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UR40

Fixed RFID Reader

29.04.2020

Agenda.

1. **Product overview.**
2. **Use case.**
3. **Factory IoT.**
4. **Specifications.**
5. **Competitor comparison.**
6. **Product line, parts numbers & external dimensions.**

1 Product overview.

Rugged. Long reading distance. All-in-one.
The new fixed RFID Reader UR40.

ALL-IN-ONE:

- Three types of antennas are built in: horizontal, vertical and circular
- Up tp three extra antennas can be added, allowing different portal configurations to be made

HIGH DURABILITY:

- UL61010 certified
- Sealed to IP65 for use in demanding and outdoor locations
- Reliable and continuous operation even at high temperatures due to die-cast aluminum case allowing for better heat dissipation

EASY INSTALLATION:

- Quality of tags can be checked with an indicator
- Common API with SP1
- Easy installation via VESA compatible mounting points

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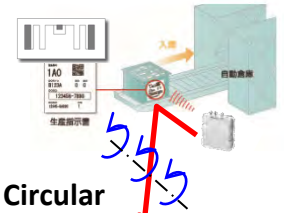
Accurate reading.

Circular antennas can capture information by reading tags at various angles. However, there are cases where tags that are close to each other are misread due to the radio wave reflection of the reader. Equipping the UR40 with three types of antennas solves this issue.

Problem

Transfer line A reader misreads adjacent line B tag

A



Circular
Misreading !

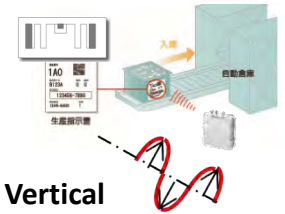
B

Circular

Solution

Avoid misreading with different antenna settings

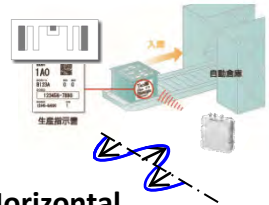
A



Vertical

Misreading does not occur!

B



Horizontal

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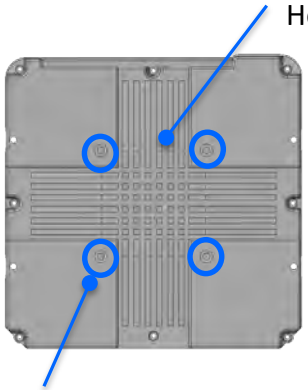
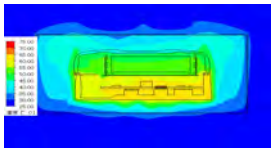
Highly rugged.

Easy installation and stable operation

- VESA Standards (75mm x 75mm)
- Adopted aluminum die-casting case with excellent heat dissipation and durability at the back of the UR40



Male screw : M5(L=5mm)



DNWA unique heat dissipation simulation

365 days continuous operation

Excellent environmental resistance

IP65

Including connector connection

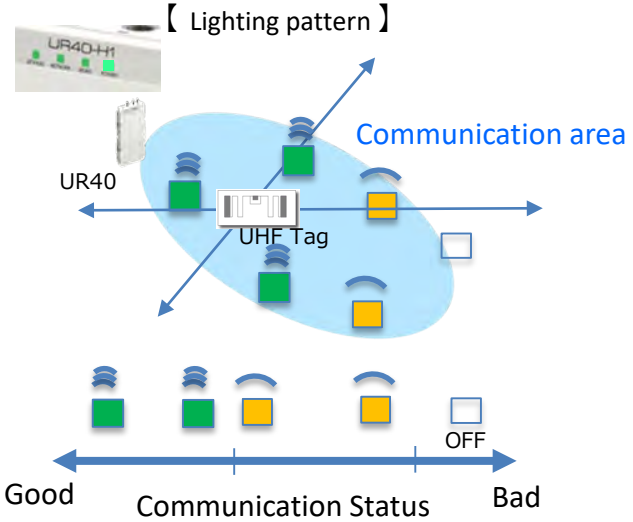
- Protected from total dust ingress
- Protected in any direction from low water pressure jets.

UL61010 certification

Ensuring communication quality.

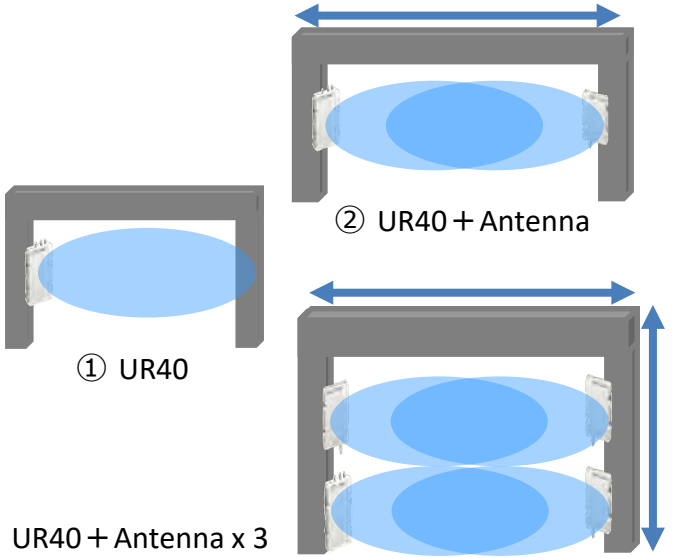
Communication visualization

The quality of communication between the UR40 and surrounding UHF tags is indicated by lights, mounted on the UR40.



Expansion of communication area

Through the addition of an external antenna, the communication range can be expanded at low costs.



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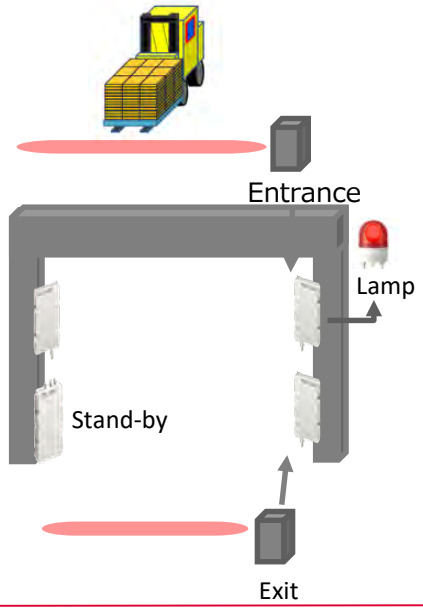
2 Use case.

Use case.

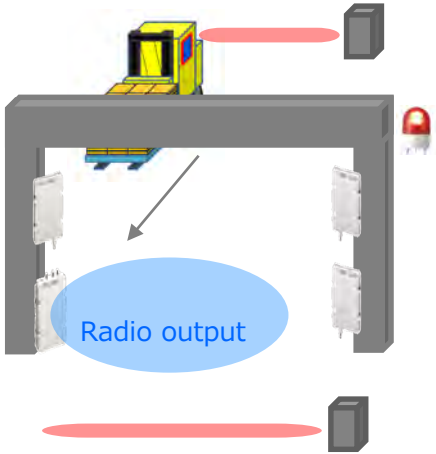
You can easily build a system using GPIO.

The following is an example of linkage among the GPIO, an entrance / exit detection sensor, and a revolving light.

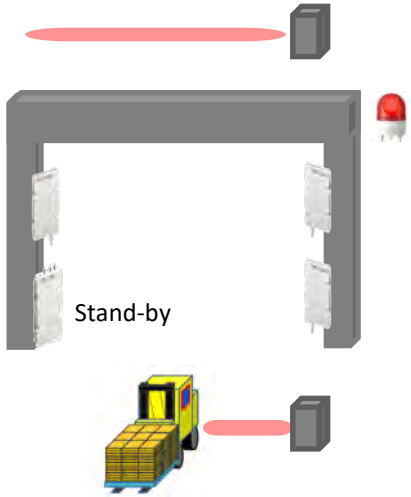
① Stand-by



② The forklift passes the entrance sensor. Radio wave output starts. The revolving light turns on.



③ The forklift passes the exit sensor. The radio wave output stops. The revolving light turns off.



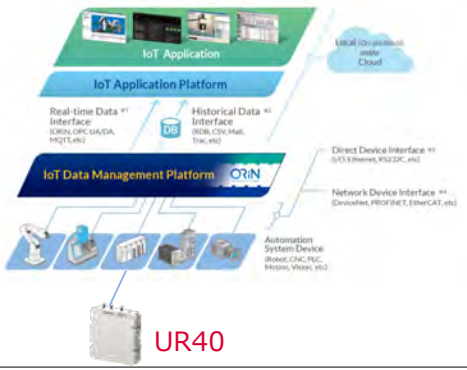
3 Factory IoT.

Factory IoT.

In order to realize factory IoT, it is necessary to collect information from various equipment in the facility and link them to the host system. Therefore, DENSO WAVE provides IoT products that realize unified access from existing equipment to new equipment using the ORiN technology.

What is ORiN

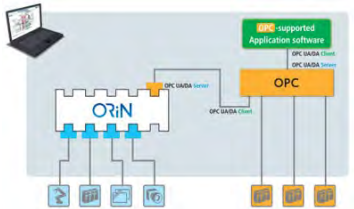
ORiN is a communication interface that absorbs the “differences between manufacturers and models” of equipment installed in the factory and provides a unified access method and expression method.



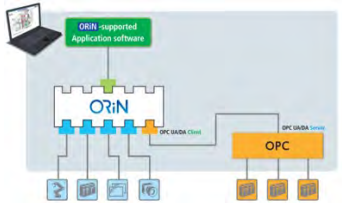
OPC Smart Solution

As ORiN supports OPC UA/UD server and client interface, OPC-based data collection system can be established.

Server



Client



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4 Specifications.

Specifications. (1)

Model		UR40-H-ERU & URAN-40H1	
RFID	Built-in antenna	Horizontal, vertical / circular	
	Reading distance	Reader / antenna	8 m / 6 m *
		Expansion antenna	6 m
	Reading speed / second	700 tags *	
	Supported RFID tags	ISO/IEC 18000-63 (GS1 GEN2)	
	Frequency (EU)	857,7 - 867,5 MHz	
	Channel width / number of channels	600 kHz / 4 ch	
	Transmission output	1 W max.	
	Modulation method	PR-ASK	
	Transmission rate	62,5 - 400 kbps	
	Output adjustment	5 - 30 dBm	

* Test value

Specifications. (2)

Model			UR40-H-ERU & URAN-40H1	
Interface	RS-232C		RS-232C asynchronous	
	USB		USB-COM-Interface	
		Standard	USB 1.1 compatible	
		Port	Micro USB Type B	
	Ethernet		IEEE802.3 10/100 BASE-T	
Power supply			24V DC or 230V AC with optional PSU	
Dimensions (mm)			Reader / antenna	210 x 210 x 54,5
			Expansion antenna	210 x 210 x 37
Weight (g)			Reader / antenna	1750
			Expansion antenna	700
Operational temperature			-20°C to +50°C	

Specifications. (3)

Model	UR40-H-ERU & URAN-40H1	
Protection rating	IP65	
Expansion antenna	Up to 3 antennas, TNC connection	
Standard	Safety	UL61010
	Noise	EN 301-489-1/-3
	Shock resistance	EN 60068

4 Competitor comparison.

Competitor comparison. (1)

Model		DNWA UR40		Impinj Speedway	Zebra FX9600	Siemens R600
RFID Performance	**Built-in Antenna**	**Horizontal, vertical / Circular**		None	None	Circular
	Scanning Distance	Controller	**8m / 6m ***	Antenna dependent	Not published	8m
		Expansion antenna	6m			Not published
	Scanning Speed /Second	700 tags(max) *		430tags *	(Under investigation) 1,250tags	500tags
Dimensions (mm)		200x210x55		190x175x30	273x184x50	258 × 258 × 80
Operating temperature		-20℃～50℃		-20℃～50℃	-20℃～55℃	-25℃～55℃

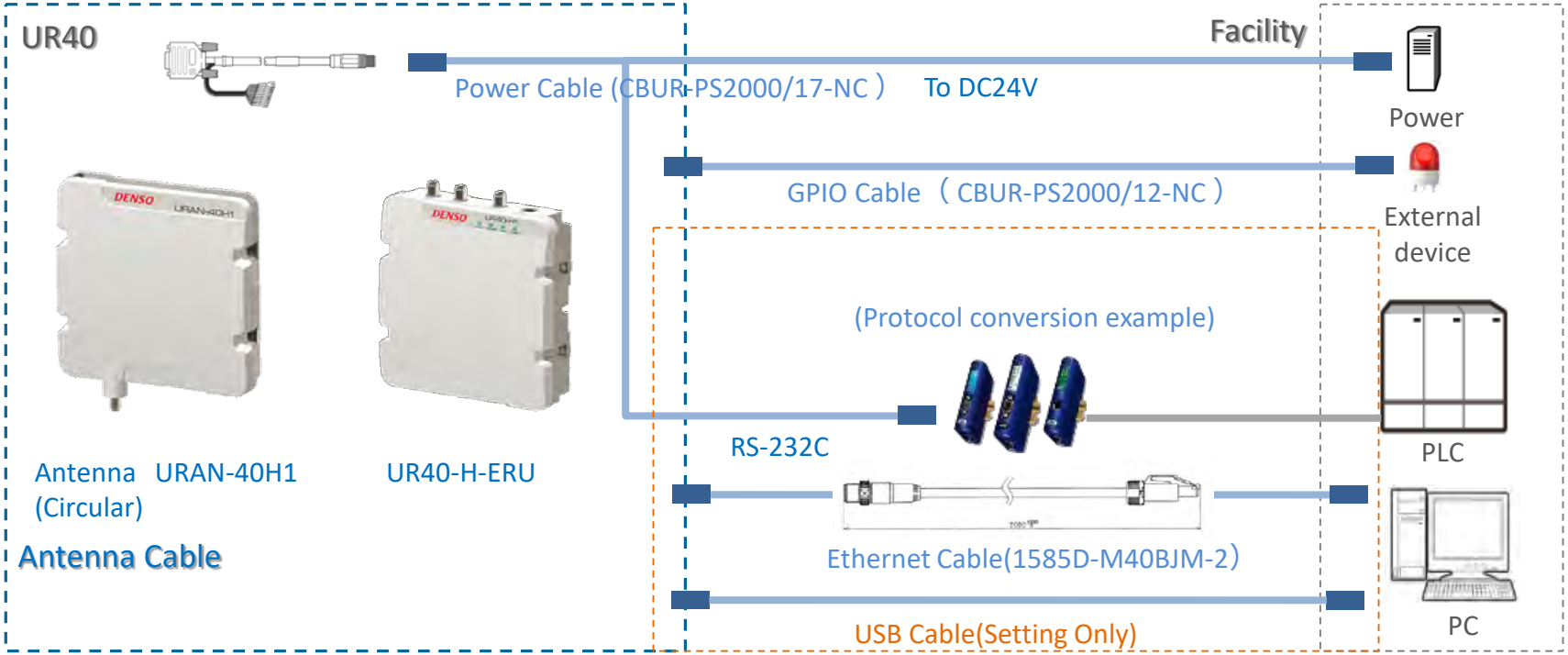
* Test value

Competitor comparison. (2)

Model	DENSO WAVE UR40		Impinj Speedway	Zebra FX9600	Siemens R600
Protection rating	Controller	**IP65**	IP52	IP53	IP65
	Expansion antenna				
Expansion antenna	**x3**		X32	x8	x1
Interface	LAN,RS-232C,USB(setting only),GPIO		LAN,USB,GPIO	LAN,USB,GPIO	LAN,RS422
Standard	Safe	**UL61010**	None	EN60950	EN60950
	Noise	**EN301-489-1/-3**	None	EN301-489-1/-3	EN301-489
	Shock resistance	**EN60068**	Mil-Std-810G	none	EN60068-2-6/-27

5 Product line & external dimensions.

Product line. (1)



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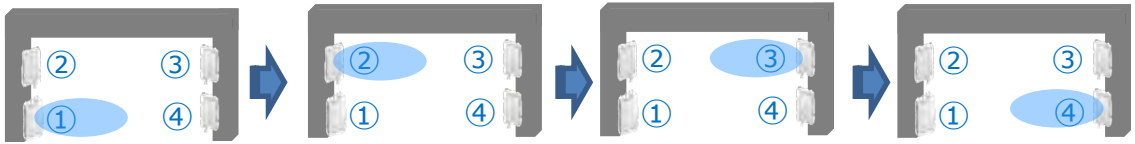
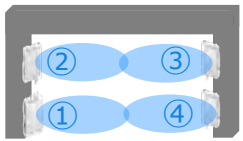
Product line. (2)

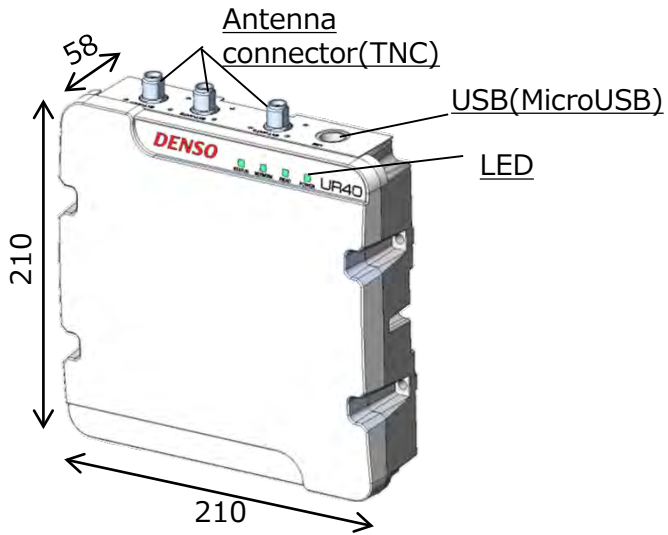
The expansion antenna can expand the communication area at low cost. However, radio waves cannot be emitted simultaneously.

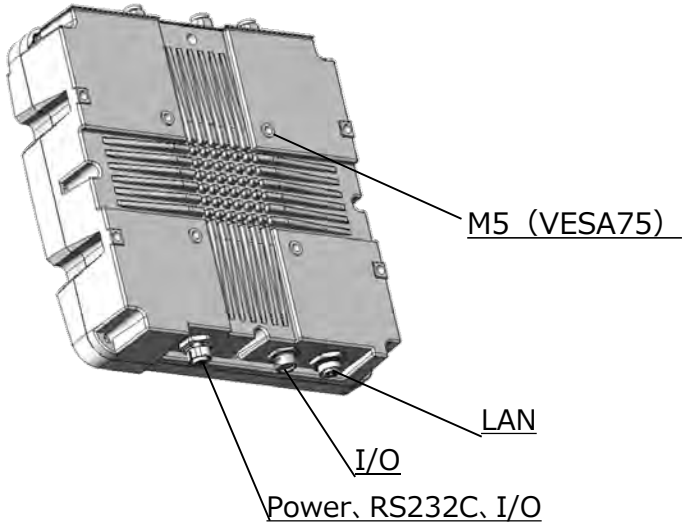


If you want to read many tags in a wide range and in a short time, by using four units, it is possible to radiate radio waves simultaneously without being affected by the surroundings.



External dimensions.





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Ready for the drive?

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