

## DDC4100S1 Controller with Operator Function

### Application

Graphic display with single-button operation and BACnet communication

- Standalone station with operator function for closed-loop and open-loop control, optimizing and monitoring functions
- Customizable plain text for every parameter
- Direct connection of the input and output signals
- 12 DDC closed-loop control plants for heating and ventilation, can be expanded with software objects
- PLC functions, free and as fixed macros (hardware objects)
- Software objects for increasing energy efficiency and energy optimization
- Weekly and annual schedules, battery-buffered clock
- Communication
  - Via TCP/IP, Ethernet cable (min. Cat5, 10/100 Mbit) to enable use of the existing infrastructure
  - Built-in remote control via PC with browser without additional software
  - Native BACnet in accordance with DIN EN ISO 16484-5
  - Up to 99 DDC4000 controllers with bidirectional data exchange
  - Access to the entire DDC4000 automation system from every connected controller (remote control) without additional devices
- 2 buses (CAN-based), configurable for switch cabinet bus or fieldbus for connecting up to 63 fieldbus modules (FBM, FBU, FBR or DDC110) or up to 16 switch cabinet bus modules (BMD, BMA or SBM)
- Error message memory, event logging with date and time, incoming and outgoing messages are saved
- Trend value memory for max. 20.000 trend points.
- Configuration using modern, effective object structure, considerably reducing project planning time.
- Embedded Linux operating system for proven, stable use
- Backward-compatible with Kieback&Peter DDC3000 automation system
- Constant system monitoring of the bus communication and all connected DDC components, bidirectional data exchange possible.



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Änderungen vorbehalten - Contents subject to change - Sous réserve de modifications - Reservado el derecho a modificación - Wijzigingen voorbehouden - Con riserva di modifichie - Innehåll som skall ändras - Změny vyhrazeny - Zmiany zastrzeżone - Возможны изменения - A változtatások jogát fenntartjuk - 保留未经通知而改动的权力

## Important Information Regarding Product Safety

### Safety Instructions

This data sheet contains information on installing and commissioning the product "DDC4100S1". Each person who carries out work on this product must have read and understood this data sheet. If you have any questions that are not resolved by this data sheet, you can obtain further information from the supplier or manufacturer.

If the product is not used in accordance with this data sheet, the protection provided will be impaired. Applicable regulations must be observed when installing and using the device. Within the EU, these include regulations regarding occupational safety and accident prevention as well as those from the VDE (Association for Electrical, Electronic & Information Technologies). If the device is used in other countries, it is the responsibility of the system installer or operator to comply with local regulations. Mounting, installation and commissioning work on the devices may only be carried out by qualified technicians. Qualified technicians are persons who are familiar with the described product and who can assess given tasks and recognize possible dangers due to technical training, knowledge and experience as well as knowledge of the appropriate regulations.

### Legend



#### WARNING

Indicates a hazard of medium risk which can result in death or severe bodily injury if it is not avoided.



#### CAUTION

Indicates a hazard of low risk which can result in minor or medium bodily injury if it is not avoided.



#### NOTICE

Indicates a hazard of medium risk which can result in material damage or malfunctions if it is not avoided.



#### NOTE

Indicates additional information that can simplify the work with the product for you.

### Notes on Disposal

For disposal, the product is considered waste from electrical and electronic equipment (electronic waste) and must not be disposed of as household waste. Special treatment for specific components may be legally binding or ecologically sensible. The local and currently applicable legislation must be observed.

**Item**

DDC4100S1      Controller with operator function

**Technical Data**

Nominal voltage      for controller (terminals 1 and 21):  
 – AC 24 V +/- 10%; 50 to 60 Hz; 21 VA; 0.9 A or  
 – DC 24 V +/- 10%; 11 W; 0.5 A or  
 – DC 12V +/- 10%; 12 W; 1.0 A  
 for binary inputs and outputs (terminals 41 and 61):  
 – DC 24V +/- 10%; 1.2 W; 0.05 A

Fuses      Time-delay mains fuse 3.15 A

Inputs and outputs      – 32 BI/BO configurable,  
    8 BI (K1 to K8) for pulse counting up to 80 Hz  
    BO: Voltage-free transistor output contact to 0 V = DC 24 V; 50 mA  
 – 24 AI/AO configurable

<b>Sensor type (AI)</b>	<b>Value range and unit</b>
0 V to 10 V	0% to 100%
KP10	-50 °C to +150 °C
KP250	-50 °C to +150 °C
Pt100	-100 °C to +850 °C
Pt1000	-100 °C to +850 °C
Ni100	-50 °C to +150 °C
Ni1000 (DIN)	-50 °C to +150 °C
Ni1000 (L&G)	-50 °C to +150 °C
<b>Output (AO)</b>	
DC 0 V to 10 V; 2.5 mA	

– Separate auxiliary power (terminal 16) DC 10 V; 20 mA for connecting external setting knobs

Bus connection      – Ethernet RJ45  
    Enables operation of up to 99 DDC4000 controllers, users can establish worldwide network via active network components, BMS and BACnet client connection, 10/100 Mbit/s, TCP/IP  
 – 2 CAN buses, configurable as fieldbus or switch cabinet bus  
    Fieldbus; F-bus: 63 fieldbus modules (FBM), 2,000 m; 20 kBd, CAN  
    Switch cabinet bus; SBM bus: 16 switch cabinet bus modules (SBM or BMA/BMD); 200 m; 40 kBd, CAN

Interface      – Serial RS232  
    Modem or printer  
 – CompactFlash  
    for CompactFlash card; update, data backup/restoration (behind front panel)

Display      Graphic display

Operation      Single-button operation  
    Knob, set key [SET], escape key [ESC]

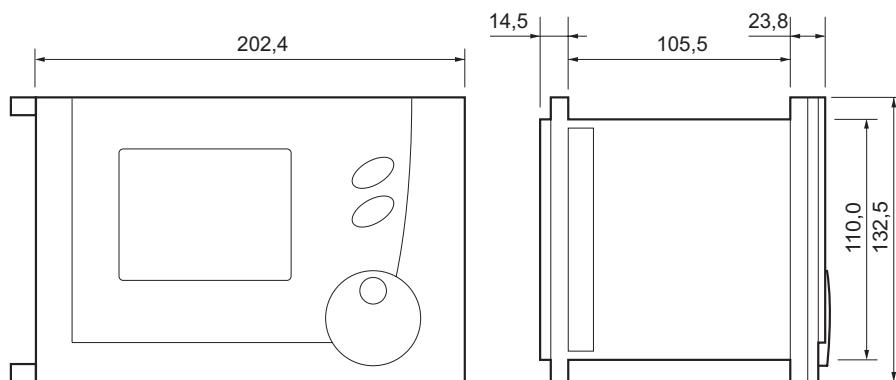
Memory      256 MB flash disc; 96 MB SDRAM; 1 MB flash PROM (boot)

Operating system      Embedded Linux

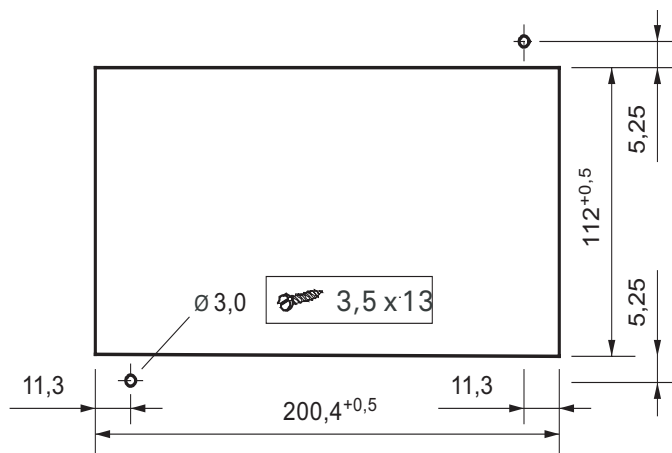
Mains failure data backup      7 years, battery-buffered clock module

Degree of protection	IP20
Ambient temperature	0 °C to 50 °C
Ambient humidity	During operation: 20% to 80% r.h., non-condensing Out of operation: 5% to 90% r.h., non-condensing
Housing	19" plastic short enclosure, quadruple enclosure with base and and extra connections for Ethernet RJ45 and RS232 WxHxD: 202 x 132 x 137 mm
Front panel cut-out	200.4 mm x 112.0 mm
Weight	2.2 kg
Marking	CE

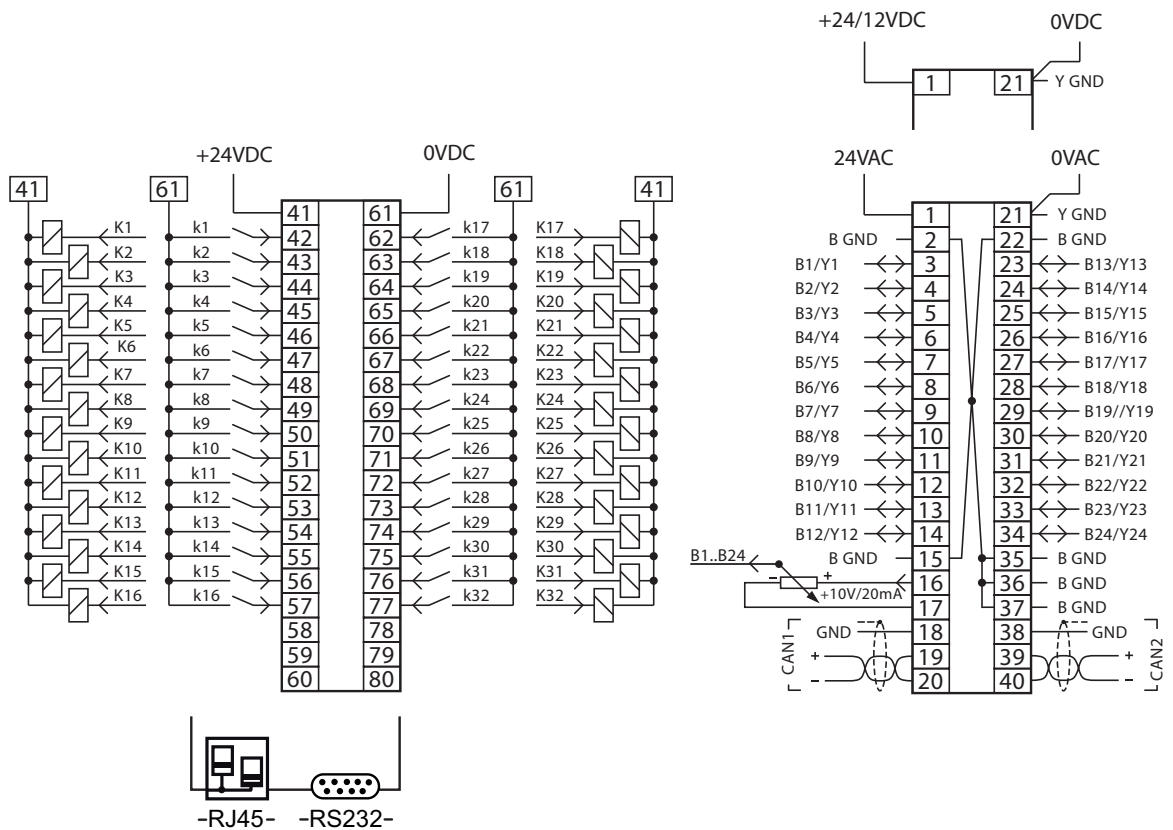
**Dimensions**



**Installation Dimensions**



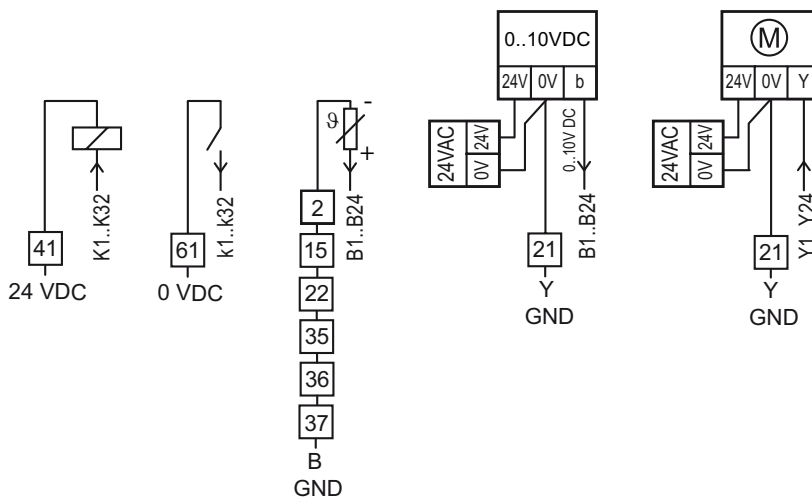
Connection



**NOTICE**

Always use separate power supply units for supplying power to the controller (terminals “1” and “21”) and the binary inputs and outputs (terminals “41” and “61”).

**Sensor and actuator connection**



**NOTICE**

Deviating GND wiring may lead to errors in measurement.

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## Installation

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### NOTICE

Switching on the power supply of unparameterized products can lead to unforeseen consequences such as malfunctions or material damage.

Switch on the power only after the device has been configured by the commissioning technician.

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### CAN bus

When connecting the CAN bus, use a cable with 2 x 2 leads stranded into a pair with plastic insulation and electrostatic shielding with a lead diameter of at least 0.8 mm. Use a stranded pair of leads for the data lines (+ and -) and another free lead for the ground (0).

At the end of the CAN bus (furthest point from the controller), install a terminating resistor of about 180 ohms between both data lines (+ and -). The terminating resistor is included with the controller.

- When using CAN bus as a fieldbus, the maximum cable length is 2,000 m.
- When using CAN bus as a switch cabinet bus, the maximum cable length is 200 m.
- Make sure to observe the line topology for the CAN bus.

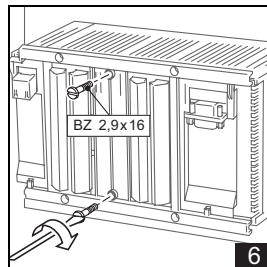
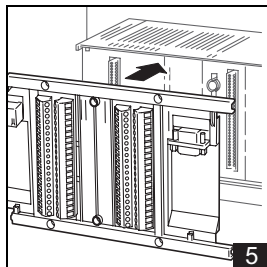
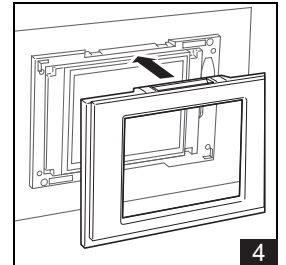
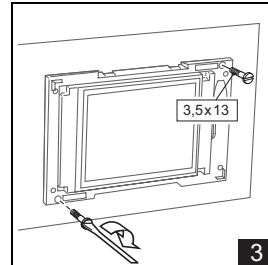
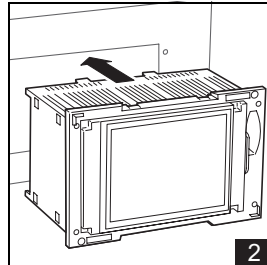
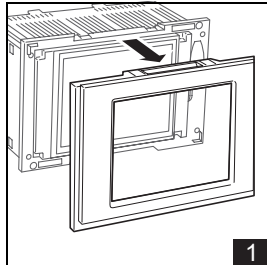
Installation



**WARNING**

Contact with live parts of electrical domestic installation can cause death due to electric shock. Mounting/removal may only be carried out when power is switched off.

**Front installation**



**19" KA rack**

