

COM465IP

Communication gateway and interface

For supported Bender and third party devices

Over Ethernet and Modbus networks



COM465IP

**Communication Gateway
For Supported BENDER Devices**



Description

The COM465IP is an advanced communication gateway which connects Bender devices to modern communication networks. The dual-function device provides a modern, easy-to-use web interface accessible from a web browser on virtually any device. Additionally, the COM465IP allows for the integration of Bender equipment into Modbus/TCP industrial ethernet networks.

Approvals



Features

- Gateway - add supported Bender and third party devices to communication networks
- Web browser interface - Fully-featured, easy-to-use interface; accessible from web browsers on connected devices
- Universal interface - Check the status of devices across multiple communication protocols on a single screen
- Modbus support - Connect supported Bender devices to Modbus/TCP networks
- Multiple ways to connect - Connect Bender devices to the COM465IP through Ethernet (newer devices) or RS-485 (legacy devices)
- Virtual setpoints - create custom alarms involving multiple devices and mathematical operations
- Third party device support - Connect Modbus devices to view status and integrate into virtual setpoints

Key additional options

- Unique naming - Identify devices with custom names
- E-mail notifications - Receive e-mails on specified trigger events
- Settings - Change device settings for connected Bender equipment
- Visualizations - Visual overviews of systems with equipment locations; identify physical locations of alarms with no programming required

Key features - standard version

- Web interface showing device alarm status and readings, accessible from virtually any type of connected device
- Modern HTML5-based interface for use in modern web browsers on desktop and mobile*
- Connects to standard 10/100 Mb Ethernet networks
- Time synchronization for connected Bender devices
- History memory showing up to 1000 events
- Read values for up to ten (10) Bender devices via Modbus/TCP
- Connect third party Modbus/TCP devices and read up to 50 data points via the web interface
- Virtual setpoints - create custom alarms using multiple devices / alarm types and mathematical / logical operations

Custom labels and e-mail notifications - option A

- Custom labels for individual devices, measuring channels, and alarms
- Connects to standard 10/100 Mb Ethernet networks
- Time synchronization for connected Bender devices
- History memory showing up to 1000 events
- Connect third party Modbus/TCP devices and read up to 50 data points via the web interface

* Some features, such as virtual setpoints, visualizations, and adding third-party Modbus devices require use of Internet Explorer with the Silverlight plugin installed.

Full Modbus/TCP communication - option B

- Acts as a gateway to Modbus/TCP networks for all connected Bender devices
- Supports two-way communication: Read data, and control devices from Modbus master (PLC, software, etc.)*

Remote device settings and configuration - option C

- Configure connected Bender devices remotely from the COM465IP's web interface
- Reporting function for importing / exporting saved settings and measured values for connected Bender devices

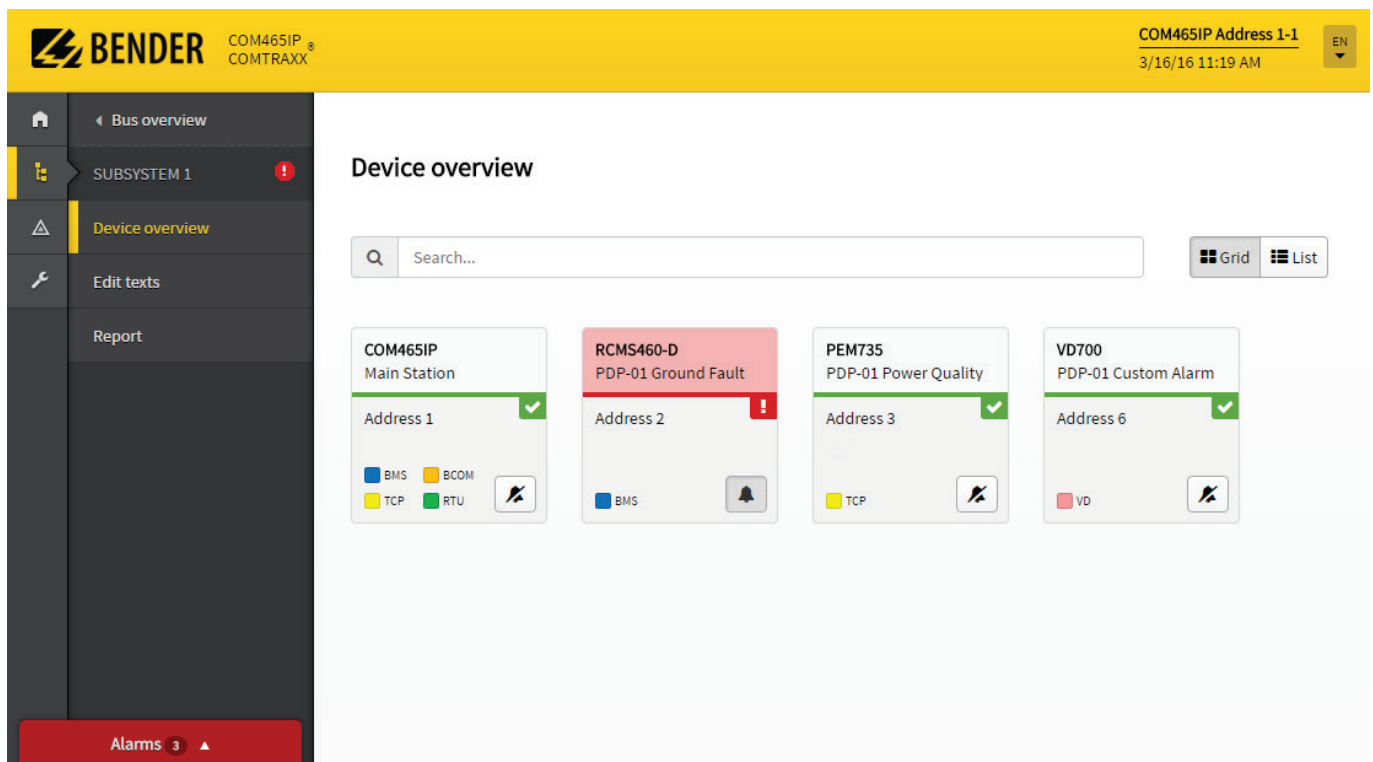
System visualization - option D**

- Fast, comprehensive system visualizations, no programming required
- Device status, alarms, and measured values can be arranged and displayed on a system plan image, such as a room or factory layout
- Customizable to specific facilities or customer requirements

* Writing to / controlling Bender devices via Modbus/TCP requires both Options B and C.

** Option D's system visualizations requires use of Internet Explorer with the Silverlight plugin installed.

Web interface - overview screen



- Easy to use status indication for connected devices
- Unified status screen for devices connected across multiple communication buses (Bender RS-485 bus, Bender Ethernet bus, Modbus/RTU, Modbus/TCP)
- Drill-down for each device shows detailed readings information, including readings for all branches for multi-channel devices
- Modern design - HTML5-based interface, works in most modern web browsers
- Responsive layout - touch-friendly layout for mobile devices
- Grid-type and list-type views available for viewing device status
- Custom alarms created using virtual setpoints appear in the same list as connected devices

Web interface - detailed device status

COM465IP[®]
COMTRAXX

COM465IP Address 1-1
3/16/16 2:22 PM

EN

Subsystem 1
RCMS460-D ADDR. 2

Overview
Edit texts
Configure e-mail
Report
Menu

Alarms 3

RCMS460-D Alarm/meas.values PDP-01 Ground Fault

#	Alarm	Test	Channel description	Measured value			
1		--	Residual current PDP-01 MCC-1 Ground Fault	2 mA			
2		Alarm	Ground Fault	--	Residual current PDP-01 MCC-2 Ground Fault	10 mA	
3		Alarm	Ground Fault	--	Residual current PDP-01 MCC-3 Ground Fault	10 mA	
4		--	Residual current PDP-01 MCC-4 Ground Fault	2 mA			
5		Alarm	Ground Fault	--	Residual current PDP-01 MCC-5 Ground Fault	10 mA	
6		--	Residual current PDP-01 MCC-6 Ground Fault	2 mA			
7		--	Channel disabled PDP-01 MCC-7 Ground Fault	--			

Web interface - virtual setpoints

01 | 006 | VD700 | Channel: 1

Formula

Mode of calculation: Logical

Formula:

Result: ● 0

Alarm state

If true, then: Warning

If false, then: Operating message

Variables and measured values

☐ Use test values Add variable

Name: a	Type: Measured value		
	System: 1	Address: [002] RCMS460-D	Measured value: ● 148 mA
		Channel: [02] Residual current	
		Fault current, channel 2	

Name: b	Type: Measured value		
	System: 1	Address: [003] PEM735	Measured value: ● 276.95 V
		Channel: [01] U(1-N)	

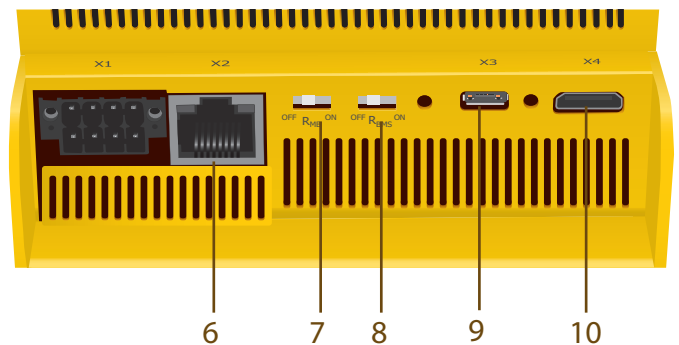
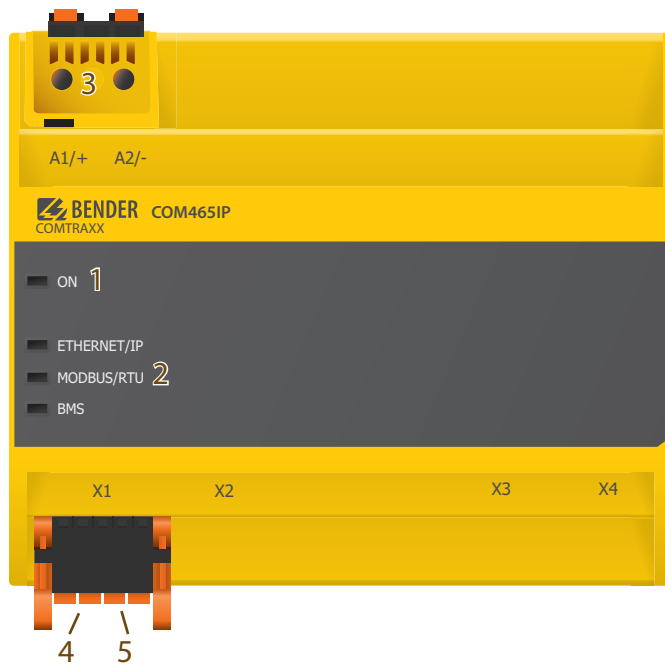
Legend and examples

Individual texts

Apply Cancel

- Create custom alarms using mathematical operations or combining multiple devices
- Combine any of the following to create application tailored alarms:
 - Alarms from multiple devices: combine ground fault alarms, voltage measurements, and many more
 - Mathematical operations: Activate alarms based on calculations using measured values
 - Logical operations: Use boolean logic to create alarms from multiple inputs
 - Integrate alarm indicators from third party Modbus/TCP equipment
- Virtual setpoints appear as standard devices on the alarm overview screen, simplifying use for technicians and staff

Operating controls and connections



- 1 - LED "ON": Flashes during startup, solid during normal operation
- 2 - LEDs, Ethernet / Modbus-RTU / BMS - Flash during interface operation
- 3 - Supply voltage: See ordering information
- 4 - Modbus/RTU interface - X1 connector
- 5 - Bender RS-485 bus (BMS) - X1 connector
- 6 - Ethernet port (RJ45) for connecting to Ethernet network and Bender Ethernet bus (BCOM)

- 7 - Termination resistor switch: Modbus RTU bus
- 8 - Termination resistor switch: BMS bus
- 9 - Provisioned for future use
- 10 - Provisioned for future use

Use copper wiring only.

Technical data

Insulation coordination acc. to IEC 60664-1/IEC 60664-3 (For model B95061065)

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 model B95061066)

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)*
Subnet mask	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 60721-3-1)	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 (continued)

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 ²
flexible with ferrule, with/without plastic sleeve	0.25 - 2.5 mm ²
Multiple conductor, flexible with TWIN ferrule with plastic sleeve	0.5 - 1.5 mm ²

Push-wire terminal X1

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

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: Base module

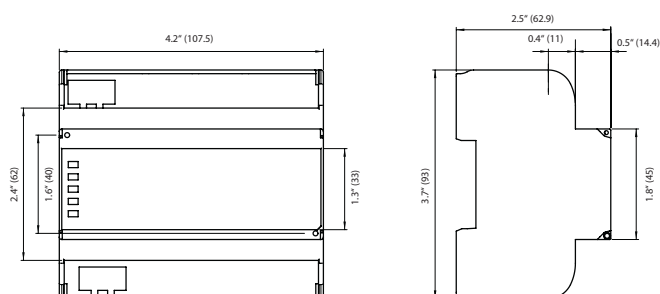
Supply voltage		Power consumption	Type	Ordering No.
AC	DC			
24 - 240 V, 50/60 Hz	24 - 240 V	max. 6.5VA / 4W	COM465IP-230V	B 9506 1065
-	24 V	max. 3W	COM465IP-24V	B 9506 1066

Ordering information: Additional options

Optional add-ons listed below are separate line items in addition to the base model. Refer to pages 2 and 3 for detailed information.

Description	Type	Ordering No.
Custom labels and e-mail notifications	Option A	B 7506 1011
Full Modbus/TCP communication	Option B	B 7506 1012
Remote device settings and configuration	Option C	B 7506 1013
System visualizations	Option D	B 7506 1014

Dimensions in inches (mm)





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