FBM034 and FBM034W Fieldbus Input Modules

Application

With four analog inputs, fieldbus input modules FBM034 und FBM034W record the signals of remote devices in DDC3000 and DDC4000 controllers.

The analog inputs can be set to either DC 0–10 V or KP10. LEDs are used for communication monitoring.

Data is transferred between the controller and the input module over the fieldbus.

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Important Information Regarding Product Safety

Safety Instructions

This data sheet contains information on installing and commissioning the product "FBM034, FBM034W". 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.

CAUTION

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

FBM034	Fieldbus input module with four analog inputs.The inputs can be set to DC 0–10 V or temperature measuring elementKP10
FBM034W	Like FBM034, but with Z175

Technical Data

Nominal voltage	DC 12 V ±20 % / 40 mA; 0.48 VA
Inputs	4 analog inputs can be selected; see the “Sensor types” table For four inputs with DC 0–10 V, Ri>300 kΩ or four temperature sensors with measuring element KP10
Interface	CAN; fieldbus 2000 m, 20 kBd
Address switch	Two rotary switches for addressing from 01 to 63
Display	2 LEDs Green BUS LED: Flashing = fieldbus data transmission Red error LED: Fieldbus error
Switch	Input selection for four inputs with DC 0–10 V or four inputs with measuring element KP10.
Overvoltage category	III
Rated impulse voltage	800 V
Level of contamination	2
How It Works	Type 1
Degree of protection	IP20 (IP65 when installed in Z175 wall-mounted enclosure)
Housing	Plastic housing, 4 HP
Ambient temperature	0 °C..45 °C
Ambient humidity	20%..80% r.h., non-condensing
Installation	On standard TH 35 x 7.5 rails for installation in the control panel or the wall-mounted enclosure.
Weight	FBM034 0.13 kg; FBM034W 0.8 kg

Sensor types

Sensor type	Value range
0 V.. 10 V	0%..10%
KP10	-50 °C...150 °C

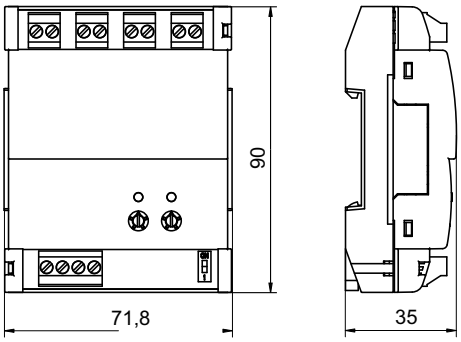
Accessories

Not included in delivery.

Z179 Cascade plug
Multiple FBM0xx modules can be connected using the cascade plug. In this manner, the modules are supplied even when there are inactive modules within the chain.
Connected fieldbus lines: DC 12 V, DC 0 V; CAN bus (+, -) A maximum of 5 modules can be connected in cascade.

Z175 Empty housing for wall mounting (4 HP/IP65)
WxHxD mm 174x94x69
Included in delivery with FBM034W

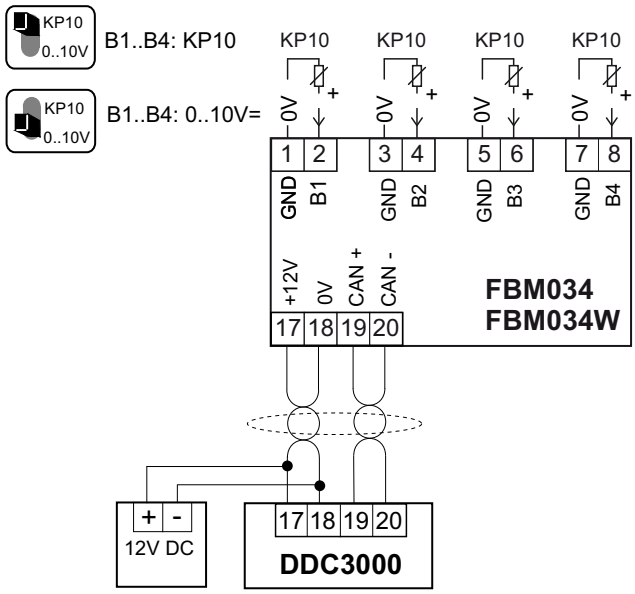
Dimensions

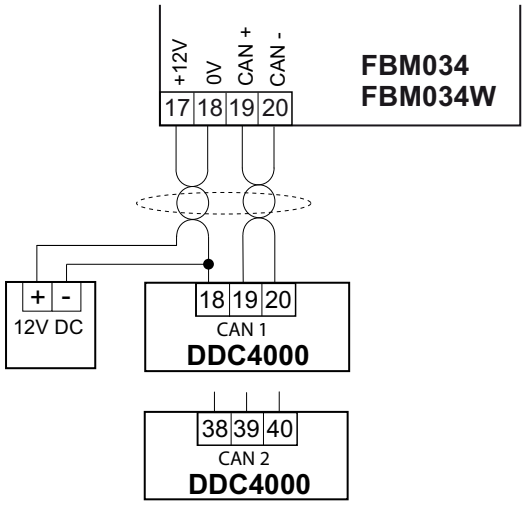


Connection

CAUTION

The GND wiring specified in the wiring diagram (Y GND, K GND, B GND) must be observed. Incorrect GND wiring may lead to errors in measurement.





Installation

CAUTION

This product description describes specific settings and functions of the FBM034x. In addition to these instructions, observe the product descriptions of other system components, such as DDC controller DDC4000, BMR or DDC420.

CAUTION

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.

Fieldbus

When connecting the fieldbus, use a cable of at least type JY(St)Y 2x2x0.8 Lg: two x two wires, twisted to a pair with plastic insulation and an electrostatic shield with a wire diameter of at least 0.8 mm. Use a stranded pair of wires for the data lines (+ and -) and another free wire for the ground connection (0).

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

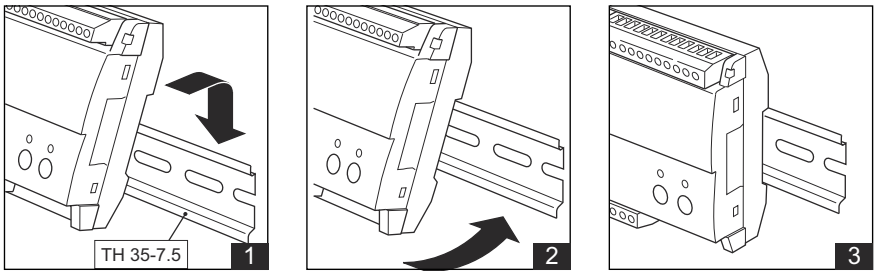
The maximum cable length for the Fieldbus is 2000 m.

Mounting

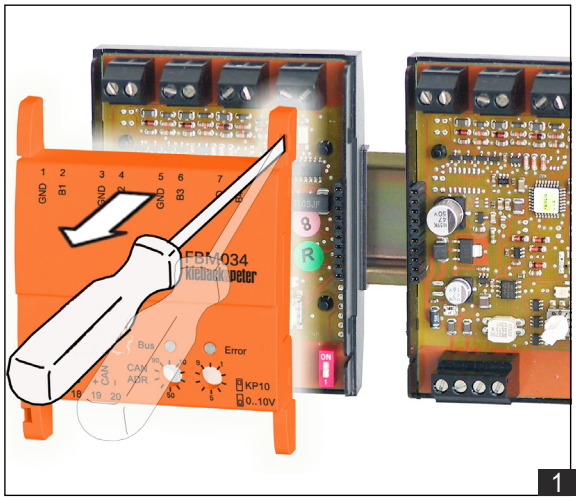
WARNING

Contact with live parts of electrical domestic installation can cause death due to electric shock.

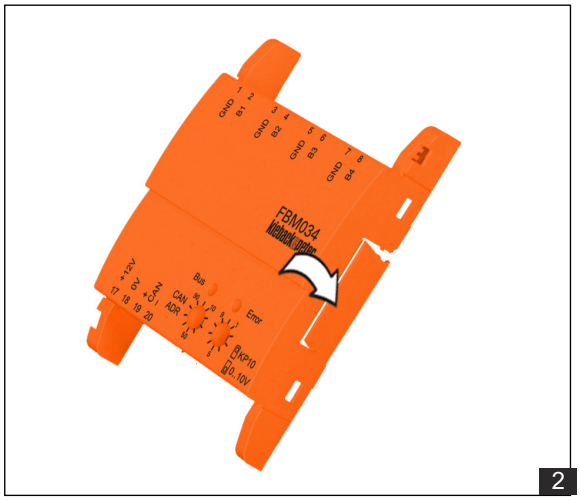
Mounting/removal may only be carried out when power is switched off.



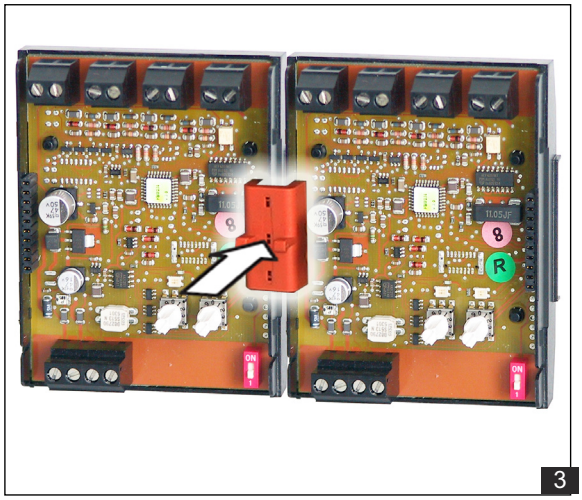
Mounting the Cascade Plug



1



2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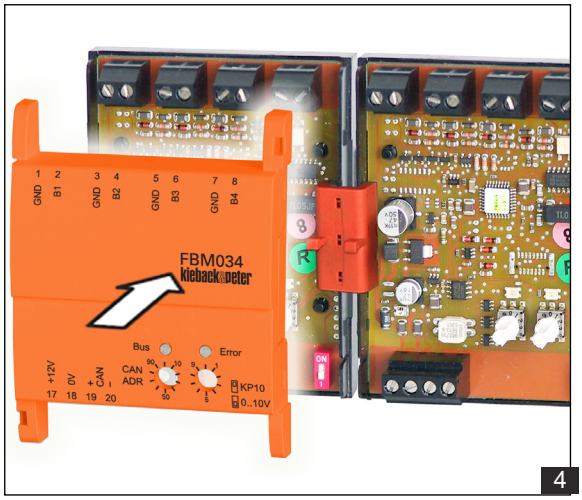
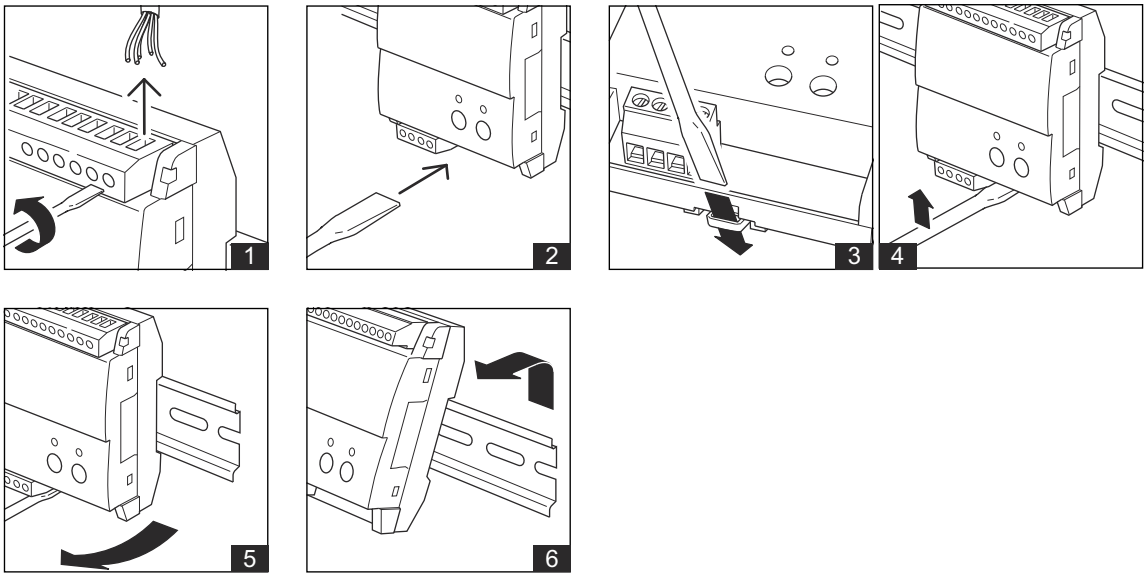


4

- Remove the covers of the devices that are to be cascaded by releasing the catches using the two slots that are provided and lifting off the covers.
- Snap the device base onto the standard rail and slide the units together.
- Break out the perforated areas for the insertion of the cascade plug.
- Connect the cascade plug.
- Replace the device hoods.

Removal



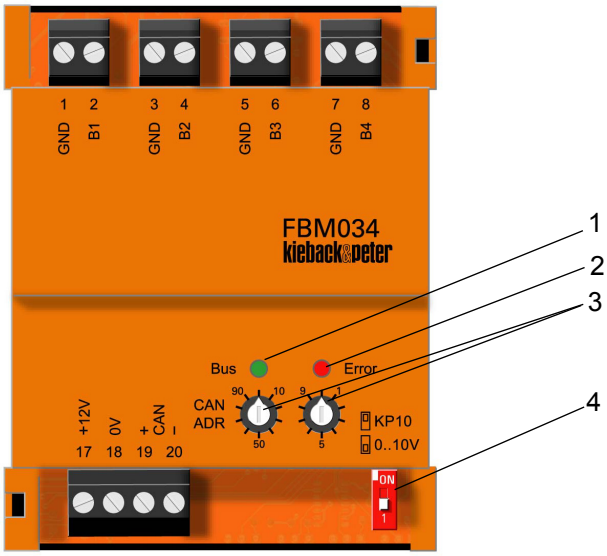
Commissioning

CAUTION

Commissioning by switching on the supply voltage may occur only after the commissioning technician/engineer has finished configuring the DDC and has set the fieldbus address.

- Configuration is described in the DDC controller project planning documentation.
- Before switching on the supply voltage, check the electric installation and the device connections.
- After configuring the device and switching on the supply voltage, check the functions of the module and the connected inputs and outputs.

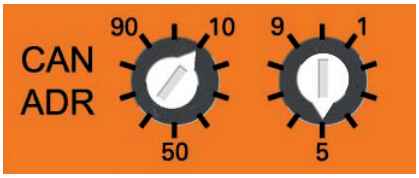
Function/Operation



1 Green LED
2 Red LED
3 Address switch – address setting 01 to 63
4 Measuring range switch inputs can be set to 0–10 V or KP10

Setting the address

Address settings: 01 to 63



Example: 15

LED Display for Bus/Error

Green LED (1)	Red LED (2)	Meaning	Cause
Off	Off	Module not in operation	■ No operating voltage or operating voltage too low
On	On	Module in operation, but there is a bus error	■ Bus line short circuit (with respect to ground or each other) ■ Bus lines mixed up ■ Bus line(s) interrupted ■ Module not registered
Flickers	Flashes	Address error	■ Outside of address range (01–63) ■ Address assigned multiple times
Flickers	On	Module logging on	
Flickers	Off	Module OK, bus activity	