COMTRAXX® COM465IP

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

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Device features

- Condition Monitor for Bender systems
- Integrated modular gateway between Bender systems and TCP/IP enables remote access via LAN, WAN or the Internet
- Range of functions adjustable through function modules
- Ethernet (10/100 Mbit/s) for remote access via LAN, WAN or the Internet
- Support of devices connected to the internal or external BMS bus via BCOM, Modbus RTU or Modbus TCP

Approvals and certifications

Range of functions

Basic device (without function modules)

- Condition Monitor with web interface for use with Bender BMS and BCOM as well as universal measuring devices.
- Supports devices that are connected
  – to the internal (max. 139 devices) or the external* BMS bus (max. 98 * 139 devices),
  – via BCOM interface (refer to BCOM manual)
  – via Modbus RTU or via Modbus TCP (max. 247 devices).
- Remote indication of current measured values, operation/alarm messages and parameters*.
- Gateway to Modbus TCP: Reading-out of current measured values, operation/alarm messages of addresses 1…10 of the own subsystem via Modbus TCP.
- Ethernet interface with 10/100 Mbit/s for remote access via LAN, WAN or the Internet
- Setting for internal parameters and for configuration of Bender universal measuring devices and energy meters.**
- Time synchronisation for all associated devices
- History memory (1,000 entries)
- Data loggers, freely configurable (30 * 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 the 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 associated devices can only be read; Function module C is necessary for modification of settings!

No reports can be generated – also not for your own device.

Function module A

- Assignment of individual texts for devices, channels (measuring points) and alarms.
- Device failure monitoring.
- E-mail notifications to various users in the event of alarms and system faults.
- Configuration of e-mail notifications.
- Report function* saves measured values and settings of associated devices. Saved settings can be compared to the current settings of the device. The report function is available for the gateway and for each associated Bender device.

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

Function module B
- Supports external applications (such as visualisation programs or PLCs) via the Modbus TCP protocol
- Reading-out of current measured values, operation/alarm messages of associated devices. Uniform access to all associated devices via Modbus TCP over integrated server.
- Control commands: Commands can be sent to devices by an external application (e.g. visualisation software or PLC) via Modbus TCP.
- Access via SNMP protocol (V1, V2c or V3) to alarms and measured values.

Function module C
- Fast and easy parameter setting of all devices* associated to the gateway via web browser.
- Report function** for documenting and saving settings and measured values. Saved settings can be compared to the current settings of the device. The saved settings can be reloaded into the device.***
- The report function is available for the gateway and for each associated Bender device.

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

**) Generating reports of BMS bus devices and loading settings from reports to BMS bus devices is only possible when the gateway is connected to the internal BMS bus.

***) Currently, the Silverlight web interface is still necessary for this function.

Function module D*
Fast and simple visualisation without any programming. Device conditions, alarms or measured values can be arranged and displayed on a background image (e.g. a room plan).
- Displaying an overview the content of which takes up more than one page. Click to jump to another view. Return to the overview page.
- Graphical presentation with the scaling of the time axis.
- System visualisation: Several gateways (COM460IP, COM465IP, COM465DP, CP700) are displayed on one website. Indication of common alarms of the devices. Clicking on a device that is being displayed will open its web user interface.

*) Currently, the Silverlight web interface is still necessary for this function.

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

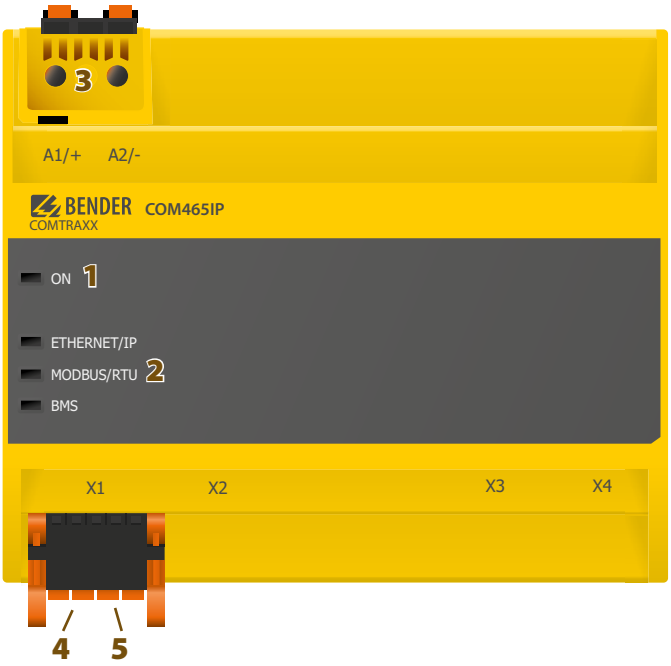
Function module F
- 1,600 data points from third-party devices (via Modbus RTU or Modbus TCP) can be integrated into the system.

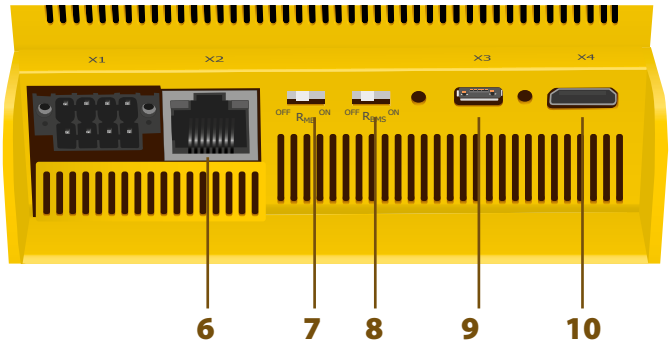
Examples:
- To write parameters via Modbus, the function modules B and C are required.
- To read parameters via Modbus, the function module B is required.

Application
- Optimum indication und visualisation of device and system statuses via web browser
- Observation and analysis of compatible Bender products (ISOMETER®, ATICS®, RCMS, EDS, Linetraxx® and MEDICS® systems, universal measuring devices and energy meters)
- Specific system overview through individual system description
- Selective notification to various users in the event of alarms
- Use of professional visualisation programs by converting to Modbus TCP protocol
- Parameter setting for devices, saving, documenting and restoring of parameters in a clear and practice-oriented manner
- Commissioning and diagnosis of Bender systems
- Remote diagnosis, remote maintenance

Function
The gateways und Condition Monitors COM465IP are connected to the existing EDP structure like PCs. After connecting them to the network and to compatible Bender products, all devices of the system can be accessed from any PC over standard web browsers (e.g. Google Chrome, Mozilla Firefox, Internet Explorer). Like this, all important system information will be directly available.

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 - Interface Modbus RTU (plug X1)

5 - BMS bus (Bender measuring device interface) (plug X1)

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

7 - Terminating resistor Modbus RTU switch

8 - Terminating resistor BMS bus 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 (For 230 V variants B95061060)

Rated insulation 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)]

Insulation coordination acc. to IEC 60664-1/IEC 60664-3 (For 24 V variants B95061061)

Rated insulation voltage	AC 50 V
Rated impulse voltage/Overvoltage category	0.5 kV/III
Pollution degree	3

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

E-mail configuration (function module A only) and device failure monitoring	max. 250 entries
Individual texts (function module A only)	unlimited number of texts with 100 characters each
Number of data points for "third-party devices" on Modbus TCP and Modbus RTU	50

Quantity

Data loggers	30
Number of data points per data logger	10,000
Number of history memory entries	1,000

Visualisation

Number of pages	20
Size of the background image	50 kByte (scaled down if larger)
Data points (per page)	50 devices or channels, 150 text elements

Interfaces

Ethernet

Port	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, can always be reached over: 192.168.0.254, (169.254.0.1)*
Netmask	nnn.nnn.nnn.nnn (255.255.0.0)*
Protocols (depending on the function module selected)	TCP/IP, Modbus TCP, Modbus RTU, DHCP, SMTP, NTP

SNMP

Versions	1, 2c, 3
Supported devices	Querying all devices (channels) possible (no trap functionality)

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: twisted pair, shielded, one end of shield connected to PE	recommended: 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, BMS bus external/internal	1…99 (2)*

BCOM

Interface/protocol	Ethernet/BCOM
BCOM subsystem address	1…99 (1)*
BCOM device address	1…99 (2)*

Modbus TCP

Interface/protocol	Ethernet/Modbus TCP
Operating mode	client for associated PEM and "third-party devices"
Operating mode	server for access to the process image and for Modbus control commands

Modbus RTU

Interface/protocol	RS-485/Modbus RTU
Operating mode	master
Baud rate	9.6…57.6 kBit/s
Cable length	≤1,200 m
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

Environment/EMC

EMC	EN 61326-1
Ambient temperatures:	
Operation	-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)	3K5 (except condensation and formation of ice)
Transport (IEC 60721-3-2)	2K3
Long-term storage (IEC 60721-1)	1K4
Classification of mechanical conditions acc. to IEC 60721:	
Stationary use (IEC 60721-3-3)	3M4
Transport (IEC 60721-3-2)	2M2
Long-term storage (IEC 60721-1)	1M3

Option "W" data different from the standard version

Classification of climatic conditions acc. to IEC 60721:	
Stationary use (IEC 60721-3-3)	3K5 (condensation and formation of ice possible)
Classification of mechanical conditions acc. to IEC 60721:	
Stationary use (IEC 60721-3-3)	3M7

Technical data (continuation)

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 TWIN 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 fixing	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 setting

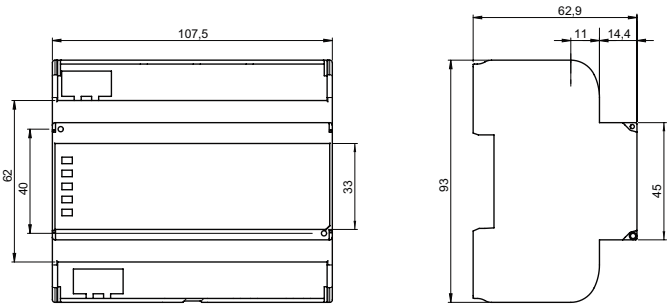
Ordering information

Supply voltage/frequency range U_S		Power consumption	Application	Type	Art. No.
AC/DC	DC				
24…240 V, 50…60 Hz	–	≤ 6.5 VA/≤ 4 W	Condition Monitor with integrated gateway: Bender system/Ethernet	COM465IP-230V	B95061065
–	24 V	≤ 3 W		COM465IP-24V	B95061066

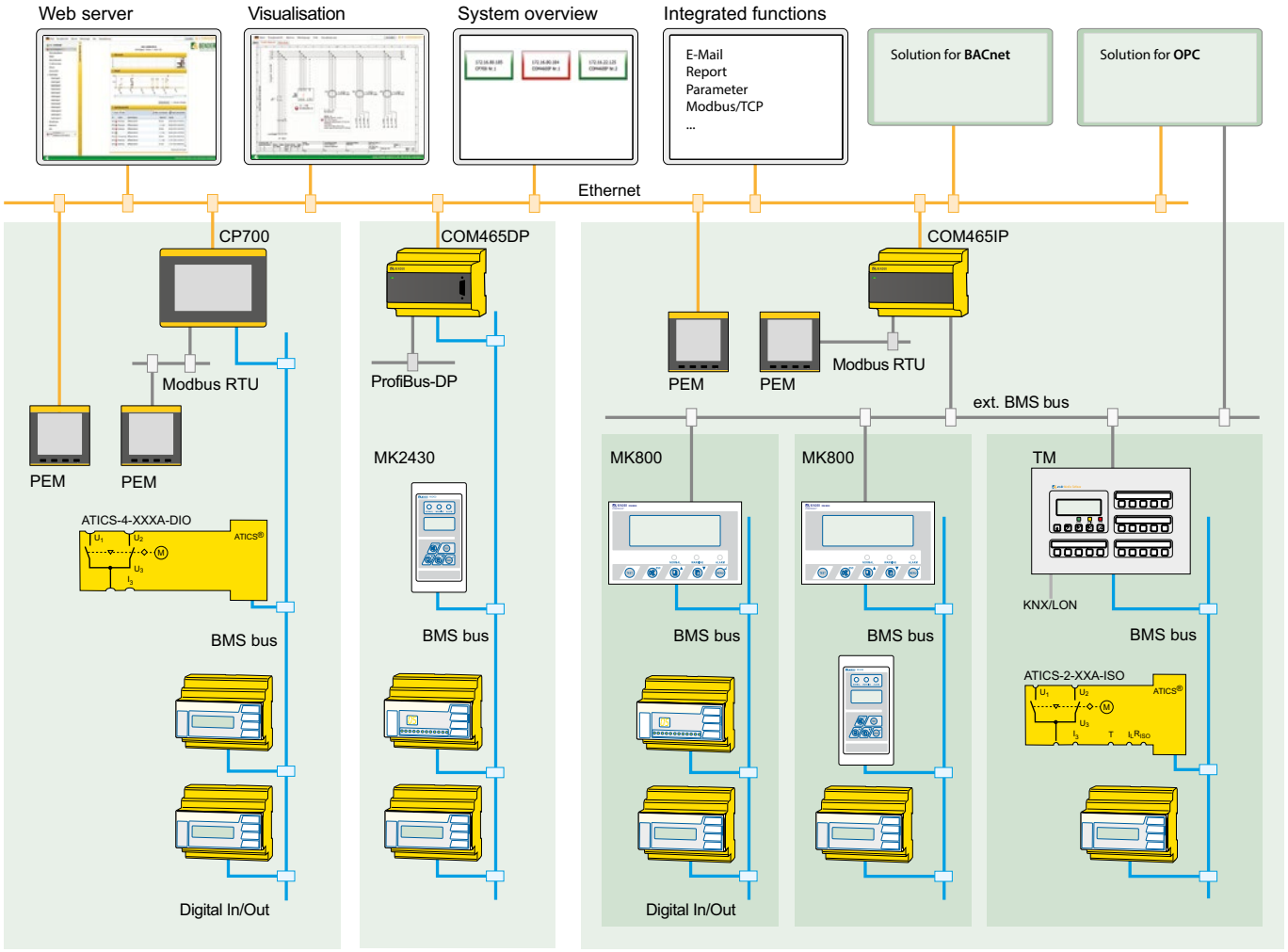
Function modules

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	Function module A	B 7506 1011
Modbus TCP server for max. 98 * 139 BMS nodes as well as BCOM and universal measuring devices, SNMP server	Function module B	B 7506 1012
Parameter setting of BMS devices as well as BCOM and universal measuring devices	Function module C	B 7506 1013
Visualisation of Bender systems, System visualisation	Function module D	B 7506 1014
Virtual devices	Function module E	B 7506 1015
Integration of third-party devices	Function module F	B 7506 1016

Dimension diagram



Application example – BMS System Integration



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The Power in Electrical Safety©

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