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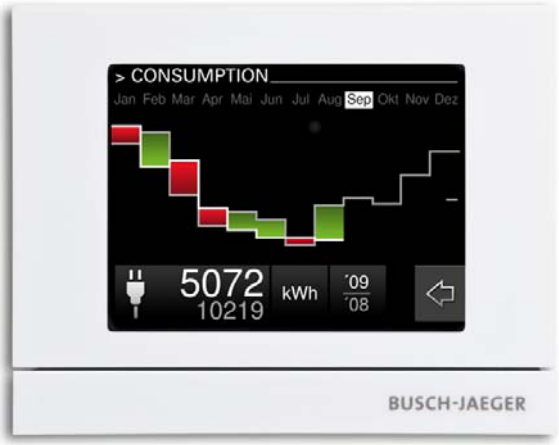
KNX Technical Reference Manual
Busch-EnergyControl

6762-500



Efficiency with a future

Less consumption and fewer costs pay off for people and the environment. You only need the right information and new avenues for saving open up.

Energy monitored consistently

The Busch-EnergyControl offers a complete overview of the primary energy sources of electricity, water, gas and heating oil. The consumption and the course of each is displayed graphically. Cost-intensive periods are quickly identified and one can respond immediately via touch screen. For example, by switching off consumers that are not required. In case of electricity, costs and tariff forecasts can be read off in real time. The currently cheapest tariffs are displayed in green - the currently expensive ones in red. This is is what optimum cost control looks like.

Power and productivity
for a better world™

KNX Technical Reference Manual
Busch-EnergyControl

1 Safety instructions

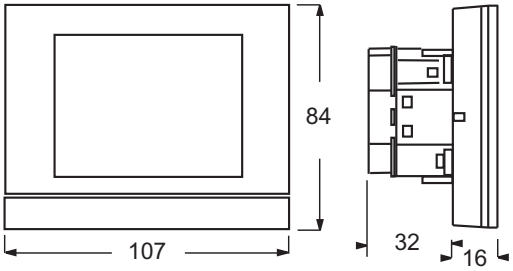


Work on the 230 V power supply system must only be performed by specialist staff.
Disconnect the mains power supply prior to mounting and/or disassembly!
Failure to observe the installation and operating instructions may result in fire or other hazards.



Disclaimer
The content of this printed material has been checked for compliance with hardware and software. However, no liability can be assumed for any deviations that may still occur. Any necessary corrections will be implemented in future versions of this manual.
Please advise us of any suggestions concerning the manual's improvement you may have.

2 Dimensions



3 Technical data

Designation		Value
Power supply		230 V, 50 Hz
Power consumption	Use	< 6 W
	Standby	< 1 W
Control and display elements	Touch screen	3.5 inch / 8.9 cm
	Resolution	320 x 240 dots
	Colour depth	65,536 colours
Interfaces	Card slot	microSD
Protection		IP 20
Temperature range	Use	-5 °C to 45 °C
	Storage	-20 °C to 70 °C
Radio standard	KNX radio control	868 MHz
Colour		Black
		White
Mounting	Flush-type installation	Standard flush-mounted socket (DIN 49073)
	Support frame	With equalising elements
Dimensions	W x H x D	107 x 84 x 16 mm
Certification		DIN EN 60669-1
		DIN EN 60669-2-1
		EN 60950-1: 2006
		ETSI EN 300220-1
		ETSI EN 300220-2

4 Easy to mount

Note
It is recommended to install the display at eye level.
So that the Busch-EnergyControl also lies flat on uneven walls, special balancing elements are included with the device.

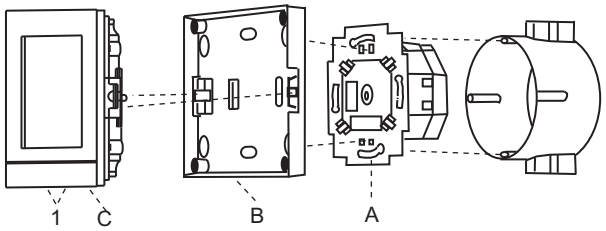


Fig. 1: Installation drawing

1. Install the FM insert (A) into a conventional FM socket.
2. Fit the enclosed support frame (B) of the Busch-EnergyControl onto the FM insert. Connect the support frame to the insert with the two enclosed countersunk screws (M3x10). Ensure that the support frame is seated correctly against the wall by adjusting it with the screwed-in distance holders.
3. And finally, lock the Busch-EnergyControl display (C) onto the support frame.

At the bottom of the display (1) a slot for connecting commercially available microSD cards and the reset button are located.

Further information is contained in the "Installation and Operating Instructions".

5 Commissioning



Connecting the operating voltage (switch on)

After the operating voltage is connected the start screen opens with the Busch-Jaeger logo, the loading bar and the KNX ID. The boot-up process takes a few seconds.

Important

Please note down the KNX ID after switching on the device!
The display must gain access to the meters programmed in the energydata gateway. The KNX ID is required as authorization to gain access to the energydata gateway. After the reset button is pressed the KNX ID re-appears in the display.

Language selection

The operating mode selection is accessed via the language selection.



Operating mode selection

Programming

If you wish to use the entire function of the Busch-EnergyControl and additional repeater function, first select operating mode "Programming". You then have the option of adding the repeater function.

Repeater

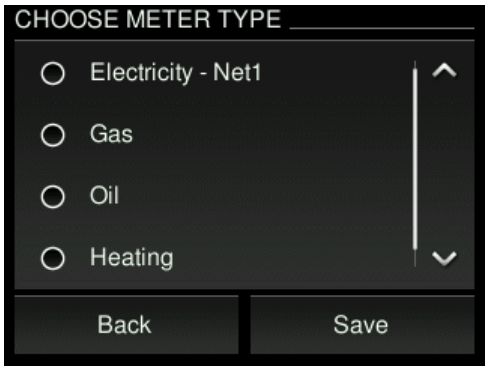
In operating mode "Repeater", the device establishes a connection to other displays outside the range of the gateways, in order to maintain communication. The device has no display function in "Repeater" operating mode. Up to six repeaters can be combined. Also the following devices can be used as repeaters:

- 6701-500 Built-in receiver WaveLINE
- 6730-500 WaveLINE LED display
- 6760-500 Busch-EnergyDisplay

5.1 Programming



The Busch-EnergyControl must be within radio range for programming.
Programming with interconnected repeaters is not possible!
Due to data protection, radio communication between the Energiedata Gateway and the Busch-EnergyControl must be enabled separately for each display unit in the Energiedata Gateway. Configuration software is required for this.



Meter selection

Configure the measuring points enabled in the energydata gateway by selecting a description and assigning it measuring point type.
You return to the meter selection via the "Save" button.
Repeat these steps until you have configured all desired measuring points and the press "Continue".

Meter configuration

After the meters have been configured, you can assign them tariffs. To do this, select a meter.

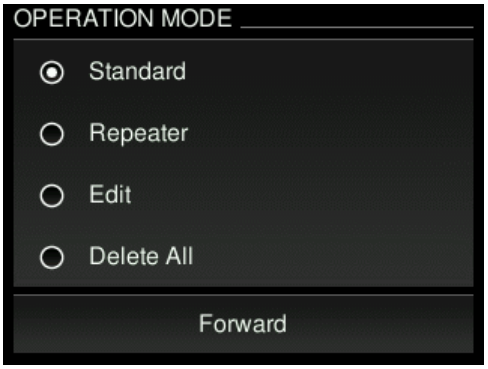
Tariff selection

First, a list of tariffs is displayed. Select a tariff to add or to edit information.
You have the option of importing tariff information automatically from the SD card. The tariff information is available from your supplier.



Tariff editor

Use the buttons "plus" and "minus" to set the price for a tariff. The tariff information is available from your supplier. The tariff information is available from your supplier.

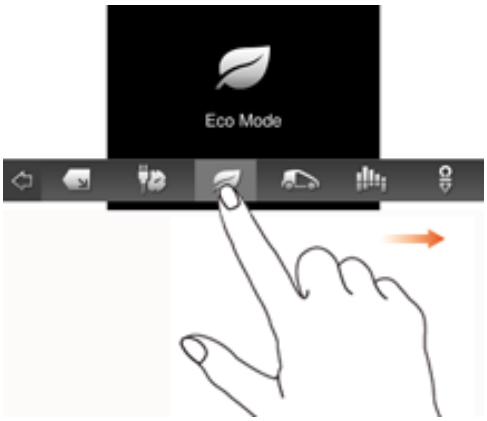


Mode selection

After programming or pressing the reset button (R), you return to the mode selection:

- Standard: Select "Standard“, to access standard operation.
- Repeater: In addition to the standard mode, the Busch-EnergyControl will repeat each signal received.
- Edit: Select "Edit“, to change data you have configured previously.
- Delete All: Select this option to delete all data and user settings.

6 Operation



The navigation menu is the starting point for all applications. The main component is the navigation bar in the lower sector.
The navigation bar enables you to call up all the functions offered by the Busch-EnergyControl. After calling up a function, the associated menu is displayed. Use the slider for this function.

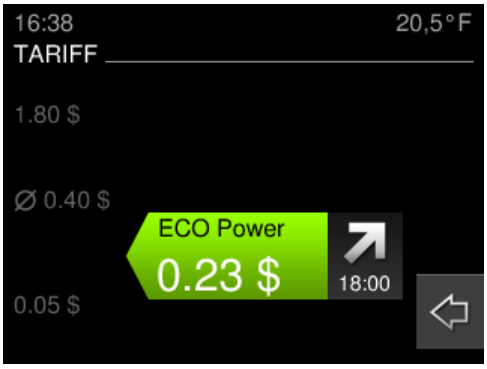


The status line displays date and time as well as messages, temperature and statuses.
Please note that the temperature displayed can deviate from the room temperature due to ambient conditions.

6.1 Reading the Electricity Rates



It is always beneficial to know whether electricity is expensive or reasonably priced.
That is why the current price is displayed and the pricing forecast is displayed in colour: ether red for expensive or green for reasonably priced.
This enables you to respond appropriately when the electricity is cheaper, e.g., to charge your electric car or turn on the underfloor heating. Currently the pricing forecast for electricity is available; other types of primary energy will be added gradually.

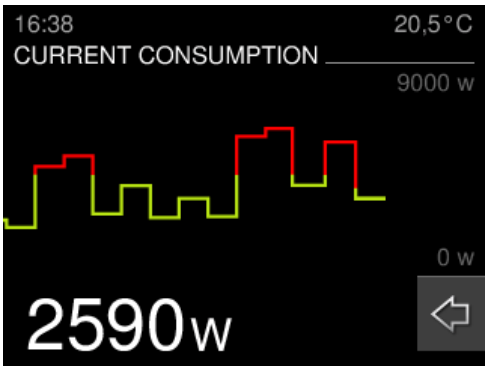


You see the current tariff for electricity on the main meter, the price range of your tariffs and the average tariff. Dependent on your supplier, a tariff preview with starting point and coloured assessment is displayed.

6.2 Reading the present consumption



To date the current electricity consumption can be graphically displayed. The precise current electricity consumption can be seen at a glance. This makes a direct response with regard to consumption and behaviour possible.



You can see the current power consumption of your household in watt. This is comparable to a passenger car with the consumption of litres per 100 km. Consumption in excess of your personal threshold value is displayed in red, consumption below that in green. You can specify the threshold in the system settings.

Note

During the first 60 seconds after the screen has been called up, the display fills with values at five-second intervals.
The graph is updated every 15 seconds from the first minute as long as the display remains activated.
If several devices that use KNX are used, there could be a delay in the updating process.

6.3 Eco Mode



Take action. Select the economising mode for your house at a hint. The consumers defined by you are separated from the network immediately. Adapted individually and to prevailing circumstances.



In this mode you can activate three freely definable consumer groups. You can specify these in the system settings. This enables you to reduce consumption at the press of a button.
The effect of the current consumption can be seen immediately.
And vice versa, all consumers can be quickly and easily returned to operating mode.

6.4 Energy station



The charging process is very clearly displayed. A car icon fills itself continuously and signals that the car is being charged. Even from the couch you can see whether the car is still being charged. You are constantly aware of the cost and the amount of energy of the current charging process.

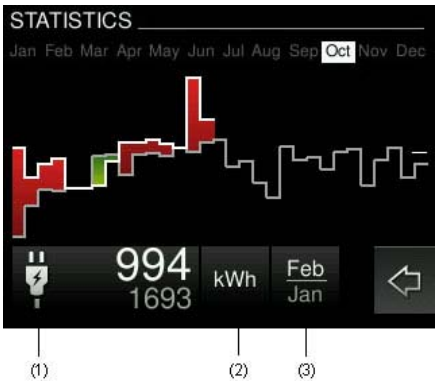


An animated car informs about the status of the connection to the energy station. Similar to the petrol pump, you can see the amount of the energy being loaded and the resultant costs. After the charging process the values remain until the following one. A corresponding electricity meter must be programmed for this function.

6.5 Statistics



The comparison clearly shows whether the actual consumption of the household matches the default value or deviates. A colour display shows the differences and provides fast orientation for action.
You can see the recorded consumption values of the current interval in direct comparison with the last interval. You can change energy type (1), unit (2) and interval (3) via the display area. You reach the next detailed level via the graph.
At the right side of the display there is a white line that depicts the average consumption of this interval. You also have the option of fading in a scale.



In the future additional graphic displays for the time intervals day/week/month/year will simplify continuous monitoring.
You can see the zoom view with consumption values for the selected period. The previous interval again serves as comparison, e.g., each first Saturday of the month.

6.6 System settings



The system settings are accessed via the Busch-Jaeger logo in the navigation menu. In addition to your personal settings you have the option of deleting all user data, to reset the device to the factory settings and to select the display mode.

6.7 Tariff settings

In menu "TARIFF SETTINGS" you have the option of entering new tariffs manually or via an SD card.

Select one of the listed meters to update its tariff, or to enter a new tariff with a valid-from date. For electricity meters you have the option of creating tariff models with a maximum of 9 tariffs.

Note

A maximum of 8 meters per energy type and a total of 10 meters can be programmed for each display.

If the valid-from date for a new tariff lies in the past, the past use is calculated on the basis of the new data.

You can view, change and update tariffs.
The entry of the calorific value serves for the conversion from gas volume (in m^3) of energy used (in kWh). If necessary, use the calorific value stated on the invoice of your gas supply company!
If the calorific value is not stated or is listed as 0, there is no conversion. In this case the selection of kWh for the display of the current gas consumption is not possible.

6.8 Eco settings

To program actuators, select "Add", and follow the instructions.
Up to 25 actuators in up to three groups can be programmed. You have the option of selecting designations from a list on the SD card. The identifiers of the actuators can be edited with a PC prior to adding, to simplify project planning.

Consumers are summarised in groups by means of their selection and editing.

6.9 Statistics

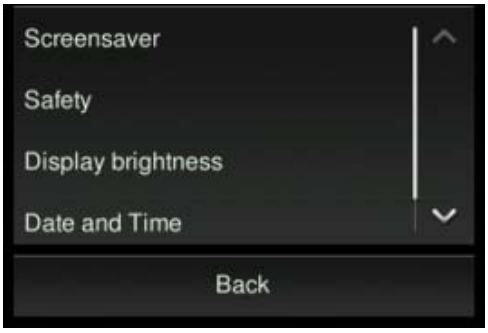
You can define a default value in submenu "STATISTICS" to serve as orientation in the display. You can additionally activate the display of a scale.

6.10 Threshold value settings

For a more optimum classification of consumption, define a threshold value for the display of the current consumption.
The value entered is included in the display of the current consumption. Consumption above the defined threshold value is shown in red, consumption below the threshold value in green.

Define your personal threshold value for the tariff display. Prices below the value entered are displayed in green, the prices above the value in red.
Prices in the +/- 15 % range of the threshold value have a neutral colour.
If you decide not to enter a value, the arithmetic average of the tariff model is used. However, extreme deviations of values in price are smoothed.

6.11 Device settings



6.11.1 Screensaver

The display is switched off in "Screensaver" mode to save power. Data are still received when the display is in "Screensaver" mode. The display is reactivated by touching it. The time period can be set here after which the display is to switch into screensaver mode. Available for selection is 30 seconds, 60 seconds, and minutes. This function can also be deactivated.

6.11.2 Safety

In "Security" display mode the selected view can be blocked with a PIN (Personal Identification Number). The PIN for the "Security" display mode can be adjusted in the system setting. The presetting for the PIN is 0000.

6.11.3 Display brightness

The display brightness can be adjusted to the surrounding circumstances. Three stages are available for selection. From very dark to very bright.

6.11.4 Date and time of day

The data for the display of time, the device receives from MUC. In this menu the formats for date, time and time zone can be set.

6.11.5 Systeminfo

This menu item provides details about the firmware of the device. Also the KNX ID can be read here.
If a microSD card is in the slot, the capacity of the memory is displayed.

6.11.6 Cleaning blockage

The cleaning blockage can be activated to prevent unintentionjal operation of the unit. It blocks the display for 20 seconds. The device can be operated as usual after this period has expired.

6.11.7 Help

The device supports you during navigation with helpful hints. These can be individually faded out with a corresponding tick directly in the Help window. If required, the entire Help function can be switched off in this item.

6.11.8 User settings

The user settings include the data of your supplier as well as the settings of the device. That is why a reset, for example, affects the brightness of the display, the user password, or the blockage of individual functions. The default setting of the PIN is 0000. It can also be changed here.

6.11.9 Reset

A reset to factory setting requires a PIN. This is known by your electrician and should only be used by him.

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