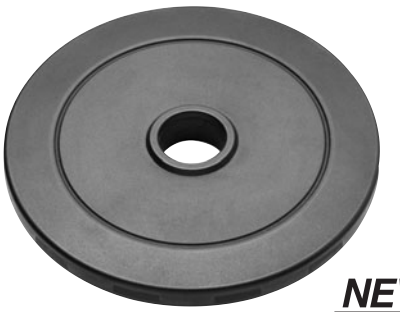
RFID System

V680 Series High-temperature RF Tag

High-temperature RF Tags Used for Production Instructions and History Management in High-temperature Environments Such As Automotive Coating Line

- Heat resistance up to 250°C
- Transmission distance of 150 mm
  (Actual transmission distance: 200 mm)
- Complies with radio regulations in major countries.
  (Ask for details.)



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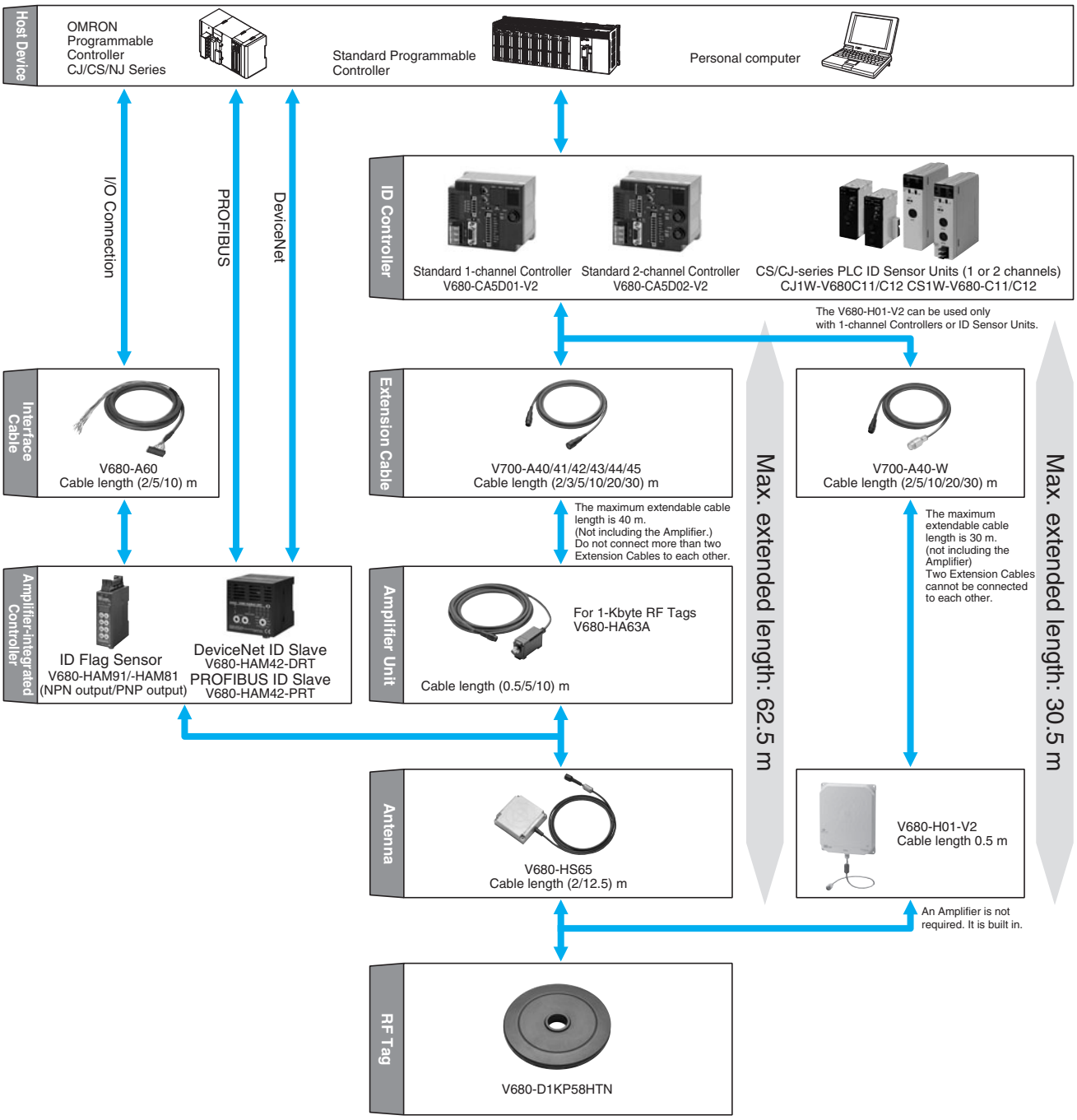
System Configuration

Connect V680 Antennas and Amplifier Units to a V680-series Controller, and read or write data from or to RF Tags.



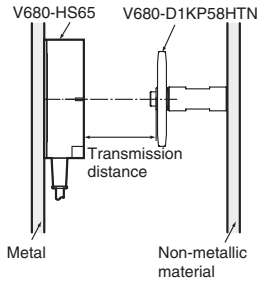
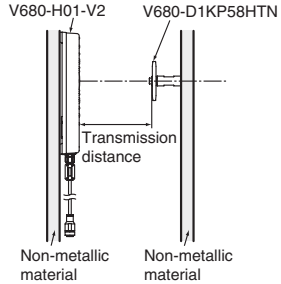
Ordering Information

Name	Model	Specifications/Appearance		
High-temperature RF Tag	**V680-D1KP58HTN**		80 dia. × t10 mm	1 kbyte
RF tag attachment	**V680-A80**		20 dia. × 110 mm	To mount the V680-D1KP58HTN

Ratings and Performance

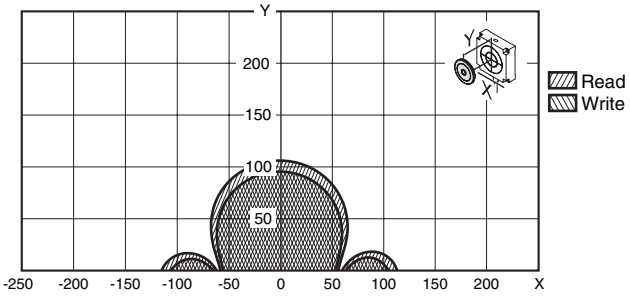
Item / Model	V680-D1KP58HTN
Memory capacity	1,000 bytes (user area)
Memory type	EEPROM
Data Retention	10 years after writing (85°C or less), 0.5 year after writing (85°C to 125°C) Total data retention at high temperatures exceeding 125°C is 10 hours
Write Endurance	100,000 times per block (25°C)
Ambient operating temperature	−25°C to 85°C (with no icing)
Ambient storage temperature	−40 to 250°C (with no icing) (Data backup −40°C to 125°C)
Ambient storage humidity	35% to 95%RH
Degree of protection	IP67 (IEC 60529) Oil resistance equivalent to IP67g according to the former JEM standard.
Vibration resistance	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	500 m/s^2, 3 times each in X, Y, and Z directions (total: 18 times)
Materials	Coating: PPS resin
Weight	Approx. 70 g

Communication Specifications

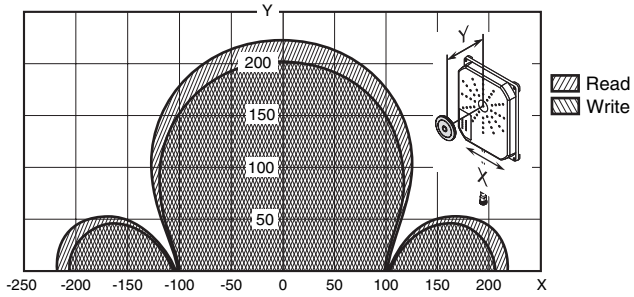
Recommended combination		Function	Transmission distance (unit: mm)	RF Tag and Antenna mounting conditions
RF Tag	**Antenna**			
V680-D1KP58HTN 	**V680-HS65** 	Read distance	0 to 55 mm (axial deviation ±10 mm)	
		Write distance	0 to 50 mm (axial deviation ±10 mm)	
	V680-H01-V2 	Read distance	0 to 150 mm (axial deviation ±10 mm)	
		Write distance	0 to 150 mm (axial deviation ±10 mm)	

Characteristic Data (Typical)

V680-HS65 (with metal on back surface) and V680-D1KP58HTN



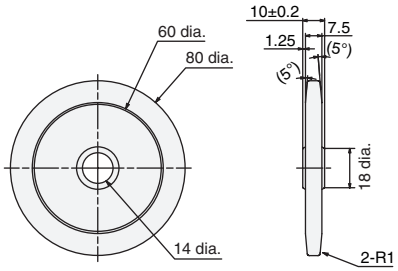
V680-H01-V2 and V680-D1KP58HTN



Dimensions

RF Tag

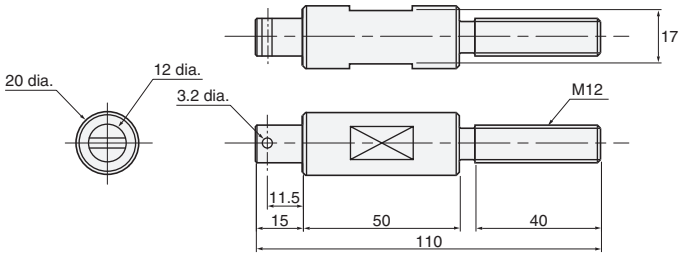
V680-D1KP58HTN



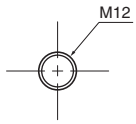
Case material	PPS resin

RF Tag Attachment

V680-A80



Mounting hole dimensions



Material	Stainless steel

Precautions for Correct Use

Data Retention

- Data stored in memory in the RF Tag may be lost due to the characteristics of EEPROM, if the accumulated usage time of the RF Tag at a high temperature over 125°C exceeds 10 hours after writing data to the RF Tag. Reset the data retention time before the accumulated usage time exceeds 10 hours.
- An error in communications between the Antenna and the RF Tag may occur in an environment where the ambient operating temperature is 85°C or higher. Do not communicate between the Antenna and the RF Tag in an environment where the ambient operating temperature is 85°C or higher.
- The UID (unique identification number for each RF Tag) may be lost due to the characteristics of EEPROM when the RF tag is used at a high temperature over 125°C. Do not use the commands using UID at a high temperature over 125°C.
  - Do not use the READ ID command (command code: ID).
  - Do not make the UID Addition Setting (command code: US).
  - Communications specifications (FIFO trigger, FIFO repeat, multi-access trigger, multi-access repeat, and selective) can not be used.

Heat Resistance

- Storing RF Tags under high temperatures or heat cycle will adversely affect the performance of the internal parts and the service life of the RF Tags. Correct operation has been confirmed through the OMRON in-house evaluation for RF Tags under the following high-temperature conditions.
  1) Room temperature/200°C, 30 minutes each for 2,000 cycles
  2) 250°C, 500 hours

For details, refer to *RF Tags - Use at high temperatures (V680-D1KP58HTN)* of *Section 2 Specifications and Performance* in the V680 Series User's Manual for Amplifiers, Antennas, and RF Tags (EEPROM) (Man. No: Z262-E1).

Controller

Please set the latest ID controller to the CA1D mode when the latest ID controller is used together with the old model ID controller V680-CA1D/CA2D.

RF Tag / Controller	V680-D1KP58HT only	V680-D1KP58HT and V680-D1KP58HTN used together	V680-D1KP58HTN only
V680-CA1D/CA2D only	Not required	Not required	Not required
V680-CA1D/CA2D and the latest ID controller used together	Not required	Set the latest ID controller to the CA1D mode.	Set the latest ID controller to the CA1D mode.
The latest ID controller only	Not required	Not required	Not required

Note: The latest ID controller:
V680-CA5D01-V2/CA5D02-V2, V680-CH1D/CHUD/CH1D-PSI, CS1W-V680C11/C12, CJ1W-V680C11/C12

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