



# TECHNICAL GUIDANCE

Color LCD display type multi monitor

## Super DIR-M3200/M8000

Total tank monitoring system of level, Temperature and Pressure

### Abstract

The multi monitor can be mixture connection SPT-3500 type tank gauge and each level, temperature and pressure sensor of 4-20mA output sensors.

### Good points

Improvement of expression ability by adoption color LCD display and on all tank data display.

Using fixed software corresponding to all tankers.

Accordingly, cost reduction and space saving can be achieved.

### Specification of Super DIR-M3200

- Maximum input sensor : 32 sets
  - a) 16 sets SPT-3500 + 16sets 4-20mA sensors
  - b) 32 sets SPT-3500 or 4-20mA sensors
- Using color LCD display with touch panel
- All in one monitoring system equipment
- Same size for replacement of DIR-M1600

### Specification of Super DIR-M8000

- Maximum input sensor : 80 sets  
(32 sets SPT-3500 + 48 sets 4-20mA sensors)
- Separate an interface unit and color LCD display unit
- Using 2 size color LCD display with touch panel  
(10.4 inch and 19 inch / Mixture connection)

### Common specification

- Using 2 sets stereo loud speaker with controller on the front of LCD display panel
- User can change alarm select 10 kind sound and Bar-graph color of display.
- Manual dimmer control for back right of LCD display.
- Online connection to Individual gauge (DIR-700 series) and Loading computer using RS232C and/or LAN out put signals.
- Liquid cargo volume and load/unload rates can be indicated as option function by installation of tank table.
- Can connect and use PC mouse  
(In this case shape arrangement of a console is necessary)

\*1: The installation to bridge supports only Super DIR-M3200

\*2: Back light life of LCD is 50,000 hour in specifications.  
However, it is not guaranteeing.



Super DIR-M3200 Multi monitor  
10.4 inch Color LCD Display



Super DIR-M8000-LD19  
19 inch Color LCD Display Unit



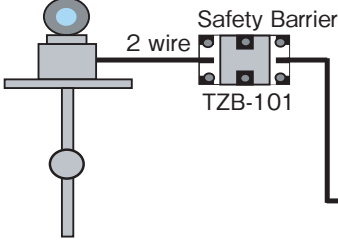
Super DIR-M8000-IF  
Interface Unit

Connecting Diagram

· Super DIR-M3200 Monitoring System

Level gauge with Temperature & Pressure sensor

SPT-3500 Series



Max. 32 sets or 16 sets

Other Level, Temp. and/or Press. sensors etc.

4-20mA  
2 wire

Max. 32 sets or 16 sets



RS232C  
LAN  
RS232CLAN

Individual gauge (DIR-700 DBII)



Super DIR-M3200 (for Bridge etc.)



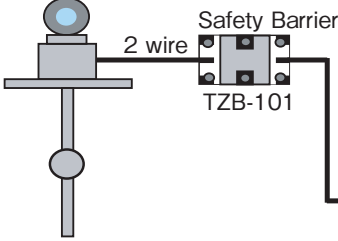
\* Loading Computer etc.



· Super DIR-M8000 Monitoring System

Level gauge with Temperature & Pressure sensor

SPT-3500 Series

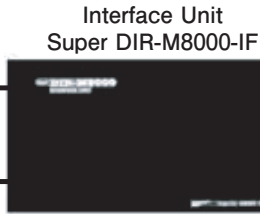


Max. 32 sets

Other Level, Temp. and/or Press. sensors etc.

4-20mA  
2 wire

Max. 48 sets



LAN

Super DIR-M8000-LD19



Super DIR-M8000-LD10



Super DIR-M3200 (for Bridge etc.)



Individual gauge (DIR-700 DBII)



RS232C

\* Loading Computer etc.

RS232C/RS485/LAN



\* We can supply Loading computer with tank monitoring system.

Display Example-1

- Initial start (Super DIR-M8000)



- Bar-Graph mode for Cargo tank



- Detail mode for Cargo tank (9 tanks select)



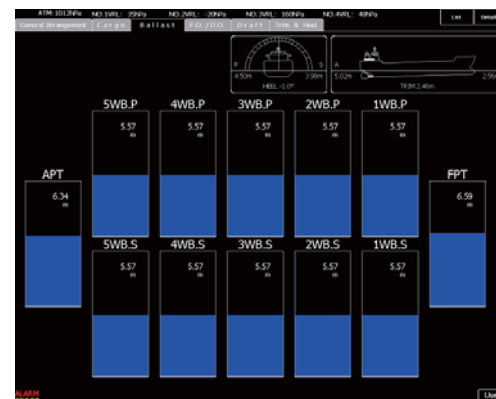
- Detail mode for Cargo tank (Expansion 2 tanks select)



- G.A. (General Arrangement) for Super DIR-M8000-LD19



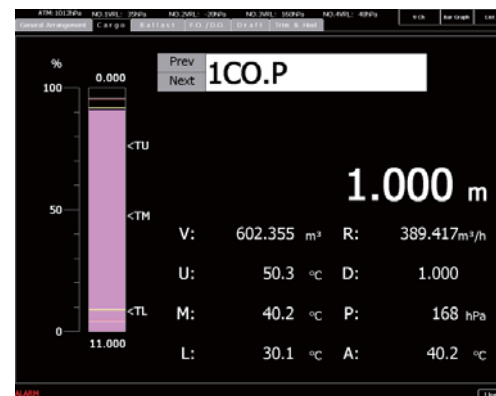
- Bar-Graph mode for Ballast tank



- Detail mode for Cargo tank (Expansion 6 tanks select)



- Detail mode for Cargo tank (Expansion 1 tank select)



Display Example-2

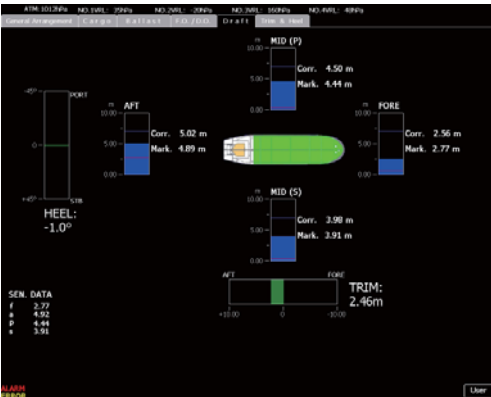
- List (table) mode for Cargo tank

NAME	LEVEL (m)	DENSITY	PRESS (hPa)
1CO.P	1.000	1.000	168
1CO.S	1.000	1.000	138
2CO.P	2.000	1.000	78
2CO.S	2.000	1.000	73
3CO.P	3.000	1.000	6
3CO.S	3.000	1.000	3
4CO.P	4.000	1.000	28
4CO.S	4.000	1.000	43
5CO.P	5.000	1.000	189
5CO.S	5.000	1.000	190
6CO.P	6.000	1.000	-2
6CO.S	6.000	1.000	-7
7CO.P	7.000	1.000	210
7CO.S	7.000	1.000	209
8CO.P	8.000	1.000	-12
8CO.S	8.000	1.000	-12

- List (table) mode for Ballast tank

NAME	LEVEL (m)	DENSITY
1WB.P	5.57	1.000
1WB.S	5.57	1.000
2WB.P	5.57	1.000
2WB.S	5.57	1.000
3WB.P	5.57	1.000
3WB.S	5.57	1.000
4WB.P	5.57	1.000
4WB.S	5.57	1.000
5WB.P	5.57	1.000
5WB.S	5.57	1.000
FPT	6.59	1.000
APT	6.34	1.000

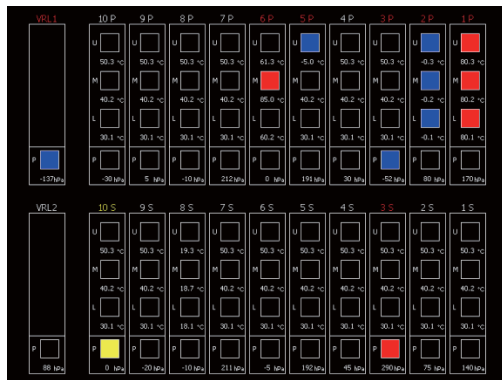
- Draft gauge (4 points) with automatic calculation for TRIM & HEEL data.



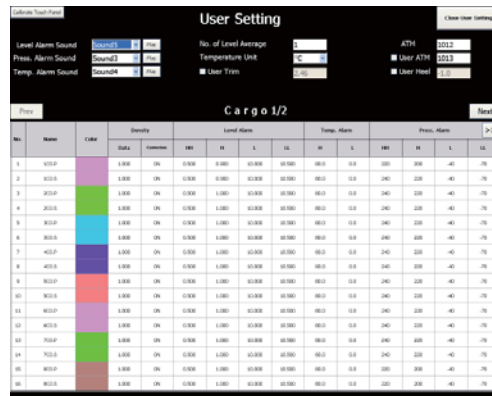
- TRIM & HEEL gauge (additional Trim & Heel sensor used)



- Temperature and/or Pressure alarm monitor for Bridge: (Super DIR-M3200 only)

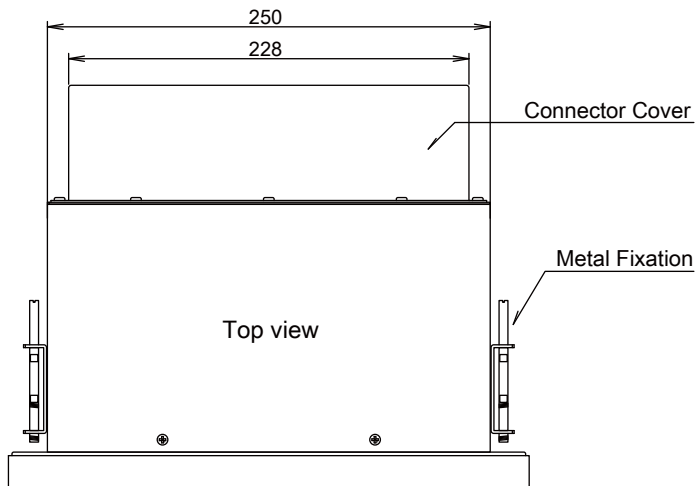


- User setting mode (Level, Temp. Press. alarm, Density setting, Bar-Graph color, and Alarm sound select etc.)



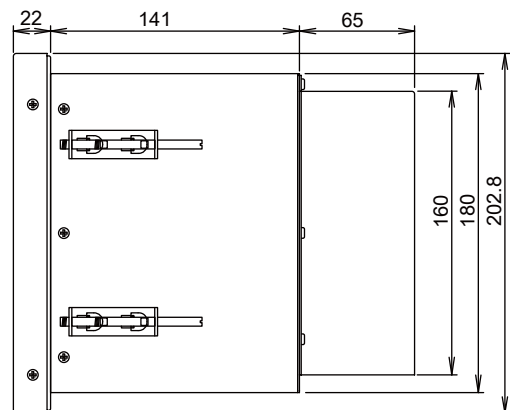
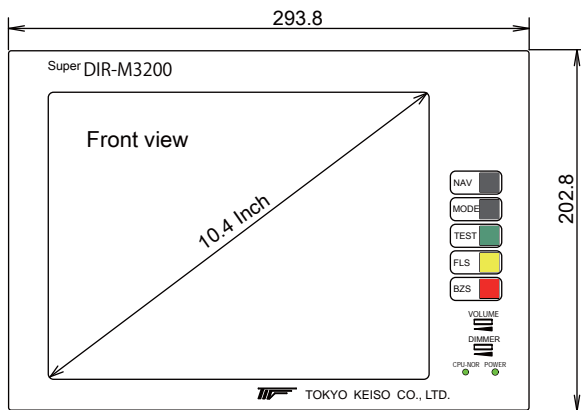
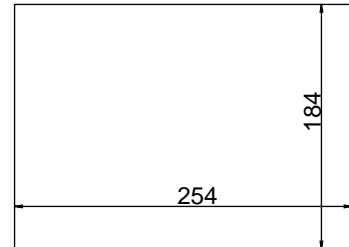
Outline/Weight-1

• Super DIR-M3200 Multi monitor

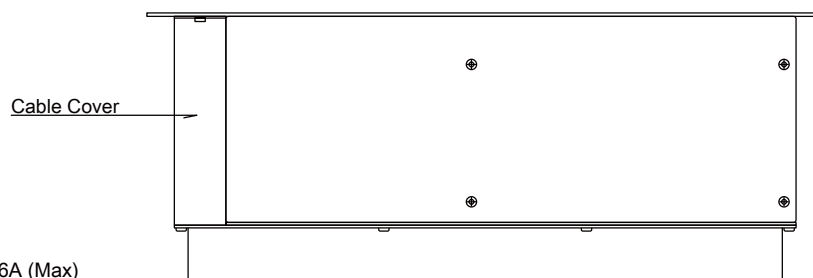


Mass: 6 Kg (Max)  
 Power Requirements;  
 a. Input Voltage: 24V DC  
 b. Current Consumption: 3.2A (Max)

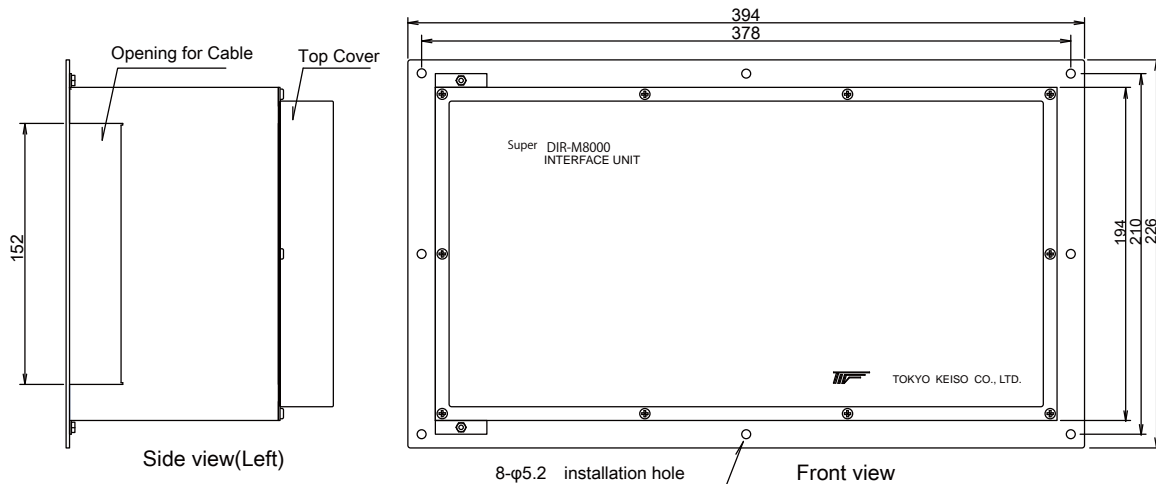
Panel cutting size



• Super DIR-M8000-IF Interface Unit

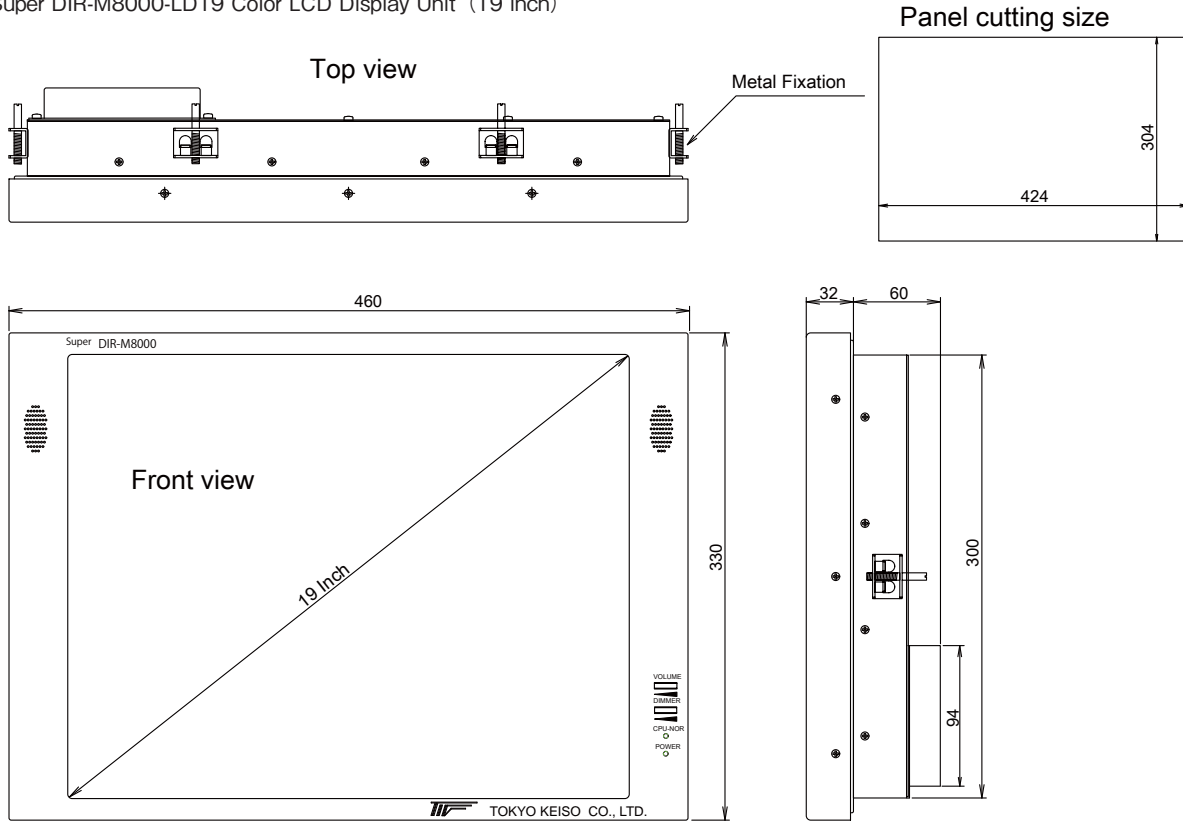


Mass: 8.5 Kg (Max)  
 Power Requirements;  
 a. Input Voltage: 24V DC  
 b. Current Consumption: 4.6A (Max)



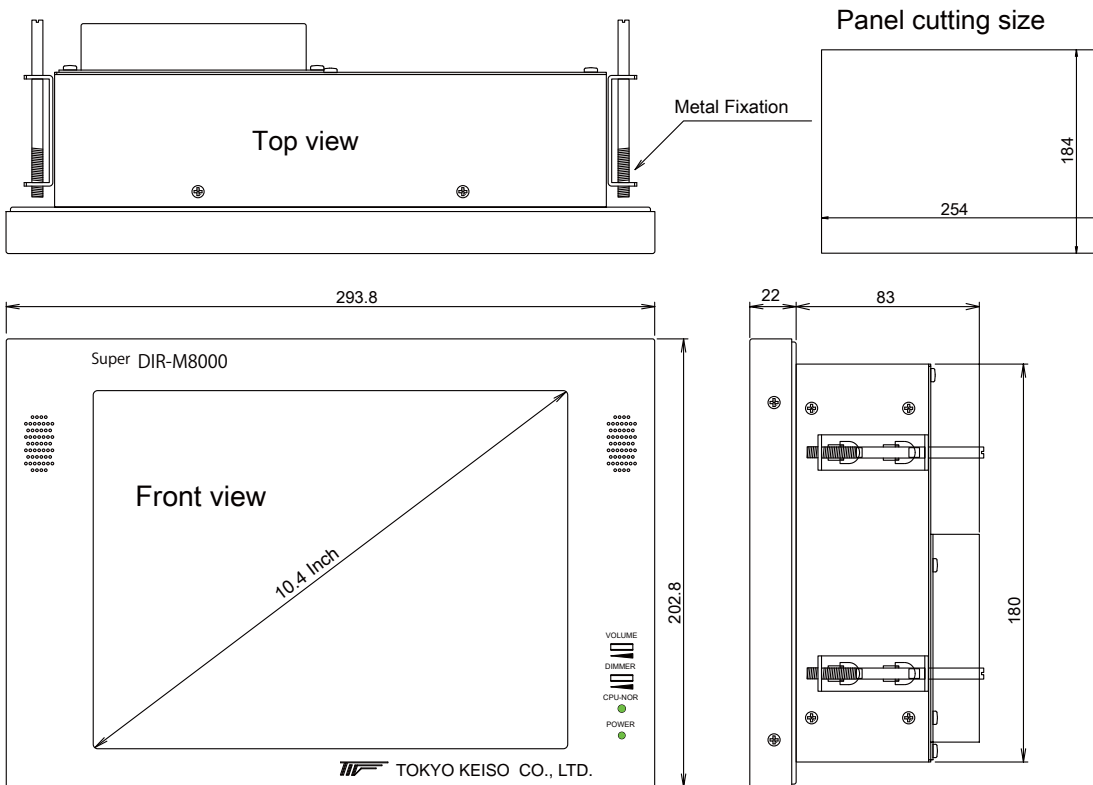
Outline/Weight-2

- Super DIR-M8000-LD19 Color LCD Display Unit (19 inch)



Mass: 10 Kg (Max)  
 Power Requirements;  
 a. Input Voltage: 24V DC  
 b. Current Consumption: 2.5A (Max)

- Super DIR-M8000-LD10 Color LCD Display Unit (10.4 inch)



Mass: 3.5 Kg (Max)  
 Power Requirements;  
 a. Input Voltage: 24V DC  
 b. Current Consumption: 1.5A (Max)

\* Specification is subject to change without notice.

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