

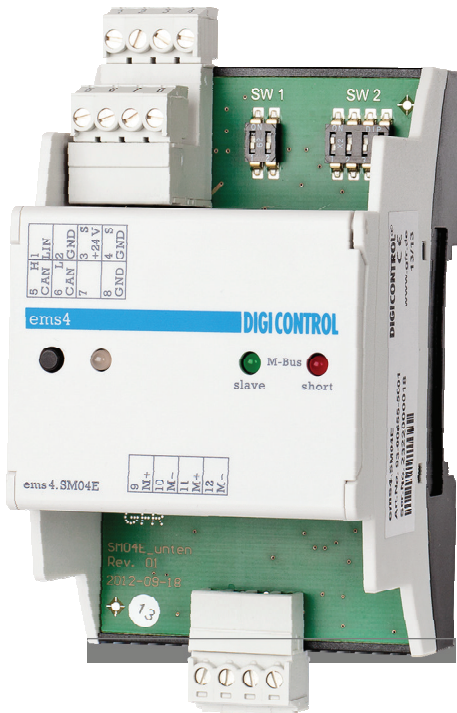
[19190]

Category: Automation systems



Communication interface for the integration of MBus

DIGICONTROL **ems4.SM04E**



Application

The module ems4.SM04E is used for the direct readout of up to 60 MBus-compatible meters (e.g. heat meters, water meters, electricity meters, pulse counters, etc.). The integrated MBus level converter saves the use of additional components. Once configured, the primary address, bus speed and readout frequency of the connected meters are parameterised; the ems4.SM04E then takes over the self-sufficient data communication.

Technical features:

- Interface module with integrated MBus interface (*1)
 - Integrated level converter for maximum 60 MBus subscribers (standard load 1.5mA each)
 - Protection against over-current and short-circuit on the MBus
 - Configuration of the MBus speed
 - Configuration of the primary address and read-out frequency of each individual MBus subscriber
 - Configuration of the data request
- (*1) Depending on data profile (differentiation by firmware version SM04E or SM14E) 30 or 60 subscribers

Article number: EMS4.SM04E

Specifications

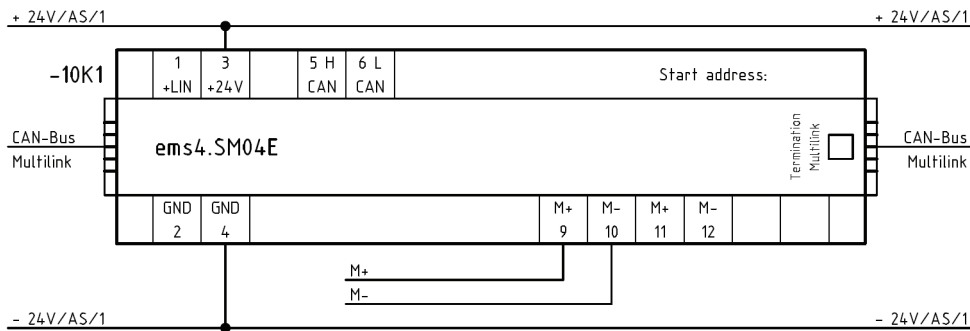
Mounting	Din rail mounting
Supply voltage	24V DC $\pm 10\%$
Power consumption	1.2W (without MBus participants), 5W (60 MBus participants)
System bus	CAN-Bus
Interfaces	LIN, CAN, MBus
DIN rail bus connector CAN / LIN	Number of MBus-counter: up to 60 pieces max. 30 mating cycles, contact load 1A
Status display	1x Duo LED (operation and CAN bus: green / error: red), 1x green LED (MBus data traffic), 1x red LED (MBus overload)
Connecting terminals	via screw terminals for wires up to 1.5mm ²
Housing	Plastic housing
Dimensions (WxHxD)	53.6 x 109.7 x 62.2 mm
Protection type	IP20
Operating temperature	+5...+40 °C
Storage temperature	-10...+70 °C



Specifications

Humidity	up to 85% without condensation according to VDE 0160, EN 50178, Class 3K3
EMC burst	EMV Burst
EMC electromagnetic interference	EN 61000-6-4, EN 50081, (EN55022)
EMC interference immunity	EN 61000-6-2, EN 50082, (EN55024)

Electrical connection



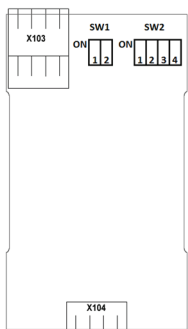
Please note: Exposed circuit elements have to be treated in compliance with ESD guidelines!

Connection terminals

Terminal no.	Description	Terminal no.	Description
1	LIN-Bus	9	M-BUS +
2	GND*	10	M-BUS -
3	+24VDC power supply	11	M-BUS +
4	GND power supply	12	M-BUS -
5	CAN-H		
6	CAN-L		
7	----		
8	GND*		

* connected internally

Position of the DIP switches





Function of the DIP switches

DIP switch SW1 (1) serves for the termination of the CAN Bus (active in position ON).
DIP switch SW2 (1+2) is for setting the CAN Bus speed.

SW1		Description	
1		CAN Bus termination, active if switch is ON	
2		No function	
SW2		Description	
1		CAN Bus speed	
2		CAN Bus speed	
		OFF	ON
3		SND_NKE is sent on start-up, after a bus fault or activation with option-bitmap (Default)	SND_NKE is not sent (Option)
4		REQ_UD2 with static FCB bit (Default)	REQ_UD2 with changing FCB bit (Option)
1	2	CAN Bus speed	Maximum CAN Bus length
OFF	OFF	1 MBit / s	30 m
ON	OFF	500 kBit / s	100 m
OFF	ON	125 kBit / s	500 m
ON	ON	62,5 kBit / s	1000 m

Firmware version SM14E with data profil for 60 MBus meters

The firmware version SM14E can be used as an alternative for module ems4.SM04E. Whereas the hardware is identical, the firmware version enables an increase of the number of meters up to 60 MBus devices by reducing the data volume of each individual meter.

GFR - Gesellschaft für Regelungstechnik
und Energieeinsparung mbH

Kapellenweg 42
D-33415 **Verl**
Phone: +49 (0) 5246 962-0
www.gfr.de / info.verl@gfr.de

Rudolstädter Str. 41
D-07745 **Jena**
Phone: +49 (0) 3641 4697-0
info.jena@gfr.de



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