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# COMTRAXX® CP9...-I Series

Condition Monitor with display and integrated gateway





### Device features

- Display sizes 7" and 15.6" 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



Simple Network Management Protocol



### Intended use

Condition monitors CP9...-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 CP9...-I (V4.9.0 and higher)**

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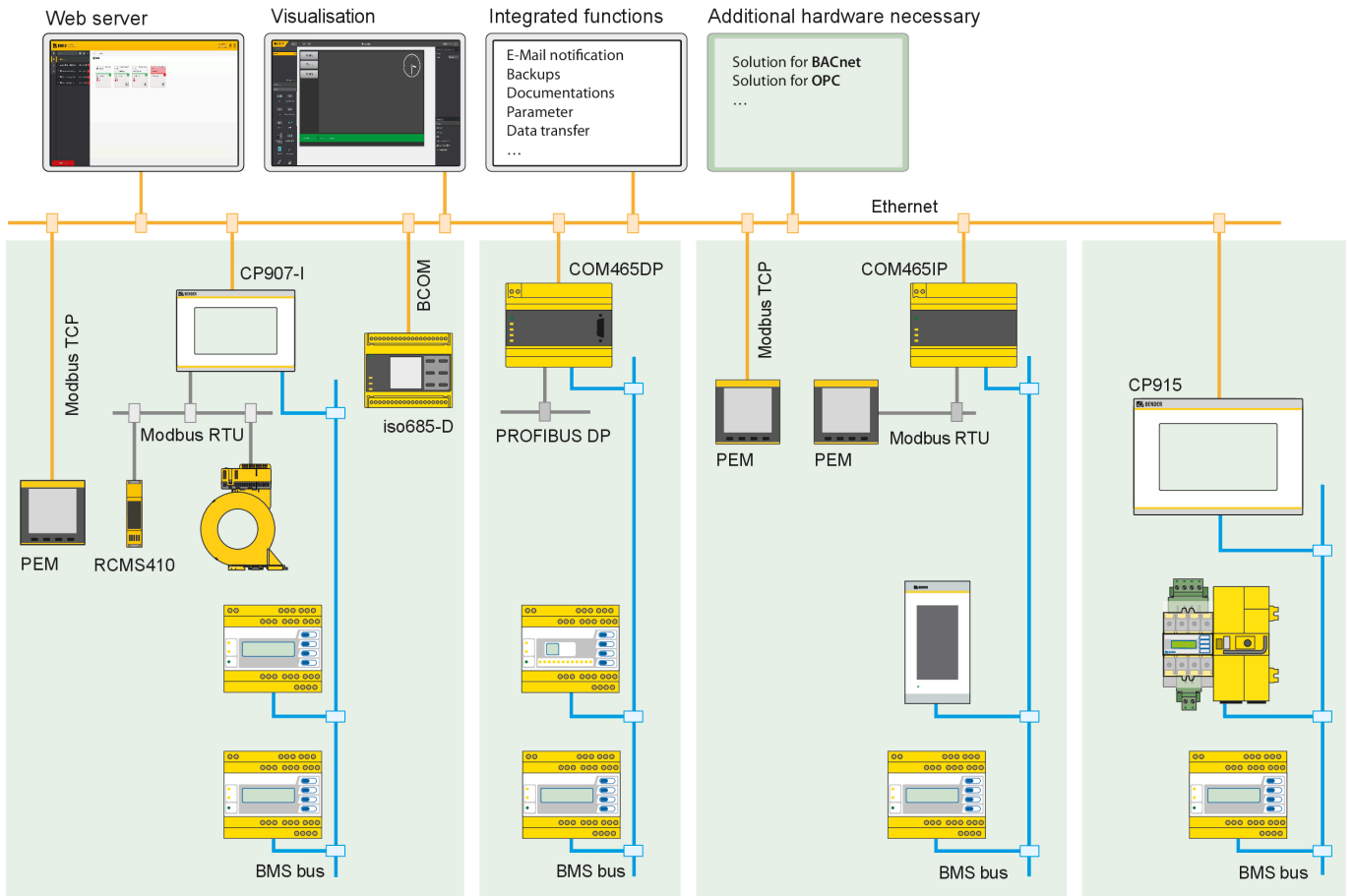
- Condition monitor with web interface and display
- Interfaces for the integration of devices
  - Internal BMS bus (max. 150 devices)
  - BCOM (max. 255 devices)
  - Modbus RTU and Modbus TCP (max. 247 devices each)
- Selectable display content
  - System overview with all devices, measured values, 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**

CP9...-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®. CP9...-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 CP9...-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 |

**CP915-I**

|  |          |
|--|----------|
| Rated voltage                            | AC 250 V |
| Overvoltage category                     | III      |
| Overvoltage category for UL applications | II       |
| Pollution degree                         | 2        |
| Rated impulse voltage                    | 4 kV     |

**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 B95061210 (24-V DC power supply unit 1.75 A): |                   |
| 0.28 mm <sup>2</sup>   | 75 m              |
| 0.5 mm <sup>2</sup>  | 130 m             |
| 0.75 mm <sup>2</sup>   | 200 m             |
| 1.5 mm <sup>2</sup>  | 400 m             |
| 2.5 mm <sup>2</sup>  | 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 mm <sup>2</sup> | 100 m             |

**CP915-I via terminal block (L1; N)**

|  |                 |
|--|-----------------|
| Nominal voltage via external power supply unit | AC 100... 240 V |
| Nominal voltage tolerance                      | -15...+10 %     |
| Frequency range $U_5$                          | 50...60 Hz      |
| Typical power consumption at AC 230 V          | < 30 W          |

**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                     |
| Display CP915-I/Resolution   | 15,6" TFT-Touch Display/1280 x 720                 |
| 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 kBit/s   |
| 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 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                           | "AMB", "BMB" (see plug-in terminal)                                |
| Operating mode                       | master/slave (master)*   |
| Baud rate                            | 9.6...57.6 kBit/s  |
| 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) |

**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: active-high or active-low |
| Factory setting                          | active-high  |
| 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**
**Terminal block (L1; N; PE) (for CP915-I only)**

|  |                         |
|--|-------------------------|
| Conductor sizes  | AWG 20...12             |
| Stripping length   | 10...11 mm              |
| rigid/flexible   | 0.5...4 mm <sup>2</sup> |
| flexible with ferrule with/without plastic sleeve                  | 0.5...4 mm <sup>2</sup> |
| Multiple conductor, flexible with TWIN ferrule with plastic sleeve | 0.5...4 mm <sup>2</sup> |

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

|  |                            |
|--|----------------------------|
| 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>  |

**Plug-in terminal (I1...I2), (k1...k12), (...MB), (...BMS)**

|  |                             |
|--|-----------------------------|
| 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 ferrule with plastic sleeve    | 0.25...0.75 mm <sup>2</sup> |

**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**

|     |             |
|-----|-------------|
| EMV | IEC 61326-1 |
|-----|-------------|

**Operating temperature**

|                             |              |
|-----------------------------|--------------|
| CP907-I                     | -10...+55 °C |
| CP907-I for UL applications | -10...+50 °C |
| CP915-I                     | -5...+40 °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 |
| CP915-I                           | 3M10 |
| 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                      | IP54                 |
| Degree of protection, front, for UL applications |                      |
| CP907-I  | IP50                 |
| CP915-I  | IP54                 |
| Degree of protection, enclosure                  | IP20                 |
| Flammability class                               | UL 94V-0             |

**Dimensions**

|                     |                   |
|---------------------|-------------------|
| CP907-I (W x H x D) | 226 x 144 x 78 mm |
| CP915-I (W x H x D) | 505 x 350 x 95 mm |

**Weight**

|         |          |
|---------|----------|
| CP907-I | < 1.1 kg |
| CP915-I | < 7.1 kg |

(\*) = factory setting

**Standards, approvals and certifications**


## Ordering information CP9...-I

### Complete devices

| Type    | Display size       | Supply                   | Device dimensions (W x H x D), mm | Weight | Enclosure                     | Display unit                 | Art. No.                    |
|---------|--------------------|--------------------------|-----------------------------------|--------|-------------------------------|------------------------------|-----------------------------|
| CP907-I | 7"<br>(17.6 cm)    | DC 24 V,<br>< 15 W       | 226 x 144 x 78                    | 1.1 kg | Flush-mounting enclosure      | Glass,<br>tempered,<br>white | B95061031                   |
|         |                    |                          | 226 x 144 x 65                    | 1.0 kg | Control cabinet door mounting |                              | B95061032                   |
| CP915-I | 15.6"<br>(38.6 cm) | AC 100...240 V<br>< 30 W | 505 x 350 x 92                    | 6.1 kg | Flush-mounting enclosure      |                              | Glass,<br>tempered,<br>grey |
|         |                    |                          |                                   |        |                               |                              | B95061034                   |

Scope of delivery:

- Display unit
- Control cabinet door mounting or flush-mounting enclosure incl. mounting plate with electronics
- CP9...-I connecting cable
- Plug kit

### Individual components

| Device series | Type   | Art. No.  |
|---------------|--|-----------|
| CP907-I       | Flush-mounting enclosure                                       | B95100140 |
| CP915-I       | Display unit white   | B95061112 |
|               | Display unit grey  | B95061113 |
|               | Flush-mounting enclosure incl. mounting plate with electronics | B95061092 |

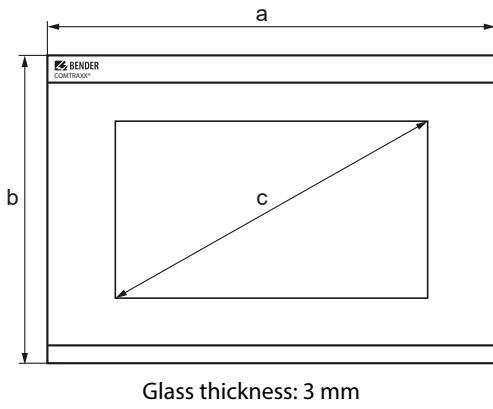
### Accessories

| Device series | Description                           | Art. No.  |
|---------------|---------------------------------------|-----------|
| alle          | CP9...-I replacement plug kit         | B95061910 |
| CP915         | CP9...-I suction lifter <sup>1)</sup> | B95061911 |
| CP907         | CP907-I surface-mounting enclosure    | B95061915 |
| CP915         | CP915-I-surface-mounting enclosure    | B22301077 |

<sup>1)</sup> The suction lifter is required to remove the display of the CP915-I.



**Dimension diagram**



**Device dimensions**

| Type    | Dimensions (mm) ±1 |     |             |
|---------|--------------------|-----|-------------|
|         | a                  | b   | c           |
| CP907-I | 226                | 144 | 176 (7")    |
| CP915-I | 505                | 350 | 386 (15.6") |

**Installation dimensions enclosure**

| Type    | Enclosure        | Dimensions (mm) |     | Required installation depth |
|---------|------------------|-----------------|-----|-----------------------------|
|         |                  | a               | b   |                             |
| CP907-I | Flush-mounting   | 212             | 124 | 75                          |
|         | Door             | 215             | 124 | 65                          |
| CP915-I | Surface-mounting | 299             | 173 | ---                         |
|         | Flush-mounting   | 464             | 309 | 92                          |
|         | Surface-mounting | 511             | 356 | ---                         |



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Subject to change!  
The specified standards take into account the  
edition valid until 07.2024 unless otherwise  
indicated.