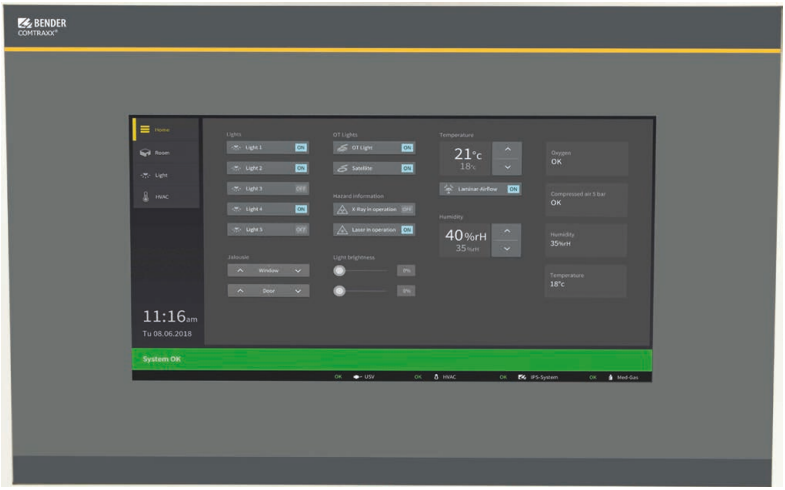
COMTRAXX® CP9xx-x – Control Panel

Customised alarm indicator and operator panel for medical locations and other areas



Service and Support for Bender products

First-level support
Technical support
Carl-Benz-Strasse 8 • 35305 Grünberg • Germany
Telephone: +49 6401 807-760
0700BenderHelp *
Fax: +49 6401 807-629
E-mail: support@bender-service.de
Available on 365 days from 7.00 a.m. to 8.00 p.m. (MEZ/UTC +1)
* Landline German Telekom: Mon-Fri from 9.00 a.m. to 6 p.m.: 6.3 cents/30 sec.; remaining time: 6.3 cents/min.

Mobile phone: higher, depending on mobile phone tariff

Repair service
Repair, calibration and replacement service
Londorfer Strasse 65 • 35305 Grünberg • Germany
Telephone: +49 6401 807-780 (technical issues) or
+49 6401 807-784, -785 (commercial issues)
Fax: +49 6401 807-789
E-mail: repair@bender-service.de

Field service
On-site service
Telephone: +49 6401 807-752, -762 (technical issues) or
+49 6401 807-753 (commercial issues)
Fax: +49 6401 807-759
E-mail: fieldservice@bender-service.de
Mon-Thu 7.00 a.m. to 4.00 p.m., Fri 7.00 a.m. to 1 p.m. (MEZ/UTC +1)

Table of Contents

1 General instructions

1.1 How to use this manual

This manual is intended for qualified personnel working in electrical engineering and electronics!
Part of the device documentation, in addition to this manual, is the enclosed "Safety instructions for Bender products".

Read the manual before mounting, connecting and commissioning the device.
Always keep the manual within easy reach for future reference.

1.2 Indication of important instructions and information

DANGER! Indicates a high risk of danger that will result in death or serious injury if not avoided.

WARNING! Indicates a medium risk of danger that can lead to death or serious injury if not avoided.

CAUTION! Indicates a low-level risk that can result in minor or moderate injury or damage to property if not avoided.

Information can help to optimise the use of the product.

Signs and symbols

	Disposal		Temperature range		Protect from dust
	Protect from moisture		Recycling	RoHS	RoHS directives

1.3 Training courses and seminars

www.bender.de > Know-how > Seminars.

1.4 Delivery conditions

The conditions of sale and delivery set out by Bender apply. These can be obtained from Bender in printed or electronic format.

The following applies to software products:

ZVEI: Die Elektroindustrie

"Software clause in respect of the licensing of standard software as part of deliveries, modifications and changes to general delivery conditions for products and services in the electrical industry."

1.5 Inspection, transport and storage

Check the shipping and device packaging for transport damage and scope of delivery. The following must be observed when storing the devices:

1.6 Warranty and liability

Warranty and liability claims in the event of injury to persons or damage to property are excluded in case of:

- Improper use of the device.
- Incorrect mounting, commissioning, operation and maintenance of the device.
- Failure to observe the instructions in this operating manual regarding transport, commissioning, operation and maintenance of the device.
- Unauthorised changes to the device made by parties other than the manufacturer.
- Non-observance of technical data.
- Repairs carried out incorrectly.
- Use of accessories and spare parts not recommended by Bender.
- Catastrophes caused by external influences and force majeure.
- Mounting and installation with device combinations not recommended by the manufacturer.

This operating manual and the enclosed safety instructions must be observed by all persons working with the device. Furthermore, the rules and regulations that apply for accident prevention at the place of use must be observed.

1.7 Disposal of Bender devices

Abide by the national regulations and laws governing the disposal of this device.

For more information on the disposal of Bender devices, refer to

www.bender.de > Service & support.

1.8 Safety

If the device is used outside the Federal Republic of Germany, the applicable local standards and regulations must be complied with. In Europe, the European standard EN 50110 applies.

DANGER! Risk of fatal injury due to electric shock! *Touching live parts of the system carries the risk of:*

- A fatal electric shock
- Damage to the electrical installation
- Destruction of the device

Before installing and connecting the device, make sure that the installation has been de-energised. Observe the rules for working on electrical installations.

2 Product description

2.1 Intended use

The CP9xx-x alarm indicator and operator panels are intended for use in medical facilities as well as industrial and single-purpose buildings.

They are used for:

- Display and visualisation of operating, warning and alarm messages
- Central control and parameter setting of BMS bus devices (BMS = Bender Measuring Device Interface)
- Output of visual and acoustic warning messages
- Indication of measured values and setting of limit values for the purpose of measured value monitoring of BMS-capable Bender monitoring systems, such as MEDICS®, RCMS or EDS.

In addition, they are used for display, control and operation of:

- Operating theatre tables
- Supply systems for medical gases
- Air conditioning and ventilation systems
- Room lighting
- Communication systems
- Third-party systems

All technical devices installed in one alarm indicator and operator panel constitute a technical centre in the respective room. Please heed the limits of the area of application indicated in the technical specifications. Any other use than that described in this manual is regarded as improper.

Intended use implies:

- System-specific settings
- Observation of all information in the operating manual
- Compliance with test intervals

2.2 Device features

The CP9xx-x series includes the following variants of customised alarm indicator and operator panels:

- CP9xx-F (only with front foil)
- CP9xx-G (only with glass front plate)
- CP9xx-H (with front foil and glass front plate)

The following basic types are described in the CP9xx-x series:

CP907-F, CP915-F with front foil Control Panel with COMTRAXX®	CP9xx-F alarm indicator and operator panels are equipped with a front foil behind which the various touch monitors are installed.
CP907-F	Alarm indicator and operator panel with complete CP907 (B95061080) integrated behind a foil (installation with inspection window and retaining frame).
CP915-F	Alarm indicator and operator panel with PCAP touch monitor (15.6", 16:9 format).
CP921-F	Alarm indicator and operator panel with resistive touch monitor (21.5", 16:9 format).
CP915-G and CP924-G with glass front plate in bezel frame or mounting frame	The CP915-G and CP924-G alarm indicator and operator panels cannot be equipped with any further components or accessories.
CP9xx-H	Alarm indicator and operator panels with glass front plate and foil front (15.6", 24", 16:9 format)

Since with the matt, antibacterial front foil the display surfaces of the monitors and also inspection windows of other components must be coated for better transparency, the use of the highly transparent foil is preferred.

Foil touch panels are individually programmed and are usually connected to a remote or external I/O control unit, which in turn is set up and parameterised individually according to the project. Depending on the requirements, the CP9xx-x alarm indicator and operator panel can be provided with one or two front plates. The front plates are usually hinged on the right or left and right side.

The individual and project-related elevation illustrations, circuit diagrams, programming and datasheets are also an important part of this manual. These must also be read and observed prior to commissioning and operation.

Some implementation examples are given below:

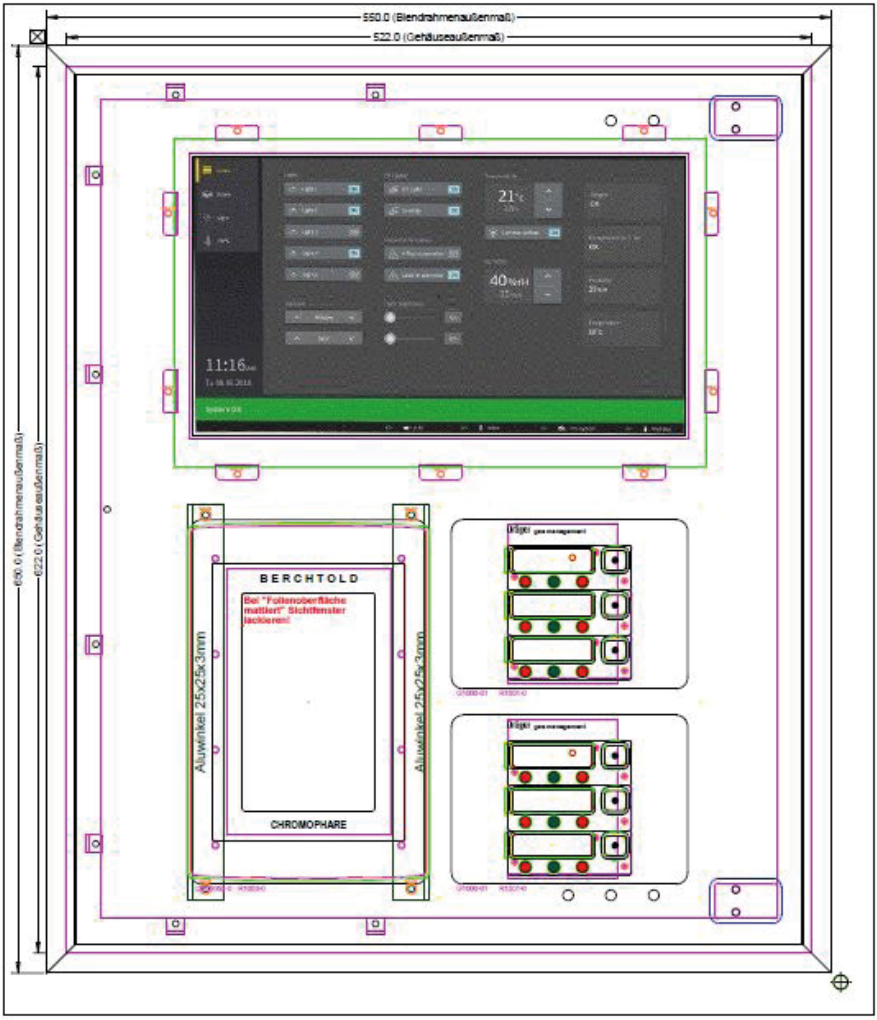


Fig. 2–1 CP915-F in bezel frame enclosure with individual, project-specific internal components

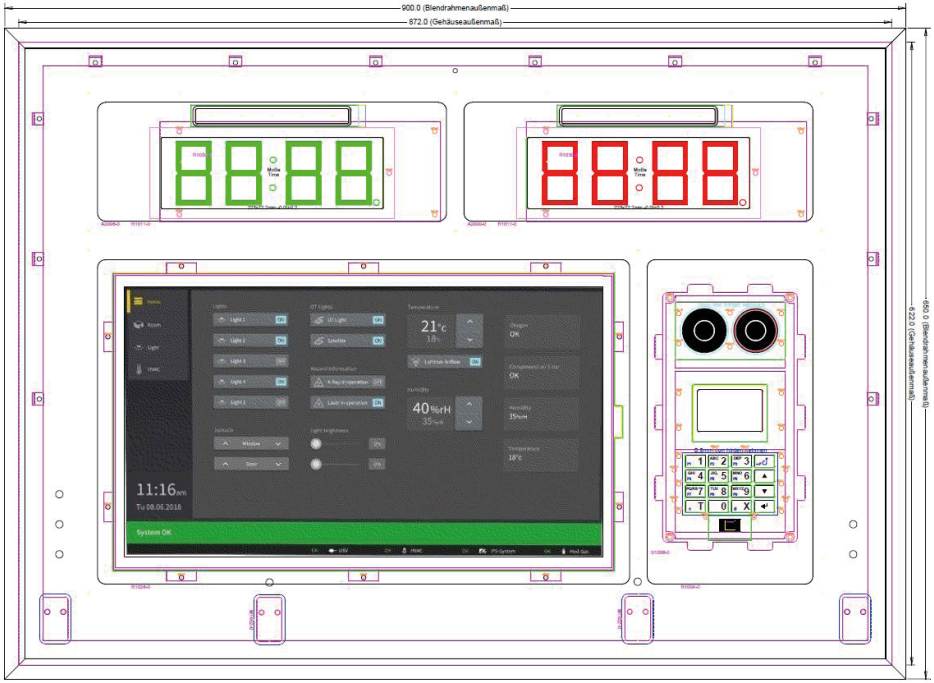


Fig. 2–2 CP921-F in bezel frame enclosure with individual, project-specific internal components

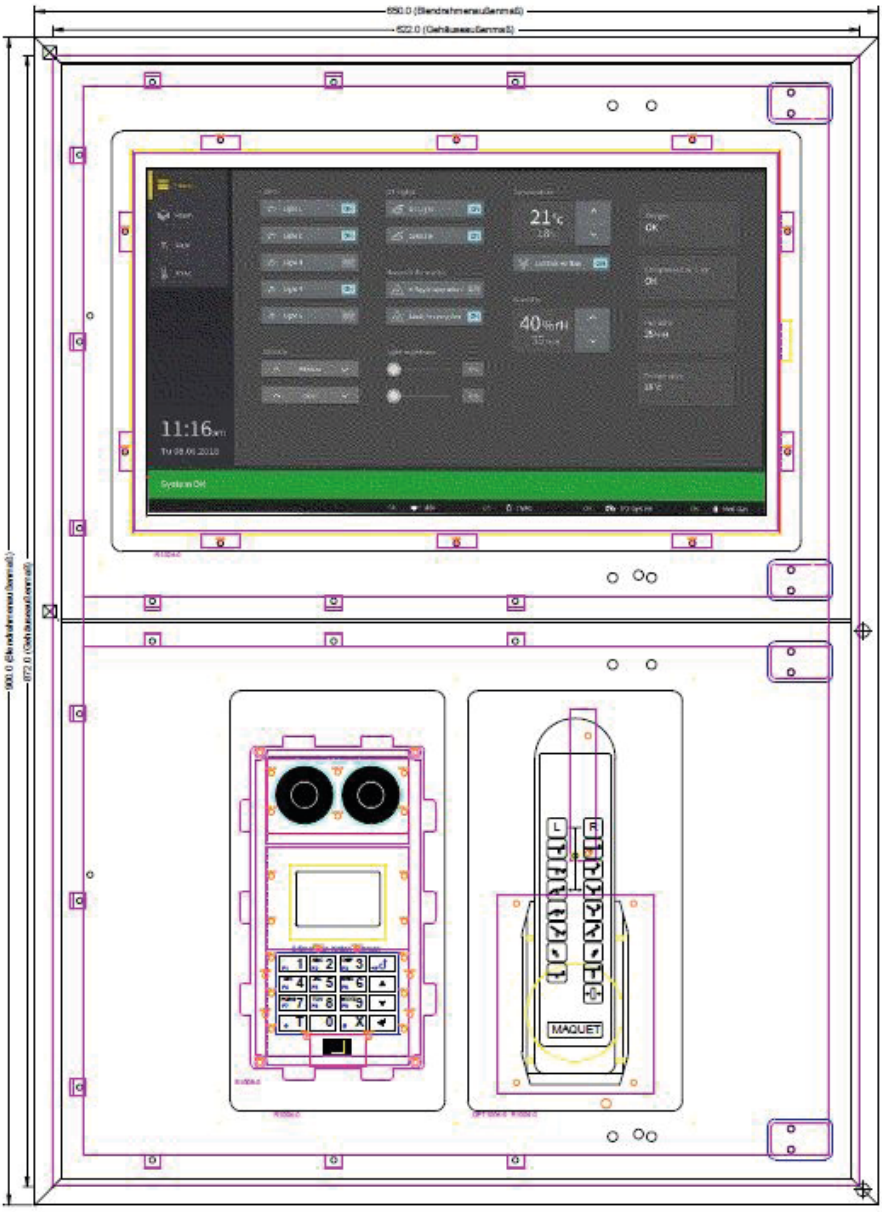


Fig. 2–3 CP921-F with two front plates in bezel frame enclosure.
Lower front plate with individual, project-specific internal components

Fig. 2–4 CP915-F with mounting frame with individual, project-specific internal components

Fig. 2–5 CP924-H with two front plates in bezel frame enclosure, upper front plate glass, lower front plate with foil front (including examples of customised individual internal components)

Fig. 2–6 CP924-H with two front plates in bezel frame enclosure
Left front plate glass, right front plate foil front and individual, project-specific internal components

Fig. 2–7 CP924-H with two front plates with bezel frame enclosure
Upper front plate glass, lower front plate with foil front and individual, project-specific internal components

2.3 Applications

- Optimum visualisation on the display tailored to the user
- Integration of compatible Bender products (ISOMETER®, ATICS®, RCMS, EDS, LINETRAXX® and MEDICS® systems, universal measuring devices and energy meters)
- Individual instructions in case of alarms (optionally available)
- Selective notification to different users in case of alarms
- Control and regulation of systems such as air conditioning or blinds control.

2.4 Function

CP9xx-x alarm indicator and operator panels can be integrated into the existing EDP structure like PCs, if required. Contact your IT administrators in this regard. After connection to the network and compatible Bender products, all system devices can be accessed from any PC via a web browser. In this way, all important system information is directly available.

Verified web browsers: Microsoft Internet Explorer, Mozilla Firefox, Google Chrome

Each alarm indicator an operator panel is individually configured and tailored to the requirements of the user.

2.5 Software products used

CP9xx-x alarm indicator and operator panels are equipped with the COMTRAXX® user interface. It is described separately in the CP9xx manual (D00349).

2.6 BMS page of the CP9xx-x alarm indicator and operator panel

The majority of Bender devices communicate via the internal BMS bus. The CP9xx-x alarm indicator and operator panel can be operated as a master or as a slave.

The CP9xx-x alarm indicator and operator panel is to be operated as master when:
- Parameters are queried or changed
- Specific control commands are given
Please note that not all BMS masters can surrender their master function!

2.7 Address configuration and termination

To ensure proper functioning of the CP9xx-x alarm indicator and operator panel, correct address assignment and termination is of utmost importance.

On delivery, the systems are pre-programmed according to the project agreements and the addressing is correct.

Multiple assignment of addresses
The default system name on all Bender BCOM devices is "SYSTEM". If several systems with the same system name are integrated into the same network, addresses are assigned twice. This leads to transmission errors. Always enter a unique BCOM system name during initial setup.

On delivery, all project-specific settings are available.

3 Mounting and connection

3.1 Mechanical installation

3.1.1 General description

The mechanical design of the enclosure for flush mounting with bezel frame is oriented toward longevity and particularly suited for the high hygienic requirements in medical locations. The enclosures are all custom made to suite the technical and mechanical requirements on site.

The actual flush-mounting enclosure is made of stiff, grey 4 mm PVC plastic or 3 mm aluminium with an extruded aluminium profile of natural aluminium colour.

The bezel frame covers a gap of up to 13 mm. Please refer to the chapter “3.2.1 Mounting a flush-mounting enclosure with bezel frame enclosure“ for more information
The size of the circular gap between the bezel frame and the front plate is 0.5 mm.
The front plate features a concealed seal to offer the highest possible level of protection.

The front plate is attached to the bezel frame with concealed hinges. The location of the hinges are according to the individual elevation illustrations.

CP9xx-G alarm indicator and operator panels have a glass front plate without hinges. The glass front plate is retained in the enclosure by a snap-in mechanism.

Caution! Damage to the glass front plate!
Placing the suction lifter in the middle and pulling only at this point may damage the glass front plate.

The necessary PCBs and components are attached to the front plate using bolts. Other electrical components are connected to the components located on the mounting plate via a flexible hose. The mounting plate can be easily removed from the flush-mounting enclosure to install it. The cable connections between the front plate and the mounting plate do not need to be disconnected.

Since no other components are attached to the rear side of the enclosure except for the mounting plate, the technician has sufficient space for installation.

Please observe chapter “3.2 Mounting instructions“ and chapter “3.3 Fastening, cable entry“.

3.1.2 Opening and closing the front plate

According to the subsequent standards, the enclosure may only be opened using keys or tools (e.g. a suction lifter):

- VDE 0660-600-1, -2, chap. 8.4.2.3
- IEC/EN 61439-1, -2, chap. 8.4.2.3

Each alarm indicator and operator panel is supplied with a suction lifter, which is normally attached to the cable harness. Take out the suction lifter before closing the panel front.
The suction lifter is your "key" to the alarm indicator and operator panel. Keep it close to the alarm indicator and operator panel (see “3.1.3 Removing the front plate of CP915 and CP924“).

Caution! Damage to the bezel frame and seal!
Do not use a screw driver or knife to open the front plate. The bezel frame and the seal may be damaged.

Refer to the elevation illustrations to see on which side the door/hinges are mounted. Open the front plate by placing the suction lifter at the lower corner on the opposite side of the hinges.

In order to prevent unintentional opening of the front panel due to protruding components (e.g. socket-outlets, operating theatre table controls), which provide a possible of holding point for opening, the front panel is secured by a safety screw (fillister head M4x10 mm with rosette) located in the middle of the side opposite to the hinges.
Pull the suction lifter to open the front.

To close the alarm indicator and operator panel, lift off the front plate slightly holding onto the suction lifter and start pressing from the lower corner adjacent to the hinges all the way around the front plate.
Make sure that the spring catches are firmly pressed into the slot of the frame and the plate surface is not higher than the bezel frame.

Caution! Damage/Failure due to fluid ingress!
If the seal of the front plate is not positioned evenly in the bezel frame, cleaning fluids may enter the alarm indicator and operator panel, damage the electronics and thereby cause a failure of the panel. Make sure that the seal is installed evenly in the frame.

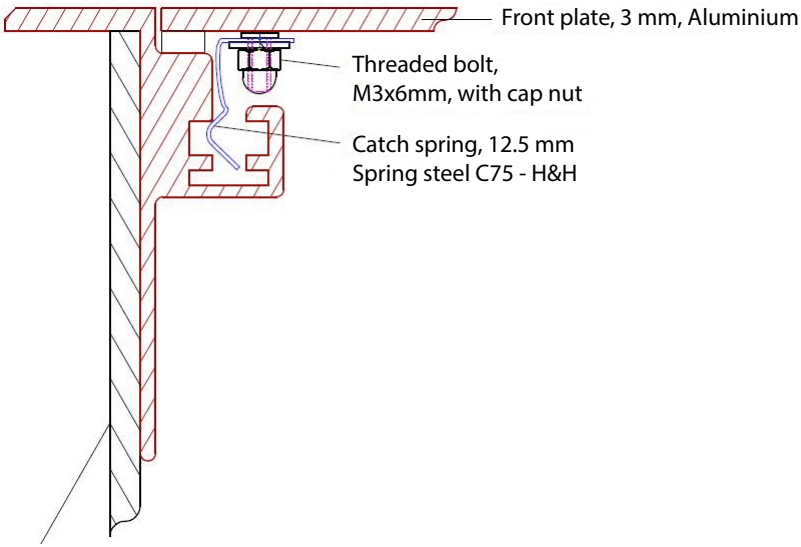
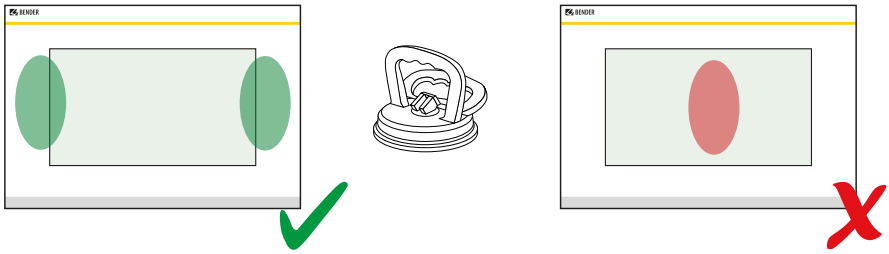


Fig. 3–1 Cross section view

3.1.3 Removing the front plate of CP915 and CP924

The front plate is removed from the enclosure of the CP915 and CP924 alarm indicator and operator panel by means of a suction lifter. For this purpose, the tool must be placed at the points marked below and the front plate must be removed until it clicks into place for the first time. If the front plate is detached at all four corners, the plate can be lifted off the enclosure.



CAUTION! Damage to the glass front plate with touch monitor!
For the CP915-G and CP924-G alarm indicator and operator panels, use only the suction lifter for CP9xx displays (B95061911). If this is not observed, the front plate may slip off and the glass plate with touch monitor may fall down and break.

3.2 Mounting instructions

Important mounting instructions:

- The enclosure must be mounted on an even surface!
- The enclosure must not warp during mounting!
- Make sure that the enclosure is mounted at right angles!
- It is recommended to make the wall cutout 3 mm larger than the flush-mounting enclosure!

For installation of the flush-mounting enclosure with bezel frame refer to illustration # 9800267-01_00 on the subsequent page.

- It is recommended to support the device in the wall, e.g. in an "H" type wall construction the enclosure should rest on the horizontal beam.
- Before inserting the cables, remove the knockouts or flange plates.
- Lead the power supply cables and control wiring cables into the enclosure.
- Insert the enclosure carefully into the wall cutout.
- Due to the size and weight of the enclosure it is recommended to carry out these steps with another person.
- The fastening holes can be drilled almost anywhere into the enclosure. Please follow the instructions in chapter “3.3 Fastening, cable entry“.
- The bezel frame has to be sealed all the way around to the wall surface using a durable elastic seal (e.g. silicone).
- The bezel frame has to be sealed all the way around to the wall surface using a durable elastic seal (e.g. silicone).

3.2.1 Mounting a flush-mounting enclosure with bezel frame enclosure

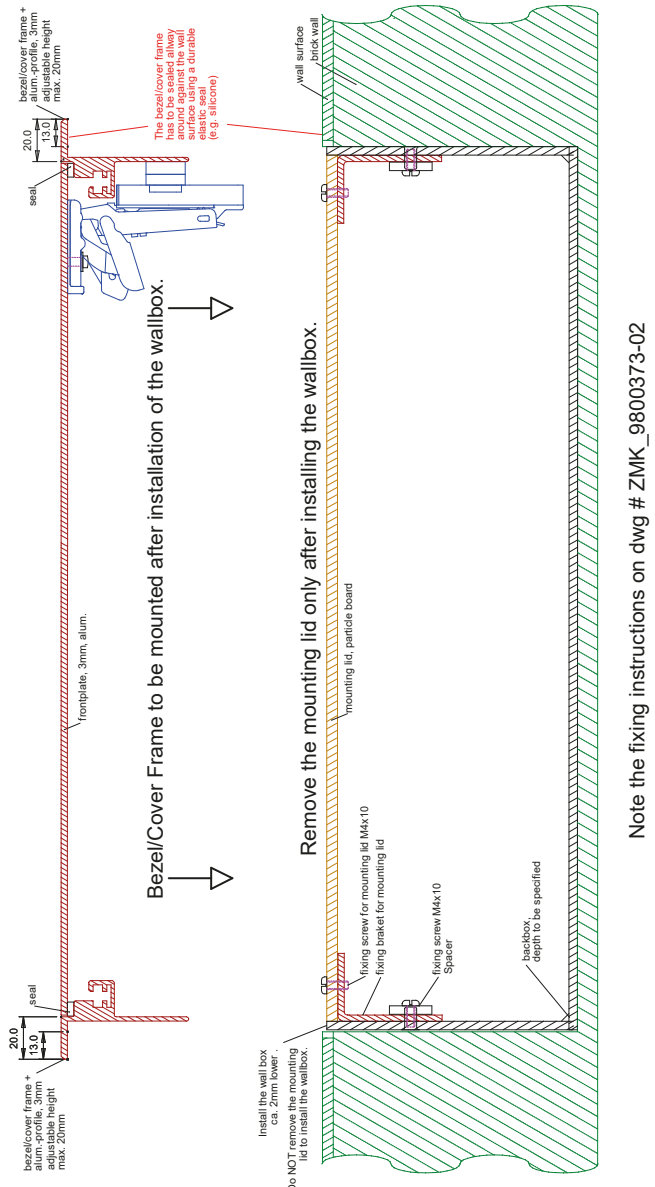


Fig. 3–1 Illustration No. 9800267-01_00

3.2.2 Cross section view flush-mounting enclosure with bezel frame

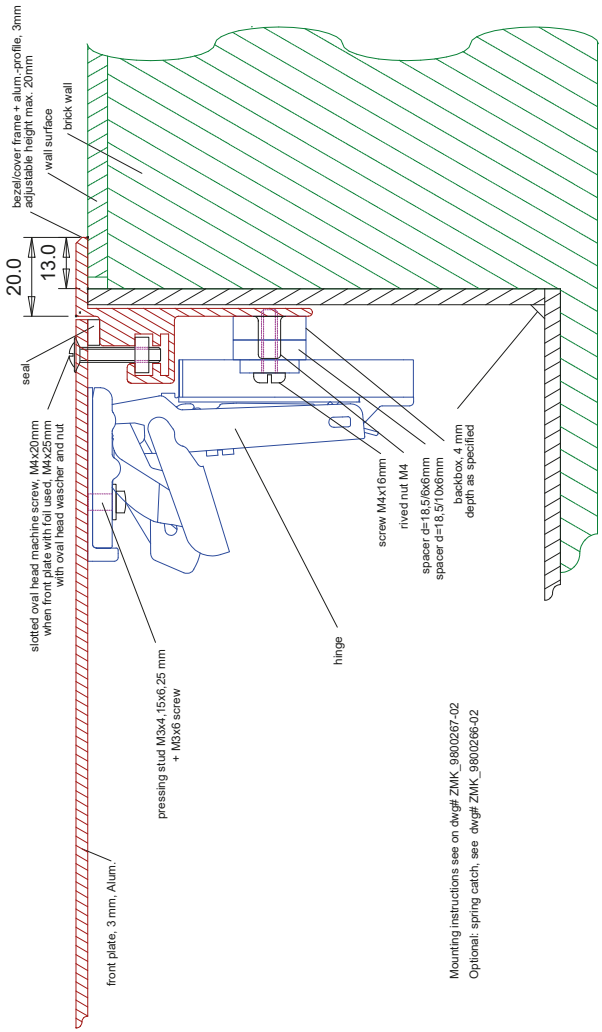


Fig. 3–1 Illustration No. 9800269-01_00

3.2.3 Cross section view flush-mounting enclosure with bezel frame for cavity wall mounting

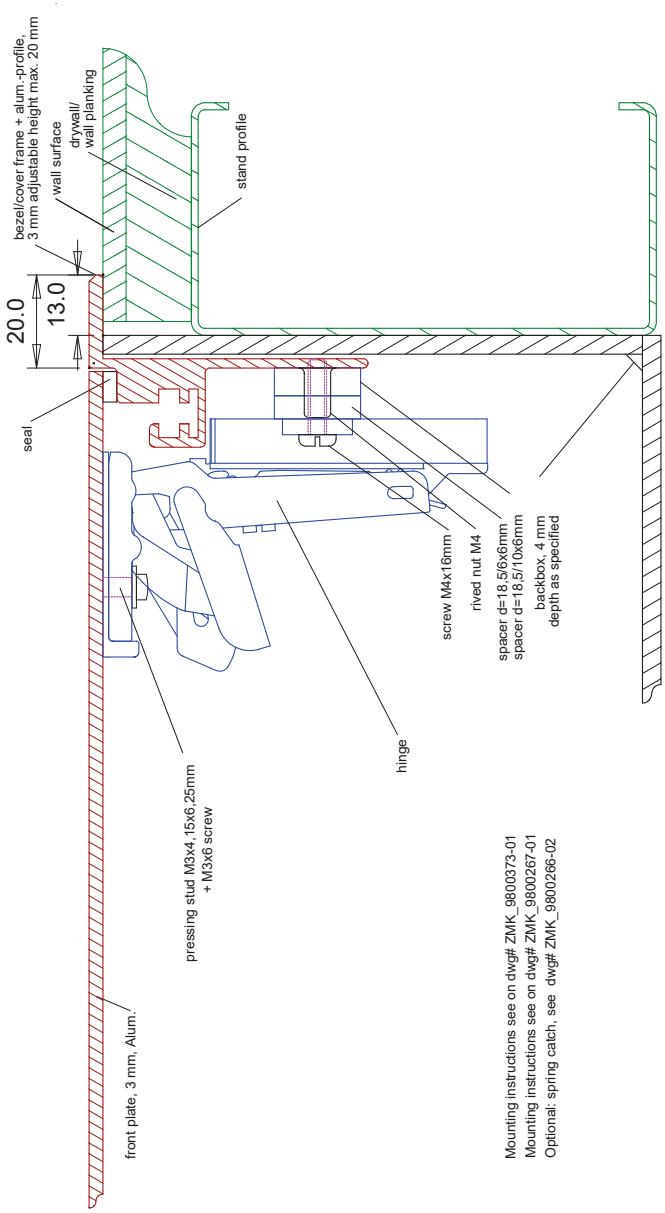


Fig. 3–1 Illustration No. 9800270-01_00

3.3 Fastening, cable entry

3.3.1 Fastening

Please observe illustration # 9800373-01_00 on the subsequent page.

- Fastening holes can be drilled into the plastic side pieces of the enclosure (see hatching). From the enclosure bottom in the area between 8 mm and the calculated value fastening T or from the finished wall surface at a depth greater than 62 mm (see cross section illustration).
- Keep the area clear where the adapter plates of the hinges are positioned.
- If fastening holes are required behind the mounting plate, the holes must be counter sunk to accommodate a counter sunk screw.
- The enclosure bottom plate is equipped with 4 rivet nuts M4x6x11.5 mm. The mounting plate rests on these rivet nuts and needs to be fastened using a spacer between the mounting plate and the mounting screw M4x10 mm. Do NOT place the spacer between the enclosure bottom plate and the mounting plate!

3.3.2 Cable entry

Please observe illustration # 9800373-01_00 on the subsequent page.

- Provisions for cable entry are made as per customer specification. Generally, they are located at the top of the side panels. (see cross section illustration below).
- If there are no requests from the customer, additional cable entry holes can be drilled into the enclosure. From the enclosure bottom in the area between 8 mm and the calculated value fastening D or from the finished wall surface at a depth greater than 62 mm (see cross section illustration).

Mounting and fastening of flush-mounting enclosure with bezel frames

Mounting Informations:

1. The enclosure must be mounted on an even surface.
2. The enclosure must not be twisted during or after fixing.
3. Make sure the enclosure is mounted squared.
4. Important: Please note the mounting instructions on drawing# ZMK_9800267-02.
5. It is recommended to make the wall cutout at 3mm larger than the actual wallbox outside dimension:

Standard Dim. Bezel Frame Width or. Height (mm)	Standard Dim. Wallbox Width or. Height (mm)	Wall Cutout Width or. Height (mm)
183	157	160
333	307	310
483	457	460
633	607	610
783	757	760
933	907	910

Fixing Points:

1. Fixing holes can be drilled into the side pieces of the enclosure (see cross section drawing). From the enclosure bottom between 8mm and the calculated value fixing D resp. from the finished wall surface in a depth larger than 62mm (see cross section drawing).
2. If fixing holes are required behind the mounting plate (see hatched area) the mounting plate must be removed before drilling (see drawing# ZMK_9800267-02).
3. The enclosure bottom plate is equipped with 4 rivet nuts M4x8x11.5mm. The mounting plate rests on these rivet nuts and needs to be fixed using a spacer between the mounting plate and the mounting screw Mx 10mm. Do NOT place the spacer between the enclosure bottom plate and the mounting plate !

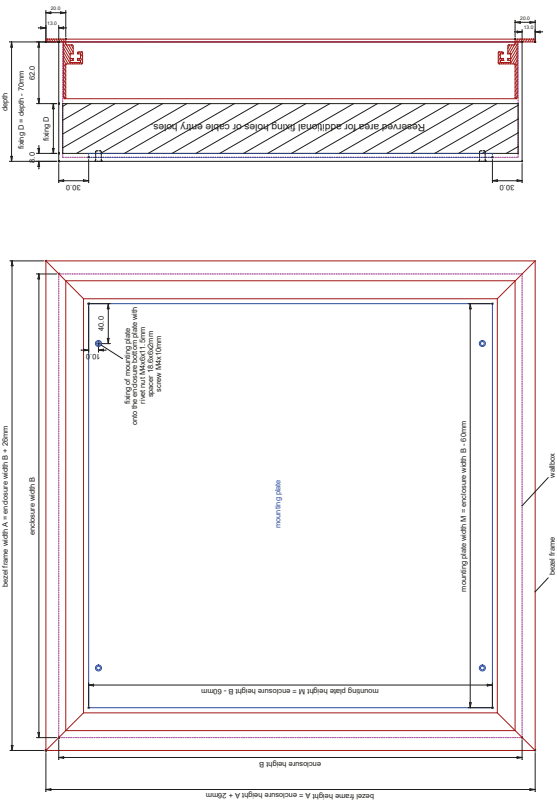
Cable Entry:

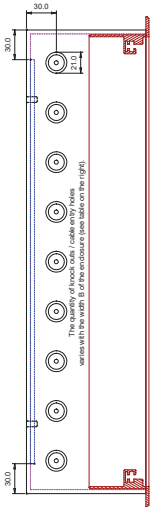
1. Provisions for cable entry are made as per the customers request/specification. Usually there are knock outs and cable entry holes in the top of the enclosure (see crosssection drawing below).
2. Additional cable entry holes can be drilled into the side pieces of the enclosure (see crosssection drawing). From the enclosure bottom between 8mm and the calculated value fixing D resp. from the finished wall surface in a depth larger than 62mm (see cross section drawing).

Important:
Note the mounting instructions on drawing# ZMK_9800267-02.

For a cross section drawing of the spring catch refer to drawing# ZMK_9800266-02.

Standard dim. bezel frame width A (mm)	Standard dim. enclosure width B (mm)	Qty. of knock outs / cable entry holes
183	157	3
333	307	6
483	457	9
633	607	12
783	757	15
933	907	18





Note:
On metal/aluminum back boxes the incoming wires and cables must be protected by cable fittings or edge guards/protectors.
(Mounting instruction on back boxes with gland plates refer to drwg# ZMK_9800510-02)

Fig. 3–1 Illustration No. 9800373-01_00

3.4 Electrical connection

- The valid standards and regulations apply.
- The national safety and accident prevention regulations apply.
- Switch off the power supply before working on this electrical equipment.
- Take precautions against unintentional reconnection.
- The wiring must be done in compliance with the supplied wiring diagram and documentation.
- Failure to observe or change of the wiring or the use of non-recommended accessories may result in injury, fire, electric shock or damage to property.

Important note:
The individual and project-related elevation illustrations, programming and datasheets are also an important part of this manual. These must also be read and considered prior to commissioning and operation.

The electronics are buffered and only switch off after a delay of approx. 90 seconds.

Notes regarding EMC-compliant installation
The electrical equipment complies with the requirements of DIN EN 50081-2 and DIN EN 50082-2. It meets the limit value class A. The equipment has been designed for the use in non-public or industrial low voltage systems or facilities (environment A, acc. to VDE 0660-600-1, -2, EN 61439-1,-2 Part J, J.9.4).

- The installation has to be carried out by EMC-skilled personnel.
- To comply with the EMC requirements the wiring and installation instructions in the enclosed documentation has to be followed, especially those of manufacturers other than Bender.
- The internal wiring and the installation has been made in accordance with the specifications of the components manufacturer.
- To keep the electromagnetic influence as low as possible, the standard EMC measures have to be taken (e.g. separation of power lines and low voltage/signal lines, shielding/earthing, protection against atmospheric discharge, etc.).

The following standards have to be particularly observed:

- IEC 60364, DIN VDE 0100 Erection of low-voltage electrical installations up to 1000 V
- DIN EN 61439-1 (VDE 0660-600-1) Part J, J.9.4 Low-voltage switchgear and control gear assemblies
- DIN EN 61439-2 (VDE 0660-600-2 Low-voltage switchgear and control gear assemblies)
- DIN EN 50081-2 (VDE 0839-81-2) EMC Generic emission standard
- DIN EN 50082-2 (VDE 0839-82-2) EMC Generic immunity standard

4 Important information

Viruses are able to spy on data, spread themselves or destroy data in your network. Viruses are easily spread since they transfer from one network to the other e.g. by the joint use of USB devices. Viruses are constantly being written or modified; therefore, it is essential that the firewall and antivirus software in your LAN network is always up to date. Contact your IT administrators in this regard.

No antivirus software is installed on this CP9xx-x alarm indicator and operator panel.

The system has been delivered free of software viruses.

This system is running on an embedded Linux (Yocto) operating system. The operating system is especially adapted to this hardware and software. Many interfaces are not implemented.

The embedded Linux (Yocto) operating system should preferably be operated in a separate network. If it is integrated into existing networks, it should be integrated into the network environment as a subnet with its own secure router.

Contact your IT administrator before connecting this panel to your network or before connecting any USB device (e.g. a USB stick) to it.

Before connecting any external USB device (e.g. USB sticks with music files) run an antivirus software on this device to eliminate the risk of virus infection.

Failure to observe these notes and recommendations might cause loss of data, system malfunctions and device failure as well as failure of all connected equipment.

Read the "COMTRAXX® CP9xx - Control Panel" (D00349) manual for the operation of the CP9xx and CP9xx-x alarm indicator and operator panels.

The I/O control unit might be external and is always individually equipped. The actual design is shown in the individual, project-related circuit diagram.

Do not disconnect the system from the power supply during shutdown or start-up. This might result in an undefined status of the computer system and the system might fail.

Technical data

Supply voltage

Supply voltage ..... AC 230 V
Frequency range ..... 50 . . . 60 Hz
Internal supply ..... DC 12/24 V
Power consumption ..... < 55 VA

Touch Monitor

Size	Resolution
24"/16:9	1920x1080
21.5"/16:9	1920x1080
15.6"/16:9	1366x768

Background lighting ..... top/bottom edge side LED type
Amount colours ..... 16.2 million
Electrical endurance ..... > 50,000 hours

Further technical data can be found in the "COMTRAXX® CP9xx-Kit" (D00399) manuals.

The actual I/O control unit with the required input and output modules might be external to the CP9xx-x alarm indicator and operator panels and is always individually equipped. The actual design is shown in the individual, project-related circuit diagram.

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