

OMRON

Model WD30-ME/ME01  
DeviceNet Wireless Master

ENG Instruction Sheet

Thank you for purchasing an OMRON product. Please find your have the product of your interest and read this User's Guide thoroughly for better understanding before using this product.

Please keep this User's Guide at hand for quick reference after having read it through.

The description on DeviceNet Wireless Slave (Model WD30-SE/SE01) is provided on the back side.



Model WD30-ME Model WD30-ME01

OMRON Corporation

©All Rights Reserved

1618735-0B

Please read the following manual, as well, for safe and appropriate use.

- DeviceNet Wireless Unit Operation Manual (No. M071-E1-01)

IC NOTICE

This device has been designed to operate with an antenna having a maximum gain of 2.14 dB. Antenna having a higher gain is strictly prohibited per regulations of Industry Canada. The Required antenna impedance is 50 ohms. To reduce potential radio interference to other users the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (EIRP) is not more than that required for successful communication.

This Class B digital apparatus complies with Canadian ICES-003. Cet appareil numérique de la classe B est conforme a la norme NMB-003 du Canada.

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.
- This transmitter must not be co-located or operated in conjunction with any other antenna or transmitter.

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



Český [Czech]	Omron Corporation tímto prohlašuje, že tento WD30 je ve shodě se základními požadavky a dalšími příslušnými ustanoveními směrnice 1999/5/ES.
Dansk [Danish]	Undertegnede Omron Corporation erklærer herved, at følgende udstyr WD30 overholder de væsentlige krav og øvrige relevante krav i direktiv 1999/5/EF.
Deutsch [German]	Hiermit erklärt Omron Corporation, dass sich das Gerät WD30 in Übereinstimmung mit den grundlegenden Anforderungen und den übrigen einschlägigen Bestimmungen der Richtlinie 1999/5/EG befindet.
Eesti [Estonian]	Käesolevaga kinnitab Omron Corporation seadme WD30 vastavust direktiivi 1999/5/EÜ põhinõuetele ja nimetatud direktiivist tulenevatele teistele asjakohastele sätetele.
English	Hereby, Omron Corporation, declares that this WD30 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 WD30 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 WD30 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 WD30 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 WD30 è conforme ai requisiti essenziali ed alle altre disposizioni pertinenti stabilite dalla direttiva 1999/5/CE.
Latviski [Latvian]	Ar šo Omron Corporation deklarē, ka WD30 atbilst Direktīvas 1999/5/EK būtiskajām prasībām un citiem ar to saistītajiem noteikumiem.
Lietuvių [Lithuanian]	Šiuo Omron Corporation deklaruoja, kad šis WD30 atitinka esminius reikalavimus ir kitas 1999/5/EB Direktyvos nuostatas.
Nederlands [Dutch]	Hierbij verklaart Omron Corporation dat het toestel WD30 in overeenstemming is met de essentiële eisen en de andere relevante bepalingen van richtlijn 1999/5/EG.
Malti [Maltese]	Hawnhekk, Omron Corporation, jidrikjara li dan WD30 jikkonforma mal-htijiet essenzjali u ma provvedimenti oħrajn relevanti li hemm fid-Direttiva 1999/5/EC.
Magyar [Hungarian]	Alulírott, Omron Corporation nyilatkozom, hogy a WD30 megfelel a vonatkozó alapvető követelményeknek és az 1999/5/EC irányelv egyéb előírásainak.
Polski [Polish]	Niniejszym Omron Corporation oświadczam, że WD30 jest zgodny z zasadniczymi wymogami oraz pozostałymi stosownymi postanowieniami Dyrektywy 1999/5/EC.
Português [Portuguese]	Omron Corporation declara que este WD30 está conforme com os requisitos essenciais e outras disposições da Directiva 1999/5/CE.
Slovensko [Slovenian]	Omron Corporation izjavlja, da je ta WD30 v skladu z bistvenimi zahtevami in ostalimi relevantnimi določili direktive 1999/5/ES.
Slovensky [Slovak]	Omron Corporation týmto vyhlasuje, že WD30 spĺňa základné požiadavky a všetky príslušné ustanovenia Smernice 1999/5/ES.
Suomi [Finnish]	Omron Corporation vakuuttaa täten että WD30 tyypin laite on direktiivin 1999/5/EY oleellisten vaatusten ja sitä koskevien direktiivin muiden ehtojen mukainen.
Svenska [Swedish]	Härmed intygar Omron Corporation att denna WD30 står i överensstämmelse med de väsentliga egenskapskrav och övriga relevanta bestämmelser som framgår av direktiv 1999/5/EG.
Islenska [Icelandic]	Hér með lýsir Omron Corporation yfir því að WD30 er í samræmi við grunnkröfur og aðrar kröfur, sem gerðar eru í tilskipun 1999/5/EC.
Norsk [Norwegian]	Omron Corporation erklærer herved at utstyret WD30 er i samsvar med de grunnleggende krav og øvrige relevante krav i direktiv 1999/5/EF.

Precautions for Safe Use

Please observe the following for your safety.

- (1) Do not use the device for real-time control (I/O control that requires the same high-speed response as DeviceNet).
- (2) Do not apply excessive vibration or shock, or drop the device accidentally.
- (3) Do not use the device subject to:
  - corrosive or flammable gas
  - excessive debris and dust
  - water, oil, and chemicals
  - drastic change in temperature that causes condensation
  - static electricity and extreme noise
- (4) Do not route the communication cable parallel or close to high-voltage or strong-current cables.
- (5) Do not plug or unplug the connector while the power is supplied to the communication cable.
- (6) Use the communication cable specified in this User's Guide.
- (7) Do not allow accidental entry of debris while the cover is open.
- (8) Do not mount the device to a location where excessive external force might be applied or that might be used as a footing.
- (9) Fasten the screws with the torque specified in this User's Guide.
- (10) Do not use this device in the vicinity of any device that might malfunction due to the presence of radio waves from this device.

Precautions for Correct Use

- (1) Disassembly and modification of this unit are prohibited by Radio Law and may be subject to a penalty.
- (2) Do not take off the certification label of technical conformity.
- (3) Make sure to turn off the device before cabling.
- (4) Use a two-sided adhesive tape or a string to temporarily secure the device for mounting adjustment and avoid the damage caused by dropping.
- (5) Do not use the device in a location that is subject to direct sunlight and extremely high humidity or close to a TV set, a radio, a motor or drill that emits sparks, a strong magnet, and a fluorescent light.
- (6) Do not bend or break the antenna. Do not wind an electrical wire around the antenna.
- (7) Mount the device so as not to make the antenna parallel to an electrical wire or a metal plate. Mount the device as far from an electrical wire or a metal plate as possible.
- (8) Communication performance depends on the environment. This device may be interfered by other wireless units that send radio waves in the same frequency band as this device. Make sure to perform the tests, such as the mounting test, provided by this device in advance.

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).

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.

• This User's Guide provides information required for using DeviceNet Wireless Unit. Please read this User's Guide and "DeviceNet Operation Manual" for better understanding and appropriate use before using this device. Also, please keep this User's Guide at hand for quick reference.

Specifications

- General specifications  
DeviceNet communications power supply voltage  
Rated voltage 24 VDC  
Allowable voltage range 11 to 25 VDC  
(provided from the DeviceNet network power supply)  
Power consumption 4 W  
Ambient operating temperature -10 to +50°C  
Ambient operating humidity 25 to 85%  
Ambient storage temperature -20 to +65°C  
Weight Approx. 200 g

● Antenna

Use the supplied two antennas. Make sure to attach both antennas. With a single antenna only, the diversity effect is not available.

● Wireless interface specifications

- Radio waveform Spectrum diffusion (direct diffusion: DS-SS)
- Communications method Simplex (half-duplex)
- Frequency band 2.4-GHz band (2402.2 to 2480.2 MHz)
- Number of channels 66 channels (using frequency division)
- Antenna power 10 mW/MHz
- Wireless interval data transfer speed 100 kbps
- Wireless interval protocol 1: N polling selecting method
- Transmission format HDLC compliant
- Expected transmission distance Indoors: 50 m (The transmission distance depends on the environment.)  
The transmission distance can be extended using relays. (3 stages max.)
- Number of connectable Wireless Slaves 64 units

● Cabling

● DeviceNet communications cable

Use the DeviceNet exclusive cable with a single socket (Model DCA1-5CN□□F1).

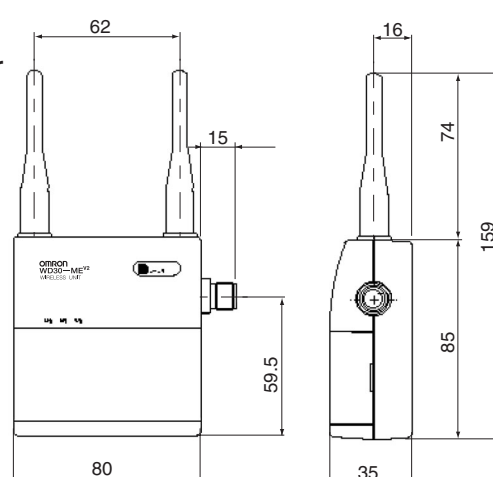
● Mounting

● Mounting requirement

Fasten the screws with torque of up to 0.3 N·m (2.7 in·lb).

● Dimensions

Unit: mm

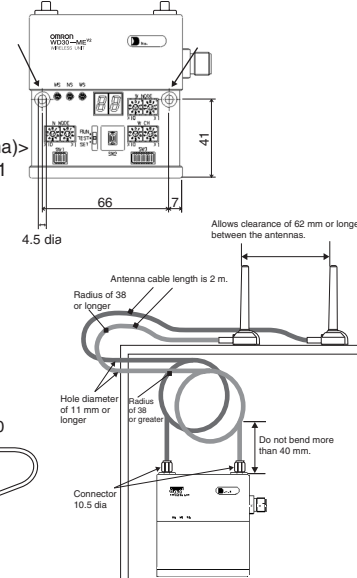
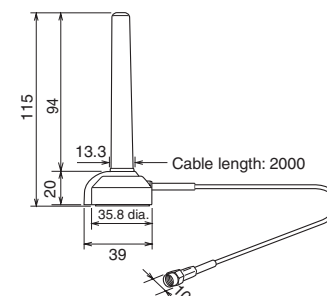


● Mounting

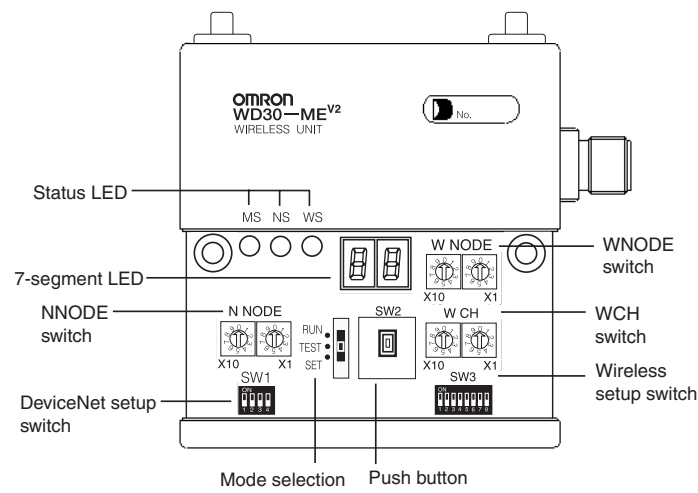
Use the screw to mount the two locations shown in the figure below.

\* You can mount ME01 main unit inside by attaching the magnet-base antennas outside.

\*WD30-ME01 supplied antenna  
<WD30-AT001 (magnet-base antenna)>  
Available model: WD30-ME/ME01  
Unavailable model: WD30-M



● Component names and functions



- Status LED  
MS (Module Status) : Main unit status  
NS (Network Status) : DeviceNet network status  
WS (Wireless Status): Wireless network status

● 7-segment LED

This LED is unlit in RUN mode. When errors are detected, this LED displays the error code and the error code of the errors in the order of error detections. In TEST mode, this LED displays the received wave level.

● DeviceNet setup switch [SW1]

Use this switch to set up the communications speed and the status of the DeviceNet interface. Set the switch before power-on. Only the switch setting immediately after power-on is effective. Any changes to the switch setting after power-on will be ignored.

No.	Description	(MODE1)	(MODE2)
1	Communications speed selection	(MODE1)	(MODE2)
3	With/without status		
4	Maximum IN/OUT count		

● DeviceNet communications speed setup

Communications speed (bps)	State of the dip switch		Remarks
	1	2	
125k	OFF	OFF	Trunk length distance of 500 m
250k	ON	OFF	Trunk length distance of 250 m
500k	OFF	ON	Trunk length distance of 100 m
-	ON	ON	Setup prohibited, no communications

No.	Description	ON	OFF
3	With/without status	With status	Without status
4	Maximum IN/OUT count	1600/1600	512/512

● Mode selection switch

Use this switch to set up operation mode of Wireless Master. (3 positions)

Operation mode	SW status
Run mode	RUN
Test mode	TEST
Setup mode	SET

● Push button [SW2]

Push this button to trigger individual settings in SET mode.

● NNODE switch

Use this switch to set up the node address (NNODE) of the DeviceNet interface. Set the switch before power-on. Only the switch setting immediately after power-on is effective. Any changes to the switch setting after power-on will be ignored.

● WNODE switch

Use this switch to set up the node address of the wireless interface. Wireless Master ignores this switch setting in RUN mode and uses the node address of "00". Set the switch before power-on. Only the switch setting immediately after power-on is effective. Any changes to the switch setting after power-on will be ignored.

● WCH switch

Use this switch to set up the group address of the wireless interface and the communications channel. Set a decimal number from "02" to "34", "51" to "83". Channel 51 cannot be used in China. Use channels 2 to 34 or channels 52 to 83. Setting any out-of-range number in RUN mode will cause a switch setup error. Set the switch before power-on. Only the switch setting immediately after power-on is effective. Any changes to the switch setting after power-on will be ignored.

● Wireless setup switch [SW3]

Use this switch to set up parameters for TEST and SET modes. Set the switch before power-on. Only the switch setting immediately after power-on is effective. Any changes to the switch setting after power-on will be ignored.

No.	Description	ON	OFF
1	(Always OFF)	-	-
2	(Always OFF)	-	-
3	Wireless channel monitoring	Yes	No
4	Mounting test	Yes	No
5	Confirmation test	Yes	No
6	Wireless Slave registration	Yes	No
7	Wireless Slave removal	Yes	No
8	Default configuration	Yes	No

● Contact Address(North America)

OMRON ELECTRONICS L L C (OEI)  
Phone:1-847-843-7900 or 1-800-55-OMRON

OMRON CANADA INC. (OCI)  
Phone:416-286-6465  
Phone:1-514-636-6676(French Language)

● Contact Address(Europe)

EUROPEAN H.Q.  
OMRON EUROPE B.V.  
Phone :31-23-56-81-300  
Fax :31-23-56-81-388

● Contact Address(Asia, Pacific)

OMRON ASIA PACIFIC PTE LTD (OEP-HQ)  
Phone:65-6-835-3011  
OMRON ELECTRONICS PTY. LTD. (OEP-AU)  
Phone:61-2-9878-6377