COMTRAXX® CP907-I

Condition Monitor with display and integrated gateway

BENDER

Device features

- Display sizes 7" with tempered and anti-reflective glass
- Easy to clean and disinfect, degree of protection IP54
- Screwless mounted front plate
- Condition monitor for Bender systems
- Integrated modular gateway between Bender systems and TCP/IP
- Remote access via LAN, WAN or Internet
- Support of devices that are connected to the internal BMS bus, via BCOM, Modbus RTU or Modbus TCP
- Individual visualisation can be generated, which can be viewed via the web browser or on the display
- Silent due to operation without fan
- High-quality display with excellent contrast, high resolution and wide viewing angle
- Possibility of graphical integration of building plans or status displays in photo quality
- Visual and acoustic notification in the event of an alarm

Data transfer interfaces

Intended use

Condition monitors CP907-I show alarms, measured values and states of devices. These include, for example:

- All Bender devices with BMS bus or BCOM interface
- Bender devices (RCMS410, PEM353, ...) with Modbus RTU or Modbus TCP interface
- Other devices with Modbus RTU or Modbus TCP interface

In addition, the data is available via Modbus TCP, Modbus RTU, SNMP, MQTT and PROFINET protocols. This allows coupling to a higher-level building control system as well as visualisation and evaluation using standard web browsers.

Operation and settings are made via the COMTRAXX® user interface integrated in the device.

Any other use than that described in this manual is regarded as improper.

Applications

- Monitoring and parameter setting of all Bender products that support communication
- Mounting in the control cabinet door so that all information is immediately visible
- Commissioning and diagnosis of Bender systems
- Remote diagnosis and remote maintenance
- Control stations in all areas
- Monitoring and analysis of data centres
- Notification in the event of an error

Scope of functions (V4.9.0 and higher)

- Condition monitor with web interface and display
- Interfaces for the integration of devices
  - Internal BMS bus (max. 150 devices)
  - BCOM (max. 255 devices)
  - Modbus RTU and Modbus TCP (max. 247 devices each)
- Selectable display content
  - System overview with all devices, measured values, parameters and alarms
  - Individually configurable visualisation
- Ethernet interface with 10/100 Mbit/s for remote access via LAN, WAN or Internet
- Time synchronisation for all assigned devices
- History memory (20,000 entries)
- Data logger, freely configurable (30 x 10,000 entries)
- Assignment of individual texts for devices, channels (measuring points) and alarms
- Device failure monitoring
- E-mail notifications to different users in the event of alarms and system errors
- Device documentation can be created for any device in the system
- System documentation can be created. It documents all devices in the system at once
- Reading the latest measured values, operating and alarm messages from all assigned devices. Uniform access to all assigned devices via Modbus TCP over an integrated server
- Reading the latest measured values, operating and alarm messages from all assigned devices via internal BMS. Uniform access to all assigned devices via Modbus RTU

- Control commands: Commands can be sent from an external application (e.g. visualisation software or PLC) to BMS devices via Modbus TCP or Modbus RTU.
- Access to alarms and measured values via SNMP protocol (V1, V2c or V3). SNMP traps are supported
- Access via PROFINET to alarms and measured values
- Alarms and measured values are provided via MQTT
- Fast and easy parameter setting of all devices assigned to the gateway via web browser or display
- Device backups can be created and restored for all devices in the system
- 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. It is possible to navigate within these pages
  - 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
- 100 virtual devices with 16 channels each can be created. There, for example, calculations of several measured values can be carried out and the result can be used in the system as a new measured value
- 1600 data points from third-party devices (via Modbus RTU or Modbus TCP) can be integrated into the system

Interfaces

CP907-I communicate with the devices and systems assigned via various interfaces:

- Internal BMS bus (RS-485) for Bender systems such as EDS46…/49…, RCMS46…/49… and MEDICS®. CP907-I can be operated as a master or as a slave. When operated as a master, requests are answered more quickly. The devices can only be operated on the internal BMS bus.

- BCOM (Ethernet) for new and future Bender systems, such as ISOMETER® iso685-D.
- Modbus RTU (RS-485) for Bender devices such as RCMS410.
- Modbus TCP (Ethernet) for Bender devices PEM…**5**
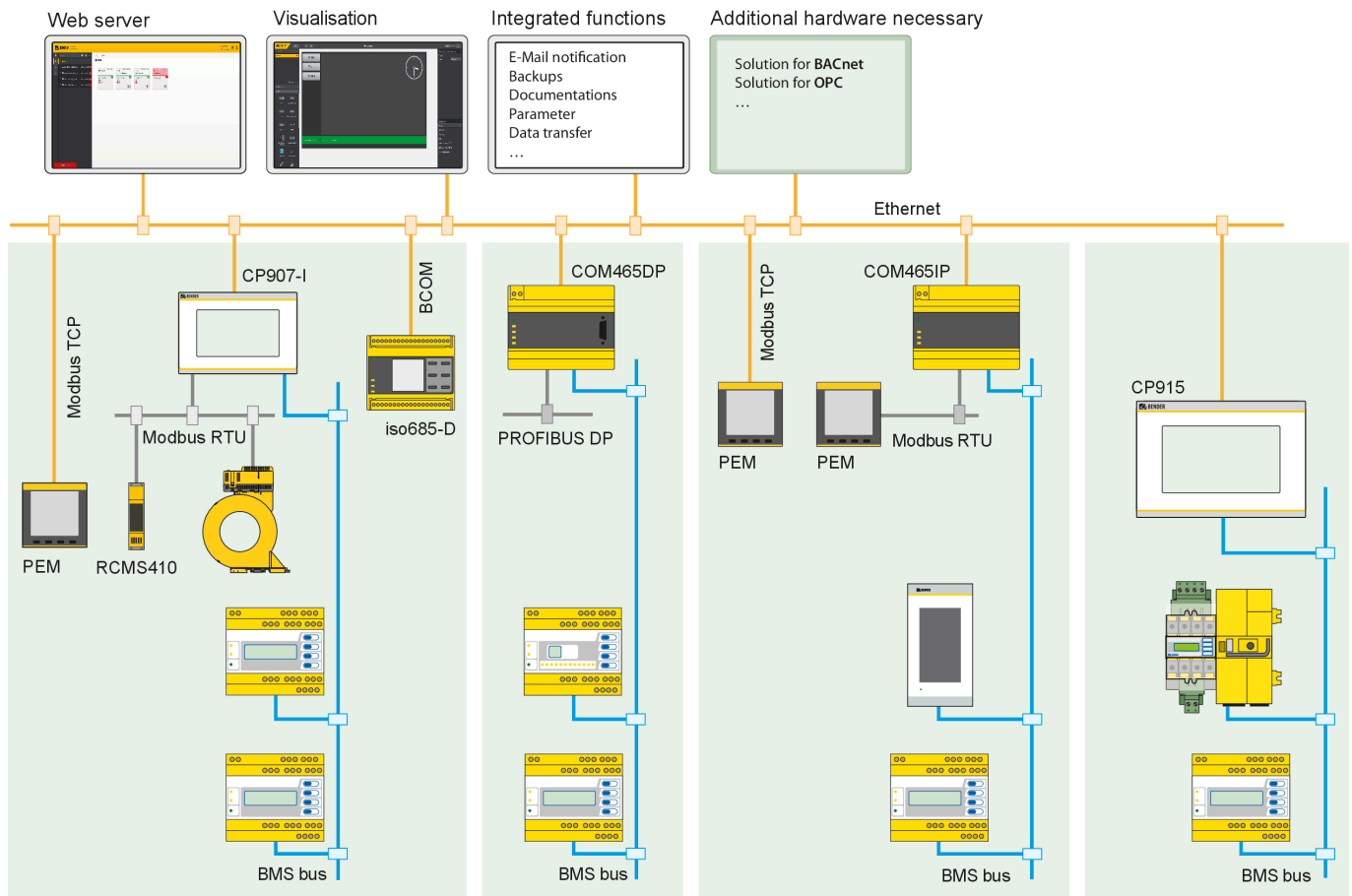
System overview interfaces CP907-I

Technical data

Insulation coordination acc. to IEC 60664-1

CP907-I

Rated voltage	50 V
Overvoltage category	III
Pollution degree	2
Rated impulse voltage	800 V

Supply

CP907-I via plug-in terminal (A1/+; A2/-)

Nominal voltage	DC 24 V SELV/PELV
Nominal voltage tolerance	±20 %
Typical power consumption at DC 24 V	< 15 W

Maximum cable length when supplied via B94053111
(24-V DC power supply unit 1.75 A)

0.28 mm²	75 m
0.5 mm²	130 m
0.75 mm²	200 m
1.5 mm²	400 m
2.5 mm²	650 m

CP907-I via Power-over-Ethernet (PoE)

Nominal voltage	DC 48 V SELV/PELV
Nominal voltage tolerance	-25…+15 %
Typical power consumption for PoE	< 15 W
Maximum cable length when supplied via AWG 26/7; 0.14 mm²	100 m

Stored energy time in the event of voltage failure

Time, date	Min. 3 days

Displays, memory

Display CP907-I/Resolution	7" TFT-Touch Display/800 x 480
E-mail configuration and device failure monitoring	Max. 250 entries
Individual texts	Unlimited number of texts with 100 characters each
Number of data points for "third-party devices" to Modbus TCP and Modbus RTU	1600
Number of data loggers	30
Number of data points per data logger	10,000
Number of entries in the history memory	20,000

Visualisation

Number of pages	50
Background image size	Max. 3 MB

Interfaces

Ethernet

Connection	RJ45
Cable	Shielded, both ends of shield connected to PE
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)*, Always reachable via 169.254.0.1
Net mask	nnn.nnn.nnn.nnn (255.255.0.0)*
Protocols	TCP/IP, Modbus TCP, Modbus RTU, PROFINET, DHCP, SNMP, SMTP, NTP

BMS-Bus

Interface/protocol	RS-485/BMS internal
Operating mode	Master/slave (master)*
Baud rate	9.6 kBaud
Cable length	< 1200 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	"ABMS", "BBMS" (see plug-in terminal)
Terminating resistor	120 Ω (0.25 W), can be switched on internally (see plug-in terminal)
Device address	1…150 (1)*

BCOM

Interface/protocol	Ethernet/BCOM
Cable length	< 100 m
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
Cable length	< 100 m
Operating mode	Client for Bender Modbus TCP devices and "third-party devices"
Operating mode	Server for access to process image and for Modbus control commands
Parallel data access from different clients	Max. 25

Modbus RTU

Interface/protocol	RS-485/Modbus RTU
Cable	Shielded, one end of shield connected to PE
Recommended	CAT6/CAT7 min. AWG23
Alternative	Twisted pair, J-Y (St) Y min. 2x0.8
Cable length	Depending on the baud rate
9.6 kBaud	< 1200 m
19.2 kBaud	< 1000 m
38.4 kBaud	< 800 m
57.6 kBaud	< 600 m
Connection	"AMB", "BMB" (see plug-in terminal)
Operating mode	Master/slave (master)*
Baud rate	9.6…57.6 kBaud
Terminating resistor	120 Ω (0.25 W), can be connected internally (see plug-in terminal)
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	Query of all devices (channels) possible
Trap support	Yes

MQTT

Interface/protocol	Ethernet/MQTT
Operating mode	Publisher (provides data for brokers)
Slots for measured value transmission	255

USB

Number	2
Operating mode	USB-2.0 host (5 V, 500 mA)
Data rate	480 Mbit/s
Cable length	< 3 m
Connection type	USB 2 Standard-A

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)

Digital inputs (1…12)

Number	12
Galvanic separation	Ja
Maximum cable length	< 1000 m
Operating mode	Selectable for each input: high-active or low-active
Factory setting	High-active
Voltage range (high)	AC/DC 10…30 V
Voltage range (low)	AC/DC 0…2 V
Max. current per channel (at AC/DC 30 V)	8 mA
Connection push-in terminal	(1-1) (2-2) (3-3) … (12-12)

Switching elements

For UL applications
Type of load: General use
Voltage connected to relay: SELV

Number	1 relay
Operating mode	N/C operation or N/O operation
Function	Programmable
Electrical endurance under rated operating conditions, number of cycles	10,000
Contact data acc. to IEC 60947-5-1	
Utilisation category	AC-13 / AC-14 / DC-12
Rated operational voltage	24 V / 24 V / 24 V
Rated operational current	2 A / 2 A / 2 A
Minimum contact load (relay manufacturer's reference)	10 µA / 10 mV DC
Connection plug-in terminal	(11;12;14)

Buzzer

Buzzer message	Can be acknowledged, adoption of characteristics of new value
Buzzer interval	Configurable
Buzzer frequency	Configurable
Buzzer repetition	Configurable

Audio

Line IN	Not used
Line OUT	Output to a STEREO playback device via 3.5 mm jack plug
Cable length	< 3 m

Device connections

Plug-in terminal (A1/+; A2/-) (11;12;14)

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

Plug-in terminal (l1…12), (k1…k12), (…MB), (…BMS)

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

For UL applications

Use copper lines only.

Minimum temperature range of the cable to be connected to the plug-in terminals	75 °C
Minimum temperature range of the cable to be connected to the PoE plug	80 °C

Environment/EMC

EMC	IEC 61326-1

Operating temperature

CP907-I	-10…+55 °C
CP907-I for UL applications	-10…+50 °C
Operating altitude	≤ 2000 m AMSL
Rel. humidity	≤ 98 % at 25 °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

Classification of mechanical conditions acc. to IEC 60721

Stationary use (IEC 60721-3-3)	
CP907-I	3M11
Transport (IEC 60721-3-2)	2M4
Long-term storage (IEC 60721-3-1)	1M12

Other

Operating mode	Continuous operation
Mounting	Display-oriented
Degree of protection, front	
CP907-I	IP54
Degree of protection, front, for UL applications	
CP907-I	IP50
Degree of protection, enclosure	IP20
Flammability class	UL 94V-0

Dimensions

CP907-I (W x H x D)	226 x 144 x 78 mm

Weight

CP907-I	< 1.1 kg

( )* = Factory setting

Standards, approvals and certifications

CE   UKCA   c(UL)us LISTED

Ordering information

Complete devices

Type	Display size	Supply	Device dimensions (W x H x D), mm	Weight	Enclosure	Display unit	Art. No.
CP907-I	7" (17.6 cm)	DC 24 V, < 15 W	226 x 144 x 78	1.1 kg	Flush-mounting enclosure	Glass, tempered, white	B95061031
			226 x 144 x 65	1.0 kg	Control cabinet door mounting		B95061032

Scope of delivery:

• Display unit
• Control cabinet door mounting or flush-mounting enclosure incl. mounting plate with electronics
• CP907-I connecting cable
• Plug kit

Individual components

Type	Art. No.
Flush-mounting enclosure	B95100140

Accessories

Description	Art. No.
Replacement plug kit	B95061910
Ssurface-mounting enclosure	B95061915

Dimension diagram
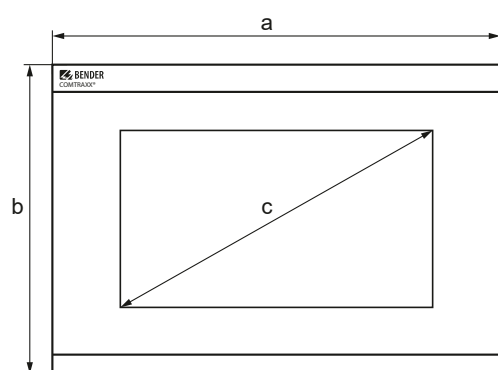
Glass thickness: 3 mm

Device dimensions

	Dimensions (mm) ±1		
	a	b	c
CP907-I	226	144	176 (7")

Installation dimensions enclosure

Enclosure	Dimensions (mm)		Required instal-lation depth
	a	b	
Flush-mounting	212	124	75
Door	215	124	65
CP907-I			
Surface-mounting	299	173	---