

# COMTRAXX® COM465IP

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



# COMTRAXX® COM465IP

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



## 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 assigned.

\*) 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.

\*) In version 2.0 the Silverlight web interface is required.

\*\*) 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.

\*\*\*) In version 2.0 the Silverlight web interface is required.

### 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.

\*) In version 2.0 the Silverlight web interface is required.

### 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.

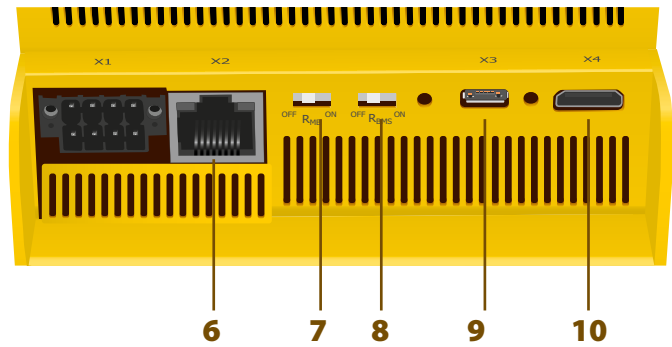
### Application

- 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 - LED "ON": 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)

## 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, autotdetect
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 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 60721-3-1)	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 60721-3-1)	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		Other	
Connection type	pluggable push-wire terminals	Operating mode	continuous operation
<b>Push-wire terminals</b>		Mounting	front-oriented, cooling slots must be ventilated vertically
Conductor sizes	AWG 24-12	Degree of protection, internal components (IEC 60529)	IP30
Stripping length	10 mm	Degree of protection, terminals (IEC 60529)	IP20
rigid/flexible	0.2...2.5 mm <sup>2</sup>	DIN rail mounting acc. to	IEC 60715
flexible with ferrule, with/without plastic sleeve	0.25...2.5 mm <sup>2</sup>	Screw fixing	2 x M4
Multiple conductor, flexible with TWIN ferrule with plastic sleeve	0.5...1.5 mm <sup>2</sup>	Enclosure type	J460
<b>Push-wire terminal X1</b>		Enclosure material	polycarbonate
Conductor sizes	AWG 24-16	Flammability class	UL94V-0
Stripping length	10 mm	Dimensions (W x H x D)	107.5 x 93 x 62.9 mm
rigid/flexible	0.2...1.5 mm <sup>2</sup>	Documentation number	D00216
flexible with ferrule without plastic sleeve	0.25...1.5 mm <sup>2</sup>	Weight	≤ 240 g
flexible with TWIN ferrule with plastic sleeve	0.25...0.75 mm <sup>2</sup>	(*) = factory setting	

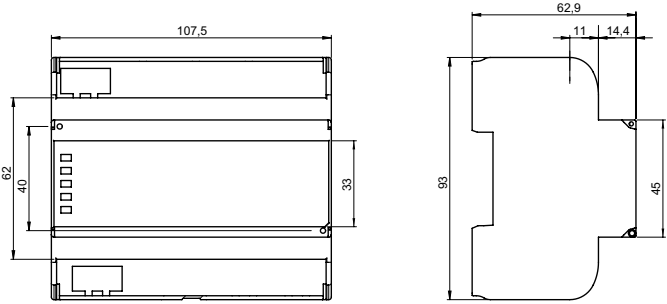
Ordering information

Supply voltage/frequency range U <sub>s</sub>		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

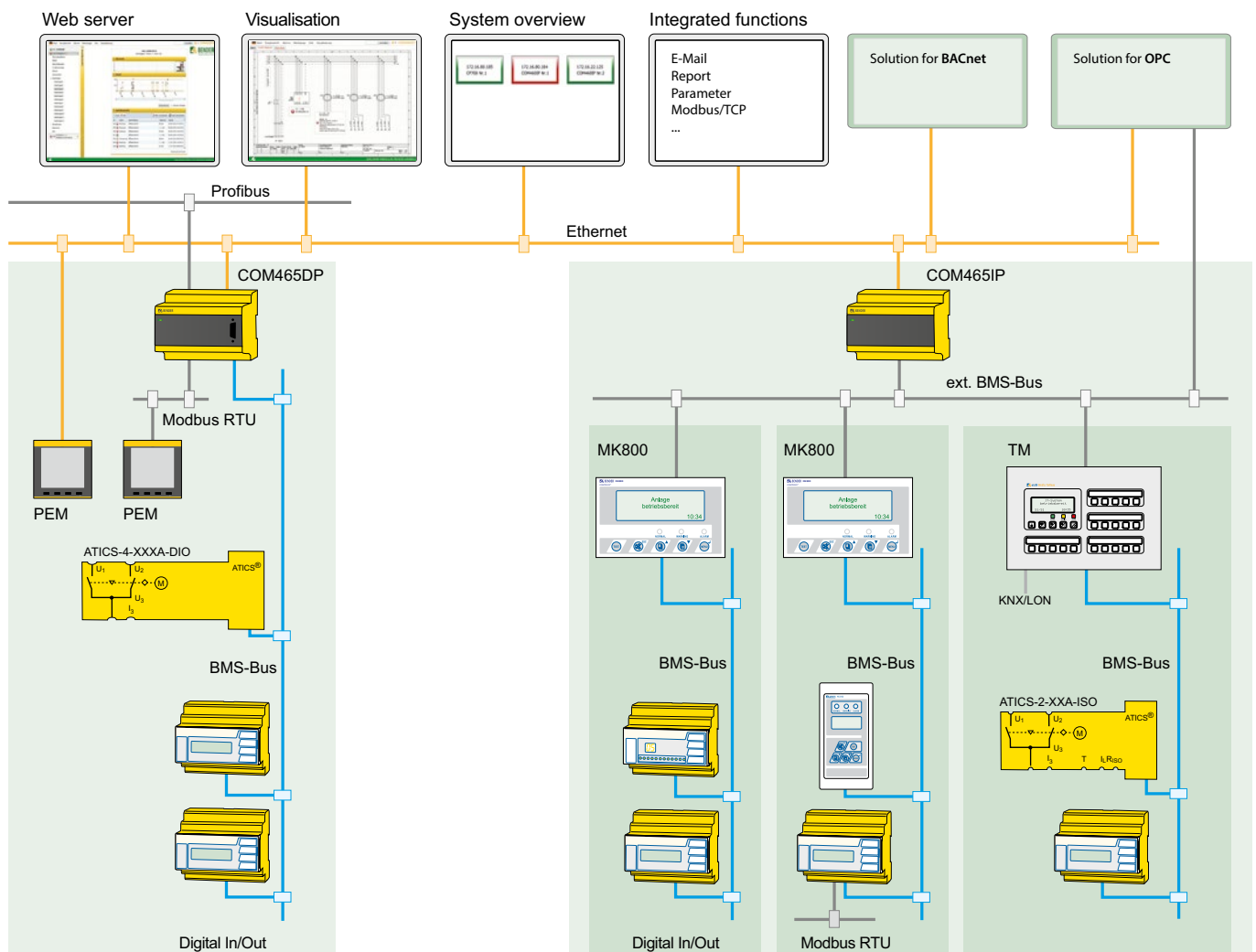
Function modules

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

Dimension diagram



## Application example – BMS System Integration



# COMTRAXX® COM465DP

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





# COMTRAXX® COM465DP

**Condition Monitor with integrated gateway  
for connection of Bender devices  
to PROFIBUS DP and Ethernet TCP/IP networks**



## 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
- Integrated gateway between Bender system and PROFIBUS DP

## 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 for coupling of associated devices with the PROFIBUS DP.
- 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 assigned.
- Supports external applications (such as visualisation programs or PLCs) via the PROFIBUS DP protocol
- Reading-out of current measured values, operation/alarm messages of associated devices. Uniform access to all associated devices via PROFIBUS DP over an integrated server.
- Control commands: Commands can be sent to devices by an external application (e.g. visualisation software or PLC) via PROFIBUS DP.

\*) 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 or PROFIBUS. 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.

\*) In version 2.0 the Silverlight web interface is required.

\*\*) 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.

\*\*\*) In version 2.0 the Silverlight web interface is required.

### 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.

\*) In version 2.0 the Silverlight web interface is required.

### 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.
- For parameterisation via PROFIBUS, the function module C is required.

### Application

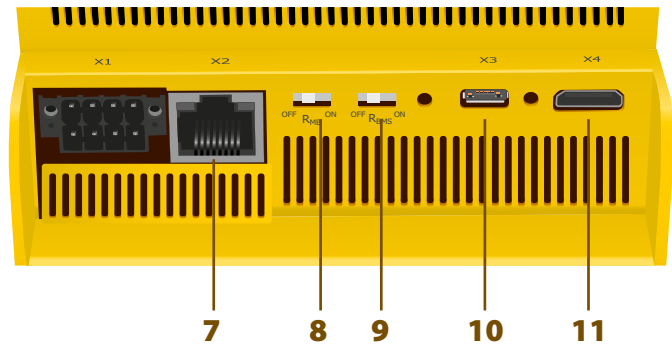
- Optimum indication und visualisation of device and system statuses via web browser
- Observation and analysis of compatible Bender products (ISOMETER®, ATICS®, RCMS, EDS, Linetraxx® and MEDICS® systems, universal measuring devices and energy meters)
- Specific system overview through individual system description
- Selective notification to various users in the event of alarms
- Use of professional visualisation programs by converting to Modbus TCP protocol or PROFIBUS DP
- 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 COM465DP 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.

Additionally, the COM465DP has a connection to PROFIBUS DP systems as slave. The PROFIBUS master, e.g. a PC with a PROFIBUS card or a PLC has to be programmed in a way that the respective reactions can be triggered over the COM465DP and the answers can be received. This programming requires good PROFIBUS knowledge by the user. The required documentation including the entire command syntax is part of the COM465DP manual.

## Operating controls and connections



- |  |  |
|--|--|
| <ul style="list-style-type: none"> <li>1 - LED "ON": Flashes during start-up.<br/>The LED lights permanently as soon as the device is ready for operation.</li> <li>2 - LEDs show activities on the different interfaces</li> <li>3 - Supply voltage: see nameplate and ordering information</li> <li>4 - Connection PROFIBUS DP</li> <li>5 - Interface Modbus RTU (plug X1)</li> <li>6 - BMS bus (Bender measuring device interface) (plug X1)</li> </ul> | <ul style="list-style-type: none"> <li>7 - Ethernet port (RJ45) for connection to the PC network as well as BCOM (plug X2)</li> <li>8 - Terminating resistor Modbus RTU switch</li> <li>9 - Terminating resistor BMS bus switch</li> <li>10 - Micro USB interface (currently without function) (plug X3)</li> <li>11 - Mini HDMI interface (currently without function) (plug X4)</li> </ul> |
|--|--|

## 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), (PROFIBUS DP)]	

### 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
PROFIBUS	data traffic PROFIBUS DP
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
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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 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

### PROFIBUS DP

Interface/protocol	RS-485 galvanically separated/PROFIBUS DP
Operating mode	slave
Baud rate	automatic baud rate detection: 9.6 kBit/s...1.5 MBit/s 9.6/19.2/93.75/187.5/500 kBit/s, 1.5 MBit/s
Connection	9-pole sub D
Device address, PROFIBUS DP	1...125 (3)*

### 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 60721-3-1)	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 60721-3-1)	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 mm <sup>2</sup>
flexible with ferrule, with/without plastic sleeve	0.25...2.5 mm <sup>2</sup>
Multiple conductor, flexible with TWIN ferrule with plastic sleeve	0.5...1.5 mm <sup>2</sup>

**Push-wire terminal X1**

Conductor sizes	AWG 24-16
Stripping length	10 mm
rigid/flexible	0.2...1.5 mm <sup>2</sup>
flexible with ferrule without plastic sleeve	0.25...1.5 mm <sup>2</sup>
flexible with TWIN ferrule with plastic sleeve	0.25...0.75 mm <sup>2</sup>

**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
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

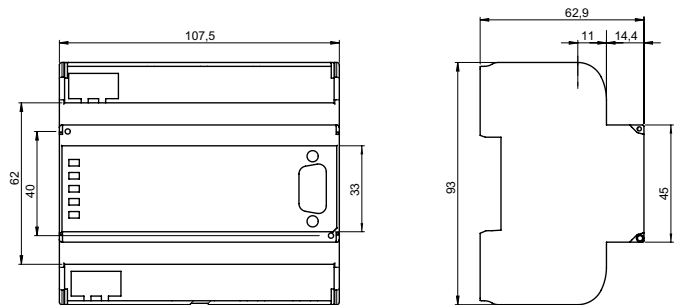
**Ordering information**

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 / PROFIBUS DP / Ethernet	COM465DP-230V	B95061060
–	24 V	≤ 3 W		COM465DP-24V	B95061061

**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

**Dimension diagram**





## COMTRAXX® COM461MT

BMS-Ethernet-Gateway for the connection of Bender devices with BMS capability to the Ethernet (TCP/IP) via the Modbus/TCP protocol



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**BMS-Ethernet-Gateway for the connection of Bender devices with BMS capability to the Ethernet (TCP/IP) via the Modbus/TCP protocol**



COM461MT

## Device features

- Setting of the IP address, BMS address and time/date using Standard web browser
- Time synchronisation for all BMS bus devices
- Integrated Ethernet switch: 2 x RJ45, 10/100 Mbit/s
- Can be operated on the internal BMS bus
- Modbus/TCP data access to the internal BMS bus, max. 150 BMS devices
- Commands can be sent from an external application (e.g. visualisation software) to BMS devices and measured values read.

## Approvals



## Product description

The BMS-Ethernet-Gateway COM461MT contains a Modbus/TCP server that converts BMS data for a Modbus client. A web server makes it possible to configure the COM461MT.

## Ethernet-TCP/IP interface:

The coupling is performed via the internal Layer-2 switch. Two Ethernet ports are available.

## Interface on the BMS side:

COM461MT can be operated as master or slave.

## Possible applications

- The use of professional visualisation programs by converting the BMS data to the Modbus/TCP protocol
- Observing and analysing Bender products that support communication, such as RCMS, EDS and MEDICS® systems

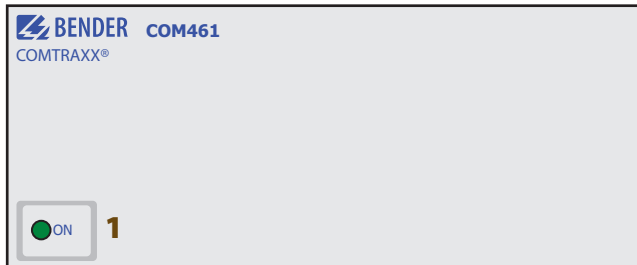
## Ordering information

Supply voltage/ frequency range $U_s$	Supply voltage/ frequency range $U_s$ For UL application		Power consumption	Type	Art. No.
	AC	DC			
76...276 V <sup>1)</sup> , 42...460 Hz	76...250 V, 25...60 mA, 42...460 Hz	76...250 V, 6...21 mA	≤ 6,5 VA	COM461MT	B 9506 1021

<sup>1)</sup> Absolute values

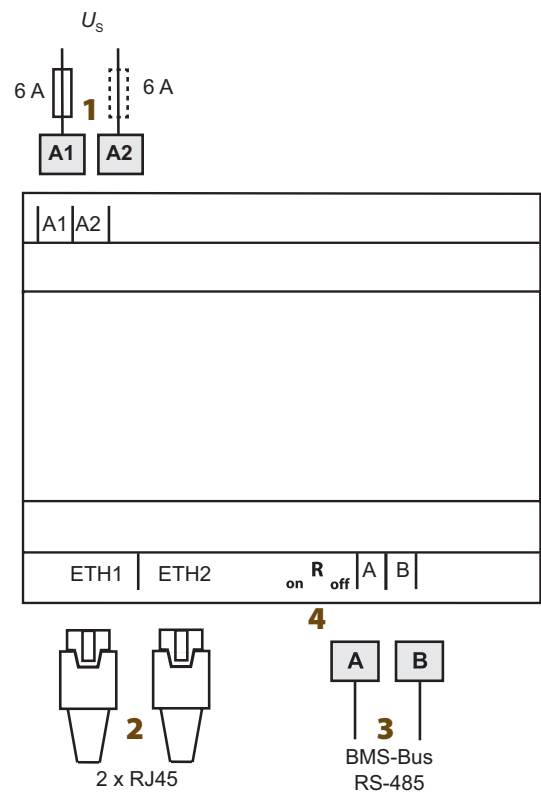


## Operating elements



- 1 - "ON" LED lights when supply voltage is applied
- 2 - Ron/off (beside terminals A, B)  
Switch for terminating the BMS bus. When the device is installed at the end of the bus, set the terminating switch to "on".

## Wiring diagram



- 1 - Connection to the supply voltage, 6 A fuse recommended, two-pole fuses should be used on IT systems.  
For UL and CSA applications, it is mandatory to use 5 A fuses.
- 2 - Two connections for connection to a personal computer or connection to the local network (hub, switch, router); Connection using a CAT5 cable; internal Layer-2-Switch with cable autodetect.
- 3 - Connection to the internal BMS bus with shielded cable (e.g. J-Y(St)Y 2x0.8)
- 4 - Switch for BMS bus termination. When the device is installed at the end of the bus, set the terminating switch to "on".

## 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

### LED indicators

2 x Ethernet ETH1, ETH2 act/link	lights when connected to the network, flashes during data transmission
ON	operation indicator

### Interfaces

#### BMS bus internal:

Interface/protocol	RS-485/BMS bus internal
Operating mode	master/slave (slave)*
Baud rate BMS internal	9.6 kbit/s
Cable length	≤ 1200 m
Cable (twisted pair, shielded, shield connected to PE on one side)	recommended: J-Y(St)Y 2x0.8
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
IP address	nnn.nnn.nnn.nnn (192.168.0.254)*
Netmask	nnn.nnn.nnn.nnn (255.255.0.0)*
Protocols	TCP/IP, Modbus/TCP, NTP

### Environment/EMC

EMC	EN 61326-1
Classification of climatic conditions acc. to IEC 60721:	
Stationary use	3K5
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 properties:	
Rigid/flexible	0.2...4/0.2...2.5 mm <sup>2</sup> (AWG 24...12)
Multi-conductor connection (2 conductors with the same cross section):	
rigid/flexible	0.2...1.5 0.2...1.5 mm <sup>2</sup>
Stripping length	8...9 mm
Tightening torque	0.5...0.6 Nm

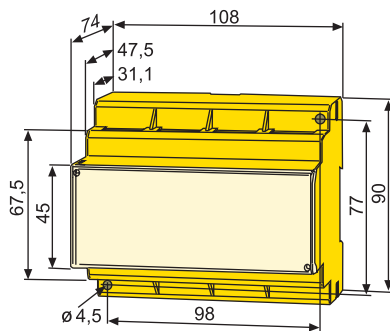
### Other

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
Software version	D402 V1.0x
Weight	≤ 310 g

( )\* = factory setting

## Dimension diagram XM460

Dimensions in mm



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