

Model WT30

FA Wireless SS Terminals



Instruction Sheet

Thank you for purchasing this OMRON product. Read this instruction sheet and thoroughly familiarize yourself with the functions and characteristics of the product before using it. This product is designed for use by qualified personnel with knowledge of electrical systems. Keep this instruction sheet for future reference.

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For detailed application procedures, refer to the WT30 Operation Manual (Cat. No. N138).

Safety Precautions

Definition of Precautionary Information

WARNING

Indicates a potentially hazardous situation which, if not avoided, will result in minor or moderate injury, or may result in serious injury or death. Additionally there may be significant property damage.

CAUTION

Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury or in property damage.



Cesky [Czech]	Omron Corporation tímto prohlašuje, že tento WT30 je ve shodě se základními požadavky a dalšími příslušnými ustanoveními směrnice 1999/5/ES.
Dansk [Danish]	Undertegnede Omron Corporation erklærer herved, at følgende udstyr WT30 overholder de væsentlige krav og øvrige relevante krav i direktiv 1999/5/EF.
Deutsch [German]	Hiermit erklärt Omron Corporation, dass sich das Gerät WT30 in Übereinstimmung mit den grundlegenden Anforderungen und den übrigen einschlägigen Bestimmungen der Richtlinie 1999/5/EG befindet.
Eesti [Estonian]	Käesolevaga kinnitab Omron Corporation seadme WT30 vastavust direktiivi 1999/5/EÜ põhinõuetele ja nimetatud direktiivist tulenevatele teistele asjakohastele sätetele.
English	Hereby, Omron Corporation, declares that this WT30 is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC.
Español [Spanish]	Por medio de la presente Omron Corporation declara que el WT30 cumple con los requisitos esenciales y cualesquiera otras disposiciones aplicables o exigibles de la Directiva 1999/5/CE.
Ελληνική [Greek]	ΜΕ ΤΗΝ ΠΑΡΟΥΣΑ Omron Corporation ΔΗΛΩΝΕΙ ΟΤΙ Ο WT30 ΣΥΜΜΟΡΦΩΝΕΤΑΙ ΠΡΟΣ ΤΙΣ ΟΥΣΙΩΔΕΙΣ ΑΠΑΙΤΗΣΕΙΣ ΚΑΙ ΤΙΣ ΛΟΙΠΕΣ ΣΧΕΤΙΚΕΣ ΔΙΑΤΑΞΕΙΣ ΤΗΣ ΟΔΗΓΙΑΣ 1999/5/ΕΚ.
Français [French]	Par la présente Omron Corporation déclare que l'appareil WT30 est conforme aux exigences essentielles et aux autres dispositions pertinentes de la directive 1999/5/CE.
Italiano [Italian]	Con la presente Omron Corporation dichiara che questo WT30 è conforme ai requisiti essenziali ed alle altre disposizioni pertinenti stabilite dalla direttiva 1999/5/CE.
Latviski [Latvian]	Ar šo Omron Corporation deklarē, ka WT30 atbilst Direktīvas 1999/5/EK būtiskajām prasībām un citiem ar to saistītajiem noteikumiem.
Lietuvių [Lithuanian]	Šiuo Omron Corporation deklaruoja, kad šis WT30 atitinka esminius reikalavimus ir kitas 1999/5/EB Direktivos nuostatas.
Nederlands [Dutch]	Hierbij verklaart Omron Corporation dat het toestel WT30 in overeenstemming is met de essentiële eisen en de andere relevante bepalingen van richtlijn 1999/5/EG.
Malti [Maltese]	Hawnhekk, Omron Corporation, jiddikjara li dan WT30 jikkonforma mal-htigijiet essenzzjali u ma provvedimenti oħrajn relevanti li hemm fid-Direttiva 1999/5/EC.
Magyar [Hungarian]	Alulírott, Omron Corporation nyilatkozom, hogy a WT30 megfelel a vonatkozó alapvető követelményeknek és az 1999/5/EC irányelv egyéb előírásainak.
Polish [Polish]	Niniejszym Omron Corporation oświadczam, że WT30 jest zgodny z zasadniczymi wymogami oraz pozostalymi stosownymi postanowieniami Dyrektywy 1999/5/EC.
Português [Portuguese]	Omron Corporation declara que este WT30 está conforme com os requisitos essenciais e outras disposições da Directiva 1999/5/CE.
Slovensko [Slovenian]	Omron Corporation izjavlja, da je ta WT30 v skladu z bistvenimi zahtevami in ostalimi relevantnimi določili direktive 1999/5/ES.
Slovensky [Slovak]	Omron Corporation týmto vyhlasuje, že WT30 spĺňa základné požiadavky a všetky príslušné ustanovenia Smernice 1999/5/ES.
Suomi [Finnish]	Omron Corporation vakuuttaa täten että WT30 tyyppinen laite on direktiivin 1999/5/EY oleellisten vaatimusten ja sitä koskevien direktiivin muiden ehtojen mukainen.
Svenska [Swedish]	Härmed intygar Omron Corporation att denna WT30 står i överensstämmelse med de väsentliga egenskapskrav och övriga relevanta bestämmelser som framgår av direktiv 1999/5/EG.
Íslenska [Icelandic]	Hér með lýsir Omron Corporation yfir því að WT30 er í samræmi við grunnkröfur og aðrar kröfur, sem gerðar eru í tilskipun 1999/5/EC.
Norsk [Norwegian]	Omron Corporation erklærer herved at utstyret WT30 er i samsvar med de grunnleggende krav og øvrige relevante krav i direktiv 1999/5/EF.

Wireless standards have been met for the following countries. The product cannot be used in any other countries.
Austria, Belgium, China (see note), Cyprus, Czech, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Japan, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland, UK, USA

Note: Channel 51 cannot be used in China. Use channels 2 to 34 or channels 52 to 83.
Use is also prohibited in aircraft or near airports.

Caution
To ensure that the WLAN transmitter complies with current FCC regulations limiting both maximum RF output power and human exposure to radio frequency radiation, a separation distance of at least 20 cm must be maintained between the unit's antenna and the body of the user and any nearby persons at all times and in all applications and uses.

FCC RF Radiation Exposure Statement
This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Suitability for Use

OMRON shall not be responsible for conformity with any standards, codes, or regulations that apply to the combination of the products in the customer's application or use of the product.
Take all necessary steps to determine the suitability of the product for the systems, machines, and equipment with which it will be used.

Know and observe all prohibitions of use applicable to this product.

NEVER USE THE PRODUCTS FOR AN APPLICATION INVOLVING SERIOUS RISK TO LIFE OR PROPERTY WITHOUT ENSURING THAT THE SYSTEM AS A WHOLE HAS BEEN DESIGNED TO ADDRESS THE RISKS, AND THAT THE OMRON PRODUCT IS PROPERLY RATED AND INSTALLED FOR THE INTENDED USE WITHIN THE OVERALL EQUIPMENT OR SYSTEM.

See also Product catalog for Warranty and Limitation of Liability.

Precautionary Information

WARNING

Always provide protective circuits in the network. Without protective circuits, malfunctions may possibly result in accidents that cause serious injury or significant property damage. Provide double or triple safety measures in external control circuits, such as emergency stop circuits, interlock circuits, or limit circuits, to ensure safety in the system if an abnormally occurs due to malfunction of the product or another external factor affecting the product's operation.

Design the system to ensure safety in the event of temporary interruptions in communications due to interference with the electromagnetic waves used for communications caused by the ambient environment and application methods.

Do not use this product for real-time control.

Using the FA Wireless SS Terminal near a pacemaker or other medical device may affect the operation of the medical device, possibly resulting in serious injury. Never use the FA Wireless SS Terminal near pacemakers or other medical devices.

CAUTION

Make sure that the direction and polarity (+/-) are correct when connecting terminal blocks and connectors. Turning ON the power to I/O circuits with the I/O cables connected in reverse, may result in a blown output fuse.

Do not apply a voltage or connect a load to the outputs that exceeds the maximum switching capacity. Leave the protective label in place when wiring the product. After completing wiring, always remove the protective label to enable proper heat dissipation. Fire may occasionally result if this precaution is not observed.

Do not allow pieces of metal, wire clippings, or fine metallic shavings or filings from installation to enter the product. Doing so may occasionally result in minor electric shock, fire, or malfunctions.

Do not attempt to disassemble, repair, or modify the product, or touch the internal parts of the product. Doing so may occasionally result in minor electric shock, fire, or malfunctions. In Japan, disassembly and modification is also prohibited under Japan's Radio Law and may be punishable by law.

Precautions for Safe Use

Be sure to observe the following precautions to ensure safe use of the product.

- Transport the product in the box in which the product was packaged, making sure the product is not subjected to excessive vibrations or shock, or dropped.
- Store the product within the specified environment. Allow the product to warm up to room temperature for at least 3 hours after it has been stored at -10°C or lower.
- Use the product within the specified temperature and humidity ranges.
- Do not use the product in the following locations.
Locations subject to extreme temperature changes resulting in condensation
Locations subject to static electricity, excessive noise, or electric fields
Locations where the product may come into contact with water, oil, or chemicals
Locations where corrosive gases or flammable gases are present
Locations where large amounts of dust or dirt are present
Locations subject to spatters, iron chips, or filings
- Do not install the product outdoors (outside a control panel).
- Use tape, cord, or other means to hold the product while adjusting the installation position to prevent the product from damage due to falling.
- Do not install the product in areas where it will be subject to excessive external force, or in walkways.
- Tighten the mounting screws to the specified torque of 0.5 to 0.6 N·m (4.4 to 5.3 in·lb).
- Provide sufficient space around the product for heat dissipation.
- Do not install the product in walkways or locations subject to traffic when installing the product outside a control panel.
- Do not reverse the power supply connection or connect the product to an AC power supply.
- Use the correct power supply voltage.
- Use AWG22 to AWG16 to connect wires for post terminals. For solid or standard wires, however, use AWG20 to AWG16 (0.52 to 1.5 mm²). The length of exposed wire is 10 mm.
- Do not apply voltage to the inputs exceeding the rated voltage range.
- Use communications cables (RS-232C cables) with a length of 15 m maximum and a load of 2,500 pF maximum.
- Do not lay communications cables (RS-232C cables) and antenna cables near other high-voltage cables or power lines.
- Use the specified cables for communications cables (RS-232C cables).
- Be sure to perform communications tests to confirm operation after wiring before using the product.
- Always set the product after it is installed or replaced. Set the product correctly according to the manual, and be sure to perform the tests provided with the product (e.g., communications tests) before operating it.
- When operating the product without checking serial numbers, check whether an existing system is present, and design the system carefully to prevent radio interference.
- Do not apply excess vibrations or shock to this product. Do not drop this product.
- Make sure that wiring and switch settings are correct before starting operations.
- Other wireless devices operating within the same frequency band may interfere with this product or be adversely affected by this product. Therefore, be sure to perform the tests provided with the product (e.g., installation tests) before operating it.
- Make sure that the antenna is not disconnected during operation.
- Do not use this product near other devices that may malfunction due to the electromagnetic waves emitted by this product.
- Turn OFF the power supply before performing any wiring or replacing devices.
- Do not touch the product with wet hands.
- Dispose of the product as industrial waste.

FCC WARNING

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

FCC NOTICE

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.
This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
* Reorient or relocate the receiving antenna.
* Increase the separation between the equipment and receiver.
* Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
* Consult the dealer or an experienced radio/TV technician for help.

Precautions for Correct Use

Always heed these precautions to prevent faulty operation, malfunction, or adverse affect on the product's performance and functionality.

- Communications performance will vary according to the operating environment. Always check operations before using the product.
- Do not install the antenna in a location surrounded by metal, such as in a control panel.
- Install the antenna so that it is as far away as possible from and not parallel to electric wires or metal plates.
- Do not use this product in areas exposed to extremely high humidity, near televisions or radios, near motors or drills that emit sparks, near strong magnets, or near fluorescent lights.
- Make sure that the terminal blocks, communications cables (RS-232C cables), and other items with locking devices are properly locked into place.
- Do not pull or bend cables with force.
- Do not change the mode selection switch during operation.

Conformity to Safety Standards

Always use a Class 2 power supply to conform to UL standards.

Use a DC power line less than 3 m to conform to EN standards. If a power line of 3 m or longer is required, extend the length at the Switching Power Supply's primary side (i.e., the AC power line).

Available Models

WT30 Terminal model	Type	Specifications (No. of I/O points)
WT30-M01-FLK	Serial Master	RS-232C
WT30-SID16	I/O Slaves	16 DC inputs (NPN/PNP)
WT30-SMD16		8 DC inputs (NPN/PNP) + 8 transistor outputs (NPN)
WT30-SMD16-1		8 DC inputs (NPN/PNP) + 8 transistor outputs (PNP)

Note: An Antenna and Mounting Brackets are not included with the FA Wireless SS Terminals.

Accessories

Antennas

Model	Type
WT30-AT001	Magnet-base Antenna (2 antennas per set)
WT30-AT002	Flat Diversity Antenna (1 antenna)
WT30-AT003	Pencil Antenna (2 antennas per set)

Communications Cables

Model	Length	Application
XW2Z-0100U-3	1 m	For personal computer
XW2Z-0200U-3	2 m	
XW2Z-0500U-3	5 m	
XW2Z-0200U-5	2 m	For PLC
XW2Z-0500U-5	5 m	

Other

Model	Type
WT30-FT001	DIN Rail Mounting Bracket (for TH35-7.5)
WT30-FT002	DIN Rail Mounting Bracket (for TH35-15)
WT30-FT003	Surface Mounting Bracket (screw-mounting) (2 brackets per set)
WT30-FT011	Flat Diversity Antenna Mounting Brackets (with magnets)
WT30-CA2M	Antenna Extension Cable (1 cable, 2 m)

Specifications

Ratings

Item	WT30-M01-FLK Serial Master	WT30-SID16/SMD16/SMD16-1 I/O Slaves
Power supply (wireless communications power supply)	Rated voltage	24 VDC
	Allowable voltage range	20.4 to 26.4 VDC
Error output/output power supply (for output circuits)	Rated voltage	--- 24 VDC
	Allowable voltage range	--- 20.4 to 26.4 VDC
Insulation resistance	20 MΩ min. (at 100 VDC) between the power supply and chassis	20 MΩ min. (at 100 VDC) between the power supply and all I/O and I/O power supply and between the power supply and chassis
Dielectric strength	1,500 VAC for 1 min between power supply and chassis	1,500 VAC for 1 min between the power supply and all I/O and I/O power supply and between the power supply and chassis
Noise immunity	IEC61000-4-4, 1 kV (power supply line)	
Vibration resistance	JIS C0040 Frequency: 10 to 55 Hz; Amplitude of 0.35 mm or acceleration of 50 m/s ² , whichever is smaller (DIN Rail mounting: single-amplitude of 0.1 mm or acceleration of 15 m/s ²) 10 sweeps of 8 min each (i.e., 80 min in total) in X, Y, Z directions	
Shock resistance	Conforms to JIS C0041: 300 m/s ² 3 times each in X, Y, and Z	
Ambient operating temperature	-10 to 55°C (with no condensation or icing) (with the Terminal mounted with the dust-proof label facing up)	Number of simultaneously ON I/O points 10 max.: -10 to 55°C 16 max.: -10 to 50°C (with no condensation or icing) (with the Terminal mounted with the dust-proof label facing up)
Ambient operating humidity	25% to 85% (with no condensation or icing)	
Ambient environment	No corrosive gases	
Storage temperature	-25 to 65°C (with no condensation or icing)	
Degree of protection	IP20	
Terminal construction	Power supply	Screwless terminal block (Phoenix Contact FFKDSV1-5.08 or equivalent)
	Serial	D-sub, 9-pin (female) Inch screws (OMRON XM2F-0910-132 or equivalent)
Weight	330 g max.	
EEPROM write life	Approx. 1 million writes	

Note: Use the WT30-FT003 Surface Mounting Bracket when installing the WT30 in environments subject to vibration.

Wireless Interface Specifications

Item	Specifications
Wave type	Spread Spectrum (direct sequence; SS-DS)
Communication method	Simplex
Frequency band	2,402.2 to 2,480.2 MHz
Number of channels	66 channels (based on switching)
Transmitter output power	10 mW/MHz
Baud rate between wireless stations	100 kbps
Relay functions	One stage using I/O slave for the serial master configuration.
Number of stations per area	10 sets max. (recommended)
Number of I/O Slaves connected	64 max.
Error detection method	CRC-CCITT (16 bits)

Package Contents

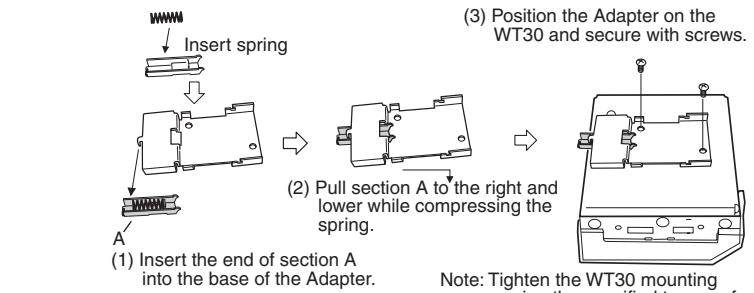
- WT30 FA Wireless SS Terminal
- Instruction Sheet
- Notification Sheet
- Terminal labels (slaves only)
- Adhesive non-slip feet (master only)

Installation

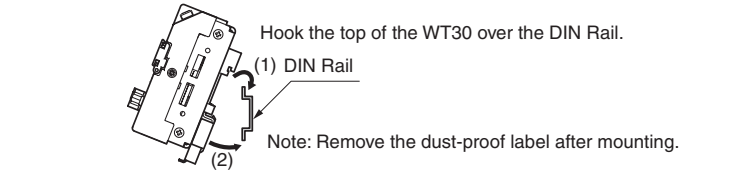
Using a DIN Rail

Note: Do not install the product in a metal panel. Doing so will decrease the wireless performance. To install the product in a panel, use either a Magnet-base Antenna or Flat Antenna and install the Antenna on the outside of the panel.

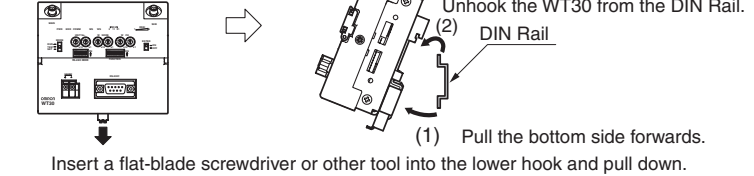
Using a DIN Rail Adapter (Installation Tool: WT30-FT001 or WT30-FT002)



Mounting Method



Removal Method



Using a Surface Mounting Bracket

Mounting hole dimensions (Unit: mm)

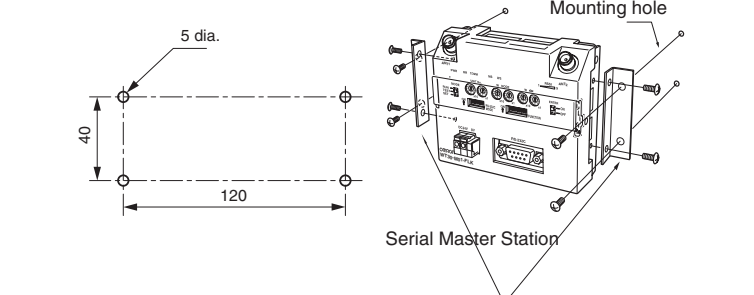


Table-top Mounting

