

1. Contents of the Package

The package contains the 30-CH Scanner Box, cable, and user's manual (this manual). If some of the contents are not correct or missing or if there is physical damage, contact the dealer from which you purchased them.

Name	Model	Description
30-CH Scanner Box	707815	Cable length: 1 m
30-CH Scanner Box	707815/L3	Cable length: 3 m

2. Connecting Signal Wires to the 30-CH Scanner Box



WARNING

- Only a functional isolation is provided between input terminals. Thus, there is a danger of electric shock occurring between input terminals. Functional isolation is an isolation provided for the purpose of meeting the measurement specifications by eliminating the effects caused by noise due to the difference in electric potential between two applicable points. This is different from a protective isolation against electric shock.
- The guard terminal is common within the group (CH1 to CH15 or CH16 to CH30). The guard terminal is connected to the L terminal of the measurement channel inside the module. If the electric potential of the L terminal is different between channels, do not use the guard terminal (because electric shock may occur).



CAUTION

- Do not apply a voltage exceeding the following value. This may cause damage to the module.
Maximum allowable input range: 30 VACrms, 42.4 Vpeak, or ± 60 VDC between H and L terminals,
(Overvoltage Category CAT I and II)
- Do not apply a voltage exceeding 60 VACrms or ± 100 VDC mutually between input channels. This may damage the module or the 30-CH Scanner Box.
- When connecting signal wires, remove the 30-CH Scanner Box from the module to prevent damage to the connected device.
- To prevent the possibility of damaging the module and the connected device, do not apply voltage between the L terminal and guard terminal (terminal indicated as G). The guard terminal is connected to the circuit common inside the module. Since the L terminal is connected to the circuit common when measuring voltage, this means that the guard terminal and L terminal are connected directly. In addition, the L terminal is based on the circuit common when measuring resistance.

Note

- When performing internal reference junction compensation using thermocouple input, the following points need to be considered so that the temperature of the terminal section stabilizes.
 - Make sure to attach the terminal cover.
 - Keep the outside temperature constant.
 - Do not use thick wires (cross-sectional area of 0.5 mm² or greater) with high heat radiation effect.
 - Place the 30-CH Scanner Box sufficiently away from the measurement point so that the heat at the measurement point is not transmitted to the 30-CH Scanner Box such as through the wiring.
- When grounding the guard terminal or the L terminal to take measures against noise, you can use the functional ground terminal (see the figure on the next page) on the side of the 30-CH Scanner Box.

The wiring varies as follows depending on the measurement function.

Thermocouple/Voltage

Wire the H terminals and L terminals of CH1 to CH30 using a two-wire system. The H terminals and L terminals of CH15C and CH30C are input terminals dedicated to RTD and resistance measurement. Do not wire these terminals when measuring thermocouples or voltages.

RTD/Resistance

Wire using a four-wire system. When the measurement function is set to RTD (resistance temperature detector) or OHM (resistance), the voltages of even-numbered channels for CH1 to CH15 and odd-numbered channels for CH16 to CH30 are measured. The next channel after the voltage measurement channel becomes the current output terminal. For example, the H and L terminals of CH1 become voltage input terminals; the H and L terminals of CH2 become current output terminals. For CH15 and CH30, the H and L terminals of CH15C and CH30C become current output terminals, respectively.

Mixture of Two-Wire Systems and Four-Wire Systems

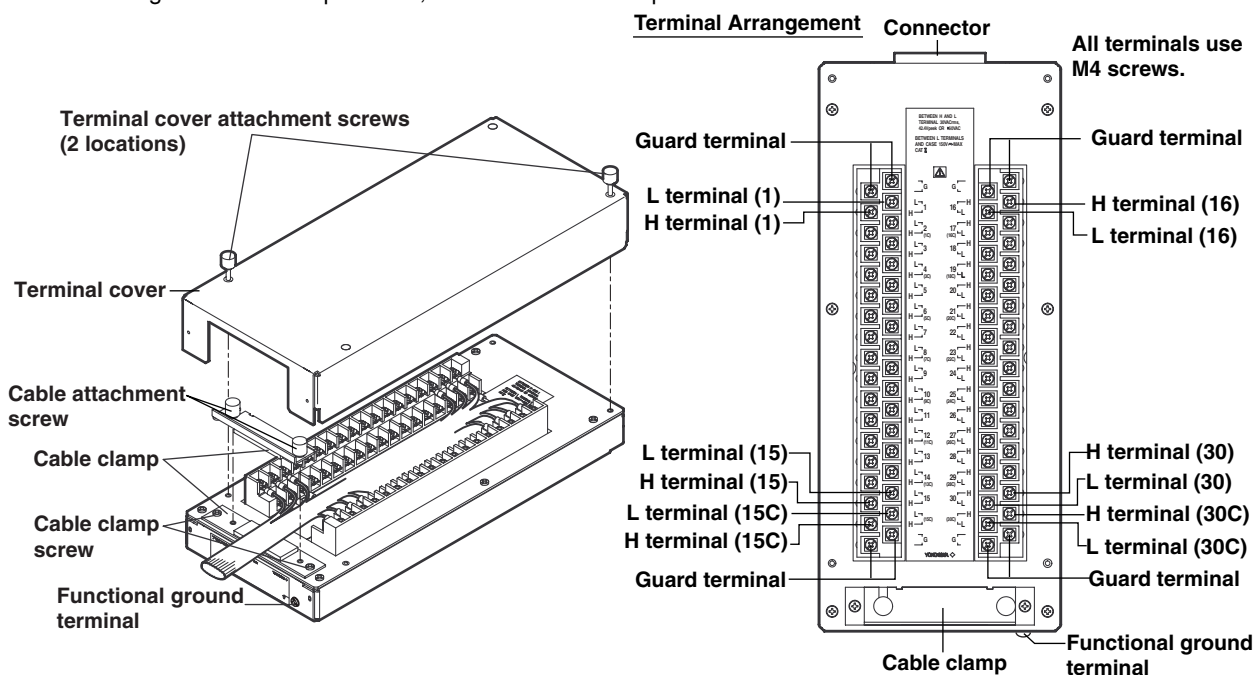
The scanner box terminals are divided into group 1 and group 2, and two-wire system or four-wire system can be specified for each group. If any of the channels are set to measure a four-wire system (RTD/resistance measurement), measurements can be made only on the odd-numbered channels of group1 and even-numbered channels of group 2. However, a mixture of two-wire system and four-wire system measurement is possible such as performing RTD or resistance measurement on CH1 and thermocouple or voltage measurement on CH3.

Group 1: CH1 to CH15, group 2: CH16 to CH30

Attaching/Removing the Terminal Cover

As shown in the following figure, unfasten the attachment screws (2 locations) at the top of the 30-CH Scanner Box and remove the terminal cover. When all the input signal wires are connected to the input terminals, fix the input signal wires in place using the cable clamp. Then, attach the terminal cover and fasten the attachment screws. If the connection to the input terminals is secure such as through the use of crimp-on lugs and the cable clamp is not required, you can remove the cable clamp to widen the opening and use wider wires for the connection. The maximum allowable cross-sectional area per cable when all input terminals are connected (limited by the opening area) is as follows.

When using the cable clamp: 2 mm², when the cable clamp is removed: 19 mm²



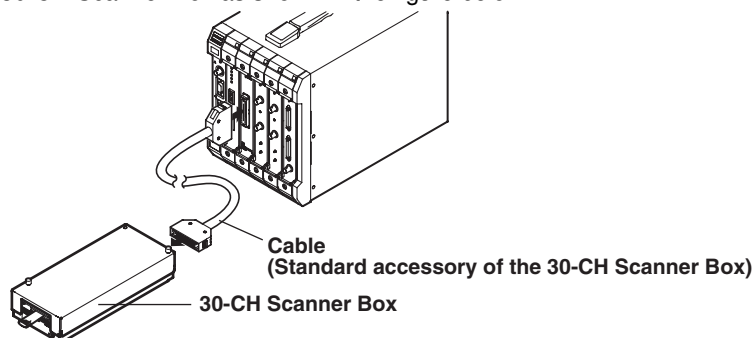
3. Connecting to the Module



CAUTION

- When connecting the 30-CH Scanner Box to the module, make sure to turn OFF the standby power switch on the measuring station.

Connect the input connector of the module and the 30-CH Scanner Box using a dedicated cable provided with the 30-CH Scanner Box as shown in the figure below.



4. Specification

For details on the specifications of the 30-CH Scanner Box, see chapter 4, "Specifications" in the *WE7231 30-CH Fast Digital Thermometer Module User's Manual IM707231-01E*.