COMTRAXX® COM465IP

Condition monitor with integrated gateway
for the connection of Bender devices
to Ethernet TCP/IP networks

COM465IP_D00217_10_D_XXEN/02.2022

COMTRAXX® COM465IP

Condition monitor with an integrated gateway for the connection of Bender devices to Ethernet TCP/IP networks

COMTRAXX® COM465IP

Device features

- Condition monitor for Bender systems
- Integrated modular gateway between Bender systems and TCP/IP enables remote access via LAN, WAN or Internet
- Range of functions adjustable through function modules
- Support of devices that are connected to the internal or external BMS bus, via BCOM, via Modbus RTU or Modbus TCP
- Individual visualisation can be generated, which is displayed via the web browser

Data transfer interfaces

Modbus

PROFIBUS • PROFINET

SNMP

Simple Network Management Protocol

Approvals

Product description

The COMTRAXX® COM465IP series features a condition monitor and is integrated into the existing EDP structure like any Ethernet-capable device. All Bender devices can be connected via the integrated interfaces. In addition, third-party devices can also be integrated into the system. The measured values, parameters and all other data can be checked and parameterised via the web interface or the display.
It is possible to indicate and visualise alarms. By means of the visualisation application, individual overview pages can be generated which are then displayed in a web browser.

Application

- Optimum display and visualisation of device and system states in the web browser
- Monitoring and analysis of compatible Bender products and third-party devices
- Specific system overview through individual system description
- Selective notification to various users in the event of alarms
- Numerous interfaces for data transfer to higher-level systems
- Clear setting of device parameters. Storing, documenting and restoring parameters is possible
- Commissioning and diagnosis of Bender systems
- Remote diagnosis, remote maintenance

Scope of functions (V4.5.0 and higher)

Basic device (without function modules)

- Condition monitor with web interface
- Interfaces for the integration of devices
  - Internal BMS bus (max. 150 devices) and external* BMS bus (max. 99 x 150 devices)
  - BCOM (max. 255 devices)
  - Modbus RTU and Modbus TCP (max. 247 devices each)
- Remote display of the latest measured values, status/alarm messages and parameters*
- Gateway to Modbus TCP: Reading the latest measured values, status/alarm messages from addresses 1…10 of each interface via Modbus TCP
- Gateway to Modbus RTU: Reading the latest measured values, status/alarm messages from addresses 1…10 of the internal BMS interface via Modbus RTU
- Ethernet interface with 10/100 MBit/s for remote access via LAN, WAN or Internet
- Setting of internal device parameters and parameters of devices connected via Modbus RTU and Modbus TCP **
- Time synchronisation for all assigned devices
- History memory (20,000 entries)
- Data loggers, freely configurable (30 x 10,000 entries)
- 50 data points from third-party devices (via Modbus RTU or Modbus TCP) can be integrated into the system
- A virtual device with 16 channels can be created

*) Indicating parameters of BMS bus devices is only possible when the gateway is connected to the internal BMS bus.

**) Parameters can be set via web application and externally (via BMS/ICOM/BCOM), but not via Modbus. The parameters of assigned devices can only be read; Function module C is necessary for modification of settings!

Function module A

- Assignment of individual texts for devices, channels (measuring points) and alarms.
- Device failure monitoring.
- E-mail notification to different users in case of alarms or system errors.
- Device documentation of any device in the system can be generated.* * It contains all parameters and measured values belonging to the device, as well as device information such as serial number and software version.
- System documentation can be created. It documents all devices in the system at once.

*) Creating device documentation of BMS bus devices is only possible if the gateway is connected to the internal BMS bus.

Function module B

- Reading the latest measured values, status and alarms messages from all assigned devices. Uniform access to all assigned devices via Modbus TCP over integrated server.
- Reading the latest measured values, status and alarm messages from all assigned devices via internal BMS. Uniform access to all assigned devices via Modbus RTU.
- Control commands: From an external application (e.g. visualisation software or PLC), commands can be sent to BMS devices via Modbus TCP or Modbus RTU.
- Access to alarms and measured values via SNMP (V1, V2c or V3). SNMP traps are supported.
- Access via PROFINET to alarms and measured values.

Function module C

- Fast and easy parameter setting of all devices* assigned to the gateway via web browser.
- Device backups of all devices in the system can be created and restored.

*) Parameter setting of BMS bus devices is only possible when the gateway is connected to the internal BMS bus.

Function module D

Quick and easy-to-create visualisation of the system. Integrated editor provides access to a variety of widgets and functions.

- Display on up to 50 overview pages, where e.g. room plans can be stored. Navigation within these overview pages is possible.
- Access to all measured values that are available in the system.
- Buttons and sliders can be used to send BMS test and reset commands, as well as to control external devices via Modbus TCP.

Function module E

- 100 virtual devices with 16 channels each can be created.

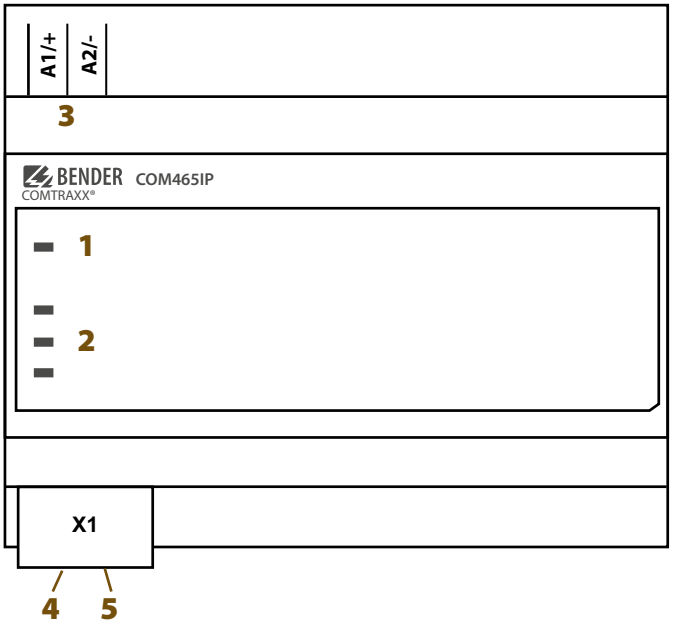
Function module F

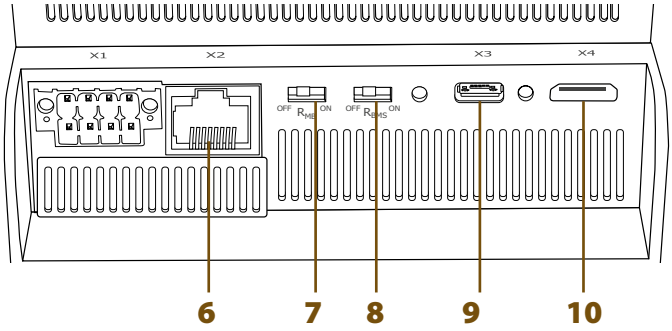
- 1,600 data points from third-party devices (via Modbus RTU or Modbus TCP) can be integrated into the system.

Examples:

- To write parameters via Modbus, function modules B and C are required.
- To read parameters via Modbus, function module B is required.
- Function modules A and D are required to be able to use a visualisation in combination with the individual texts.

Operating controls and connections





1 - "ON" LED: Flashes during start-up.
The LED lights permanently as soon as the device is ready for operation.

2 - LEDs show activities on the different interfaces

3 - Supply voltage: see nameplate and ordering information

4 - Modbus/RTU interface: Terminals **A**MB and **B**MB (plug X1)

5 - BMS bus (Bender measuring device interface):
Terminals **A**BMS and **B**BMS (plug X1)

6 - Ethernet port (RJ45) for connection to the PC network as well as BCOM (plug X2)

7 - Modbus RTU terminating resistor switch

8 - BMS bus terminating resistor switch

9 - Micro USB interface (currently without function) (plug X3)

10 - Mini HDMI interface (currently without function) (plug X4)

For UL applications, the following has to be observed:
– Maximum ambient temperature: 55 °C
– Use 60/75 °C copper wires only

Technical data

Insulation coordination acc. to IEC 60664-1/IEC 60664-3

Rated voltage	AC 250 V
Rated impulse voltage/overvoltage category	4 kV/III
Pollution degree	3
Protective separation (reinforced insulation) between	(A1/+, A2/-) - [(AMB, BMB), (ABMS, BBMS), (X2), (X3, X4)]

Supply voltage

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

Indications

LEDs:

ON	operation indicator
ETHERNET IP	data traffic Ethernet
MODBUS RTU	data traffic Modbus
BMS	data traffic BMS
Ethernet (terminal X2)	lights during network connection, flashes during data transfer

Memory

Individual texts (function module A only)	unlimited number of texts each with 100 characters
E-mail configuration and device failure monitoring	max. 250 entries
Number of data points for “third-party devices” to Modbus TCP and Modbus RTU	50
Number of data loggers	30
Number of data points per data logger	10,000
Number of history memory entries	20,000

Visualisation

Number of pages	50
Background image size	3 MB

Interfaces

Ethernet

Port	RJ45
Cable length	< 100 m
Data rate	10/100 MBit/s, autodetect
HTTP mode	HTTP/HTTPS (HTTP)*
DHCP	on/off (off)*
t_{off} (DHCP)	5…60 s (30 s)*
IP address	
nnn.nnn.nnn.nnn	(192.168.0.254)*
can always be reached via:	169.254.0.1
Net mask	nnn.nnn.nnn.nnn (255.255.0.0)*
Protocols (depending on function module selected)	TCP/IP, Modbus TCP, Modbus RTU, DHCP, SNMP, SMTP, NTP

BMS bus (internal/external)

Interface/protocol	RS-485/BMS internal or BMS external (BMS internal)*
Operating mode	master/slave (master)*
Baud rate BMS	internal 9.6 kBit/s external 19.2; 38.4; 57.6 kBit/s
Cable length	≤ 1,200 m
Cable	shielded, one end of shield connected to PE
recommended:	CAT6/CAT7 min. AWG23
alternative:	twisted pair, J-Y(St)Y min. 2x0,8
Connection	X1 (ABMS, BBMS)
Connection type	refer to connection “push-wire terminal X1”
Terminating resistor	120 Ω (0.25 W), can be connected internally
Device address, internal/external BMS bus	1…150 (1)*/2…99

BCOM

Interface/protocol	Ethernet/BCOM
BCOM system name	(SYSTEM)
BCOM subsystem address	1…255 (1)*
BCOM device address	0…255 (0)*

Modbus

Bender Modbus image	V1, V2 (V2)*

Modbus TCP

Interface/protocol	Ethernet/Modbus TCP
Operating mode	client for Bender Modbus TCP devices and “third-party devices”
Operating mode	server for access to the process image and for Modbus control commands
Parallel data access from different clients	max. 25

Modbus RTU

Interface/protocol	RS-485/Modbus RTU
Operating mode	master/slave (master)*
Baud rate	9.6…57.6 kBit/s
Cable length	≤ 1,200 m
Cable	shielded, one end of shield connected to PE
recommended:	CAT6/CAT7 min. AWG23
alternative:	twisted pair, J-Y(St)Y min. 2x0,8
Connection	X1 (AMB, BMB)
Connection type	refer to connection “push-wire terminal X1”
Terminating resistor	120 Ω (0.25 W), can be connected internally
Supported Modbus RTU slave addresses	2…247

PROFINET

Interface/protocol	Ethernet/PROFINET
Operating mode	Slave (IO-Device)

SNMP

Interface/protocol	Ethernet/SNMP
Versions	1, 2c, 3
Supported devices	queries to all devices (channels) possible
Trap support	yes

Used ports

53	DNS (UDP/TCP)
67, 68	DHCP (UDP)
80	HTTP (TCP)
123	NTP (UDP)
161	SNMP (UDP)
162	SNMP TRAPS (UDP)
443	HTTPS (TCP)
502	MODBUS (TCP)
4840	OPCUA (TCP)
5353	MDNS (UDP)
48862	BCOM (UDP)

Environment/EMC

EMC	EN 61326-1

Ambient temperatures

Operating temperature	-25…+55 °C
Transport	-40…+85 °C
Long-term storage	-25…+70 °C

Classification of climatic conditions acc. to IEC 60721:

Stationary use (IEC 60721-3-3)	3K22
Transport (IEC 60721-3-2)	2K11
Long-term storage (IEC 60721-3-1)	1K22

Mechanical conditions acc. to IEC 60721:

Stationary use (IEC 60721-3-3)	3M11
Transport (IEC 60721-3-2)	2M4
Long-term storage (IEC 60721-3-1)	1M12

Technical data

Connection

Connection type	pluggable push-wire terminals
Push-wire terminals	
Conductor sizes	AWG 24…12
Stripping length	10 mm
rigid/flexible	0.2…2.5 mm²
flexible with ferrule, with/without plastic sleeve	0.25…2.5 mm²
Multiple conductor, flexible with TWIN ferrule with plastic sleeve	0.5…1.5 mm²
Push-wire terminal X1	
Conductor sizes	AWG 24…16
Stripping length	10 mm
rigid/flexible	0.2…1.5 mm²
flexible with ferrule without plastic sleeve	0.25…1.5 mm²
flexible with ferrule with plastic sleeve	0.25…0.75 mm²

Other

Operating mode	continuous operation
Mounting	front-oriented, cooling slots must be ventilated vertically
Degree of protection, internal components (IEC 60529)	IP30
Degree of protection, terminals (IEC 60529)	IP20
Quick DIN rail mounting acc. to	IEC 60715
Screw mounting	2 x M4
Enclosure type	J460
Enclosure material	polycarbonate
Flammability class	UL94V-0
Dimensions (W x H x D)	107.5 x 93 x 62.9 mm
Documentation number	D00216
Weight	≤ 240 g

( )* = factory settings

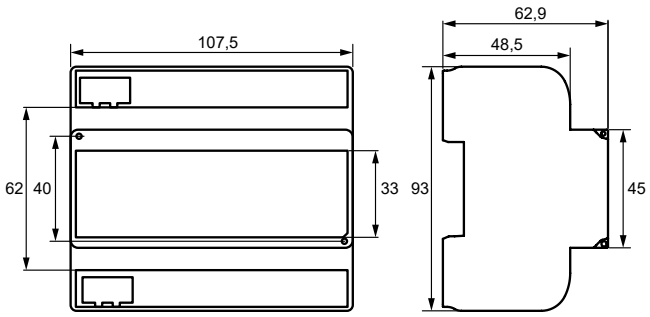
Ordering information

Supply voltage/frequency range U_s	Power consumption	Application	Type	Art. No.
AC/DC				
24…240 V, 50…60 Hz	≤ 6.5 VA/≤ 4 W	Condition monitor with integrated gateway: Bender system/Ethernet	**COM465IP-230V**	**B95061065**

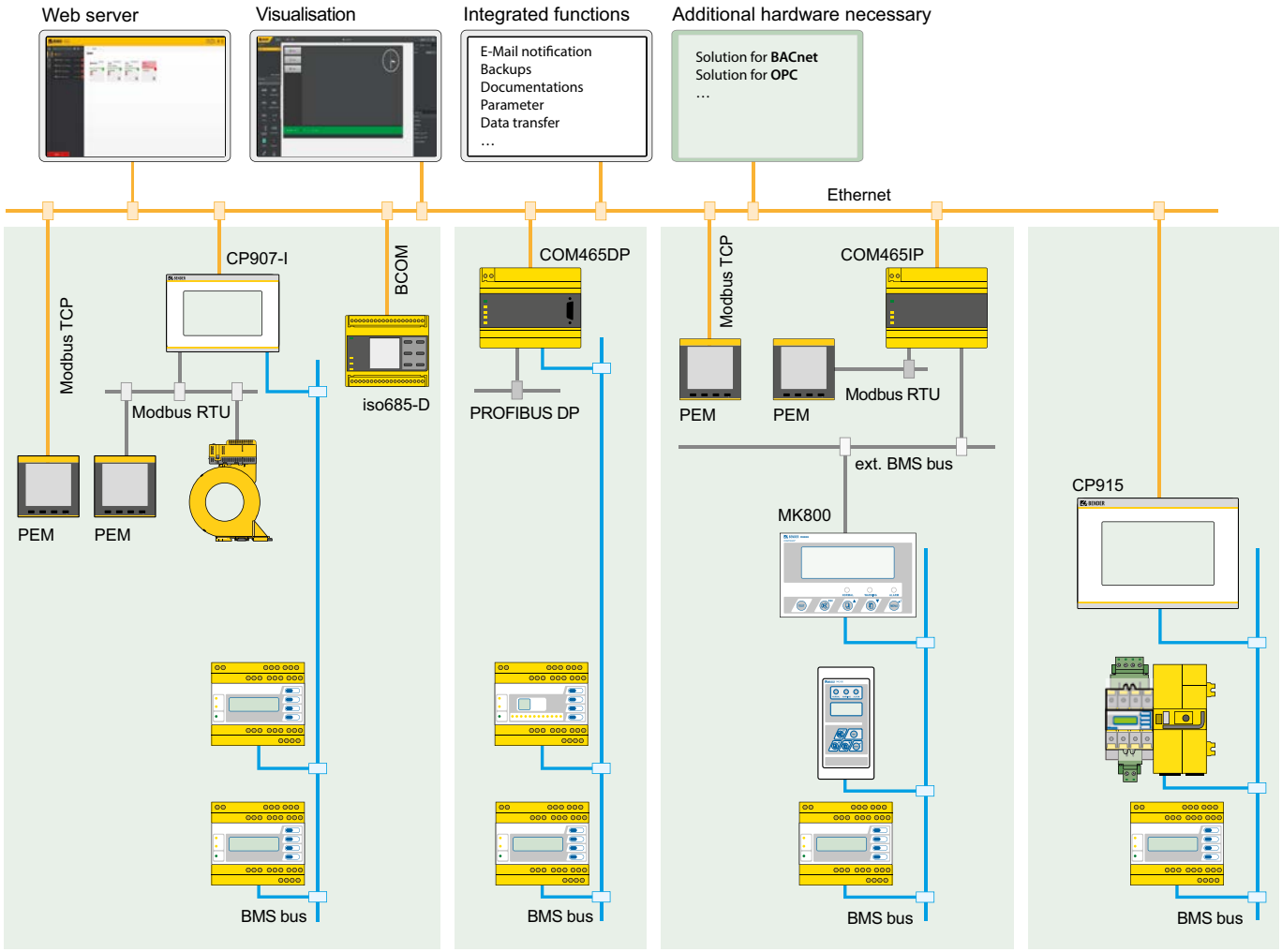
Function modules

Application	Function module (software licence)	Art. No.
Individual text messages for all devices/ channels, device failure monitoring, e-mail in the event of an alarm, device documentation	**Function module A**	**B75061011**
Provision of data via via Modbus TCP, Modbus RTU, SNMP and PROFINET	**Function module B**	**B75061012**
Parameter setting of all integrated devices, device backups	**Function module C**	**B75061013**
Visualisation application	**Function module D**	**B75061014**
Virtual devices	**Function module E**	**B75061015**
Integration of third-party devices	**Function module F**	**B75061016**

Dimension diagram



Application example



BENDER
The Power in Electrical Safety©

Bender GmbH & Co. KG
Londorfer Straße 65 • 35305 Grünberg • Germany
Tel.: +49 6401 807-0 • info@bender.de • www.bender.de

BENDER Group