FURUNO

INSTALLATION GUIDE
HUB-102　Network Hub

⚠ WARNING

Do not open the shield cover unless totally familiar with electrical circuits.

Only qualified personnel should work inside the equipment.

Do not install the unit where it may be submerged in water.

Water in the unit can result in fire, electrical shock, or damage to the equipment.

Use only the supplied power cable.

Fire or damage to the equipment can result if a different power cable is used.

Do not disassemble or modify the equipment.

Fire, electrical shock, or serious injury can result.

⚠ CAUTION

Observe the following compass safe distances to prevent interference to a magnetic compass:

	standard compass	steering compass
HUB-102	0.05 m	0.05 m

FURUNO ELECTRIC CO., LTD.

Specifications

Transmission speed	10Mbps/100Mbps half/full duplex 1000Mbps full duplex	
I/O Ports	5 ports	
Environmental conditions	Ambient temperature	-15 to 55 °C
	Relative humidity	93% or less
	EMC	IEC 60945 Ed.4
	Dustproofing, waterproofing	IP56 (IEC 60529)
Power supply	12-24 VDC/0.2-0.1 A	

Equipment List

Name	Type	Part No.	Qty	Remarks
Ethernet HUB	HUB-102	-	1	
Installation materials	HUB-102-CBL-05	-	1	Power cable assy.
	Self-tapping screws	-	1 set	M3 screws (4pcs.)
	Installation Manual	-	1	

Installation

Mounting considerations

The HUB-102 can be mounted on a desktop or a bulkhead. When choosing a mounting location, keep in mind the following points:

- Locate the unit where it will not be submerged in water.
- Keep the unit out of direct sunlight to prevent build up heat inside the cabinet.
- Cables should point down to prevent any possible water wicking.

Mounting

Fix the unit to the mounting location with four self-tapping screws, referring to the outline drawing in this manual.
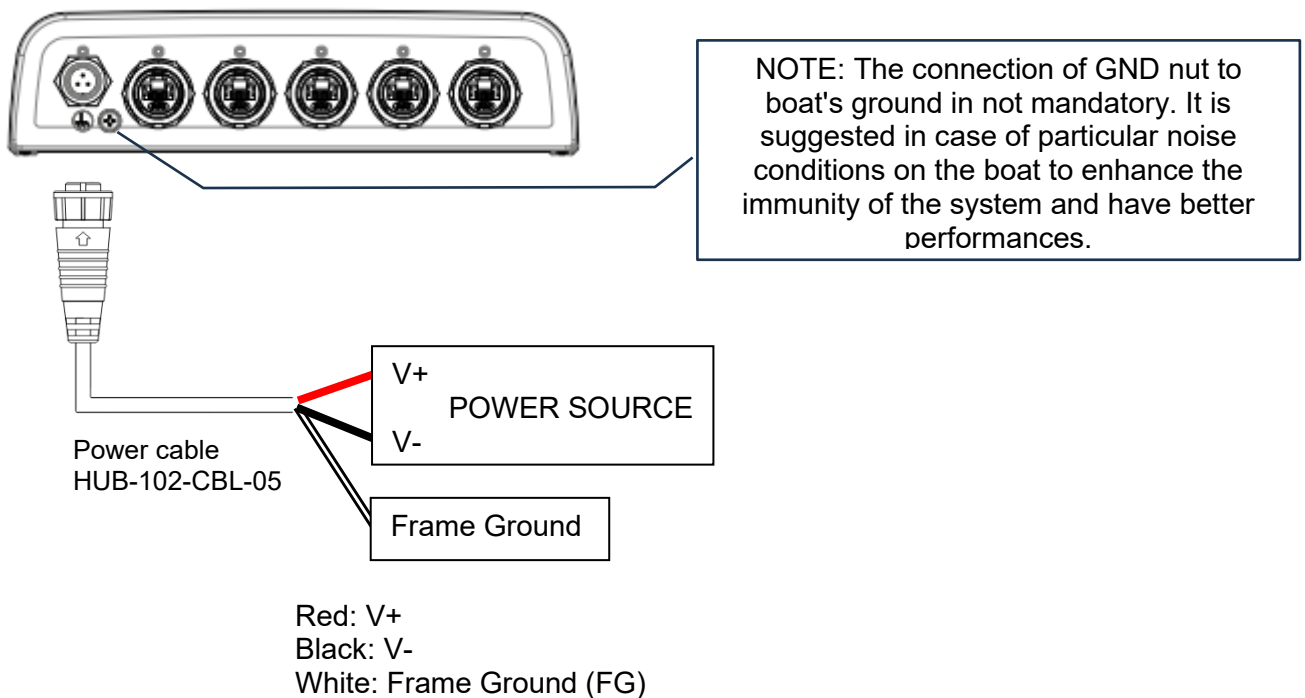
Wiring

Interconnection

To connect NavNet equipment, use the optional cables shown below depending on the unit connected. (All cables below are shielded.)

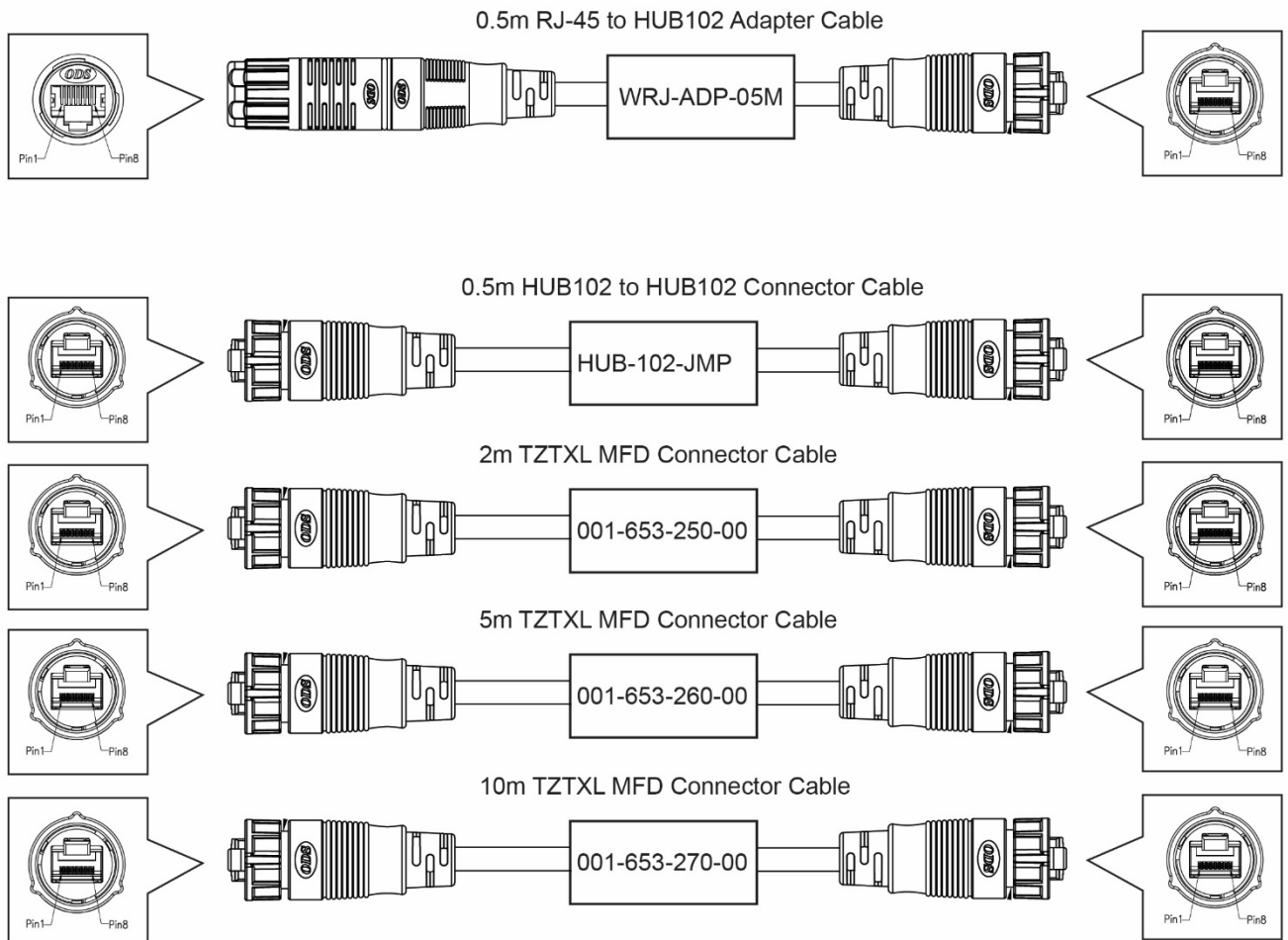| Connected unit	Type	Part No.	Cable length
Waterproof equipment (Waterproof RJ45 to Waterproof RJ45 Cable)	FRU-RZWPWP-002G	001-653-250-00	2 m
	FRU-RZWPWP-005G	001-653-260-00	5 m
	FRU-RZWPWP-010G	001-653-270-00	10 m
Non-waterproof equipment (Waterproof RJ45 to Non-Waterproof RJ45 Cable)	FRU-RZWPNWP-002G	001-646-960-00	2 m
	FRU-RZWPNWP-005G	001-646-980-00	5 m
	FRU-RZWPNWP-010G	001-647-000-00	10 m
Waterproof adapter cable		WRJ-ADP-05M	0.5 m
Multiple HUB-102		HUB-102-JMP	0.5 m

Power connection

The HUB-102 power supply must be connected to a power source as follows:

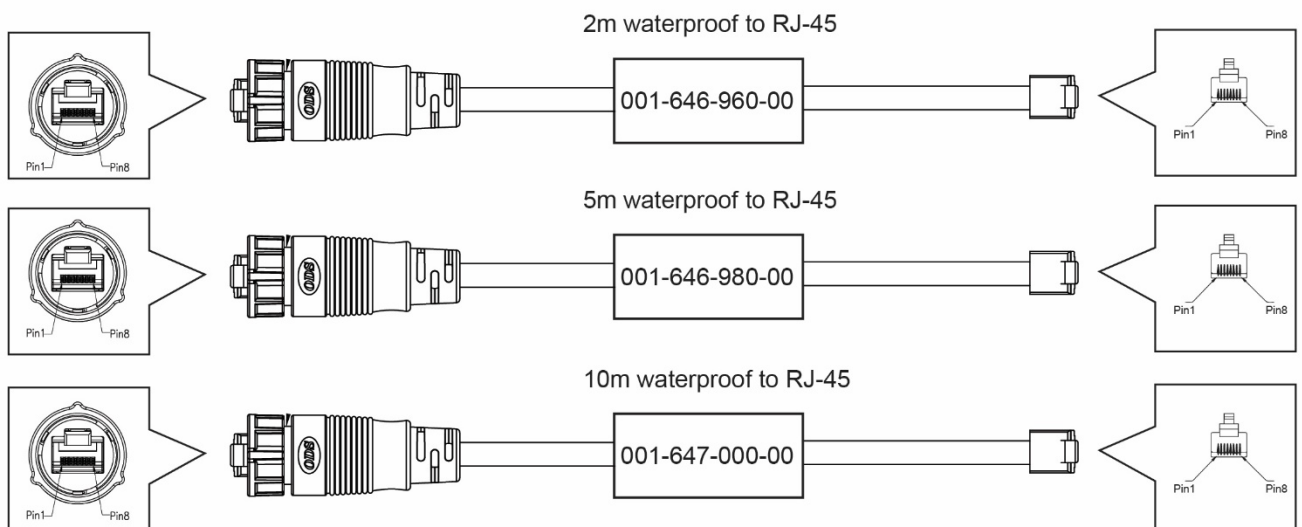The HUB-102 is protected by an internal auto resetting fuse.

NOTE: The connection of GND nut to boat's ground in not mandatory. It is suggested in case of particular noise conditions on the boat to enhance the immunity of the system and have better performances.

Power cable HUB-102-CBL-05

V+

POWER SOURCE

V-

Frame Ground

Red: V+
Black: V-
White: Frame Ground (FG)

Optional cables

Ethernet waterproof to waterproof cables

0.5m RJ-45 to HUB102 Adapter Cable

WRJ-ADP-05M

0.5m HUB102 to HUB102 Connector Cable

HUB-102-JMP

2m TZTXL MFD Connector Cable

001-653-250-00

5m TZTXL MFD Connector Cable

001-653-260-00

10m TZTXL MFD Connector Cable

001-653-270-00

Ethernet waterproof to non-waterproof cables

2m waterproof to RJ-45

001-646-960-00

5m waterproof to RJ-45

001-646-980-00

10m waterproof to RJ-45

001-647-000-00

Example: Typical System

1 ➡

Use shielded CAT5E or better cable

2 ➡ NXT FU

3 ➡ HUB-102
MARINE NETWORK HUB

WRJ-ADP-05M

WRJ-ADP-05M

WRJ-ADP-05M

001-653-250-00 (2m)
001-653-260-00 (5m)
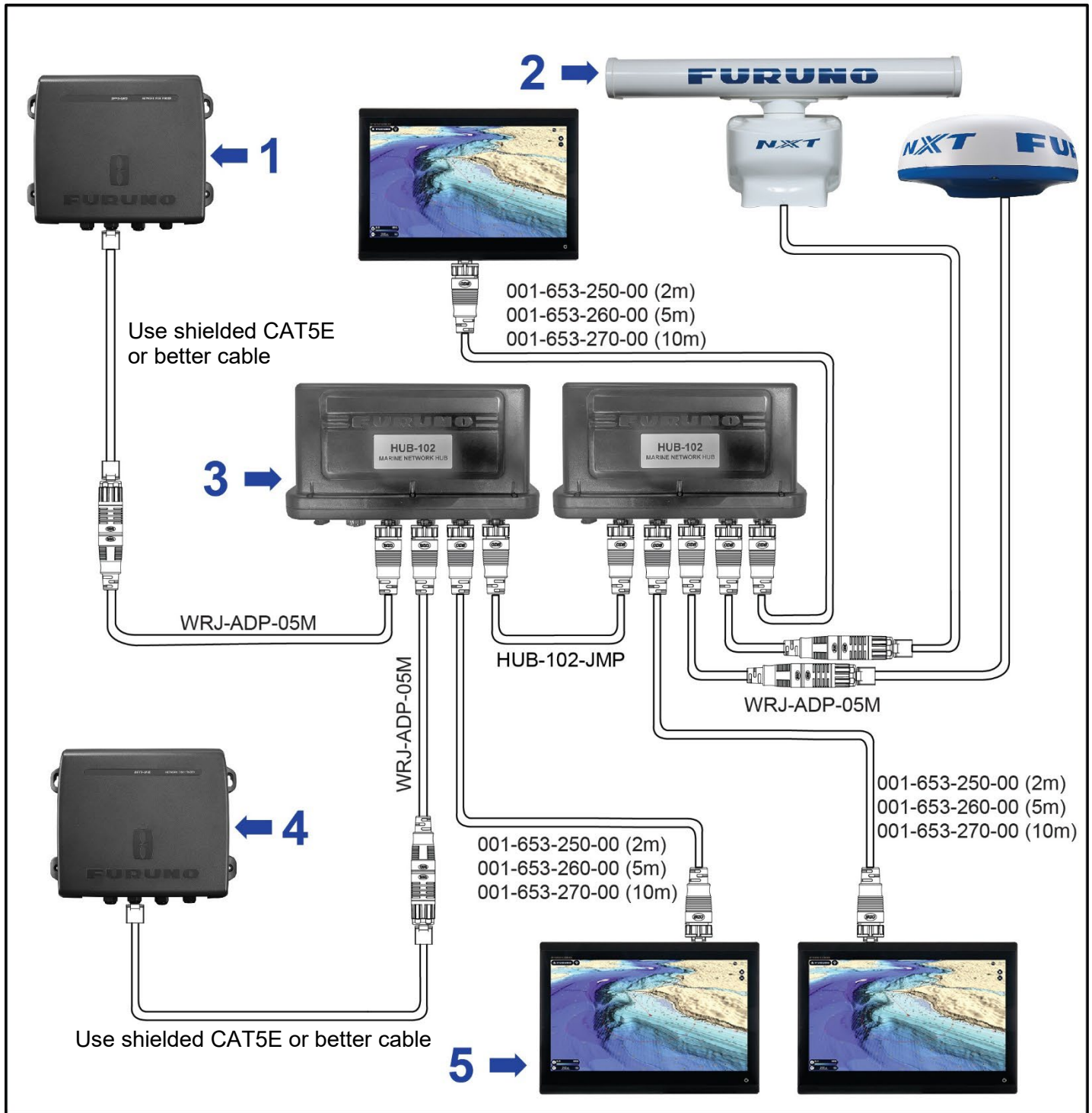001-653-270-00 (10m)

**4** ➡

5 ➡

Use shielded CAT5E or better cable
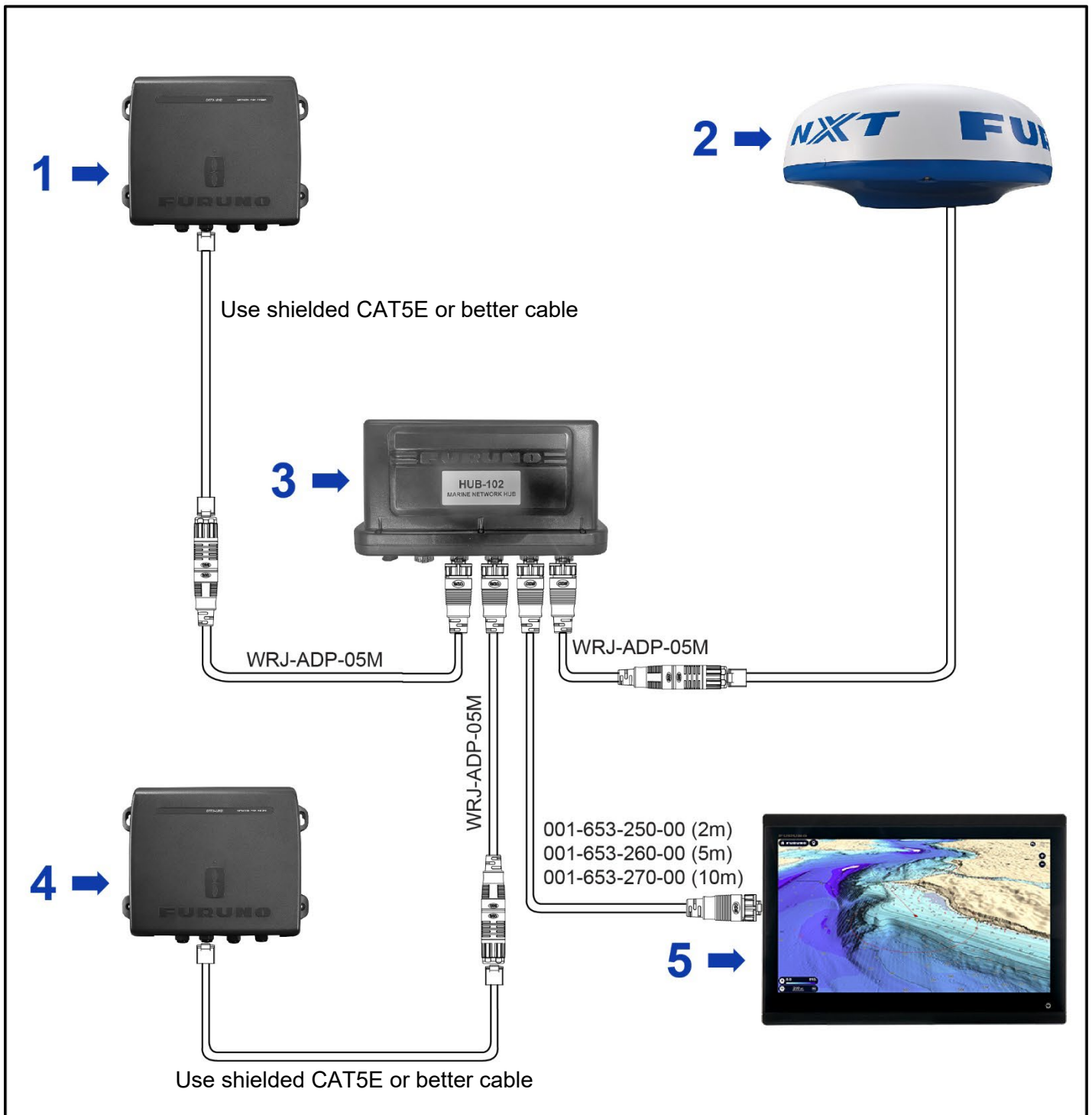
1. DFF3D Multibeam Sonar
2. Radar Antenna
3. HUB102 Network Switch
4. Network Fish Finder
5. Multi Function Display

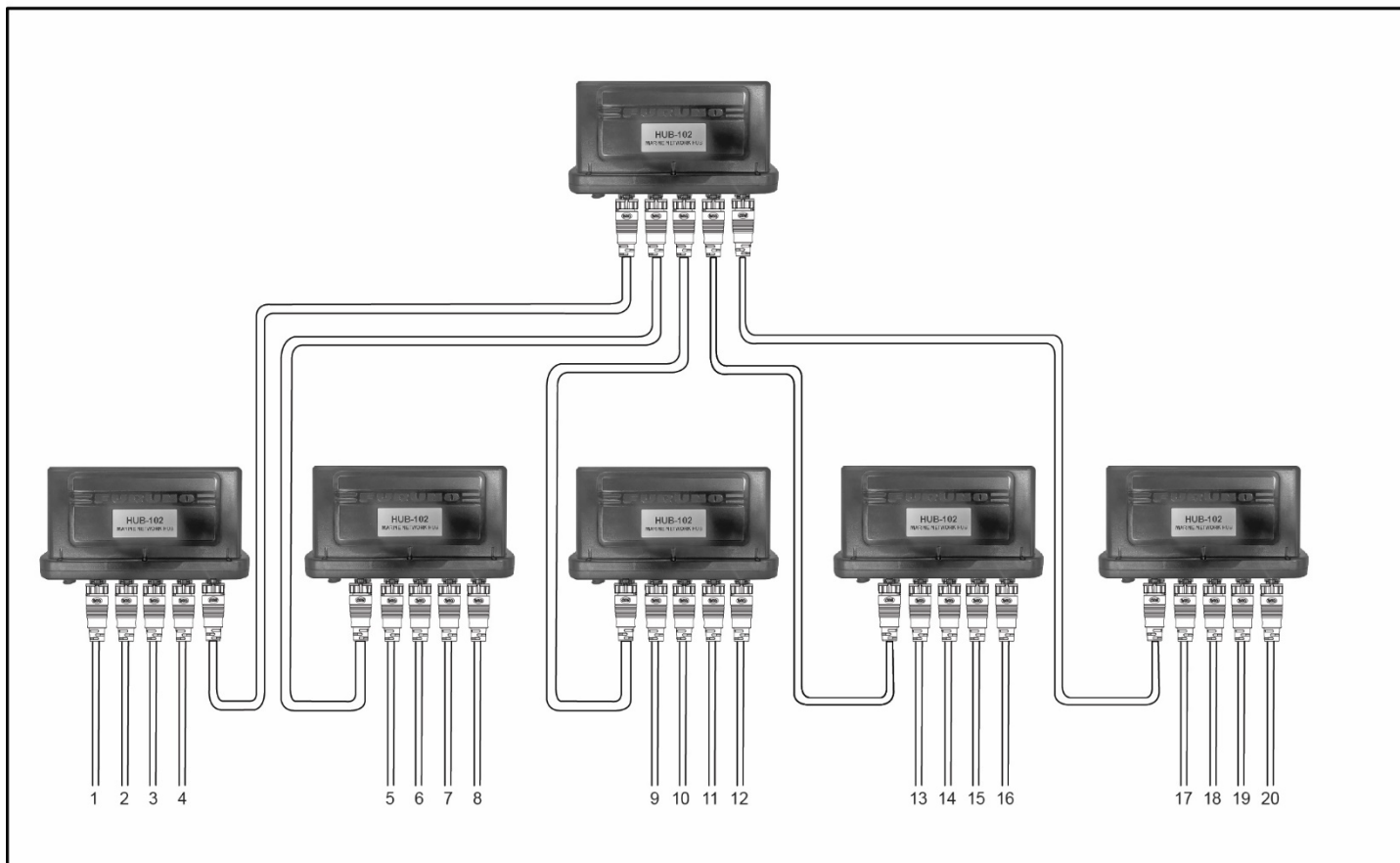**Example: System connecting two HUB102's together**

001-653-250-00 (2m)
001-653-260-00 (5m)
001-653-270-00 (10m)

Use shielded CAT5E or better cable

WRJ-ADP-05M

WRJ-ADP-05M

HUB-102-JMP

WRJ-ADP-05M

001-653-250-00 (2m)
001-653-260-00 (5m)
001-653-270-00 (10m)

001-653-250-00 (2m)
001-653-260-00 (5m)
001-653-270-00 (10m)

Use shielded CAT5E or better cable

1. DFF3D Multibeam Sonar

2. DRS Radar

3. HUB102 Network Switches connected together to provide 8 ports

4. Network Fish Finder

5. Multi Function Displays

Connect up to 4 HUB102's in a daisy chain

HUB-102-JMP

HUB-102-JMP

HUB-102-JMP

1 2 3 4   5 6 7   8 9 10   11 12 13 14
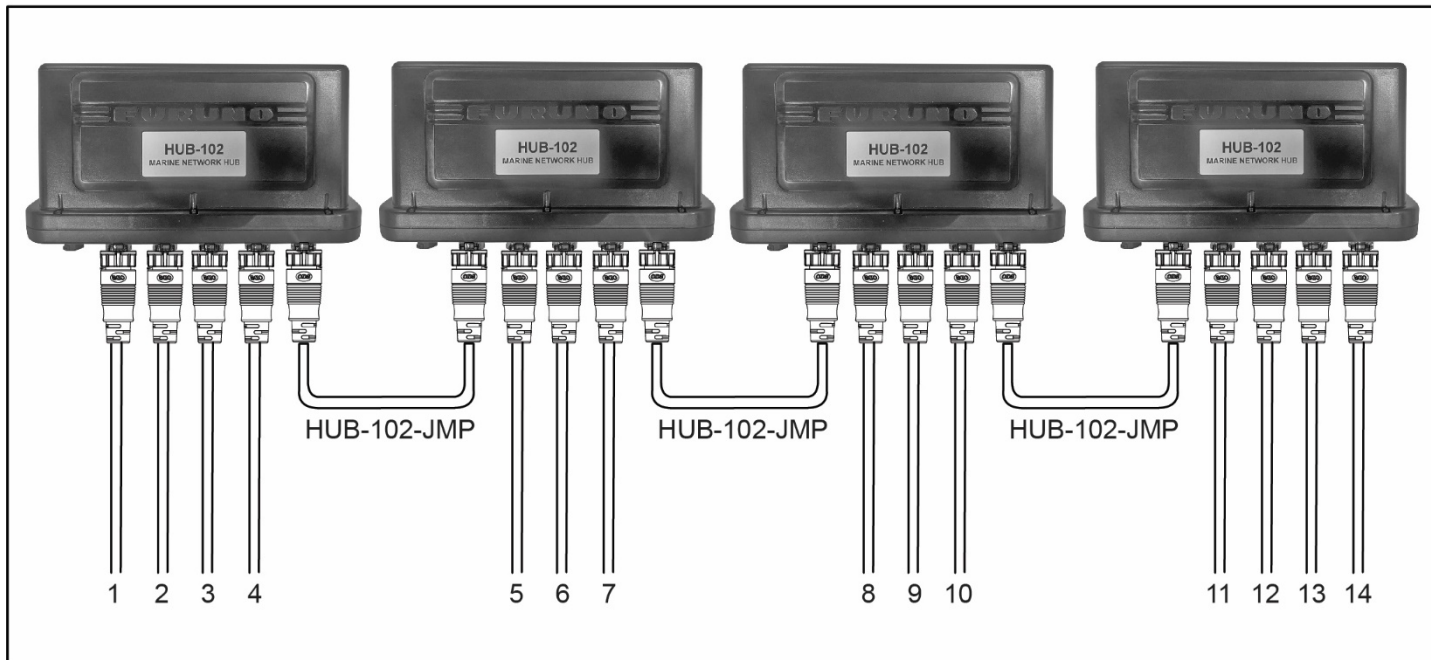
To connect 5 HUB102's, connect per the diagram below

1 2 3 4   5 6 7 8   9 10 11 12   13 14 15 16   17 18 19 20

Turning Power on, LED function

No operation is required by the user. Simply turn on the HUB-102's DC power source to power it.

LED display

There are LEDs to monitor power and LAN communication on the unit. The LEDs light, blink or go off according to equipment status as shown in the table below. When the equipment is powered on, LEDs light as following.

Power on sequence

- Power LED: ON
- LAN LEDs: Blink once, then go off.
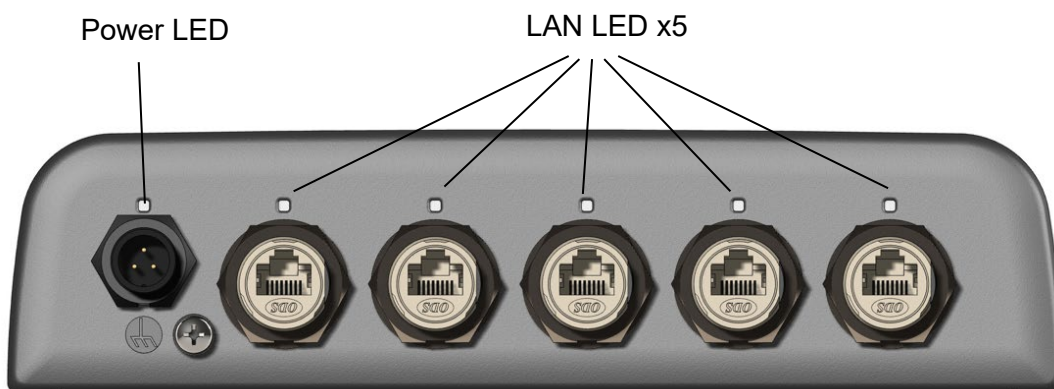
LED	Status	Meaning
Power (green)	On Off	Equipment powered Equipment off
LAN LED (green)	On Off Blinking	Connected to terminal Disconnected from terminal Data TX or RX

Compatible model ／ unit

NavNet MFD	TZT10X / TZT13X / TZT16X / TZT22X / TZT24X / TZTBBX TZT9F / TZT12F / TZT16F / TZT19F / TZT2BB
FLEX Function Display	SFD-1010 / SFD-1012
Marine Radar	FR-10 / FR-12 MODEL1815
Fish Finder	FCV-38 / FCV-2100 / FCV-1900G / FCV-1900B / FCV-1900

Dimension Drawing

117

131

57

1

230

230

217

ø 3.5

20

6

69

117

6

(28)

14
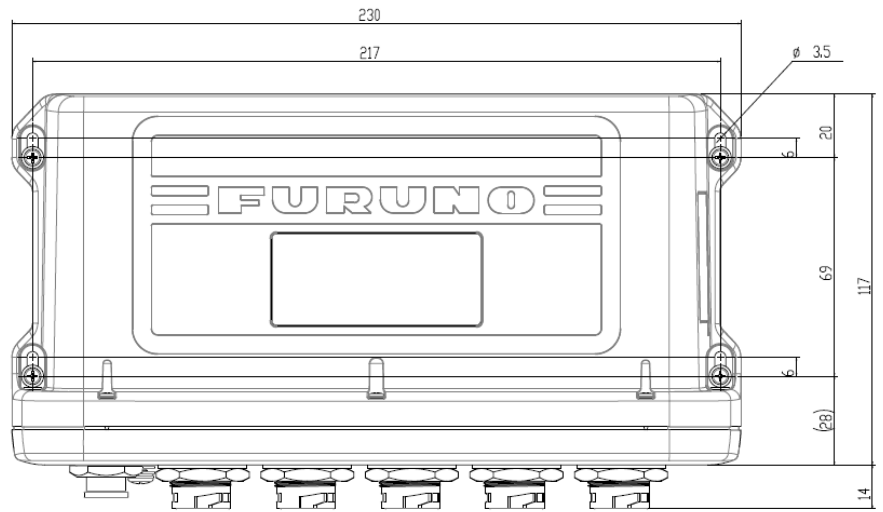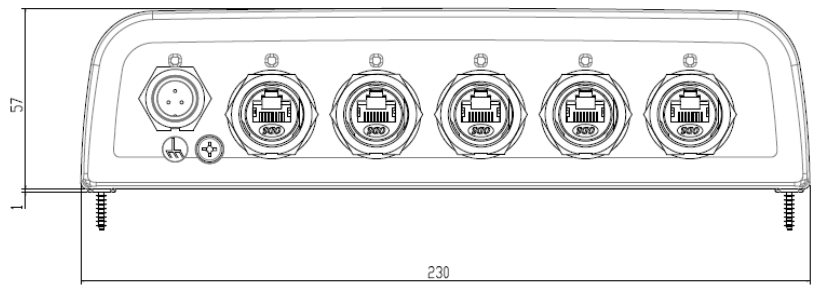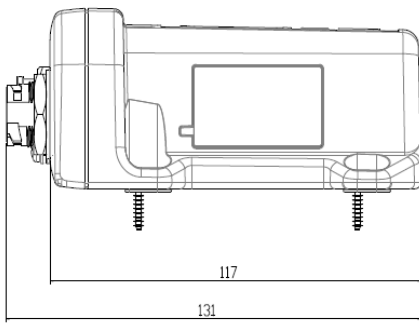
MINIMUM SERVICE CLEARANCE

30mm

30mm