BL FPM …

Flat-panel monitor for the industrial environment



Data sheet
3467_en_G

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1 Description

The Basicline BL FPM … is an industrial flat-panel monitor that can be used in applications where a remote display location is required.

2 Features

- 15.6-, 18.5-, and 21.5-inch display
- 10-point, multi-touch, touch screens
- DisplayPort 1.2, VGA, and DVI-D input ports
- Integrated configuration buttons

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NOTE:
Circuit ground (0 V) and functional earth ground (FE) are connected.

Make sure you always use the latest documentation.
It can be downloaded at phoenixcontact.net/products.

This document is valid for all products listed in the “Ordering data” on page 2.

3 Ordering data

Products

Description	Type	Order No.	Pcs./Pkt.
LCD touch screen monitor, 21.5 inch	BL FPM 21.5	2400515	1
LCD touch screen monitor, 18.5 inch	BL FPM 18.5	2402981	1
LCD touch screen monitor, 15.6 inch	BL FPM 15.6	2402980	1

4 Technical data

General data	
Ambient temperature (operating)	-10 … 60°C
Ambient temperature (storage/transport)	-20 … 75°C
Permissible humidity (relative)	10 … 90% non-condensing
Weight	
BL FPM 21.5	7.87 kg
BL FPM 18.5	6.24 kg
BL FPM 15.6	5.48 kg
Mounting	Panel cutout with bezel
	VESA MIS-D 100
Degree of protection	IP65 (front), IP20 (back)
LED indicators	Power
Electrical data	
Power supply, range	24 V DC ±10%
Current draw, maximum (full load) (24 V DC)	
BL FPM 21.5	0.90 A
BL FPM 18.5	0.74 A
BL FPM 15.6	0.59 A
Current draw, standby[1] (24 V DC)	
BL FPM 21.5	0.13 A
BL FPM 18.5	0.14 A
BL FPM 15.6	0.13 A
Power consumption, maximum (full load) (24 V DC)	
BL FPM 21.5	21.60 W
BL FPM 18.5	17.76 W
BL FPM 15.6	14.16 W
Power consumption, standby[1] (24 V DC)	
BL FPM 21.5	3.12 W
BL FPM 18.5	3.36 W
BL FPM 15.6	3.12 W
Power connector	3-pos. removable COMBICON (Order No. 1786844)

[1] Standby indicates the BL FPM … is powered and connected to a PC, but is not receiving a signal.

Display data, 21.5-inch display	
Overall dimensions, including bezel (W x H x D)	562 x 382 x 51mm
Screen size, diagonal	548 mm (~21.5 in.)
Screen size, horizontal x vertical	477 X 270 mm
Aspect ratio	16:9
Resolution	1920 x 1080
Type	10-point projective capacitive touch screen
Brightness	300 Cd/m²
Number of colors	16.7 million
Contrast ratio	5000:1
View angle, horizontal/vertical (CR=10), typ.	85°/80°
Installation cutout dimensions (W x H)	547 x 367 mm
Outside bezel dimensions (W x H x D)	562 x 382 x 9 mm
Backlight life, minimum	50000 hr.
Touch screen interface	USB Type A
Video signal	VGA, DVI-D, DisplayPort (DP++)

Display data, 18.5-inch display	
Overall dimensions, including bezel (W x H x D)	491 x 321 x 51 mm
Screen size, diagonal	472 mm (~18.5 in.)
Screen size, horizontal x vertical	412 X 232 mm
Aspect ratio	16:9
Resolution	1366 x 768
Type	10-point projective capacitive touch screen
Brightness	300 Cd/m²
Number of colors	16.7 million
Contrast ratio	1000:1
View angle, horizontal/vertical (CR=10), typ.	85°/80°
Installation cutout dimensions (W x H)	475 x 305 mm
Outside bezel dimensions (W x H x D)	591 x 321 x 10 mm
Backlight life, minimum	50000 hr.
Touch screen interface	USB Type A
Video signal	VGA, DVI-D, DisplayPort (DP++)

Display data, 15.6-inch display	
Overall dimensions, including bezel (W x H x D)	417 x 312 x 52 mm
Screen size, diagonal	397 mm (~15.6 in.)
Screen size, horizontal x vertical	346 X 195 mm
Aspect ratio	16:9
Resolution	1366 x 768
Type	10-point projective capacitive touch screen
Brightness	300 Cd/m²
Number of colors	16.7 million
Contrast ratio	500:1
View angle, horizontal/vertical (CR=10), typ.	85°/80°
Installation cutout dimensions (W x H)	401 x 296 mm
Outside bezel dimensions (W x H x D)	417 x 312 x 6 mm
Backlight life, minimum	50000 hr.
Touch screen interface	USB Type A
Video signal	VGA, DVI-D, DisplayPort (DP++)

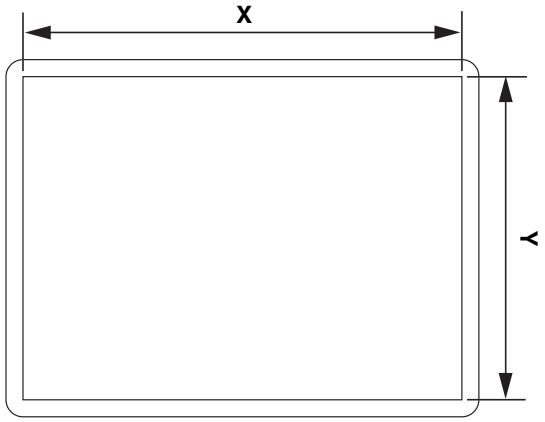
Conformity	
Shock tests according to IEC 60068-2-27	15g, 11 ms impulse
Vibration according to IEC 60068-2-64	1g

5 Installation

5.1 Panel installation

1. Cut the appropriate size hole in the enclosure where the monitor will be installed.

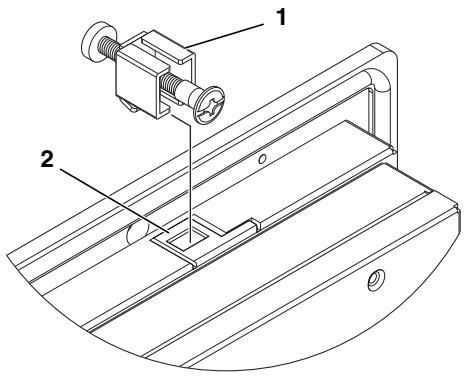
Figure 1 Panel cutout dimensions



Display	X (mm)	Y (mm)
21.5 in.	547	367
18.5 in.	475	306
15.6 in.	401	296

2. From the front, push the BL FPM … through the opening. Ensure the gasket is properly positioned in the groove.
3. From the rear, place the display clamps (1) in the slots (2) on the display and slide the clamp to the right. All eight clamps must be used, one in every slot.

Figure 2 Monitor mounting clamp



4. Tighten the screws on all clamps, alternating from one side to the other until the front bezel is secure against the mounting cutout. Torque the bolts to 1.2 Nm.

5.2 VESA mounting

While the BL FPM … includes a VESA mount, this method negates the IP65 environmental rating and other mechanical tests.

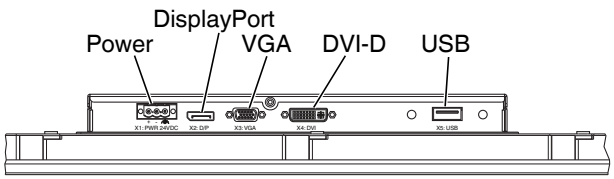
In addition to panel installation, the BL FPM … can be installed on a VESA mount. The rear of the BL FPM … conforms to the 100 mm variant of the VESA MIS-D mounting standard.

M4 hardware is not included. It is typically included with the VESA mount, which must be purchased separately.

5.3 Connections

Connectors to interface with the computer are located on the rear bottom of the BL FPM ….

Figure 3 Monitor connections



All ports were tested with a shielded 1.8 m cables. The VGA and DVI cables included a ferrite core. Phoenix Contact will not ensure functionality of cables that are outside this specification.

DisplayPort, VGA, DVI-D, and USB ports are restricted to 1.8 m cables to meet the test environment. VGA and DVI-D cables require double-ended ferrite cores.

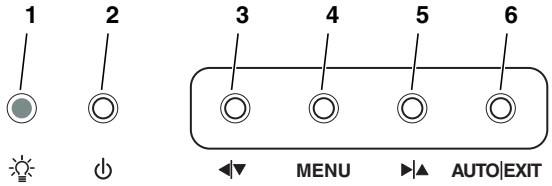
- **Power**: Connect 12/24 V DC power to the included removable power connector (Order No. 1786844). This connector supports wire sizes from 0.2 to 2.5 mm² (24 to 12 AWG). Tighten the wire retaining screws using 0.5 Nm (4.4 lb_f-ft) torque.
- **DisplayPort (D/P)**: This port connects to a DisplayPort on a computer.
- **VGA**: This DB-15 port connects to the computer to receive analog video signals (1.8 m VGA cable included).
- **DVI-D**: This DVI-D port connects to the computer to receive digital (DVI) video signals.
- **USB**: USB Type A port provides the touch screen interface to the PC. A USB type A to type A cable is included with the BL FPM … monitor.

The USB port on the BL FPM … is a dedicated touch screen interface. It is not intended for connection to other types of USB devices.

6 Operation

The back of the BL FPM … has several buttons and an LED to indicate the status.

Figure 4 Control buttons



1	Status LED	**4**	MENU
2	Power button	**5**	Scroll right/up button
3	Scroll left/down button	**6**	AUTO/EXIT button

Status LED: Indicates the condition of the BL FPM ….

– Green indicates power is applied
– Orange indicates standby mode (connected with no signal from the PC).
– Off indicates no power is present or the power is off.

Power button: Press to cycle power.

Scroll left/down button: In menu mode, allows selection of inputs.

Newer PC hardware uses different signal-source coding that is not recognized by the firmware within the BL FPM …. The signal source must be set manually.

"MENU" button: Press to enter menu mode and configure the BL FPM …

The signal source is selected using the scroll left/down button. Each press of the button sequences through the options from VGA to DVI to DP.

Scroll right/up button: In menu mode, allows selection of options.

"AUTO/EXIT" button: Exits the menu mode. Auto configures the BL FPM … based on the PC signal.