SCHAKO

TECHNICAL DOCUMENTATION

EasyBus®

EasyBus

Control and monitoring system for control technology products of TGA

EasyF-V01

- **Fieldbus module for connecting up to two 24 V DC drives (e.g. VAV)**
- **Control and monitoring of the drives via 0(2)-10 V DC**
- **4 configurable universal inputs for monitoring digital signals (0-24 V DC), analogue signals (0-10 V DC) or for measuring a resistance (PT100, PT1000, NTC)**
- **Addressing via RFID tag**
- **Maintenance / test via Bluetooth**
- **Colour LEDs for easy status display**
- **Magnetic fastening or fastening with a single screw**

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CONTENTS

SAFETY INSTRUCTIONS

Please read the safety instructions carefully before installing and maintaining the EasyBus system.

Please observe the following instructions:

- Installation or maintenance must be carried out according to the instructions.
- Observe all national and local electrical regulations.
- Observe the warnings and precautions in these instructions.
- All installation and maintenance work must be carried out by a qualified person in accordance with local regulations and the instructions in this manual.
- Be careful during installation and maintenance. Avoid operating errors to prevent electric shock, injuries or death and other accidents.

The EasyBus system (including all EasyBus modules) must be installed, commissioned, maintained, repaired and removed / dismounted by a qualified installer or a qualified service technician.

For all tasks involving the 230 V AC power supply:

- installation and maintenance must be carried out by a qualified electrician who ensures adherence to all legal and official regulations.
- all wiring and connections must be carried out in a de-energised state and in accordance with the instructions of the local regulations.

GENERAL INFORMATION

The EasyBus system (including all EasyBus modules) meets the following standards:

EN 60730-1

CENELEC EN50065-1

Note on disposal

As the EasyBus modules contain electronics, they must not be disposed of with normal household waste. Ensure that the products are disposed of in accordance with the local regulations for the disposal of electrical appliances or the WEEE of the EU.

Explanation of symbols

Risk of electric shock (230 V AC)

All electrical work must be carried out by qualified personnel in accordance with the regulations.

Risk of burns

Attention, hot surface

Warning

Failure to comply with the points marked with this symbol may:
-- impair / reduce the function
-- damage modules and/or the entire installation

Operating conditions

ambient temperature	5 up to 40 °C
Ambient humidity	0 - 90% rH, non-condensing
Operating position	Only suitable for indoor use

Storage and transport conditions
The EasyBus modules must be stored and transported at ambient conditions of -10 °C to 60 °C, 0 to 95% rH, non-condensing.

DEVICE DESCRIPTION

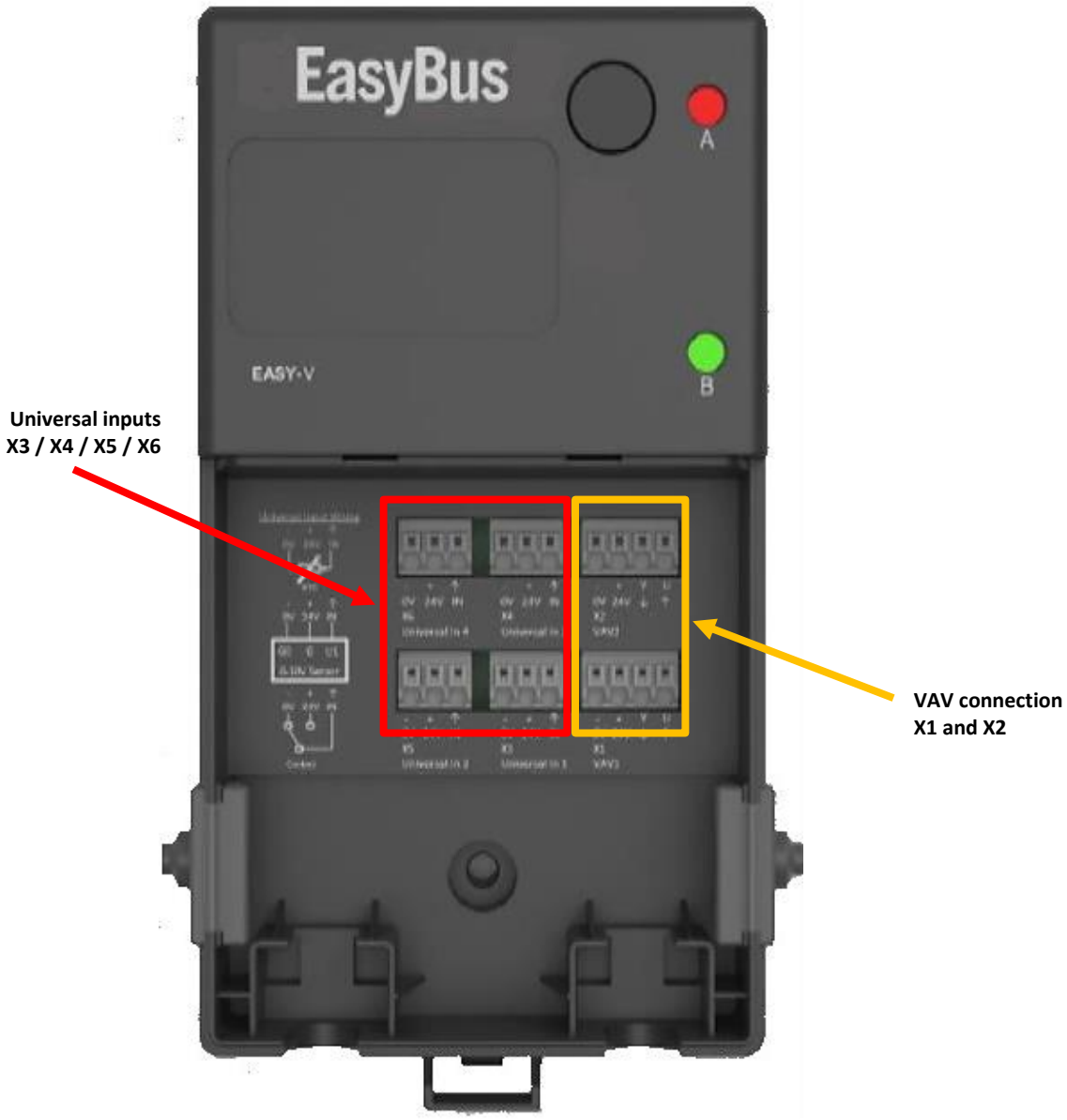
The EasyF-V01 device can be controlled by an EasyS-M01 master device. Its function is to control and monitor up to two variable 24 V DC drives (e.g. VAV, valves, etc.). It also has 4 universal inputs that can be configured for monitoring digital signals (0-24 V DC), analogue signals (0-10 V DC) or for measuring a resistance (PT100, PT1000, NTC).
The module contains the complete EasyBus technology:

- Addressing via RFID labels
- Bluetooth connectivity for maintenance and testing
- Colour LEDs for easy status monitoring
- Magnetic fastening or fastening with a single screw.

TECHNICAL DATA

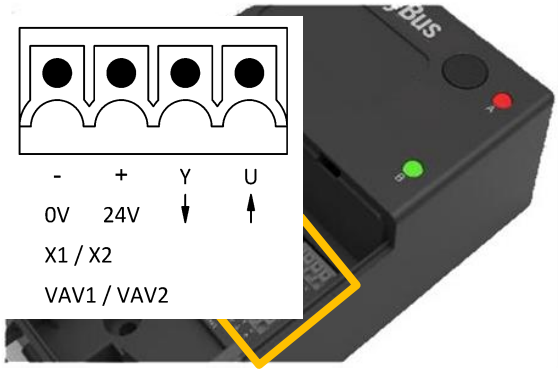
Description	Designation	Min.	Type	Max.	Unit
Power supply					
Supply voltage	$V_{EasyF-V01}$		230		V AC
Current consumption without load	$P_{EasyF-V01}$		4 1.6		VA W
Current consumption, 0.3 A max. load	$P_{EasyF-V01-Max}$		9.5 4.6		VA W
VAV control					
VAV supply voltage	$V_{Motor-CMD}$		24	26.4	V AC
VAV maximum power (for 1 drive)	P_{Motor}			5.5	VA
VAV analogue input / output voltage	$V_{VAV-IN/OUT}$	0		10	V DC
VAV analogue input / output current	$I_{VAV-IN/OUT}$			1	mA
Digital sensor					
Universal input voltage (digital)	$V_{INPUT-DIG}$	0		24	V DC
Universal input voltage (analogue)	$P_{INPUT-ANALOG}$	0		10	VA
Universal input RTD range	R_{INPUT}	0		65	kΩ
Powerline communication					
Frequencies	f_{PLC}	100		240	KHz
Modulations	Mod		PSK/FSK		
Baud rate	-	2400		28800	

ELECTRICAL CONNECTIONS



VAV CONTROL X1 AND X2

The electrical connections X1 and X2 are the interface connection between the EasyF-V01 module and the steadily controlling drives. This enables the motor position (e.g. air flow) to be controlled and monitored.



Simplified representation

Pin	Description
1	0 V
2	24 V DC
3	Analogue output 0…10 V
4	Analogue output 0…10 V

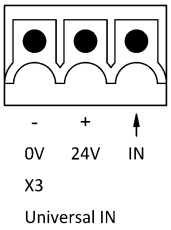
Description	Min.	Nom.	Max.
Supply voltage		24 V AC	26.4 V AC
Supply current			0.25 A
Analogue output voltage	0 V DC		10 V DC
Analogue output current			1 mA
Analogue input voltage	0 V DC		10 V DC
Analogue input current			1 mA
Cable cross-section	0.2 mm^2		1 mm^2

UNIVERSAL INPUTS X3 / X4 / X5 / X6

The electrical connection X3-X6 is the universal input interface of the EasyF-V01 module. It can be used to monitor different types of input signals:

-- Digital input signal: 0-24 V DC
-- Analogue input signal: 0-10 V DC
-- Resistance input: PT100, PT1000, NTC

Simplified representation, example



Pin	Description
1	0 V
2	24 V DC
3	Input

Description	Min.	Nom.	Max.
Supply voltage		24 V AC	26.4 V AC
Supply current			100 mA
Digital input voltage	0 V DC		24 V DC
Analogue input voltage	0 V DC		10 V DC
Maximum input current			1 mA
Resistance input value	0 Ω		65 kΩ
Cable cross-section	0.2 mm^2		1 mm^2

EASYBUS NETWORK

A 60 cm cable is pre-installed on the EasyF-V01 for connection to the EasyBus network.
It is recommended that EasyBus networks are installed using EasyZ-FKP or -FKH ribbon cables. Optionally, the EasyBus field modules are already equipped at the factory with EasyZ-ADM connection sockets for connection to the ribbon cable without tools.

Description	Nom.	Max.
Supply voltage	230 V AC	
Supply current		45 VA 26 W
Cable cross-section	1.32 mm²	
Line length	60 cm	

The EasyBus network is connected to the 230 V AC mains. For all connections in the EasyBus network, suitable connections must be used.

The EasyBus subnetworks are proprietary power line networks.

Only EasyBus products may be installed in these networks

Adding additional non-compatible products can result in damage to the modules and/or the entire installation.

EasyBus subnetworks cannot be used as a power supply network. It is strictly forbidden to install T13 plugs to supply other devices.

ADDRESSING

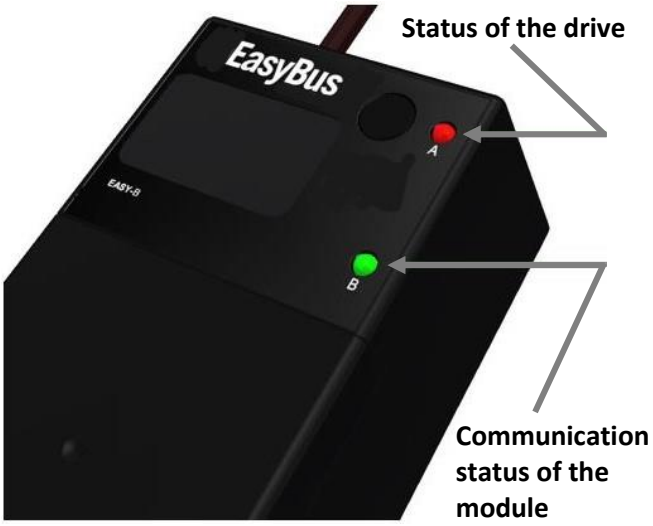
The EasyBus address **must** be configured with a specific RFID label.
The label must be glued in the designated area as shown in the following figure:

RFID TAG from 1 to 128

If the EasyF-B01 module is not equipped with an RFID label and/or has not been addressed manually via Bluetooth, it cannot be detected by the EasyBus system!

LED DISPLAY

Two LEDs are available on the EasyF-V01 module for visualisation.



LED A	
Initialisation	white
Ready	green

LED B	
Communication OK	Pulsating green
Communication error	red
Bluetooth active	flashes blue
Bluetooth connected	blue
Motor closed	white

BUTTON

The main function of the button is to activate the Bluetooth connection.

Detailed information can be found in the next chapter "Bluetooth connection".

Briefly press this button to activate the Bluetooth connection for one minute.

Shutting down the module via the button:

The button can also be used to switch off or shut down the device. The following sequence must be observed:

1. Press and hold the button for 5 seconds
2. All LEDs are lit white to confirm the reset
3. Release the button

BLUETOOTH CONNECTION

A smartphone application compatible with Apple iOS and Android systems is required to establish a connection to an EasyF-V01.

The Bluetooth connection is always deactivated and must be activated either by pressing the device button or by remote access via the Easy-H interface.

As soon as the connection is established, the following actions are possible:

- Reading the device status
- Reading the statistics counter
- Configuring the device address and frequency
- Manual control of opening / closing to test the installation

Download your Easy3 app for iOS or Android to activate the Bluetooth connection.

Easy3

www.easybus3.com

SHUTDOWN FUNCTION

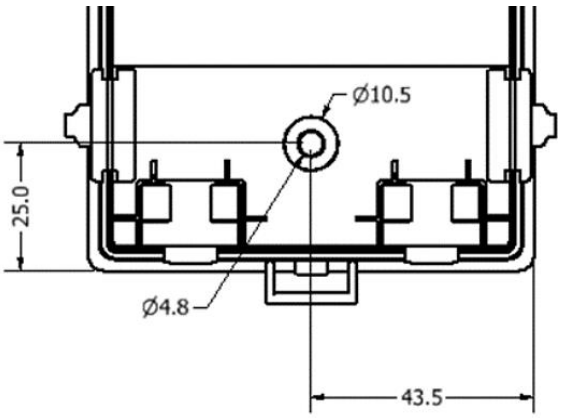
When the device is connected to the power supply for the first time or has been shut down (for more detailed information, see chapter "Button"), it is in the shutdown state.
In this state, the drive is automatically opened to allow easy testing of the installation.
Once the device has been configured by the EasyS-H01 and EasyS-M01, it no longer opens the drive automatically.

COMMUNICATION TIMEOUT

If the EasyF-V01 does not receive any valid data for 1 minute, the fire damper is automatically closed to ensure that the system is in a safe state.

MECHANICAL FASTENING

The plastic housing contains two strong magnets which ensure that it can be attached to any metallic surface.
The fixing force can vary depending on the material properties of the metal plate.
If the magnetic fixing is insufficient for some reason, it is possible to fix the device with a screw.
The screw hole is located under the protective cover. The dimensions and position of the hole are shown in the figure below.



DIMENSIONS