50°45'3.186"N

B&G

ZM SERIES MONITORS

OPERATOR MANUAL

ENGLISH



www.bandg.com

Preface

As Navico is continuously improving this product, we retain the right to make changes to the product at any time which may not be reflected in this version of the manual. Please contact your nearest distributor if you require any further assistance.

It is the owner's sole responsibility to install and use the equipment in a manner that will not cause accidents, personal injury or property damage. The user of this product is solely responsible for observing safe boating practices.

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This manual represents the product as at the time of printing. Navico Holding AS and its subsidiaries, branches and affiliates reserve the right to make changes to specifications without notice.

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Warranty

The warranty card is supplied as a separate document.

In case of any queries, refer to the brand website of your display or system: www.bandg.com

Compliance Statements

The B&G series monitors;

- Europe: Complies with CE under EMC directive 2014/30/EU.
- United Kingdom: Complies with UKCA under The Electromagnetic Compatibility Regulations 2016.
- United States of America:

> ⚠ **Warning:** The user is cautioned that any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

- Australia: This product complies with ACMA according to Radiocommunications Labelling (Electromagnetic Compatibility) Notice 2017.
- New Zealand: This product complies with RSM according to Radiocommunications (EMC Standards) Notice 2019.

The relevant Declaration of Conformity is available in the following website under model documentation section: www.bandg.com

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About this manual

This manual is a reference guide for installing and operating the B&G Series monitors.

The manual does not cover basic background information about how equipment such as radars, echosounders and AIS work.

Important text that requires special attention from the reader is emphasized as follows:

➔ ***Note:*** Used to draw the reader's attention to a comment or some important information.

⚠ **Warning: Used when it is necessary to warn personnel that they should proceed carefully to prevent risk of injury and/or damage to equipment/personnel.**

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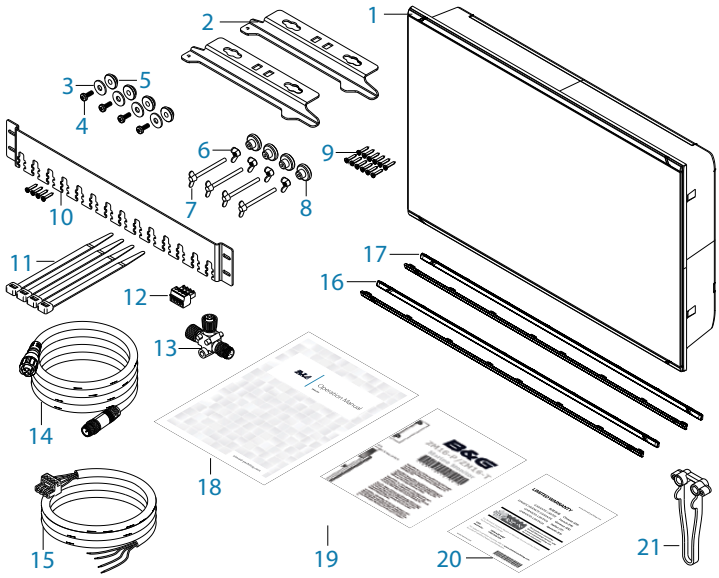
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1 Introduction

The B&G ZM Series monitors offer a low profile, high brightness solution for displaying video from a variety of sources. This includes two models; the ZM16", and ZM19" Touch monitors. These models are suited for both indoor and outdoor use. Both monitors accept video via HDMI®, DVI-I and composite inputs.

Items included

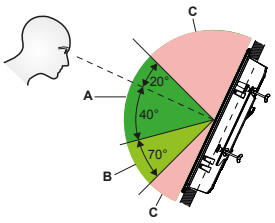


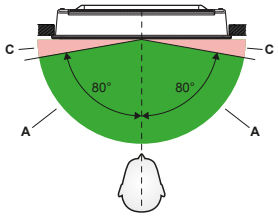
1 **Monitor**
2 **Dash mount brackets (x2)**
3 **Washer, M4, 12mm, SS (x4)**
4 **Pozi pan head machine screw, M4 x 12mm, SS (x4)**
5 **Plastic spacer (x4)**
6 **Wing nut M5 (x4)**
7 **Wing head machine screw (x4)**
8 **Plastic stopper - dash mount (x4)**
9 **Pozi pan head self-tapping screw 4G x 1/2" (x12)**
10 **Cable retention bracket with screws 4G x 1/2" (x4)**
11 **Cable ties (x4)**
12 **Connector block (serial data)**
13 **Micro-C tee piece**
14 **Micro-C cable, 2m (6ft)**
15 **Power cable with connector**
16 **Bezel trim, black (x2)**
17 **Bezel trim, silver (x2)**
18 **Operator manual**
19 **Cutout template**
20 **Warranty card**
21 **Drill and screw guide tool**

2 Display installation

It is recommended that the unit be powered and connected to a video source to assist in selecting a suitable mounting location, prior to irreversible modification of the vessel's helm station. When planning the display location, the following points should be considered to ensure safe, comfortable and reliable operation:

- **Convenience** - the mounting location should be easily accessible to allow operation of the controls and should enable easy viewing of the display.
- **Viewing angle** - the viewing angle influence the viewability of the monitor. The recommended viewing angles relative to perpendicular are shown in the illustrations below.





Horizontal viewing angles

A: Optimum viewing angle

B: Good viewing angle

C: Poor viewing angle or obstructed view

- **Access** - there must be sufficient space behind the display to allow cable connections to the rear connectors, avoiding tight bends in the cable. Also ensure there is sufficient access for tightening wing nuts/screws on the mounting brackets, where used.
- **Interference** - the selected location should be far enough away from devices that may cause interference, such as motors, generators and radio transmitters/receivers.
- **Magnetic compass** - mount the display at least 1 metre (3 ft.) away from a magnetic compass.
- **Environment** - to prevent overheating, do not restrict airflow at the rear of the display unit; ensure that there is adequate ventilation, particularly if the display unit is pod-mounted. If the space behind the display is air conditioned or cooled by a fan, it will help in keeping the unit's temperature down. The ZM16/19 displays are designed to operate in indoor/outdoor environments and in high ambient brightness conditions, however, we recommended the display not be mounted in a location where it will be exposed to direct sunlight for prolonged periods. The display should be protected from physical damage and excessive vibration. Although the display unit is waterproof from the front when installed correctly, it is good practice to mount it in a protected area away from prolonged and direct exposure to rain and salt spray.

> ⚠ **Warning:** Damage incurred to monitor through failure to provide adequate ventilation could invalidate your warranty. Do not recess device in to an enclosure shared with a heat source. E.g., engine compartment.

Cutout template

Use the supplied scale template to help mark up the cutout area.

→ ***Note:*** Always check the template dimensions against the physical monitor to ensure dimensions are correct, prior to making the cutout.

Fixing options

The ZM series monitors can be dash or bracket mounted (using optional VESA adaptor).

When dash mounting, unit should be fitted using the rear mounted dash mount brackets, and bezel screws from the front. Exclusion of the dash mount bracket will greatly increase strain on bezel screws and adjacent bezel plastics, and is not recommended.

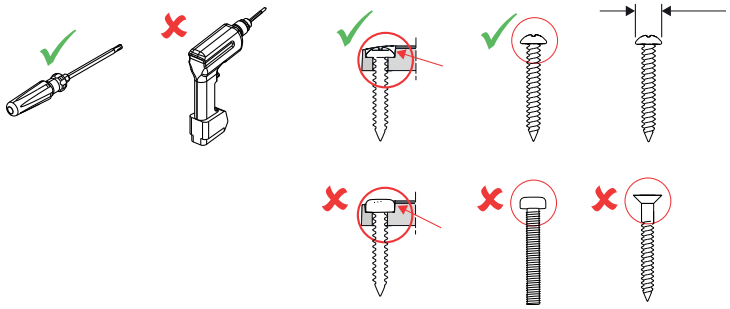
Flush mounting the display

➔ ***Note:*** The following guidelines and warnings apply:

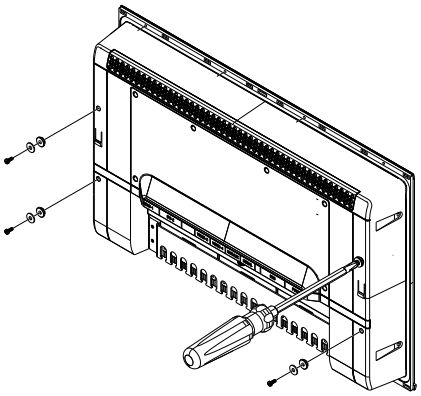
Important drill bit size selection information

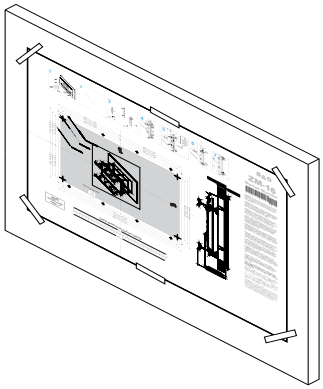
Soft materials e.g. Plywood	1.9 - 2.3 mm (5/64")
Hard materials e.g. GRP, Acrylic, hardwoods	2.3 - 2.5 mm (3/32")

Front mount screw recommendations



1. Fit the supplied M4 machine screws, washers, and plastic spacers to each of the four threaded fittings on the back case of screen. Hand tighten only.



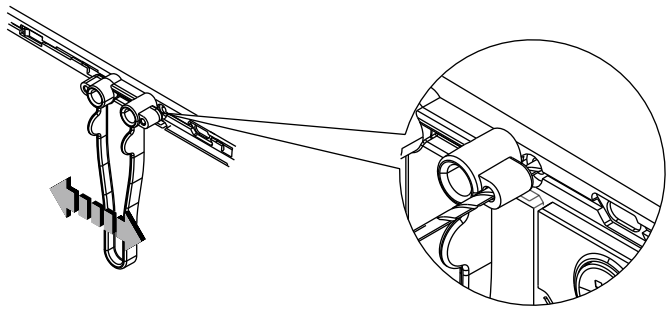


2. Tape appropriate mounting template in place on dash, and ensure cutout lines are level relative to a reference point on dash.
3. Drill top and bottom mounting screw holes using an appropriate drill bit for the surface material:

- Soft materials e.g. Plywood - 1.9 - 2.3 mm (5/64")
- Hard materials e.g. GRP, Acrylic, hardwoods - 2.3 - 2.5 mm (3/32")

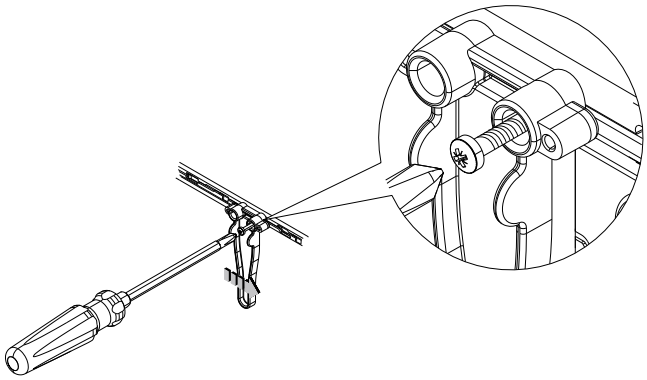
4. Drill cutout corners with a small pilot drill bit followed with 13 mm drill bit. Complete cutout with jigsaw or similar tool.

5. Place the display in the dash hole.
6. Place the guide tool on the glass of the display.
7. Slide the tool across so the drill bit hole guide lines up with the center of a screw location hole on the case of the display.
8. Drill the pilot hole.

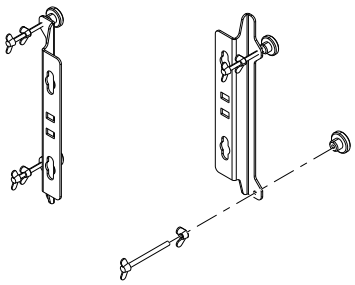


➔ ***Note:*** Before drilling the rest of the pilot holes it is recommended to secure the display with at least one screw to allow for movement in the dash cutout.

9. Insert one of the supplied screws in to the screw guide and tighten using a hand screw driver.

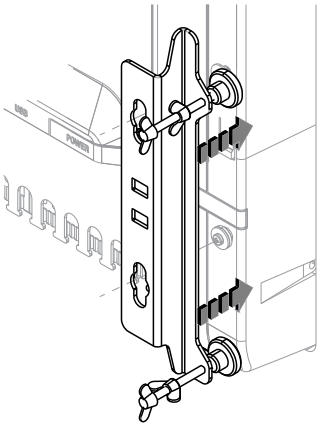


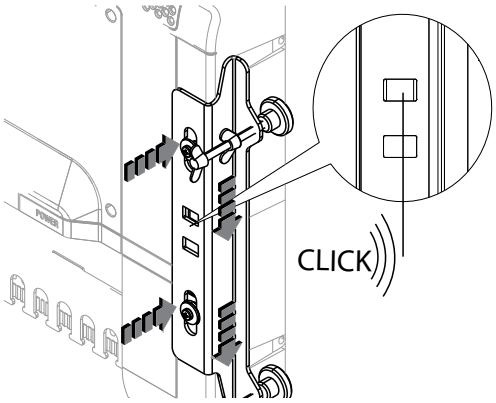
10. Repeat for the rest of the mounting screws.



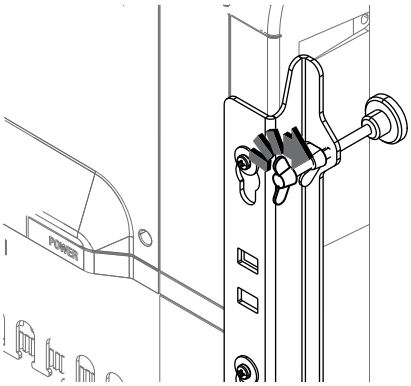
11. Wind wing nut on to wing screw, then wind the wing screw assembly in to bracket till approximately 5 mm of threaded rod protrudes through other side of bracket.
12. Fit stopper foot on to end of wing screw.
13. Complete for both threaded holes on each bracket.

14. Fit brackets to rear of display, aligning 'key holes' on bracket with screws on back of display case.

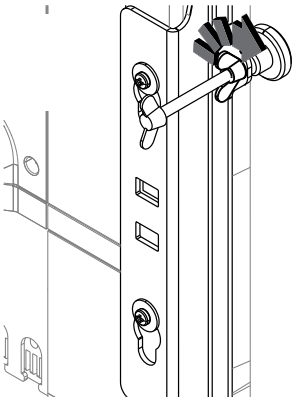




15. With bracket making contact with back of monitor, slide bracket down till it engages with a click and is held in place.

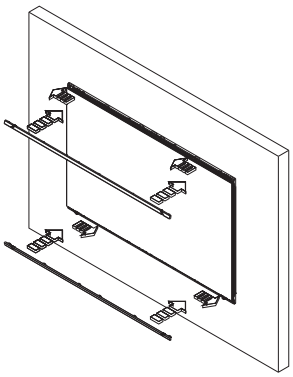


16. Wind in the wing screw, until stoppers make firm contact with rear of dashboard material.
17. Check front of unit, ensuring that unit's bezel is making even contact with the dash surface.



18. Hand tighten wing nuts against the back of the mounting brackets to lock the wing screw in place. Hold wing screw stationary if it turns while adjusting the wingnut.

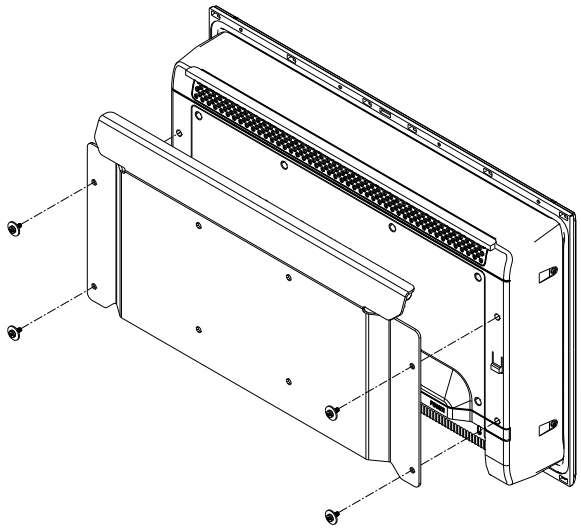
19. When fitting bezels, ensure hook tabs on back of each bezel recess into opposing slots on screen frame. Once flush with front surface of screen, slide top bezel to the left, and bottom bezel to the right to lock in to place.



VESA mounting the display

A VESA bracket adaptor is available as an optional part for all display sizes, allowing a variety of wall and free standing bracket mounting options. The fasteners for attachment to the display are included with the bracket.

Monitors mounted using a Vesa bracket have IPX2 rating, and should be mounted in an area sheltered from rain and sea spray.



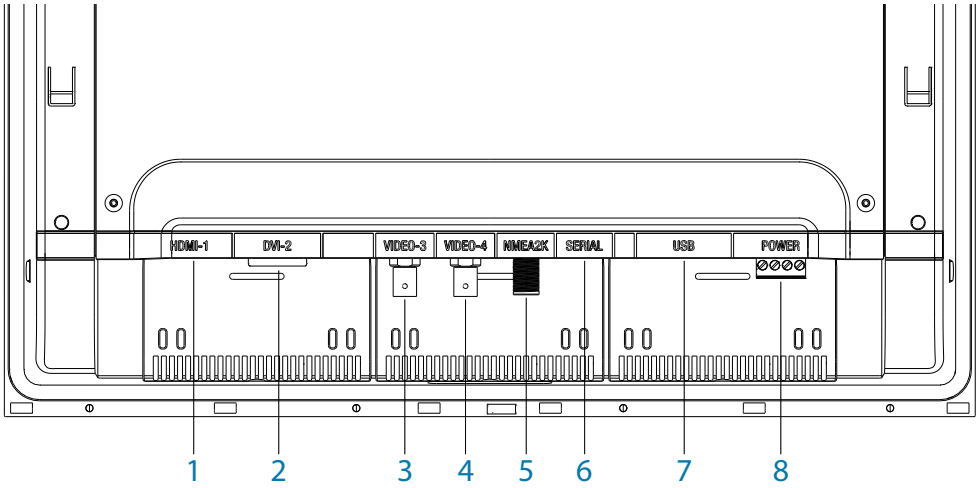
➔ ***Note:*** The monitor should not be tilted forward by more than 15 degrees, as this compromises the IPX2 rating. In fully enclosed helm stations, this limitation may be disregarded.

➔ ***Note:*** The bracket mounting points on the monitor are only intended to carry the weight of the monitor - do not install monitor in such a place where it may be used as a handhold, or have additional equipment attached to it.

3 Connecting the display

The ZM series monitors largely use industry standard cables, which can be purchased pre-terminated in a variety of lengths. The following chapter provides additional detail where cables require field termination by the installer.

Rear connections



No.	Connection	Function
1	HDMI-1	Video input (digital)
2	DVI-2	Video input (digital)
3	VIDEO-3	Video input for camera (composite - analogue)
4	VIDEO-4	Video input for camera (composite - analogue)
5	NMEA2K	Control input/output, software upgrade
6	SERIAL	Control input/output for touchscreen
7	USB	Control input/output for touchscreen
8	POWER	12/24 V DC power supply input

➔ ***Note:*** HDMI-1, and DVI-2 inputs do not support HDCP (High bandwidth Digital Content Protection). Sources such as protected DVDs may not display correctly/at all on this monitor.

⚠ **Warning:** Make sure power is switched off before commencing with installation.

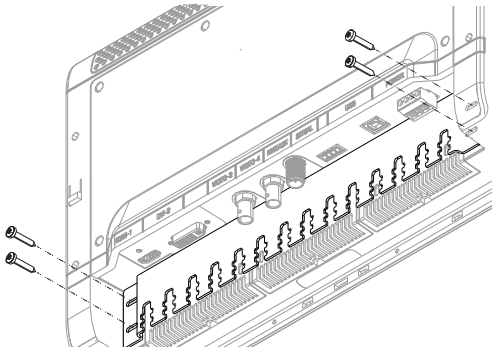
HDMI® cable

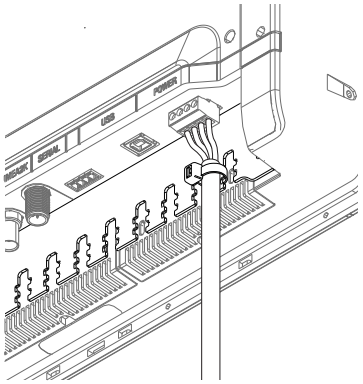
A second monitor can be added to the system using a HDMI® cable.

⚠ **Warning:** All hardware devices must be switched off prior to connecting or disconnecting the HDMI® cable.

Cable retention

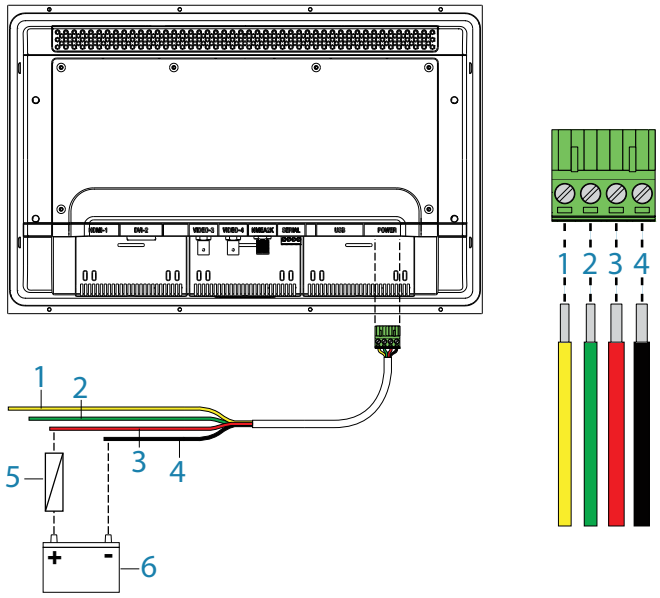
Cables fitted to the display should utilize some form of strain relief. All displays are supplied with a retention bracket, which should be attached to the rear case.





With the cable and plug fitted in place, secure the cable to the retention bracket using a cable tie. Do not secure in such a way that it applies strain to the cable, or causes the plug or socket to be bent out of alignment.

Connecting power



No.	Color	Function
1	Yellow	Power control
2	Green	Chassis ground
3	Red	Positive DC supply (12 V or 24 V system)
4	Black	Negative DC supply (12 V or 24 V system)
5		Fuse - see table at end of section
6		DC supply

➔ ***Note:*** This display is not intended for use on vessels fitted with a positive ground electrical system. The power input cable screen drain wire should be connected to a negative ground.

➔ ***Note:*** Chassis ground will typically not be required. In certain problematic installations it may help stabilize touch screen sensitivity, ie. prevent 'false' touches, or non-registered touches.

Recommended fuse rating		
Model	ZM16-T	ZM19-T
Fuse	3 amp	4 amp

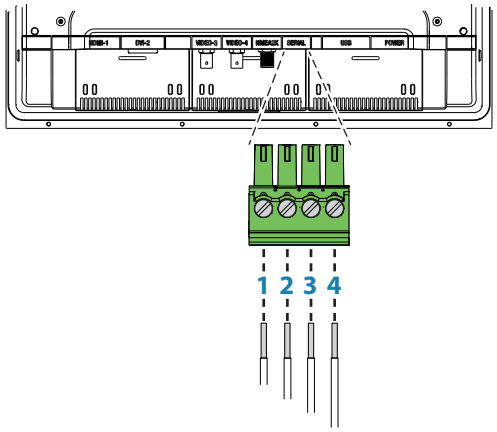
Connecting touch control

The ZM series monitors can provide touch control to Zeus Marine Processors as well as Windows PCs. Connection can be made via serial data to a Zeus Marine Processor, or USB for PC systems.

Serial connection

The ZM series monitors should always be connected to Zeus Marine Processor via serial. Make all connections with the power turned off.

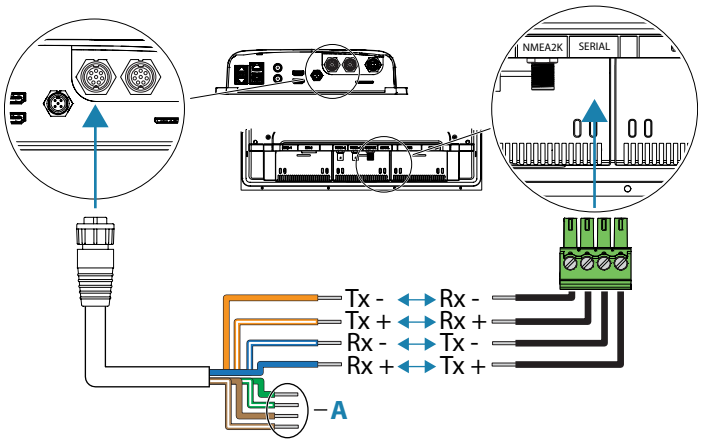
Pin	Purpose
1	RS422 Listener - (Rx-)
2	RS422 Listener + (Rx+)
3	RS422 Talker - (Tx-)
4	RS422 Talker + (Tx+)



→ ***Note:*** Serial connection will support very long cable runs provided a good quality cable designed for serial data is used.

Example connection

The illustration shows an Zeus³S Glass Helm MPU connection, wire colors may vary. Refer to the documentation for your Zeus Marine Processor for wiring details. The NMEA 0183® wires (**A**) are not to be used for touch operation.



USB connection

Connection using USB is straightforward, as regular off-the-shelf cables may be used, which are available in various lengths (generally up to 5 m). The monitor end must be fitted with a USB type B male plug. The opposite end should suit the device being controlled, which typically will use the common USB type A male plug.

- ***Note:*** Where USB is used, cable length should not exceed 5 m when using regular cables. Lengths over 5 m may be possible with the use of a USB cable fitted with active boosting.
- ***Note:*** Do not connect both serial and USB to the same video source.
- ***Note:*** Ensure any third party video source connected to the ZM monitor has an isolated USB connection to avoid potential damage due to incorrect installation, or failure elsewhere in the system.
- ***Note:*** The preferred method of connection is via serial cable, only serial touch can be configured to work for a specific video input. USB touch is output regardless of video input selection, which can lead to false touches when viewing a different video source.

Connecting NMEA 2000®

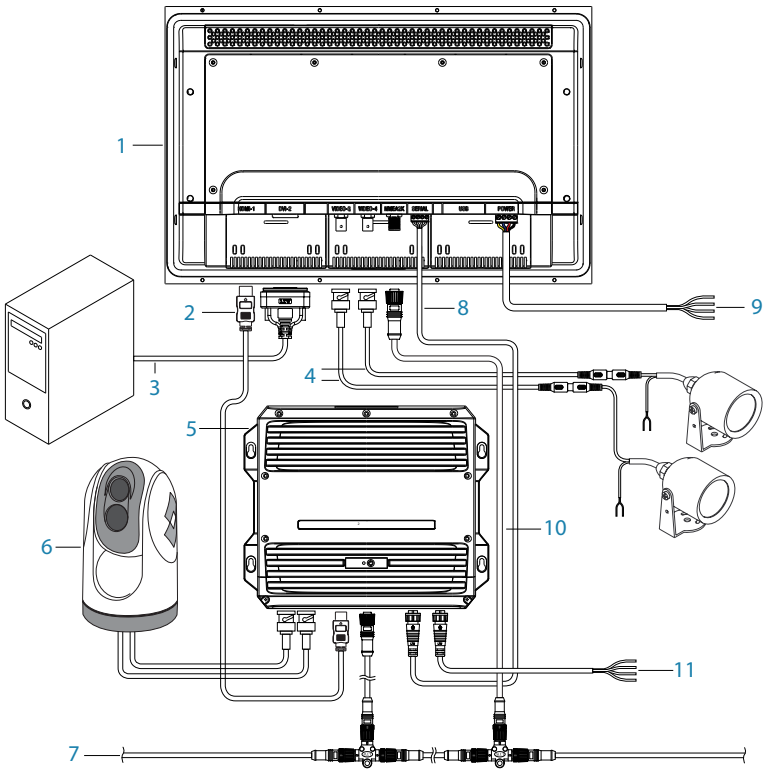
When connected to a compatible processor such as the Zeus Marine Processor, the display should also be connected to the NMEA 2000® network. This enables the monitors home key to bring up the home screen. NMEA 2000® is also used for applying software updates from the processor to the display.

- ***Note:*** If the monitor is connected to the NMEA 2000® network and the monitor has its key beeps turned on, it will sound for any network alarm when the focus is on that screen.

Connecting HDMI® cable

All hardware devices must be turned off prior to connecting or disconnecting the HDMI® cable.

Typical installation

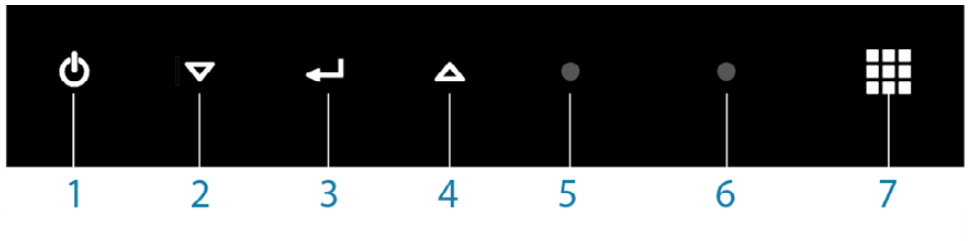


No.	Description
1	ZM16-T or ZM19-T monitor
2	HDMI® cable (non HDCP sources only)
3	DVI cable (eg. PC, non HDCP sources only)
4	Composite video cable (eg. video camera)
5	Zeus Marine Processor
6	FLIR® IR camera supplying video via Zeus Marine Processor
7	NMEA 2000® (Micro-C network bus)
8	Serial cable - communicates touch control to Zeus Marine Processor
9	Power cable - monitor
10	NMEA 2000® drop cable (Micro-C network drop cable) - allows software updating of monitor via a Zeus Marine Processor
11	Power cable - Zeus Marine Processor

➔ ***Note:*** Peripheral devices in diagram do not necessarily show all required connections where not directly related to ZM series monitor.

4 Operating the display

The display is configured and controlled using the row of touch sensitive buttons along the lower edge of the monitor frame. All buttons are backlit - only the power button is illuminated when the monitor is turned off.



1. Power: long press turns display on/off. Short press brings up OSD / steps backwards
2. Down: scroll down in menu options (also reduce brightness shortcut)
3. Enter: select menu option (also source selection shortcut)
4. Up: scroll up in menu options (also increase brightness shortcut)
5. Red LED: solid red = 'active off' (no video source), flashing = booting or upgrading
6. Light sensor
7. Home: selects the home page on compatible Navico devices

First time operation

The display has the capability to automatically adjust itself to the resolution of the source to which it is attached. This auto adjustment will take place when the unit is first installed and connected to a source and there after, if the video input changes, or is user initiated.

Shortcut functions

Source selection: pressing the Enter key will step through the video source options.

Display brightness: pressing the Up/Down keys will adjust the screen brightness.

→ ***Note:*** Shortcut functions only work when the OSD is not open.

→ ***Note:*** If the display is set to a source that does not have an active video source connected, after a brief delay the display will go in to 'active off' mode. In this mode the screen backlight is turned off, but other functions of the monitor remain powered. Note that the monitor will still draw approximately 300mA @ 13.8 V.

→ ***Note:*** The touch screen will not operate when OSD is on the screen. The touch screen will resume normal operation when OSD is removed from the screen.

OSD menu

This menu accesses controls for all aspects of picture setup, and is accessed by a short press of the power key when the display is on. The eight main menu options are explained in the following:

Option	Sub option	Range	Function
Display	Brightness	0-100	Adjusts backlighting level
	Contrast		Adjusts image contrast (range between darkest and lightest)
	Hue (analogue video only)		Shifts colours represented by screen
	Saturation (analogue video only)		Varies colour intensity, from dull to full and rich

Option	Sub option	Setting	Function
Scaling	HDMI-1	1:1, FILL, ASPECT	Sets input image to true size, fill available screen area, or to fill screen vertically or horizontally but maintain correct aspect ratio
	DVI-2		
	VID-3		
	VID-4		

Option	Sub option	Range	Description
Colour	Temperature	User, 6500K, 9300K	Allows the user to select colour temperature. The 6500K setting makes the display colour warmer (slight red tint). The 9300K setting makes the display colour cooler (slight blue tint). The User setting allows the customer to manually select the Red, Green, and Blue values
	Red	0 - 255	Adjusts the red colour
	Green		Adjusts the green colour
	Blue		Adjusts the blue colour

Option	Sub option	Setting/Range	Description
PIP Control (Picture-in-Picture)	PIP Mode	OFF, PIP, Split	Sets to either no PIP, regular PIP as dictated by following settings, or 50:50 split pane (image scaled to fit)
	PIP Swap		Swaps main source with PIP source
	PIP Size	Small, Medium, Large	Controls PIP window size. Sets to approximately 1/6th, 1/5th, and 1/4 of screen area respectively
	PIP Horizontal	0-100	Adjusts horizontal position, where 0 = left, and 100 = right
	PIP Vertical	0-100	Adjusts vertical position, where 0 = bottom, and 100 = top

Option	Sub option	Setting/Range	Description
Source	Main Source	HDMI-1, DVI-2, VID-3, VID-4	Select which physical input should be displayed Note: PIP source can only be set to VID-3 or VID-4 when HDMI® or DVI are the main source. The reverse applies when either of the analogue sources is set as main source
	PIP Source		

Option	Sub option	Range	Description
OSD Position	Horizontal	0-100	Adjusts horizontal position, where 0 = left, and 100 = right
	Vertical		Adjusts vertical position, where 0 = left, and 100 = right

Option	Sub option	Description
Language	English French German Spanish Italian Portuguese	Select language best suited for OSD text

Option	Sub option	Range	Description
Configuration	Power Control	Slave, Master	In slave mode monitor will turn on if 12/24V is detected on the yellow wire. In master mode monitor will turn on slave devices by switching 12V to yellow wire when monitor is on
	Key Beeps	Off, On	Turns on or off the OSD key beeps
	Factory Reset	Yes, No	Restore all settings to default

Option	Sub option	Description
Touch Screen	HDMI	Enables serial touch control for HDMI®
	DVI	Enables serial touch control for DVI
	Enable All	Enables serial touch control for HDMI® and DVI
	Disable	Disables serial touch control

➔ ***Note:*** USB touch control is automatically enabled upon connection.

Updating the firmware

Updates to the ZM series monitor firmware may occasionally become available. The updates will typically include improvements to existing functionality or new features, and will be made available via the B&G website: www.bandg.com.

Checking current firmware version

On the Configuration page it is possible to see the name of the monitor, resolution (native), OSD version, BIOS version, and the serial number.

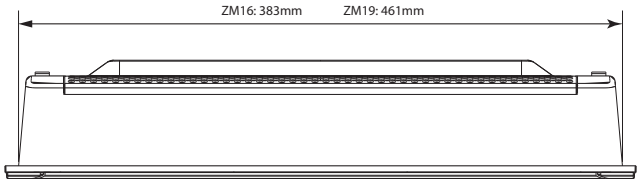
Installing an Update

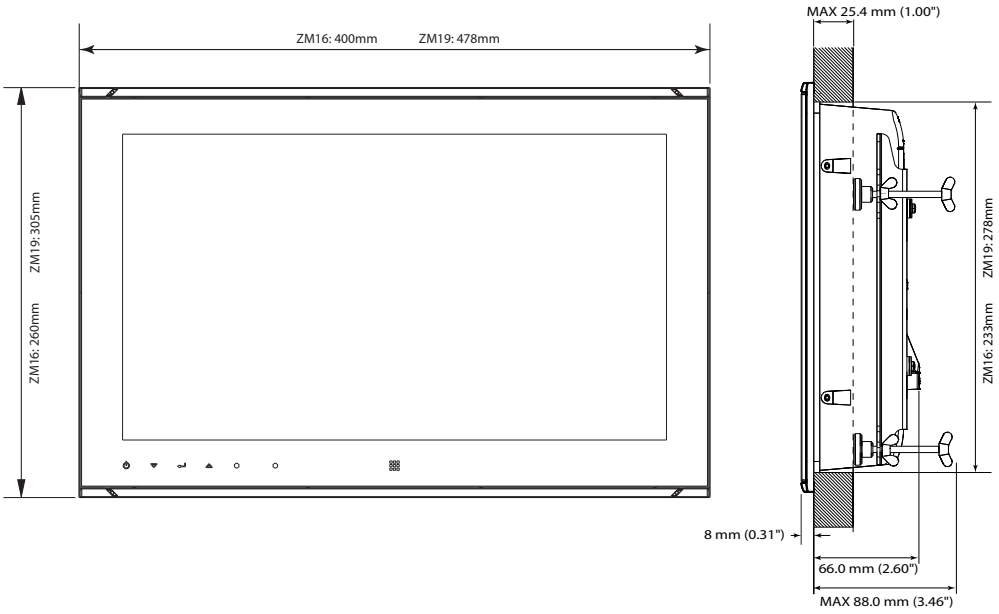
Updates should be loaded via a compatible B&G Multifunction display. Refer to the applicable product manual on how to upgrade a device over NMEA 2000®.

Alternatively, return the device to a Navico dealer to arrange updating.

➔ ***Note:*** Upgrading a ZM monitor can only be done one at a time.

5 Dimensional drawings





6 Troubleshooting tips

Issue	Possible Cause
No picture - red LED ON	LED on continuously indicates no (compatible) video is available on currently selected source. Confirm that the correct video input is selected. Check that the video signal cable is properly connected to the display. Test cable with 'known good' equipment. Check display settings of the video source - ensure the resolution is supported by the display. Ensure brightness is turned up to a suitable level.
No picture - red LED OFF	Make sure power is connected to an appropriate DC voltage source, and that the fuse is fitted or breaker is switched on. After pressing power button, the red LED should blink as monitor starts up, followed by momentary display of the logo on the screen.
Image persistence	Image persistence occurs when a ghost of an image remains on the screen after the screen image has been changed. Unlike a CRT monitor, an LCD monitor's image persistence is not permanent. To erase an image ghost, turn the monitor off for several hours. To avoid this condition, do not leave the monitor displaying the same image unnecessarily, for an extended period of time.
Picture quality & image stability	Check for video cable condition; is shield intact, and does cable not exceed maximum distance for video standard. Check the signal source is outputting a compatible resolution at a supported frequency. Monitor may be receiving incorrect/bad sync signals from source. Video compromised by interference from other equipment.
Low level backlight	Supply voltage has dropped below 10V. Will restore at >11V. Unit has been subject to excessively hot direct sunlight for an extended period and/or unit enclosure is too hot. Automatic thermal protection has been enabled.
Slight distortion in text or graphics	Not working in native resolution, where possible adjust the video source to output correct resolution.
Display is present but "bars" appear or roll across screen	Ground loop problem between video source and monitor. Video compromised by interference from other equipment.
Vertical shaded bars on screen image	Incoming video may be in 4:3 ratio, either leave in 'aspect' mode, or set to 'fill' to use full screen space.

7 Cleaning and maintenance

If the display requires cleaning, use a damp soft cloth (e.g. microfiber) with a mild, non-abrasive glass cleaner. Ensure cloth is regularly washed or replaced.

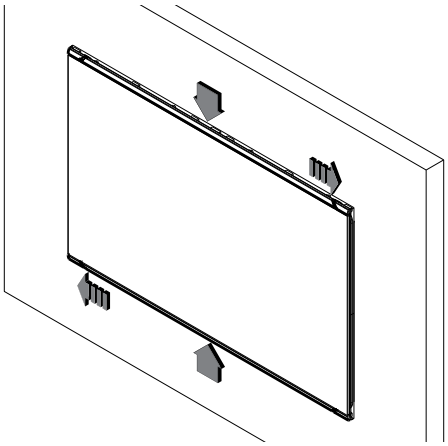
→ ***Note:*** Do not use paper products as they may scratch the surface. To minimize the risk of abrasion, allow the screen to air dry.

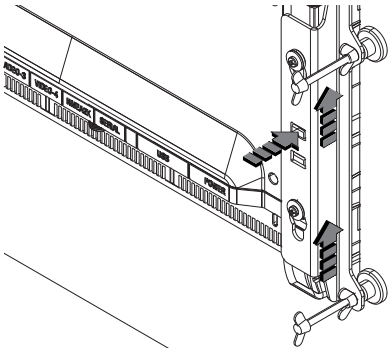
→ ***Note:*** Never use acidic, ammonia based, or abrasive cleaning products to clean the display. These products will damage special coatings on the glass.

→ ***Note:*** To prevent damage caused by lightning strikes, it is recommended to disconnect the display from the power source during intense storms, or when the product is not in use for extended periods.

Display removal

The display's top and bottom bezel trim must be removed in order to undo the fasteners holding unit in place by the mounting flange. The bezel trim have been designed to be very low profile, and therefore fully conceal the locking tabs that keep them from being accidentally disengaged from the mounting flange. To release the locking tab, it is necessary to gently lever the centre of the bezel trim away from the mounting flange. To remove the cover, simultaneously slide it sideways; to the right for the top cover, and to the left for the bottom cover.

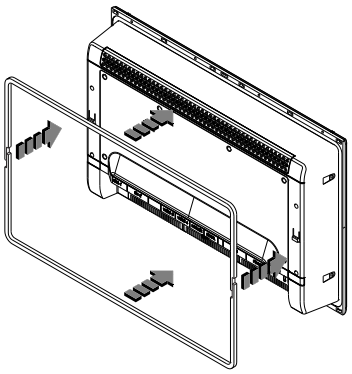




The mounting brackets should be loosened in reverse order to fitting. To remove the brackets, depress the locking tab before sliding brackets upwards.

Replacing the gasket

The foam gasket on the rear of the display bezel is available as an optional accessory, should the factory installed item be damaged.

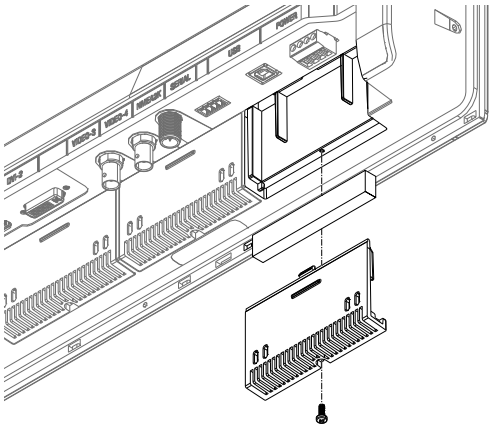


Fit the two lengths of foam gasket in to the rebated channel on the back of the displays mounting flange. Only remove backing paper from the side to be stuck to monitor, and only remove a small amount at a time. Ensure the gasket ends of the two halves overlap and make contact.

→ ***Note:*** take care not to stretch gasket when applying. Only pull gasket minimum amount required to lay it on straight. The backing paper on outside of gasket will help prevent stretch, and should only be removed when display is ready to install in to dashboard.

Replacing the filters

Where displays are installed in an unsealed enclosure, air intake filters should be inspected yearly, and replaced if noticeably fouled. If vessel is subject to major works involving spray painting or sanding, it is recommended that the monitor either be removed, or completely covered in a clean fabric drop cloth.



➔ ***Note:*** ZM16 and ZM19 models require three filter elements. The filter accessory kit includes five elements.

Other maintenance

Only qualified service personnel should perform any repairs that require opening of the case.

> ⚠ **Warning:** Some components in the display unit operate on high voltages. Repairs require specialized service procedures and tools only available to service technicians - there are no user serviceable parts or adjustments. The operator should never remove the display unit cover or attempt to service the equipment.

8 General specifications

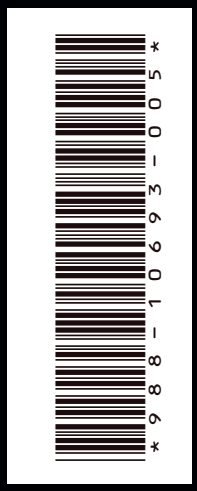
LCD display	15.6" TFT Active Matrix Panel 18.5" TFT Active Matrix Panel	Weight (monitor only):	ZM16T = 3.60 kg ZM19T = 4.60 kg
Brightness	1000 nit	Screen glass	AF, AR
Native resolution	ZM16: 1366x768 ZM19: 1920x1080	Protection	Thermal: auto screen dimming, overvoltage, reverse polarity, low voltage
Contrast	ZM16: 500:1 ZM19: 1000:1	Power and setup keys	Capacitive touch
View angle	Horizontal: 80/80 Vertical: top 20, bottom 70	Comms / Control	RS422, USB, NMEA 2000®
Display colours	16.7 million	Video inputs	1x HDMI®, 1x DVI-I, 2x composite (NTSC & PAL)
Operating temp	-15 to 55 degrees Celsius	Picture in Picture	YES; variable position & size
Non operating temp	-20 to 60 degrees Celsius	Auto video detection	YES
Operable humidity	95%	Auto video scaling	YES
Water ingress resistance	IPX2 (bracket mount) IPX5 (dash mount - front only exposed)	Supply voltage	12 V / 24 V DC (9 - 31.2 V)
Bezel & rear case	PC/ABS	Power consumption	16" 24 W 19" 38 W
Supported Resolutions			
640 x 480 (8-32 bit colour, 59, 60 Hz) 720 x 480 (8-32 bit colour, 59, 60 Hz) 720 x 576 (16-32 bit colour, 50-60 Hz)	800 x 480 (8-32 bit colour, 60 Hz) 800 x 600 (8-32 bit colour, 60 Hz) 1024 x 600 (8-32 bit colour, 60 Hz) 1024 x 768 (8-32 bit colour, 60 Hz)	1280 x 768 (8-32 bit colour, 60 Hz) 1280 x 720 (8-32 bit colour, 50-60 Hz) 1360 x 768 (8-32 bit colour, 60 Hz)	1366 x 768 (8-32 bit colour, 60 Hz) 1920 x 1080 (8-32 bit colour, 50-60 Hz) 1920 x 1080 (8-32 bit colour, 25, 29, 30 Hz Interlaced)

→ ***Note:*** Occasionally specifications may change - refer to the latest edition of the manual on the website: www.bandg.com

9 Accessories

Part description	Part number
ZM16 bezel trim, silver and black (4 pieces)	000-11620-001
ZM19 bezel trim, silver and black (4 pieces)	000-11621-001
ZM16 Vesa bracket	000-11615-001
ZM19 Vesa bracket	000-11616-001
Cable retention bracket (all models), includes 4 cable ties, screws	000-11614-001
ZM16/19 rear mounting kit	000-11618-001
ZM16/19 dash seal kit (6 pieces)	000-11619-001
ZM16/19 inlet filters (5 pack)	000-11623-001
ZM16/19 inlet filter cover	000-11624-001
HDMI® cable (3m)	000-11248-001
HDMI® cable (10m)	000-11249-001
Connector kit (power and serial plugs)	000-11625-001

→ ***Note:*** Occasionally available accessories may change - refer to the latest edition of the manual on the website: www.bandg.com



50°45'3.186"N
1°31'45.971"W

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