

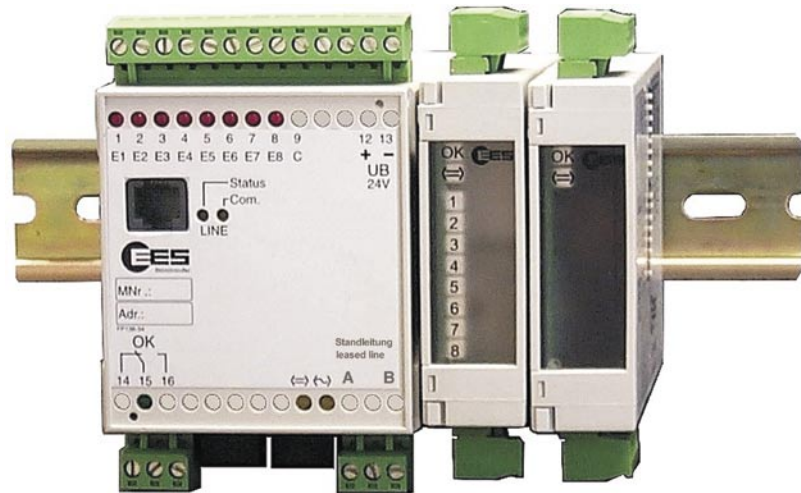


A system from the

MFW-product family

www.ees-online.de

info



## Modular Dedicated Line Telecontrol System

Telecontrol on private and public dedicated lines

### Performance characteristics:

- Bidirectional point-to-point transmission
- Modular configuration for up to 32 I/O modules
- Simple connection to other transmission media, e.g. radio or two-wire within the framework of the MFW product family
- Simple adaptation of transmit levels to the line quality of the transmission link
- Cyclic data exchange

## Functional description

The **MFW Modular Telecontrol Network** has been specially conceived for the interconnection of widely scattered outdoor installations, such as for example pump, transformer and gas regulating stations, storm-overflow reservoirs, inspection chambers and elevated reservoirs. The MFW can be operated as a fully independent, cost-effective telecontrol system or as an extension to existing telecontrol interface modules. Almost all types of cable (telephone line, three-phase current cable, cable screen, electrically isolated cable, optical fibres etc.) and various radio ranges are suitable as transmission media. This documentation covers only a small section of this: Transmission on dedicated lines.

The telecontrol system in the dedicated line variant consists of a central station and an outstation. Each station requires at least one **basic module**, containing the following function groups, display and setting elements:

- internal dedicated line modem
- RS 232 parameterising and diagnostics interface or combined RS 232 parameterizing, diagnostics and protocol interface
- I/O module with optionally 8 binary inputs or outputs with status LED
- two CAN bus interfaces for connecting the expansion modules
- watchdog LED and fault signalling contact
- DIP switches for setting the station address, module number, etc.

The basic modules can be obtained in two versions:

- A master module, whose type name contains „MF-...“, needs to be present in the system, and is usually used in the central station. It co-ordinates the flow of data.
- The outstation module, whose type name contains „UF-...“, is used in the outstations.

Each basic module can be fitted with up to a maximum of 15 expansion modules in order to increase the I/O scope. These are connected via the CAN bus interface. You can find more detailed information in the separate datasheet „Expansion modules“.

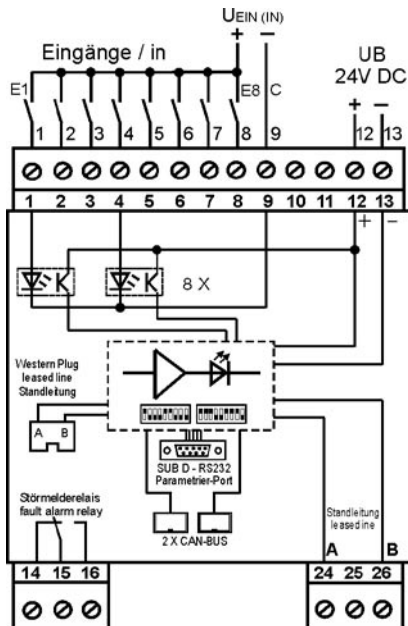
Each **I/O module** is given a module number. The data is exchanged between modules with the same module number. The physical arrangement of the modules within the system (the station address) is of no significance at all here. The input module with number 5, for instance, transmits its data to all the output modules whose number is 5.

The data exchange is controlled by the master, which cyclically queries the outstations. **Measuring and set values, messages, commands, momentary and counting pulses** are transmitted. In the case of digital I/O modules the inputs/outputs 1-4 can be switched over between the two types of function - static or counting/momentary pulses. Analog signals can be transmitted both as voltage values 0-10V or as current values 0-20mA.

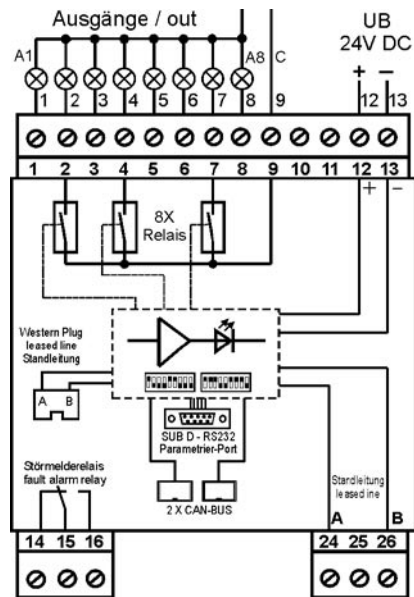
If the outstation cannot be reached or if the data transmission is faulty, the system recognises the faulty communication and signals this by LED and relay contact both to the central station as well as to the outstation. After the cause of the fault has been rectified, normal operation is resumed automatically.

Configuration of the system is simple and easy. On the modules themselves it is only necessary to set the module number (0 ...254), transmit level, static / counter value for digital I/Os as well as current/voltage in the case of analog signals etc.

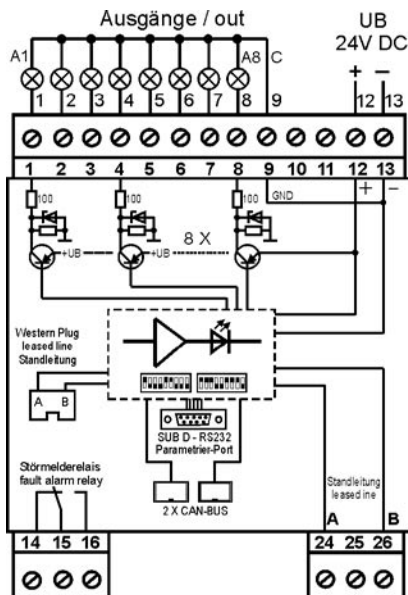
## Terminal assignments



Basic module with  
8 digital inputs



Basic module with  
8 output relays



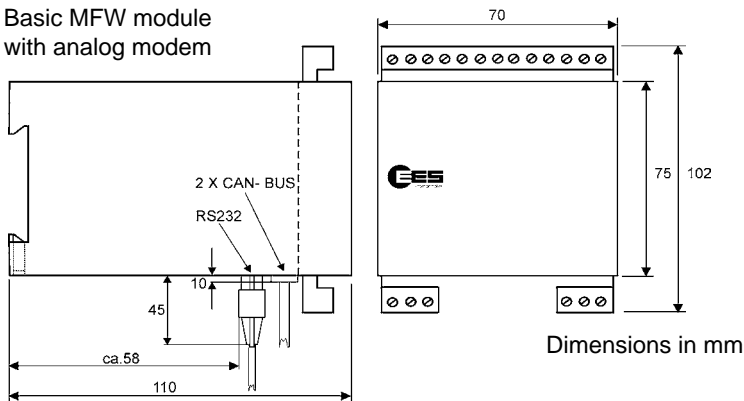
Basic module with  
8 transistor outputs

Attention:  
positive switched  
pnp transistors!

The right to make technical changes is reserved

## Dimensional drawing

Basic MFW module  
with analog modem



## Technical data

### General data

Rated operating voltage	24V DC
Operating voltage range	
Basic module	10 ...32V DC
with expansions	20 ...32V DC
Operating and ambient temperature	0 °C ...+55 °C
Air humidity	maximum 95%, non-condensing
Connection terminals	Nominal cross section 2.5 mm <sup>2</sup>
Housing / protection class	plastic / IP 40

### Digital input module

Power consumption	approx. 2.5W
Signal voltage	approx. 16 ... 48V AC/DC*
Input resistance	approx. 10kOhm
Maximum count rate	10Hz
Minimum pulse width	50ms
Electrical isolation between signal and supply voltage	4kV <sub>eff</sub>

### Digital output module

Power consumption	approx. 3.5W
With relay outputs	max. 2.5W logic + load current
With transistor outputs	
Contact loading of relay outputs**	
minimum	1,2V / 1mA
maximum	250V AC / 400mA 250V AC 2A (purely ohmic load) 30V DC / 2A 110V DC / 0,2A 220V DC / 0,1A

Total current 230V AC (purely ohmic load)	max. 8A
Load capacity of transistor outputs	maximum 50 mA per output
Maximum count rate	12Hz *
Pulse width / pause	40ms *
Electrical isolation between output and supply voltage	4kV <sub>eff</sub> (not for transistor outputs!)

\* Other figures on request

\*\* Accuracy specifications on request.

The right to make technical changes is reserved



## ...Solutions for complex tasks

from project planning through to commissioning

### Master modules

MF-ASMOD-G8DEX-DIA-0-BB-0	8 digital inputs
MF-ASMOD-G8DAL-DIA-0-BB-0	8 transistor outputs
MF-ASMOD-G8DAR-DIA-0-BX-0	8 relay outputs

### Outstation modules

UF-ASMOD-G8DEX-DIA-0-BB-0	8 digital inputs
UF-ASMOD-G8DAL-DIA-0-BB-0	8 transistor outputs
UF-ASMOD-G8DAR-DIA-0-BX-0	8 relay outputs

### Expansion modules

Please find more information in our special datasheet.

### Accessories

Connecting cable to PC or laptop, power supplies, DC/DC converter, battery back-up charging unit, incl. battery packs.

Further accessories and more detailed information may be found in the appropriate product sections in the catalogue.



HOTLINE  
+49(0)7191/182-235  
-214



INTERNET  
[www.ees-online.de](http://www.ees-online.de)



**Elektra Elektronik GmbH & Co Störcontroller KG**

Hummelbühl 7-9 • D-71522 Backnang/Germany • P.O. Box 12 40 • D-71502 Backnang  
Phone: +49(0)7191/182-0 • Fax: +49(0)7191/182-200 • email: [info@ees-online.de](mailto:info@ees-online.de)