

COMTRAXX® COM460IP

BMS-Ethernet-Gateway



COMTRAXX® COM460IP



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 SilverlightTM 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
- "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
- "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 Us		Supply s frequency for UL ap	voltage/ y range U _S plications	Power consumption	Application	Туре	Art. No.		
AC /DC	AC	DC	AC	DC					
76276 V ¹⁾ , 42460 Hz	-	-	76250 V, 40150 mA, 42460 Hz	76250 V, 1035 mA	540 VA/ 3,8 W	BMS-Ethernet-Gateway (basic device)	COM460IP	B 9506 1010	
-	1672 V, 5060 Hz	1694V	1672 V, 80200 mA, 5060 Hz	1694 V, 20120 mA	\leq 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

 \leq 310 g

Technical data

Insulation coordination acc. to IEC 60664-1		Environment/EMC
Rated insulation voltage	AC 250 V	EMC
Rated impulse voltage/pollution degree	4 kV/3	Classification of climatic conditions acc. to IEC 60721:
C		Stationary use 3K5 (i
Supply voltage		Transport
Supply voltage U _S	see ordering information	Long-term storage
Frequency range U _S	see ordering information	Operating temperature
Power consumption	see ordering information	Classification of mechanical conditions acc. to IEC 607
Displays, memory		Stationary use
Display four lines ba	With for operating data and dovice monu	Transport
	kin, for operating data and device menu	Long-term storage
2 x Ethernet FTH1 FTH2 act/link		Connection
lights when connected to t	he network flashes during data transmission	Connection
ALARM	internal device error	
COM	data traffic BMS bus	Connection rigid/flovible
	operation indicator	rigid/liexible U.
Memory card for special device functions (micro S	D card) 2 GB	multi-conductor connection (2 conductors with the sa
E-mail configurations (function package A only) a	nd device failure monitoring	rigid/liexible
E mail comgarations (ranction package / only) a	max 250 entries	Suppling length
Individual texts (function package A only)	max 1200 texts with 100 characters each	
		Other
Interfaces		Operating mode
BMS bus (internal):		Mounting
Interface/protocol	RS-485/BMS internal	Degree of protection, internal components (IEC 6052)
Operating mode	master/slave (slave)*	Degree of protection, terminals (IEC 60529)
Baudrate BMS (internal)	9.6 kbit/s	Type of enclosure
Cable length	≤ 1200 m	Screw mounting
Cable (twisted in pairs, one end of shield connected to PE)	recommended: J-Y(St)Y min. 2 x 0.8	DIN rail mounting acc. to
Connection, BMS internal	terminals A, B	Flammability class
Terminating resistor	120 Ω (0.25 W)	Documentation number
Device address, BMS bus internal	199 (2)*	Weight
Ethernet:		$()^* = factory setting$
Connection	2 x RJ45	()
Data rate	10/100 Mbit/s, autodetect	
DHCP	on/off (on)*	
t _{off} (DHCP)	560 s (30 s)*	
IP address	nnn.nnn.nnn.nnn (192.168.0.254)*	
Netmask	nnn.nnn.nnn (255.255.0.0)*	
Protocols (depending on the function package sel	ected)	
	TCP/IP, Modbus/TCP, DHCP, SMTP, NTP	

Dimension diagram XM460



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	0.24/0.22.5 mm ² (AWG 2412)
Multi-conductor connection (2 conductors wit	h the same cross section)
rigid/flexible	0.21.5 mm ²
Stripping length	89 mm
Tightening torque	0.50.6 Nm
Other	
Operating mode	continuous operation
Mounting	display oriented
Degree of protection, internal components (IE	C 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

Application example – BMS system integration



Bus overview

001 COM4601P		0							🌽 BEI	N
058 RCM5490-D (2)	4	5							The Power	in Dec
020 RCM5460-L [1] Residual current Hall B		Wervi								
		ew								
			No.		Alarm	Test	Channel description	Heasured value	Device name: RCH5490-0	,
			1	•			Residual current 7N1 K1 Supply of HVC1	< 1 mA	Last contact: 8/9/2013 7136:46 AM Number of alarms :2	() De
			2	•			Residual current 7N1 K2 Door storage room	< 1 mÅ	Address: 18	vice in
			3	•	Warning UV8109 [Alarm text 3]		Residual current Reserve	90 mA	V Hide inactive channels	nfo
			4	۲			Residual current 7N1 K4 EDP Paternoster	< 1 mA		
			5	•			Residual current 7N1 KS Place 9	< 1 mA		
			6	•			Residual current 7N1 K5 Testing instrument 1 (8109)	< 1 mA		
			7	•			Residual current 7N1 K7 Place 1	< 1 mÅ		
				•			Residual current 7N1 K8 Place 2	< 1 mA		
			9	•			Residual current 7N1 K9 Place 3	< 1 mA		
			10	•			Residual current 7N1 K10 Place 5	< 1 mA		
			11	•	Warning UVB109 (Alarm text 11)		Residual current 7N1 K11 Place 6	9.59 A		
			12	•			Residual current	< 1 mA		C

COM460IP HOME BUS To T [1]2] COM460IP [1]4] ATICS2-ISO-63 [1]6] RCMS490-L [1]8] EDS491-D [1]10] IZ427-D5CB2 [1]40] RCMS460-D 2011 LpL.hg. W. Bender Cambrid & C. KG.

Presentation of the bus overview on mobile phones

Harmonics (RCMS)

🌽 BENDE	RCMS490-D Harmonics		OM4601P
The Power in Electrical Se			CM5490-D (2) 🧃 🚆
		Channel 1 *	menu 🖌
	< 1 mA	No.	3
	0 %	THD	reas.values 🖁
	< 1 mA	DC	raph
	< 1 mA	1.	
	< 1 mA	2.	ics
	< 1 mA	3.	iger .
	< 1 mA	4.	
	< 1 mA	5,	
	< 1 mA	6.	
	< 1 mA	7.	CMS460-L [1]
	< 1 mA	8.	estoral content half o
	< 1 mA	9.	_
	< 1 mA	10.	_
	< 1 mA	11.	
	< 1 mA	12.	_
	< 1 mA	13.	
	< 1 mA	14.	_
	< 1 mA	15.	
	< 1 mA	16.	
	< 1 mA	17.	
	< 1 mA	18.	
	< 1 mA	19.	_
	< 1 mA	20.	
	< 1 mA	21.	
-	< 1 mA	22.	_
Thirdd AM	8/0/2013		

User-defined visualisation



Data logger (RCMS)

		018 RCM5490-D		Z BENDER
o des l'accesses o tes		Data logger3 wooress: 7 Chamlet 216		The Power in Distinical Safet
Report	 Overview 			
Allow leave where	1		****	
h far such			and the second second	
alistory			100	
Reconcilia .	o Detail			
- Data languar				-
Data Industri	0.2			
Data langer?	0.1		3171	
Data logger 2				
and the second sec				
Data looper4	2 2 0	5 0 2 2 5 2		•/
Data logger4 Data logger5	and the second	the second second		
Data logger4 Data logger5 Data logger6	Star 12			5
Data logger4 Data logger5 Data logger5 Data logger5	State 11		and the second	8
Data logger4 Data logger5 Data logger5 Data logger8 Data logger8	and the second s		Toors.cot	• •
Data logger4 Data logger5 Data logger5 Data logger5 Data logger8 Data logger9	* Table view		Toors out	
Data Noger-4 Data Noger-5 Data Noger-5 Data Noger-7 Data Noger-9 Data Noger-9 Data Noger-9 Data Noger-9	Table view	11116	Corrs out	
Oata lingger# Data lingger5 Data lingger5 Oata lingger5 Data lingger8 Data lingger8 Data lingger8 Data lingger10 Data lingger11	 Table view Excell Ø Adf 	<u>, , , , , , , , ,</u>	Corn cut Cliptary limit in	6 10 8
Data logger# Data logger# Data logger# Data logger# Data logger# Data logger# Data logger# Data logger#1 Data logger12	A Table view E tool ₽ Pdf No. Alarm Cha	nel description	Coons cut Citaplay limit in Resat filter Cupdate grap	• • •
Data loggeré Data loggeré Data loggerő Data loggerő Data loggerő Data loggerő Data loggerő Data loggerő Data loggerő Data loggerő Settloggerő Data loggerő	Table view ► Cool ♥ Pdf No. Alarm Cha 300 ♥ Warning Resi	real description Heatington	Corn. out Chaptery limit in Reset filter C Update grap dvs Date 8/9/2013 7:05:03 AM	• •
Data loggeré Data loggeré	 Table view ■ Excell ● Pdf No. Alarm Cha 200 ● Warning Residence 209 ● Warning Residence 	net description Heatured va half current s 9 mA	Conn.nd: Display limit lin Kessel filter Cupdate grap Avy Date Avy2013 1 20140 MM	
Data logoret Data	Table view Table view Table view Dical (P) PAT To Alarm Cha Dical Dical (P) PAT To Alarm Cha Dical D	B B	Constant Date Reset filter Cloptary Senit Sin Reveal Date Rev2013 103:03 AM Rev2013 103:03 AM Rev2013 103:03 AM	•
Data Nagaré Data Nagaré Nagaré Data Nagaré Data Nagaré Data Nagaré Data Nagaré	 College View Cool € Por Cool € Por<td>nel deolation Realment of the American Science of the</td><td>Conn.ed Display limit lin (Lasset filter C Update graps (w/2013 1.03:43 PH (w/2013 2.55) PH (w/2013 5.55) PH</td><td></td>	nel deolation Realment of the American Science of the	Conn.ed Display limit lin (Lasset filter C Update graps (w/2013 1.03:43 PH (w/2013 2.55) PH (w/2013 5.55) PH	
Data Sagaré Data S	01 5 01 5 10 01 6 Table view © Excel 0 04 00 Warring Resi 209 Warring Resi 209 Warring Resi 209 Warring Resi 201 @ Varring Resi 207 @ Resi 207 @ Resi	end dacoption Nearent v had connect of the American American had connect of the American American had connect of the American American Had connect of the American Had connect of the American American American American American American Had connect of the American Am	Correct officer Chipdete graph Reset filter Chipdete graph 6/9/2013 7:05:00 Arti 6/9/2013 0:34:34 Mit 6/9/2013 0:55:59 Mit 6/9/2013 0:55:59 Mit 6/9/2013 0:55:59 Mit	
Data Nagaré Data N	A Table view ►	nud description had connect on had c	Const and Capital Series (Constant) Capital Series (Capital Se	
Data Napperé Data Napperé National Sector Sector Sector Sector Sector National Sector Sector Sector Sector Sector Sector National Sector S	A Table view ► Dool ⊕ Per No. Alarm Chi 200 ⊕ Warning Resi 200 ⊕ Warning Resi 200 ⊕ Warning Resi 200 ⊕ Warning Resi 200 ⊕ Persaming Resi	nel deciption de la construir de la construit	Construct Construction Construc	•

E-mail notification



Features of the device variants

Software options					
Functionality	Basic device	Function package A	Function package B	Function package C	Function package D
		Individual texts, e-mail	Modbus/TCP, gateway	Parameterisation	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	1	1	1	✓	✓
Import					

Interface protocols

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



Bender GmbH & Co. KG

P.O. Box 1161 • 35301 Gruenberg • Germany Londorfer Strasse 65 • 35305 Gruenberg • Germany Tel.: +49 6401 807-0 • Fax: +49 6401 807-259 E-Mail: info@bender.de • www.bender.de

