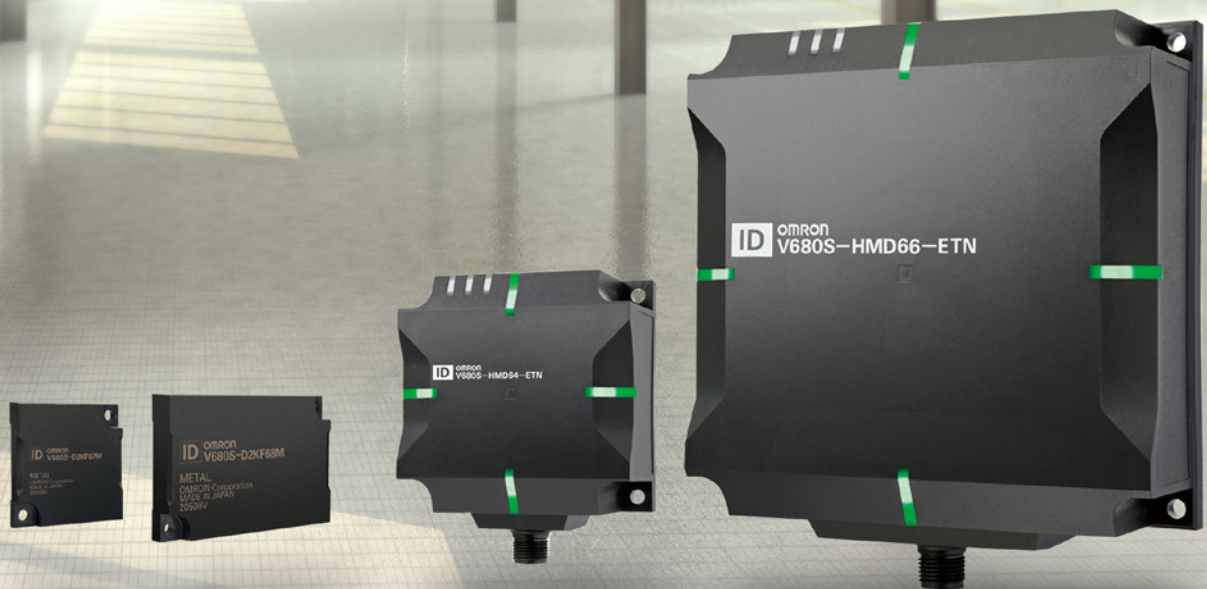


RFID System V680 S Series

RFID Conforming to ISO/IEC 18000-3 (15693)



- Easy Operation using a web browser
- 3 in 1 RFID: Antenna, Amplifier & Controller
- Easy Connection via Ethernet

OMRON Promises 2 Trusts.

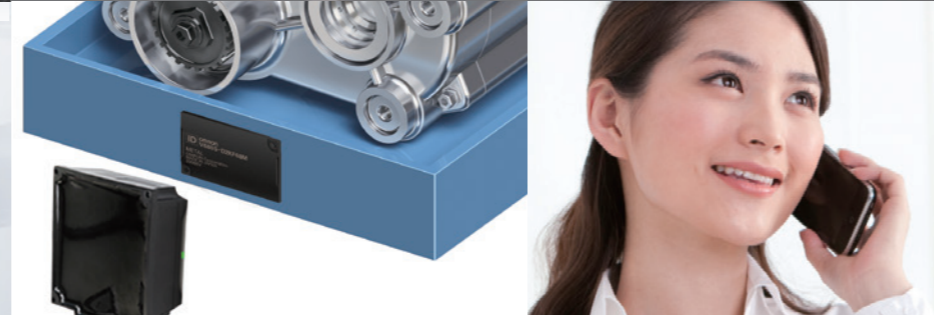
Over 25 Years of History and Experience

Radio Regulations Compliance for More than 45 Countries



Experience in all sectors of Transportation Manufacturing. Bringing High quality to your Manufacturing Process.

Industry-leading service for RFID system with over 25 years of experience.



Radio waves for mobile phone, TV, and Industrial Components are national public goods. RFID system must comply with Radio Regulations.

Continued Compliance that our products can comply with Radio Regulations in more countries as global standards for RFID system.



Introduction of high reliability of the RFID system

You can see the backbone of high reliability in the video by reading the 2D code using the bar code reader function of your smartphone or tablet.

Japan
Europe
Americas (United States, Canada, Mexico, Brazil)
Asia (China, South Korea, Taiwan, Philippines, Vietnam, Thailand, Singapore, Indonesia, Malaysia, India)
Oceania (Australia, New Zealand)

Simple 3 in 1 RFID Featuring the 3 "Easy"

3in1 Plus+ Ethernet
RFID



RFID system
V680 S Series



Easy Connection ▶ P.6

Ethernet(Modbus TCP) is provided as a standard feature. PLC direct connection.



Read the 2D code on the left with your smartphone or tablet to see "Easy Connection" in the video.



Easy Installation ▶ P.7

Stable communications are possible just by installing within a specified range.



Read the 2D code on the left with your smartphone or tablet to see "Easy Installation" in the video.



Easy Operation ▶ P.8

The Interface using a web browser enables setting for reading/writing data without special software.



Read the 2D code on the left with your smartphone or tablet to see "Easy Operation" in the video.

Easy Connection

Easy connection to a PLC with "One Cable" via Ethernet

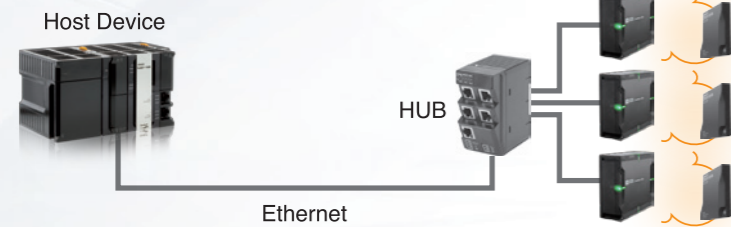
Wiring work can be reduced, and a simple system can be configured easily.

One Cable One Connection

Modbus TCP enables any PLC from any manufacturer to be connected without a converter.

Easy System Expansion

Multiple Reader/Writers can be easily connected to a PLC using a Switching HUB



Ethernet

Plus+

The Connection Procedure Manual for OMRON NJ Series and CJ Series is available.

Note: Contact your OMRON sales representative for the Connection Procedure Manual.



Video about Easy Connection

Read the 2D code with your smartphone or tablet to see the example of easy connection, One Cable One Connection.



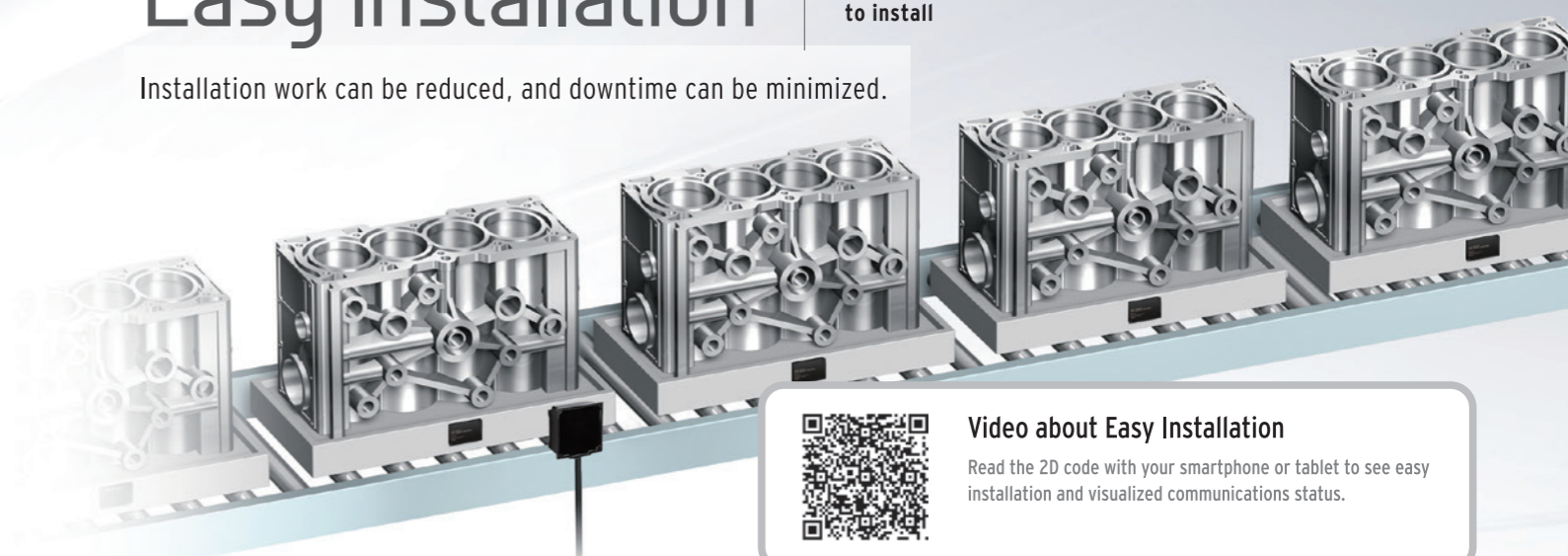
Video about Easy Installation

Read the 2D code with your smartphone or tablet to see easy installation and visualized communications status.

Easy Installation

Easy to find the best location to install

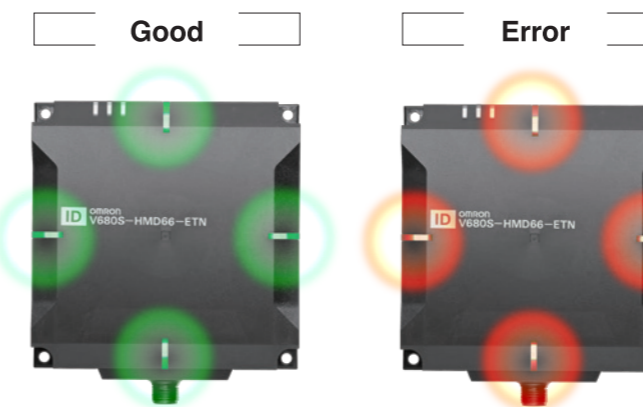
Installation work can be reduced, and downtime can be minimized.



Visualized Communications Status

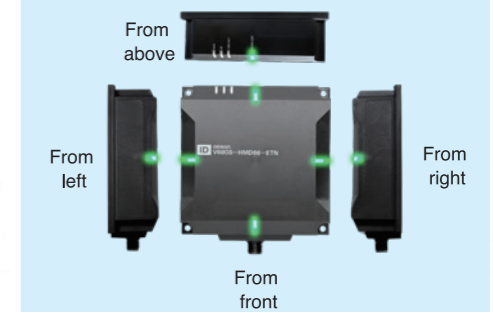
On-site operators can easily check the communications status with the indicators of the Reader/Writer.

The indicators using easy-to-see high-brightness LED can be easily seen from a distance.



Plus+

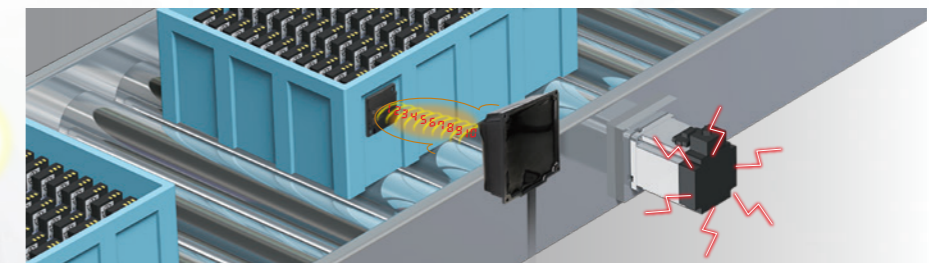
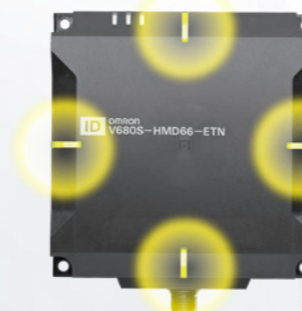
Communications status can be checked from four directions.



Diagnosis of Communications

The Reader/Writer measures the communications signal and ambient noise levels to diagnose its stability, then indicates in LED and report to Host System. Easily and quickly checks the proper installation of the system, and helps to reduce startup time. This can be used for preventing errors during operation.

Warning Indicates "Warning" states communication in yellow.



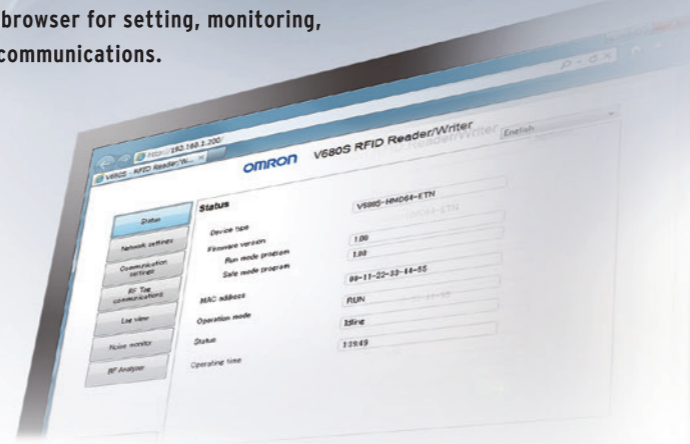
Note 1. Reader/Writers version 2.00 or later support Communication Diagnostic.

2. Communication Diagnostic is disabled in the default settings.

3. The communication time is longer when enabling Communication Diagnostic. For details, refer to the User's Manual (Cat. No. Z339).

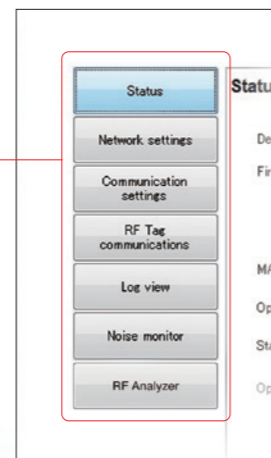
Easy Operation

Web browser for setting, monitoring, and communications.



Video about Easy Operation

Read the 2D code with your smartphone or tablet to see web browser for setting, monitoring, and communications.



No special software nor expert knowledge is required.

WEB Browser Function

Connection with a computer enables all operations from setting to monitoring anywhere.

STEP 1. Connect a computer with the V680S.

STEP 2. Enter an IP address on the computer.

STEP 3. A setting screen appears on the computer.

Functions

Users can execute RF tag communication, monitor the noise state, and can see the operation log.

Four Language Support

Select from four languages: English, Chinese, Korean and Japanese.

Plus+ RF Analyzer **Industry's First***

Detailed data acquired by Communication Diagnostic is displayed on the WEB Browser Window. This function makes it easy to check the stability of communication or to take actions when errors occur.

List
Latest 2,048 communication results are logged and checked.



Guidance window



Troubleshoot is also available in the "Warning" results.

Graph
Diagnostic results can be shown by the graph. Analysis time to identify the cause of unstable communication can be reduced by checking the time-series signal and noise levels. The results can be output to CSV files.



Note. V680S series Reader/Writers version 2.00 or later support Communication Diagnostic.

*Based on OMRON investigation in Jan.2014.

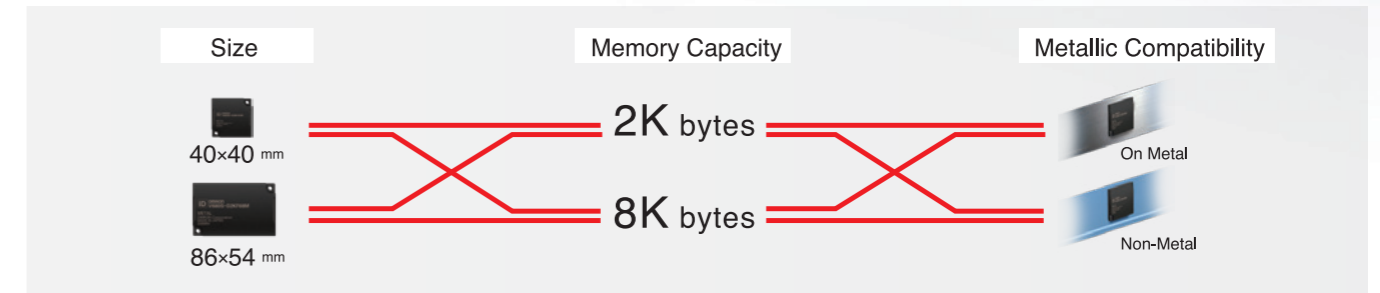
V680S Series RF Tag

Features

Versatile selection and setup, improves performance, and ensures reliable operation.

Easy to Select Suitable RF Tag for Your Application

V680S RF Tag series offers 8 kinds of full combinations based on Communication Range, Mounting Materials, Memory Sizes. Making it Easy to find the suitable RF Tag for your application.



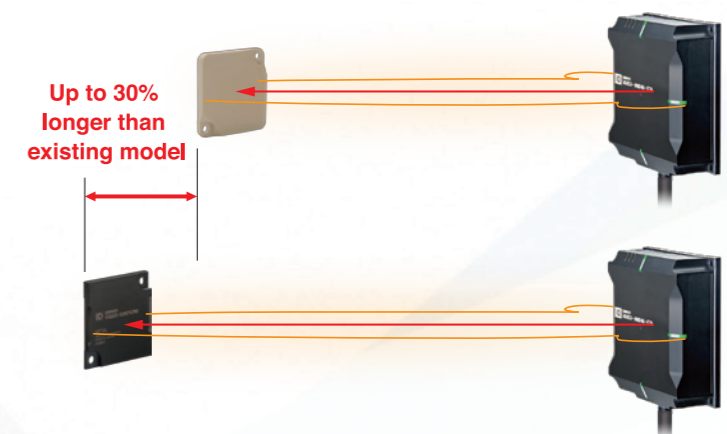
Durable to High-temperature Wash Down : IP68 + IPx9K Support

RF Tag is molded by PPS resin which has superior oil and chemical resistance specification. It can be washed-down by a steam cleaner without removing from the pallet.



Longer Communication Range*

V680S series RF Tags are optimally designed to be used with V680S series Reader/Writers. Communication Range are up to 30% longer than those of existing models. This enables more flexible system design.



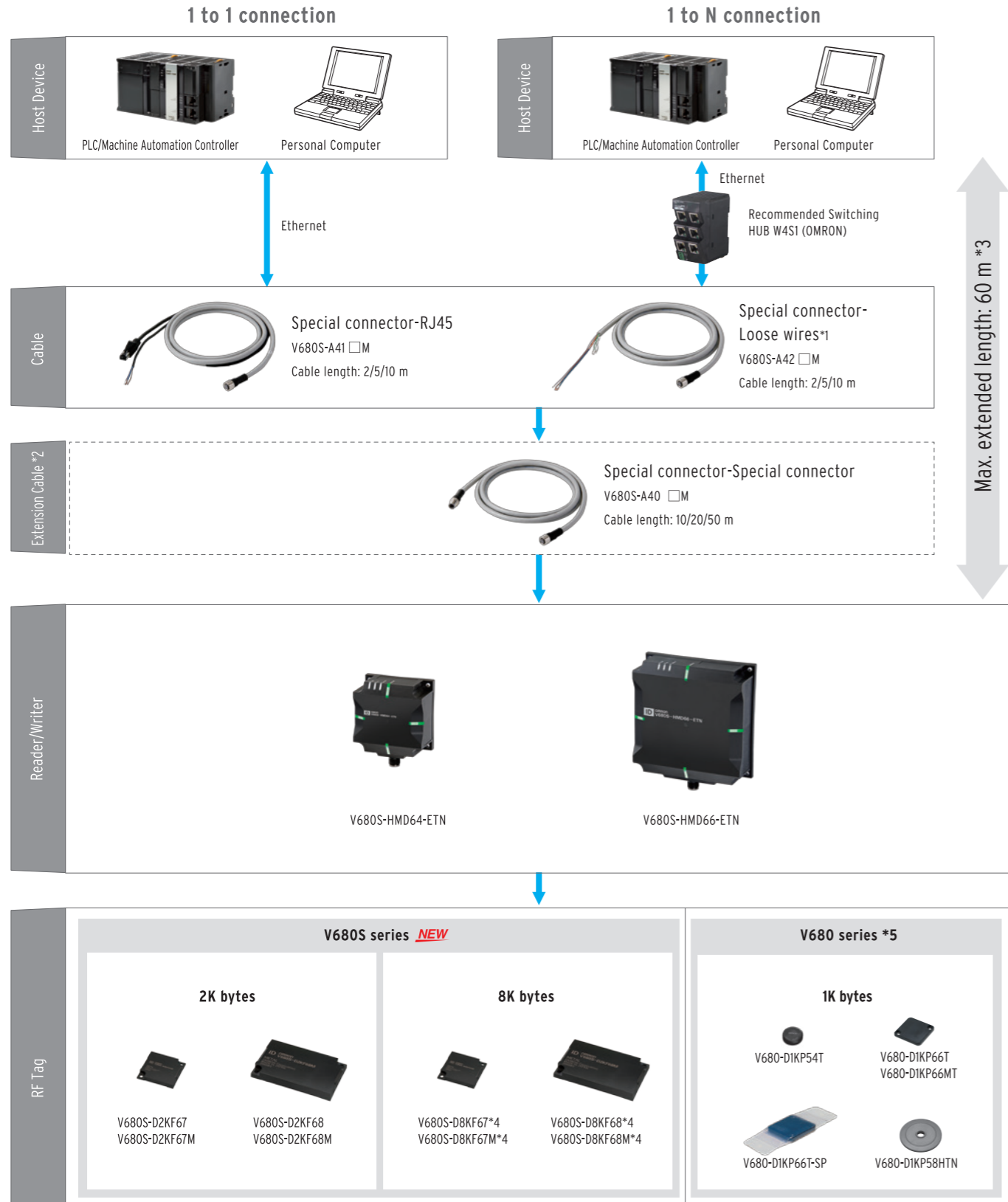
Combination Examples

Size	Memory Capacity	Reader/Writer	Communication Range	
			Existing Model	New Model
40x40 mm (40 mmx40 mmx5 mm)	8K bytes	V680S-HMD64-ETN	V680-D8KF67 5.0 to 50.0 mm	V680S-D8KF67 5.0 to 65.0 mm
86x54 mm (86 mmx54 mmx10 mm)	8K bytes	V680S-HMD66-ETN	V680-D8KF68A 10.0 to 100.0 mm	V680S-D8KF68 10.0 to 115.0 mm

*When using some combinations of V680S series RF Tag and V680S series Reader/Writer.

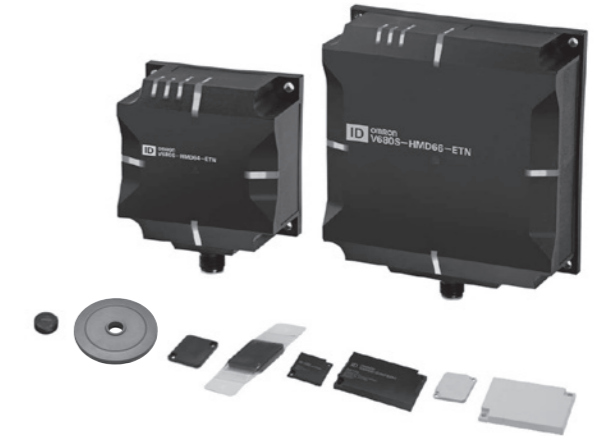
RFID System V680S Series

System Configuration



3 in 1 RFID: Antenna, Amplifier & Controller

- Conforms to ISO/IEC 18000-3 (15693).
- Standard-feature Ethernet (Modbus TCP) enables easy connection with one cable.
- Easy installation and "visualized" communications status minimize startup work and downtime.
- WEB browser can be used for setting, monitoring, and communications with RF tags.



Ordering Information

V680S-series RF Tag

Type	Memory capacity	Appearance	Size	Installation	Model
Battery-less	2 kbytes		40 × 40 × 5 mm	For flush mounting on metallic surface	V680S-D2KF67M NEW
			40 × 40 × 5 mm	For flush mounting on nonmetallic surface	V680S-D2KF67 NEW
		86 × 54 × 10 mm	For flush mounting on metallic surface	V680S-D2KF68M NEW	
		86 × 54 × 10 mm	For flush mounting on nonmetallic surface	V680S-D2KF68 NEW	
	8 kbytes		40 × 40 × 5 mm	For flush mounting on metallic surface	V680S-D8KF67M * NEW
			40 × 40 × 5 mm	For flush mounting on nonmetallic surface	V680S-D8KF67 * NEW
	86 × 54 × 10 mm	For flush mounting on metallic surface	V680S-D8KF68M * NEW		
	86 × 54 × 10 mm	For flush mounting on nonmetallic surface	V680S-D8KF68 * NEW		

* V680S-D8KF6□M/V680S-D8KF6□ can be used with V680S series Reader/Writer version 2.00 or higher.



V680-series RF Tag

Type	Memory capacity	Appearance	Size	Installation	Model
Battery-less	1 kbyte		20 dia. × 2.7 mm	For flush mounting on nonmetallic surface	V680-D1KP54T
			34 × 34 × 3.5 mm	For flush mounting on metallic surface	V680-D1KP66MT
			34 × 34 × 3.5 mm	For flush mounting on nonmetallic surface	V680-D1KP66T
Environment-resistant type Battery-less		95 × 36.5 × 6.5 mm	For flush mounting on nonmetallic surface	V680-D1KP66T-SP	
High-temperature type Battery-less		80 dia. × t10 mm	For mounting with special attachment	V680-D1KP58HTN	




Note: V680 series 8kbyte RF Tag (V680-D8KF67, V680-D8KF67M and V680-D8KF68A) can communicate with V680S series Reader/Writer. For details, refer to the User's Manual (Cat. No. Z339).

*1. A customer should treat wires terminal of the connector.
 *2. Only one extension cable can be used.
 *3. When the industrial Switching Hub is used, the maximum extendable cable length between the Reader/Writer and the Industrial Switching Hub is 60 m.
 *4. V680S-D8KF6 □M/V680S-D8KF6 □ can be used with V680S series Reader/Writer version 2.00 or higher.
 *5. V680 series 8K byte RF Tag (V680-D8KF67, V680-D8KF67M and V680-D8KF68A) can communicate with V680S series Reader/Writer. For details, refer to the User's Manual (Cat. No. Z339).



Reader/Writer

Type	Appearance	Size	Interface	Model
Reader/Writer		75 × 75 × 40 mm	Ethernet (TCP/IP; Modbus TCP)	V680S-HMD64-ETN
		120 × 120 × 40 mm	Ethernet (TCP/IP; Modbus TCP)	V680S-HMD66-ETN


RF Tag Attachment

Type	Appearance	Model
For the V680-D1KP66T		V600-A86
For the V680-D1KP58HTN		V680-A80
For the V680-D1KP54T		V700-A80

Cable


Type	Appearance	Length	Model
Special connector – RJ45		2 m	V680S-A41 2M
		5 m	V680S-A41 5M
		10 m	V680S-A41 10M
Special connector – Loose wires		2 m	V680S-A42 2M
		5 m	V680S-A42 5M
		10 m	V680S-A42 10M

Extension Cable

Type	Appearance	Length	Model
Special connector – Special connector		10 m	V680S-A40 10M
		20 m	V680S-A40 20M
		50 m	V680S-A40 50M

Note: The maximum extendable cable length using the cable and extension cable is 60 m. Only one extension cable can be used.

Industrial Switching Hubs (Recommended Hubs)

Type	Appearance	Specifications			Model
		Functions	No. of ports	Failure detection	
Industrial Switching Hubs		Quality of Service (QoS): EtherNet/IP control data priority Failure detection: Broadcast storm and LSI error detection 10/100BASE-TX, Auto-Negotiation	3	No	W4S1-03B
			5	No	W4S1-05B
			5	Yes	W4S1-05C

Ratings and Performance

**V680S-series
RF Tag (2-kbyte Memory)**

Item	Model	V680S-D2KF67	V680S-D2KF67M	V680S-D2KF68	V680S-D2KF68M
Memory capacity		2,000bytes (user area)			
Memory type		FRAM			
Data Retention		10 years after writing (85 °C or less)			
Memory life		One trillion writes for each block (85 °C or less), Access frequency *1 : One trillion accesses			
Ambient operating temperature		-20 to 85 °C (with no icing)			
Ambient storage temperature		-40 to 125 °C (with no icing)			
Ambient operating humidity		35% to 85%			
Degree of protection		IP68 (IEC 60529:2001), Oil resistance equivalent to IP67G (JIS C 0920:2003, Appendix 1) *2. IPX9K (DIN 40 050)			
Vibration resistance		No abnormality after application of 10 to 2,000 Hz, 1.5-mm double amplitude, acceleration: 150 m/s ² , 10 sweeps each in X, Y, and Z directions for 15 minutes each		No abnormality after application of 10 to 500 Hz, 1.5-mm double amplitude, acceleration: 100 m/s ² , 10 sweeps each in X, Y, and Z directions for 11 minutes each	
Shock resistance		No abnormality after application of 500 m/s ² , 3 times each in X, Y, and Z directions (Total: 18 times)			
Dimensions		40 × 40 × 5 mm (W × H × D)		86 × 54 × 10 mm (W × H × D)	
Materials		Exterior: PPS resin			
Weight		Approx. 11.5 g	Approx. 12 g	Approx. 44 g	Approx. 46 g
Metal countermeasures		None	Provided	None	Provided

*1 The number of accesses is the total number of reads and writes.

*2 Oil resistance has been tested using a specific oil as defined in the OMRON test method.

Note: For details, refer to the User's Manual (Cat. No. Z339).

RF Tag (8-kbyte Memory)

Item	Model	V680S-D8KF67	V680S-D8KF67M	V680S-D8KF68	V680S-D8KF68M
Memory capacity		8,192 bytes (user area)			
Memory type		FRAM			
Data Retention		10 years after writing (85 °C or less)			
Memory life		One trillion writes for each block (85 °C or less), Access frequency *1 : One trillion accesses			
Ambient operating temperature		-20 to 85 °C (with no icing)			
Ambient storage temperature		-40 to 125 °C (with no icing)			
Ambient operating humidity		35% to 85%			
Degree of protection		IP68 (IEC 60529:2001), Oil resistance equivalent to IP67G (JIS C 0920:2003, Appendix 1) *2. IPX9K (DIN 40 050)			
Vibration resistance		No abnormality after application of 10 to 2,000 Hz, 1.5-mm double amplitude, acceleration: 150 m/s ² , 10 sweeps each in X, Y, and Z directions for 15 minutes each		No abnormality after application of 10 to 500 Hz, 1.5-mm double amplitude, acceleration: 100 m/s ² , 10 sweeps each in X, Y, and Z directions for 11 minutes each	
Shock resistance		No abnormality after application of 500 m/s ² , 3 times each in X, Y, and Z directions (Total: 18 times)			
Dimensions		40 × 40 × 5 mm (W × H × D)		86 × 54 × 10 mm (W × H × D)	
Materials		Exterior: PPS resin			
Weight		Approx. 11.5 g	Approx. 12 g	Approx. 44 g	Approx. 46 g
Metal countermeasures		None	Provided	None	Provided

*1 The number of accesses is the total number of reads and writes.

*2 Oil resistance has been tested using a specific oil as defined in the OMRON test method.

Note: For details, refer to the User's Manual (Cat. No. Z339).

**V680-series
RF Tag (1-kbyte Memory)**

Item	Model	V680-D1KP54T	V680-D1KP66T	V680-D1KP66MT	V680-D1KP66T-SP
Memory capacity		1,000 bytes (user area)			
Memory type		EEPROM			
Data retention time		10 years after writing (85 °C or less), 0.5 year after writing (85 °C to 125 °C) Total data retention at high temperatures exceeding 125 °C is 10 hours *1		10 years after writing (85 °C or less)	
Write endurance		100,000 writes for each block (25 °C)			
Ambient operating temperature (during transmission)		-25 to 85 °C (with no icing)		During RF Tag communications: -25 to 70 °C (with no icing) Not during RF Tag communications: -40 to 110 °C (with no icing)	
Ambient storage temperature (during data backup)		-40 to 125 °C (with no icing) Heat resistance: 1,000 thermal cycles each of 30 minutes at -10 °C/150 °C, High temperature storage: 1,000 hours at 150 °C *2 200 thermal cycles each of 30 minutes at -10 °C/180 °C, High temperature storage: 200 hours at 180 °C *3		-40 to 110 °C (with no icing)	
Ambient operating humidity		35 to 95%			
Degree of protection		IP67 (IEC 60529:2001) Oil resistance equivalent to IP67G (JIS C 0920:2003, Appendix 1) *4	IP68 (IEC 60529:2001) Oil resistance equivalent to IP67G (JIS C 0920:2003, Appendix 1) *4	IP67	
Vibration resistance		No abnormality after application of 10 to 2,000 Hz, 1.5-mm double amplitude, acceleration: 150 m/s ² , 10 sweeps each in X, Y, and Z directions for 15 minutes each			
Shock resistance		No abnormality after application of 500 m/s ² , 3 times each in X, Y, and Z directions (Total: 18 times)			
Appearance		20 dia. × 2.7 mm	34 × 34 × 3.5 mm	95 × 36.5 × 6.5 mm (excluding protruding parts)	
Materials		PPS resin		Exterior: PFA fluororesin RF Tag filling: PPS resin	
Weight		Approx. 2 g	Approx. 6 g	Approx. 7.5 g	Approx. 20 g
Metal countermeasures		None	None	Provided	None

*1 After storing data at high temperatures, rewrite the data even if changes are not required. High temperatures are those exceeding 125 °C up to 180 °C.

*2 150 °C heat resistance: The heat resistance has been checked at 150 °C for up to 1,000 hours, and thermal shock has been checked through testing 1,000 thermal cycles each of 30 minutes at -10/150 °C. (Test samples: 22, defects: 0)

*3 180 °C heat resistance: The heat resistance has been checked at 180 °C for up to 200 hours, and thermal shock has been checked through testing 200 thermal cycles each of 30 minutes at -10 °C/180 °C. (Test samples: 22, defects: 0)

*4 Oil resistance has been tested using a specific oil as defined in the OMRON test method.

Note: For details, refer to the User's Manual (Cat. No. Z339).

RF Tag (1-kbyte Memory with High-temperature Capability)

Item	Model	V680-D1KP58HTN
Memory capacity		1,000 bytes (user area)
Memory type		EEPROM
Data Retention		10 years after writing (85 °C or less), 0.5 year after writing (85 °C to 125 °C) Total data retention at high temperatures exceeding 125 °C is 10 hours *1
Write Endurance		100,000 writes for each block (25 °C)
Ambient operating temperature (during transmission)		-25 to 85 °C (with no icing)
Ambient storage temperature (during data backup)		-40 to 250 °C (with no icing) (Data retention: -40 to 125 °C)
Ambient storage humidity		No restrictions.
Degree of protection		IP67 (IEC 60529:2001) Oil resistance equivalent to IP67G (JIS C 0920:2003, Appendix 1) *2
Vibration resistance		No abnormality after application of 10 to 2,000 Hz, 1.5-mm double amplitude, acceleration: 150 m/s ² , 10 sweeps each in X, Y, and Z directions for 15 minutes each
Shock resistance		No abnormality after application of 500 m/s ² , 3 times each in X, Y, and Z directions (Total: 18 times)
Materials		Exterior: PPS resin
Weight		Approx. 70 g

*1. After storing data at high temperatures, rewrite the data even if changes are not required. High temperatures are those exceeding 125 °C up to 250 °C.

*2 Oil resistance has been tested using a specific oil as defined in the OMRON test method.

Note: For details, refer to the User's Manual (Cat. No. Z339).

Reader/Writer

Item	Model	V680S-HMD64-ETN	V680S-HMD66-ETN
Dimensions		75W × 75H × 40D (excluding protruding parts)	120W × 120H × 40D (excluding protruding parts)
Power supply voltage		24 VDC (-15% to +10%)	
Consumption current		0.2A max.	
Ambient operating temperature		-10 to +55 °C (with no icing)	
Ambient operating humidity		25% to 85% (with no condensation)	
Ambient storage temperature		-25 to 70 °C (with no icing)	
Ambient storage humidity		25% to 85% (with no condensation)	
Insulation resistance		20 MΩ min. (at 500 VDC) between cable terminals and case	
Dielectric strength		1,000 VAC, 50/60 Hz for 1 min between cable terminals and case	
Vibration resistance		No abnormality after application of 10 to 500 Hz, 1.5-mm double amplitude, acceleration: 100 m/s ² , 10 sweeps in each of 3 axis directions (up/down, left/right, and forward/backward) for 11 minutes each	
Shock resistance		No abnormality after application of 500 m/s ² , 3 times each in 6 directions (Total: 18 times)	
Degree of protection		IP67 (IEC 60529: 2001) Oil resistance equivalent to IP67F (JIS C 0920: 2003, Appendix 1) *1	
Materials		Case: PBT resin, Filled resin: Urethane resin	
Mass		Approx. 270g	Approx. 640g
Installation method		Four M4 screws (Use a screw of 12 mm or more in length.)	
Host device communications interface		Ethernet 10BASE-T/100BASE-TX	
Host device communications protocol		MODBUS TCP	
Accessories		Instruction sheet, Copy of Description of Regulations and Standard, IP address label, Ferrite core *2	

*1 Oil resistance has been tested using a specific oil as defined in the OMRON test method.

*2 Provided only with the V680S-HMD66-ETN.

Communication Specifications


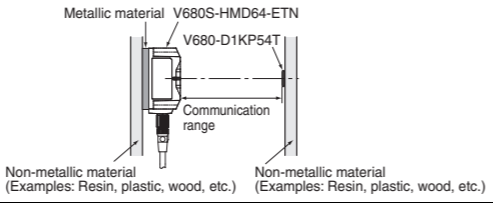
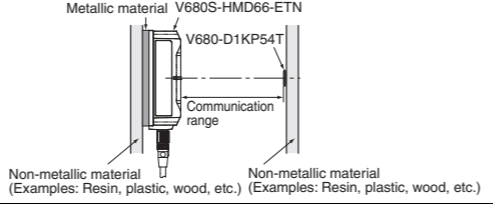

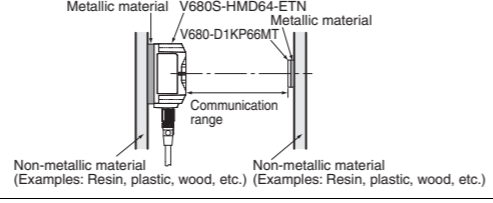
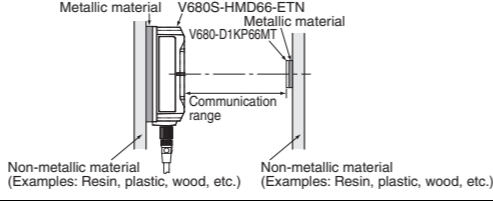

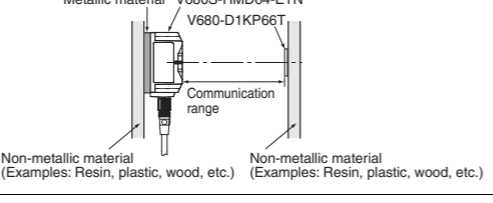
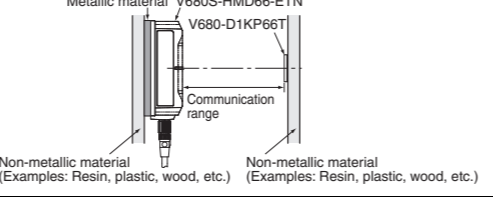
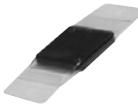
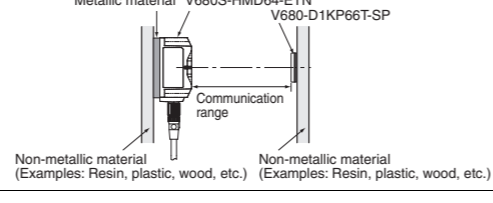
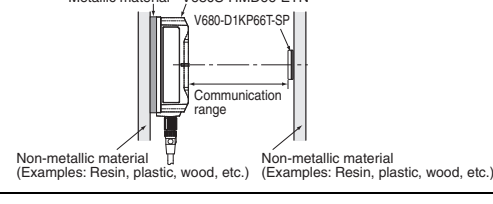
V680S-series
RF Tag (2kbyte Memory)

Combination		Function	Communication range (unit: mm)	RF Tag and Reader/Writer mounting conditions
RF Tag	Reader/Writer			
V680S-D2KF67M (mounted to metallic material)	V680S-HMD64-ETN	Read	3.0 to 40.0 (axis offset ±10)	
		Write	3.0 to 40.0 (axis offset ±10)	
	V680S-HMD66-ETN	Read	4.0 to 45.0 (axis offset ±10)	
		Write	4.0 to 45.0 (axis offset ±10)	
V680S-D2KF67 (mounted to non-metallic material)	V680S-HMD64-ETN	Read	5.0 to 65.0 (axis offset ±10)	
		Write	5.0 to 65.0 (axis offset ±10)	
	V680S-HMD66-ETN	Read	7.0 to 85.0 (axis offset ±10)	
		Write	7.0 to 85.0 (axis offset ±10)	
V680S-D2KF68M (mounted to metallic material)	V680S-HMD64-ETN	Read	5.5 to 55.0 (axis offset ±10)	
		Write	5.5 to 55.0 (axis offset ±10)	
	V680S-HMD66-ETN	Read	7.5 to 75.0 (axis offset ±10)	
		Write	7.5 to 75.0 (axis offset ±10)	
V680S-D2KF68 (mounted to non-metallic material)	V680S-HMD64-ETN	Read	7.5 to 75.0 (axis offset ±10)	
		Write	7.5 to 75.0 (axis offset ±10)	
	V680S-HMD66-ETN	Read	10.0 to 115.0 (axis offset ±10)	
		Write	10.0 to 115.0 (axis offset ±10)	


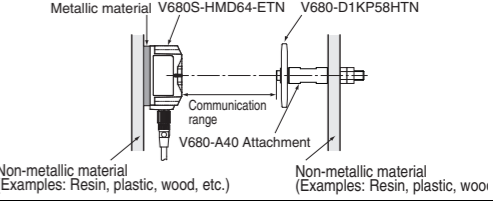
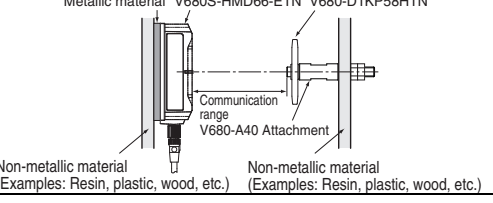
RF Tag (8kbyte Memory)

Combination		Function	Communication range (unit: mm)	RF Tag and Reader/Writer mounting conditions
RF Tag	Reader/Writer			
V680S-D8KF67M (mounted to metallic material)	V680S-HMD64-ETN	Read	3.0 to 40.0 (axis offset ±10)	
		Write	3.0 to 40.0 (axis offset ±10)	
	V680S-HMD66-ETN	Read	4.0 to 45.0 (axis offset ±10)	
		Write	4.0 to 45.0 (axis offset ±10)	
V680S-D8KF67 (mounted to non-metallic material)	V680S-HMD64-ETN	Read	5.0 to 65.0 (axis offset ±10)	
		Write	5.0 to 65.0 (axis offset ±10)	
	V680S-HMD66-ETN	Read	7.0 to 85.0 (axis offset ±10)	
		Write	7.0 to 85.0 (axis offset ±10)	
V680S-D8KF68M (mounted to metallic material)	V680S-HMD64-ETN	Read	5.5 to 55.0 (axis offset ±10)	
		Write	5.5 to 55.0 (axis offset ±10)	
	V680S-HMD66-ETN	Read	7.5 to 75.0 (axis offset ±10)	
		Write	7.5 to 75.0 (axis offset ±10)	
V680S-D8KF68 (mounted to non-metallic material)	V680S-HMD64-ETN	Read	7.5 to 75.0 (axis offset ±10)	
		Write	7.5 to 75.0 (axis offset ±10)	
	V680S-HMD66-ETN	Read	10.0 to 115.0 (axis offset ±10)	
		Write	10.0 to 115.0 (axis offset ±10)	

**V680-series
RF Tag (1kbyte Memory)**

Combination		Function	Communication range (unit: mm)	RF Tag and Reader/Writer mounting conditions
RF Tag	Reader/Writer			
V680-D1KP54T (mounted to non-metallic material) 	V680S-HMD64-ETN	Read	0.0 to 33.0 (axis offset ±10)	 Metallic material V680S-HMD64-ETN V680-D1KP54T Non-metallic material (Examples: Resin, plastic, wood, etc.)
		Write	0.0 to 28.0 (axis offset ±10)	
	V680S-HMD66-ETN	Read	0.0 to 45.0 (axis offset ±10)	 Metallic material V680S-HMD66-ETN V680-D1KP54T Non-metallic material (Examples: Resin, plastic, wood, etc.)
		Write	0.0 to 38.0 (axis offset ±10)	
V680-D1KP66MT (mounted to metallic material) 	V680S-HMD64-ETN	Read	0.0 to 35.0 (axis offset ±10)	 Metallic material V680S-HMD64-ETN V680-D1KP66MT Non-metallic material (Examples: Resin, plastic, wood, etc.)
		Write	0.0 to 30.0 (axis offset ±10)	
	V680S-HMD66-ETN	Read	0.0 to 37.0 (axis offset ±10)	 Metallic material V680S-HMD66-ETN V680-D1KP66MT Non-metallic material (Examples: Resin, plastic, wood, etc.)
		Write	0.0 to 30.0 (axis offset ±10)	
V680-D1KP66T (mounted to non-metallic material) 	V680S-HMD64-ETN	Read	0.0 to 47.0 (axis offset ±10)	 Metallic material V680S-HMD64-ETN V680-D1KP66T Non-metallic material (Examples: Resin, plastic, wood, etc.)
		Write	0.0 to 42.0 (axis offset ±10)	
	V680S-HMD66-ETN	Read	0.0 to 64.0 (axis offset ±10)	 Metallic material V680S-HMD66-ETN V680-D1KP66T Non-metallic material (Examples: Resin, plastic, wood, etc.)
		Write	0.0 to 57.0 (axis offset ±10)	
V680-D1KP66T-SP (mounted to non-metallic material) 	V680S-HMD64-ETN	Read	0.0 to 42.0 (axis offset ±10)	 Metallic material V680S-HMD64-ETN V680-D1KP66T-SP Non-metallic material (Examples: Resin, plastic, wood, etc.)
		Write	0.0 to 37.0 (axis offset ±10)	
	V680S-HMD66-ETN	Read	0.0 to 59.0 (axis offset ±10)	 Metallic material V680S-HMD66-ETN V680-D1KP66T-SP Non-metallic material (Examples: Resin, plastic, wood, etc.)
		Write	0.0 to 52.0 (axis offset ±10)	

High-temperature RF Tag (1kbyte Memory)

Combination		Function	Communication range (unit: mm)	RF Tag and Reader/Writer mounting conditions
RF Tag	Reader/Writer			
V680-D1KP58HTN (mounted with special attachment) 	V680S-HMD64-ETN	Read	7.5 to 75.0 (axis offset ±10)	 Metallic material V680S-HMD64-ETN V680-D1KP58HTN V680-A40 Attachment Non-metallic material (Examples: Resin, plastic, wood, etc.)
		Write	7.5 to 75.0 (axis offset ±10)	
	V680S-HMD66-ETN	Read	10.0 to 90.0 (axis offset ±10)	 Metallic material V680S-HMD66-ETN V680-D1KP58HTN V680-A40 Attachment Non-metallic material (Examples: Resin, plastic, wood, etc.)
		Write	10.0 to 80.0 (axis offset ±10)	

Characteristic Data

RF Tag Interrogation Zone (for Reference Only)

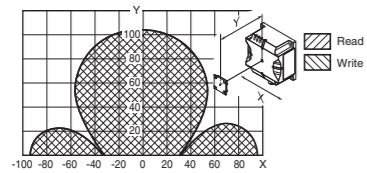
The values given for communications ranges are reference values. Refer to pages 16 to 19 for communications distance specifications. Communication range depends on the RF Tags, ambient temperature, surrounding metal, noise, and other factors. Carefully check the operation when installing a system.

• **V680S-HMD64-ETN**

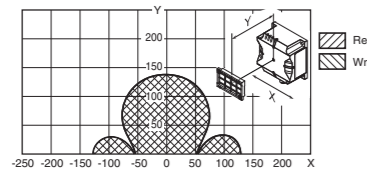
V680S-series

2kbyte Memory RF Tag

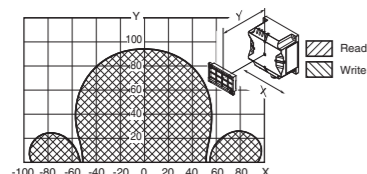
V680S-HMD64-ETN and V680S-D2KF67
(Back Surface: Metal)



V680S-HMD64-ETN and V680S-D2KF68
(Back Surface: Metal) (Tag direction: Horizontal)

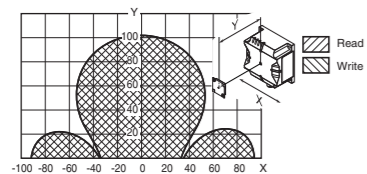


V680S-HMD64-ETN and V680S-D2KF68M
(Back Surface: Metal) (Tag direction: Horizontal)

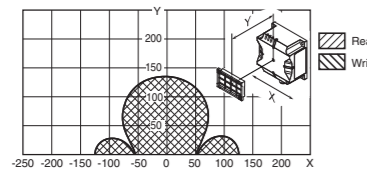


8kbyte Memory RF Tag

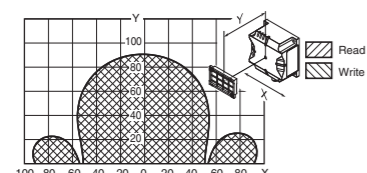
V680S-HMD64-ETN and V680S-D8KF67
(Back Surface: Metal)



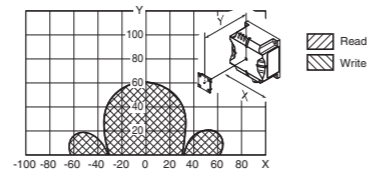
V680S-HMD64-ETN and V680S-D8KF68
(Back Surface: Metal) (Tag direction: Horizontal)



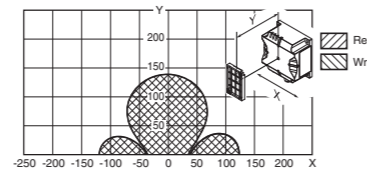
V680S-HMD64-ETN and V680S-D8KF68M
(Back Surface: Metal) (Tag direction: Horizontal)



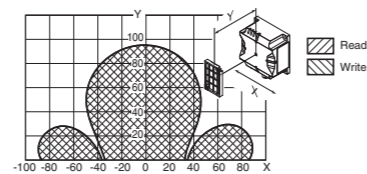
V680S-HMD64-ETN and V680S-D2KF67M
(Back Surface: Metal) (Back Surface: Metal)



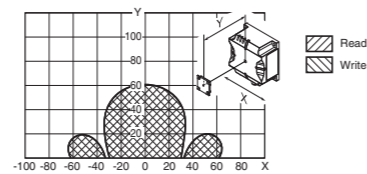
V680S-HMD64-ETN and V680S-D2KF68
(Back Surface: Metal) (Tag direction: Vertical)



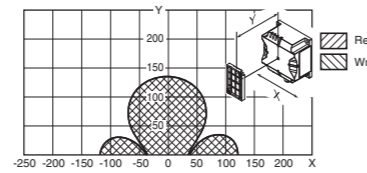
V680S-HMD64-ETN and V680S-D2KF68M
(Back Surface: Metal) (Tag direction: Vertical)



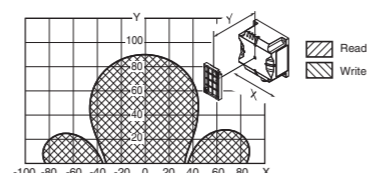
V680S-HMD64-ETN and V680S-D8KF67M
(Back Surface: Metal) (Back Surface: Metal)



V680S-HMD64-ETN and V680S-D8KF68
(Back Surface: Metal) (Tag direction: Vertical)



V680S-HMD64-ETN and V680S-D8KF68M
(Back Surface: Metal) (Tag direction: Vertical)

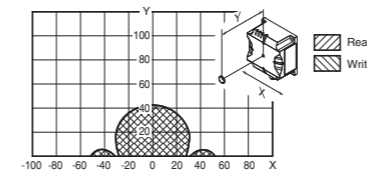


(Unit: mm)

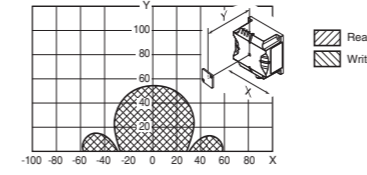
V680-series

1kbyte Memory RF Tag

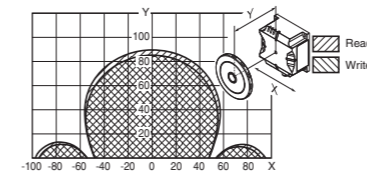
V680S-HMD64-ETN and V680-D1KP54T
(Back Surface: Metal)



V680S-HMD64-ETN and V680-D1KP66MT
(Back Surface: Metal) (Back Surface: Metal)



V680S-HMD64-ETN and V680-D1KP58HTN
(Back Surface: Metal) (with Attachment, V680-A80)

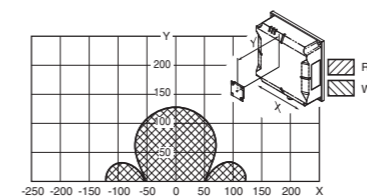


• **V680S-HMD66-ETN**

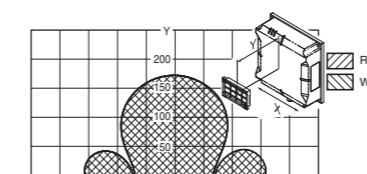
V680S-series

2kbyte Memory RF Tag

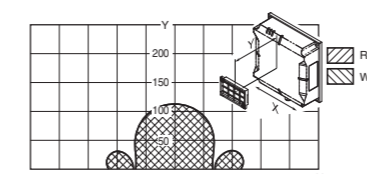
V680S-HMD66-ETN and V680S-D2KF67
(Back Surface: Metal)



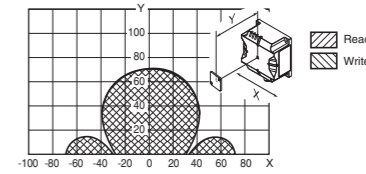
V680S-HMD66-ETN and V680S-D2KF68
(Back Surface: Metal) (Tag direction: Horizontal)



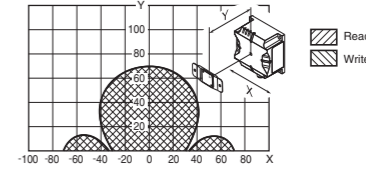
V680S-HMD66-ETN and V680S-D2KF68M
(Back Surface: Metal) (Tag direction: Horizontal)



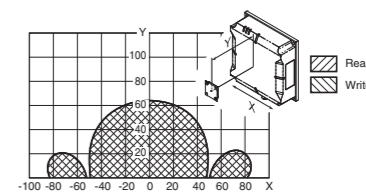
V680S-HMD64-ETN and V680-D1KP66T
(Back Surface: Metal)



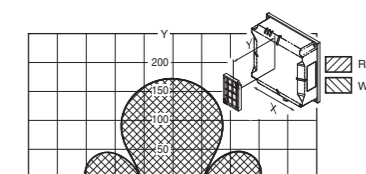
V680S-HMD64-ETN and V680-D1KP66T-SP
(Back Surface: Metal)



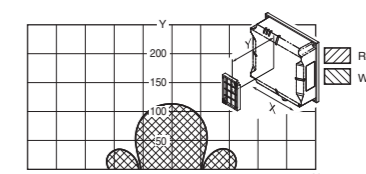
V680S-HMD66-ETN and V680S-D2KF67M
(Back Surface: Metal) (Back Surface: Metal)



V680S-HMD66-ETN and V680S-D2KF68
(Back Surface: Metal) (Tag direction: Vertical)

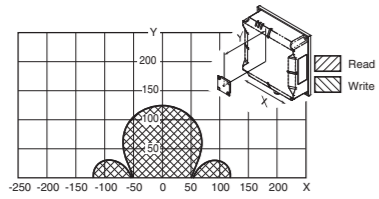


V680S-HMD66-ETN and V680S-D2KF68M
(Back Surface: Metal) (Tag direction: Vertical)

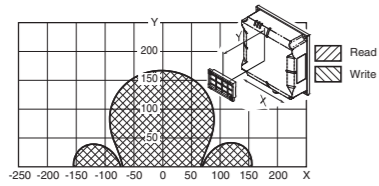


8kbyte Memory RF Tag

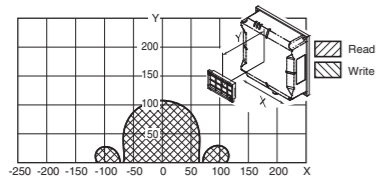
V680S-HMD66-ETN and V680S-D8KF67
(Back Surface: Metal)



V680S-HMD66-ETN and V680S-D8KF68
(Back Surface: Metal) (Tag direction: Horizontal)



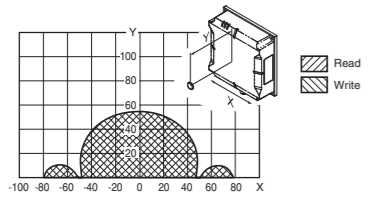
V680S-HMD66-ETN and V680S-D8KF68M
(Back Surface: Metal) (Tag direction: Horizontal)



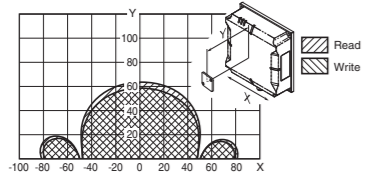
V680-series

1kbyte Memory RF Tag

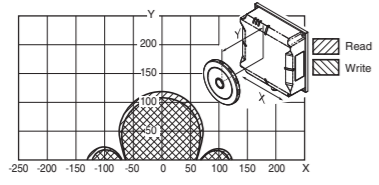
V680S-HMD66-ETN and V680-D1KP54T
(Back Surface: Metal)



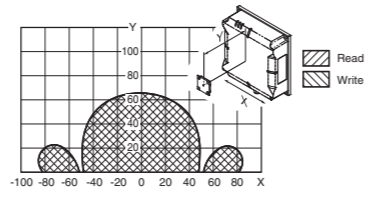
V680S-HMD66-ETN and V680-D1KP66MT
(Back Surface: Metal) (Back Surface: Metal)



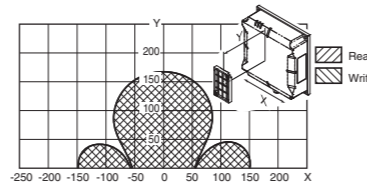
V680S-HMD66-ETN and V680-D1KP58HTN
(Back Surface: Metal) (with Attachment, V680-A80)



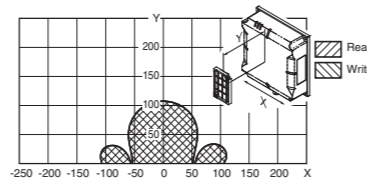
V680S-HMD66-ETN and V680S-D8KF67M
(Back Surface: Metal) (Back Surface: Metal)



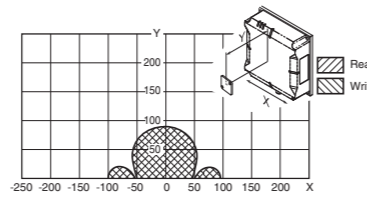
V680S-HMD66-ETN and V680S-D8KF68
(Back Surface: Metal) (Tag direction: Vertical)



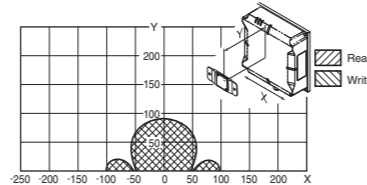
V680S-HMD66-ETN and V680S-D8KF68M
(Back Surface: Metal) (Tag direction: Vertical)



V680S-HMD66-ETN and V680-D1KP66T
(Back Surface: Metal)



V680S-HMD66-ETN and V680-D1KP66T-SP
(Back Surface: Metal)



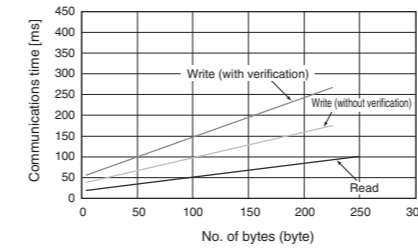
RF Tag Communication Time (for Reference Only)

V680S series

2kbyte Memory RF Tag

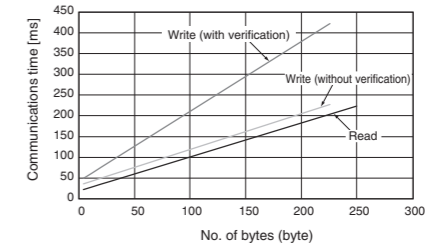
V680S-HMD64-ETN/-HMD66-ETN:
V680S-D2KF6□ (Communications speed setting: High speed)

Query	Communications time (ms) N: No. of bytes processed
Read	$T = 0.33N + 17.77$
Write (with verification)	$T = 0.95N + 52.26$
Write (without verification)	$T = 0.62N + 35.9$



V680S-HMD64-ETN/-HMD66-ETN:
V680S-D2KF6□ (Communications speed setting: Normal speed)

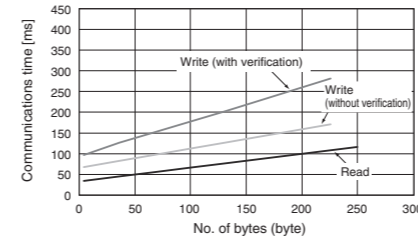
Query	Communications time (ms) N: No. of bytes processed
Read	$T = 0.82N + 19.02$
Write (with verification)	$T = 1.68N + 42.46$
Write (without verification)	$T = 0.86N + 32.63$



8kbyte Memory RF Tag

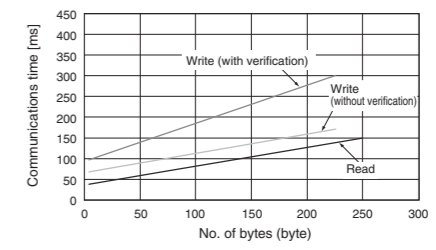
V680S-HMD64-ETN/-HMD66-ETN:
V680S-D8KF6□ (Communications speed setting: High speed)

Query	Communications time (ms) N: No. of bytes processed
Read	$T = 0.33N + 33.41$
Write (with verification)	$T = 0.82N + 95.39$
Write (without verification)	$T = 0.46N + 66.12$



V680S-HMD64-ETN/-HMD66-ETN:
V680S-D8KF6□ (Communications speed setting: Normal speed)

Query	Communications time (ms) N: No. of bytes processed
Read	$T = 0.45N + 36.41$
Write (with verification)	$T = 0.92N + 93.32$
Write (without verification)	$T = 0.46N + 66.12$



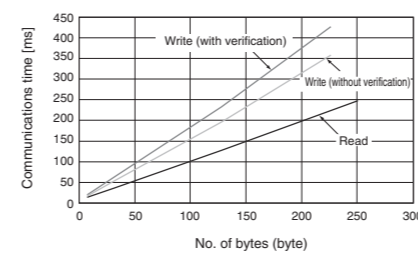
V680 series

1kbyte Memory RF Tag

V680S-HMD64-ETN/-HMD66-ETN: V680-D1KP□□

There are no differences between Communication speed: "normal" and "high".

Query	Communications time (ms) N: No. of bytes processed
Read	$T = 0.97N + 5.51$
Write (with verification)	$T = 1.85N + 3.31$
Write (without verification)	$T = 1.56N + 3.28$

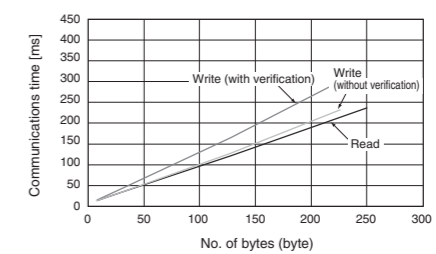


8kbyte Memory RF Tag

V680S-HMD64-ETN/-HMD66-ETN: V680-D8KF6□

There are no differences between Communication speed: "normal" and "high".

Query	Communications time (ms) N: No. of bytes processed
Read	$T = 0.92N + 5.55$
Write (with verification)	$T = 1.30N + 3.93$
Write (without verification)	$T = 1.00N + 3.90$

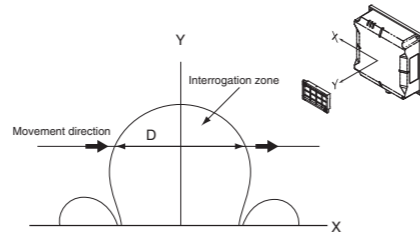


Travel Speed Calculations

When communicating with a moving RF Tag, specify an AUTO mode.
The maximum speed for communicating with the RF Tag can be calculated simply using the following formula.

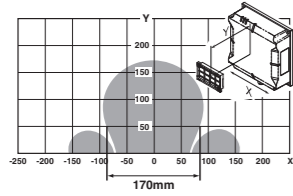
$$\text{Maximum speed} = \frac{D \text{ (Distance travelled in Interrogation zone)}}{T \text{ (Communications time)}}$$

D (Distance travelled in Interrogation zone) is calculated from the actual measurement or the Interrogation zone between the Reader/Writer and RF Tag.



Calculation Example

The following example is for reading 128 bytes with the V680S-D2KF68, and V680S-HMD66-ETN.



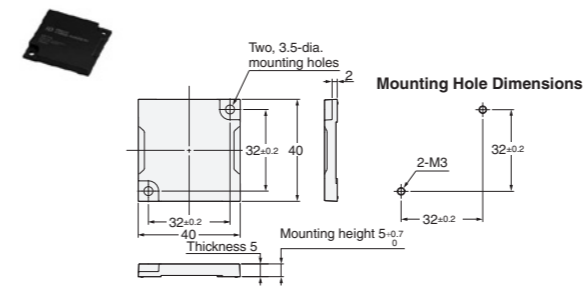
From the left chart,
Distance travelled in Interrogation zone = 170 mm when Y (communications distance) is 50 mm
Communications time T = 123.98 ms (calculated from the communications time, i.e., $0.82 \times 128 \text{ bytes} + 19.02$)
Therefore, the maximum speed of the Tag is as follows:

$$\text{Maximum speed} = \frac{D \text{ (Distance travelled in Interrogation zone)}}{T \text{ (Communications time)}} = \frac{170 \text{ (mm)}}{123.98 \text{ (ms)}} = 82.27 \text{ m/min}$$

Dimensions

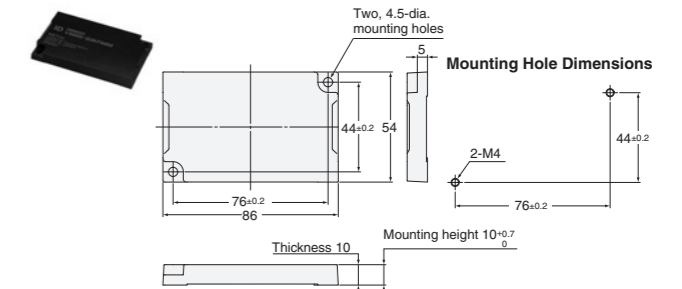
RF Tag

V680S-D2KF67/-D2KF67M
V680S-D8KF67/-D8KF67M



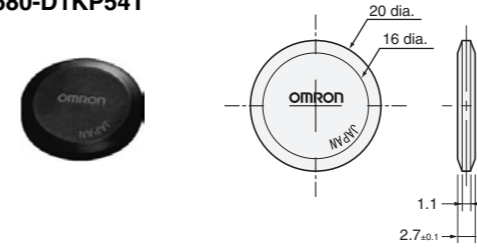
Case material PPS resin

V680S-D2KF68/-D2KF68M
V680S-D8KF68/-D8KF68M



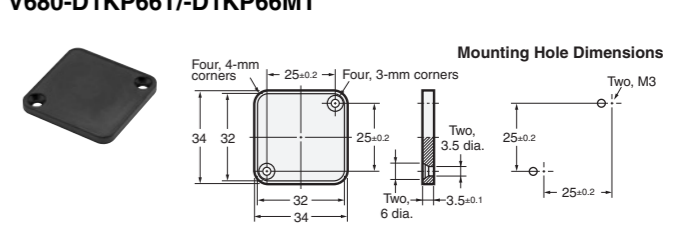
Case material PPS resin

V680-D1KP54T



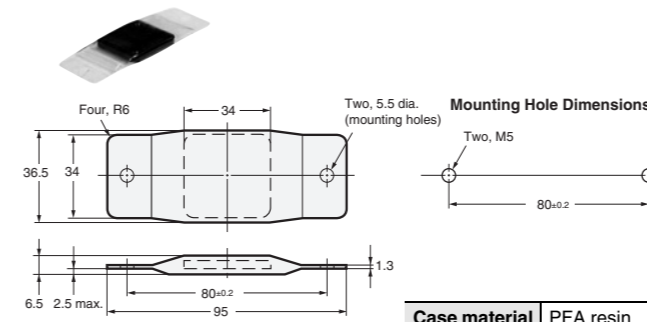
Case material PPS resin

V680-D1KP66T/-D1KP66MT



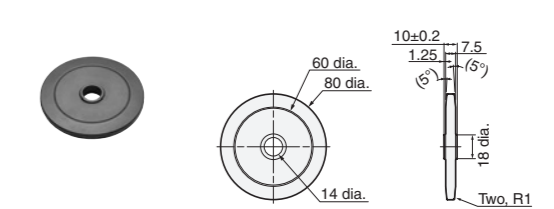
Case material PPS resin

V680-D1KP66T-SP



Case material PFA resin

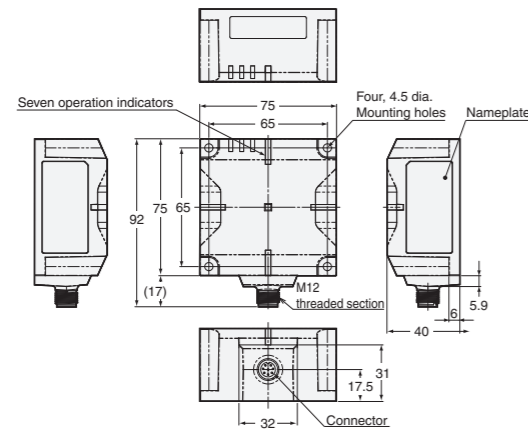
V680-D1KP58HTN



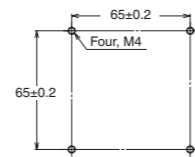
Case material PPS resin

Reader/Writer

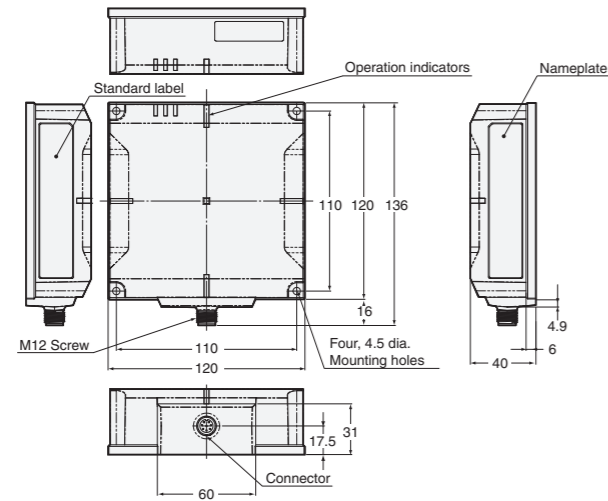
V680S-HMD64-ETN



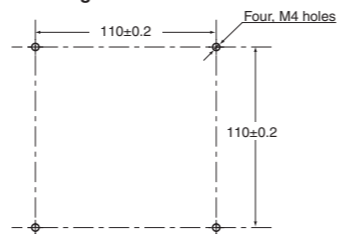
Mounting Hole Dimensions



V680S-HMD66-ETN

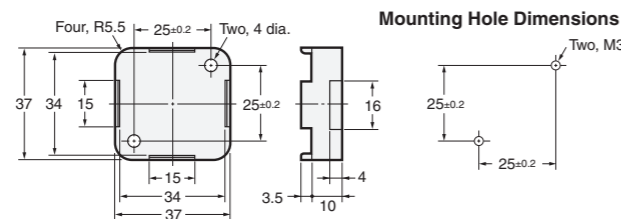


Mounting Hole Dimensions



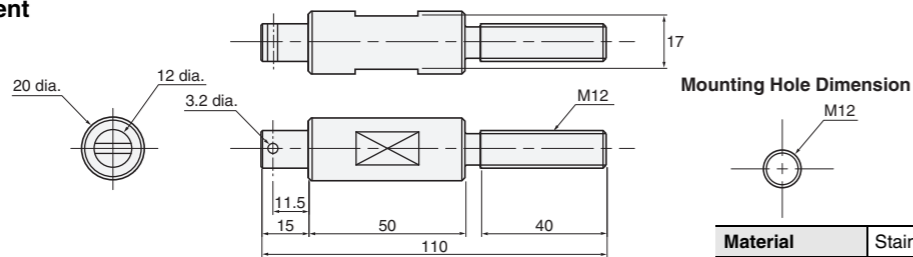
RF Tag Attachment

V680-D1KP66T Attachment
V600-A86



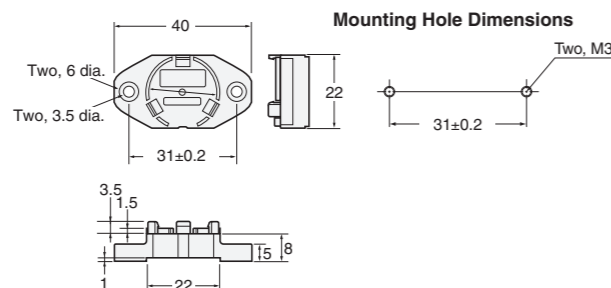
Material	PPS resin
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V680-D1KP58HTN Attachment
V680-A80



Material	Stainless steel
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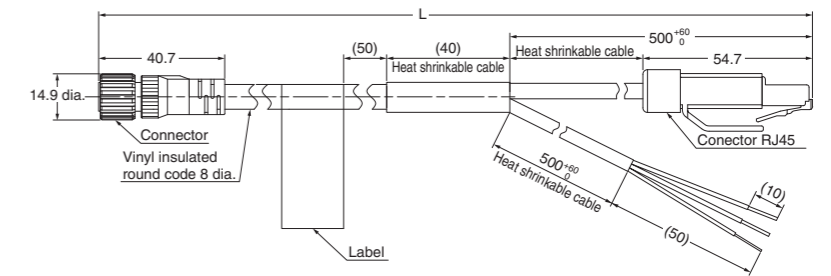
V680-D1KP54T Attachment
V700-A80



Material	PPS resin
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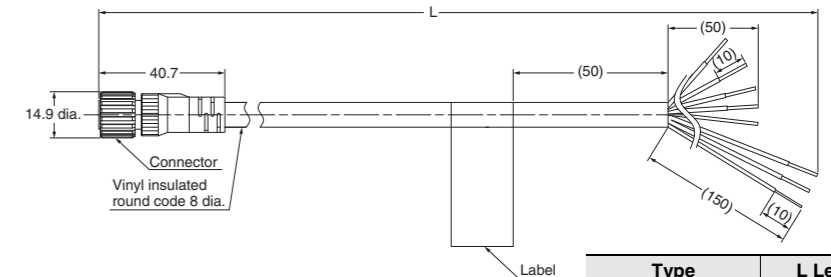
Cable

V680S-A41 □M
Special connector – RJ45



Type	L Length
V680S-A41 2M	2000 ⁺¹⁵⁰ ₀
V680S-A41 5M	5000 ⁺³⁰⁰ ₀
V680S-A41 10M	10000 ⁺¹⁰⁰⁰ ₀

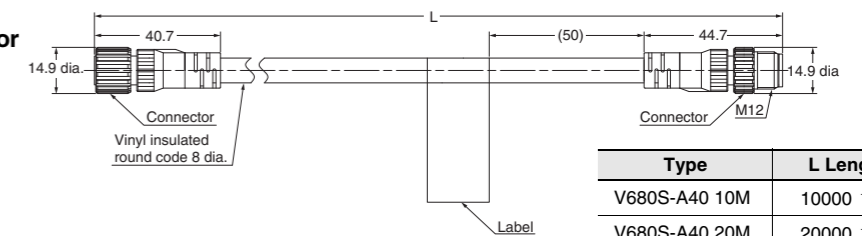
V680S-A42 □M
Special connector – Loose wires



Type	L Length
V680S-A42 2M	2000 ⁺¹⁵⁰ ₀
V680S-A42 5M	5000 ⁺³⁰⁰ ₀
V680S-A42 10M	10000 ⁺¹⁰⁰⁰ ₀

Extension Cable

V680S-A40 □M
Special connector – Special connector



Type	L Length
V680S-A40 10M	10000 ⁺¹⁰⁰⁰ ₀
V680S-A40 20M	20000 ⁺²⁰⁰⁰ ₀
V680S-A40 50M	50000 ⁺⁵⁰⁰⁰ ₀

Related Manuals

English Man. No.	Japanese Man. No.	Model	Name
Z339	SDGR-709	V680S-HMD□-ETN	RFID system V680S Series User's Manual

Would you like to know more?

OMRON EUROPE B.V.

 +31 (0) 23 568 13 00

 industrial.omron.eu

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Austria

Tel: +43 (0) 2236 377 800
industrial.omron.at

Belgium

Tel: +32 (0) 2 466 24 80
industrial.omron.be

Czech Republic

Tel: +420 234 602 602
industrial.omron.cz

Denmark

Tel: +45 43 44 00 11
industrial.omron.dk

Finland

Tel: +358 (0) 207 464 200
industrial.omron.fi

France

Tel: +33 (0) 1 56 63 70 00
industrial.omron.fr

Germany

Tel: +49 (0) 2173 680 00
industrial.omron.de

Hungary

Tel: +36 1 399 30 50
industrial.omron.hu

Italy

Tel: +39 02 326 81
industrial.omron.it

Netherlands

Tel: +31 (0) 23 568 11 00
industrial.omron.nl

Norway

Tel: +47 (0) 22 65 75 00
industrial.omron.no

Poland

Tel: +48 22 458 66 66
industrial.omron.pl

Portugal

Tel: +351 21 942 94 00
industrial.omron.pt

Russia

Tel: +7 495 648 94 50
industrial.omron.ru

South Africa

Tel: +27 (0)11 579 2600
industrial.omron.co.za

Spain

Tel: +34 902 100 221
industrial.omron.es

Sweden

Tel: +46 (0) 8 632 35 00
industrial.omron.se

Switzerland

Tel: +41 (0) 41 748 13 13
industrial.omron.ch

Turkey

Tel: +90 212 467 30 00
industrial.omron.com.tr

United Kingdom

Tel: +44 (0) 1908 258 258
industrial.omron.co.uk

More Omron representatives

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