should pay increased attention during all mounting operations. Modules within the DELTA millennium channel system can be composed as you like. The modules are mounted like the channel covers by simply slipping them onto the channel bottom part. For dismantling the device simply and without destruction with the dismantling kit at least one extension module has to be used within one table.

### Connecting and wiring the modules (figure 2 and 3)

The modules must be previously connected and wired outside the channel, because they are mounted at the back side.

To connect the modules (B1) first the swivel lid (B2) has to be removed.

To do so the lid has to be clicked out of place (B3) at the handle bar in the "OPEN" direction and to be removed.

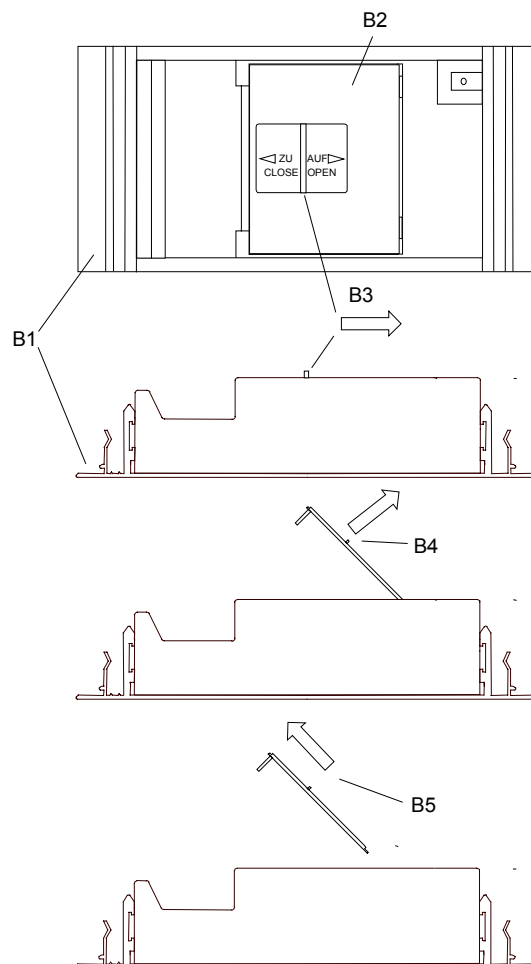


Figure 2: Opening the housing lid

The bus plug-in connector is slipped upon the bus terminal (C1) (figure 3). Consider the bus polarisation! Then the bus cable is anchored at the module housing by one of the anchorage clamps (C2) (At most two bus lines can be clamped per anchorage clamp). An EIB cable jumper with an appropriate length connecting neighbouring modules should be provided to ensure

simple mounting operations (a total length of  $\geq 25$  cm is recommended). In case of using an overvoltage protection an apparent plug-in socket is provided for mounting the element. After wiring the EIB cable the lid is inserted back and clicked into place in "CLOSE" direction (figure 2, reverse sequence). For wire insertion additional inserting apertures can be broken into the lid at the provided break-out areas.

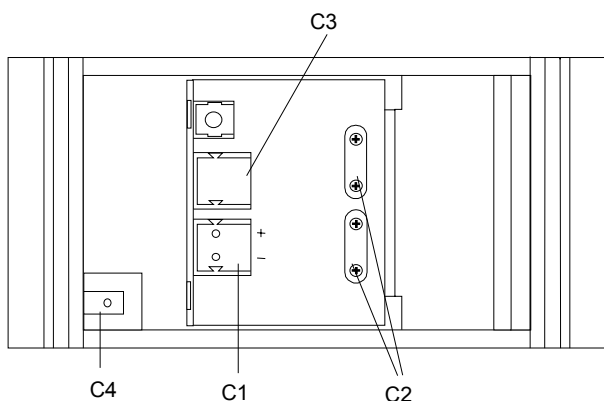


Figure 3: Module with open lid from the backside

To ensure electric safety in case of failures each module must be earthed. For this the earthing clamp (D1) has to be slipped in the mounting area into the potential rail (D2) of the channel unit bottom part (D3) and tightened (figure 4).

Torque of the mounting screw:  $T = 1,2$  Nm

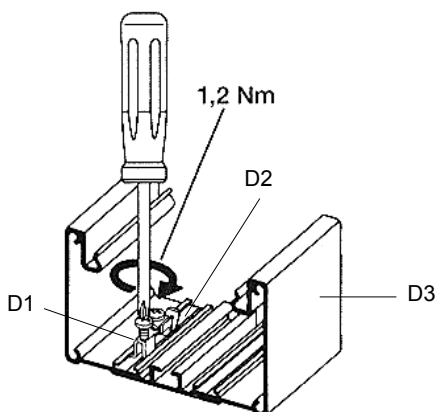


Figure 4: Tightening the earthing clamps

#### Mounting the modules (figure 5)

The terminal of the stranded non-fused earthed conductor (E3) has to be plugged onto the flat plug-in connector terminal (E2) before mounting the modules (E1) in the channel unit. The connection between earth and the earthing clamp (E4) mounted in the channel unit bottom part is established via the stranded non-fused earthed conductor. The earthing clamp should be mounted on the opposite side due to the place restrictions.

If all wires have been connected the modules can be inserted in the pre-mounted channel unit bottom part and clicked into place by an equal pressure onto the clamp outlines.

When inserting the modules take into account that the attachment mark (double line, E5) is situated on the channel unit's left side.

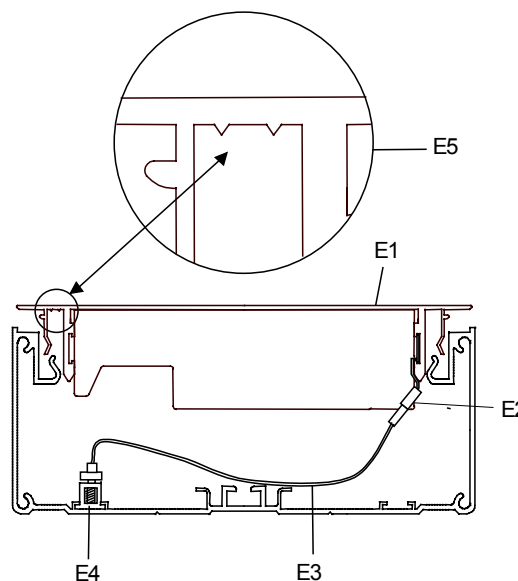


Figure 5: Inserting the modules

#### Programming the modules (figure 6)

If all provided modules are installed excluded the extension module, the modules can be programmed in the following manner: The modules in the channel unit's bottom part can be displaced up to 80 mm (figure 6) if the base module is left out. First the module situated at the top (F2) is pushed upwards towards the channel cover and all the other modules are pushed towards the bottom channel cover. The access to the programming button is possible via the aperture. It gleams "red" on depression. When the button's light extinguishes after the module has been programmed, the next module can be pushed upwards and programmed.

DELTA millennium Temperature Controller IKE 250

5WG1 250-8AB01

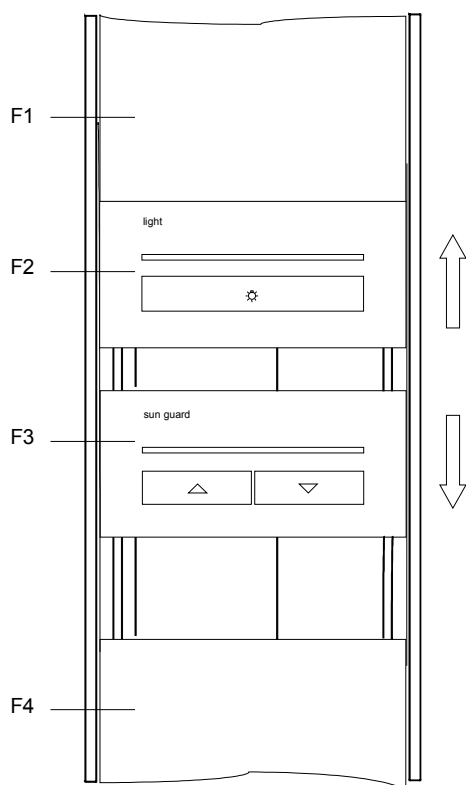


Figure 6: programming the modules

The channel is closed by the base module after the modules have been programmed.

#### Note

During this take into account that the base module has to be earthed with the enclosed stranded non-fused earthed conductor.

#### Dismounting

##### Note

The covers and modules always have to be dismantled with the provided mounting kit (order number: 5WG1 195-8AB51). It can only be carried through without damages if a base module has been installed as a "device for meshing in with the dismantling tools".

First the mounting kit (G1) is put down upon the upper edge of the base module (G3) with its sucking bowls (G2) as described in figure 7.

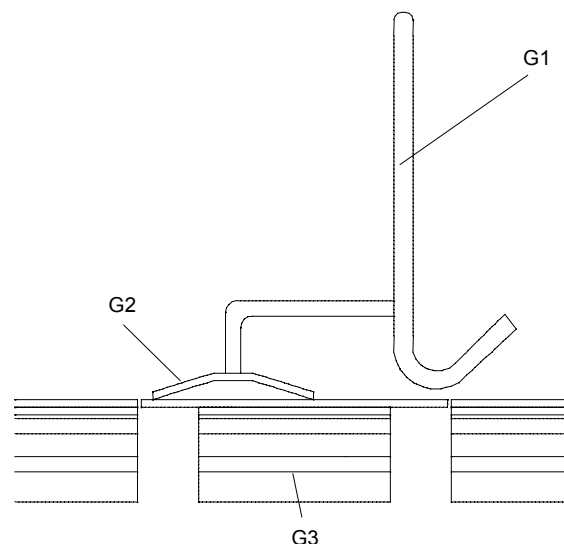


Figure 7: putting down the mounting kit

Afterwards the base module (G3) is removed from the locking outline of the channel unit's bottom part (G4) by levering the handle (G1) in the direction of the arrow (figure 8). Take care that both sucking bowls (G2) strongly stick to the surface on the upper edge and the bottom part of the mounting kit props up itself at the bottom edge of the base module (take advantage of the leverage).

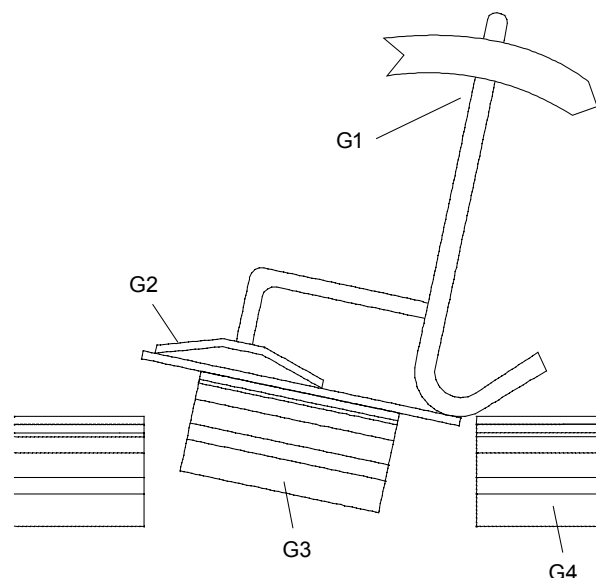


Figure 8: Direction of leverage for dismantling

With the base module once removed the other modules and covers can be removed as shown below:  
The mounting kit (H1) is rotated and the hooks, as shown in figure 9 and figure 10, are put between the channel's top (H2) and bottom (H3) part.

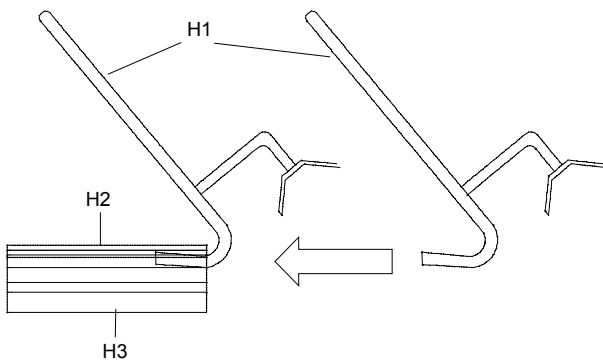


Figure 9: Putting the dismounting kit to the dismounting position for channel top parts (side view)

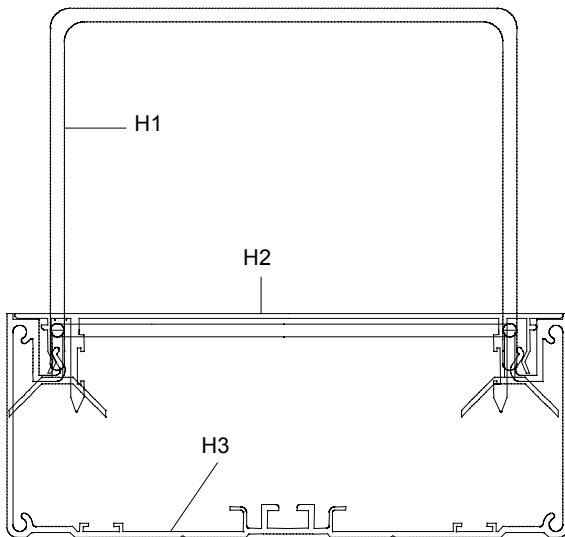


Figure 10: Position of the dismounting hooks (outline section)

Figure 11 shows the removal of the channel unit top part from the locking outline, guaranteeing a simple and in any case free of damage dismounting of channel covers and modules.

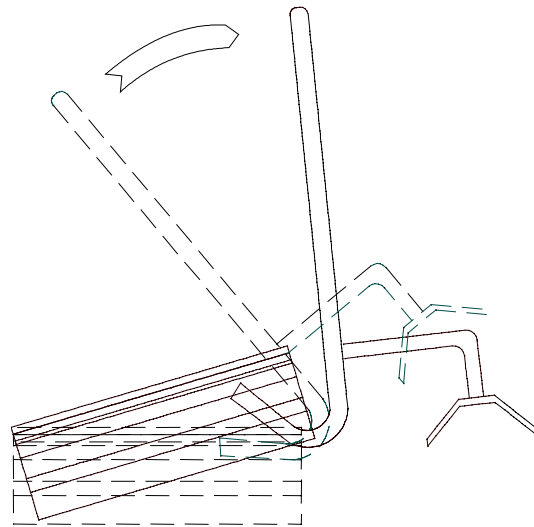


Figure 11: Levering out the channel unit's top part respectively the modules