

INSTALLATION GUIDE

ETHERNET HUB HUB-101

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 get wet from rain or water splash.

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

Use only the specific power cable.

Fire or damage to the equipment can result if a different 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-101 | 0.80 m | 0.50 m |

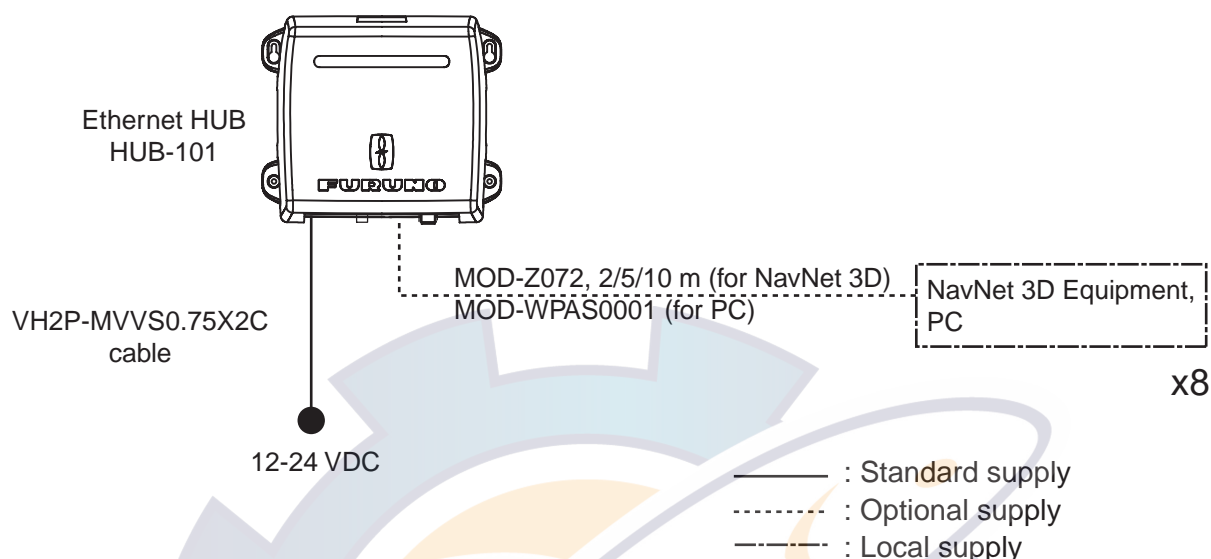


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System Configurations

The HUB-101 Ethernet HUB uses an Ethernet interface (100BASE-TX/10BASE-T) to provide the network communication among the NavNet 3D equipments, and PC. Eight ports are provided on this HUB. Three HUB-101 can be installed in a LAN series.



Specifications ETHERNET HUB HUB-101

| | | |
|--------------------------|-------------------------------------------|------------------|
| Transmission speed | Half-duplex/Full-duplex: 10 Mbps/100 Mbps | |
| I/O Ports | 8 ports | |
| Environmental conditions | Ambient temperature | -15 to 55 °C |
| | Relative humidity | 93% (at 40 °C) |
| | EMC | IEC 60945 Ed.4 |
| | Dustproofing, waterproofing | IP20 (IEC 60529) |
| Power supply | 12-24 VDC/0.5-0.25 A | |
| Body color | N2.5 | |

Equipment List

| Name | Type | Code No. | Qty | Remarks |
|------------------------|------------------|----------------|-------|------------------------------------------------------------------------|
| Ethernet HUB | HUB-101 | - | 1 | |
| Installation materials | MOD-Z072-050+ | 000-167-176-10 | 1 | LAN cable (for connection with NavNet 3D equipment) |
| | VH2P-MVVS0.75X2C | 000-167-944-10 | 1 | Power cable assy |
| | CP19-01101 | 001-027-250 | 1 set | Self-tapping screws (Type: 3x20, Code No.: 000-167-940-10) |
| Spare parts | SP19-00901 | 001-027-240 | 1 set | 1.5A Fuses (2 pcs, Type: FGMB 125V 1.5A PBF, Code No.: 000-157-464-10) |

Installation

Mounting considerations

The HUB-101 can be mounted on a desktop or a bulkhead. When choosing a mounting location for desktop or bulkhead mounting, keep in mind the following points:

- Locate the unit well away from areas subject to water splash and rain.
- Keep the unit out of direct sunlight because of heat that can build up inside the cabinet.

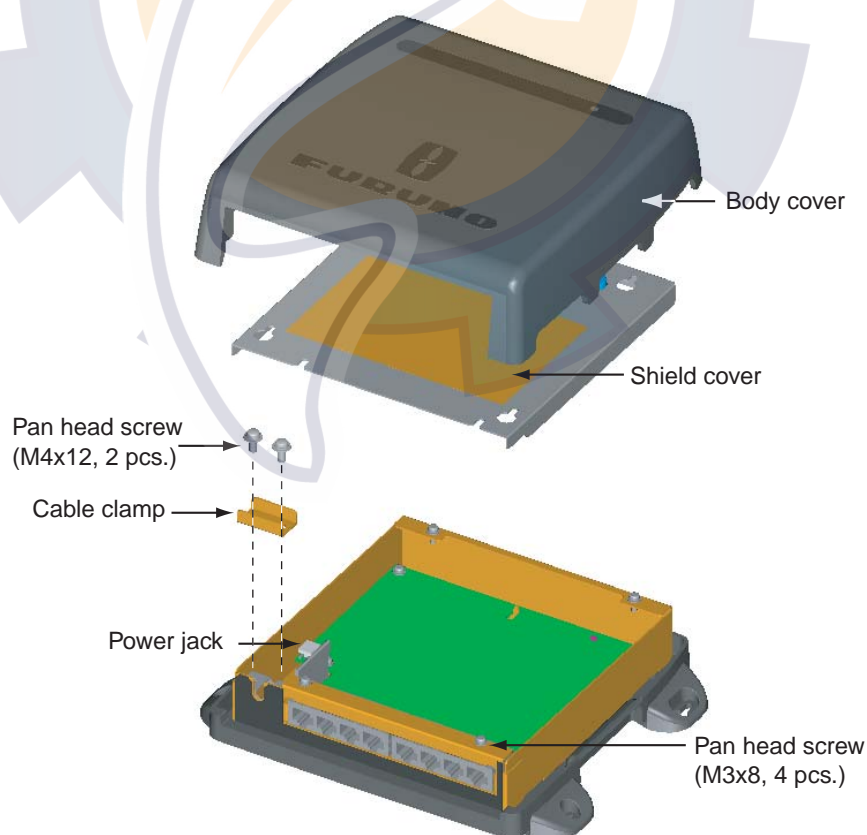
Mounting

Fix the unit to the mounting location with four self-tapping screws (3x20), referring to the outline drawing in this manual.

Wiring

Connecting the cable assy (power)

1. Detach the body cover by hands.
2. Loosen four pan head screws (M3x8) and slide the shield cover upward to remove it.
3. Unfasten two pan head screws (M4x12) to remove the cable clamp.
4. Connect the cable assy VH2P-MVVS0.75X2C (supplied) to the power jack in the HUB-101.

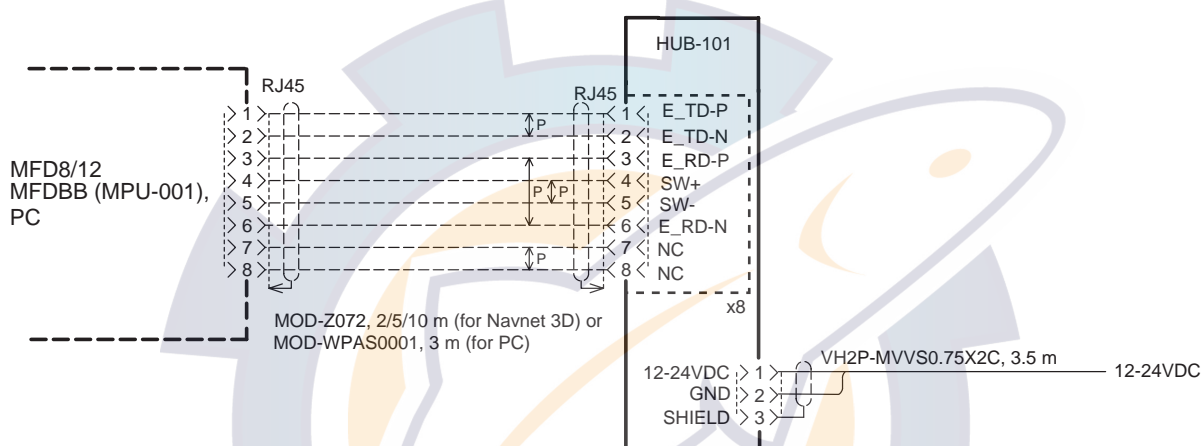


5. Remount the cable clamp, shield cover and body cover in that order.

Interconnection

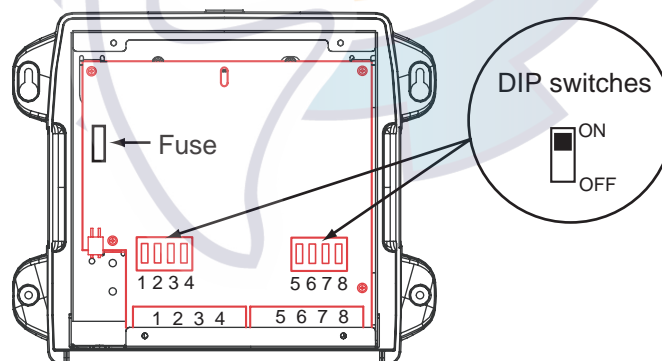
To connect the NavNet 3D equipments, use the NavNet 3D optional cables shown below depending on the unit connected.

| Connected unit | Type | Code No. | Cable length |
|---------------------|-------------------|----------------|--------------|
| NavNet 3D equipment | MOD-Z072-020+ | 000-167-175-10 | 2 m |
| | MOD-Z072-050+ | 000-167-176-10 | 5 m |
| | MOD-Z072-100+ | 000-167-177-10 | 10m |
| PC | MOD-WPAS0001-030+ | 000-164-609-10 | 3m |



DIP switch setting

When multiple MFD8/12-BBs are connected to the HUB-101 by using MOD-Z072 cables, you can power all of them by turning on one. The number of DIP switch shows the port number, and turn on ALL DIP switches used for the ports.



Note: When connecting with PC(s), use the MOD-WPAS0001-030+ cable and set the applicable DIP switch(es) to OFF.

Turning Power on, LED function

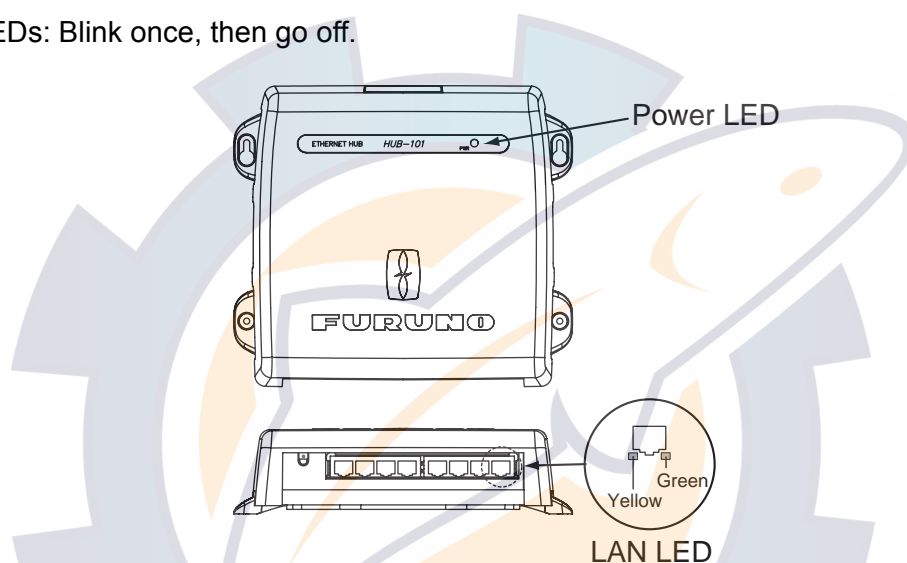
No operation is required for the user. Simply turn on the HUB-101's DC power source to power it.

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 the table shown below. The LEDs show link, mode (full-duplex or half-duplex) and collision statuses. When the equipment is powered, LEDs light as following;

Power on sequence

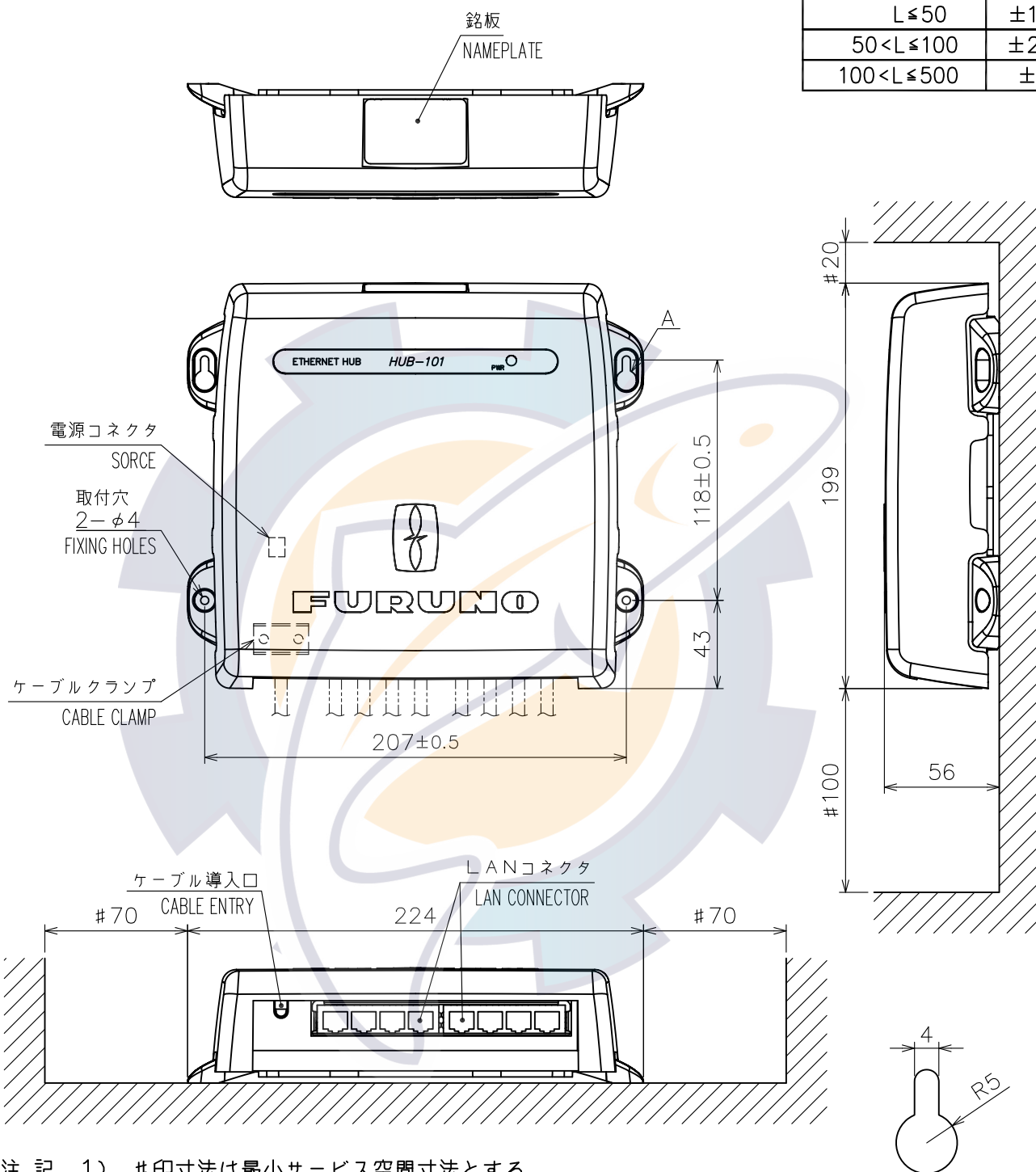
- Power LED: ON
- LAN LEDs: Blink once, then go off.



| LED | Status | Meaning |
|------------------|-----------------------|----------------------------------------------------------------------|
| Power | On Off | Equipment powered Equipment off |
| LAN LED (yellow) | On Off Blinking | Full-duplex Half-duplex Data collision |
| LAN LED (green) | On Off Blinking | Connected to terminal Disconnected from terminal Data TX or RX |

表1 TABLE 1

| 寸法区分 (mm) DIMENSION | 公差 (mm) TOLERANCE |
|------------------------|----------------------|
| $L \leq 50$ | ± 1.5 |
| $50 < L \leq 100$ | ± 2.5 |
| $100 < L \leq 500$ | ± 3 |



- 注 記 1) #印寸法は最小サービス空間寸法とする。
2) 指定外の寸法公差は表1による。
3) 取付用ネジはトラスタッピンネジ呼び径3×20を使用のこと。
- NOTE 1. # MINIMUM SERVICE CLEARANCE.
2. TABLE 1 INDICATES TOLERANCE OF DIMENSIONS WHICH IS NOT SPECIFIED.
3. USE TAPPING SCREWS $\phi 3 \times 20$ FOR FIXING THE UNIT.

A部詳細 (尺度: 1/1)
DETAIL OF A (SCALE: 1/1)

| | | | |
|----------|------------------------|---------|-----------------|
| DRAWN | Oct. 18 '07 T.YAMASAKI | TITLE | HUB-101 |
| CHECKED | Oct. 18 '07 T.TAKENO | 名称 | イーサネットハブ |
| APPROVED | Oct. 22 '07 R.Esumi | 外寸図 | |
| SCALE | 1/3 MASS 1.1 ±10% kg | NAME | ETHERNET HUB |
| DWG.No. | C4444-G03-A | REF.No. | 19-028-420G-1 |
| | | | OUTLINE DRAWING |