

# Protocol converter FTC470XMB

Protocol converter to interface the BMS bus with Modbus RTU



FTC470XMB

### Device features

- Modbus-RTU interface for communication with higher-level systems (building management systems or visualisation software)

### Product description

The protocol converter FTC470XMB is designed to transmit data from the BMS bus to the Modbus RTU and vice versa. In this way, information from communication-capable Bender products, such as EDS, RCMS or MEDICS® systems can be integrated into a Modbus RTU system. Programming and adaptations on the Modbus RTU side have to be carried out by the user. In mode 1, up to 10 BMS-compatible Bender devices can be displayed with one FTC470XMB.

### Application

- Transmitting all BMS data to Modbus RTU
- Displaying Bender data on Modbus-RTU-compatible software
- Reactions on the Modbus RTU side to BMS events
- Control of BMS systems via Modbus RTU
- Connection to Modbus-RTU-compatible building services management systems
- Reactions on the BMS side to events on the Modbus RTU side

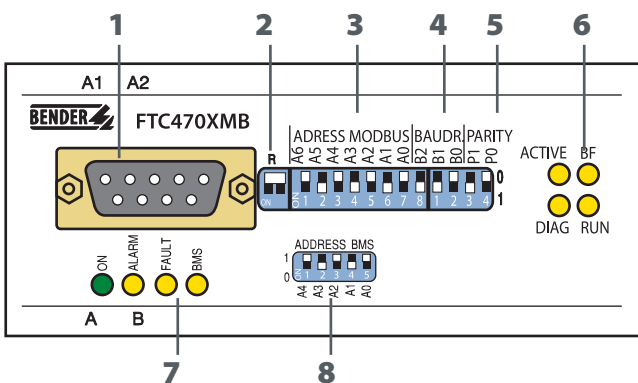
### Function

The protocol converter FTC470XMB is incorporated into the Modbus RTU network as a slave and in a BMS system either as a master or a slave. The Modbus RTU master, e.g. a personal computer utilising a Modbus RTU interface or a PLC must be programmed in a way that the protocol converter is capable of triggering the respective requests and getting the replies. For appropriate programming, the user is required to have a thorough Modbus RTU knowledge. The entire command syntax is a component of the FTC470XMB operating manual.

### Standards, approvals and certifications

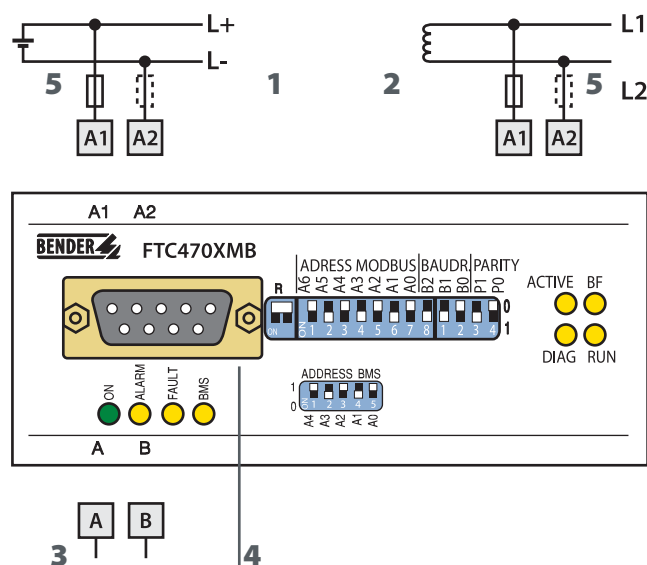


### Operating elements



- 1 - Socket for Modbus RTU cable: 9-pin SUB-D
- 2 - Micro switch for Modbus RTU termination: "ON" = terminating resistor activated
- 3 - DIP switches for binary addressing of Modbus RTU: 1...127
- 4 - DIP switches for binary baud rate setting of Modbus RTU: 1200...57600 bit/s
- 5 - DIP switches for binary parity setting of Modbus RTU: none/even/odd
- 6 - Modbus RTU status indication
- 7 - BMS bus status indication
- 8 - DIP switches for binary BMS bus address setting: 1...30

### Wiring diagram



- 1 - System connection  $U_s = DC 85...276 V$
- 2 - System connection  $U_s = AC 85...276 V$
- 3 - BMS bus connection
- 4 - Modbus-RTU 9-pin SUB-D
- 5 -  $U_s$  see ordering information, 6 A fuse recommended)

1.8.3

**Technical data**

**Insulation coordination acc. to IEC 60664-1**

Rated insulation voltage	AC 250 V
Rated impulse withstand voltage/pollution degree	4 kV/3

**Supply voltage**

Supply voltage $U_s$	see ordering information
Frequency range $U_s$	AC 50...400 Hz / DC
Power consumption	≤ 12 VA

**Interfaces**

**BMS**

Interface / protocol	RS-485 / BMS (internal)
Baud rate	9.6 kbit / s
Cable length	≤ 1200 m
Recommended cable (shielded, shield connected to PE on one side)	min. J-Y(St)Y 2x0.6
Modus	Master / Slave
Connection	terminals A/B
Terminating resistor	120 Ω (0.25 W)
Device address, BMS bus	DIP switch 1...30
Indication LEDs	ON / Alarm / FAULT / BMS

**Modbus**

Interface / protocol	RS-485 / Modbus RTU
Mode	Modbus RTU slave
Connection	9-pin SUB-D
Indication LEDs	Active/bus error/Diag/Run
Baud rate	1.2...57.6 kbit/s
Terminating resistor	DIP switch
Address assignment Modbus RTU	DIP switches 1...127

**General data**

EMC immunity	EN 61000-6-2
EMC emission	EN 61000-6-4
Classification of climatic conditions acc. to IEC 60721	
Stationary use	3K5
Transport	2K3
Long-time storage	1K4
Operating temperature	-10 °C...+55 °C
Classification of mechanical conditions acc. to IEC 60721	
Stationary use	3M4
Transport	2M2
Long-time storage	1M3
Operating mode	continuous operation
Mounting	any position
Connection	screw-type terminals
Connection properties	
rigid/flexible/conductor sizes	0.2...4 / 0.2...2.5 mm <sup>2</sup> / AWG 22-12
flexible with ferrule, without/with plastic sleeve	0.25...2 mm <sup>2</sup>
Stripping length	8 mm
Tightening torque	0.5 Nm
Degree of protection, internal components (IEC 60529)	IP30
Degree of protection, terminals (IEC 60529)	IP20
Type of enclosure / dimension diagram	X470
Screw mounting	2 x M4
DIN rail mounting acc. to	IEC 60715
Flammability class	UL94 V-0
Operating manual	TGH1367
Weight	≤ 360 g

**Ordering information**

Type	Supply voltage $U_s$	Art. No.
FTC470XMB	AC / DC 85...276 V*	B 9506 1002

\*Absolute value

**Dimension diagram X470**

Dimensions in mm

