

# FURUNO

# OPERATOR'S MANUAL

## INTERFACE UNIT

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MODEL IF-2500

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**FURUNO ELECTRIC CO., LTD.**

NISHINOMIYA, JAPAN

(TENI, 0307)

PUB. No. OMC-43421-A1  
IF-2500



\* 00014763600 \*



\* OMC43421A10 \*



# SAFETY INSTRUCTIONS



## CAUTION

**The mounting location should satisfy the following conditions:**

Sparate from radio transmitter, radar, direction finder (at least 3m).

Locate the equipment away from air conditioner vents.

Keep the equipment out of direct sunlight.

Vibration should be minimal.

The location should be free of water spray.



## CAUTION

**Observe the following compass safe distances to prevent deviation of a magnetic compass:**

	Standard compass	Steering compass
IF-2500	1.40 m	0.95 m

**Turn off the power switch at the switchboard before beginning the installation.**

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**SPECIFICATIONS**

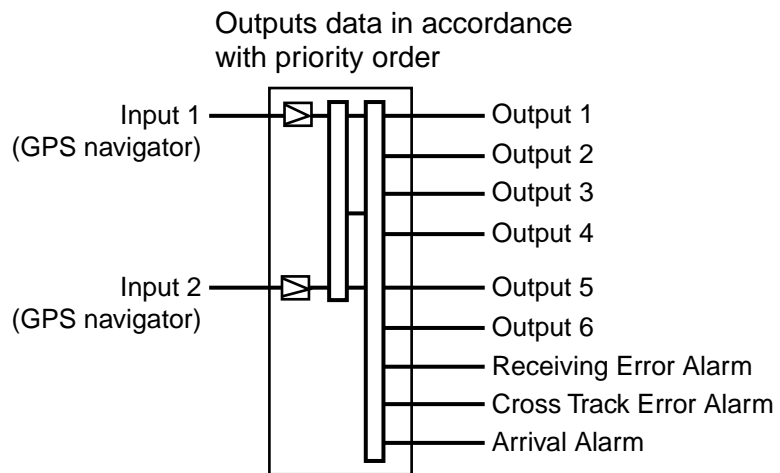
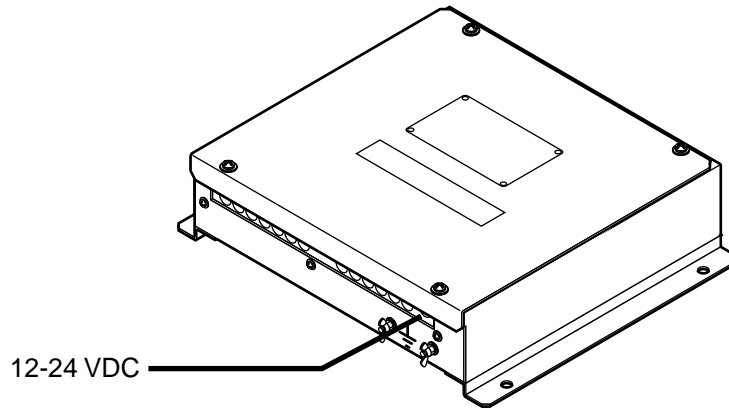
**PACKING LIST**

**OUTLINE DRAWING**

**INTERCONNECTION DIAGRAM**

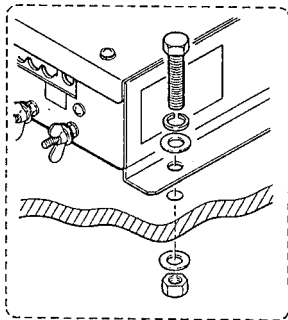
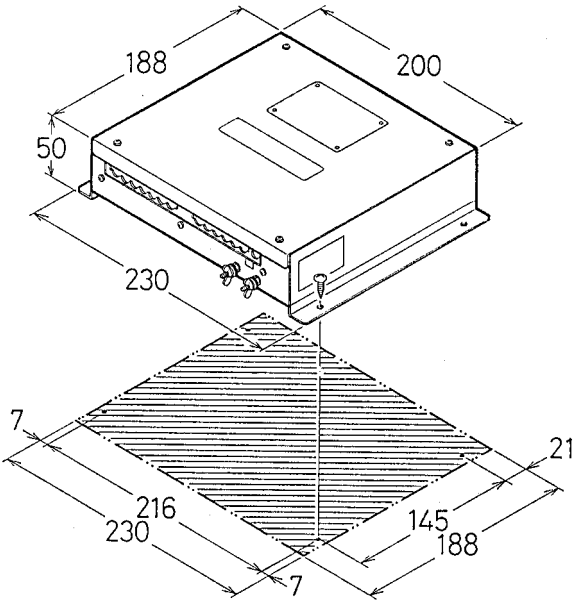
## Overview

The interface for the dual GPS navigator receives data from two GPS navigators and chooses one to output in accordance with priority order. Output data is converted to NMEA current loop, IEC 61162-1 or contact signal and output.



## Mounting

This unit does not have power switch. If you do not connect the IF-2500 to power switchboard or circuit breaker, install an external power switch (local supply), locating it near the IF-2500.



- All dimensions in millimeters.
- For added support, use nuts, bolts and washers instead of woodscrews.
- Leave sufficient space at the sides and rear of the unit for maintenance and servicing.

## Grounding

To prevent mutual interface, run a ground wire between the earth terminal on the unit and ship's superstructure.

## Selection of output data format

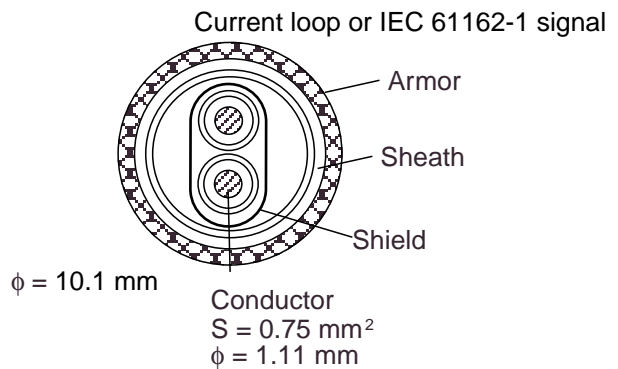
The output data format is selectable by changing a jumper block; A for IEC61162-1 and B for NMEA. For example, to select NMEA for J4, change the jumper block from A to B on JP401 and JP402. Do the same on J5 thru J9.

Output	Jumper	Factory setting	
		IEC61162-1 (A)	Current loop (B)
J4	JP401/JP402	○	
J5	JP501/JP502	○	
J6	JP601/JP602	○	
J7	JP701/JP702	○	
J8	JP801/JP802	○	
J9	JP901/JP902		○

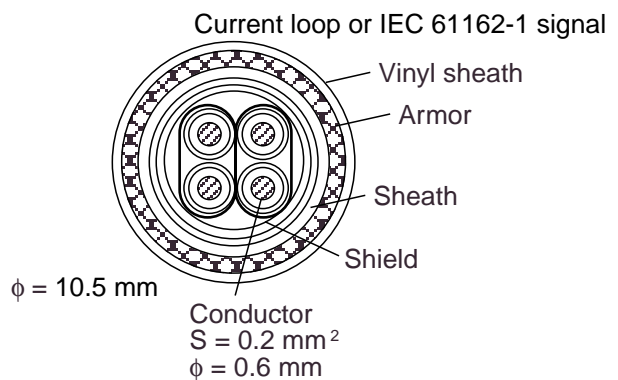
## Cable fabrication

Use the following cables (Japan Industrial Standard cables) or the equivalents.

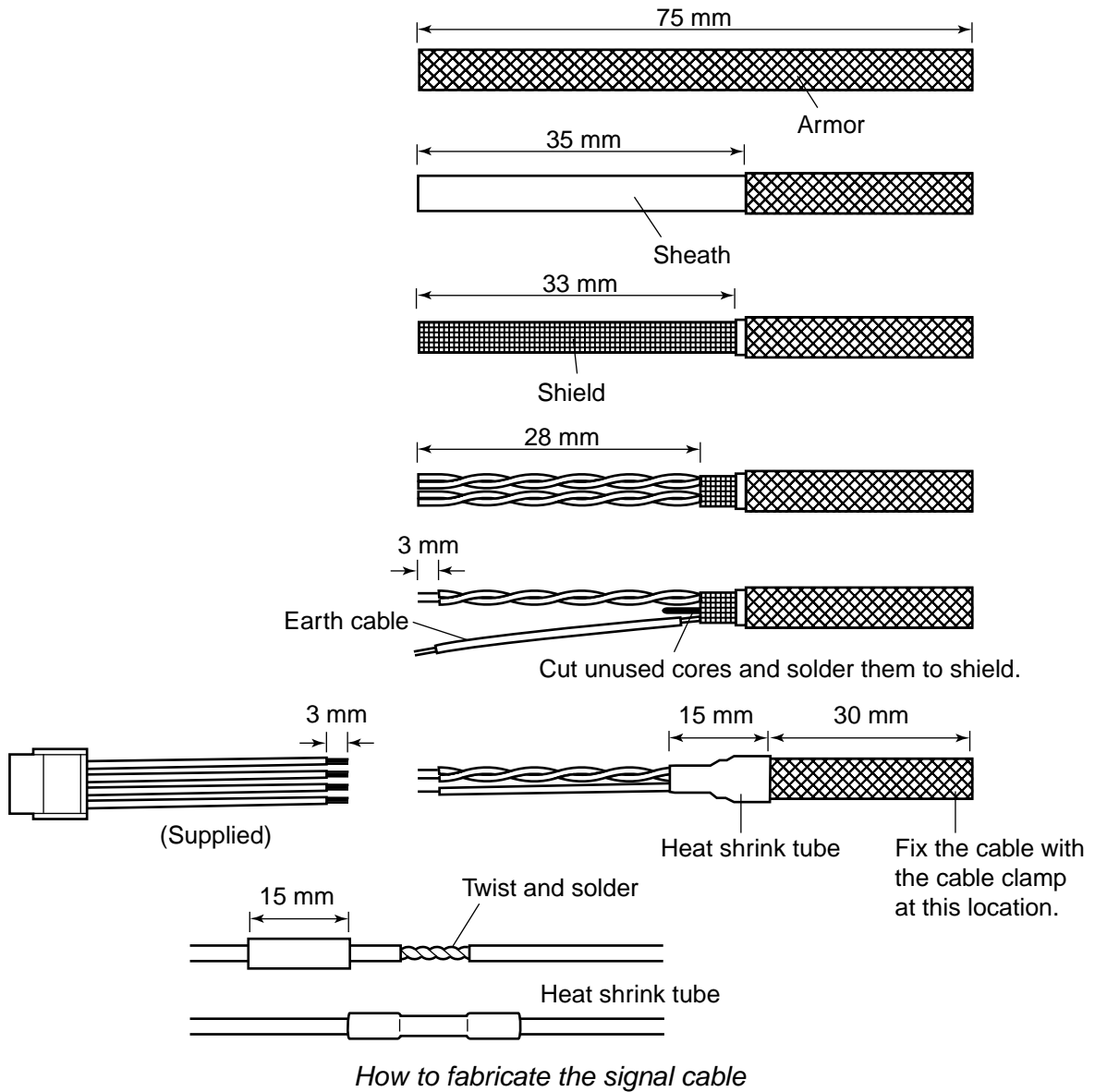
TTYCS-1 (Twisted pair cable)

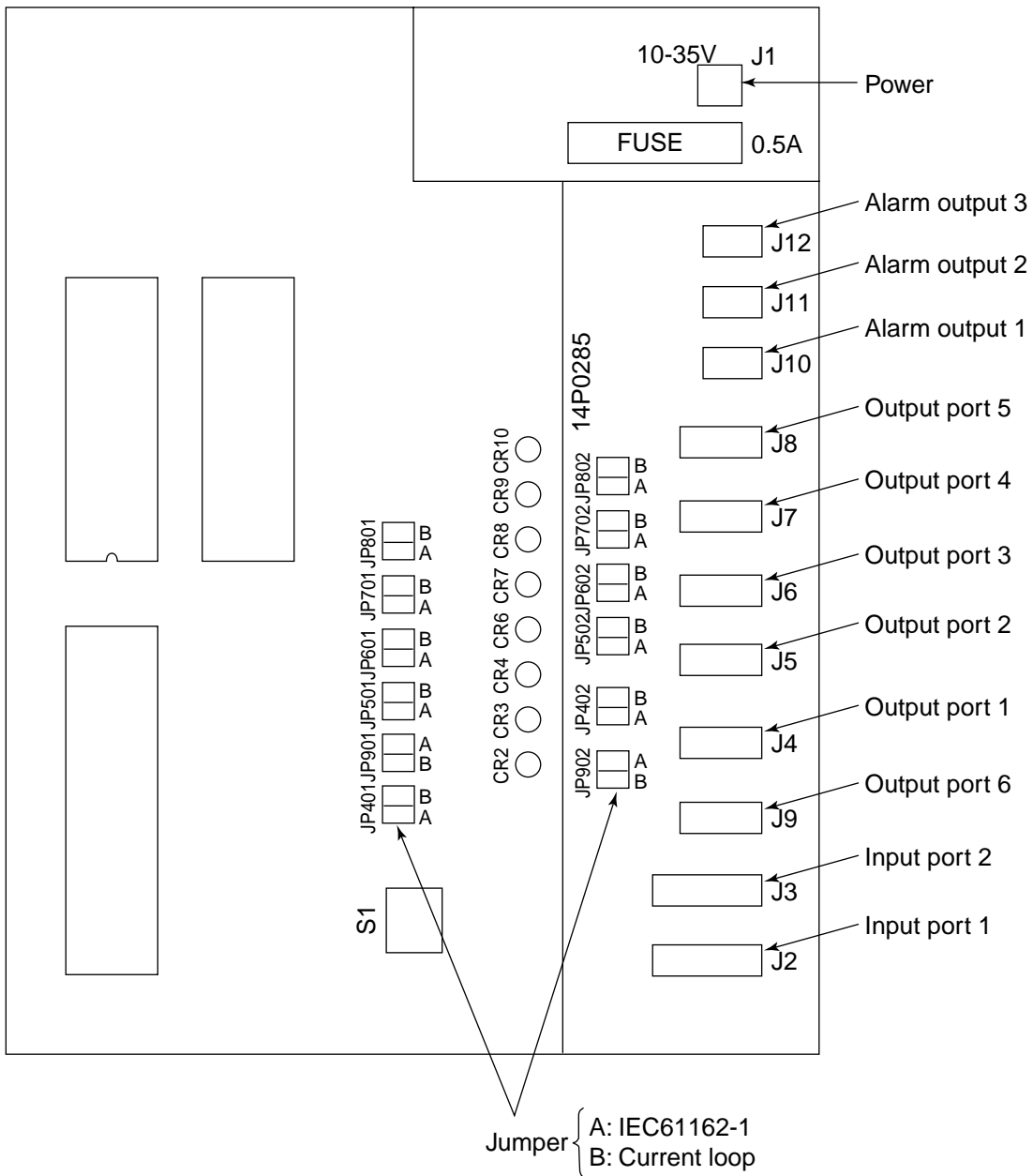


CO-SPEVV-SB-C 0.2x2P



# Fabrication of CO-SPEVV-SB-C 0.2X2P





Parts location

Alarm output 1	Arrival Alarm
Alarm output 2	Cross Track Error Alarm
Alarm output 3	Receiving Error Alarm

Alarm output normal closed type

Normal	Relay contact is closed.
Abnormal	Relay contact is open.
Turns the power off	Relay contact is open.

LEDs (Normal status)

CR6	Blinks every second.
CR7	Off.
CR8	Off.
CR9	Lights when Input port 1 has priority.
CR10	Lights when Input port 2 has priority.

## Maintenance

### Self test 1

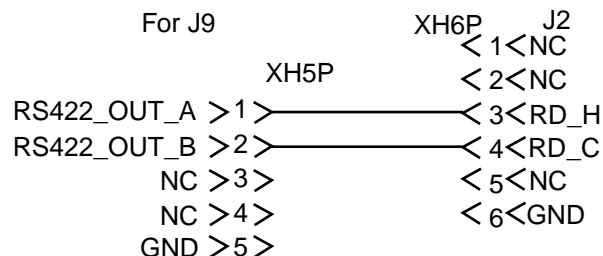
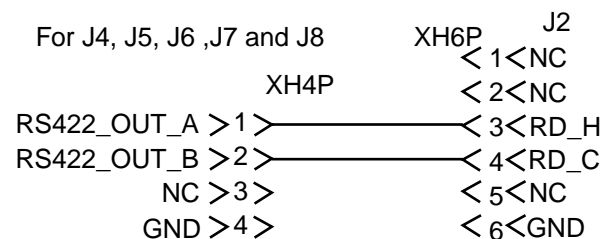
The unit performs an internal self-check in the following sequence each time power is turned on.

- LEDs CR7 to CR10 blink twice every 2 seconds.
- ROM and RAM are tested.
- LED CR6 blinks every second for normal operation. If an error is detected during the test, the corresponding LED is turned on.
  - When CR7 is on, ROM is defective.
  - When CR8 is on, RAM is defective.

### Self test 2

The test requires an external loop to check I/O. Follow the steps below to carry out the test.

- Set the DIP switch #4 of S1 to the ON position.
- Temporarily disconnect input and output connectors J2 and J4.
- Construct a pair of short connector assemblies as below.



*Short connector assy*

- Connect the XH6P-XH4P short connector assy. between J2 and J4.
- Confirm that each LED lights according to equipment status as follows:

CR2	Lights when receiving NMEA data from J2.
CR4	Lights when sending NMEA data to J4 thru J9.
CR6	Blinks every second.
CR7	Lights when ROM error is detected.
CR8	Lights when RAM error is detected.
CR9	Lights when SIO error is detected.
CR10	Normally off.

- Remove the connector from J4 and plug it into J5, J6, J7 and J8 successively, confirming that CR2 and CR9 light as below for each port. Then, remove the XH6P-XH4P short connector assy., plug in the XH6P-XH5P short connector assy. between J2 and J9, and confirm that CR2 and CR9 light as below.

CR2	Lights when receiving NMEA data at J2.
CR9	Lights when SIO error is detected.

- Remove the XH6P-XH5P short connector assy. Plug in the XH6P-XH4P short connector assy. between J3 and J4, J5, J6, J7 and J8 successively. Confirm that LEDs light or blink as below. Remove the XH6P-XH4P short connector assy., plug in the XH6P-XH5P short connector assy. between J3 and J9 and confirm that the LEDs light or blink as below.

CR3	Lights when receiving NMEA data at J3.
CR4	Lights when sending NMEA data to J4 thru J9.
CR6	Blinks every second.
CR9	Lights when SIO error is detected.

The relay contact signal output is turned on and off alternately every second during the test.

### Fuse replacement

If the fuse blows, find the cause of the problem before replacing it. Do not use a fuse rated more than 0.5A, since it may cause more serious damage to the equipment.



## SPECIFICATIONS OF INTERFACE UNIT IF-2500

This equipment is used for distribution of nav aids data from navigation equipment. It provides six outputs each from two independent inputs. Alarm signal is also available to distribute three outputs from two independent inputs.

- |                          |   |
|--------------------------|---|
| 1. Port                  | Input: 2 ports (IEC61162-1)<br>Output: 6 ports (IEC61162-1 or Current loop)<br>Alarm signal Output: 3 ports (Relay contact) |
| 2. Alarm signal          | Receiving Error Alarm, Cross Track Error Alarm, Arrival Alarm   |
| 3. Rated voltage/Current | 12-24 VDC: 0.16-0.08 A  |
| 4. Coating Color         | 2.5GY 5/1.5 Newtone No.5  |
| 5. Ambient Temperature   | -15 to 55°C   |
| 6. Relative Humidity     | 95%RH(40°C)   |
| 7. Water proofing        | IPX0  |

表 1 TABLE 1

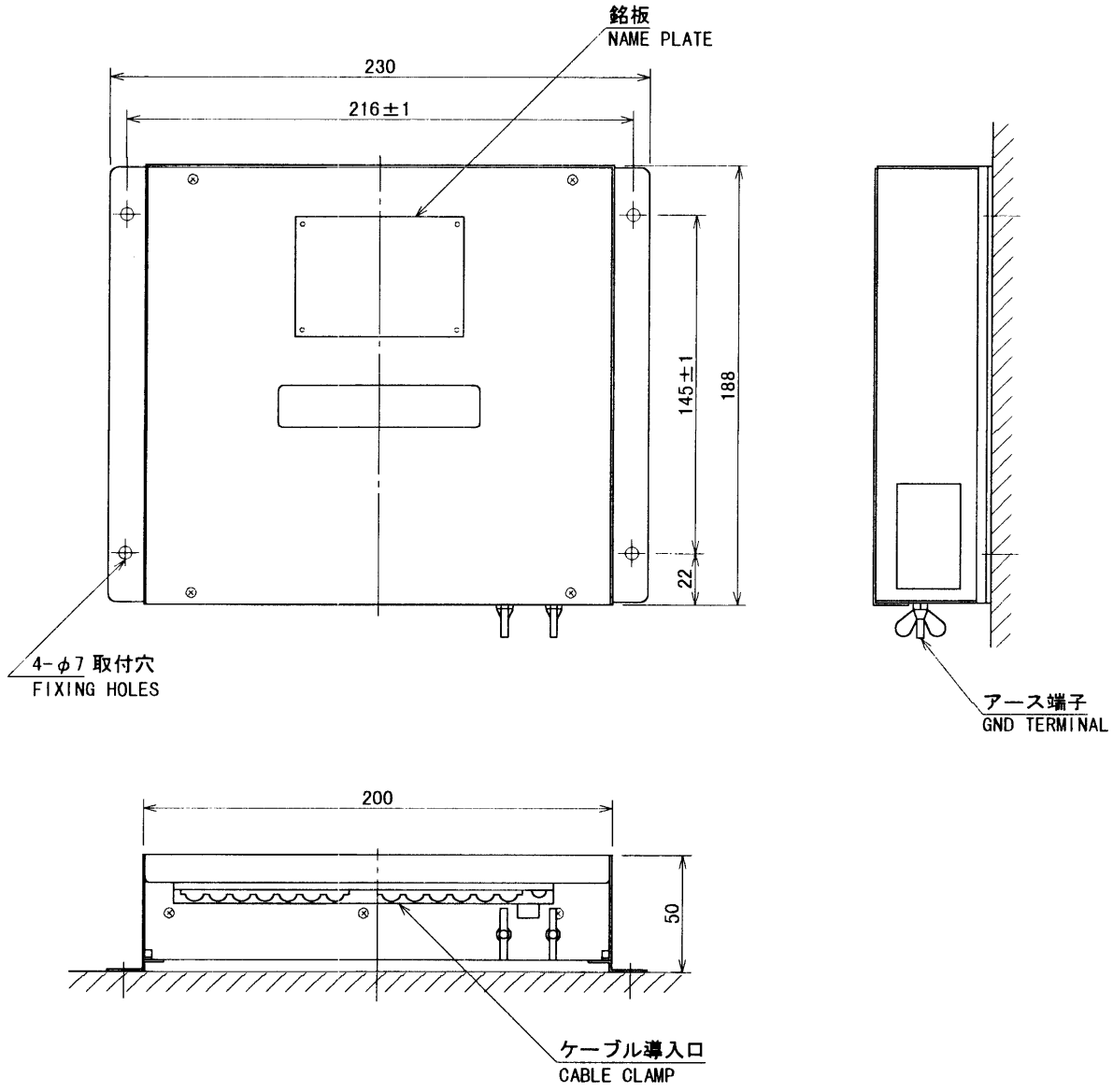
寸法区分 (mm) DIMENSION	公差 (mm) TOLERANCE
0 < L ≤ 50	±1.5
50 < L ≤ 100	±2.5
100 < L ≤ 500	±3

A

B

C

D



注記

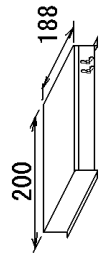
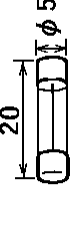

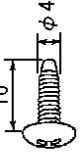

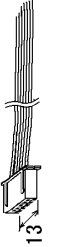

1) 指定なき寸法公差は表 1 による。


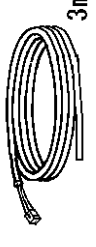


NOTE

1. TABLE 1 INDICATES TOLERANCE OF DIMENSIONS.

DRAWN <i>June 26 '00 T. YAMASAKI</i>		TITLE IF-2000/2500	
CHECKED <i>June 26 '00 Y. Kuroki</i>		名称 インターフェイス ユニット	
APPROVED <i>June 26 '00 Y. Kuroki</i>		外寸図	
SCALE 1/3	MASS ±10% 1.5 kg	NAME INTERFACE UNIT	
DWG. No. C4342-G01-E		OUTLINE DRAWING	

# PACKING LIST IF-2500

NAME	OUTLINE	DESCRIPTION/CODE	Q'TY
<b>ユニット</b>			
インターフェイスユニット INTERFACE UNIT		IF-2500	1
		000-000-999	(*1)
<b>予備品</b>			
<b>SPARE PARTS</b>			
ヒューズ FUSE		FCMB 0.5A AC125V 000-114-994	3
<b>工事材料</b>			
<b>INSTALLATION MATERIALS</b>			
ケーブル組品 CABLE ASSY.		MJ-A6SPF0012-100 64S4071	1
+トッピングネジ +TAPPING SCREW		000-133-817 4X16 SUS304 1771	4
XHコネクタ組品 XH CONNECTOR ASSY.		000-802-080 XH6P-002	2
		000-000-991	(*1)
XHコネクタ組品 XH CONNECTOR ASSY.		XH5P-002	1
		000-000-992	(*1)
XHコネクタ組品 XH CONNECTOR ASSY.		XH4P-002	5
		000-000-993	(*1)

NAME	OUTLINE	DESCRIPTION/CODE	Q'TY
XHコネクタ組品 XH CONNECTOR ASSY.		XH3P-002	3
		000-000-994	(*1)
電源ケーブル組品 POWER CABLE ASSY.		VCTF1.25X2C*3M*/VH2P	1
		000-000-995	(*1)
スチューブ F(Z) HEAT-SHRINK TUBE		3X0.25 7φ*1.00M*	1
		000-568-172	
スチューブ F HEAT-SHRINK TUBE		10X0.25 7φ*0.5M*	1
		000-123-379	

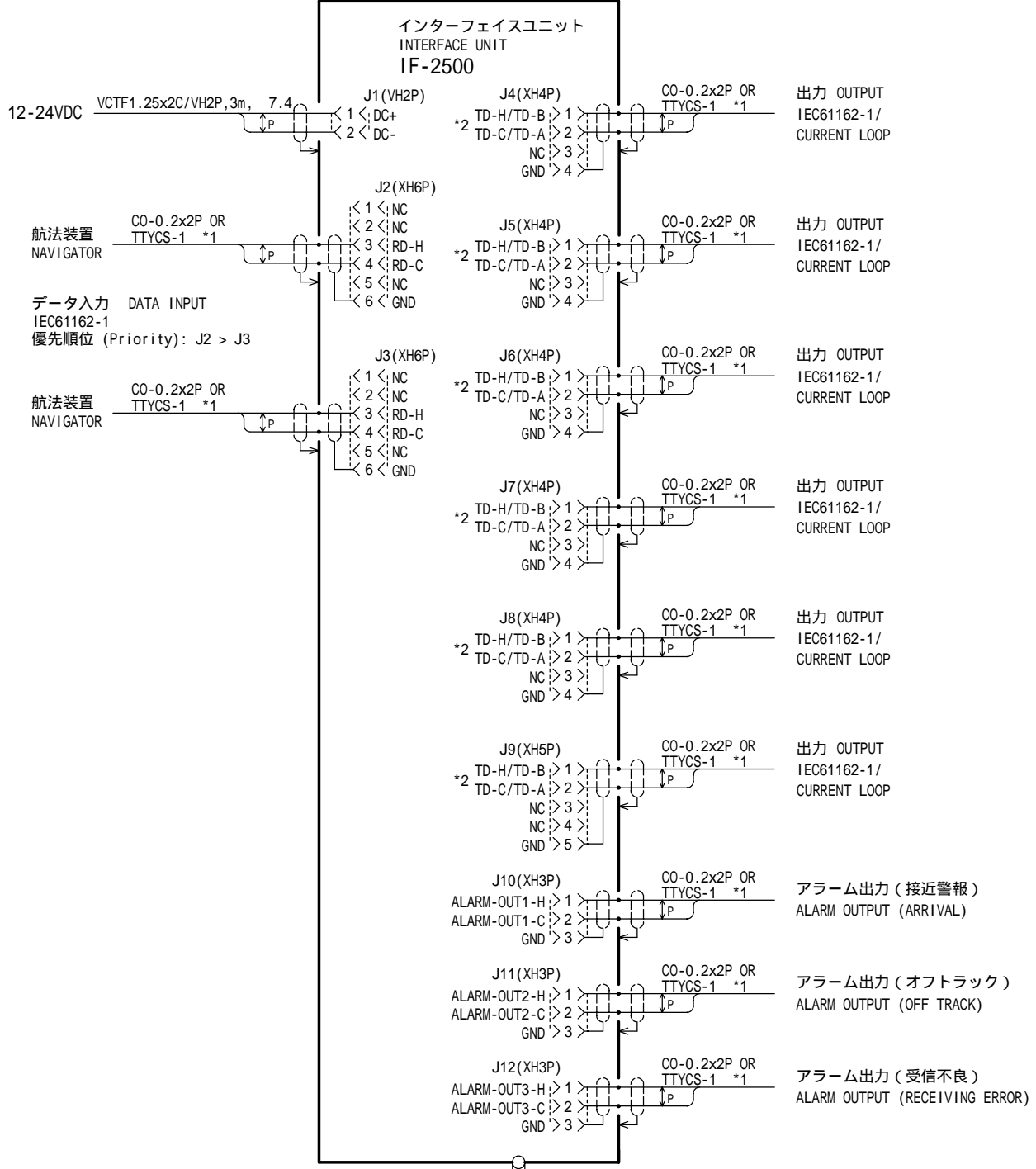
1.(\*)印のユニット及び部品コードは架空コードに付き注文用には使用できません。  
 (\*1)Code numbers are not allowed to order as dummy code.

A

B

C

D



注記  
\* 1 ) 造船所手配。  
\* 2 ) 内部の設定で切替え。

NOTE  
\*1. SHIPYARD SUPPLY.  
\*2. SELECT CURRENT LOOP OR IEC61162-1 BY INNER SETTING.

CO-0.2x2P: CO-SPEVV-SB-C 0.2x2P, 10.5

DRAWN 31 July '03 H.MAKI	TITLE IF-2500
CHECKED Takahashi T.	名称 インターフェイスユニット
APPROVED Takahashi T.	相互結線図
SCALE MASS kg	NAME INTERFACE UNIT
DWG.No. C4342-C02- A	INTERCONNECTION DIAGRAM