

Electromagnetic Inductive RFID System V640 for Semiconductor Industry

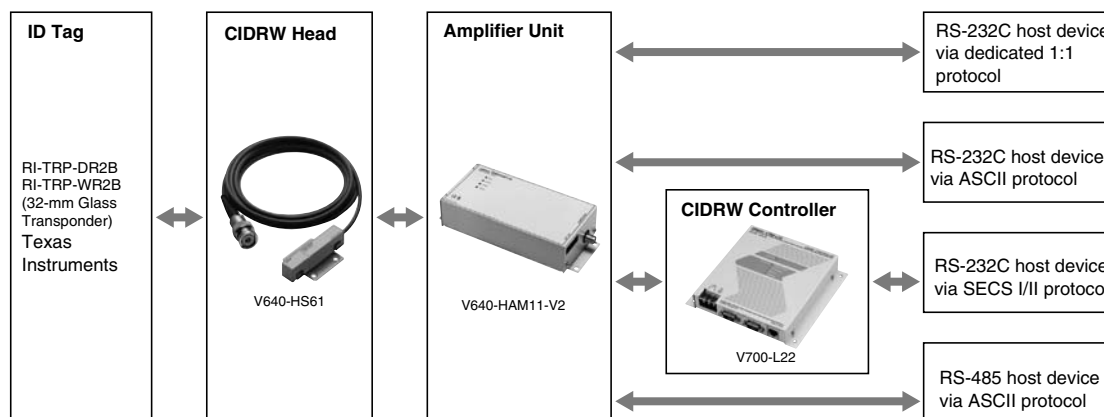
Enables reading and writing transponders for various Semiconductor applications, such as FOUPs (Front-Opening Unified Pods), reticles, and pods.

- Conforms to Carrier Reader/Writer-related SEMI standards; SEMI E99, E4, and E5.
- Antenna dimensions conform to SEMI E15.1.
- Reads/writes data embedded in a 32-mm Glass Multipage Transponder (RI-TRP-DR2B/-WR2B).
- Noise measurement function for detecting proper placement of Antenna.
- Shielded antenna reduces influence of surrounding metal.
- Lineup includes compact models designed for long-range communications.
- CE marking/FCC approvals

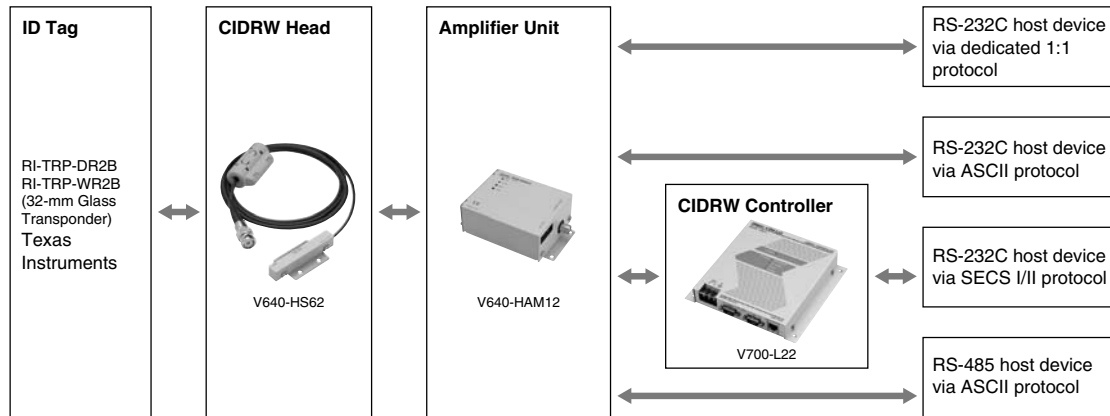


System Configuration

■ 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 CIDRW Controller when using SECS communications protocol.
 3. Refer to the *User's Manual* (V640-HAM11-V2: Cat. No. Z167; V640-HAM12: Cat. No. Z218) for details.

Ordering Information

■ List of Models



Name	Model		Specifications/Design	
CIDRW Head	V640-HS61		50 × 30 × 12 mm (including mounting plate)	2-meter cable
	V600-HS62		65 × 30 × 12 mm (including mounting plate)	1.9-meter cable
Amplifier Unit	V640-HAM11-V2		80 × 185 × 43 mm	RS-232C interface RS-485 interface 24 VDC
	V640-HAM12		80 × 125 × 43 mm	
CIDRW Controller	V700-L22		150 × 167 × 28 mm	24 VDC RS-232C interface (Compatible with SECS I/II protocol.)
ID Link Unit	V700-L11		110 × 65 × 64 mm	24 VDC RS-232C interface RS-485 interface
Accessories	V640-A90		Connector accessories for the V640 Amplifier Unit Power Supply Connector (1) Power Supply Connector Pins (3) RS-485 Port Connector (1) (See Note.)	

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



To Purchase 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


■ CIDRW Head

Item				
	V640-HS61		V640-HS62	
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	


■ Amplifier Unit

Item				
	V640-HAM11-V2		V640-HAM12	
Host interface	RS-232C (via dedicated 1:1 protocol or 1:N protocol) or RS-485			
Power supply voltage	24 VDC (max. fluctuation 20.4 to 26.4 VDC)			
Power consumption	3 W max.			
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	SECC (coated)			
Ground	Ground at a resistance of less than 100 Ω.			
Weight	Approx. 500 g		Approx. 400 g	

■ CIDRW Controller

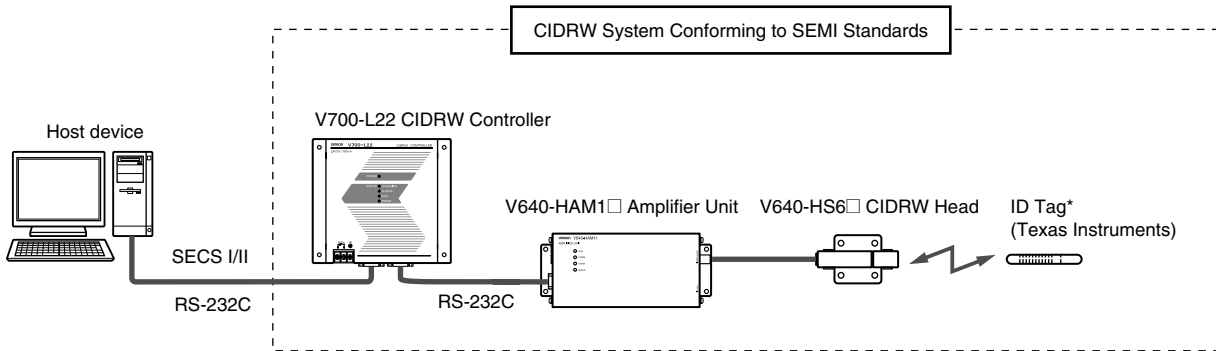
Item	V700-L22 
Host interface	RS-232C
Power supply voltage	24 VDC (max. fluctuation 20.4 to 26.4 VDC)
Power consumption	150 mW max.
Insulation resistance	50 MΩ min. (at 500 VDC) between the power supply terminals and the frame ground terminal
Dielectric strength	500 VAC (50/60 Hz, 1 minute) between the power supply terminals and the ground terminal (leakage current: 3.5 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	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.
Weight	Approx. 580 g

■ ID Link Unit

Item	V700-L11 
Host interface	RS-232C or RS-485
Power supply voltage	24 VDC (max. fluctuation 20.4 to 26.4 VDC)
Power consumption	10 W max.
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.
Weight	Approx. 200 g

Applicable SEMI Standards

■ CIDRW System Conforming to SEMI Standards



The Carrier ID Reader Writer (CIDRW) System is an RFID system that conforms to SEMI standards. The V700-L22 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:

- SEMI E99 CARRIER ID READER/WRIER FUNCTIONAL STANDARD
- SEMI E5 EQUIPMENT COMMUNICATIONS STANDARD 2 MESSAGE CONTENT (SECS-II)
- SEMI E4 EQUIPMENT COMMUNICATIONS STANDARD 1 MESSAGE TRANSFER (SEC- I)

Note: SEMI: Semiconductor Equipment and Materials International (Refer to SEMI for standards information. (SEMI URL: <http://www.semi.org/>))
 SECS: SEMI Equipment Communications Standard
 Refer to the *User's Manual* (V640-HAM11-V2: Cat. No. Z167; V640-HAM12: Cat. No. Z218) for details.
 V700-L22 conforms to SEMI E99-0303 (issued in March 2003).

* The following table lists the ID Tags (manufactured by Texas Instruments) that can be read/written by the V640 RFID System.

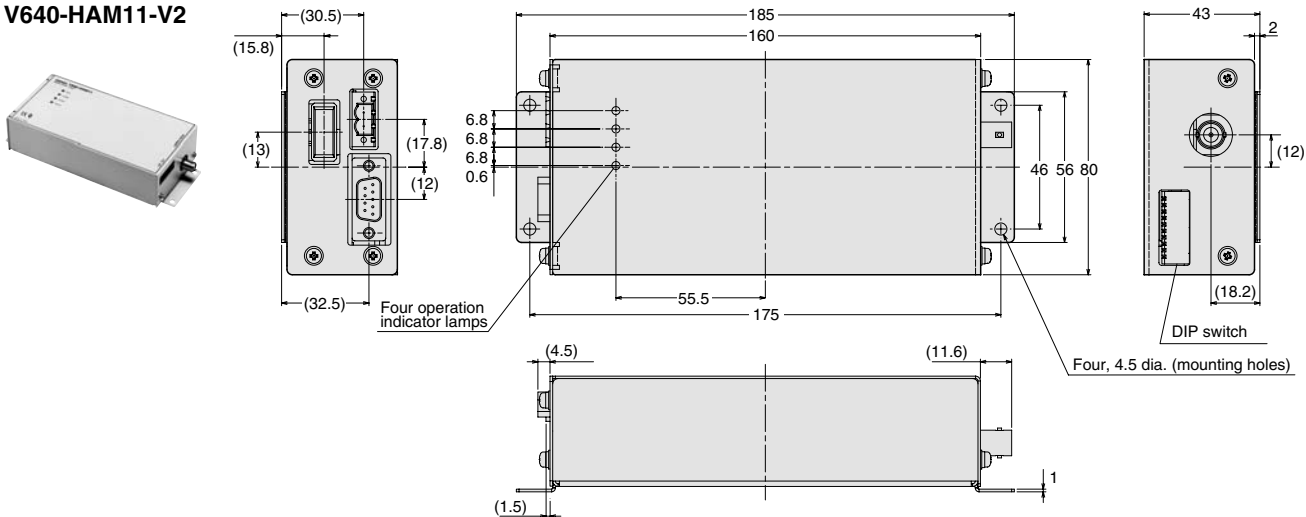
Amplifier Unit	CIDRW Head	ID Tag (Texas Instruments)
V640-HAM11-V2	V640-HS61	RI-TRP-DR2B
V640-HAM12	V640-HS62	RI-TRP-WR2B

Dimensions

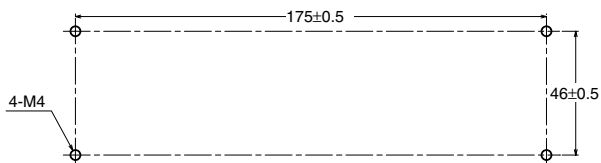
Note: All units are in millimeters unless otherwise indicated.

Amplifier Unit

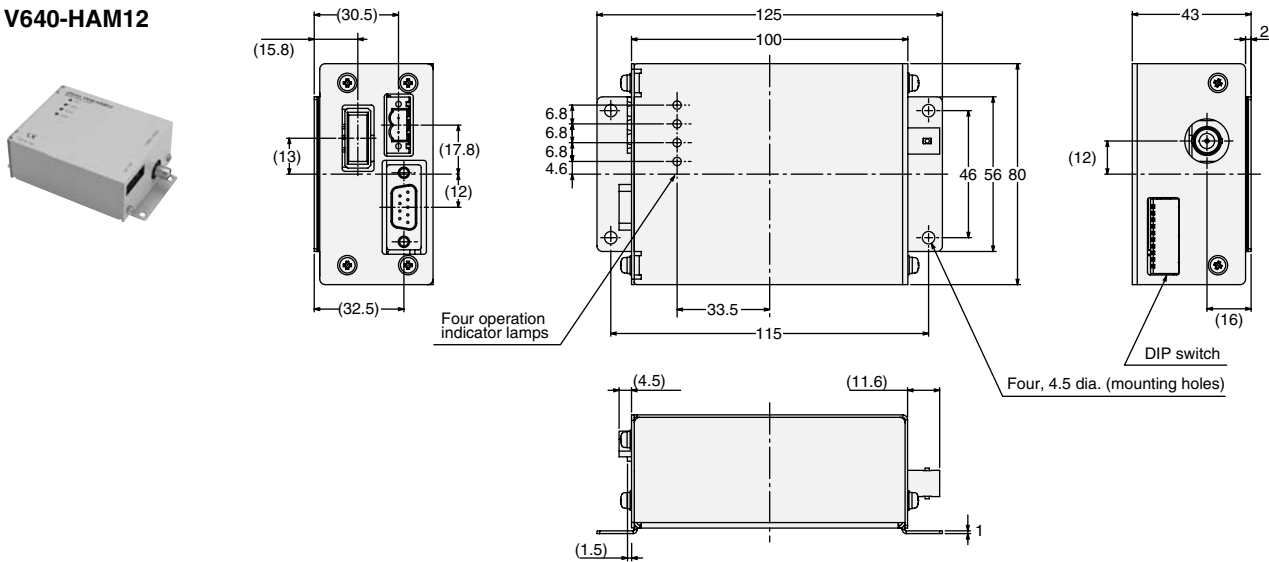
V640-HAM11-V2



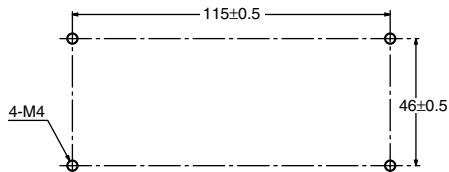
Mounting Hole Dimensions



V640-HAM12

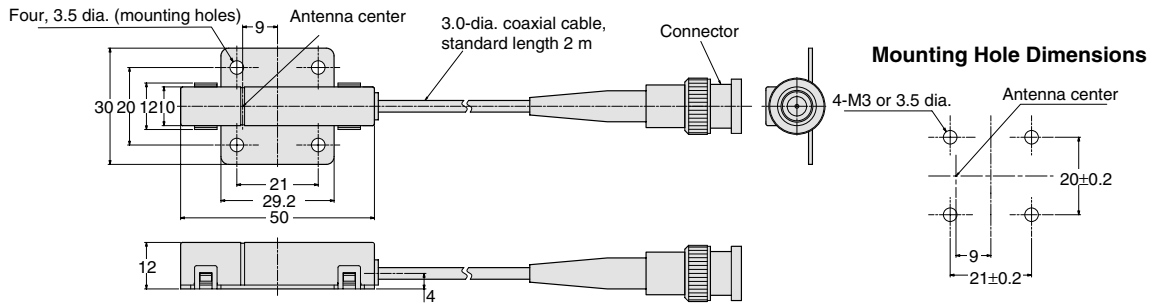


Mounting Hole Dimensions

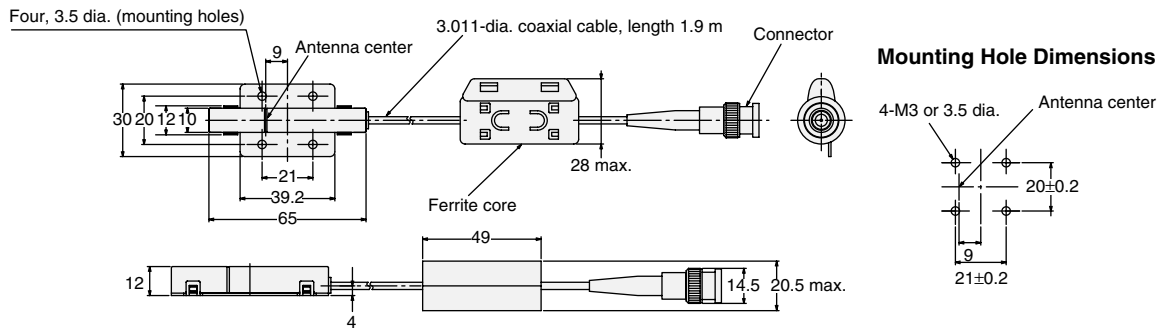


CIDRW Head

V640-HS61

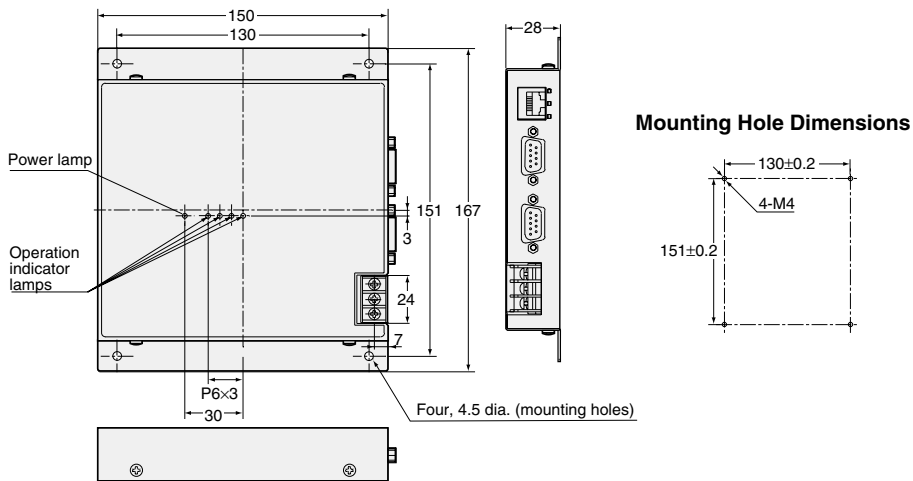


V640-HS62



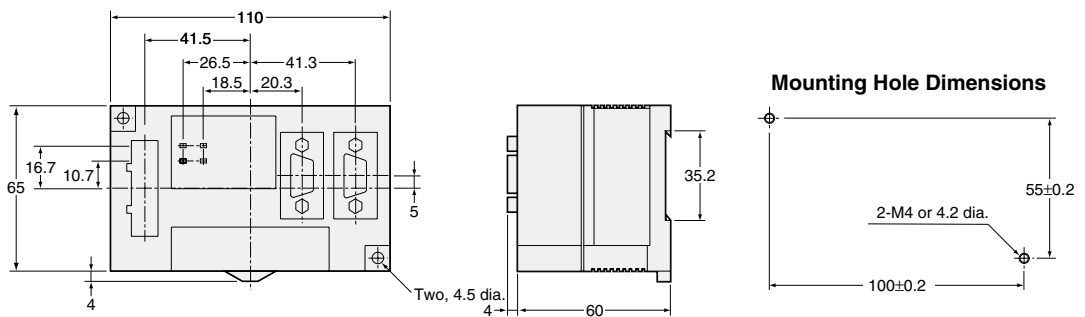
CIDRW Controller

V700-L22



ID Link Unit

V700-L11



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

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