1 General

The Universal Interface US/U 12.2 is used for the operation and display of building functions via push buttons and light emitting diodes (LED's). The compact design enables the device to be inserted in a conventional 60 mm wiring box, e.g. behind an operating panel.

This manual provides technical information about the device as well as its assembly and programming. The last section contains application examples for its effective use on site.

1.1 Product and functional overview

The Universal Interface US/U 12.2 has 12 channels for the connection of conventional push buttons (input mode) or LED's (output mode). Alternatively one Electronic Relay ER/U 1.1 can be connected per channel for controlling electrothermal valve drives.

The operating mode of each channel of the device can be parameterized separately. The connecting lines of 30 cm can be extended up to 10 m.

The supply of the LED's (2 mA per channel) is provided by the device. Therefore no additional power supply is required.

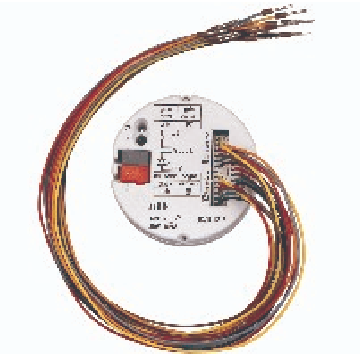
The functionality is extremely extensive but comprehensible and enables the device to be used in a wide variety of application areas. The following list provides an overview:

Switching and dimming of the lighting (also 1 button operation)

- Operation of blinds and shutters (also 1 button operation)
- Sending of values e.g. temperature values
- Control and storing of light scenes
- Triggering an electronic relay for controlling an electrothermal drive mechanism for heating valves
- Triggering an LED (with flashing function and time restriction) for reporting an operation
- Operation of various loads by multiple push button actions
- Operation of several loads in a fixed switching sequence
- Counting of impulses and push button operations

Each channel of a device can adopt any of the functions described above.

2 Device technology



The device has four channels, which can either be parameterized as inputs or outputs in the ETS program.

Using the colour-coded connecting cables, it is possible to connect conventional push buttons, floating contacts or light-emitting diodes.

The scanning voltage for the contacts and the supply voltage for the LED's are made available by the device.

Series resistors for external LED's are integrated in the device.
The universal interface is inserted in a conventional 60 mm combined wall and joint box.

The bus connection is carried out via the bus-connecting terminal supplied.

2.1 Technical data

Supply	- Operating voltage	21...30 V DC, via the bus
	- Current consumption	10 mA
Inputs and Outputs	- Number	12, can be separately parameterized as input or output
	- Permitted cable length	≤ 10 m
Input	- Polling voltage U_n	20 V DC, pulsed
	- Sensing current I_n	0.5 mA
Output	- Output voltage	3.3 V DC
	- Output current	Max. 2 mA
	- Safety	Short circuit proof, overload protection, reverse voltage protection
Operating and display elements	- LED (red) and push button	For assigning the physical address
Connections	- Inputs / Outputs	3x6 cables, approx. 30 cm long, can be extended to max. 10m
	- EIB / KNX	Via bus connecting terminal
Ambient temperature range	- Operation	-5° C ... + 45° C
	- Storage	-25° C ... + 55° C
	- Transport	-25° C ... + 70° C
Type of protection	IP 20 when installed	To EN 60 529
Protection class	III	To DIN EN 61 140
Mounting	In switch box ∅ 60mm	
Mounting position	As required	
Dimensions (∅ x H)	54 x 19 mm	
Weight	0.06 kg	
Housing, colour	Plastic housing, halogen free, colour: grey	
Approvals	EIB / KNX to EN 50 090-1, -2	
CE mark	In accordance with EMC guideline and low voltage guideline	

Application program	Max. number of communication objects	Max. number of group addresses	Max. number of associations
Binary Input Display Heat 12f/1	84	254	255

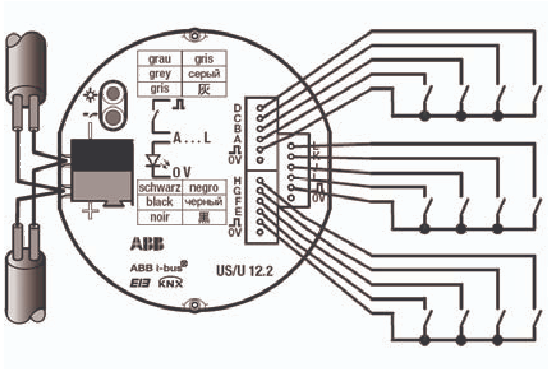
Note: The programming requires EIB Software Tool ETS2 V1.3a or higher. If ETS3 is used a ".VD3" type file must be imported. The application program is available in the ETS2 / ETS3 at "ABB / Display and Visualisation / Input and Output"

Note: The device does not support the encoding function of the ETS. If the access to the device is locked by using a "BC-password" (ETS2) or a "BCU-key" (ETS3) respectively, this will have no effect to this device. It can still be read out or programmed.

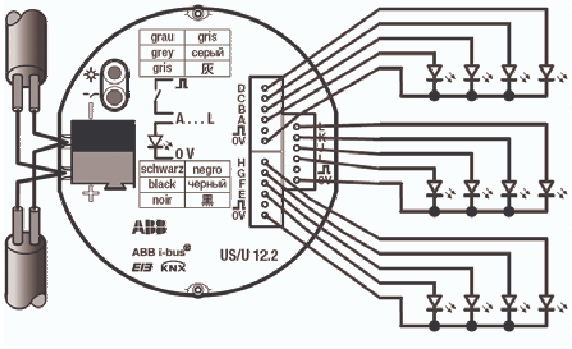
2.2 Circuit diagram

The maximum cable length is 10 m. The colours of the connection cables are explained in section 2.5.

Connection of a floating push button / switch



Connection of an LED



The series resistors for the LED's are integrated in the device. The maximum output current is 2 mA.

Connection of an Electronic Relay type ER/U 1.1

The electronic relay is connected according to an LED. The coloured core is connected to "+", the black core is connected to "–".

Important: The connection of other relays than type ER/U 1.1 is not allowed.

Note: The connection to an S0 pulse output is possible for electronic energy meters of ABB only. The correct polarity should be observed ("+" to grey core, "– " to coloured core).