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No. T716301He

Easy ID/5bit system Read System

Reader

Z5-EA05N-__, Z5-EA05P-__ Z5-EA05BKN-__, Z5-EA05BKP-__ Z5-EA05P-FCC-02 Z5-EA05BKP-FCC-02

Manual



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Safety Considerations

(Please read through before use)

Before using this product, please carefully read this instruction manual, pay attention to safety, and handle it properly.

Design considerations

- This product constitutes the identification system together with the ISO 15693 compliant ID tag. Please do not use for other uses.
- Please design the system so that the entire system works on the safe side even if the external power supply malfunction or this product breaks down

♦ Please design the system carefully and not to exceed the range of the equipment specification described in this instruction manual for power supply / usage conditions.

Usage considerations

Use a regulated power supply, e.g. switch-model type.

There is a risk of fire or heat generation exceeds the rated voltage power is being supplied"

igoplus "When wiring the processor, follow the chapters containing the wiring diagrams

closely, and wire all connections properly.

Incorrectly connected wiring may cause malfunction or unexpected problems."

 \blacklozenge When installing, maintaining, troubles etc. concerning this product, be sure to turn off the power, please go.

- \blacklozenge Do not disassemble or modify the processor.
- Which may cause failure,malfunction, injury or fire.
- igodelet To avoid malfunction caused by induction noise, cable should be kept apart from motor or other power cable.
- igoplus When disposing of the processor, treat it as industrial waste.

1. Description

1.1 Description

The 5bit system is an ID system that easily reads 5bit data without any special program.

This Read-Only system needs no particular program to read data, for the Reader reads data of a Data carrier automatically

when the Data carrier come into the reading area of the reader. The 5bit system is an ID system that easily reads 5bit data without any special program.

An ID reader / writer (Z6-01-U) is available for writing data.

The 5bit system uses the ISO 15693 compliant ID tag and occupies the first 3 bytes (00, 01, 02 address) of the tag memory as the data area.

1. 2 System Configuration



1.3 Each role

ID tag	Memory that stores information. Use the first 3bytes in the 5bit system.	
ID Reader A device that reads the information stored in the ID tag. (This product)		
	When the ID tag enters the communicable area, it automatically reads the data and	
	the read data is output as a 5-bit parallel signal.	

Used frequency / 13.56MHz

1.4 5bit system format

ID data is stored in a format for a 5bit system.

The first 1 byte (5 bits of 00 address) is the ID data of the user,

the next 2 bytes (5 bits of 01 and 02 address) are used for data check. This format is called a 5bit system format.

When reading, the ID reader compares and processes the 5bit data stored in the above 3 addresses When the comparison result is positive, After outputting 00 address data as read data, then turn on valid data output. If the comparison result is incorrect,

Blinks LED (low speed) as data check error. At this time the output does not change.

(Example)

	Data bit No.					Writing data	Chook data			
	7	6	5	4	3	2.	1	0	winning uata	
00H address	Х	Х	Х	0	0	1	0	0	04H (*)	-
01H address	Х	Х	Х	1	1	0	1	1	-	1BH(*)
02H address	Х	Х	Х	1	1	0	1	1	-	1BH(*)

X : option

(*) Describe the upper 3 bits assuming "O"

2. Specification

General specification

Tuno oodo	Case color (Orange)	Z5-EA05N	Z5-EA05P	Z5-EA05P-FCC-02		
Type code	Case color (Black)	Z5-EA05BKN	Z5-EA05BKP	Z5-EA05BKP-FCC-02		
Output spec	cification	NPN output	PNP output	PNP output		
Supply volta	ige	DC24V±10% (Including	g ripple)			
Current con	sumption	50mA or less				
Number of	output points	6 points (ID data signal: 5	5 points, data valid signal: 1	l point)		
The output	load voltage	DC30V				
Output load	capacity	Up to 50 mA per output				
Output rema	aining voltage	1.5V or less				
Output circu	uit protection	Short-circuit protection				
Output leak	age current	0.08mA or less				
ID tag data	reading time	50 ms (automatic reading	g)			
Metal embe	dding	Impossible (installation or	n metal surface is acceptab	ole)		
Operating te	mperature / humidity	0~50°C/35~90%RH				
Storage ten	nperature / humidity	0~50°C/35~90%RH				
Data valid L	ED	LED (3 places) ID tag lights on when completing data reading / ID tag blinks with data check error				
Insulation re	esistance	50 M Ω or more (Between	charging unit and case be	tween DC 500 VM)		
Voltage end	lurance	AC 1000 V / 1 minute (Battery Charging Batch and Case)				
Vibration ra	ting	10 to 55 Hz, 1.5 mm amplitude, 2 hours in each of X, Y, Z directions				
Shock ratin	and a second sec	50 G, three in each of the X, Y, Z axial directions, 18 times in total				
Protection of	class	IP67				
Housing ma	iterial	Case: PBT (GF 30%), back cover: aluminum				
Cable		PVC、 \$\$.5, 8XAWG24				
Weight		Body20g cable 50g/m				
Mounting scr	ew / tightening torque	M4 / 1.2N·m				
Applicable regulations		This machine has built-in high-frequency equipment that acquired the following type designation. Z5-EA05N: Ministry of Foreign Affairs Designated No. AC-16019 Z5-EA05P: Ministry of Foreign Affairs Designated No. AC-16020				
Compliance	standard	CE		CE , FCC		

The Z5-EA05BK* series has a black case color, but other specifications are the same as the Z5-EA05 series.

Demension



Cable color

Signal name	1/0	Cable color	Meaning
Power (24V)	IN	White	Power supply input (24V)
Power supply OV	IN	Black	Power supply input (OV)
Read data DO Out I		Brown	Output data read from Bit address [0]
Read data D1	Out	Red	Output data read from Bit address [1]
Read data D2	Out	Yellow	Output data read from Bit address [2]
Read data D3	Out	Green	Output data read from Bit address [3]
Read data D4	Out	Blue	Output data read from Bit address [4]
Data valid DV	Out	Gray	Output signal that indicates the read data is valid

LED display contents

Condition	Meaning
	A state in which data can be correctly read
	from the tag and data is being output. (Keep
	lit for 0.5 to 0.7 seconds even if the tag is out
	of communication area while it is lit.)
	The tag is out of the communication area.
	(All outputs are off.)
Plinking	Output over current condition. (Repeat
	with 50ms on and 50ms off. Over current
(QUICKIY)	protection works.)
Plinking	Data check error condition. (Repeats 0.5
	second lighting and 0.5 second light off.)
(SIUWIY)	(All outputs are off.)

Output Equivalent Circuit Diagram

NPN type Z5-EA05(BK)N-_ _



3. Installation and Wiring

Installation

Surrounding metal

- · Mounting on metal surface: Enabled
- · Embedding in metal: Not permitted

Nonmetallic region when embedded in metal



	Α	20mm
	В	20mm
ĺ	С	Omm
	D	10mm (up to the thickness
		of the antenna)

Mutual interference

When installing the ID reader, in order to avoid mutual interference between ID readers

please set it at an interval more than the value shown in the table below.



Parallel	60 mm	
Face to face	100 mm	

PNP type : Z5-EA05(BK)P-_ _ Z5-EA05(BK)P-FCC-02



Cable bend radius



When cables are bent and wired, Please secure a bending radius of 33mm or more. Do not pull the cable with excessive

force.

Tightening torque

1.2N·m

Wiring Diagram



Attention

- Maximum cable length between Reader and external device is 10 m.
- Z5-EA05(BK)P-FCC-02 is FCC certified for 2m cable length only.

There is a 2m cable, but it is shorter than 2m because of the need to attach the included ferrite core. Connect the included noise filter to the end of the power supply wire (white or black). For more information, please refer to the next page.

About FCC Certification

Z5-EA05P-FCC-02 and Z5-EA05BKP-FCC-02 complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Installation of Z5-EA05(BK)P-FCC-02

The ferrite core and the noise filter must be properly installed as follows in order to comply with the FCC [Installation]



Wiring the power lines

The cable used for the wiring from the noise filter to the power supply must be prepared by the customer and wrapped around a 6T ferrite core clamp.

Recommended Cable $\cdot \ \cdot \ \cdot$ AWG24 or 26. Any color. About 70cm

CAUTION

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

4. Communication with the External Unit

Data Reading

Timing Chart 1





Timing Chart 2

When the ID tag O enters the communicable area during the output data holding period of the ID tag O



[Procedure for Communication]

(1) Reader reads the data of the Data carrier automatically as soon as the Data carrere comes into the communication area of the reader and set the read data.

(2) The host computer should start reading from DO to D7 of Reader after checking the data valid signal turns ON.

≪ Note ≫

- If there are multiple ID tags in the communication area, data valid (DV) will not be turned on.
- If a data check error occurs, the data valid (DV) remains OFF and the read data is not output. In this case, the LED flashes (0.5 second lights on, 0.5 second off).

5. Available ID tag and reading distance



Applicable Data carrier

Z1-AA04-02K, Z1-B011-128

A distance of 200 mm or more is required between the tag and its surrounding A. (See below)

· Metal attachment refers to a state where it is installed directly on a metal (C:0 mm). Nonmetallic attachment refers to a state in which the metal and the tag are installed with securing a certain distance (C) or more on the back side. Communication distance and axis deviation values are all reference values.



Type code : Ζ1-CB27-112 Size : φ 27 x 0.76 mm Non-metallic area(A: 70mm)

Mounti	ing	Metal mounting (C:Omm)	Non metal mounting(C:20mm)
Commu distance	nication e (mm)	impossible	020
Center offset	Destance Omm	_	± 11
(mm)	4mm	—	± 11
	8mm	—	± 11
	12mm	—	±11
	16mm	_	± 9
	20mm	—	± 3

Type code : Z1-CB45-112 Size : \$\overline{45 x 0.76 mm}					
		Non-metallic area(A : 85mm)			
Mount	ing	Metal mounting(C:Omm)	Non metal mounting(C:20mm)		
Commu distance	nication e (mm)	impossible	025		
Center offset	Destance Omm	_	±15		
(mm)	5mm	—	± 15		
	10mm	—	± 15		
	15mm	—	± 13		
	20mm	_	± 11		

25mm

Type code : Z1-BB10-112 Size : <i>ф</i> 10 x 0.76 mm						
		Non-metallic a	rea(A:70mm)			
Mount	ing	Metal mounting(C:Omm)	Non metal mounting(C:20 mm)			
Commu distance	nication e (mm)	04	06			
Center	Destance Omm	± 5	± 5			
offset	2mm	± 4	± 5			
(mm)	4mm	± 3	± 4			
	6mm	—	± 3			

Wireless Power Supply by **В&РЦЈ∫** К.К.

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* Info may change the mention contents such as specifications without a notice. Thank you for understanding

* Please refer to instruction manual or the user's guide. It can be download by HP.

Size : 30 × 30 × 6 mm							
		Non-metallic a	rea(A:70mm)				
Mount	ing	Metal mounting (C: Omm)	Non metal mounting (C: 20mm)				
Comm distan	unication ce(mm)	010	012				
Center offset	Distance Omm	± 5	± 6				
(mm)	4mm	± 5	± 7				
	8mm	± 4	± 7				
	10mm	± 0	± 6				
	12mm	_	± 0				

Type code : Z1-B011-128 Size : <i>ф</i> 50 x 8.3 mm					
Non-metallic area (A : 70mm)					
Mouting		Metal mounting (C: Omm)		Non metal mounting (C: 20mm)	
Moving direction of Data carrier.		Width- ways	Length- ways	Width- ways	Length- ways
Communication distance (mm)		0~12		0~12	
Center offset (mm)	Destance Omm	±15	±7	±15	±7
	5mm	±15	±8	±15	±8
	10mm	±10	±5	±10	±5
	12mm	±Ο	±0	±Ο	±0

Z1-B011-128 has different offset depending on the moving direction of Data carrier. When it's installed as described below, up and down movement means vertical direction, left and right movement means lateral direction.



± 7



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