

INSTRUCTION GUIDE

About the handling of products



Precautions for wire connections

- Make sure screw terminals are tightened to the torque appropriate for the screw size.
- Use the UL-certified torque with UL products. To check UL-certified torques, go to the Osada website: www.osada-terminal.co.jp ("About UL / cUL Products" page)
- Review all precautions related to wire stripping lengths or packings for push-button terminal blocks.
- Use a driver in a vertical direction about the miniature screw type.

Precautions for terminal storage

- Do not store in locations exposed to direct sunlight.
- Do not store in environments where relative humidity exceeds 60%.
- Do not store in locations subject to condensation.
- Do not store in locations subject to excessive vibration.
- Do not store in locations where gases, acids, salt damage, or chemicals that could affect the product materials are used or present.

Usage precautions

- To prevent electric shock, avoid contact with live terminal components.
- Turn off the power supply before connecting or disconnecting wires to or from the terminals.
- Do not use in environments exceeding IEC pollution degree 3.

UL / CUL certified products

- Use UL-certified crimping terminals.
- Use the correct crimping tool for the crimping terminals.
- The wiring sections are specified as internal (**FW1**) or external (**FW2**). External wiring can be used, provided the device is indicated in the catalog as "UL (FW2)" or "cUL" Usage Group
 B: Commercial appliances, including business equipment, electronic data processing equipment, and the like
 C: Industrial, general
 D: Industrial, devices having limited ratings^b
 E: Terminal blocks rated 601-1500V
 Go to www.osada-terminal.co.jp ("About UL / cUL Products" page).

Terminal block soldering conditions

■ Flow soldering

Conductor board thickness	0.4 ~ 1.2 mm	255°C ± 5°C	3 to 5 s
Width	0.6 ~ 2.5 mm		
Conductor board thickness	1.4 ~ 2.5 mm	255°C ± 5°C	
Width	2.0 ~ 4.5 mm		

■ Manual soldering (manual correction after flow soldering only)

Iron temperature	350°C ± 5°C	Up to 3 s
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Contact Osada for any conditions not described above.

- Solder applied to tin-plated products is guaranteed for one year after delivery. The decision to offer parts warranties exceeding one year is left to the manufacturer. Guarantee of discoloration of the plating of other also is one year. There is no problem about the performance of this case.

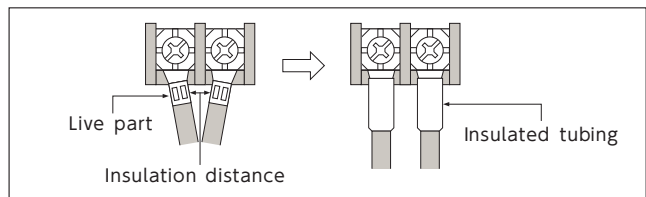
Miniature type / One-touch type

- Use only within the specified ratings. Use wiring that complies with applicable ratings.
- The rated current indicates the maximum current for individual terminals.
- When stripping cables, be sure to comply with the specifications for the individual product. Use the strip gauge (typically) provided with the products.
- The standard wiring configuration is one wire per pin. Product performance is not guaranteed if multiple wires are connected.
- Use a round rod or finger to press the buttons. If you use a Philips screwdriver to press the buttons, make sure the screwdriver tip does not go below the level of the main unit.

- The number of button operations corresponds to the number of cable connections to the terminal block. As a rough guide, this will be approximately 30 times. Contact Osada for more information in cases in which buttons are operated frequently.
- Be careful when soldering. Use the appropriate amount of flux. Excessive flux can flow into a connector and affect the connection.
- Consult with Osada before attempting to wash the entire unit. Doing so may adversely affect the buttons.
- Press down on the buttons when connecting or disconnecting cables. (On certain products, you can connect single cables without pressing down on the buttons.)
- Use only single-core or stranded cable. Consult Osada if you wish to use rod terminals.

Screw terminal blocks

- If you are using bare crimped terminals, provide the insulation needed to cover exposed live parts and prevent electric shock and short circuits (e.g., use insulated tubing).



Recommended and guaranteed tightening torques

- Recommended and guaranteed tightening torques apply when securing cables and short bars.

Screw	M 2.5	M 3	M 3.5	M 4	M 5	M 6	M 8	M 10	M 12
Recommended torque	0.4	0.5	0.8	1.2	2.0	2.5	5.5	10.0	15.5
Guaranteed torque	0.5	0.6	1.0	1.4	2.4	3.0	6.6	12.0	18.5

In accordance with JIS C 2811

- Tightening torque for fittings

Printed circuit boards type Relay terminal blocks up to 20 A	0.5~0.6Nm (Max)	Use flat washers measuring at least 0.8 mm in thickness. Apply a torque of 2.0 Nm if using 2.0 mm thick flat washers.
Through type Relay terminal blocks for 20 A or more	1.5Nm (Max) M4, M5	

※The product delivery specifications indicate the tightening torque applied at the time the product was delivered.
 ◎Do not use impact drivers. Use a precision torque power screwdriver.

Comparison of AWG wire numbers with stranded wire (mm²) and single-core wire (dia.)

A W G	30	28	26	24	22	20	18	16	14	12	10	8	6	4	3	2	1	1/0
(A)	0.5	0.8	1	2	3	5	7	10	15	20	30	50	65	85	100	115	130	150
Single-core wire φ	0.254	0.320	0.404	0.511	0.643	0.813	1.024	1.295	1.628	2.057	2.600	3.264	4.115	5.189	5.827	6.553	7.348	8.255
Stranded wire mm ²	0.051	0.080	0.128	0.205	0.324	0.519	0.823	1.318	2.082	3.325	5.309	8.368	13.300	21.150	26.670	33.940	42.410	53.520

Caution

Catalog information

- Rated power values (AC / DC) are identical.
- Actual products may differ slightly from photographs.
- Always order the relevant drawings if using these printed circuit board terminal blocks for product development.

Product information

- The recommended screw tightening torque for the mounting fixtures when using the ST Series cover mounting fixtures is 0.5 to 0.6 Nm for M3 and 0.8 Nm for M4.
- Go to the Osada website to check certification details if the products must be UL-certified.
www.osada-terminal.co.jp ("About UL / cUL Products" page)
- For small orders of products having fewer than a certain numbers of terminals, the products provided may be cut from larger sizes. In these cases, signs of cutting or exposed fixtures may be visible at the ends of the terminal blocks. These changes do not affect performance. Also check the product information at our website for the order quantity.
- Make sure any detergent used for hand-wash is completely rinsed off before starting operations.