

ID OMRON V680S-HMD66-ETN



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

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# **OMRON Prom**

# Over 25 Years of History and Experience



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





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



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# Radio Regulations Compliance for More than 45 Countries







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

Continued Compliance – Our products comply with Radio Regulations as global standards for RFID systems.

1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
USA	The Philippines
Canada	Malaysia
South Korea	Europe
China	Mexico
Taiwan	India
Thailand	Brazil
Singapore	32 European countries

# Simple 3 in 1 RFID Featuring the 3 " Easy "

D <sup>omron</sup> V680S-HMD66-ETN

# 3in1 Pust Ethernet RFID

CONTROLLER

AMPLIFIER

ANTENNA



# **Easy Connection**

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



# Easy Installation

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

P.7

# FID system 680S Series



# Easy Operation

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



# 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**

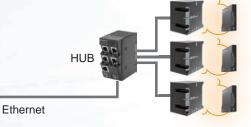
Modbus TCP enables any PLC from any manufacturer to be connected without a converter,

# **Easy System Expansion**

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

Host Device







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.

Ethernet

Note: Power must be supplied to the Reader/Writer. Refer to the V680S Series User's Manual (Cat. No. Z339-E1) for details.

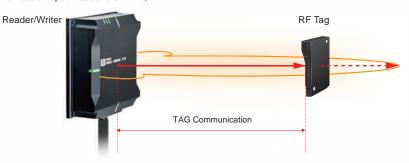
# Easy Installation

Easy to find the best location to install

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

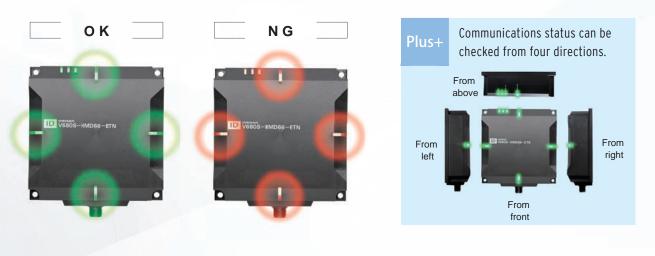
# Wide Communication Range allows Easy Installation

Installation according to the communication specifications enables more stable communications even in harsh FA environments. (Refer to the communication specifications on P.14.)



# **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.



# Easy Operation

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.

-		ander/Writer	(Eres lines
UNRUE - APID Reading/West	omron	V680S RFID Reader/Writer	
	Status	VERES-HMDER-ETN	
Statut Inclusive continent	Device here Ferenare version	1.00	
Commission	Ran mode program Sale mode program	1.00 00-11-22-33-44-55	
	NAC address Operation mode	RUN	
	Alexandrian and a second s	75848 Files	
Op	serating time		

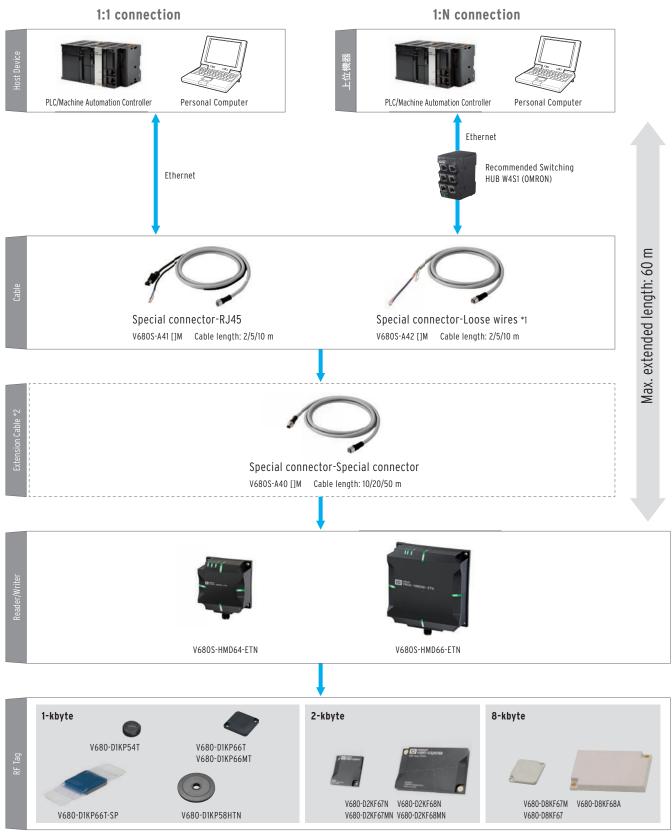
Web browser for setting, monitoring,

and communications.

#### Statu Status **Functions** Network settings De Users can make communications settings, monitor noise, and Fir Communication settings display the history. RF Tag communications Four Language Support MA Log view Select from four languages:English,Chinese,Korea Op and Japanese Noise monitor Sta

Plus+	Example of WEB Browser Window Tag Communications						
			ОП	<b>NRON</b> V680	S RFID Reader/V		nglish 👻
	<ul> <li>Select Read or Write.</li> </ul>	Status	RF Tag com			0000	
		Network settings	Query	Reading RF Tag	Register number Read data size	0000	
		Communication		Writing RF Tag	Register number Data to write		
9		RF Tag communications	Repeat	00000000006FF030000	00002		
4	• Enter the register number and read/write data size.	Log view		0000000000007FF030462		-	
		Noise monitor	Query/Response	Error code		Number	of sent 3
3	<ul> <li>Click the Send Button to display read/write data.</li> </ul>	Reboot	[ Query ] [Response] [ Query ] [Response] [Response]	00000000000000000000000000000000000000	30000002 306 300000002 306	g data are	displayed.
		Configuration	]	_	_		_

## System Configuration



\*1. A customer should treat wires terminal of the connector.

\*2. Only one extension cable can be used.

# RFID System V680S Series

# 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**

#### **Reader/Writer**

Туре	Appearance	Size	Metallic compatibility	Model
	· · · · · · · · · · · · · · · · · · ·	75  imes 75  imes 40  mm	Ethernet (TCP/IP: Modbus TCP)	V680S-HMD64-ETN
Reader/Writer		120 × 120 × 40 mm	Ethernet (TCP/IP: Modbus TCP)	V680S-HMD66-ETN

#### Cable

Туре	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**

Туре	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)

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

#### **RF** Tag

Туре	Memory capacity	Appearance	Size	Metallic compatibility	Model	
			20 dia. × 2.7 mm	For flush mounting on nonmetallic surface	V680-D1KP54T	
Battery-less			24 24 25	For flush mounting on metallic surface	V680-D1KP66MT	
	4 14-4		$34 \times 34 \times 3.5$ mm	For flush mounting on nonmetallic surface	V680-D1KP66T	
Environment-resistant type Battery-less	1 kbytes		95  imes 36.5  imes 6.5 mm	For flush mounting on nonmetallic surface	V680-D1KP66T-SP	
High-temperature type Battery-less		$\bigcirc$	80 dia. × t10 mm	For mounting with special attachment	V680-D1KP58HTN	
			For flush mounting on metallic surface	V680-D2KF67MN		
			$40 \times 40 \times 4.5 \text{ mm}$	For flush mounting on nonmetallic surface	V680-D2KF67N	
	2 kbytes	S	z koytes		For flush mounting on metallic surface	V680-D2KF68MN
Detters lass			86 × 54 × 5 mm	For flush mounting on nonmetallic surface	V680-D2KF68N	
Battery-less		40 × 40 × 4.5 mm	For flush mounting on metallic surface	V680-D8KF67M		
			For flush mounting on nonmetallic surface	V680-D8KF67		
8 kb	8 kbytes		$86 \times 54 \times 10 \text{ mm}$	For flush mounting on nonmetallic surface	V680-D8KF68A	

### **RF Tag Attachment**

	Appearance	Model
For the V680-D1KP66T		V600-A86
For the V680-D1KP58HTN	8	V680-A80
For the V680-D1KP54T		V700-A80

## **Ratings and Performance**

#### RF Tag (1-kbyte Memory)

Item Mode	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) Fotal 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)			-25 to 70 °C (with no icing)		
Ambient storage temperature (during data backup)	High tempera 200 thermal of	-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				
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	IP67 (IEC 60529:2001) Oil resistance equivalent to IP (JIS C 0920:2003, Appendix 1	IP67			
Vibration resistance		on of 10 to 2,000 Hz, 1.5-mm do eeps each in X, Y, and Z directic				
Shock resistance	No abnormality after application	on of 500 m/s <sup>2</sup> , 3 times each in $\lambda$	K, Y, and Z directions (Total: 1	8 times)		
Appearance	20 dia. × 2.7 mm	20 dia. × 2.7 mm 34 × 34 × 3.5 mm				
Materials	PPS resin	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 Mode	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 operating humidity	35 to 95%
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 <sup>2</sup> , 10 sweeps each in X, Y, and Z directions for 15 minutes each
Shock resistance	No abnormality after application of 500 m/s <sup>2</sup> , 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 180 °C.

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

#### RF Tag (8-kbyte Memory)

Item M	odel	V680-D8KF67	V680-D8KF67M	V680-D8KF68A			
Memory capacity	8,19	,192 bytes (user area)					
Memory type	FRA	M					
Data Retention *1	10 y	vears after writing ( 70 °C or less), 6 yea	rs after writing (70 °C to 85 °C )				
Write Endurance	10 t	billion writes for each block, Number of a	accesses: *2 10 billion writes				
Ambient operating temperature (during transmission)	-20	to 85 °C (with no icing)					
Ambient storage temperature (during data backup)	-40	40 to 85 °C (with no icing)					
Ambient operating humidity	35%	5% to 85%					
Degree of protection		7 (IEC 60529:2001) resistance equivalent to IP67G (JIS C 09	920:2003, Appendix 1) *3				
Vibration resistance		No abnormality after application of 10 to 2,000 Hz, 1.5-mm double amplitude, acceleration: 150 m/s <sup>2</sup> , 10 sweeps each in X, Y, and Z directions for 15 minutes each X, Y, and Z directions for 15 minutes each X, Y, and Z directions for 11 minutes					
Shock resistance	No	abnormality after application of 500 m/s <sup>2</sup>	<sup>2</sup> , 3 times each in X, Y, and Z directions (Tota	al: 18 times)			
Dimensions	40 >	40 × 40 × 4.5 mm 86 × 54 × 10 mm					
Materials	Cas	Case: PBT resin, Filling: Epoxy resin					
Weight	Арр	rox. 8 g	Approx. 8.5 g	Approx. 50 g			
Metal countermeasures	s Nor	e	Provided	None			

\*1 Refer to the User's Manual (Cat. No. Z339) for data retention time for temperatures of 70 ×C or higher.

\*2 The number of accesses is the total number of reads and writes.

 ${\boldsymbol{*3}}$  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 Mode	V680S-HMD64-ETN	V680S-HMD66-ETN		
Dimensions	$75W \times 75H \times 40D$ (excluding protruding parts)	$120W \times 120H \times 40D$ (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	$20~\text{M}\Omega$ 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 <sup>2</sup> , 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 <sup>2</sup> , 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, 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**

### RF Tag (1kbyte Memory) Transmission

Coml	bination	-	Transmission	
RF Tag	Reader/Writer	Function	distance (unit: mm)	RF Tag and Reader/Writer mounting conditions
V680-D1KP54T (mounted to non-metallic material)	V680S-HMD64-ETN	Read distance	0.0 to 33.0 (axial deviation ±10)	Metallic material V680S-HMD84-ETN
		Write distance	0.0 to 28.0 (axial deviation ±10)	Communications distance distance Non-metallic material (Examples: Resin, plastic, wood, etc.)
	V680S-HMD66-ETN	Read distance	0.0 to 45.0 (axial deviation ±10)	Metallic material V680S-HMD66-ETN V680-D1KP54T
		Write distance	0.0 to 38.0 (axial deviation ±10)	Non-metalic material (Examples: Resin, plastic, wood, etc.)
V680-D1KP66MT (mounted to metallic material)	V680S-HMD64-ETN	Read distance	0.0 to 35.0 (axial deviation ±10)	Metallic material
		Write distance	0.0 to 30.0 (axial deviation ±10)	Nor-metallic material (Examples: Resin, plastic, wood, etc.)
	V680S-HMD66-ETN	Read distance	0.0 to 37.0 (axial deviation ±10)	Metallic material
		Write distance	0.0 to 30.0 (axial deviation ±10)	Non-metallic material (Examples: Resin, plastic, wood, etc.)
V680-D1KP66T (mounted to non-metallic material)	V680S-HMD64-ETN	Read distance	0.0 to 47.0 (axial deviation ±10)	Metallic material V680S-HMD84-ETN
		Write distance	0.0 to 42.0 (axial deviation ±10)	Non-metallic material (Examples: Resin, plastic, wood, etc.)
	å`V680S-HMD66-ETN	Read distance	0.0 to 64.0 (axial deviation ±10)	Metallic material V6805-HMD66-ETN
		Write distance	0.0 to 57.0 (axial deviation ±10)	Nor-metallic material (Examples: Resin, plastic, wood, etc.)
V680-D1KP66T-SP (mounted to non-metallic material)	V680S-HMD64-ETN	Read distance	0.0 to 42.0 (axial deviation ±10)	Metallic material V6805-HIMD64-ETN
		Write distance	0.0 to 37.0 (axial deviation ±10)	Non-metallic material (Examples: Resin, plastic, wood, etc.)
	V680S-HMD66-ETN	Read distance	0.0 to 59.0 (axial deviation ±10)	Metallic material V680S-HMD66-ETN
		Write distance	0.0 to 52.0 (axial deviation $\pm 10$ )	Non-metallic material (Examples: Resin, plastic, wood, etc.)

#### High-temperature RF Tag (1kbyte Memory) Transmission

Combination		Europei euro	Transmission		
RF Tag	Reader/Writer	Function	distance (unit: mm)	RF Tag and Reader/Writer mounting conditions	
V680-D1KP58HTN (mounted with special attachment)	V680S-HMD64-ETN	Read distance	7.5 to 75.0 (axial deviation ±10)	Metallic material	
		Write distance	7.5 to 75.0 (axial deviation ±10)	Non-metalic material (Examples: Resin, plastic, wood, etc.)	
	V680S-HMD66-ETN	Read distance	10.0 to 90.0	Metallic material V6805-HMD66-ETN Metallic material V680-DBKF67M	
		Write distance		Non-metallic material (Examples: Resin, plastic, wood, etc.)	

#### RF Tag (8kbyte Memory) Transmission

Combination			Transmission	DE Tax and Deeder/Mriter mounting conditions		
RF Tag	Reader/Writer	Function	distance (unit: mm)	RF Tag and Reader/Writer mounting conditions		
V680-D8KF67M (mounted to metallic material)	V680S-HMD64-ETN	Read distance	3.0 to 40.0 (axial deviation ±10)	Metallic material V680S-HMD64-ETN Metallic material V680-DBK-F67M		
		Write distance	3.0 to 40.0 (axial deviation $\pm$ 10)	Non-metallic material (Examples: Resin, plastic, wood, etc.)		
	V680S-HMD66-ETN	Read distance	4.0 to 45.0 (axial deviation ±10)	Metallic material		
		Write distance	4.0 to 45.0 (axial deviation ±10)	Non-metalic material (Examples: Resin, plastic, wood, etc.)		
V680-D8KF67 (mounted to non-metallic material)	V680S-HMD64-ETN	Read distance	5.0 to 50.0 (axial deviation ±10)	Metallic material V680S-HMD84-ETN		
		Write distance	5.0 to 50.0 (axial deviation ±10)	Communications distance Non-metallic material (Examples: Resin, plastic, wood, etc.)		
	V680S-HMD66-ETN	Read distance	7.0 to 70.0 (axial deviation ±10)	Metallic material V680S-HMD66-ETN		
		Write distance	7.0 to 70.0 (axial deviation ±10)	Communications distance Non-metallic material (Examples: Resin, plastic, wood, etc.)		
V680-D8KP68A (mounted to non-metallic material)	V680S-HMD64-ETN	Read distance	7.5 to 75.0 (axial deviation ±10)	Metallic material V680S-HMD64-ETN V680-D8KF68A		
		Write distance	7.5 to 75.0 (axial deviation ±10)	Communications distance Non-metallic material (Examples: Resin, plastic, wood, etc.)		
	V680S-HMD66-ETN	Read distance	10.0 to 100.0 (axial deviation ±10)	Metallic material V6005-HMD66-ETN V680-DBKF68A		
		Write distance	10.0 to 100.0 (axial deviation ±10)	Non-metallic material (Examples: Resin, plastic, wood, etc.)		

(unit:mm)

# **Characteristic Data (Typical)**

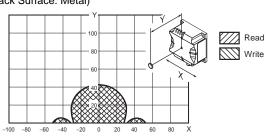
### Transmission Range (Typical)

The values given for communications ranges are reference values. Refer to pages 14 to 15 for communications distance specifications. The communications distance will depend on the RF Tags, ambient temperature, surrounding metal, noise, and other factors. Test operation completely when installing a system.

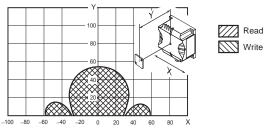
#### • V680S-HMD64-ETN

#### **1kbyte Memory RF Tag**

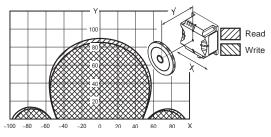
V680S-HMD64-ETN and V680-D1KP54T (Back Surface: Metal)



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

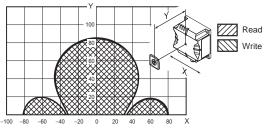


V680S-HMD64-ETN and V680-D1KP58HTN (with Attachment, V680-A80) (Back Surface: Metal)

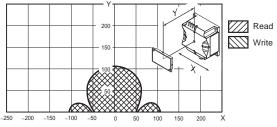


#### **8kbyte Memory RF Tag**

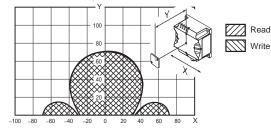
V680S-HMD64-ETN and V680-D8KF67 (Back Surface: Metal)



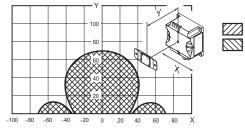
V680S-HMD64-ETN and V680-D8KF68A (Back Surface: Metal) (Horizontal-facing RF Tag)



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

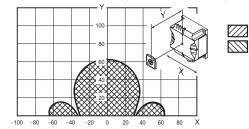


V680S-HMD64-ETN and V680-D1KP66T-SP (Back Surface: Metal)



Read Write

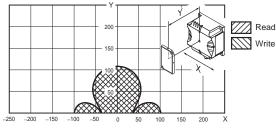
V680S-HMD64-ETN and V680-D8KF67M (Back Surface: Metall) (Back Surface: Metal)



Read  $\square$ 

Write

V680S-HMD64-ETN and V680-D8KF68A (Back Surface: Metal) (Verticall-facing RF Tag)

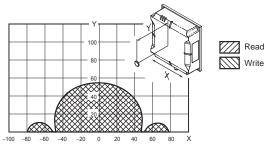


#### • V680S-HMD66-ETN

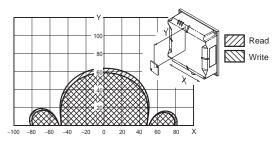
#### (unit:mm)

#### 1kbyte Memory RF Tag

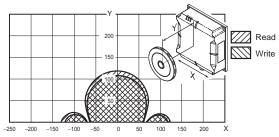
V680S-HMD66-ETN and V680-D1KP54T (Back Surface: Metal)



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

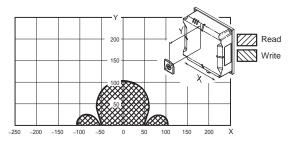


V680S-HMD66-ETN and V680-D1KP58HTN (Back Surface: Metal) (with Attachment, V680-A80)

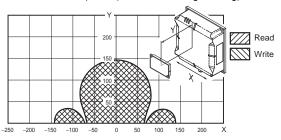


#### 8kbyte Memory RF Tag

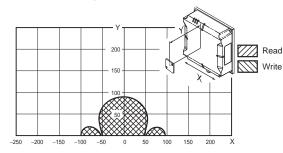
V680S-HMD66-ETN and V680-D8KF67 (Back Surface: Metal)



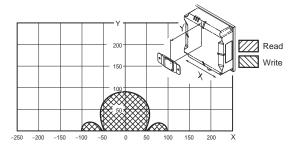
V680S-HMD66-ETN and V680-D8KF68A (Back Surface: Metal) (Horizontal-facing RF Tag)

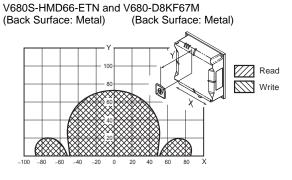


V680S-HMD66-ETN and V680-D1KP66T (Back Surface: Metal)

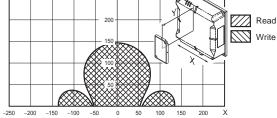


V680S-HMD66-ETN and V680-D1KP66T-SP (Back Surface: Metal)





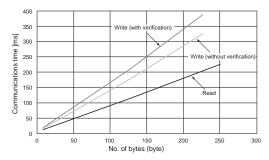
V680S-HMD66-ETN and V680-D8KF68A (Back Surface: Metal) (Verticall-facing RF Tag)



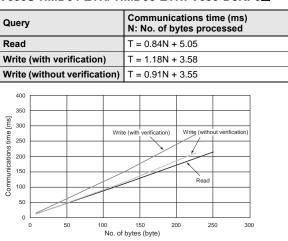
## **Communications Time**

1kbyte Memory RF Tag V680S-HMD64-ETN/-HMD66-ETN: V680-D1KP□□

Query	Communications time (ms) N: No. of bytes processed
Read	T = 0.88 N + 5.01
Write (with verification)	T = 1.69 N + 3.01
Write (without verification)	T = 1.41 N + 2.98



#### 8kbyte Memory RF Tag V680S-HMD64-ETN/-HMD66-ETN: V680-D8KF6□



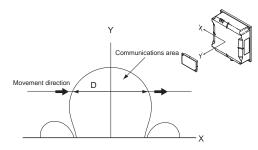
### **Travel Speed Calculations**

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.

Maximum speed = D (Distance travelled in communications area)

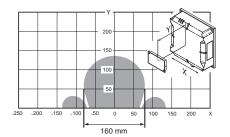
T (Communications time)

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



#### **Calculation Example**

The following example is for reading 128 bytes with the V680-D8KF68A, and V680S-HMD66-ETN.



From the above chart,

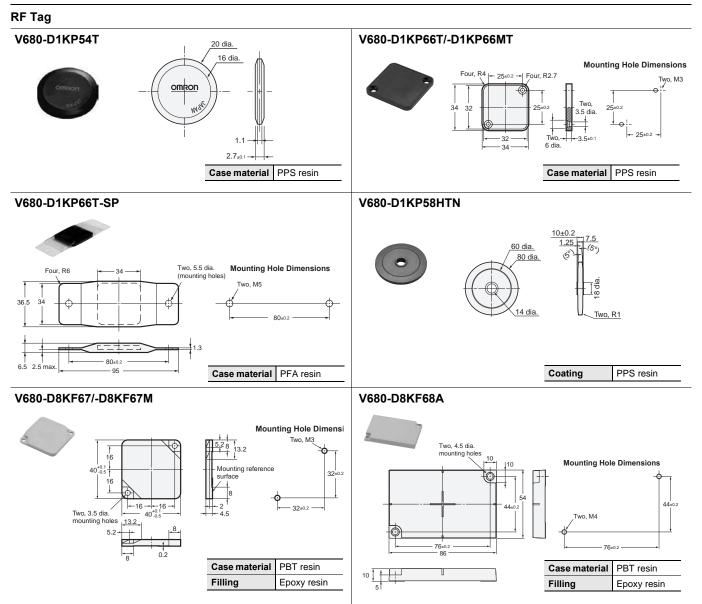
Ν

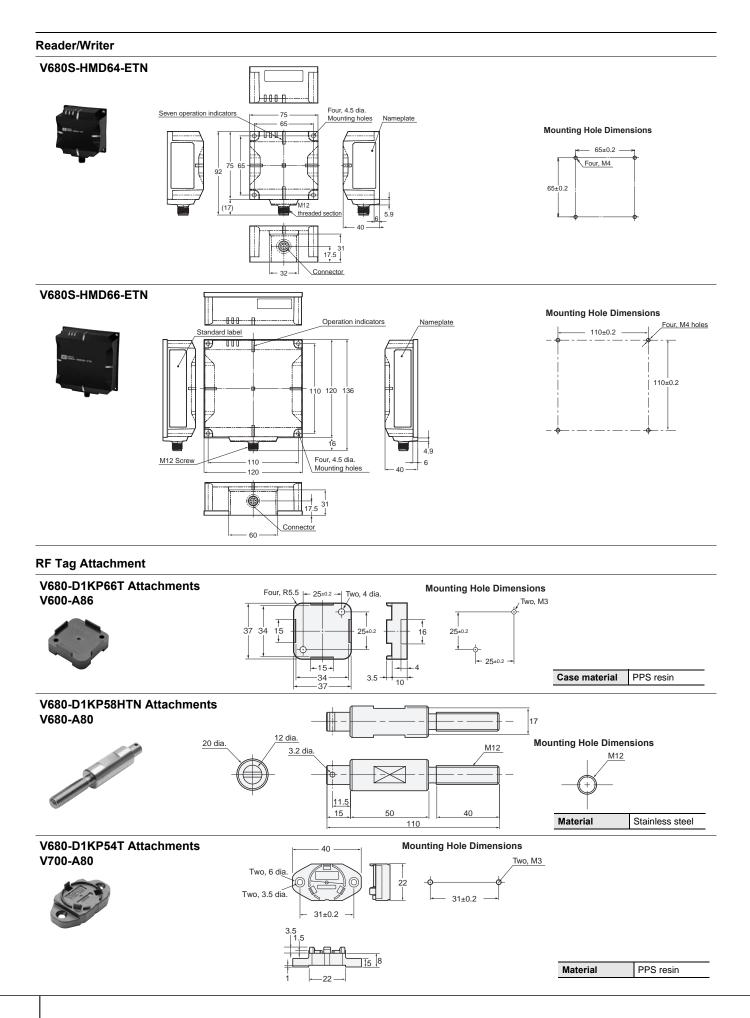
Distance travelled in communications area = 160 mm when Y (communications distance) is 50 mm Communications time T = 225.5 ms (calculated from the communications time , i.e.,  $1.2 \times 128$  bytes + 10.46) Therefore, the maximum speed of the Tag is as follows:

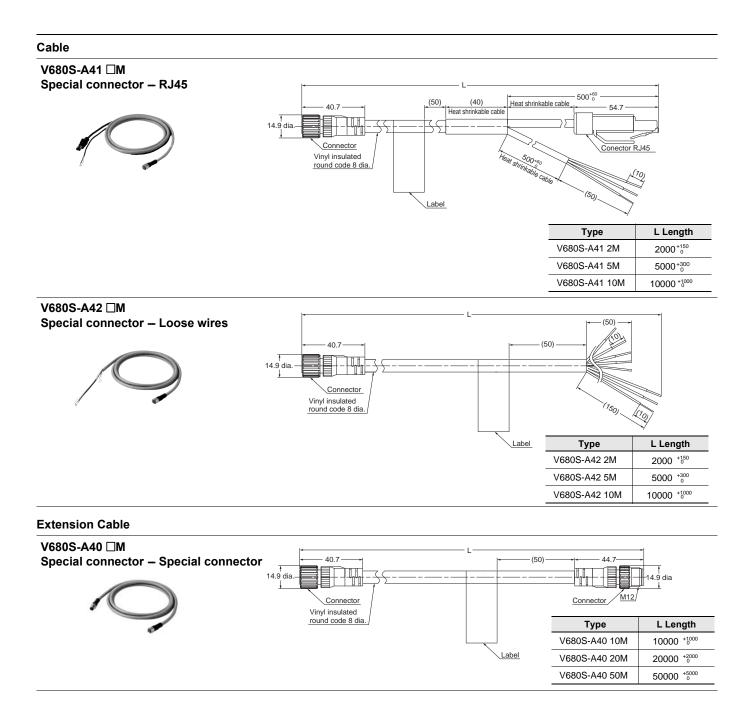
Maximum speed =	D (Distance travelled in communications area)	_	160 (mm)
	T (Communications time)	-	225.5 (ms)
		= -	42.57 m/min

(Unit: mm) Tolerance class IT16 applies to dimensions in this

## Dimensions







## **Related Manuals**

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

#### **Caution for Radio Regulations**

As soon as the V680S Series has been certified to comply with Radio Regulations of each country, the product label will be subject to change to include a certificate number without any advance notice. For update on compliance with Radio Regulations, refer to "Models with Standards Certification" on the OMRON website (http://www.ia.omron.com/).

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