

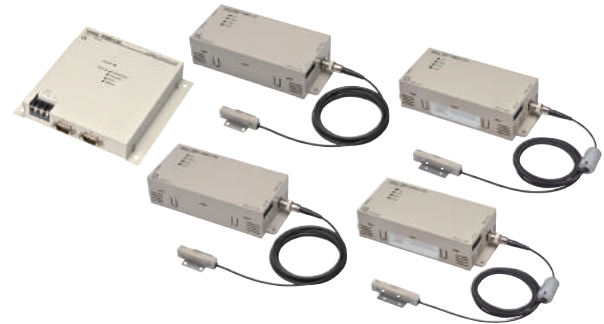
V640 Series

CSM_V640_Series_DS_E_9_5

Line-up Ethernet I/F model newly. RFID system for Semiconductor applications, supports reading and writing TI (Texas Instruments) transponders

- Conforms to SEMI standards (E4, E5, E99, E15.1)
- Supports SECS commands (via CIDRW Controller Model. V700-L22, V700-L22-V2)
- Embedded Web browser function provides easy configuration and read/write testing (Ethernet type only)
- Enhanced functions, TEST Mode / Detecting for CIDRW Head status
- Certified as radio by many countries: the USA's FCC, EU R&TTE directive, Canada's IC, China, South Korea, Taiwan, Singapore, and Isreal.

Note: Update of radio certifications can be confirmed in the OMRON website. <http://www.ia.omron.com/index.html>

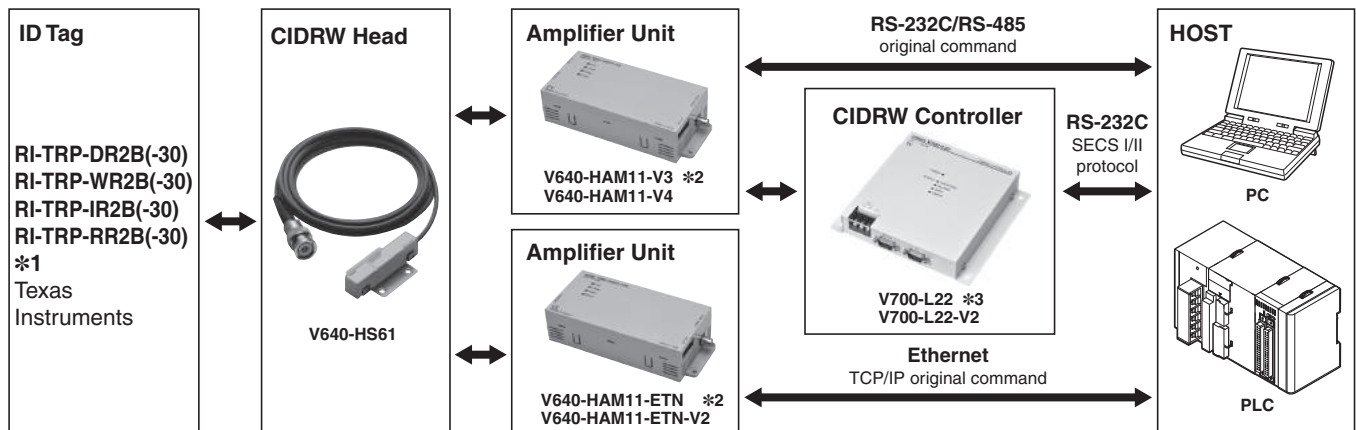


V640-HAM11-V3, V640-HAM11-ETN, V640-/HAM11-L and V640-HAM11-L-ETN in this catalog have been discontinued at the end of March 2016. V700-L22 will be discontinued at the end of December 2016.

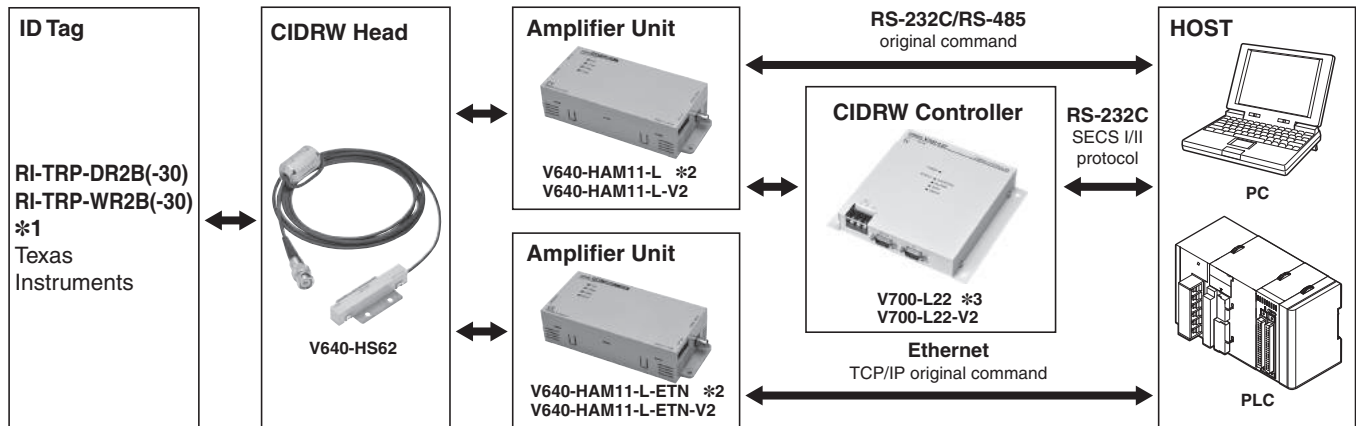
Be sure to read the "Safety Precautions" on page 6

System Configuration

Standard Models



Long-range Communications Model



- Note:**
1. Use of the V700-L11 ID Link Unit enables the Amplifier Unit to be removed/installed while the CIDRW System remains turned ON in the event of a malfunction or during maintenance.
 2. Use the V700-L22 or V700-L22-V2 CIDRW Controller when using SECS communications protocol.
 3. For details, refer to the User's Manual. Confirm the Manual No. that is listed in Related Manuals.

*1. Communication performance does not guarantee.

*2. Production was discontinued.

*3. Production will be discontinued at the end of December 2016.

Ordering Information

List of Models

| Name | Appearance | Size | Specifications | Model |
|---|---|---|---|---|
| CIDRW Head |  | 50 × 30 × 12 mm (including mounting plate) | Standard Models 2-meter cable | V640-HS61 2M |
| |  | 65 × 30 × 12 mm (including mounting plate) | Long-range Communications Model 1.9-meter cable | V640-HS62 1.9M |
| Amplifier Unit |  | 80 × 185 × 43 mm | RS-232C interface RS-485 interface 24 VDC | V640-HAM11-V3 *2 V640-HAM11-V4 NEW |
| |  | 80 × 185 × 43 mm | Ethernet interface 24 VDC | V640-HAM11-ETN *2 V640-HAM11-ETN-V2 NEW |
| |  | 80 × 185 × 43 mm | RS-232C interface RS-485 interface 24 VDC | V640-HAM11-L *2 V640-HAM11-L-V2 NEW |
| |  | 80 × 185 × 43 mm | Ethernet interface 24 VDC | V640-HAM11-L-ETN *2 V640-HAM11-L-ETN-V2 NEW |
| CIDRW Controller |  | 150 × 167 × 28 mm | 24 VDC RS-232C interface (Compatible with SECS I/II protocol.) | V700-L22 *3 V700-L22-V2 NEW |
| ID Link Unit |  | 110 × 65 × 64 mm | 24 VDC RS-232C interface RS-485 interface | V700-L11 |
| Connector accessories for the V640 Amplifier Unit | | | Power Supply Connector (1) Power Supply Connector Pins (3) RS-485 Port Connector (1) } *1 | V640-A90 |

*1. V640-A90 includes all of these accessories as a set. To purchase individual accessories, contact the manufacturers below directly.

*2. Production was discontinued.



*3. Production will be discontinued at the end of December 2016.

Purchasing Individual Accessories





| Name | Model | Manufacturer |
|-----------------------------|--------------------|----------------------|
| Power Supply Connector | 1-178288-3 | Tyco Electronics |
| Power Supply Connector Pins | 175217-3 | |
| RS-485 Port Connector | MSTB2.5/2-STF-5.08 | Phoenix Contact Inc. |

Specifications and Ratings



CIDRW Head

| Item | Model |  |  |
|-------------------------------|---|---|---|
| Transmission frequency | 134 kHz | | |
| Insulation resistance | 20 MΩ min. (at 100 VDC) between the connector terminals and the case | | |
| Dielectric strength | 1,000 VAC (50/60 Hz, 1 minute) between the connector terminals and the case (leakage current: 5 mA max.) | | |
| Vibration resistance | 10 to 150 Hz, 0.20-mm double amplitude, 15-m/s ² acceleration with 10 sweeps of 8 min each in X, Y, and Z directions | | |
| Shock resistance | 150-m/s ² acceleration for 3 times each in X, Y, and Z directions (18 times in total) | | |
| Ambient operating temperature | 0 to 40°C (with no icing) | | |
| Ambient operating humidity | 35% to 85% (with no condensation) | | |
| Ambient storage temperature | -15 to 65°C (with no icing) | | |
| Ambient storage humidity | 35% to 85% (with no condensation) | | |
| Degree of protection | IEC60529: IP20 | | |
| Cable | 2-m (3-mm dia.) coaxial cable | | 1.9-m (3-mm dia.) coaxial cable |
| Case | ABS/epoxy resin, stainless-steel mounting fixture | | |
| Weight | Approx. 70 g | | Approx. 100 g |


CIDRW Controller

| Item | Model |  |  |  |  |
|-------------------------------|---|---|---|---|---|
| Host interface | RS-232C/RS-485 | | | Ethernet (TCP/IP) | |
| Power supply voltage | 24 VDC (max. fluctuation 20.4 to 26.4 VDC) | | | | |
| Current consumption | 150mA or less | 400mA or less | 150mA or less | 400mA or less | |
| Insulation resistance | 20 MΩ min. (at 100 VDC) between the power supply terminals and the frame ground terminal | | | | |
| Dielectric strength | 1,000 VAC (50/60 Hz, 1 minute) between the power supply terminals and the frame ground terminal (leakage current: 5 mA max.) | | | | |
| Vibration resistance | 10 to 150 Hz, 0.20-mm double amplitude, 15-m/s ² acceleration with 10 sweeps of 8 min each in X, Y, and Z directions | | | | |
| Shock resistance | 150-m/s ² acceleration for 3 times each in X, Y, and Z directions (18 times in total) | | | | |
| Ambient operating temperature | 0 to 40°C (with no icing) | | | | |
| Ambient operating humidity | 35% to 85% (with no condensation) | | | | |
| Ambient storage temperature | -15 to 65°C (with no icing) | | | | |
| Ambient storage humidity | 35% to 85% (with no condensation) | | | | |
| Degree of protection | IEC60529: IP20 | | | | |
| Case | ABS+PC | | | | |
| Ground | Ground at a resistance of less than 100 Ω. | | | | |
| Weight | Approx. 250 g | | | | |

CIDRW Controller

| Item | Model |  V700-L22 |  V700-L22-V2 |
|-------------------------------|-------|---|--|
| Host interface | | RS-232C | |
| Power supply voltage | | 24 VDC (max. fluctuation 20.4 to 26.4 VDC) | |
| Current consumption | | 150 mA or less | |
| Insulation resistance | | 50 MΩ min. (at 500 VDC) between the power supply terminals and the frame ground terminal | |
| Dielectric strength | | 500 VAC (50/60 Hz, 1 minute) between the power supply terminals and the ground terminal | |
| Vibration resistance | | 10 to 150 Hz, 0.20-mm double amplitude, 15-m/s ² acceleration with 10 sweeps of 8 min each in X, Y, and Z directions | |
| Shock resistance | | 150-m/s ² acceleration for 3 times each in X, Y, and Z directions (18 times in total) | |
| Ambient operating temperature | | 0 to 40°C (with no icing) | |
| Ambient operating humidity | | 10% to 85% (with no condensation) | |
| Ambient storage temperature | | -15 to 65°C (with no icing) | |
| Ambient storage humidity | | 10% to 95% (with no condensation) | |
| Degree of protection | | IEC60529: IP20 | |
| Ground | | Ground at a resistance of less than 100 Ω. | |
| Case | | SECC (coating) | |
| Weight | | Approx. 560 g | |

ID Link Unit

| Item | Model |  V700-L11 |
|-------------------------------|-------|--|
| Host interface | | RS-232C or RS-485 |
| Power supply voltage | | 24 VDC (max. fluctuation 20.4 to 26.4 VDC) |
| Current consumption | | 250 mA or less |
| Insulation resistance | | 50 MΩ min. (at 500 VDC) between the power supply terminals and the frame ground terminal |
| Dielectric strength | | 1,000 VAC (50/60 Hz, 1 minute) between the power supply terminals and the frame ground terminal (leakage current: 5 mA max.) |
| Vibration resistance | | 10 to 150 Hz, 0.20-mm double amplitude, 15-m/s ² acceleration with 10 sweeps of 8 min each in X, Y, and Z directions |
| Shock resistance | | 150-m/s ² acceleration for 3 times each in X, Y, and Z directions (18 times in total) |
| Ambient operating temperature | | 0 to 40°C (with no icing) |
| Ambient operating humidity | | 35% to 85% (with no condensation) |
| Ambient storage temperature | | -15 to 50°C (with no icing) |
| Ambient storage humidity | | 35% to 85% (with no condensation) |
| Degree of protection | | IEC60529: IP20 |
| Ground | | Ground at a resistance of less than 100 Ω. If grounding is not performed properly, transmission specifications may be adversely affected by the surrounding environment. |
| Case | | PC/ABS resin |
| Weight | | Approx. 200 g |

Functional Specifications

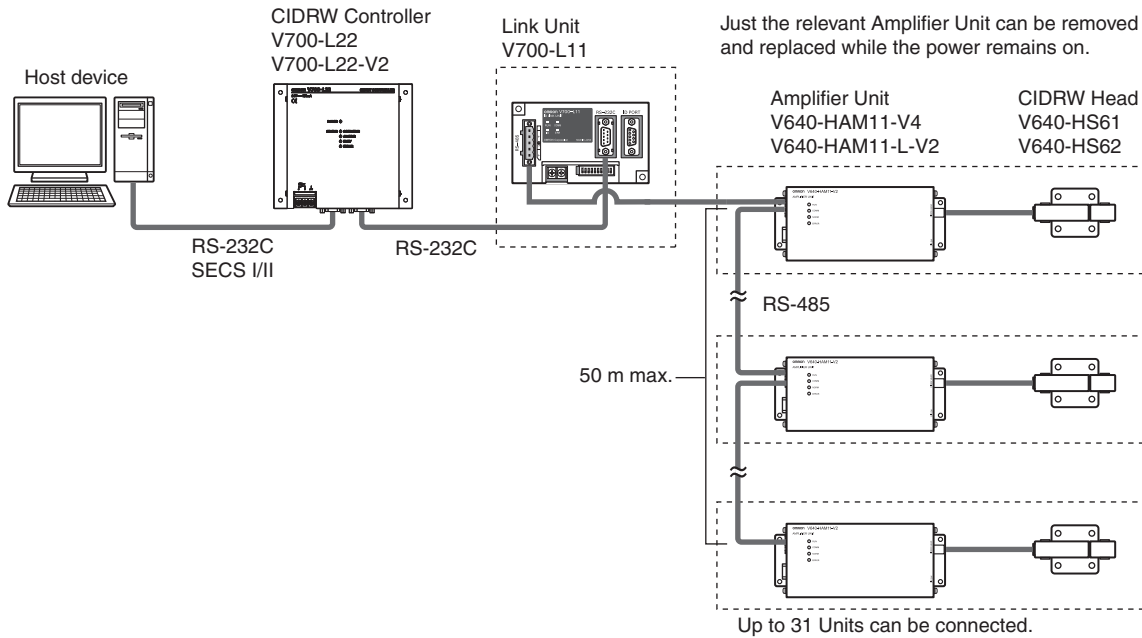
Serial Type System Configuration Examples

System Configuration Using CIDRW Controller (V700-L22, V700-L22-V2)

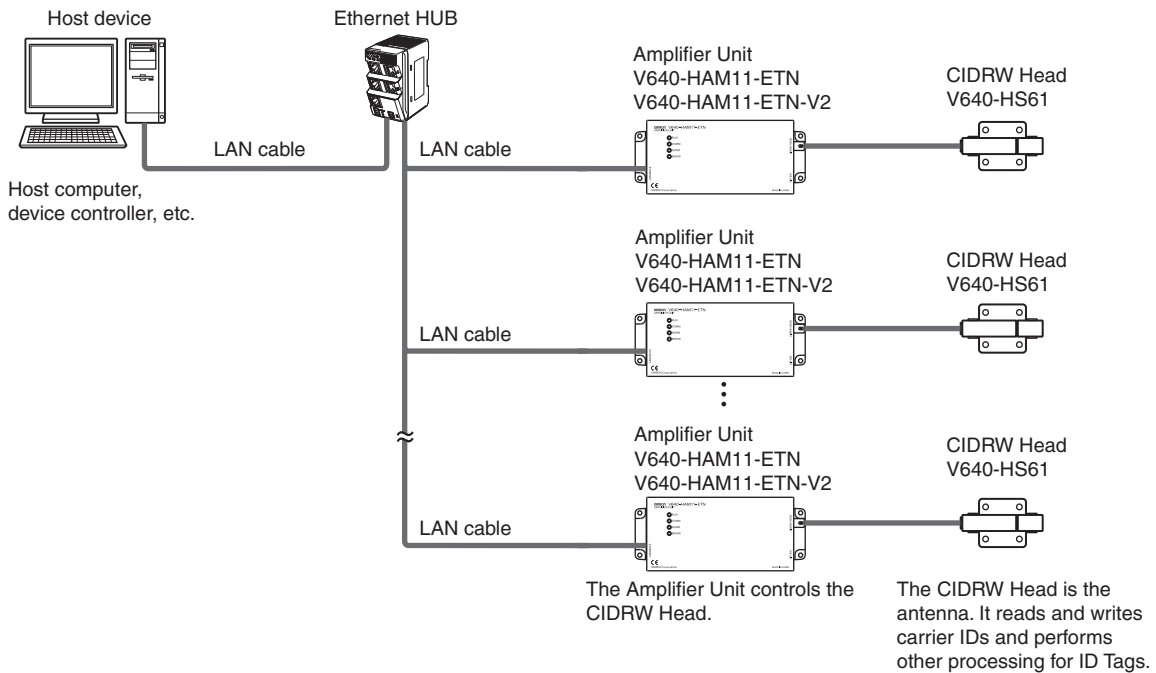
The Carrier ID Reader Writer (CIDRW) System is an RFID system that conforms to SEMI standards. The V700-L22 or V700-L22-V2 CIDRW Controller, the V640-HAM1□ Amplifier Unit, the V640-HS6□ CIDRW Head, and a Texas Instruments ID Tag can be used to configure a Carrier ID Reader Writer (CIDRW) System that conforms to the following standards:

Note: SEMI: Semiconductor Equipment and Materials International
SECS: SEMI Equipment Communications Standard

CIDRW System



Ethernet Type System Configuration Examples



Note: If the IP address is set on the DIP switch, it will be in the form 192.168.1.□□□. The subnet mask is always 255.255.255.0. The IP address of the Amplifier Unit can be either set on this DIP switch or the desired IP address can be set in ROM. If pins 1 to 5 on the DIP switch are all turned OFF, the IP address that is set in ROM will be used.

Safety Precautions

WARNING

The product is not designed or rated for ensuring safety of persons.
Do not use it for such purposes.



Precautions for Safe Use

Please observe the following precautions for safe use of the products.

- Never use the product in an environment where combustible or explosive gas is present.
- Please separate from a high-pressure equipment and the power equipment to secure the safety of the operation and maintenance.
- In the installation, please tighten the screw surely. (Recommended 1.2N.m)
- Please do not insert foreign bodies such as water and the wires from the space of the case.
- Please do not dismantle, repair or modify this product.
- Please process as industrial waste when you abandon this product.
- When you work on wiring and put on and take off cables, CIDRW head, please perform it after switching off this product.
- Provide enough space around this product for ventilation.
- Please avoid installing this product near the machinery (a heater, a transformer, large-capacity resistance) that has high the calorific value. When you felt abnormality to this product, and having switched it off.

Confirm the effects of radio waves on medical devices. The following guideline is from JAISA (Japan Automatic Identification Systems Association).

This product is a reader-writer that uses radio waves for RFID equipment. The application and location of this product may affect medical devices. The following precaution must be observed in the application of the product to minimize the effects on medical devices.

Any person with an implanted medical device must keep the area where the device is implanted at least 22 cm away from the antenna of a stationary or modular RFID device.

Precautions for Correct Use

Please observe the following precautions to prevent failure to operate, malfunctions, or undesirable effects on product performance.

About installation Site

Do not install this product in the locations subject to the following conditions.

- Place where direct sunshine strikes.
- Place with corroded gas, dust, metallic powder, and salinity.
- Place with condensation due to rapid temperature fluctuations.
- Place with condensation due to high humidity.
- Place where vibration and impact more than being provided by specification are transmitted directly to main body.
- Place with spray of water, oil, and chemical medicine.
- The working temperature is within the range stipulated in the specifications.

About depositoty Site

- Please follow the save ambient temperature / humidity, and keep this product.

About wiring

- Use the power supply voltage specified in this documet.
- Ensure correct polarity when connecting to the +/- power supply terminals.
- Do not run high-voltage lines and power lines though the same conduit.
- To avoid static-induced failure, wear a wrist band or equivalent means to release a static charge before touching a terminal or a signal line within a connector.
- In using this product in EU association states, the cable for DC power supply to this product must not be extended over 3m.
- When you put on and take off a CIDRW head, please do not add excessive power to a connector.
- Please connect the correct CIDRW head to the amplifier unit.

About cleaning

- Use alcohol to clean this product.
- Never use an organic solvent such as thinner, benzene, acetone or kerosene, as it will attack resin components or case coating.

Power and Ground Cables

- Use an appropriate ground. An insufficient ground can affect this product operation or result in damage to this product.

About the communication range and time

- Do the communication test with Transponder in the installation environment because the metal, noise and ambient temperature around CIDRW head damage to the communication range and time.
- Install CIDRW head and ID tag in the appropriate distance because the communication range can change by the difference of ID tag specifications.

About mounting

- This product communicates with ID Tags using the 134 kHz frequency band. Some transceivers, motors, monitoring equipment, and power supplies (power supply ICs) generate electrical waves (noise) that interfere with communications with ID Tags. If you are using the product in the vicinity of any of these devices, check the effect on communications in advance.
- In order to minimize the effects of noise, ground nearby metal bodies with a grounding resistance not exceeding 100 ohms.
- When mounting CIDRW Heads, tighten the screws tightly. (Recommended 0.6N·m)
- When multiple CIDRW Heads are mounted next to each other, communications performance could be impaired by mutual interference. Read and follow the information in User's Manual on mutual interference when installing multiple heads.

Screw Locking Adhesive

- Screw locking adhesive (screw lock) may cause deterioration and cracking of resin parts; do not use it for screws in resin parts or anywhere where resin washers are used.

Communications with the Host Device

**(V640-HAM11-V3 and V640-HAM11-V4,
V680-HAM11-L and V680-HAM11-L-V2 only)**

- Communicate with the host device only after confirming that the CIDRW Controller has started. Also, unstable signals may occur at the host interface when the CIDRW Controller is started. When initializing operation, clear the reception buffer at the host device or take other suitable methods to clear unwanted signals.

Startup Precaution

- Never turn OFF the power supply while the CIDRW Controller is starting, including when power is turned ON, when the mode is changed, or when the CIDRW Controller is being reset. Doing so may damage the CIDRW Controller.

Application Precaution

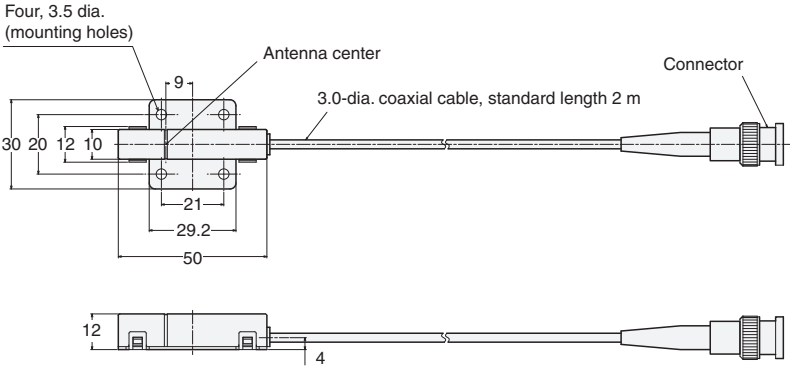
**(V640-HAM11-ETN and V640-HAM11-ETN-V2,
V640-HAM11-L-ETN and V640-HAM11-L-ETN-V2 only)**

- Never turn OFF the power supply while setting the IP address, subnet mask, or Web password. Doing so may damage the Amplifier Unit.

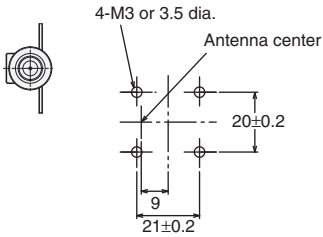
Dimensions

CIDRW Head

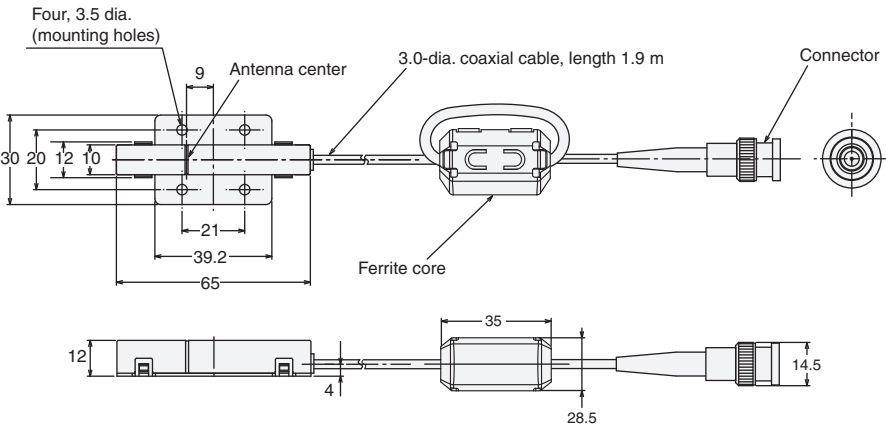
V640-HS61



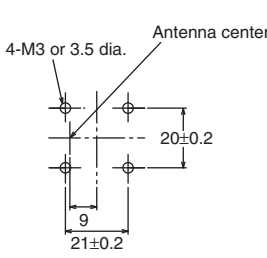
Mounting Hole Dimensions



V640-HS62

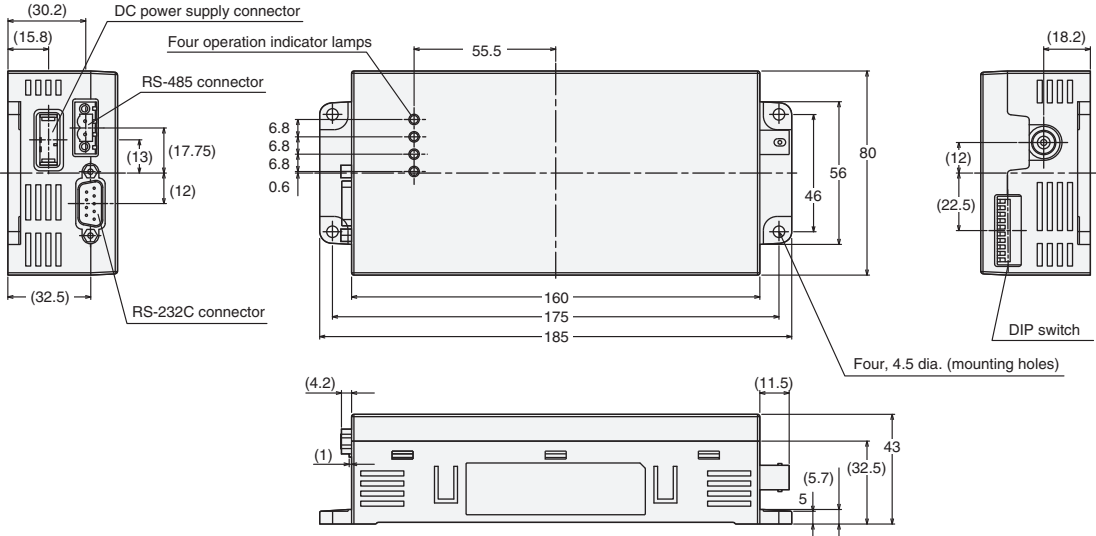


Mounting Hole Dimensions

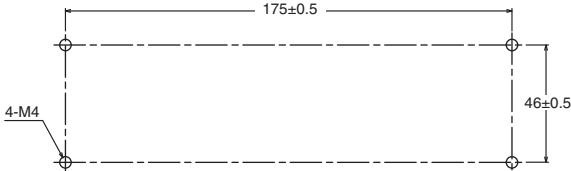


Amplifier Unit

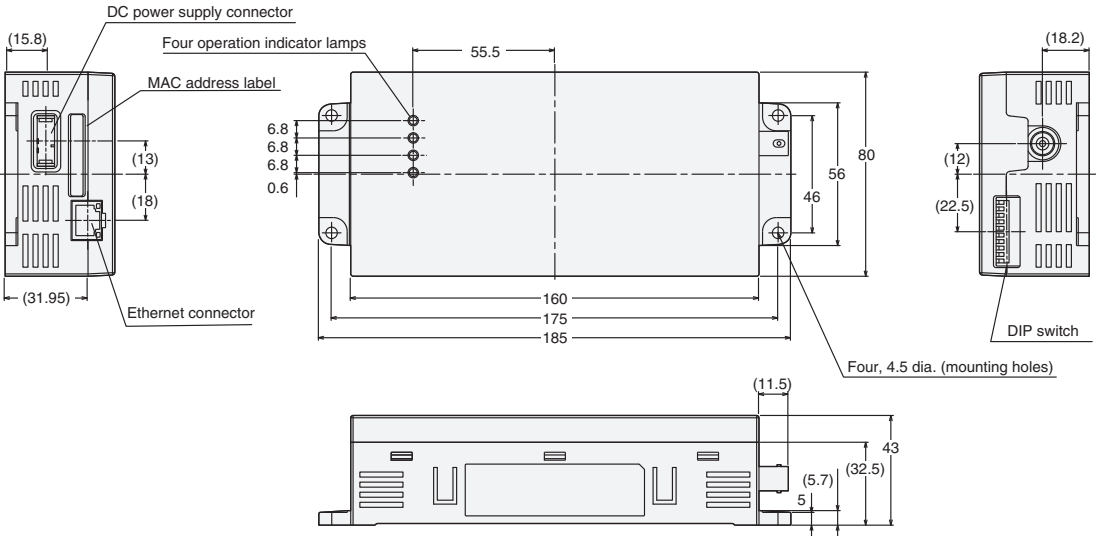
- V640-HAM11-V3
- V640-HAM11-V4
- V640-HAM11-L
- V680-HAM11-L-V2



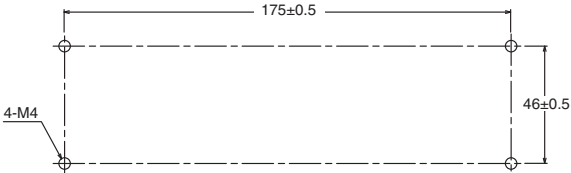
Mounting Hole Dimensions



- V640-HAM11-ETN
- V640-HAM11-ETN-V2
- V640-HAM11-L-ETN
- V640-HAM11-L-ETN-V2

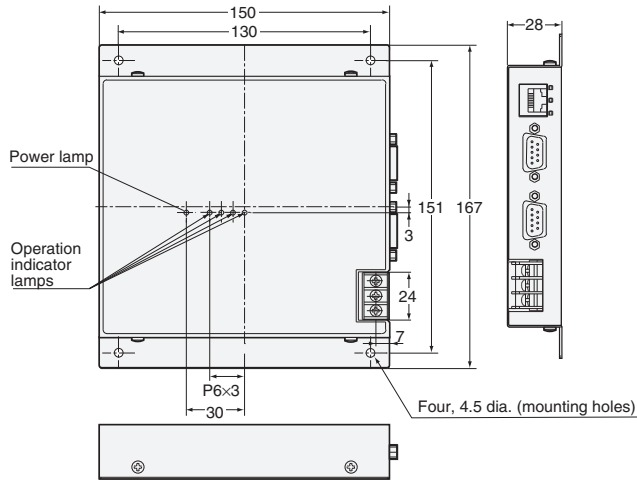


Mounting Hole Dimensions

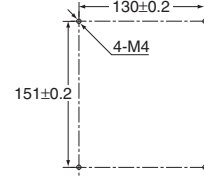


CIDRW Controller

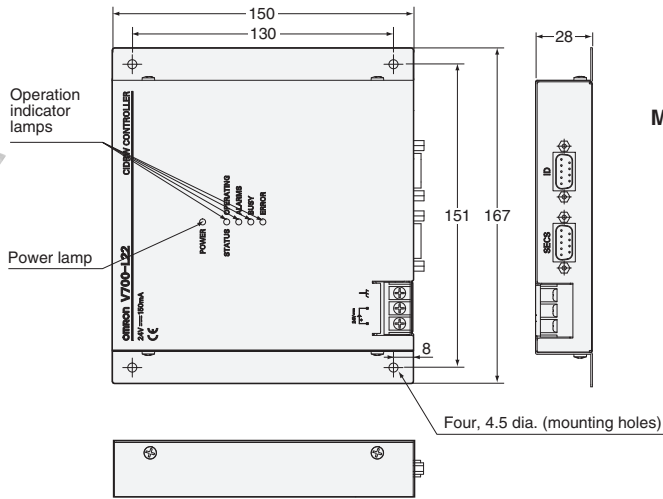
V700-L22



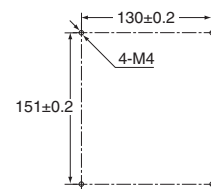
Mounting Hole Dimensions



V700-L22-V2

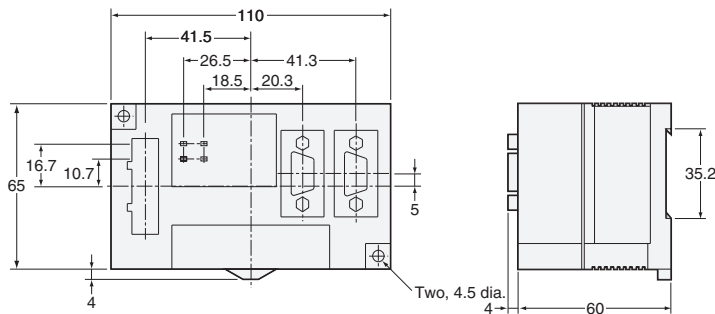


Mounting Hole Dimensions

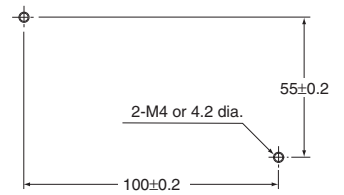


ID Link Unit

V700-L11



Mounting Hole Dimensions



Related Manuals

| English Cat.No. | Japanese Cat.No. | Model | Name |
|-----------------|------------------|---|---------------------------|
| Z307-E1 | SDGR-701 | V640-HAM11-V3 *1 V640-HAM11-L *1 V640-HS61/HS62 V700-L11/L22 *2 | V640 Series User's Manual |
| Z308-E1 | SDGR-702 | V640-HAM11-ETN *1 V640-HAM11-L-ETN *1 V640-HS61 V640-HS62 | V640 Series User's Manual |
| Z360-E1 | SDGR-712 | V640-HAM11-V4 V640-HAM11-L-V2 V640-HS61/HS62 V700-L11/L22 *2 /L22-V2 | V640 Series User's Manual |
| Z361-E1 | SDGR-713 | V640-HAM11-ETN-V2 V640-HAM11-L-ETN-V2 V640-HS61 V640-HS62 | V640 Series User's Manual |

*1. V640-HAM11-V3, V640-HAM11-ETN, V640-/H-M11-L and V640-HAM11-L-ETN in this catalog have been discontinued at the end of March 2016.

*2. V700-L22 will be discontinued at the end of December 2016.

Terms and Conditions Agreement

Read and understand this catalog.

Please read and understand this catalog before purchasing the products. Please consult your OMRON representative if you have any questions or comments.

Warranties.

(a) Exclusive Warranty. Omron's exclusive warranty is that the Products will be free from defects in materials and workmanship for a period of twelve months from the date of sale by Omron (or such other period expressed in writing by Omron). Omron disclaims all other warranties, express or implied.

(b) Limitations. OMRON MAKES NO WARRANTY OR REPRESENTATION, EXPRESS OR IMPLIED, ABOUT NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OF THE PRODUCTS. BUYER ACKNOWLEDGES THAT IT ALONE HAS DETERMINED THAT THE PRODUCTS WILL SUITABLY MEET THE REQUIREMENTS OF THEIR INTENDED USE.

Omron further disclaims all warranties and responsibility of any type for claims or expenses based on infringement by the Products or otherwise of any intellectual property right. (c) Buyer Remedy. Omron's sole obligation hereunder shall be, at Omron's election, to (i) replace (in the form originally shipped with Buyer responsible for labor charges for removal or replacement thereof) the non-complying Product, (ii) repair the non-complying Product, or (iii) repay or credit Buyer an amount equal to the purchase price of the non-complying Product; provided that in no event shall Omron be responsible for warranty, repair, indemnity or any other claims or expenses regarding the Products unless Omron's analysis confirms that the Products were properly handled, stored, installed and maintained and not subject to contamination, abuse, misuse or inappropriate modification. Return of any Products by Buyer must be approved in writing by Omron before shipment. Omron Companies shall not be liable for the suitability or unsuitability or the results from the use of Products in combination with any electrical or electronic components, circuits, system assemblies or any other materials or substances or environments. Any advice, recommendations or information given orally or in writing, are not to be construed as an amendment or addition to the above warranty.

See <http://www.omron.com/global/> or contact your Omron representative for published information.

Limitation on Liability; Etc.

OMRON COMPANIES SHALL NOT BE LIABLE FOR SPECIAL, INDIRECT, INCIDENTAL, OR CONSEQUENTIAL DAMAGES, LOSS OF PROFITS OR PRODUCTION OR COMMERCIAL LOSS IN ANY WAY CONNECTED WITH THE PRODUCTS, WHETHER SUCH CLAIM IS BASED IN CONTRACT, WARRANTY, NEGLIGENCE OR STRICT LIABILITY.

Further, in no event shall liability of Omron Companies exceed the individual price of the Product on which liability is asserted.

Suitability of Use.

Omron Companies shall not be responsible for conformity with any standards, codes or regulations which apply to the combination of the Product in the Buyer's application or use of the Product. At Buyer's request, Omron will provide applicable third party certification documents identifying ratings and limitations of use which apply to the Product. This information by itself is not sufficient for a complete determination of the suitability of the Product in combination with the end product, machine, system, or other application or use. Buyer shall be solely responsible for determining appropriateness of the particular Product with respect to Buyer's application, product or system. Buyer shall take application responsibility in all cases.

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

Programmable Products.

Omron Companies shall not be responsible for the user's programming of a programmable Product, or any consequence thereof.

Performance Data.

Data presented in Omron Company websites, catalogs and other materials is provided as a guide for the user in determining suitability and does not constitute a warranty. It may represent the result of Omron's test conditions, and the user must correlate it to actual application requirements. Actual performance is subject to the Omron's Warranty and Limitations of Liability.

Change in Specifications.

Product specifications and accessories may be changed at any time based on improvements and other reasons. It is our practice to change part numbers when published ratings or features are changed, or when significant construction changes are made. However, some specifications of the Product may be changed without any notice. When in doubt, special part numbers may be assigned to fix or establish key specifications for your application. Please consult with your Omron's representative at any time to confirm actual specifications of purchased Product.

Errors and Omissions.

Information presented by Omron Companies has been checked and is believed to be accurate; however, no responsibility is assumed for clerical, typographical or proofreading errors or omissions.

2016.8

In the interest of product improvement, specifications are subject to change without notice.

OMRON Corporation
Industrial Automation Company

<http://www.ia.omron.com/>

(c)Copyright OMRON Corporation 2016 All Right Reserved.