

COMTRAXX® COM460IP

BMS-Ethernet-Gateway





COM460IP

Device features

- Modular, expandable gateway between BMS bus and TCP/IP
- Gateway between BMS bus and Ethernet
- Range of functions customisable through function packages
- Remote access via LAN, WAN or Internet

Approvals



Product description

COM460IP is a BMS-Ethernet-Gateway that is used to convert data from the Bender-BMS bus into TCP/IP protocols. The integrated web server can be used for simple and fast presentation of data from BMS systems on any PC via a web browser with Silverlight™ Plugin. Additional software need not to be installed. Depending on the stage of expansion, the following functions are supported:

Basic device

- Representation of BMS data using a standard web browser with Silverlight™ plug in
- Representation of current measured values, operational and alarm messages
- Time synchronisation for all BMS bus devices
- Integrated Ethernet switch: 2 x RJ45, 10/100 Mbit/s
- LCD for simple address setting
- Operation possible via the internal BMS bus
- Access to **all devices connected to the BMS bus** using the web server
- Modbus/TCP data access to BMS addresses 1...10 of the first internal BMS bus
- Password-protected device menu
- History memory for 1000 entries
- 12 data loggers, freely configurable with 1000 entries each.

Function package A – Individual messages

- Assignment of individual texts for devices and measuring points (channels).
- E-mail notification to various user groups in the event of alarms and system faults. The e-mail address of the sender being displayed can be entered.
- Device failure monitoring
- Report function saves measured values and settings. Saved settings can be compared with the current settings made on the COM460IP.

Function package B – Modbus/TCP expansion

- Up to 150 BMS devices can be monitored on the internal bus
- From an external application (e.g. visualisation software) commands can be sent to BMS devices.

Function package C – Parameter setting

- Fast, simple parameter setting of BMS devices using the web browser
- BMS devices, other than COM460IP, can only be parameterised when the gateway is operated on the **internal** BMS bus
- Report function saves measured values and settings when the gateway is operated on the **internal** BMS bus. Saved settings can be compared with the current settings made on the COM460IP. The saved settings can be reloaded into the COM460IP.

Function package D – Visualisation

- Fast and simple visualisation without any programming. For example, measured values or alarms can be arranged on a floor plan and visualised.
- Displaying an overview the contents of which takes up more than one page. Jump to another view page and back to the overview page.
- A graphical representation with the scaling of the time axis for the data logger of COM460IP and compatible Bender devices.
- System visualisation: Displaying several gateways (COM460IP, CP700) on one website. Displaying common alarms of the devices. Clicking on a device being displayed will open its web user interface.

List of devices compatible with COM460IP

<http://www.bender-de.com/en/products/system-components/com460ip-compatible-devices.html>

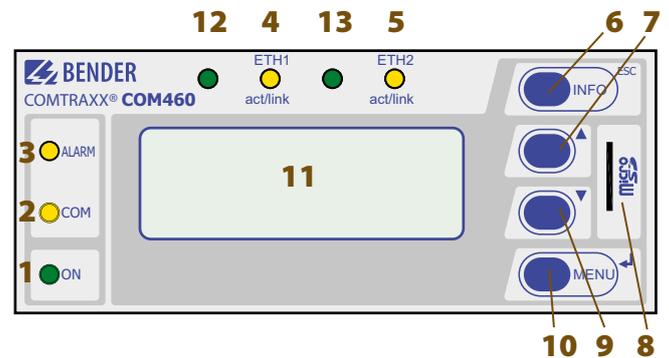
Application

- Commissioning and diagnostics of BMS bus systems
- Optimum presentation and visualisation of device and system statuses supported by silverlight functions in the web browser
- Specific system overview according to individual system description
- Selective notification to various user groups in the event of alarms
- The use of professional visualisation programs permits conversion of BMS data to Modbus/TCP protocols
- Observing and analysing communication-capable Bender products, such as RCMS, EDS and MEDICS® systems
- Simple and fast parameter settings of BMS systems, storage and documentation of settings

Function

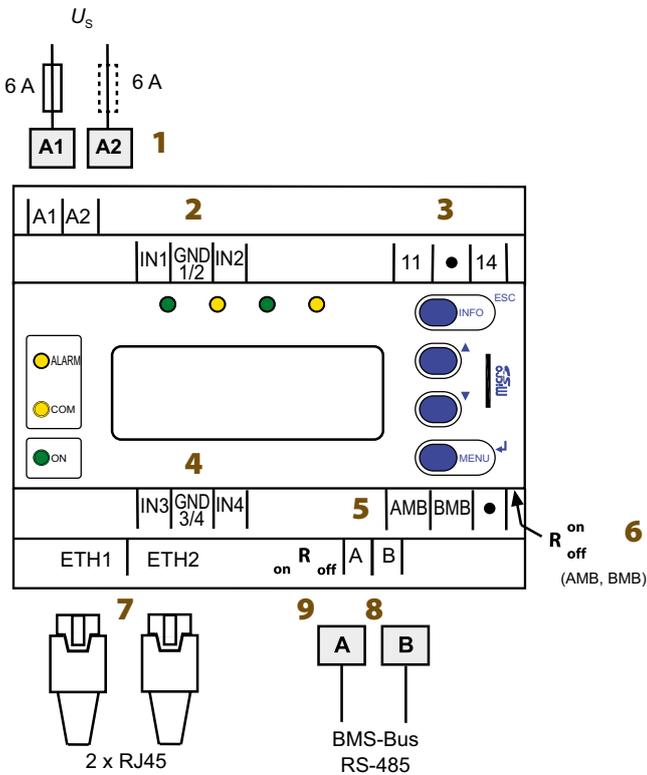
The BMS-Ethernet Gateway COM460IP can be integrated into an existing computer system architecture like a personal computer. After connecting the Ethernet Gateway to the mains and to a BMS system, all devices in the BMS system can be accessed from any personal computer using a standard web browser (e.g. Internet Explorer, Firefox). In this way, all important measuring data of the system are directly available.

Operating elements



- 1 - "ON" LED lights when supply voltage is applied
- 2 - "COM" LED lights when the gateway is responding to BMS requests
- 3 - "ALARM" LED lights when an internal device error occurs
- 4 - LED "ETH1 act/link" flashes when data is being transmitted
- 5 - LED "ETH2 act/link" flashes when data is being transmitted
- 6 - "INFO" button to query the COM460IP for device-specific information
ESC To exit the menu function without changing parameters
- 7 - "▲" button: to move up in the menu, to increase the parameter value
- 8 - Micro-SD card
- 9 - "▼" button: to move down in the menu, to decrease values
- 10 - "MENU" button for starting and exiting the menu
"↵" button to confirm parameter change
- 11 - LC display for standard and menu mode
- 12 - no function (reserve)
- 13 - no function (reserve)

Wiring diagram



- 1 - Connection to the supply voltage, 6 A fuse recommended, IT systems require two fuses.
For UL and CSA applications, it is mandatory to use 5 A fuses
- 2 - Currently has no function (digital inputs)
- 3 - Currently has no function (alarm relay K1)
- 4 - Currently has no function (digital inputs)
- 5 - Currently has no function
- 6 - Currently has no function
- 7 - Two connections to: a personal computer or to the local network (Hub, Switch, Router); Connection with a CAT5 cable; internal Layer-2-Switch with cable autodetect
- 8 - Connection BMS bus (internal) with shielded cable (e.g. J-Y(St)Y 2x0.8)
- 9 - Switch for BMS bus termination.
When the device is installed at the end of the bus, set the terminating switch to "on"

Ordering information

Supply voltage/ frequency range U_s			Supply voltage/ frequency range U_s for UL applications		Power consumption	Application	Type	Art. No.
AC/DC	AC	DC	AC	DC				
76...276 V ¹⁾ , 42...460 Hz	-	-	76...250 V, 40...150 mA, 42...460 Hz	76...250 V, 10...35 mA	5...40 VA/ 3,8 W	BMS-Ethernet-Gateway (basic device)	COM460IP	B 9506 1010
-	16...72 V, 50...60 Hz	16...94 V	16...72 V, 80...200 mA, 50...60 Hz	16...94 V, 20...120 mA	≤ 4 VA	BMS-Ethernet-Gateway (basic device) 24 V	COM460IP-24V	B 9506 1020

¹⁾ Absolute values

Function package

Application	Function package (software license)	Art. No.
Individual texts for devices/channels, e-mail in the event of an alarm	Function package A	B 7506 1011
Modbus/TCP server with max. 14700 BMS nodes	Function package B	B 7506 1012
Parameter setting for BMS devices	Function package C	B 7506 1013
Visualisation of BMS devices	Function package D	B 7506 1014

Technical data

Insulation coordination acc. to IEC 60664-1

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

Supply voltage

Supply voltage U_s	see ordering information
Frequency range U_s	see ordering information
Power consumption	see ordering information

Displays, memory

Display	four lines, backlit, for operating data and device menu
LEDs:	
2 x Ethernet ETH1, ETH2 act/link	lights when connected to the network, flashes during data transmission
ALARM	internal device error
COM	data traffic BMS bus
ON	operation indicator
Memory card for special device functions (micro SD card)	2 GB
E-mail configurations (function package A only) and device failure monitoring	max. 250 entries
Individual texts (function package A only)	max. 1200 texts with 100 characters each

Interfaces

BMS bus (internal):

Interface/protocol	RS-485/BMS internal
Operating mode	master/slave (slave)*
Baudrate BMS (internal)	9.6 kbit/s
Cable length	≤ 1200 m
Cable (twisted in pairs, one end of shield connected to PE)	recommended: J-Y(St)Y min. 2 x 0.8
Connection, BMS internal	terminals A, B
Terminating resistor	120 Ω (0.25 W)
Device address, BMS bus internal	1...99 (2)*

Ethernet:

Connection	2 x RJ45
Data rate	10/100 Mbit/s, autodetect
DHCP	on/off (on)*
t_{off} (DHCP)	5...60 s (30 s)*
IP address	nnn.nnn.nnn.nnn (192.168.0.254)*
Netmask	nnn.nnn.nnn.nnn (255.255.0.0)*
Protocols (depending on the function package selected)	TCP/IP, Modbus/TCP, DHCP, SMTP, NTP

Environment/EMC

EMC	EN 61326-1
Classification of climatic conditions acc. to IEC 60721:	
Stationary use	3K5 (no condensation, no formation of ice)
Transport	2K3
Long-term storage	1K4
Operating temperature	-10...+55 °C
Classification of mechanical conditions acc. to IEC 60721:	
Stationary use	3M4
Transport	2M2
Long-term storage	1M3

Connection

Connection	screw-type terminals
Connection rigid/flexible	0.2...4/0.2...2.5 mm ² (AWG 24...12)
Multi-conductor connection (2 conductors with the same cross section)	
rigid/flexible	0.2...1.5 mm ²
Stripping length	8...9 mm
Tightening torque	0.5...0.6 Nm

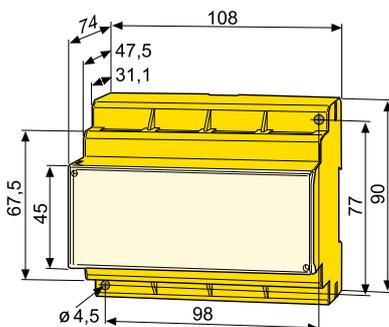
Other

Operating mode	continuous operation
Mounting	display oriented
Degree of protection, internal components (IEC 60529)	IP30
Degree of protection, terminals (IEC 60529)	IP20
Type of enclosure	X460
Screw mounting	2 x M4
DIN rail mounting acc. to	IEC 60715
Flammability class	UL94V-0
Documentation number	D00023
Weight	≤ 310 g

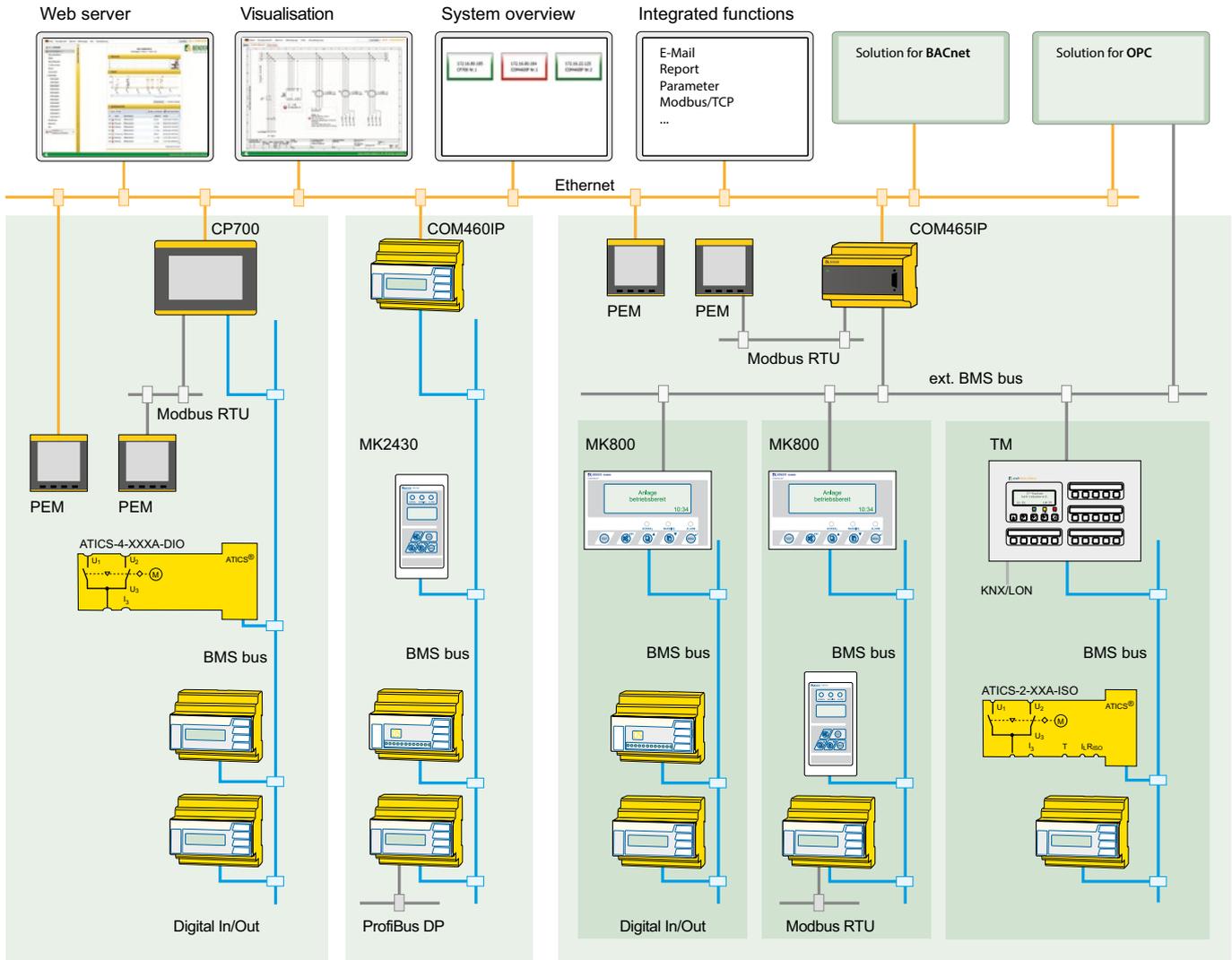
()* = factory setting

Dimension diagram XM460

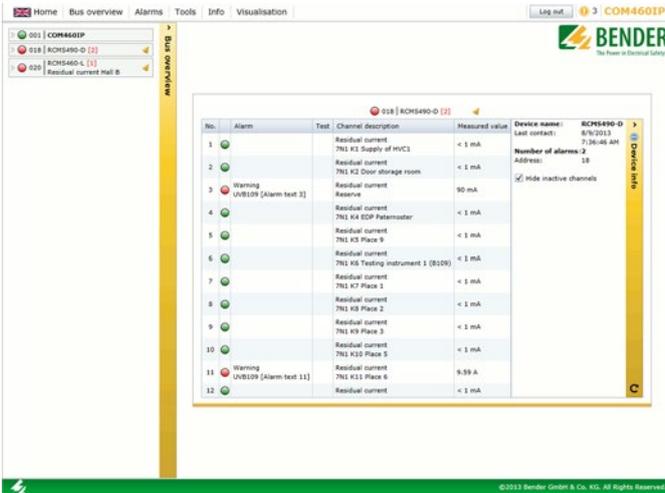
Dimensions in mm



Application example – BMS system integration



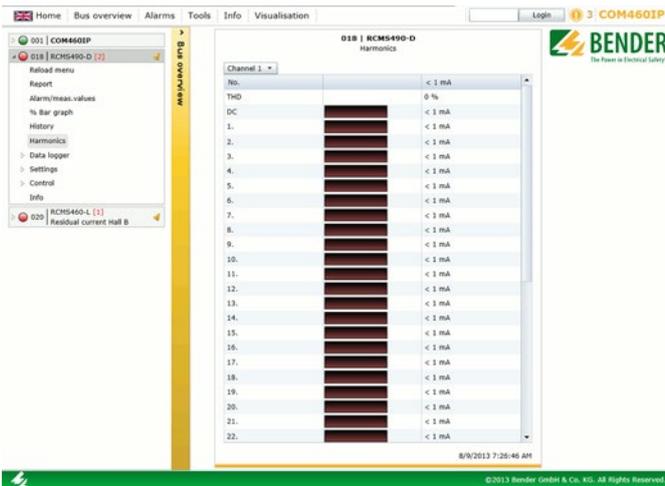
Bus overview



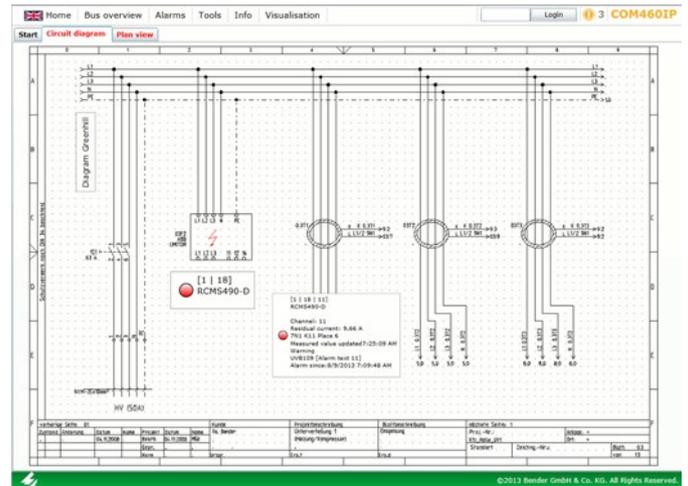
Presentation of the bus overview on mobile phones



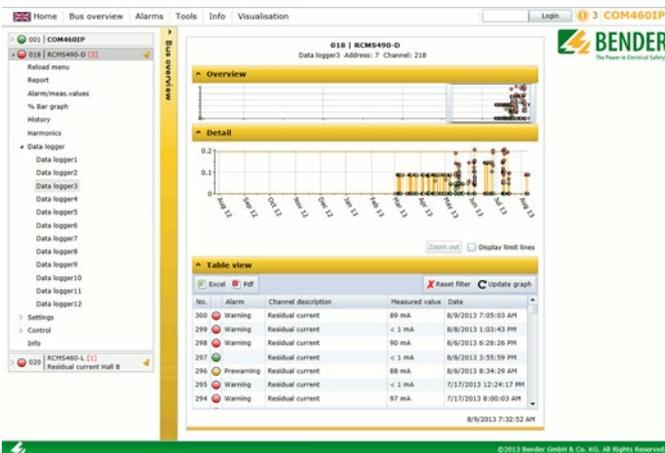
Harmonics (RCMS)



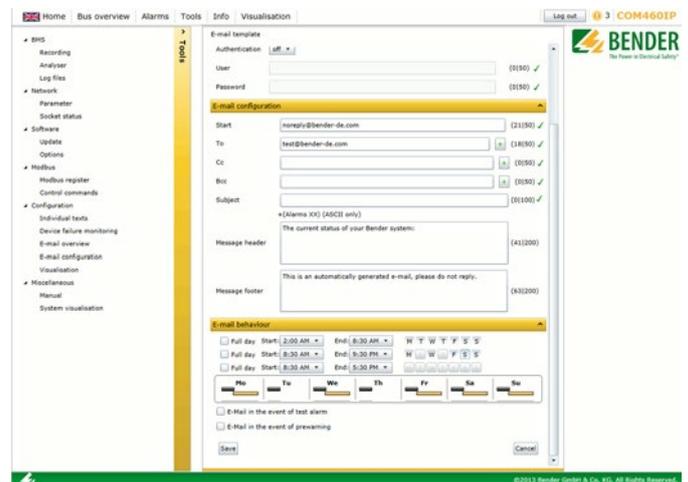
User-defined visualisation



Data logger (RCMS)



E-mail notification



Features of the device variants

Functionality	Basic device	Function package A Individual texts, e-mail	Function package B Modbus/TCP, gateway	Function package C Parameterisation	Function package D Visualisation
Complete system overview with indication of alarm messages and measured values	•				
Web server with Silverlight	•				
Web server for displaying the system overview on mobile phones	•				
Can be operated on the internal bus (max. 139 addresses)	•				
Multilingual menu structure	•				
IPaddress setting manually or via DHCP	•				
Time synchronisation for the BMS bus system via NTP	•				
Built-in switch with 2x RJ45, cable auto detection	•				
Diagnostics function (bus log, analyser...)	•				
Modbus/TCP data access for the BMSaddresses 1... 10 on the internal BMS bus	•				
To read out data from the history memory and data logger of BMS devices/with report function	•				
History memory for alarms, warnings and tests	•				
Data logger	•				
Individual text messages for all devices/channels		•			
E-mail/alarm message		•			
Report function (file export) import/export		•		•	
Modbus/TCP data access for all BMS devices			•		
Modbus/TCP to control BMS devices			•		
Parameter setting for all BMS devices				•	
Visualisation					•
System visualisation					•
Data logger Visualisation					•
Activated	✓	✓	✓	✓	✓
<input type="button" value="Import"/>					

Interface protocols

Connection to SCADA systems (Supervisory Control and Data Acquisition) and/or PLCs via OPC, BACnet or other protocols on request.



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