TECHNICAL GUIDANCE

NMR5000

Tank Gauge Receiver

OUTLINE

The **NMR5000** is a tank gauge receiver that can accept up to 256 transmitters.

Users can access the inside from the front panel side, making maintenance much easier than with conventional models. The inner board uses the slot system and supports hot swapping, enabling users to replace the board and other parts during operation. Although the NMR5000 has no exhaust fan, it can withstand an ambient temperature of up to 50°C. It is also lightweight and power-saving. The operating system is Windows 10 IoT. Simple replacement makes it easy to upgrade from the existing NMR series and gauge receiver of other companies.

STANDARD SPECIFICATIONS

Connection	: Max. 256 transmitters (two-way)
External communication	: LAN, RS-232C, parallel communication, etc.
Power supply	: 100 to 240 V AC ±10%　50/60 Hz
Power consumption	: 100 VA (max.)
Cooling fan	: N/A
Ambient temperature	: 0 to 50°C
Ambient humidity	: 20 to 80% (No condensation)
Installation	: Panel mount, desktop, 19-inch rack mount
Storage	: Solid state drive (SSD)
Panel cutout	: 392 (W) × 177 (H) (mm)
External dimensions	: 388 (W) × 200 (H) × 302 (D) (mm)
Mass	: Approx. 10 kg
Maintenance	: Front access, hot swapping
Replacement parts	: Power supply unit (5 years)*
	Fuse (5 years)
	Other parts (7 years)

* Figures in parentheses are the recommended replacement period.

FUNCTIONS

❏ Self-diagnosis
Judges whether automatically sampled data are correct or incorrect. The status of transmitters and interfaces is also diagnosed.

❏ Alarm monitoring
Data are continuously monitored, and when they reach alarm points, users are immediately notified by lamp and buzzer (contact output is also available). Level alarms can be set at up to four points, and temperature alarms at up to two points for each transmitter.

❏ Level gauge control
Through operations on the display, operators can remotely perform hoisting up and other operations on level meters. Operations differ depending on the connected transmitter.

❏ Host computer interface
Data on level and temperature are sent to a host computer. One port for LAN and two ports for RS-232C serial communication are provided as standard. Parallel communication is also available as an option.

❏ Capacity display (optional)
By registering a tank table, the apparent capacity can be displayed. The capacity calculated from JIS K-2249 and ASTM D-1250 Tables 54A and 54B can also be displayed.

TOKYO KEISO CO., LTD.

TG-L1034-E01
2nd edition Dec 2019 K
1st edition Dec 2018 K

BASIC MODEL CODE

Basic model code			Description
NMR5000	–		
Communication board	IF1	– ✻ ✻	Internal board specifications * Select one by referring to Table1 "Internal board specification code".
	IF2	✻ ✻	
	IF3	✻ ✻	
	IF4	✻ ✻	
	IF5	✻ ✻	
	IF6	✻ ✻	
	IF7	✻ ✻	
	IF8	✻ ✻	
Connector board	CN1	– ✻	Rear face connector board specifications * Select one by referring to Table2 "Rear face connector board specification code".
	CN2	✻	
	CN3	✻	
	CN4	✻	
	CN5	✻	
	CN6	✻	
	CN7	✻	
	CN8	✻	
Watch dog timer CN9		– 0	N/A
		– 1	M4 screw terminal 3P
		– 2	Amphenol 14P
Number of ports for external communication		0	1 port for LAN and 2 ports for RS-232C
		1	2 ports for LAN and 1 port for RS-232C
		2	1 port for LAN and 3 to 6 ports for RS-232C
		3	2 ports for LAN and 2 to 5 ports for RS-232C
Display		0	N/A
		1	8.4 inch
		2	12.1 inch
Installation		0	Panel mount
		1	Desktop
		2	19-inch rack mount
		3	19-inch rack mount (front surface alignment)
Software basic specifications		0	Level and temperature monitoring
		1	Custom specification

Table1: Internal board specification code

Specifications		Code	
No boards		0	0
Two-way communication board	FW/DM-II format	W	0
One-way communication board	DM format	S	0
	DB-M format (36V)	S	1
	DB-ML format	S	2
	DB-M format (24V)	S	3
Two-way communication board other company (MDP/V1 format)	Ch1: Other company format Ch2: Other company format	E	0
	Ch1: Other company format Ch2: TIC format	E	1
Digital input board (input: 32 points)	Photocoupler input (internal power supply)	1	0
	Photocoupler input (external power supply)	1	1
Digital input/output board (input: 16 points, output: 16 points)	Photocoupler input (internal power supply) Photocoupler output (internal power supply)	2	0
	Photocoupler input (external power supply) Photocoupler output (external power supply)	2	1
	Photocoupler input (internal power supply) Photo relay output	2	2
	Photocoupler input (external power supply) Photo relay output	2	3
	Photocoupler input (internal power supply) Photo relay output (output: 8 points) ✻1	2	4
	Photocoupler input (external power supply) Photo relay output (output: 8 points) ✻1	2	5
Digital output board (output: 32 points)	Photocoupler output (internal power supply)	3	0
	Photocoupler output (external power supply)	3	1
	Photo relay output	3	2
	Photo relay output (output: 16 points) ✻1	3	3
Analog input board (input: 4 points)	Current input	4	0
	Voltage input	4	1
Analog output board (output: 4 points)	Current input	5	0
	Voltage input	5	1

✻1: Specification when using 2-line communication for a single output signal, in which each output is isolated and the number of output points is halved.

Table 2: Rear face connector board specification code

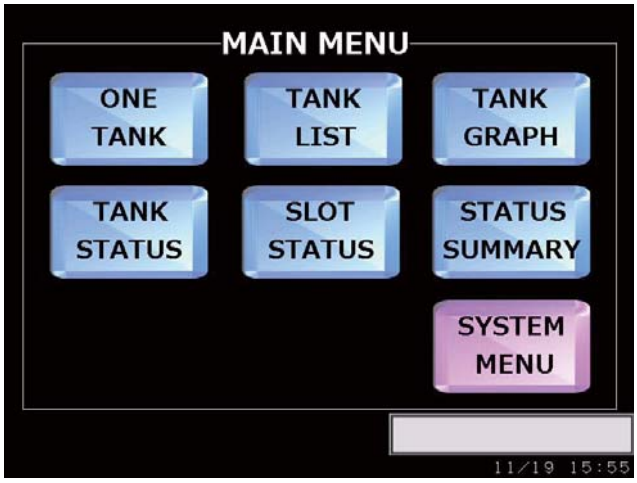
Specifications	Code
No connectors	0
M4 screw terminal 6P	1
Plug type terminal	2
Amphenol 36P	3
Amphenol 50P	4
D-sub 9P (male) inch screw	5

INDICATION

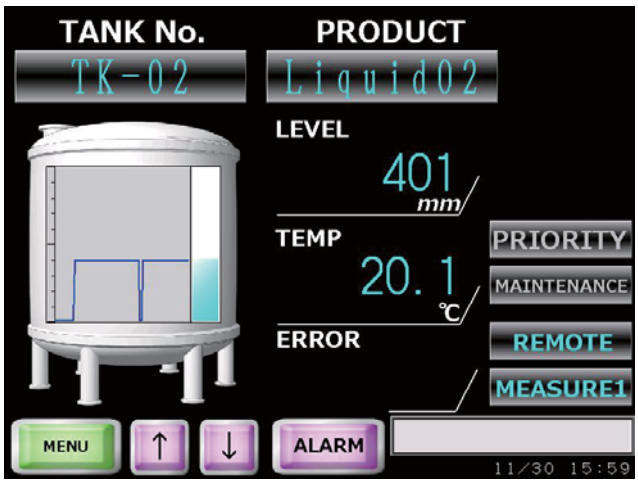
The touch panel LCD can display the following:

- Main menu
- One tank
- Tank list (8 tanks and 16 tanks)
- Tank graph (2 tanks and 4 tanks)
- Tank status (error, level alarm, temp. alarm)
- Slot status
- Status summary (error summary and alarm summary)

EXAMPLE OF DISPLAY



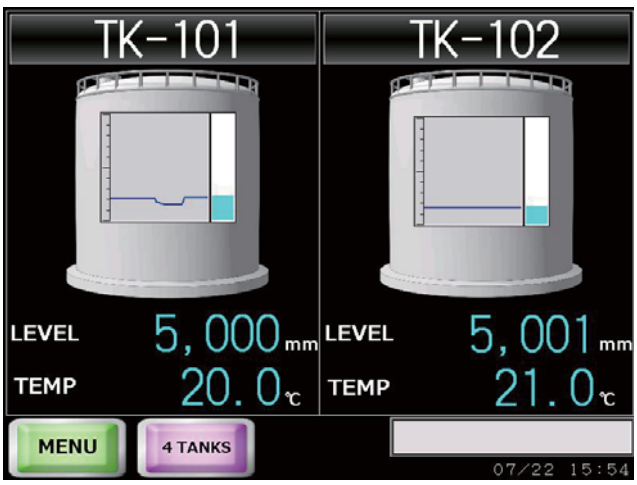
Main menu



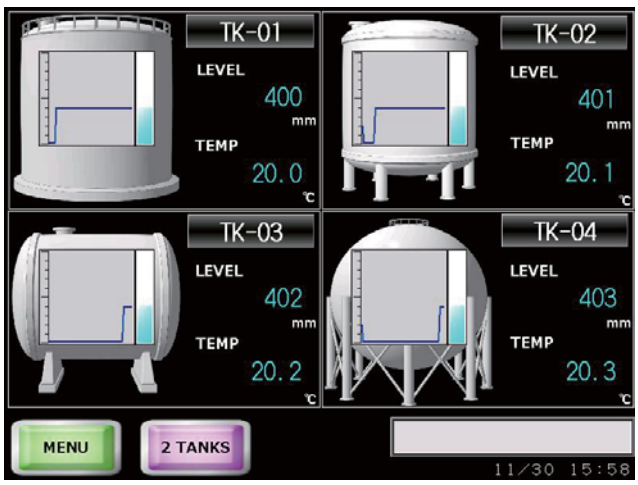
One tank

List (8 tanks)

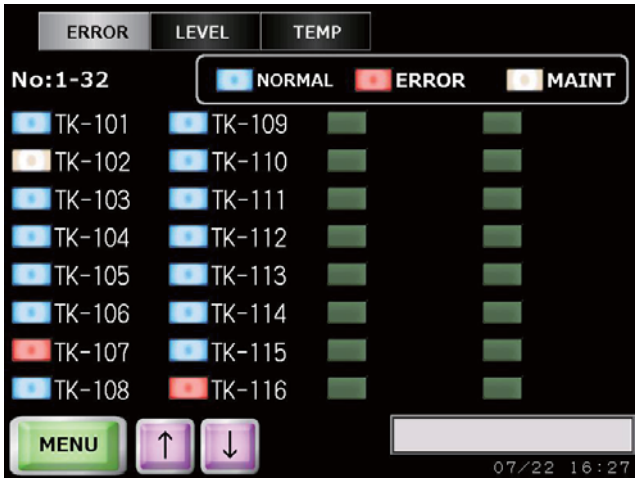
List (16 tanks)



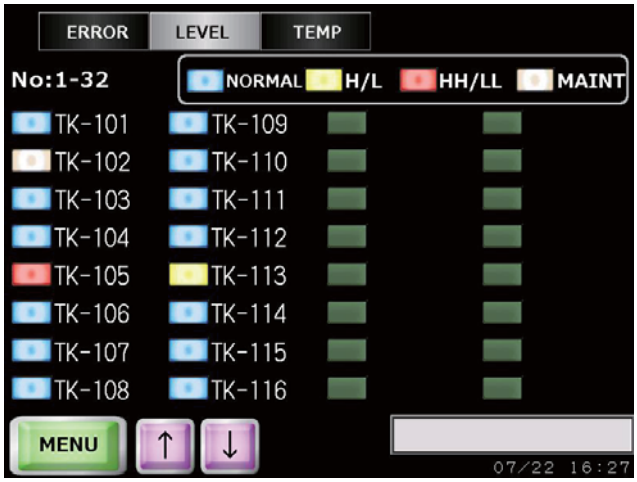
Graph (2 tanks)



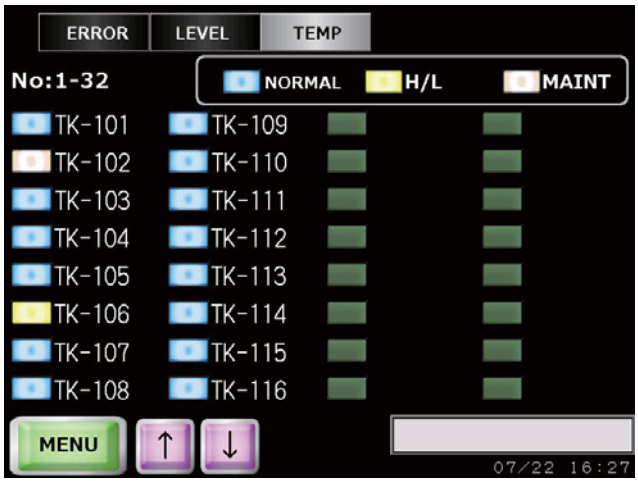
Graph (4 tanks)



Tank status (error)



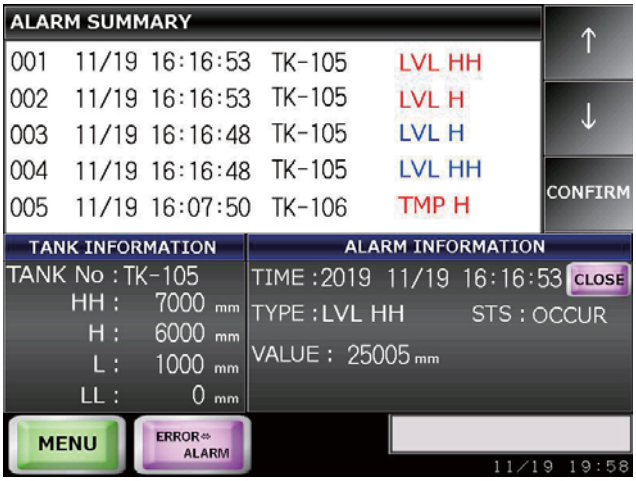
Tank status (level alarm)



Tank status (temp. alarm)

Slot status

Status summary (error summary)

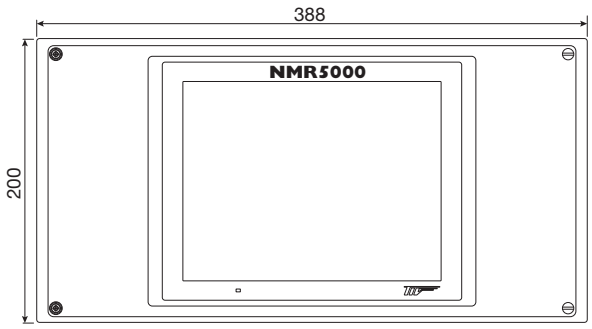


Status summary (alarm summary)

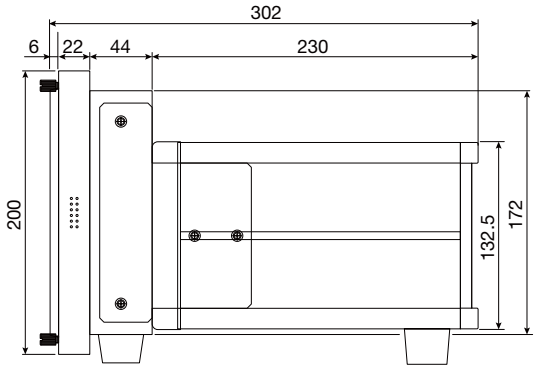
EXTERNAL DIMENSIONS

Unit: mm

〔Display size: 8.4 inch〕

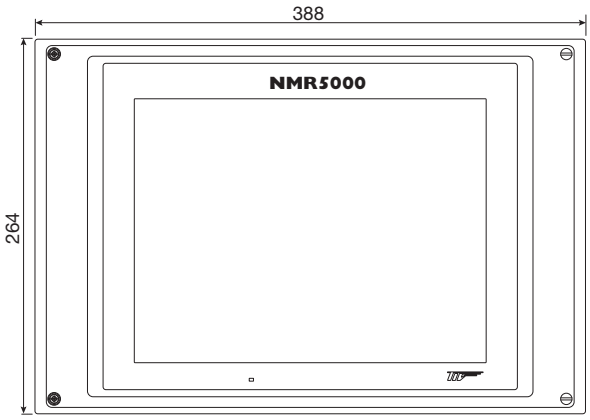


Front View

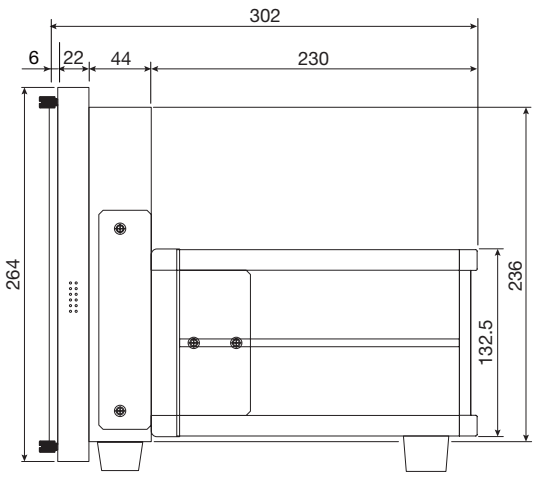


Side View

〔Display size: 12.1 inch〕

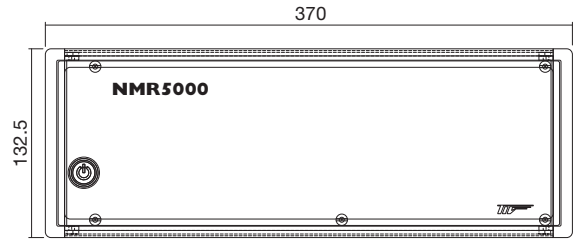


Front View

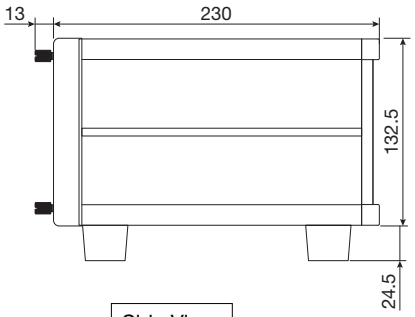


Side View

〔No display size〕

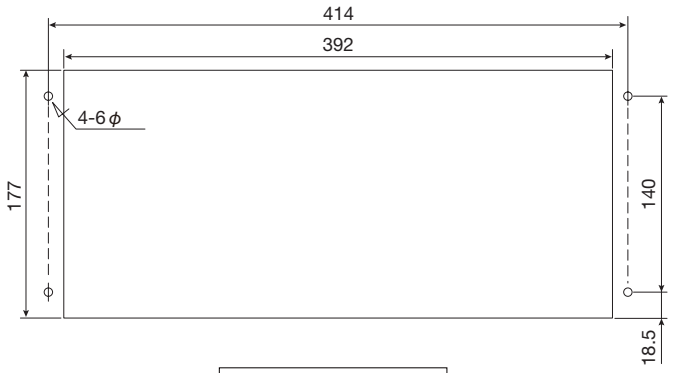


Front View



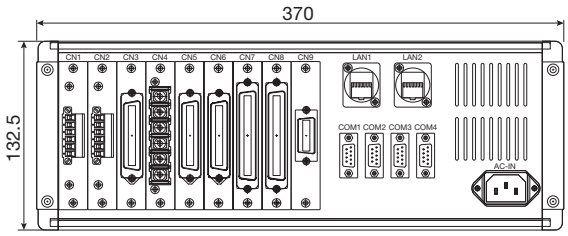
Side View

〔Display size: 8.4 inch〕



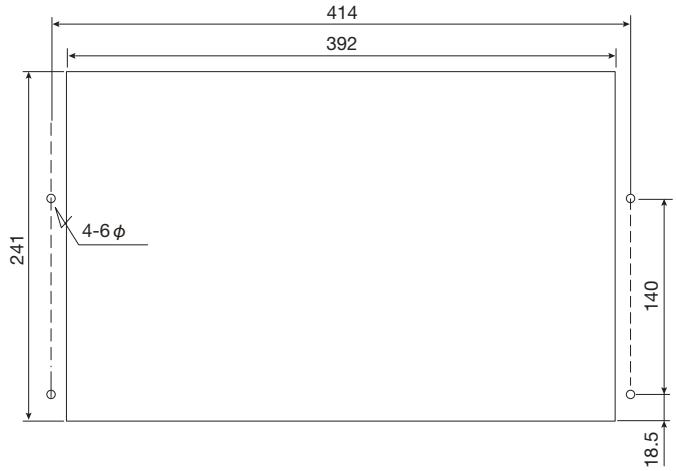
Panel Cut Dimension

〔Common〕



Rear View

〔Display size: 12.1 inch〕



Panel Cut Dimension

* Specification is subject to change without notice.

TOKYO KEISO CO.,LTD.

Head Office : Shiba Toho Building, 1-7-24 Shibakoen, Minato-ku, Tokyo 105-8558
Tel : +81-3-3431-1625 (KEY) ; Fax : +81-3-3433-4922
e-mail : overseas.sales@tokyokeiso.co.jp ; URL : https://www.tokyokeiso.co.jp