Instruction handbook

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be in motion be in motion

BAUMÜLLER

Touch panel
IPD

CE

E	5.20007.01

Read the Instruction handbook before starting any work!

Preliminary information

Warning Insofar as this document is identified as being preliminary information, the following applies:
this version is regarded as providing advance technical information to users of the described devices and their functions at an early enough time in order to adapt to any possible changes or expanded functionality.
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This Instruction handbook are a part of the equipment/machine. This Instruction handbook must be available to the operator at all times and must be in legible condition. If the equipment/machine is sold or moved another location, this Instruction handbook must be passed on by the owner together with the equipment/machine.
After any sale of the equipment/machine, this original and all copies must be handed over to the buyer. After disposal or any other end use, this original and all copies must be destroyed.

When the present Instruction handbook is handed over, corresponding sets of Instruction handbooks of a previous version are automatically invalidated.
Please note that the specifications/data/information **are current values according to the printing date**. These statements are **not legally binding** with regard to measurements, computation or calculations.
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No liability can be accepted concerning the correctness of this Instruction handbook unless otherwise specified in the General Conditions of Sale and Delivery.

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1

GENERAL

1.1 Information on this Instruction handbook

This Instruction handbook provides important information on handling the device. A prerequisite for safe work is compliance with all specified safety notes and procedural instructions.

Additionally, the valid accident prevention regulations and general safety regulations applicable to the scope of application the device must be complied with.

Read this Instruction handbook, particularly the safety notes chapter, completely before beginning any work on the device. This Instruction handbook is part of the product and must be kept accessible to personnel at all times in the immediate vicinity of the device.

1.2 Key to symbols

Warning notes

Warning notes are identified by symbols in this Instruction handbook. The notes are introduced by signal words that express the extent of the danger.

It is imperative that these notes be complied with and are conscientiously regarded in order to prevent accidents, personal injury and material damage.

DANGER!

....this indicates a hazardous situation which, if not avoided, will result in death or serious injury.

WARNING!

....this indicates a hazardous situation which, if not avoided, could result in death or serious injury.

CAUTION!

....this indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

NOTICE!

....indicates a hazardous situation which, if not avoided, may cause material damage.

Recommendations

NOTE!

....highlights useful hints and recommendations, as well as information for the efficient and trouble-free use.

1.3 Limitation of liability

All specifications and notes in this Instruction handbook were compiled taking into account the applicable standards and regulations, the state of the art and our knowledge and experience of many years.

The manufacturer assumes no liability for damages due to:

- noncompliance with the Instruction handbook
- usage for other than the intended purpose
- usage by untrained personnel

The actual scope of delivery can vary in case of optional equipment, laying claim to additional order options, or on account of the latest technical changes to the explanations and representations described herein.

The user bears the responsibility for performing service and commissioning in accordance with the safety regulations of the applicable standards and all other relevant governmental or local regulations referring to the dimensioning and protection of conductors, grounding, disconnectors, overcurrent protection, etc.

The person who carried out the mounting or installation is liable for any damage, which incurred when assembling or connecting the device.

1.4 Copyright protection

The Instruction handbook must be treated confidentially. It is to be used exclusively by personnel who work with the device. The consignment of the Instruction handbook to third persons without the written permission of the manufacturer is prohibited.

NOTE!

The specific contents, text, drawings, images and other representations are copyrighted and subject to industrial property rights. Any prohibited usage is punishable by law.

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NOTE!

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1.5 Spare parts

WARNING!

False or flawed spare parts can lead to damage, malfunction or complete failure, thus endangering safety.

Therefore:

- Only use original spare parts of the manufacturer.

Procure spare parts through an authorized dealer or directly from the manufacturer.

See also ▹Accessories and Spare parts◃ from page 83.

1.6 Disposal

Insofar as no take-back or disposal agreement has been made, please disassemble units correctly and properly recycle the constituent parts.

See also ▹Disposal◃ on page 85.

1.7 Guarantee provisions

The guarantee provisions are stated in a separate document of the sales documents.

The devices described herein may only be operated in accordance with the stipulated methods, procedures and conditions. Anything else not presented here, including the operation of devices in mounted positions, is not permitted and must be cleared with the plant on a case-by-case basis. If the devices are operated in any other manner than as described within this Instruction handbook, then all guarantee and warranty rights are rendered null and void.

1.8 Customer service

Our customer service is available to provide you with technical information.

Info on the responsible contact persons is available at all times via telephone, fax, mail or the Internet.

1.9 Terms used

The term „device“ is also used in this documentation for this Baumüller product „**Touch panel IPD**“.

1.10 Applicable documents

Components of other manufacturers are integrated into the device. For these purchased parts, hazard assessments have been performed by the respective manufacturers. The compliance of the design construction with the applicable European and national regulations has been declared for the components by the respective manufacturers.

2

SAFETY

This section provides an overview of all of the important safety aspects for optimum protection of personnel as well as for the safe and problem-free operation.

2.1 Contents of the Instruction handbook

Each person who is tasked with performing work on or with the device must have read and understood the Instruction handbook before working with the device. This also applies if the person involved with this kind of device or a similar one, or has been trained by the manufacturer.

2.2 Changes and modifications to the device

In order to prevent hazards and to ensure optimum performance, no changes, additions or modifications may be undertaken on the device that have not been explicitly approved by the manufacturer.

2.3 Appropriate Use

The device is conceived and constructed exclusively for usage compliant with its intended purpose described in this Instruction handbook.

WARNING!

Danger arising from usage for an unintended purpose!

Any usage that goes beyond the intended purpose and/or any non-compliant use of the device can lead to dangerous situations.

Therefore:

- Only use the device compliant with its intended purpose.
- Observe all specifications of this Instruction handbook.
- Ensure that only qualified personnel work with/on this device.
- Ensure that the power supply complies with the stipulated specifications.
- The device may only be operated in a technically flawless condition.

2.4 Responsibility of the operating company

The device will be used in commercial areas. Thus, the proprietor of the device is subject to the legal work safety regulations.

Along with the notes on work safety in this Instruction handbook, the safety, accident prevention and environmental protection regulations valid for the area of application of this device must be complied with. Whereby:

- The operating company must inform himself about the applicable work health and safety regulations and ascertain, in a hazard assessment, any additional hazards that could arise from the special working conditions in the use area of the device. These must then be implemented in the form of operating instruction for operation of the device.
- This Instruction handbook must be kept accessible to personnel working with the device at all times in the immediate vicinity of the device.
- The specifications of the Instruction handbook must be adhered to completely and without exception.
- The device may only be operated in a technically faultless and operationally safe condition.

2.5 Training of the personnel

WARNING!

Risk of injury due to insufficient qualifications!

Improper handling can lead to significant personal injury and material damage.

In this Instruction handbook, the following qualifications are stipulated for various areas of activity:

- **Operating personnel**
  - The drive system may only be operated by persons who have been specially trained, instructed and authorized.
  - Troubleshooting, maintenance, cleaning, maintenance and replacement may only be performed by trained or instructed personnel. These persons must know the Instruction handbook and act accordingly.
  - Commissioning and training may only be performed by qualified personnel.

- **Qualified personnel**
  - Electrical engineers authorized by Baumüller Nürnberg GmbH, and qualified electricians of the customer or a third party who have learned to install and maintain Baumüller drive systems and are authorized to ground and identify electrical power circuits and devices in accordance with the safety engineering standards of the company.
  - Qualified personnel have had occupational training or instruction in accordance with the respective locally applicable safety engineering standards for the service and use of appropriate safety equipment.

2.6 Fire fighting

DANGER!

Risk of fatal injury from electrical current!

There is a risk of electric shock if an electrically-conductive, fire-extinguishing agent is used.

Therefore:

- Use the following fire-extinguishing agent:

ABC powder / CO_2

2.7 Safety equipment

WARNING!

Risk of fatal injury due to non-functioning safety equipment!

Safety equipment provides for the highest level of safety in a facility. Even if safety equipment makes work processes more awkward, under no circumstances may they be circumvented. Safety can only be ensured by intact safety equipment.

Therefore:

- Before starting to work, check whether the safety equipment in good working order and properly installed.

2.8 Behavior in hazardous situations or at accidents

Preventive measures

- Always be prepared for accidents or fire!
- Keep first-aid equipment (e.g. first-aid kits, blankets, etc.) and fire extinguishers readily accessible.
- Train personnel so that they can handle the accident signalling systems, first aid equipment and life saving equipment.

And if something does happen: respond properly

- Stop operation of the device immediately with an EMERGENCY Stop.
- Initiate first aid measures.
- Evacuate persons from the danger zone.
- Notify the responsible persons of the site.
- Alarm medical personnel and/or the fire department.
- Keep access routes clear for rescue vehicles.

2.9 Signs and labels

The following symbols and information signs are located in the working area. They refer to the adjacencies, where they were affixed.

WARNING!

Risk of injury due to illegible symbols!

Over the course of time, stickers and symbols on the device can become dirty or otherwise unrecognizable.

Therefore:

- Maintain all safety, warning and operating labels on the device in easily readable condition.

Electrical voltage

Only qualified personnel may work in work areas that identified with this.

Unauthorized persons may not touch working materials marked correspondingly.

On the rear panel the following labels are present.

Figure 1: Label position detail

1 Connector label

2 Marking label, refer to ▹Figure 7◃ on page 33 and ▹Type code◃ on page 34

Connector label

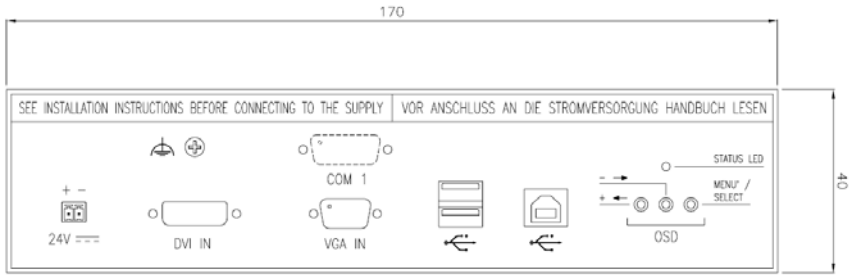


Figure 2: Connector label detail

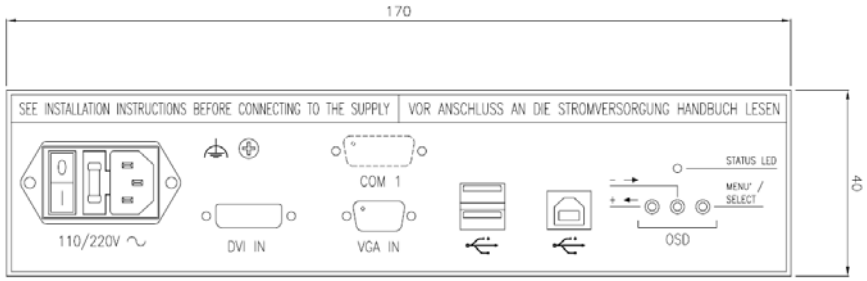


Figure 3: Connector label detail

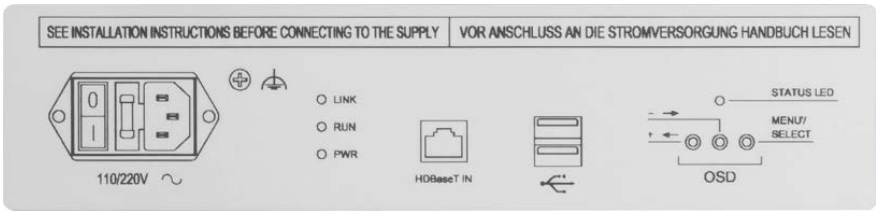


Figure 4: Connector label detail

3

TECHNICAL DATA

3.1 LCD aspect ratio

There are different LCD aspect ratio depending of the frontal panel size:

Panel size	Aspect ratio
8.4”	4 : 3
10.4“	4 : 3
12.1“	4 : 3
15.0”	4 : 3
15.6” wide	16 : 9
17.0”	5 : 4
18.5” wide	16 : 9
19.0”	5 : 4
21.5”	16 : 9

3.2 Dimensions / Weight

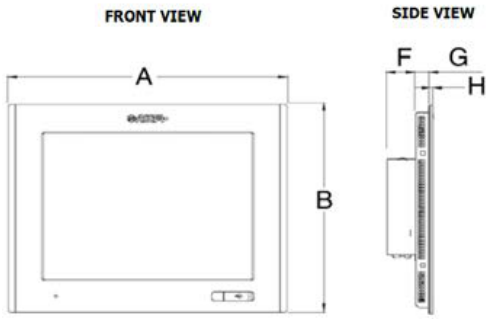


Figure 5: Dimensions

LCD TFT	A	B	F	G	H	Kg
8.4”	250	210	45	19	5	3.1
10.4”	300	245	45	19	5	3.9
12.1”	335	270	45	19	5	4.6
15.0”	390	315	45	19	6	5.3
15.6”	430	275	45	19	6	6.0
17.0”	455	355	45	21	6	6.7
18.5”	500	320	45	19	6	7.3
19.0”	490	388	45	21	6	7.3
21.5”	579	367	45	23	6	8.4

3.3 Technical specifications

8.4”
display features

Dimensions	8,4”
Technology	LCD-TFT active matrix
Active area	170.4 (A) x 127.8 (L) mm
Resolution	800 x 600
Colours	16.7M
Pixel Pitch	0.213 x 0.213 mm
Luminance	600 cd / m² typical
Horizontal visual angle (left : right)	80°:80° typical
Vertical visual angle min (upper : lower)	60°:80° typical
Contrast value on optimal angle	600:1 typical
Response (Rise)	4 ms typical
Response (Decay)	12 ms typical
Power (max.)	5.1 V
Surface treatment	Antiglare
Sidelight	LED
MTBF	80.000 h

10.4”
display features

Dimensions	10,4”
Technology	LCD-TFT active matrix
Active area	212.2 (A) x 158.4 (L) mm
Resolution	800 x 600
Colours	16.2M
Pixel Pitch	0.264 x 0.264 mm
Luminance	400 cd / m² typical
Horizontal visual angle (left : right)	160° typical
Vertical visual angle min (upper : lower)	140° typical
Contrast value on optimal angle	700:1
Response (Rise)	5 ms typical
Response (Decay)	11 ms typical
Power (max.)	5.2 V
Surface treatment	Antiglare
Sidelight	LED
MTBF	50.000 h

12.1” display features

Dimensions	12,1”
Technology	LCD-TFT active matrix
Active area	246,0 (A) x 184,5 (L) mm
Resolution	800 x600
Colours	16.2M
Pixel Pitch	0.3075 x 0.3075 mm
Luminance	500 cd / m² typical
Horizontal visual angle (left : right)	160° typical
Vertical visual angle min (upper : lower)	140° typical
Contrast value on optimal angle	800:1 typical
Response (Rise)	4 ms max
Response (Decay)	12 ms max
Power (max.)	9.08 V
Surface treatment	Antiglare
Sidelight	LED
MTBF	100.000 h

12.1” XGA display features

Dimensions	12,1”
Technology	LCD-TFT active matrix
Active area	245,76 (A) x 184,32 (L) mm
Resolution	1024 x768
Colours	16.2M
Pixel Pitch	0.240 x 0.240 mm
Luminance	600 cd / m² typical
Horizontal visual angle (left : right)	160° typical
Vertical visual angle min (upper : lower)	140° typical
Contrast value on optimal angle	700:1 typical
Response (Rise)	5 ms max
Response (Decay)	11 ms max
Power (max.)	13 V
Surface treatment	Antiglare
Sidelight	LED
MTBF	50.000 h

15.0” display features

Dimensions	15,0”
Technology	LCD-TFT active matrix
Active area	304.1 (H) x 228.1 (W) mm
Resolution	1024 x 768
Colours	16.2 M
Pixel Pitch	0.297 x 0.297 mm
Luminance	450 cd / m² typ.
Horizontal visual angle (left : right)	160° typ.
Vertical visual angle min (upper : lower)	140° typ
Contrast value on optimal angle	700:1 typ
Response (Rise)	2 ms max
Response (Decay)	10 ms max
Power (max.)	11.8 V
Surface treatment	Antiglare
Sidelight	LED
MTBF	100.000 h

15.6” display features

Dimensions	15,6”
Technology	LCD-TFT active matrix
Active area	344,2 (H) x 193,5 (W) mm
Resolution	1366 x 768
Colours	16 M
Pixel Pitch	0.252 x 0.252 mm
Luminance	300 cd / m² typ.
Horizontal visual angle (left : right)	170° typ.
Vertical visual angle min (upper : lower)	160° typ
Contrast value on optimal angle	500:1 typ
Response (Rise)	6 ms max
Response (Decay)	2 ms max
Power (max.)	14,5 V
Surface treatment	Antiglare
Sidelight	LED
MTBF	50.000 h

17.0” display features

Dimensions	17,0”
Technology	LCD-TFT active matrix
Active area	337.9 (H) x 270.3 (W) mm
Resolution	1280 x 1024
Colours	16.7M
Pixel Pitch	0.264 mm
Luminance	350 cd / m² typ.
Horizontal visual angle (left : right)	170° typ.
Vertical visual angle min (upper : lower)	160° typ
Contrast value on optimal angle	1000:1 typ
Response (Rise)	20 ms max
Response (Decay)	10 ms max
Power (max.)	22 V
Surface treatment	Antiglare
Sidelight	LED
MTBF	50.000 h

18.5” display features

Dimensions	18,5”
Technology	LCD-TFT active matrix
Active area	409.8 (H) x 230.4 (W) mm
Resolution	1366 x 768
Colours	16.7 M
Pixel Pitch	0.300 x 0.300 mm
Luminance	300 cd / m² typ.
Horizontal visual angle (left : right)	150° typ.
Vertical visual angle min (upper : lower)	140° typ
Contrast value on optimal angle	1000:1 typ
Response (Rise)	3.5 ms max
Response (Decay)	1.5 ms max
Power (max.)	18,7 V
Surface treatment	Antiglare
Sidelight	LED
MTBF	50.000 h

19.0” display features

Dimensions	19,0”
Technology	LCD-TFT active matrix
Active area	376.3 (H) x 301.1 (W) mm
Resolution	1280 x 1024
Colours	16.7 M
Pixel Pitch	0.294 x 0.294 mm
Luminance	300 cd / m² typ.
Horizontal visual angle (left : right)	178° typ.
Vertical visual angle min (upper : lower)	178° typ
Contrast value on optimal angle	2000:1 typ
Response (Rise)	15 ms max
Response (Decay)	5 ms max
Power (max.)	30,6 V
Surface treatment	Antiglare
Sidelight	LED
MTBF	50.000 h

21.5” display features

Dimensions	21,5”
Technology	LCD-TFT active matrix
Active area	476.6 (H) x 268.1 (W) mm
Resolution	1920 x 1080
Colours	16,7 M
Pixel Pitch	0.248 x 0.248 mm
Luminance	300 cd / m² typ.
Horizontal visual angle (left : right)	178° typ.
Vertical visual angle min (upper : lower)	178° typ
Contrast value on optimal angle	5000:1 typ
Response (Rise)	10 ms max
Response (Decay)	6 ms max
Power (max.)	26,9 V
Surface treatment	Antiglare
Sidelight	LED
MTBF	50.000 h

3.4 Technical data IPD Standard

3.4.1 Technical data IPD-XXXS

Case	Panel mount	
Front panel	Aluminum	
Touchscreen	5 wires resistive technology ▪ on board controller ▪ USB I/F (RS232 optional)	
Frontal protection	IP66	
Power supply	DC	Input voltage 18÷32V DC ▪ not isolated
		Input voltage 18÷36V DC ▪ isolated
	AC	Input voltage 90÷264 V AC ? isolated ▪ Autoranging
Frontal access interfaces	1 x USB 2.0 (Type-A)	
Rear access interfaces	1 x VGA (DB15F) 1 x DVI-D Single Link 2 x USB 2.0 (Type A) 1 x USB 2.0 (HUB input, Type B) 1 x RS232 (DB9F) for T/S, optional	
Environmental specifications	Operating temperature: 0° ÷ +50°C Storage temperature: -5° ÷ +60°C Humidity: 80% (non-condensing)	
Approvals	CE (EN 55022, EN 61000-3-2/3, EN 55024, EN 60950-1), cULus LISTED (UL508)	

Options

Serial T/S	RS232 serial interface for touch-screen ▪ inside monitor installation ▪ without external cable Usage of the serial interface exclude the USB interface operation for touch-screen.	
Direct connection cables	Cables kit 1,8 mt VGA (VGA 1,8 mt / USB 1,8 mt)	
	Cables kit 1,8 mt DVI (DVI 1,8 mt / USB 1, 8mt)	
	Cables kit 7,5 mt VGA (VGA 10 mt / USB 7,5 mt) [1)]	
	Cables kit 7,5 mt DVI (DVI 10 mt / USB 7,5 mt) [1)]	
	Cables kit 10 mt VGA (VGA 10 mt / USB 11 mt amplified) [1)]	
	Cables kit 10 mt DVI (DVI 10 mt/ USB 11 mt amplified) [1)]	
	Extension cable for RS232 touch-screen interface (DB9M/DB9F) 1,8 mt	
Touchscreen		Glass Film Glass (GFG) option
	No Touch-Screen	/
	8,4" Touch-Screen ▪ 5 wires resistive technology ▪ USB I/F	x
	10,4" Touch-Screen ▪ 5 wires resistive technology ▪ USB I/F	x
	12,1" Touch-Screen ▪ 5 wires resistive technology ▪ USB I/F	✓
	15" Touch-Screen ▪ 5 wires resistive technology ▪ USB I/F	✓
	15,6" Touch-Screen ▪ 5 wires resistive technology ▪ USB I/F	x
	17" Touch-Screen ▪ 5 wires resistive technology ▪ USB I/F	✓
	18,5" Touch-Screen ▪ 5 wires resistive technology ▪ USB I/F	x
	19" Touch-Screen ▪ 5 wires resistive technology ▪ USB I/F	x
	21,5" Touch-Screen ▪ 5 wires resistive technology ▪ USB I/F	x

1) With kit cables 7,5 m, USB 1.1 standard is ensured. With kit cables 11 m, USB 2.0 standard is ensured;
USB cable has an amplified signal repeater in the middle; Repeater has dimensions of (mm) 32x17x90; distance of the repeater from the edges is 5 m and 6 m.

3.4.2 Technical data IPD-XXXS-TAX

Case	Panel mount	
Front panel	Aluminum TrueFlat ▪ Polycarbonate Pantone Cool Grey 4C color	
Touchscreen	5 wires resistive technology ▪ overlaminated with OCA (Optical Clear Adhesive) ▪ on board controller ▪ USB I/F (RS232 optional)	
Frontal protection	IP66	
Power supply	DC	Input voltage 18÷32V DC ▪ not isolated
		Input voltage 18÷36V DC ▪ isolated
	AC	Input voltage 90÷264 V AC ? isolated ▪ Autoranging
Frontal access interfaces	1 x USB 2.0 (Type-A)	
Rear access interfaces	1 x VGA (DB15F) 1 x DVI-D Single Link 2 x USB 2.0 (Type A) 1 x USB 2.0 (HUB input, Type B) 1 x RS232 (DB9F) for T/S, optional	
Environmental specifications	Operating temperature: 0° ÷ +50°C Storage temperature: -5° ÷ +60°C Humidity: 80% (non-condensing)	
Approvals	CE (EN 55022, EN 61000-3-2/3, EN 55024, EN 60950-1), cULus LISTED (UL508)	

Options

Serial T/S	RS232 serial interface for touch-screen ▪ inside monitor installation ▪ without external cable Usage of the serial interface exclude the USB interface operation for touch-screen.
Direct connection cables	Cables kit 1,8 mt VGA (VGA 1,8 mt / USB 1,8 mt)
	Cables kit 1,8 mt DVI (DVI 1,8 mt / USB 1, 8mt)
	Cables kit 7,5 mt VGA (VGA 10 mt / USB 7,5 mt) **1)**
	Cables kit 7,5 mt DVI (DVI 10 mt / USB 7,5 mt) **1)**
	Cables kit 10 mt VGA (VGA 10 mt / USB 11 mt amplified) **1)**
	Cables kit 10 mt DVI (DVI 10 mt/ USB 11 mt amplified) **1)**
	Extension cable for RS232 touch-screen interface (DB9M/DB9F) 1,8 mt

1) With kit cables 7,5 m, USB 1.1 standard is ensured. With kit cables 11 m, USB 2.0 standard is ensured;
USB cable has an amplified signal repeater in the middle; Repeater has dimensions of (mm) 32x17x90; distance of the repeater from the edges is 5 m and 6 m.

3.4.3 Technical data IPD-XXXS-TEX

Case	Panel mount	
Front panel	TrueFlat stainless steel 1.4301 surface brushing grain 180 medium ▪ Polyester Autoflex EB A180 RAL 7035 color	
Touchscreen	5 wires resistive technology ▪ overlaminated with OCA (Optical Clear Adhesive) ▪ on board controller ▪ USB I/F (RS232 optional)	
Frontal protection	IP66K	
Power supply	DC	Input voltage 18÷32V DC ▪ not isolated
		Input voltage 18÷36V DC ▪ isolated
	AC	Input voltage 90÷264 V AC ? isolated ▪ Autoranging
Rear access interfaces	1 x VGA (DB15F) 1 x DVI-D Single Link 2 x USB 2.0 (Type A) 1 x USB 2.0 (HUB input, Type B) 1 x RS232 (DB9F) for T/S, optional	
Environmental specifications	Operating temperature: 0° ÷ +50°C Storage temperature: -5° ÷ +60°C Humidity: 80% (non-condensing)	
Approvals	CE (EN 55022, EN 61000-3-2/3, EN 55024, EN 60950-1), cULus LISTED (UL508)	

Options

Serial T/S	RS232 serial interface for touch-screen ▪ inside monitor installation ▪ without external cable Usage of the serial interface exclude the USB interface operation for touch-screen.
Direct connection cables	Cables kit 1,8 mt VGA (VGA 1,8 mt / USB 1,8 mt)
	Cables kit 1,8 mt DVI (DVI 1,8 mt / USB 1, 8mt)
	Cables kit 7,5 mt VGA (VGA 10 mt / USB 7,5 mt) **1)**
	Cables kit 7,5 mt DVI (DVI 10 mt / USB 7,5 mt) **1)**
	Cables kit 10 mt VGA (VGA 10 mt / USB 11 mt amplified) **1)**
	Cables kit 10 mt DVI (DVI 10 mt/ USB 11 mt amplified) **1)**
	Extension cable for RS232 touch-screen interface (DB9M/DB9F) 1,8 mt

1) With kit cables 7,5 m, USB 1.1 standard is ensured. With kit cables 11 m, USB 2.0 standard is ensured;
USB cable has an amplified signal repeater in the middle; Repeater has dimensions of (mm) 32x17x90; distance of the repeater from the edges is 5 m and 6 m.

3.4.4 Technical data IPD-XXXS-TGX

Case	Panel mount	
Front panel	Aluminum and tempered glass TrueFlat	
Touchscreen	Projective capacitive multitouch, 4 fingers . overlaminated with OCA (Optical Clear Adhesive) ▪ Controller on module	
Frontal protection	IP66K	
Power supply	DC	Input voltage 18÷32V DC ▪ not isolated
		Input voltage 18÷36V DC ▪ isolated
	AC	Input voltage 90÷264 V AC ? isolated ▪ Autoranging
Rear access interfaces	1 x VGA (DB15F) 1 x DVI-D Single Link 2 x USB 2.0 (Type A) 1 x USB 2.0 (HUB input, Type B) 1 x RS232 (DB9F) for T/S, optional	
Environmental specifications	Operating temperature: 0° ÷ +50°C Storage temperature: -5° ÷ +60°C Humidity: 80% (non-condensing)	
Approvals	CE (EN 55022, EN 61000-3-2/3, EN 55024, EN 60950-1), cULus LISTED (UL508)	

Options

Direct connection cables	Cables kit 1,8 mt VGA (VGA 1,8 mt / USB 1,8 mt)
	Cables kit 1,8 mt DVI (DVI 1,8 mt / USB 1, 8mt)
	Cables kit 7,5 mt VGA (VGA 10 mt / USB 7,5 mt) [1)]
	Cables kit 7,5 mt DVI (DVI 10 mt / USB 7,5 mt) [1)]
	Cables kit 10 mt VGA (VGA 10 mt / USB 11 mt amplified) [1)]
	Cables kit 10 mt DVI (DVI 10 mt/ USB 11 mt amplified) [1)]
	Extension cable for RS232 touch-screen interface (DB9M/DB9F) 1,8 mt

1) With kit cables 7,5 m, USB 1.1 standard is ensured. With kit cables 11 m, USB 2.0 standard is ensured;
USB cable has an amplified signal repeater in the middle; Repeater has dimensions of (mm) 32x17x90; distance of the repeater from the edges is 5 m and 6 m.

3.5 Technical data IPD Extended

3.5.1 Technical data IPD-XXXE

Case	Panel mount	
Front panel	Aluminum	
Touchscreen	5 wires resistive technology ▪ on board controller ▪ USB I/F (RS232 optional)	
Frontal protection	IP66	
Power supply	DC	Input voltage 18÷36V DC ▪ isolated
	AC	Input voltage 90÷264 V AC ? isolated ▪ Autoranging
Frontal access interfaces	1 x USB 2.0 (Type-A)	
Rear access interfaces	1 x RJ45 (remotation input) 2 x USB 2.0 (Type A)	
Remotation Module (TX)	Remotation module (TX) for DVI-D and USB 2.0 signals ▪ 24V DC power supply ▪ For wall (standard and book) and DIN guide (book) mounting	
Environmental specifications	Operating temperature: 0° ÷ +50°C Storage temperature: -5° ÷ +60°C Humidity: 80% (non-condensing)	
Approvals	CE (EN 55022, EN 61000-3-2/3, EN 55024, EN 60950-1), cULus LISTED (UL508)	

Options

Touchscreen		Glass Film Glass (GFG) option
	No Touch-Screen	/
	8,4" Touch-Screen ▪ 5 wires resistive technology ▪ USB I/F	x
	10,4" Touch-Screen ▪ 5 wires resistive technology ▪ USB I/F	x
	12,1" Touch-Screen ▪ 5 wires resistive technology ▪ USB I/F	✓
	15" Touch-Screen ▪ 5 wires resistive technology ▪ USB I/F	✓
	15,6" Touch-Screen ▪ 5 wires resistive technology ▪ USB I/F	x
	17" Touch-Screen ▪ 5 wires resistive technology ▪ USB I/F	✓
	18,5" Touch-Screen ▪ 5 wires resistive technology ▪ USB I/F	x
	19" Touch-Screen ▪ 5 wires resistive technology ▪ USB I/F	x
	21,5" Touch-Screen ▪ 5 wires resistive technology ▪ USB I/F	x

Cables for remotation

Patch cables for remotation	Cables kit 0,9 m (DVI-D 1 m / USB 2.0 0,9 m) Customer can buy patch and remotation cables from Baumüller or supply it by other suppliers.
Cables for remotation static laying	Cable 15 m ▪ Cat 5e SF/UTP type ▪ for static laying [1)]
	Cable 20 m ▪ Cat 5e SF/UTP type ▪ for static laying [1)]
	Cable 30 m ▪ Cat 5e SF/UTP type ▪ for static laying [1)]
	Cable 50 m ▪ Cat 5e SF/UTP type ▪ for static laying [1)]
	Cable 100 m ▪ Cat 5e SF/UTP type ▪ for static laying [1)]

1) SF/UTP (Shielded Foil Unshielded Twisted Pair) is for Ethernet cable and means that the cable is shielded and made by twisted pair copper wires.

3.5.2 Technical data IPD-XXXE-TAX

Case	Panel mount	
Front panel	Aluminum TrueFlat ▪ Polycarbonate Pantone Cool Grey 4C color	
Touchscreen	5 wires resistive technology ▪ overlaminated with OCA (Optical Clear Adhesive) ▪ on board controller ▪ USB I/F (RS232 optional)	
Frontal protection	IP66	
Power supply	DC	Input voltage 18÷36V DC ▪ isolated
	AC	Input voltage 90÷264 V AC ? isolated ▪ Autoranging
Frontal access interfaces	1 x USB 2.0 (Type-A)	
Rear access interfaces	1 x RJ45 (remotation input) 2 x USB 2.0 (Type A)	
Remotation Module (TX)	Remotation module (TX) for DVI-D and USB 2.0 signals ▪ 24V DC power supply ▪ For wall (standard and book) and DIN guide (book) mounting	
Environmental specifications	Operating temperature: 0° ÷ +50°C Storage temperature: -5° ÷ +60°C Humidity: 80% (non-condensing)	
Approvals	CE (EN 55022, EN 61000-3-2/3, EN 55024, EN 60950-1), cULus LISTED (UL508)	

Cables for remotation

Patch cables for remotation	Cables kit 0,9 m (DVI-D 1 m / USB 2.0 0,9 m) Customer can buy patch and remotation cables from Baumüller or supply it by other suppliers.
Cables for remotation static laying	Cable 15 m ▪ Cat 5e SF/UTP type ▪ for static laying [1)]
	Cable 20 m ▪ Cat 5e SF/UTP type ▪ for static laying [1)]
	Cable 30 m ▪ Cat 5e SF/UTP type ▪ for static laying [1)]
	Cable 50 m ▪ Cat 5e SF/UTP type ▪ for static laying [1)]
	Cable 100 m ▪ Cat 5e SF/UTP type ▪ for static laying [1)]

1) SF/UTP (Shielded Foil Unshielded Twisted Pair) is for Ethernet cable and means that the cable is shielded and made by twisted pair copper wires.

3.5.3 Technical data IPD-XXXE-TEX

Case	Panel mount	
Front panel	TrueFlat stainless steel 1.4301 surface brushing grain 180 medium ▪ Polyester Autoflex EB A180 RAL 7035 color	
Touchscreen	5 wires resistive technology ▪ overlaminated with OCA (Optical Clear Adhesive) ▪ on board controller ▪ USB I/F (RS232 optional)	
Frontal protection	IP66K	
Power supply	DC	Input voltage 18÷36V DC ▪ isolated
	AC	Input voltage 90÷264 V AC ? isolated ▪ Autoranging
Rear access interfaces	1 x RJ45 (remotation input) 2 x USB 2.0 (Type A)	
Remotation Module (TX)	Remotation module (TX) for DVI-D and USB 2.0 signals ▪ 24V DC power supply ▪ For wall (standard and book) and DIN guide (book) mounting	
Environmental specifications	Operating temperature: 0° ÷ +50°C Storage temperature: -5° ÷ +60°C Humidity: 80% (non-condensing)	
Approvals	CE (EN 55022, EN 61000-3-2/3, EN 55024, EN 60950-1), cULus LISTED (UL508)	

Cables for remotation

Patch cables for remotation	Cables kit 0,9 m (DVI-D 1 m / USB 2.0 0,9 m) Customer can buy patch and remotation cables from Baumüller or supply it by other suppliers.
Cables for remotation static laying	Cable 15 m ▪ Cat 5e SF/UTP type ▪ for static laying **1)**
	Cable 20 m ▪ Cat 5e SF/UTP type ▪ for static laying **1)**
	Cable 30 m ▪ Cat 5e SF/UTP type ▪ for static laying **1)**
	Cable 50 m ▪ Cat 5e SF/UTP type ▪ for static laying **1)**
	Cable 100 m ▪ Cat 5e SF/UTP type ▪ for static laying **1)**

1) SF/UTP (Shielded Foil Unshielded Twisted Pair) is for Ethernet cable and means that the cable is shielded and made by twisted pair copper wires.

3.5.4 Technical data IPD-XXXE-TGX

Case	Panel mount	
Front panel	Aluminum and tempered glass TrueFlat	
Touchscreen	Projective capacitive multitouch, 4 fingers . overlaminated with OCA (Optical Clear Adhesive) ▪ Controller on module	
Frontal protection	IP66K	
Power supply	DC	Input voltage 18÷36V DC ▪ isolated
	AC	Input voltage 90÷264 V AC ? isolated ▪ Autoranging
Frontal access interfaces	1 x USB 2.0 (Type-A)	
Rear access interfaces	1 x RJ45 (remotation input) 2 x USB 2.0 (Type A)	
Remotation Module (TX)	Remotation module (TX) for DVI-D and USB 2.0 signals ▪ 24V DC power supply ▪ For wall (standard and book) and DIN guide (book) mounting	
Environmental specifications	Operating temperature: 0° ÷ +50°C Storage temperature: -5° ÷ +60°C Humidity: 80% (non-condensing)	
Approvals	CE (EN 55022, EN 61000-3-2/3, EN 55024, EN 60950-1), cULus LISTED (UL508)	

Cables for remotation

Patch cables for remotation	Cables kit 0,9 m (DVI-D 1 m / USB 2.0 0,9 m) Customer can buy patch and remotation cables from Baumüller or supply it by other suppliers.
Cables for remotation static laying	Cable 15 m ▪ Cat 5e SF/UTP type ▪ for static laying [1)]
	Cable 20 m ▪ Cat 5e SF/UTP type ▪ for static laying [1)]
	Cable 30 m ▪ Cat 5e SF/UTP type ▪ for static laying [1)]
	Cable 50 m ▪ Cat 5e SF/UTP type ▪ for static laying [1)]
	Cable 100 m ▪ Cat 5e SF/UTP type ▪ for static laying [1)]

1) SF/UTP (Shielded Foil Unshielded Twisted Pair) is for Ethernet cable and means that the cable is shielded and made by twisted pair copper wires.

3.6 Power consumption

This paragraph contains the information needed to self-calculate the absorbed power of any system configuration.

Absorbed power calculation

It is possible to calculate the maximum absorbed power for each system configu-ration by adding together the power consumption value of one Item of each Sec-tions listed in the “Basic system” table plus the power consumption value of the options eventually installed and listed in the “Options” table.

How to define power consumption

The 24V DC power consumption unit is Watt [W] and it is indicated into the column POWER which is calculated according to the following criteria:

- All the power consumptions are calculated considering the maximum ab-sorbed power of each component. The power consumption sum is multiplied by the coefficient that represents the internal power supply efficiency.
- The LCD power consumption value is referred to the maximum LCD brightness.
- The power consumption values of USB devices connectable to the systems are not included into the basic configuration power consumption value. The connected USB devices effective consumption have to be considered and added to the total power consumption value. We underline that a USB 2.0 device can consume 3.3 W max and a USB 3.0 device can consume 5.9 W. These values are calculated multiplying the maximum ports power consumption defined into the USB standard (2.5 W and 4.5 W) by the coefficient that represent the internal power supply efficiency.

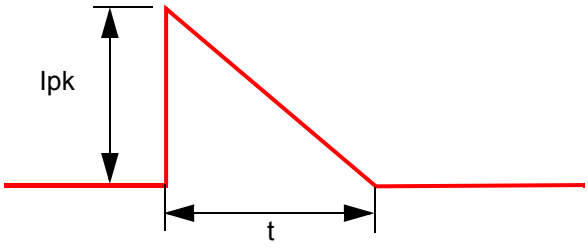
Basic system

SECTION	ITEM	POWER [W]
Display	8,4" LCD	6.7
	10,4" LCD	6.8
	12,1" LCD (SVGA)	11.9
	12,1" LCD (XGA)	17.0
	15,0" LCD	15.4
	15,6" LCD	19.0
	17,0" LCD	28.8
	18,5" LCD	24.4
	19,0" LCD	26.8
	19,0" (MVA) LCD	40.8
	21,5" LCD	35.2
Internal Power Supply	24VDC	0.0
	24VDC with integrated UPS (without battery pack)	0.7

How to choose the 24V DC power supply

This section contains tips to select the 24V DC power supply for HT/PB2200.

- The nominal output power should be 25% larger than HT/PB2200 drained power.
- The output voltage rise time has to be less than 100ms.
- Consider the working temperature and the thermal de-rating of the power supply.
- The inrush current can be represented by the following figure:



Ipk = 10 A

T = 400 µs

Figure 6: Inrush current

Choose a power supply that is capable of withstanding this impulsive current without going into a latched condition.

3.6 Power consumption

4

DESIGN AND FUNCTION

The IPD family, with 5 Wires Resistive Touch and a VGA and DVI-D port, gives the option to have 18÷32 VDC (either isolated or not power supply) or 110÷230 VAC Power Input Voltage. Equipped with one USB port on the front and two on the rear with integrated HUB, IPD monitors have three different options for the front panel (Aluminum, Aluminum True Flat, Stainless Steel True Flat).

Standard hardware features are:

- From 8.4” up to 21.5 wide LCD display sizes.
- Front panel protection grade IP65.
- 5 wire resistive touchscreen with USB interface (optional serial interface).
- LCD with LED backlight
- 1 x USB 2.0 (front, TYPE-A).
- 2 x USB 2.0 (rear, TYPE-A).
- 1 x VGA.
- 1 x DVI.
- 24VDC or 115/230VAC power supply.

4.1 Type plate

On the type plate the type code of the device also can be found.

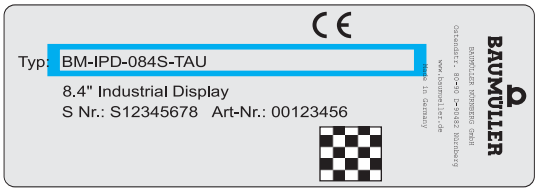


Figure 7: Type plate

NOTE!

The type plate can be not visible when the device is mounted. Take the information of the plate before mounting. It is recommended to make an accordant note on the inside cover page of the Instruction handbook.

4.2 Type code

Type code format

BM-IPD-XXXX-XXX-YYY-ZZZ

In the following table the type code is explained:

BM-IPD-XXXX-XXX-YYY-ZZZ Baumüller

BM-IPD-XXXX-XXX-YYY-ZZZ Device series

Industrial PC display

BM-IPD-XXXX-XXX-YYY-ZZZ Types

084S	8.4"	Standard	
121S	12.1"	Standard	
150S	15.0"	Standard	
170S	17.0"	Standard	
121E	12,1"	with cable extension	Extension
150E	15,0"	with cable extension	Extension
170E	17,0"	with cable extension	Extension

BM-IPD-XXXX-XXX-YYY-ZZZ Front type

TAU	True Flat Aluminum mit Front-USB
TEB	True Flat stainless steel without USB (Basic)
TGM	True Flat Glass Multi touch without Front-USB

Codes:

T - True Flat
A - Aluminum
E - Stainless steel
G - Glass
U - USB
B - Basic (no USB)
M - Multi touch

BM-IPD-XXXX-XXX-YYY-ZZZ Hardware version: Front imprint

A:	Display imprint ASEM
B:	Display imprint „Baumüller“
C:	Customized display imprint (customer dependent)
N:	Without imprint

BM-IPD-XXXX-XXX-YYY-ZZZ Hardware version: Interface type

00:	Video: 1x VGA, 1x DVI-D, 2x USB 2.0 (type-A)

BM-IPD-XXXX-XXX-YYY-ZZZ Software version

4.3 Front view

The system is available with three different kinds of frontal panel:

- Full aluminum.
- Aluminum with True Flat technology.
- Stainless steel with true True Flat technology.

Figure 8: Full aluminum front panel detail

Figure 9: Full aluminum with True Flat technology front panel detail

Figure 10: Stainless Steel with True Flat technology front panel detail

4.3.1 Full aluminum front panel

IPD (full aluminum front panel) is available in the following sizes:

- 8.4”
- 10.4”
- 12.1”
- 15.0”
- 15.6” wide
- 17.0”
- 18.5” wide
- 19.0”
- 21.5” wide

Figure 11: Full aluminum front panel detail

1 Full aluminum front panel
2 Touchscreen display
3 IP 65 USB
4 Status LED

The full aluminum front panel has a “step” between the front panel and the touchscreen.

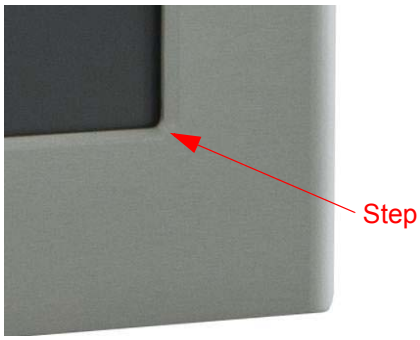


Figure 12: Front panel “Step” detail

Index of protection	IP65
Back Seal type	EPDM
Metal housing	EN AW-5754, H22 EN 485-1

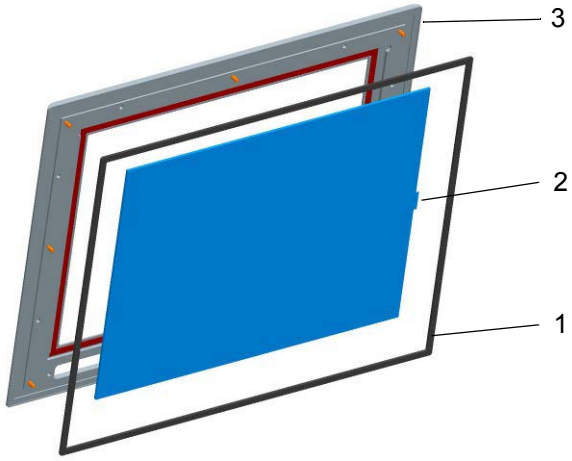


Figure 13: Construction detail (rear view).

1 Back seal
2 Touchscreen
3 Metal housing

4.3.2 Aluminum with True Flat technology front panel

IPD (aluminum front panel with true flat technology) is available in the following sizes:

- 8.4”
- 10.4”
- 12.1”
- 15.0”
- 15.6” wide

Figure 14: Full aluminum front panel detail

1 Full aluminum front panel
2 Touchscreen display
3 IP 65 USB
4 Status LED

The front panel with true flat technology (aluminum and stainless steel) has no “step” between the front panel and the touchscreen, therefore it can be easily cleaned. The polyester top-film covers the resistive touchscreen up to the aluminum border.

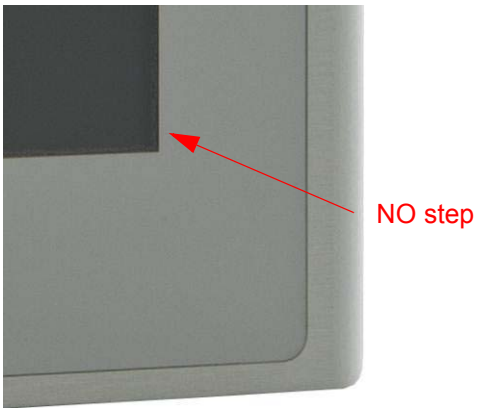


Figure 15: Front panel “No step” detail

Index of protection	IP65
Back Seal type	EPDM
Front laminate	Polyester
Metal housing	EN AW-5754, H22 EN 485-1

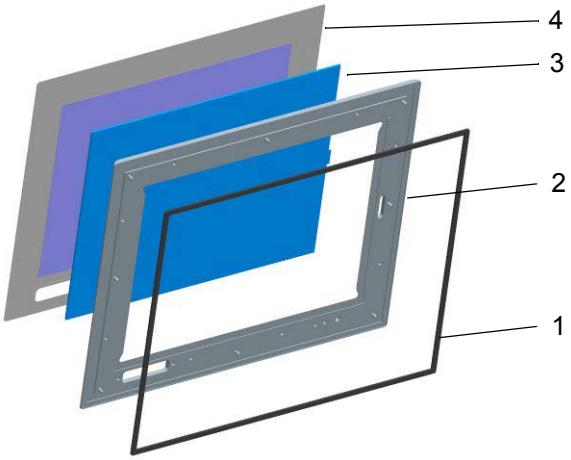


Figure 16: Construction detail (rear view).

1 Back seal
2 Metal housing
3 Touchscreen
4 Front laminate

4.3.3 Aluminum with True Flat technology front panel

IPD (aluminum front panel with true flat technology) is available in the following sizes:

- 8.4”
- 10.4”
- 12.1”
- 15.0”
- 15.6” wide

Figure 17: Aluminum front panel with true flat technology detail

1 Aluminum front panel with top polyester film
2 Touchscreen display
3 IP 65 USB
4 Status LED

The front panel with true flat technology (aluminum and stainless steel) has no “step” between the front panel and the touchscreen, therefore it can be easily cleaned. The polyester top-film covers the resistive touchscreen up to the aluminum border.

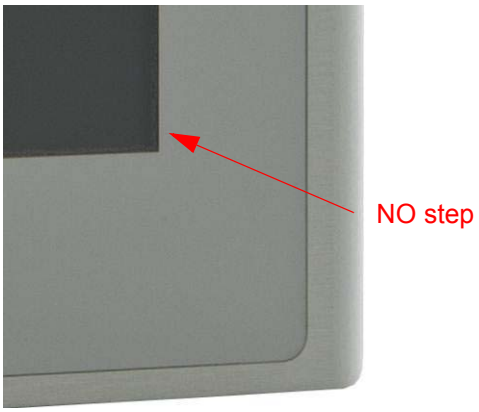


Figure 18: Front panel “No step” detail

Index of protection	IP65
Back Seal type	EPDM
Front laminate	Polyester
Metal housing	EN AW-5754, H22 EN 485-1

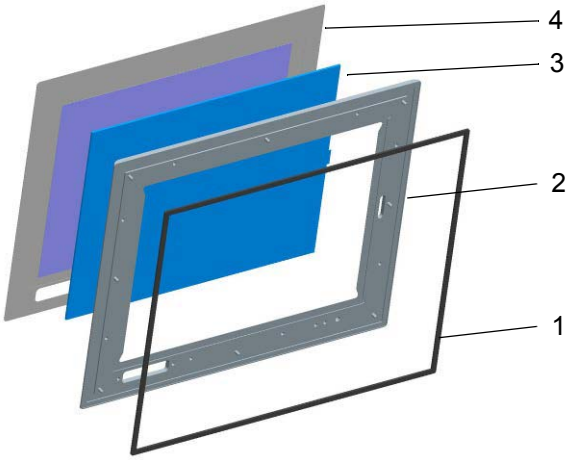


Figure 19: Construction detail (rear view).

1 Back seal
2 Metal housing
3 Touchscreen
4 Front laminate

4.3.4 Stainless steel with true True Flat technology front panel

Figure 20: Full aluminum front panel detail

1 Full aluminum front panel
2 Touchscreen display
3 Status LED

The front panels with true flat technology (aluminium and stainless steel) con-tain a 5?]wire resistive touchscreen that is handled by a USB controller within the system.

Figure 21: Front panel “No step” detail

Index of protection	IP66K
Seal type	EPDM
Front laminate	Polyester
Metal housing	AISI 304, EN 1.4301
Matt ground	with ground size 180

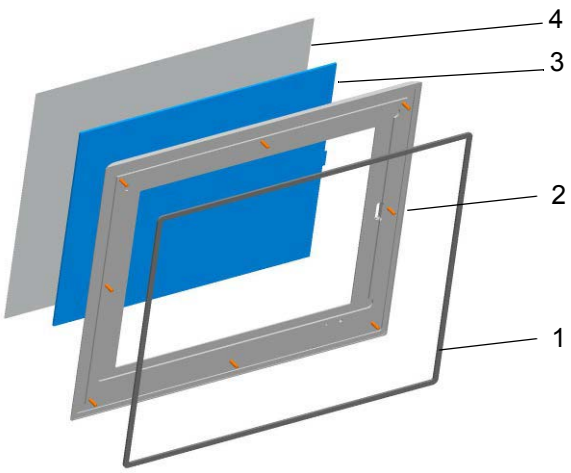


Figure 22: Construction detail (rear view).

1 Back seal
2 Metal housing
3 Touchscreen
4 Front laminate

4.4 LED

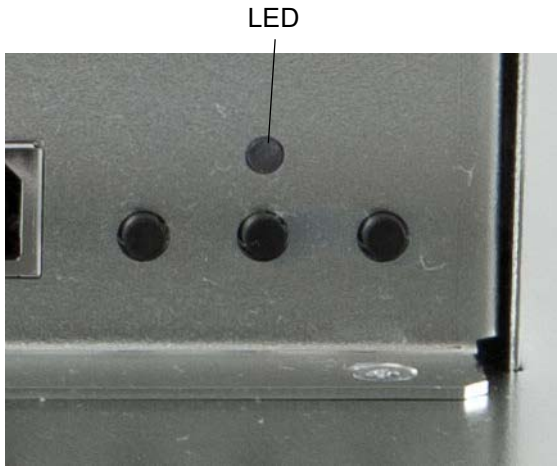


Figure 23: Status LED

The frontal and the rear LED have the same function.

Display	Description
Green	Correct video signal input
Amber	Unsupported video input
Amber blinking	No video input

4.5 OSD buttons

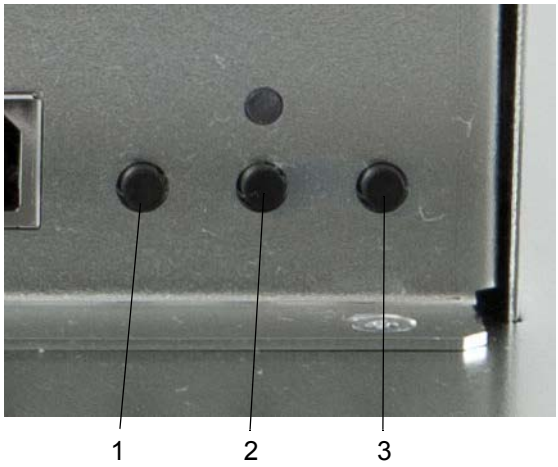


Figure 24: OSD buttons

1 + (<-)
2 - (->)
3 Select

5

TRANSPORT AND PACKING

Safety notes for the transport

NOTICE!

Damage due to unauthorized transport!

Transport handled by untrained personnel can lead to a substantial amount of material damage.

- The unloading of the packages upon delivery as well as the in-house transport should only be done by trained personnel.
- Contact Baumüller Nürnberg GmbH sales office if necessary.

WARNING!

Danger of physical impact!

Secure devices against falling down.

Therefore:

- Use appropriate means of transport.

5.1 What to observe when transporting

For initial transport of a device, it is packed at the manufacturer's plant. If the device must be transported, ensure that the following conditions are met throughout the entire transport:

- Climate class, refer to ▹Technical Data◃ from page 15
- Temperature range, refer to ▹Technical Data◃ from page 15

5.2 Transport inspection

Upon receiving the delivered goods, immediately examine them for completeness and transport damage.

If there is visible transport damage on the outside, proceed as follows:

- Do not accept the delivery or conditionally accept it with reservations.
- Note the extent of the damage on the transport documents or on the delivery note of the shipping agent.
- Immediately file a complaint with the freight carrier. Have the complaint confirmed in writing and immediately contact the responsible representative of Baumüller Nürnberg GmbH.

NOTE!

The device may not be operated if there is visible transport damage!

5.3 Package

IPD

User's guide CD-ROM	
Drivers CD-ROM	
Depending of LCD size: o n.9 (7+2 spare) clamps with grub screw. o n.10 (8+2 spare) clamps with grub screw. o n.12 (10+2 spare) clamps with grub screw o n.16 (14+2 spare) clamps with grub screw.	
n.2 hex key	
n.1 Power cable (only for 110/220 VAC version)	
n.1 Power supply cover	

5.4 Unpacking

After having received the packaged device:

- Avoid forceful transport agitation and hard jolts, e.g. when putting an item down.

If no transport damage is visible:

- Open the packaging of the device.
- Verify the delivery scope based on the delivery note.

File a claim with the responsible Baumüller representative if the delivery is incomplete.

NOTE!

Claim each individual deficiency as soon as it has been detected. Damage claims can only be validly asserted within the claim registration period.

5.5 Disposal of the packaging

The packaging consists of cardboard, plastic, metal parts, corrugated cardboard and/or wood.

- When disposing of the packaging, comply with the national regulations valid at the use area.

5.5 Disposal of the packaging

6

MOUNTING

NOTE!

Mounting shall only be performed by employees of the manufacturer or by other qualified personnel.

WARNING!

Danger as a result of mechanical effects!

Secure devices against falling down.

Therefore:

- Use appropriate means of transport.

NOTICE!

Danger due to electrostatic discharge.

The connecting terminals of the device are partially at risk due from ESD.

Therefore:

- Please heed the respective notes.

6.1 Rear view

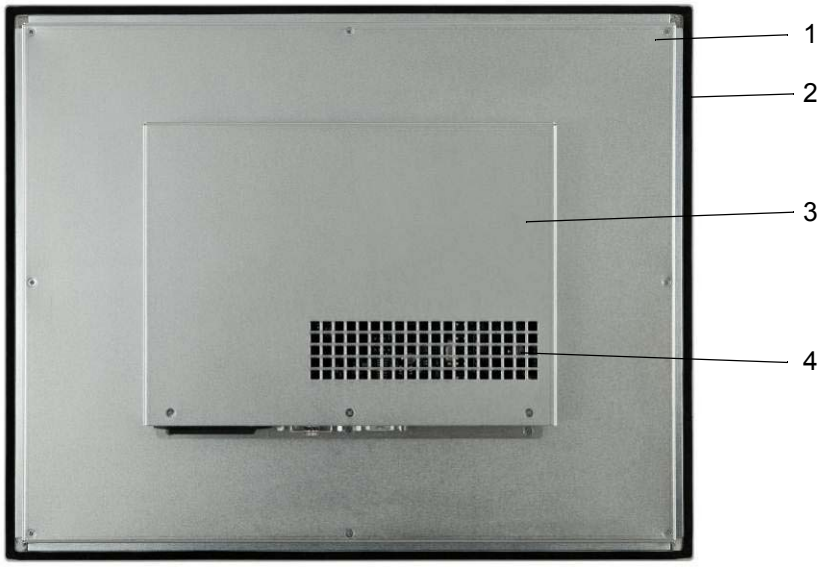


Figure 25: Rear view

1 LCD housing
2 Mounting seal
3 PC housing
4 Ventilation holes

6.2 Side view

Figure 26: Side view

1 Ventilation holes
2 Holes for fixing clamps

Figure 27: Side view

1 Ventilation holes
2 Holes for fixing clamps

6.3 Select the mounting location

The mounting location should comply with the following characteristics:
☐ Avoid direct sunlight exposure.
☐ Make sure that IPD is properly (ergonomically) accessible to the operator.
☐ Choose a suitable mounting height.
☐ Ensure that the ventilation holes are not covered.

6.4 Checking the operating conditions

- ☐ Read carefully the standards, approvals, EMC parameters and technical specifications for operation of the device. This information is available in the following sections:
  - Certificates and approvals.
  - Electromagnetic compatibility.
- ☐ Check the mechanical and climatic ambient conditions for operation of the device: Ambient conditions.
- ☐ Follow the instructions for local use of the device: Notes about usage.
- ☐ Adhere to the permissible rated voltage and the associated tolerance range:
- ☐ For DC models:
  - 24V DC
  - Maximum permissible operating voltage range 18V to 32V
- ☐ For AC models:
  - 110/220 ~

6.5 Mounting position

IPD device is suitable for installation in:

- Mounting cabinets
- Control cabinets
- Switchboards
- Consoles

6.6 Damage due to overheating

- Up to 18.5” display the operative temperature must be between 0° and 50°C.
- From 19.0” up to 21.5” display the operative temperature must be between 0 °C and 45 °C.
- All IPD systems are designed for vertical mounting position.
- An inclined installation reduces the thermal convection by MH/MH-R and the maximum permissible ambient temperature for operation. Please contact ASEM for details.
- IPD may otherwise be damaged and its certifications and warranty will be void.

Figure 28: Mounting position

6.7 Checking installation distances

To ensure adequate ventilation it is necessary leaving the following open spaces around the system:

- X direction 15 mm (min.) for each side.
- Y direction 15 mm (min.) for each side.
- Z direction 15 mm (min.).

Figure 29: Installation distances

6.8 Preparing the mounting cut-out

In order to ensure a proper mounting of the system, the material of the mounting cut-out must be sufficiently stable.

To obtain the degree of protection described below, the material of the mounting panel must not deform due to the use of clamps on the operator panel.

6.8.1 Degrees of protection

The degree of protection of the system (IP) is intended only for the front panel of MH/MH-R and is guaranteed only if the following conditions are satisfied:

- Material thickness at the mounting cut-out for IP65 protection: 2mm to 6 mm.
- Deviations of the plane of the mounting cut-out limits: 0.5 mm. This condition must be satisfied even when the device is installed.
- Allowed surface roughness in the area of the seal: . 120 microns (Rz 120).

6.8.2 Cut-out

This section shows the dimensions of the rectangular openings to be implement-ed on the host panel to mount the system.

Cut-out measures

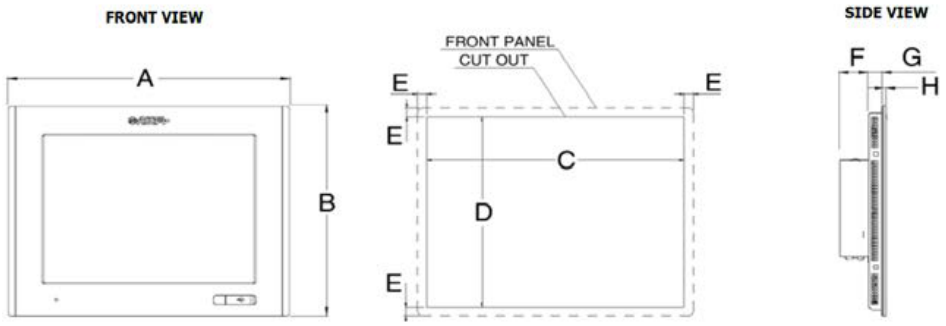


Figure 30: Cut-out

LCD TFT	A	B	C	D	E	F	G	H	Kg
8.4”	250	210	230	190	10	45	19	5	3.1
10.4”	300	245	280	225	10	45	19	5	3.9
12.1”	335	270	315	250	10	45	19	5	4.6
15.0”	390	315	370	295	10	45	19	6	5.3
15.6”	430	275	410	255	10	45	19	6	6.0
17.0”	455	355	435	335	10	45	21	6	6.7
18.5”	500	320	480	300	10	45	19	6	7.3
19.0”	490	388	470	368	10	45	21	6	7.3
21.5”	579	367	559	347	10	45	23	6	8.4

6.9 Mounting the device

Mounting clamps

- To obtain the declared degree of frontal protection for the system, it is necessary to respect the positions of the clamps shown below.
- The table below shows the number and the position of the clamps for each IPD size.

LCD size	Clamp	Quantity
8.4”		7
10.4”		8
12.1”		8
15.0”		10
15.6” wide		10
17.0”		10
18.5” wide		10
19.0”		10
21.5” wide		14

Tools

- 1.5 mm provided hexagonal key.

Procedure

- Insert IPD into the mounting cut-out from the front.

Figure 31: Mounting

NOTE!

Mounting the clamps requires a space at least 20 mm on the outer perimeter of the frame display.

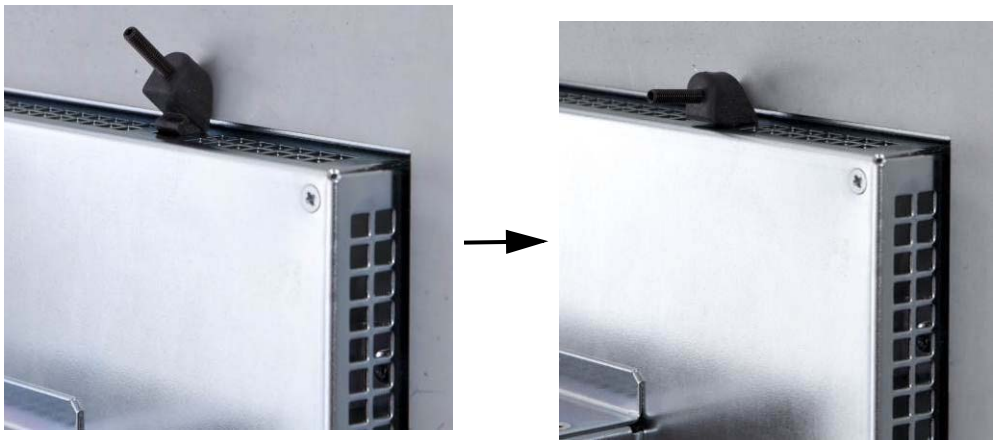


Figure 32: Mounting the clamps

- Tighten the fixing clamps with the hex key provided with (14 x 91 x 1.5 mm).

NOTE!

Adhere to the permissible torque when tightening the threaded pin of the mounting clamp: 0.2 Nm.

Figure 33: Fasten mounting clamp

- Repeat the procedure for all mounting clamps.
- Check the seal seat.

7

INSTALLATION

After mounting the **IPD** the required cable connection must be made. The cables are connected on the top side (voltage supply) and on the lower side (interfaces) of the **IPD**.

Safety notes

NOTE!

The installation may be performed by employees of the manufacturer or by other qualified personnel only.

CAUTION!

In order to access to the rear pan-el connectors the system must be disconnected from the power supply and put on a flat plane to remove the rear panel.

7.1 Connector view

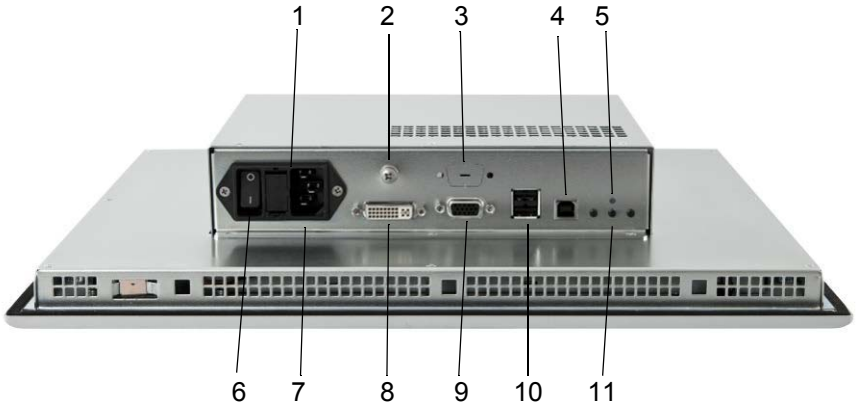


Figure 34: Rear panel connectors

1 Fuse
2 Earth screw
3 Optional
4 USB HUB input
5 Power LED
6 Power on/off button
7 Power supply
8 DVI video input
9 VGA video input
10 USB host 2.0 (for instance to KBD/MS)
11 Control keys

7.2 Devices with cable extension

Type code with cable extension

BM-IPD-XXX**E**-XXX-YY-ZZZ

This devices provide the remotation of DVI-D and USB 2.0 signals that allows the connection to a IPC up to 100 meters away with Cat 5e SF/UTP cable.

Figure 35: Example: Device with cable extension

This technology let you transmit high quality signals with Full HD resolution, up to 100 mt, using the auto-equalization to compensate typical effect in the remotation solutions like losses and delays

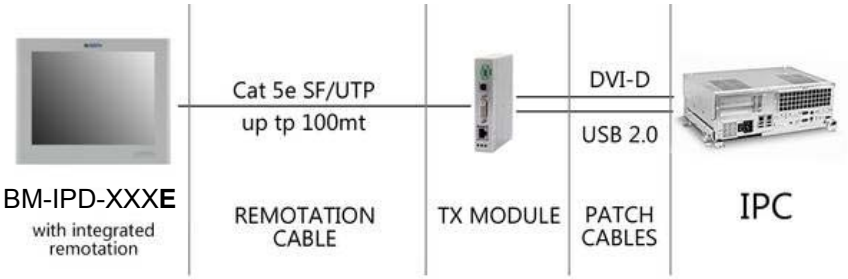


Figure 36: Remotation system

7.3 USB 2.0

The system is provided with a USB HUB device which creates n.4 USB ports, available as follow:

- n.2 type A USB connector rear
- n.1 type A USB connector on front
- n.1 internal touchscreen

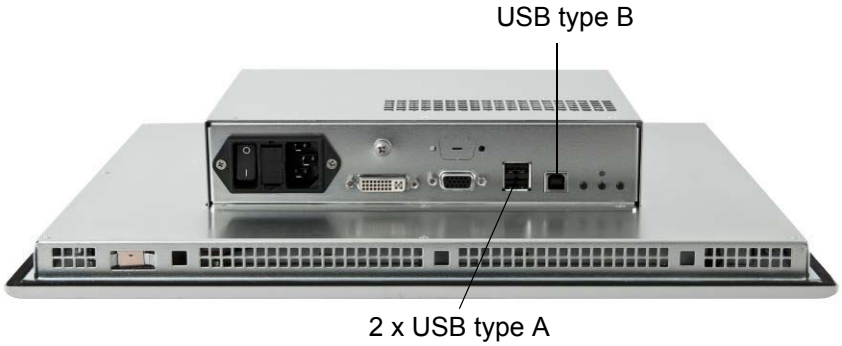


Figure 37: USB detail

The HUB mast be connected to the host PC trough the USB type B connector on the rear of the system.

The USB 2.0 port on the front panel is protected by anti-flame silicone rubber cover.

Figure 38: USB detail

When the cover is closed, it ensures a IP65 protection.

Figure 39: USB detail

7.4 Connecting

7.4.1 Grounding and bonding

- Whenever two pieces of equipment connected to each other are far apart, it is possible that their ground connections could be at a different potential level. The data cable screens connecting the equipment's chassis on one end and the IPD chassis on the other end can therefore be subject to a high current circulation capable of destroying the interface. To overcome this hazard such current must be steered away from the interface. To achieve this goal the following methods can be used:

1 Connect the data cable screens to the equipotential bonding rail on both sides before connecting the cable to the interfaces.

2 Use an equipotential bonding cable (16mm2) to connect the equipment's' ground to the IPD ground.

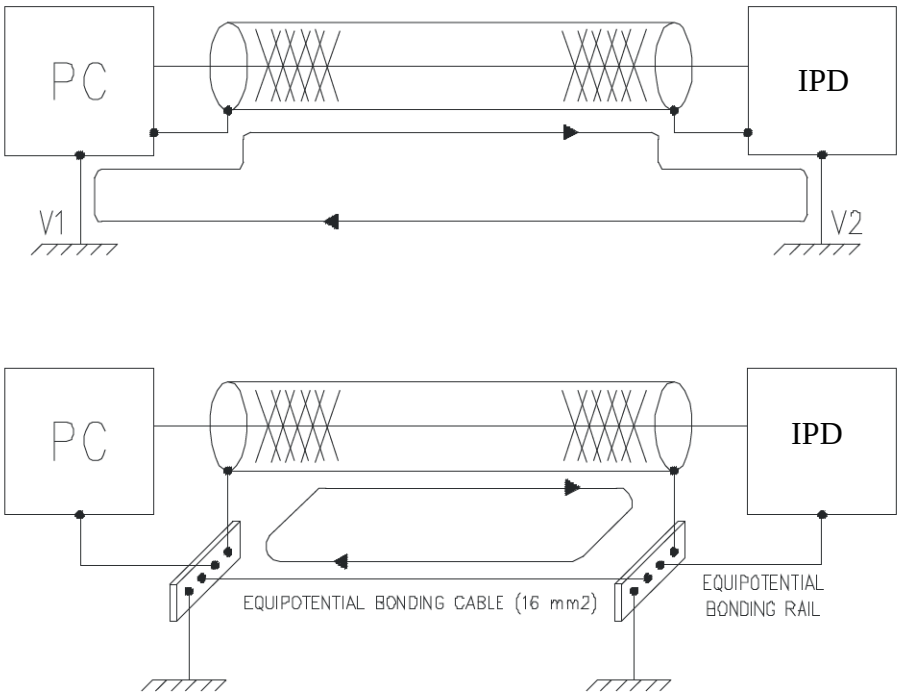


Figure 40: Power supply connection detail

- The ground screw is located on the rear side.

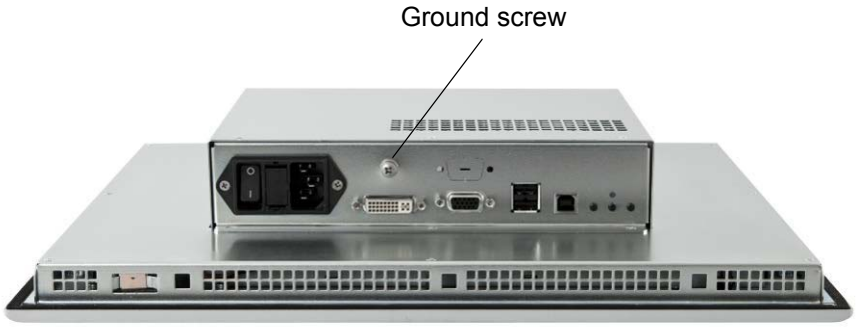


Figure 41: Ground screw

NOTE!

It is suggested to connect the system to the ground wire by means of suitable wiring (AWG14 or greater cross sections are suggested).

7.5 Installation 24VDC version

☐ Remove the two poles connector from the system

CAUTION!

The system must be powered with a voltage of 24 VDC (18 to 32 VDC).

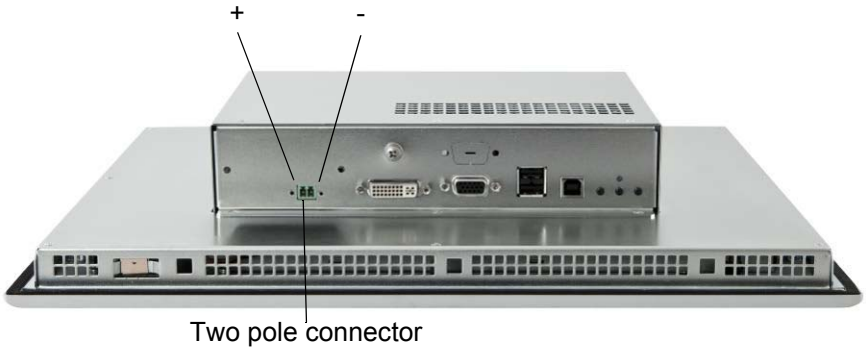


Figure 42: Connection 24VDC

CAUTION!

For EMI proposes it is necessary to connect the system to the ground wire by means of suitable wiring (min. AWG13) connected to the ground screw.

Power connector assembly

The system is equipped with a connector cup to be installed on the two poles power connector. To properly assemble the connector please follow these instructions:

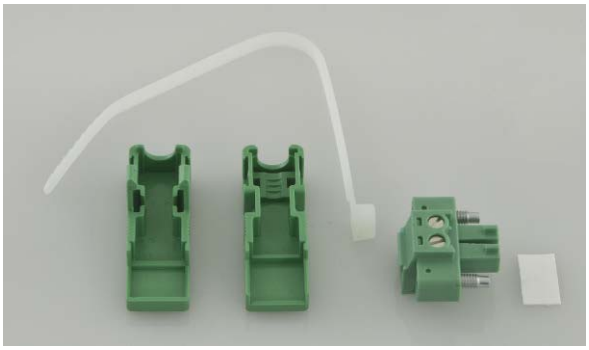


Figure 43: Power connector assembly

☐ Insert the cable tie in the cup as shown in the picture.

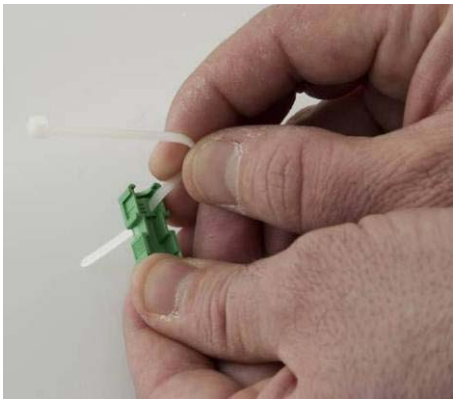


Figure 44: Power connector assembly

☐ Slide the cable tie as shown in the picture.

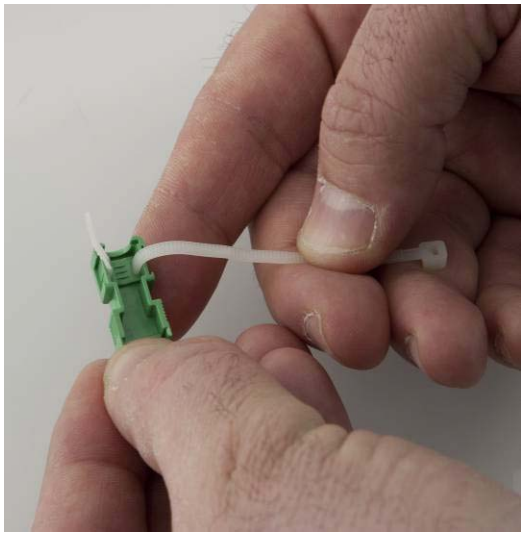


Figure 45: Power connector assembly

☐ Place the two poles plug connector in the cup as shown in the picture.

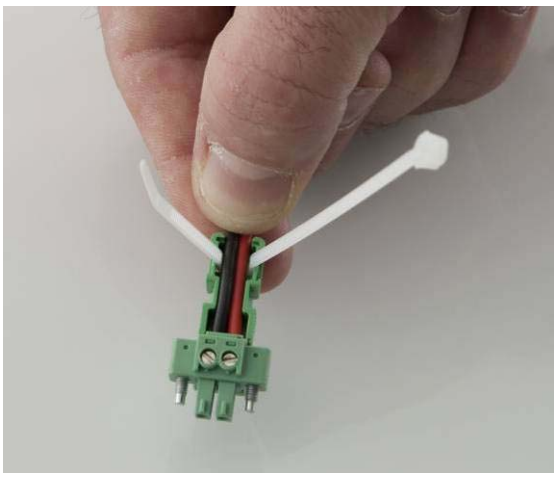


Figure 46: Power connector assembly

☐ Tighten the cable tie.

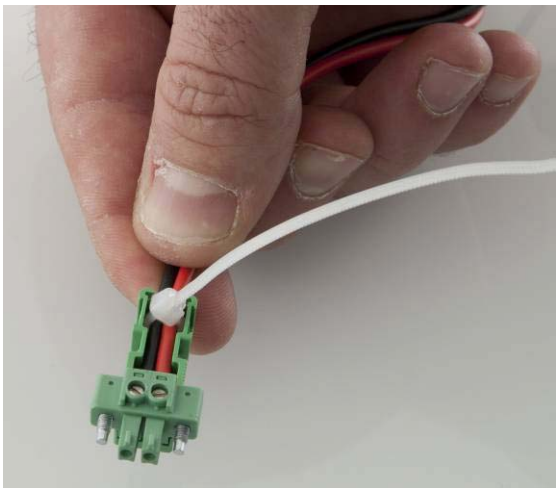


Figure 47: Power connector assembly

☐ Cut the excess part.

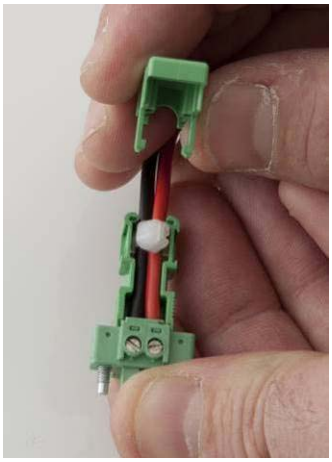


Figure 48: Power connector assembly

☐ Insert the white label and close the cup as shown in the picture.

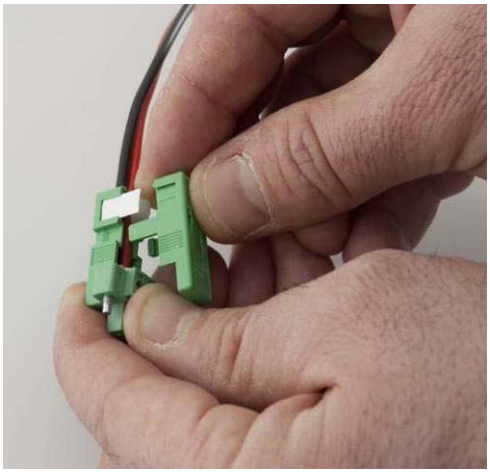


Figure 49: Power connector assembly

Example of a correctly installed cup.

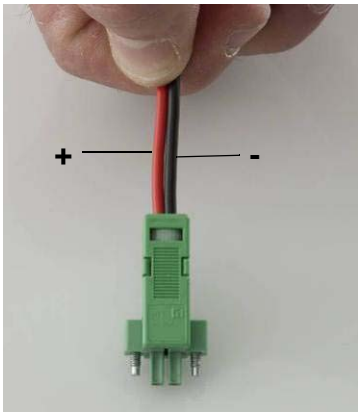


Figure 50: Power connector assembly

7.6 Installation 110/220VAC version

☐ Insert the power cord.

CAUTION!

The system must be powered with 110/220VAC.

Figure 51: Connection 24VDC

☐ Turn the system on by the power switch.

Fuse replacement

The system is provided with two FUSE 250V 1A (5x20) SLOW.

To replace it refer to the following procedure:

☐ Extract the fuse box.

Figure 52: Details of fuse box

☐ Remove the fuse and replace it with the same model.

Figure 53: Detail of fuse box

8

OPERATION

General

WARNING!

Risk of injury due to improper operation!

Improper operation can result in severe personal injuries or material damage.

Therefore:

- Carry out all operating steps as per the details in this Instruction handbook.
- Before starting work assure that all covers and safety equipment is installed and operate properly.
- The control cabinet, where the device was placed, shall protect against touching of the conductive parts.
  Keep all doors of the control cabinet shut during operation.

NOTICE!

The environmental conditions do not comply with the requirements.

Unspecified environmental conditions can cause material damage.

Therefore:

- The environmental conditions must be complied to during operation (see ▹Technical Data◃ on page 15).

8.1 OSD (On Screen Display)

The adjustments made through the OSD function relate solely to the screen mode currently used without changing the base configuration of the other viewing modes.

Therefore, this adjustment must be made for each viewing mode.

In the following section are detailed the operations to set properly the LCD controller based on ST Semiconductors/Genesis chip.

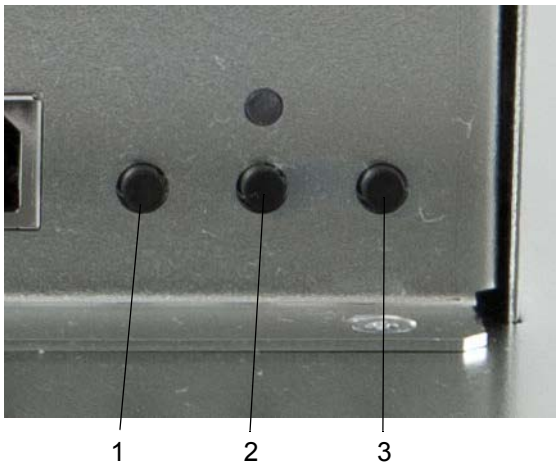


Figure 54: OSD buttons

1 + (<-)
2 - (->)
3 Select

8.1.1 OSD navigation

OSD is carried out pressing push-buttons Select +, – :

- Select: it selects the evidenced option, entering in an “under-menu” or exiting from current menu (back option). With standing OSD, + enters in main menu.
- +: Increases the value of the selected control or select the next menu item.
- -: Decreases the value of the selected control or select the previous menu item.

8.1.2 On-Screen Display menu

Input interface Settings.

Brightness / Contrast.

Color Adjustment.

Image setting.

Tools.

Exit.

Figure 55: On-Screen Display menu

8.1.3 Input interface setting

Displays the input interface in use:

Figure 56: OSD - Input Interface Setting menu

Analog input

Digital input

Figure 57: OSD - Input interface setting sub-menu

8.1.4 Brightness / Contrast

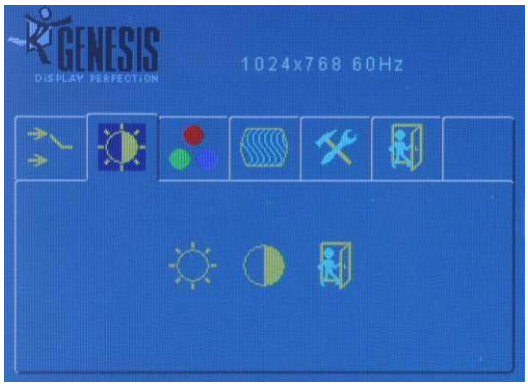


Figure 58: OSD - Brightness / Contrast menu

Brightness: Adjust the brightness.

Contrast: Adjust the contrast.

Figure 59: OSD - Brightness / Contrast sub-menu

8.1.5 Color adjustment

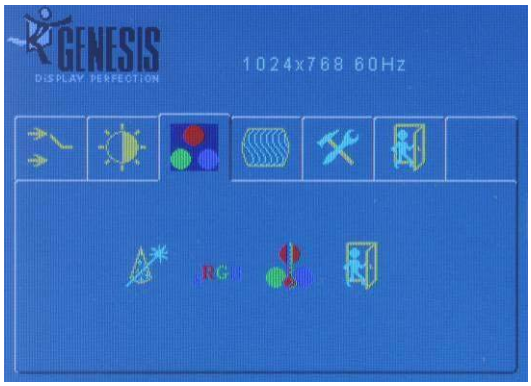
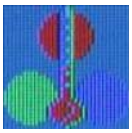


Figure 60: OSD - Color adjustment menu

Auto color cetup: Recall the color default settings.

Standard color setup: Adjust Red, Green, Blue color.



R.G.B. color temperature setting: Change the color intensity of the temperature selected.

Figure 61: OSD - Color adjustment sub-menu

8.1.6 Image setting

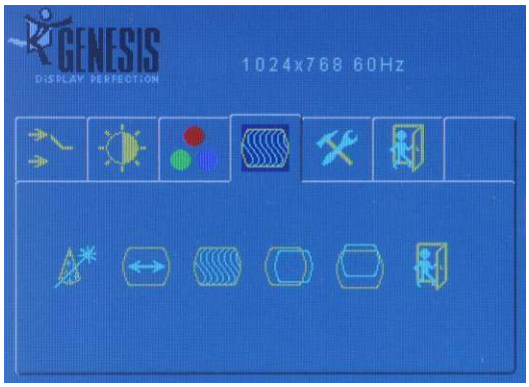


Figure 62: OSD - Image setting menu

Auto Config: Automatically adjust of Image Width, Phase, H-Position, V-Position settings.

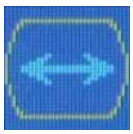
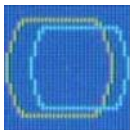
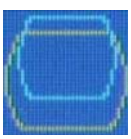


Image Width: Regulate Image Width.

Phase Adjustment: Correct flickering text or lines.



H-Position: Adjust screen horizontal position.



V-Position: Adjust screen vertical position

Figure 63: OSD - Color adjustment sub-menu

8.1.7 Tools

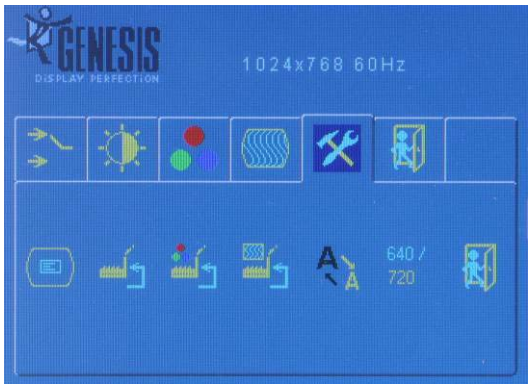
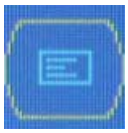


Figure 64: OSD - Tools menu



OSD Settings.

Restore the default settings.

Restore the color settings.

Restore the trimming setting

Text readibility

Dos Graphic Mode

Figure 65: OSD - Tools sub-menu

9

MAINTENANCE

General

WARNING!

Risk of injury due to improper maintenance!

Improper maintenance can result to serious personal injury and property damage.

Therefore:

- Before starting, ensure that there is sufficient room to carry out the work.
- Pay attention to order and cleanliness at the installation site! Components that are loosely stacked or lying around can cause accidents.

9.1 Cleaning

NOTE!

Clean the front panel of the system with a soft damp cloth.

NOTICE!

Do not use detergents, solvents, cleaners or objects that could scratch the surface.

WARNING!

Switch off the power before any cleaning operation.

9.2 Repair

If the device is out of order, please contact your sales agency or:

Baumüller Nürnberg GmbH

Ostendstr. 80 - 90
90482 Nürnberg
Germany

Tel. +49 9 11 54 32 - 0
Fax: +49 9 11 54 32 - 1 30

E-Mail: mail@baumueller.com
Internet: www.baumueller.com

10

TROUBLESHOOTING

General

WARNING!

Risk of injury due to improper troubleshooting!

Therefore:

- Only qualified personnel may work on this device!
- The personnel, working on the Industry PC must be familiar operating the device and of the safety instructions. The user must know how to react on error displays and error states, The user must have special knowledge of error displays reactions and of the error states.

IPD will not start an operating system from a USB port.

- Contact technical support.

11

ACCESSORIES AND SPARE PARTS

This chapter lists the accessories and spare parts for the **IPD**. Our Product Management is looking forward to inquiries and suggestions concerning spare parts.

12

DISPOSAL

NOTE!

Baumüller products are not subject to the scope of the EU's Waste Electrical and Electronic Equipment Directive (WEEE, 2002/96/EC). Hence, Baumüller is not obligated to bear costs for return and disposal of waste electronic equipment.

NOTE!

Avoid polluting the environment as a result of improper disposal.

Therefore:

- Only dispose in compliance with the health and safety regulations.
- Take heed of any special local regulations. If you are unable to directly ensure safe disposal yourself, commission a suitable disposal contractor.
- In the event of a fire, hazardous substances could possibly be generated or released.
- Do not expose electronic components to high temperatures.
- Beryllium oxide is used as inner insulation, for example for various power semiconductors. The beryllium dust that is generated upon opening is injurious to the health.
  Do not open electronic components.
- Dispose of capacitors, semiconductor modules and electronic scrap as special waste.

WARNING!

Danger as a result of faulty deinstallation!

The deinstallation and disposal requires qualified personnel with adequate experience.

Therefore:

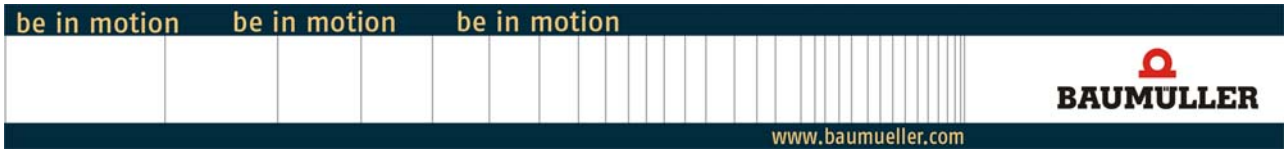
- Only allow deinstallation and disposal to be performed by qualified personnel.

12.1 Disposal facilities/authorities

Ensure that the disposal is handled in compliance with the disposal policies of your company, as well as with all national regulations of the responsible disposal facilities and authorities. In case of doubt, consult the bureau of commerce or environmental protection authority responsible for your company.

A

APPENDIX A - 0DECLARATION OF CONFORMITY



EC - Declaration of Conformity

Doc.-No: **5.20043.00**
Date: **26-Oct-2020**

according to EMC Directive 2014/30/EU

The manufacturer: Baumüller Nürnberg GmbH
Ostendstraße 80-90
90482 Nürnberg, Germany

declares that the product:

Designation: Touch Panel
Type: BM-IPD-XXXX-XXX-YYY-ZZZ
Manufactured since: 16-Jan-2020

is developed, designed and manufactured in accordance with the EMC Directive 2014/30/EU.

Applied harmonized standards:

Norm	Titel
EN 55022: 2010 +AC:2011	Information technology equipment - Radio disturbance characteristics - Limits and metho of measurement
EN 61000-3-2:2014	Limits for harmonic current emissions
EN 61000-3-3:2013	Limitation of voltage fluctuation and flicker
EN 55024:2010	Information technology equipment - Immunity characteristics - Limits and methods of measurement
EN 61000-6-2:2005 +AC:2005	Immunity for industrial environments
EN 60950-1:2006 +A1:2010 +A11:2009 +A12:2011 +AC:2011 + A2:2013	Information technology equipment - Safety

The products must be installed correctly and all notes and safety notes of the referring instruction handbook must be complied with, to guarantee the compliance to the guidelines.

Nürnberg / 26-Oct-2020
Place / Date

The content of the Declaration of Conformity is subject to change. The current version can be obtained on request.

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Revision survey

Version	Status	Changings
5.20007.01	6-Oct-2020	First release

Notes:

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