Wireless Production Control Indicator
Display
[21D-429D]
[21D-265D]
[21D-485D]
Operation Manual
V1.80

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[21D] Notational Conventions for Series Model

Set (Controller ＋Display)

	1 Machine types		2 Item		3 Communication		4 Display type		5 LED color
21	***	-	***	-	***	-	***	-	***
	D		2		429		123		G
	D5		3		265		523		R
	DW		4				124		
	D5W						524		
	DE						152		
	DEW						15		
							12		
							52		
							23		
							24		
							1523		
							1524		

For the Controller only, the contents of 3Communication are as follows:

429C

265C

For the Display only, the contents of 3Communication are as follows:

429D

265D

485D

1 Machine types: D→Large-sized 4-digit Single side, D5→Large-sized 5-digit Single side,
DW→Large-sized 4-digit Double side
D5W→Large-sized 5-digit Double side,
DE→Middle-sized 5-digit Single side, DEW→Middle-sized 5-digit Double side

2 Item : 2-4 items

3 Communication: 429→Specific small-current radio wave
265→Micro radio wave
485→Wire-type
*For the 485 type, only the Display is available.

4 Display type : 1→Target 2→Actual 3→Advancement 4→Accomplishment rate 5→Plan

5 LED color : G→Green R→Red
*For the Middle-sized type, only red color is available.

To use this product in safety and comfort, (Be sure to read)

Thank you very much for purchasing our product.

This operation manual contains the precautions necessary for preventing an accident caused by the use in an improper ways.

Read it carefully while thoroughly understanding the meanings of pictorial symbols.

⚠ Warning	Using in an improper way while ignoring this pictorial symbol might cause a serious human injury.
⚠ Caution	Using in an improper way while ignoring this pictorial symbol might cause a human injury or property damage.

■ The type of precautions that should be observed, are classified using the following pictorial symbols.

⚠	This pictorial symbol indicates a “Reminder” to attract an attention.
⊘	This pictorial symbol indicates a “Prohibition” to prohibit a certain action.

⚠ Caution

■ For the usage to be commonly applied in all the models:

Avoid using in a place with a plenty of humidity or dust. Otherwise, absorbing a dust or water contents may cause machine trouble, fire or electrical shock. ⊘

■ For handling this machine:

● This is the electronic devise or wireless radios composed of the precision parts. Do not overhaul/remodel. It may cause accident or machine trouble. ⊘

⚠ Warning

■ For handling this machine:

● Do not use this product for the application needing the high reliability related to human lives.
● Do not use this product in a place where it is uncertain about whether or not radio waves reach.

■ For handling the power source:

Be sure to observe the following precautions to prevent the AC adapter and Power cord from being heated, damaged, or ignited.

Do not approximate the AC adapter and Power cord to a fire, or do not put them into a fire. The AC adapter and Power cord can be broken or ignited, resulting in an accident.
● You can use the AC adapter and main body only with the specified power voltage to protect them from the damage and fire accident.
● Do not use the AC adapter and main body in a wettable atmosphere. It may cause accidents or troubles such as heating, igniting or electrical shock.
● Do not touch the AC adapter, main body, Power cord and Plug outlet with wet hands. It may cause an accident such as electrical shock, etc.
● Do not damage the Power cord. A short-circuit or heating may cause a fire or electrical shock.
● Do not use the Power plug with dust being adhered. A short-circuit or heating may cause a fire or electrical shock.
● Do not give a strong impact onto the AC adapter. It may cause an accident or machine failure.
● If you find out deformed AC adapter, do not use it. It may cause an accident or machine failure.
● Do not use this product in a place where flammable gas can be generated. It may cause a fire accident.
● Never overhaul the AC adapter. It may cause an accident or machine failure.

■ When trouble happens during use:

Since it may cause a fire or electrical accident, disconnect a power plug, and immediately ask outlet store or our company to repair.

When smoke or abnormal odors are generated, stop using, immediately disconnect a power plug, and ask outlet store or our company to repair.
● Once the Power cord is damaged, do not use it. Using it as is may cause a fire or electrical accident.

※This operation manual is translated a product for Japan into English/
This product is based on Japanese Wireless law.

Contents

1. General Description

1-1. Scope

The specifications are applied to the [21D] SERIES wireless production display system.

1-2. Outline

The [21D] SERIES wireless production display system consists of the Controller and the Display.

Since wireless communication is available between controller and display system, there is no need to make wiring and you can take actions with ease even if layout is changed.

Various types of [21D] Series Displays available allow you to select anything of size, digit-number, Single side/Double side and display items at your own way.

Also, because the [21D] Series Display will receive and display the data corresponding to the specified communication format, optional data can also be displayed via the modem from the computer on behalf of the Controller of either [21D-429C] or [21D-265C].

1-3. Machine types

Types	Large-sized 21D (4-digit and 5-digit display)	Middle-sized 21DE (5-digit display)
2-command type	21D-2	21DE-2
3-command type	21D-3	21DE-3
4-command type	21D-4	21DE-4
2-command double side type	21DW-2	21DEW-2
3-command double side type	21DW-3	21DEW-3
4-command double side type	21DW-4	21DEW-4
2-command 5-digit type	21D5-2	————
3-command 5-digit type	21D5-3	————
4-command 5-digit type	21D5-4	————
2-command 5-digit double side type	21D5W-2	————
3-command 5-digit double side type	21D5W-3	————
4-command 5-digit double side type	21D5W-4	————

1-4. Display type

The 21D series allows you to select several kinds of display types through the combination of “Target”, “Actual”, “Advancement”, “Accomplishment rate” and “Plan”.
You can select the display type of acrylic plate character among the following types.
*To specify the motion type, use the Controller.
1: Target 2: Actual 3: Advancement 4: Accomplishment rate 5:Plan

Commands	Types	Numeric representation
3-command	Target/Actual/Advancement	123
	Plan/Actual/Advancement	523
	Target/Actual/Accomplishment rate	124
	Plan/Actual/Accomplishment rate	524
	Target/Plan/Actual	152
2-command	Target/Plan	15
	Target/Actual	12
	Plan/Actual	52
	Actual/Advancement	23
	Actual/Accomplishment rate	24
4-command	Target/Plan/Actual/Advancement	1523
	Target/Plan/Actual/Accomplishment rate	1524

1-5. Communication

The 21D SERIES Display lets you select the following communication types.
The Display is used only for receiving.

Communication	Contents
429	Communication method by means of Specific small-current radio wave Communication range is about 100 to 300m
265	Communication method by means of micro radio waves Communication range is about 20 to 30m.
485	Communication method by means of RS-485 Communication Communication range is about 1.2km. Connected with a twisted pair cable. Cannot be used as a set combined with 21D series Controller.

2. Specifications

2-1. 3-command type

<3-command large-sized type>

		21D－3	21DW－3	21D5－3	21D5W－3
Indicator character		(4-digit x 2-line)+(Symbol+ 3-digit x 1-line) or 4-digit x 3-line		(5-digit x 2-line) +(Symbol +4-digit x 1-line) or 5-digit x 3-line	
Display surface		Single side	Double side	Single side	Double side
Indicator element		High-luminance 7-segment LED display			
Character		110H x 60wmm			
Size of case		600W x 600H x 80Dmm			
Power source		AC100V (Max input range: AC85 – 125V)			
Working environment		Temperature: 0- 50℃ Humidity:85% or less(no dew drop)	Temperature: 0- 40℃ Humidity:85% or less(no dew drop)	Temperature: 0- 50℃ Humidity:85% or less(no dew drop)	Temperature :0-40℃ Humidity:85% or less(no dew drop)
Communication	429	For receiving only (Use optional one wave of 40 waves ranging 429.2500 - 429.7375MHz.)			
	265	For receiving only (Use optional one wave of 41 waves ranging 264.500 - 265.500MHz.)			
	485	For receiving only (RS485 x 1)			
Power consumption		MAX47W	MAX88W	MAX58W	MAX111W
Weight		About 9.0kg	About 9.8kg	About 9.2kg	About 10.1kg

<3-command middle-sized type>

		21DE-3	21DEW-3
Indicator character		(5-digit x 2-line)+(Symbol+4-digit x 1-line) or 5-digit x 3-line	(5-digit x 2-line)+(Symbol+4-digit x 1-line) or 5-digit x 3-line
Display surface		Single side	Double side
Indicator element		High-luminance dispersion type red-color 7-segment LED	
Character		55H x 30Wmm	
Size of case		400W x 360H x 65Dmm	
Power source		AC100V (Max input range: Ac85 - 125V)	
Working environment		Temperature: 0-50℃ Humidity: 85% or less(no dew drop)	
Communication	429	For receiving only (Use optional one wave of 40 waves ranging 429.2500～ 429.7375MHz.)	
	265	For receiving only (Use optional one wave of 41 waves ranging 264.500～ 265.500MHz.)	
	485	For receiving only (RS485 x 1)	
Power consumption		MAX19W	MAX34W
Weight		About 4.2kg	About 4.5kg

2-2. 2-command type

<2-command large-sized type>

		21D-2	21DW-2	21D5-2	21D5W-2
Indicator character		(4-digit x 1-line)+(Symbol+3-digit x 1-line) or 4-digit x 2-line		(5-digit x 1-line)+(Symbol+4-digit x 1-line) or 5-digit x 2-line	
Display surface		Single side	Double side	Single side	Double side
Indicator element		High-luminance 7-segment LED			
Character		110H x 60Wmm			
Size of case		600W x 445 H x 80Dmm			
Power source		Ac100V（Max input range:Ac85 – 125V）			
Working environment		Temperature:0-50℃ Humidity:85% or less (No dew drop)		Temperature:0-40℃ Humidity:85% or less (No dew drop)	
Communication	429	For receiving only (Use optional one wave of 40 waves ranging 429.2500 - 429.7375MHz.)			
	265	For receiving only (Use optional one wave of 41 waves ranging 264.500 - 265.500MHz.)			
	485	For receiving only (RS485 x 1)			
Power consumption		MAX38W	MAX63W	MAX44W	MAX84W
Weight		About 7.2kg	About 7.6kg	About 7.4kg	About 8.1kg

＜2-command middle-sized type＞

		21DE-2	21DEW-2
Indicator character		(5-digit x 1-line)+(Symbol+4-digit x 1-line) or 5-digit x 2-line	(5-digit x 1-line)+(Symbol+4-digit x 1-line) or 5-digit x 2-line
Display surface		Single side	Double side
Indicator element		High-luminance dispersion type red-color 7-segment LED	
Character		55H x 30Wmm	
Size of case		400W x 285H x 65Dmm	
Power source		AC100V (Max input range: AC85 - 125V)	
Working environment		Temperature:0-50℃　　Humidity:85% or less（No dew drop）	
Communication	429	For receiving only (Use optional one wave of 40 waves ranging 429.2500 - 429.7375MHz.)	
	265	For receiving only (Use optional one wave of 41 waves ranging 264.500 - 265.500MHz.)	
	485	For receiving only (RS485 x 1)	
Power consumption		MAX15W	MAX25W
Weight		About 3.7kg	About 3.9kg

2-3. 4-command type

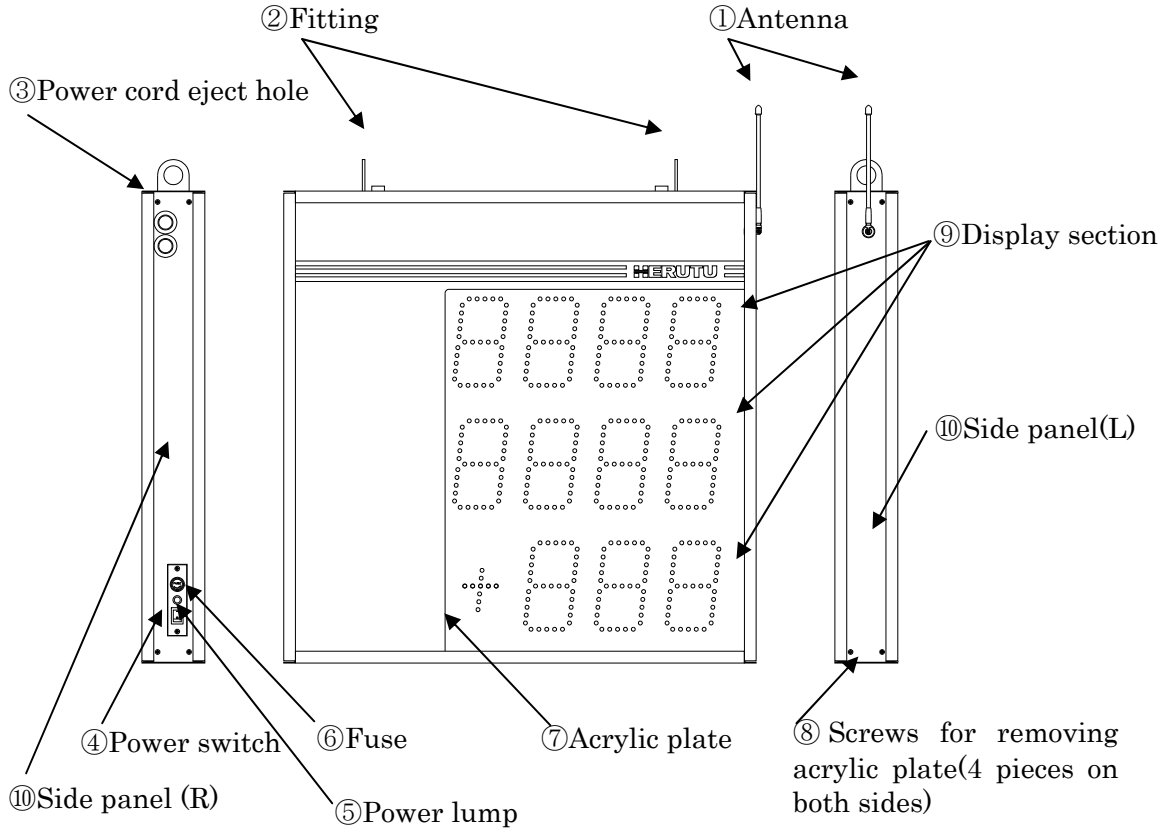
<4-command large-sized type>

		21D-4	21DW-4	21D5-4	21D5W-4
Indicator character		(4-digit x 3-line)+(Symbol+3-digit x 1-line) or 4-digit x 4-line		(5-digit x 3-line)+(Symbol+4-digit x 1-line) or 5-digit x 4-line	
Display surface		Single side	Double side	Single side	Double side
Indicator element		High-luminance 7-segment LED			
Character		110H x 60Wmm			
Size of case		600W x 755H x 80Dmm			
Power source		AC100V (Max input range: AC８５ - １２５V)			
Working environment		Temperature:0-50℃ Humidity:85% or less(No dew drop)		Temperature:0-40℃ Humidity: 85% or less（No dew drop）	
Communication	429	For receiving only (Use optional one wave of 40 waves ranging 429.2500 - 429.7375MHz.)			
	265	For receiving only (Use optional one wave of 41 waves ranging 264.500 - 265.500MHz.)			
	485	For receiving only (RS485 x 1)			
Power consumption		MAX59W	MAX111W	MAX82W	MAX141W
Weight		About 11.0kg	About 12.0kg	About 11.4kg	About 12.4kg

<4-command middle-sized type>

		21DE-4	21DEW-4
Indicator character		(5-digit x 3-line)+(Symbol+4-digit x 1-line) or 5-digit x 4-line	(5-digit x 3-line)+(Symbol+4-digit x 1-line) or 5-digit x 4-line
Display surface		Single side	Double side
Indicator element		High-luminance dispersion type red-color 7-segment LED	
Character		55H x 30Wmm	
Size of case		400W x 435H x 65Dmm	
Power source		AC100V (Max input range:AC85 - 125V)	
Working environment		Temperature: 0-50℃　　Humidity:85% or less (No dew drop)	
Communication	429	For receiving only (Use optional one wave of 40 waves ranging 429.2500 - 429.7375MHz.)	
	265	For receiving only (Use optional one wave of 41 waves ranging 264.500 - 265.500MHz.)	
	485	For receiving only (RS485 x 1)	
Power consumption		MAX24W	MAX44W
Weight		About 5.0kg	About 5.4kg

3. Names and Functions of each section



①Antenna	!/4 λ Antenna
②Fitting	To hang display 2-point
③Signal code eject hole	To draw signal cord
④Power cord eject hole	To draw power cored. (The product is shipped with Power cord being mounted.)
⑤Power lump	Illuminated at power on
⑥Power switch	Switch to supply power
⑦Fuse	Fuse
⑧Acrylic plate	Differrent from Type （Shipment time fixation）
⑨Screws for removing acrylic plate	Screws for removing acrylic plate
⑩Side panel	Fixed main body with4 pieces.

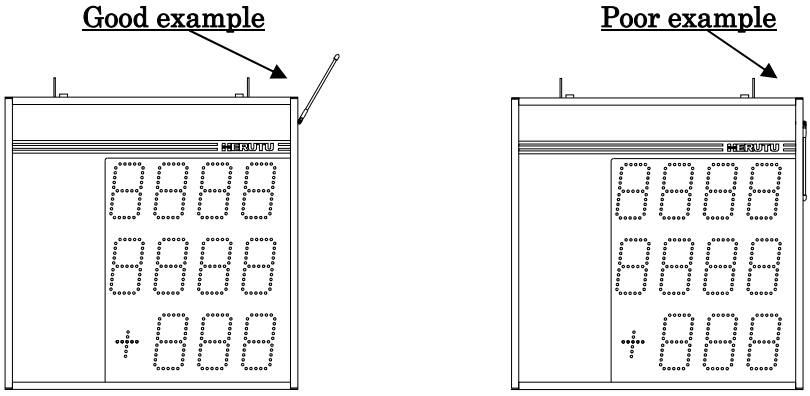
4. Setting and Installation methods

4-1. Installing the Display

Install the Display in a place so that it can be easily seen from the Controller. For the installation in a place with a poor visibility, select an installation site without obstacles near the antenna as far as possible.

Besides, direct the antenna diagonally upward. Do not direct it downward while being in parallel to the side of display.

By nature, the LED is most visible from the front. Install it at an angle so that you can see it from the front.



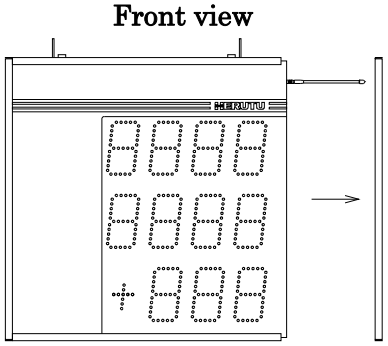
4-2. Connecting the Power cord

The product is shipped with Power cord being mounted.

If you need to disconnect/connect the Power cord due to some reasons, connect the Power cord according to the manual.

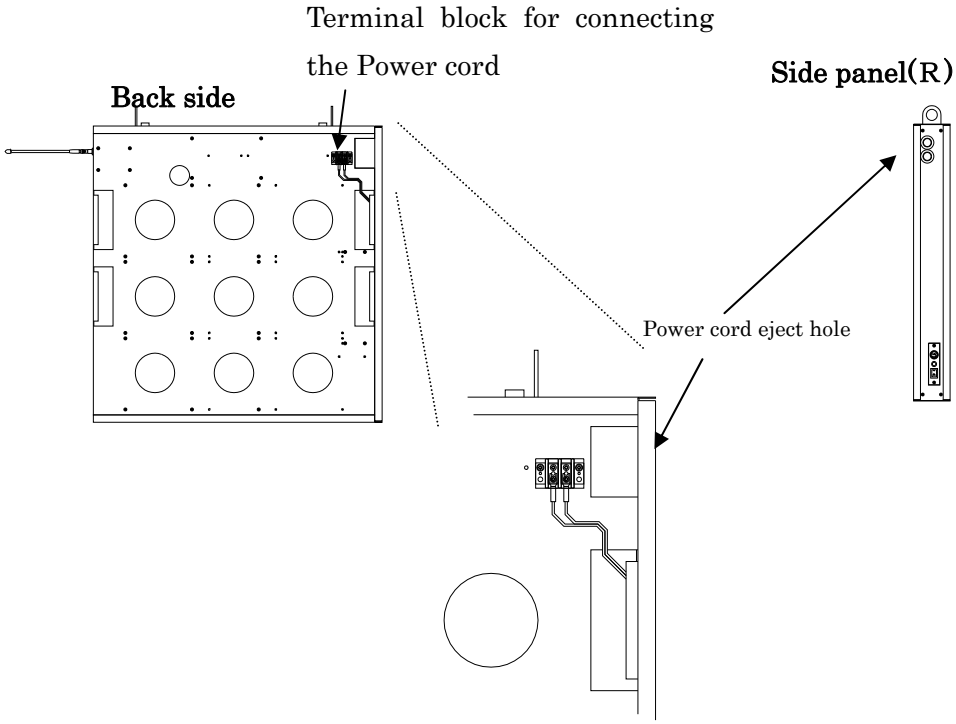
①Disconnect the side panel(L).

Make antenna arranged perpendicular to the side panel (L), and remove the screws (4 pieces) for acrylic plate fixing the side panel (L). Move the side panel (L) to remove it in parallel to the antenna so that it cannot be caught by that antenna.



②Connect the Power cord.

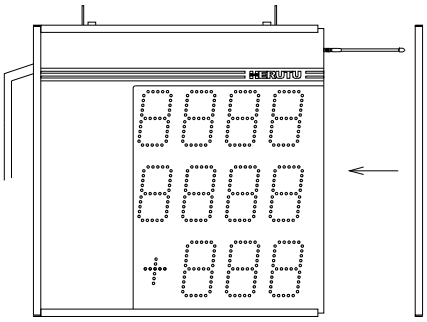
The terminal block for connecting the power source is at back side of display. Slide the acrylic plate at back side to remove the terminal block.



The Power cord eject hole is at side panel (R). Connect the power cord to the terminal block only after inserting the power cord through the eject hole. (Connecting it to the terminal block without inserting the power cord through the power cord eject hole does not allow the acrylic plate at back side to be closed.)

Terminal block for connecting the Power cord M3

③Restore the acrylic plate and side panel to their original places.



4-3. Connecting the Communication cable for 485 Communication type

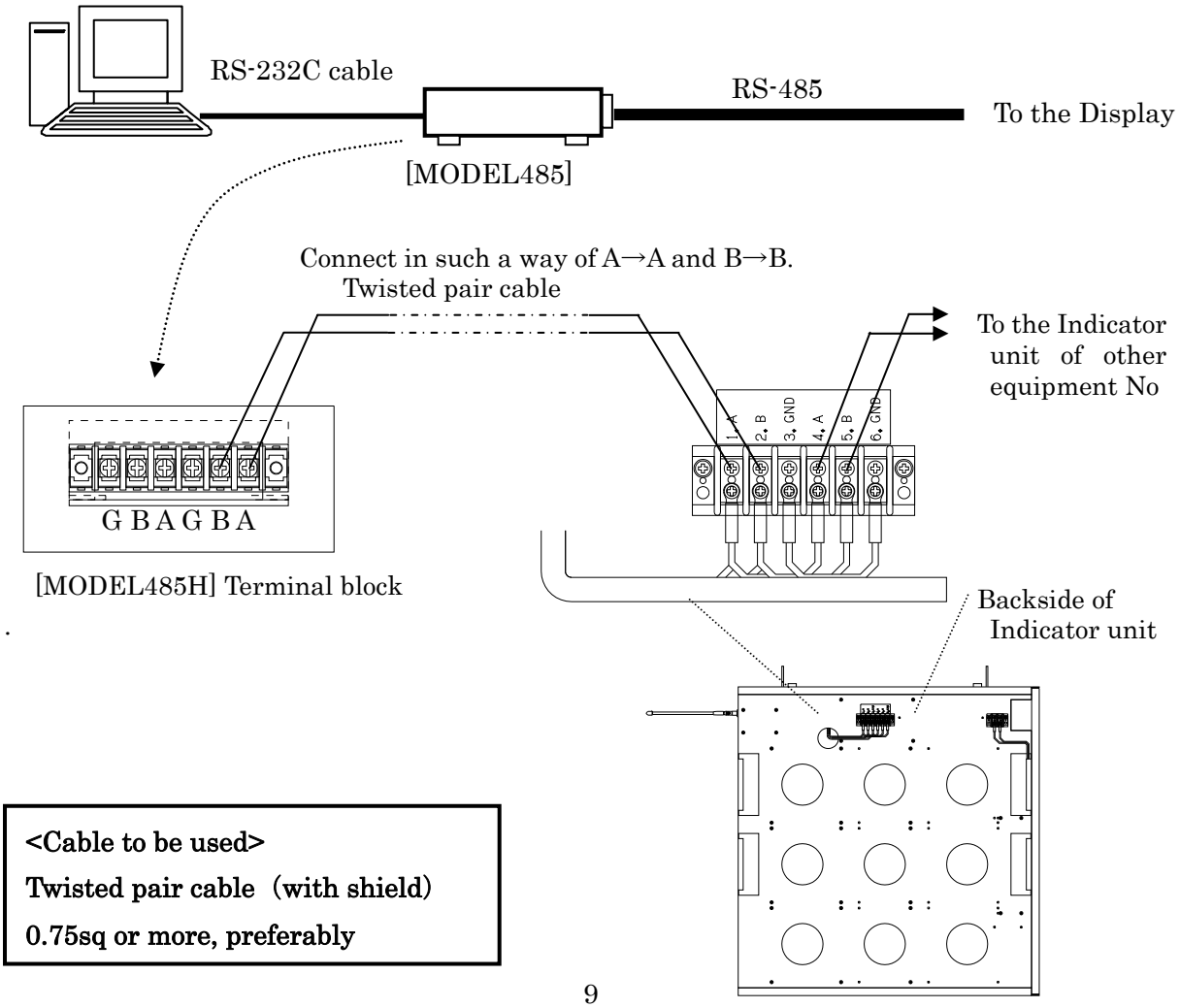
The description in this page is only required when using with the 485 Communication type.

The 485 Communication type cannot be used as a set combined with [21D] Series Controller. The computer transmits the RS232C signal data via the wired modem [MODEL 485H] to the Display.

The RS-485 communication line should be connected in daisy chain connection (one after another) using a twisted pair cable.

Connect the Terminal block [A] of [MODEL485H] to the Terminal block [A] of Indicator unit, and Terminal block [B] to the Terminal block [B] of Indicator unit. Also for the connection between Indicator units, the terminal [A] should be connected to terminal [A] and terminal [B] to terminal [B] in the same manner as above.

Remove the side panel of display and acrylic plate at backside while referring to "4-2. Connecting the Power cord", and connect them to the terminal block for RS-485 signal lest you should mistake the contents of signal.



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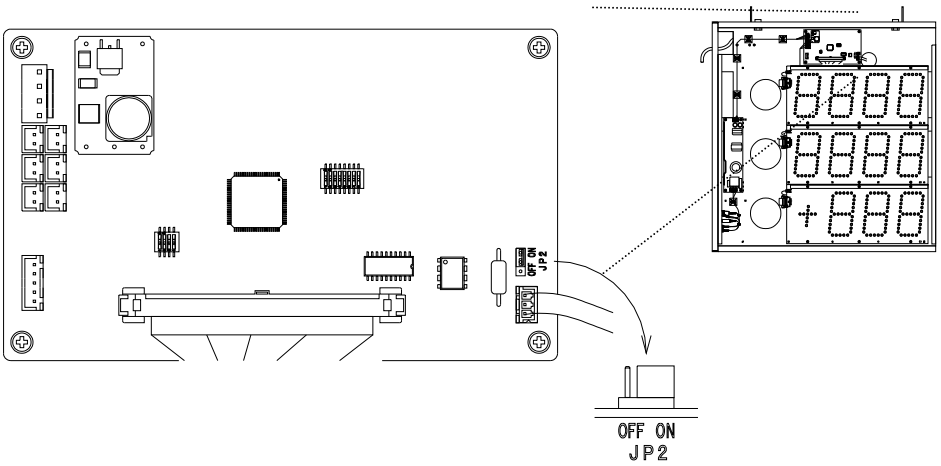
<Cable to be used>
Twisted pair cable (with shield)
0.75sq or more, preferably

For the RS-485 line, the terminating resistance should be set at both ends of line. Turn on the terminating resistance for the Indicator unit connected at end using a daisy chain. To turn on/off the terminating resistance, use the jumper switch on the CPU board inside the Indicator unit.



Front view of Indicator unit

ON/OFF of Jumper 2(JP2) for the terminating resistance

This page and onward describe the setting for the communication (Communication channel and Equipment No.).

If you use as a set combined with either of "21D" Series Controller "21D-429C" or "21D-265C", setting has been completed before shipment. There is no need to make setting stated below.

Communication between Controller and Display is only available when the same "Communication channel" and the same "Equipment No." are set.

4-4. Setting the communication channel

The communication channel can be set by the rotary switch of wireless modem, that is, either of

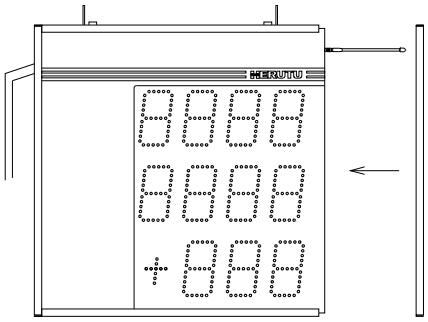
"TELEMATE III RB" (429 Communication type) or

"WCS-300R" (265 Communication type)

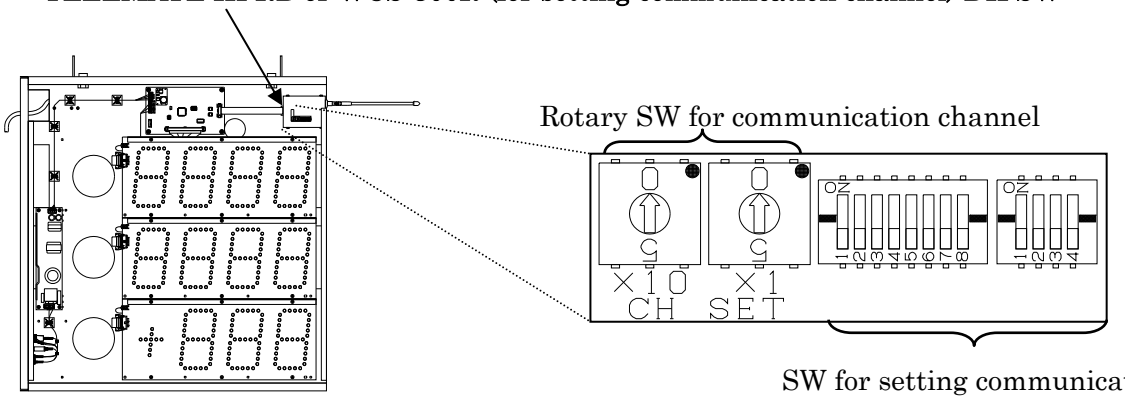
built in the Display. Set the same channel as the one of equipment at Transmitter.

The wireless modem is at front of Display. Slide the acrylic plate at front to remove that modem. Turn off the power source of Display before changing the communication channel.

Front view



TELEMATE III RB or WCS-300R (for setting communication channel) DIPSW



※Since the communication setting SW for TELEMATE III RB and WCS-300R is fixed before shipment, do not change it. (ALLOFF)

※ For the 485 Communication type, TELEMATE III and WCS-300 are not built in.

●429 Communication type

Channel No.	Frequency（MHz）	Channel No.	Frequency（MHz）
01	429.2500	21	429.5000
02	429.2625	22	429.5125
03	429.2750	23	429.5250
04	429.2875	24	429.5375
05	429.3000	25	429.5500
06	429.3125	26	429.5625
07	429.3250	27	429.5750
08	429.3375	28	429.5875
09	429.3500	29	429.6000
10	429.3625	30	429.6125
11	429.3750	31	429.6250
12	429.3875	32	429.6375
13	429.4000	33	429.6500
14	429.4125	34	429.6625
15	429.4250	35	429.6750
16	429.4375	36	429.6875
17	429.4500	37	429.7000
18	429.4625	38	429.7125
19	429.4750	39	429.7250
20	429.4875	40	429.7375

●265 Communication type

Channel No.	Frequency（MHz）	Channel No.	Frequency（MHz）
00	264.500	21	265.025
01	264.525	22	265.050
02	264.550	23	265.075
03	264.575	24	265.100
04	264.600	25	265.125
05	264.625	26	265.150
06	264.650	27	265.175
07	264.675	28	265.200
08	264.700	29	265.225
09	264.725	30	265.250
10	264.750	31	265.275
11	264.775	32	265.300
12	264.800	33	265.325
13	264.825	34	265.350
14	264.850	35	265.375
15	264.875	36	265.400
16	264.900	37	265.425
17	264.925	38	265.450
18	264.950	39	265.475
19	264.975	40	265.500
20	265.000		

●485 Communication type

The 485 Communication type does not have channel setting. Only the setting for Equipment No is required. See the next article and onward to set the Equipment No.

4-5. Setting the equipment No.

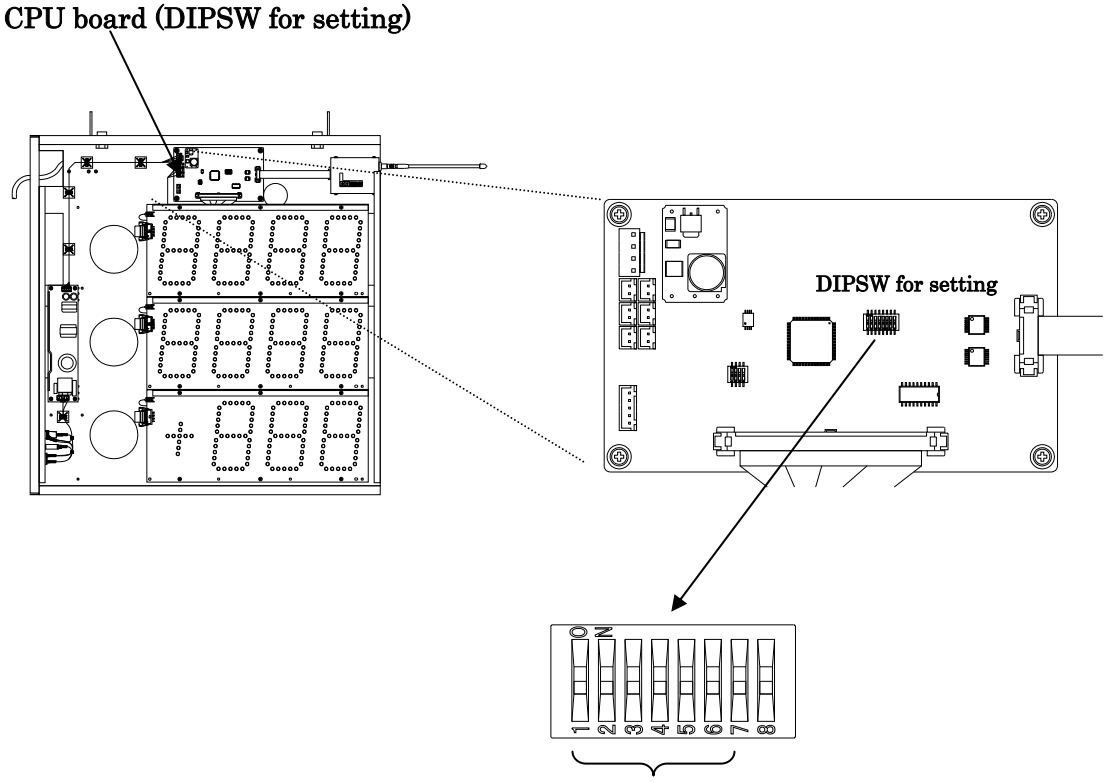
Use the DIP Switch on CPU board built in the Display to set the Equipment No.

Slide the acrylic plate at front to remove the CPU board at front of Display. Set the Equipment No, which is precisely matched with the contents of the communication format transmitted from the equipment at transmitter.

Use the DIPSW 1 to 7 on CPU board to set the Equipment No.

The setting ranges are 0 to 99.

Turn off the power source before changing the setting.



DIPSW 1 - 7 for setting

Equipment No.

*For the 485 Communication type, TELEMATE III and WCS-300 are not built in.

DIPSW 1→ON, 0→OFF

Equipment No.	DIPSW 1234567	Equipment No.	DIPSW 1234567	Equipment No.	DIPSW 1234567	Equipment No.	DIPSW 1234567
ID000	0000000	ID025	1001100	ID050	0100110	ID075	1101001
ID001	1000000	ID026	0101100	ID051	1100110	ID076	0011001
ID002	0100000	ID027	1101100	ID052	0010110	ID077	1011001
ID003	1100000	ID028	0011100	ID053	1010110	ID078	0111001
ID004	0010000	ID029	1011100	ID054	0110110	ID079	1111001
ID005	1010000	ID030	0111100	ID055	1110110	ID080	0000101
ID006	0110000	ID031	1111100	ID056	0001110	ID081	1000101
ID007	1110000	ID032	0000010	ID057	1001110	ID082	0100101
ID008	0001000	ID033	1000010	ID058	0101110	ID083	1100101
ID009	1001000	ID034	0100010	ID059	1101110	ID084	0010101
ID010	0101000	ID035	1100010	ID060	0011110	ID085	1010101
ID011	1101000	ID036	0010010	ID061	1011110	ID086	0110101
ID012	0011000	ID037	1010010	ID062	0111110	ID087	1110101
ID013	1011000	ID038	0110010	ID063	1111110	ID088	0001101
ID014	0111000	ID039	1110010	ID064	0000001	ID089	1001101
ID015	1111000	ID040	0001010	ID065	1000001	ID090	0101101
ID016	0000100	ID041	1001010	ID066	0100001	ID091	1101101
ID017	1000100	ID042	0101010	ID067	1100001	ID092	0011101
ID018	0100100	ID043	1101010	ID068	0010001	ID093	1011101
ID019	1100100	ID044	0011010	ID069	1010001	ID094	0111101
ID020	0010100	ID045	1011010	ID070	0110001	ID095	1111101
ID021	1010100	ID046	0111010	ID071	1110001	ID096	0000011
ID022	0110100	ID047	1111010	ID072	0001001	ID097	1000011
ID023	1110100	ID048	0000110	ID073	1001001	ID098	0100011
ID024	0001100	ID049	1000110	ID074	0101001	ID099	1100011

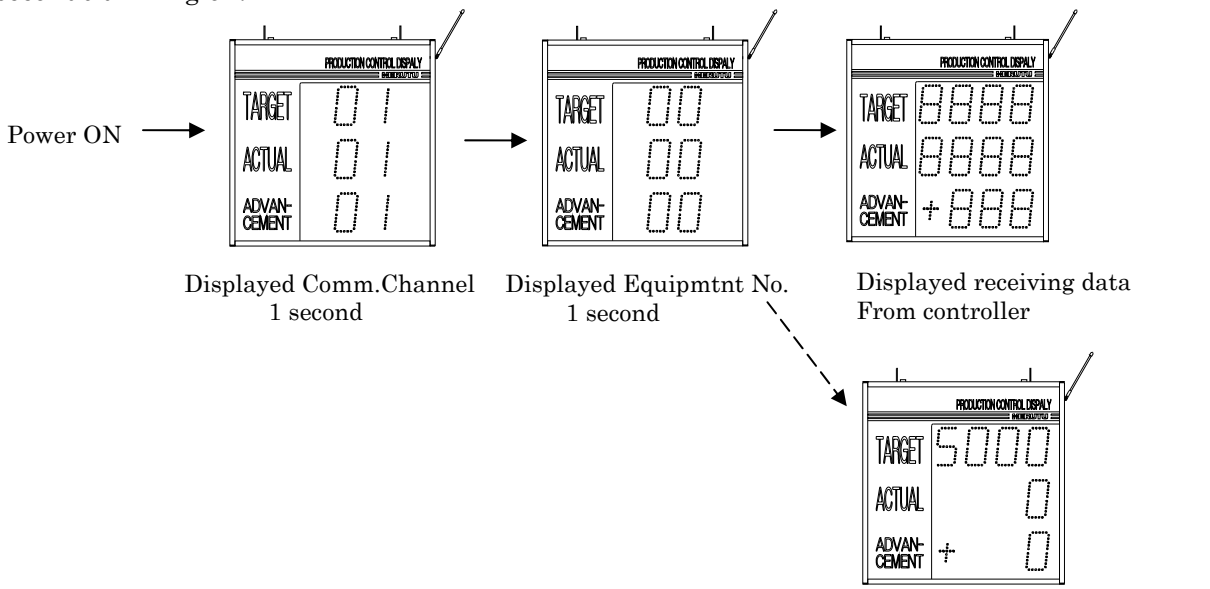
*If they are set out of the range, ID000 is available.

5.Operation

If installation and setup of display and controller can be performed, please turn on each power supply. Communication channel and equipment No. is displayed each for 1 second.

Display changes the contents received when the date was received from controller.

If the display doesn't receive the data from controller, LED light off the all-points light after 3 seconds turning on.



Displayed Comm.Channel
1 second

Displayed Equipmtnt No.
1 second

Displayed receiving data
From controller

If the display doesn't receive the data from controller, LED light off the all-points light after 3 seconds turning on.

If the display doesn't receive the data normally for 30 seconds except immediately after power supply, LED light off the all-points light.*1

If there are above situation, please arrange installation and setup of display and controller.

*1:It is only case of setting that Display Latch of function setting is "No".

If you use "Direct Display" way, it is only case of setting that Command is "lights off after 30 seconds"

6. Applications - Direct display

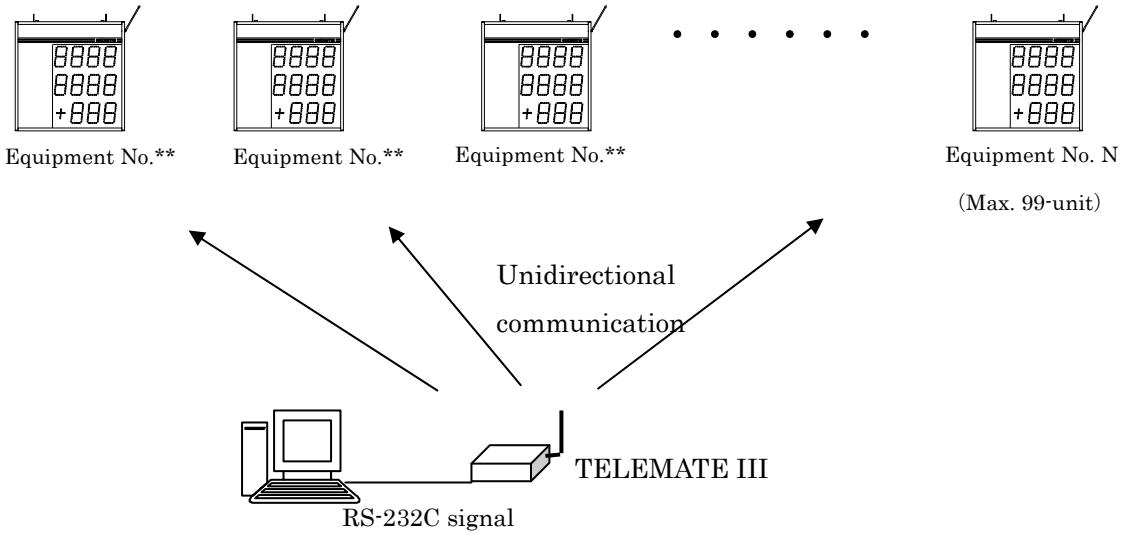
This article describes the usage when the Controller [21D-429C] is not used. The direct data transmission system to the Display without using the Controller is called "Direct display" in this manual. This function is intended for 429 Communication type and 485 Communication type.

("Direct display" is not available in 265 Communication type. Only as a combination with the Controller, it can be used.)

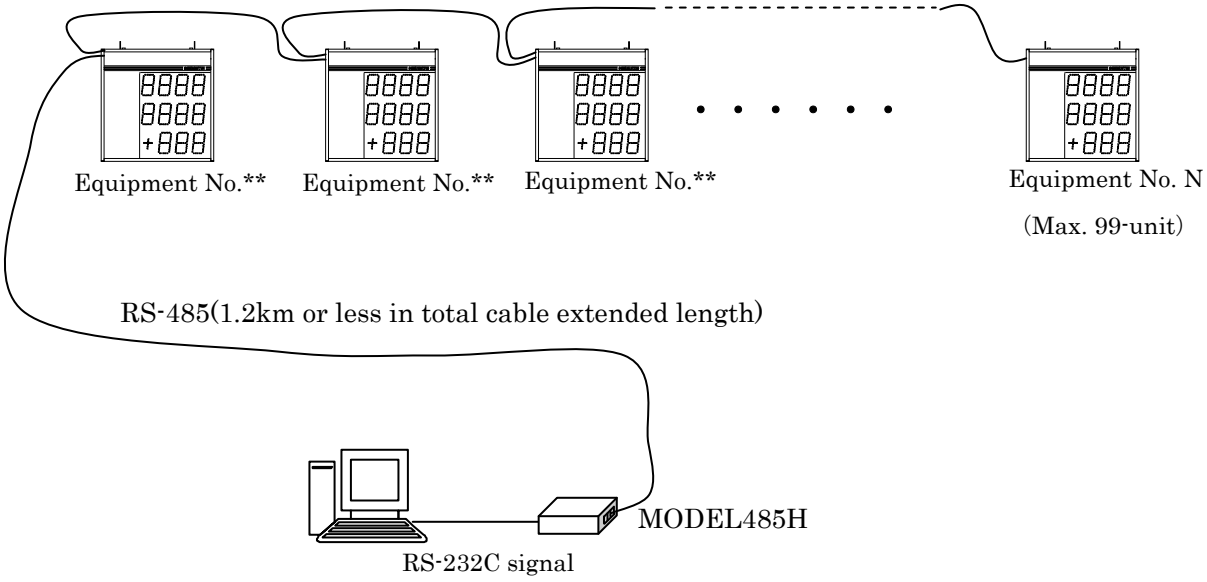
If you use combined with either of Controller [21D-429C] or [21D-265C], this function is not wanted. Omit it.

<Configurations of direct display units>

●429 Communication type



●485 Communication type



Applications

6-1. Transmitter

When Controller [21D-429C] is not used, use our wireless modem [TELEMATE III] as the modem for transmitter.

Also, when RS-485 communication (wired communication) is conducted, use the RS232C/485 signal converter modem [MODEL485H] as a modem for transmission side.

For the detail of [TELEMATE III] and [MODEL485H], see the attached operation manual.

The RC-232C signal sent from the computer is transmitted via the wireless modem (or wired modem) to the Display. Once the data corresponding to the specified communication format is received, the Display displays the data. Thoroughly understand the Communication specifications/Communication format before use.

For the setting methods of Communication channel/Equipment No., see "4-3. Setting the Communication channel" and "4-4. Setting the Equipment No."

6-2. Communication specifications

Items	Descriptions
Communication method	Unidirectional communication
Synchro system	Asynchronous
Communication speed	1200bps
Start bit	1 bit
Data length	8 bits
Stop bit	2 bits
Parity	None
Code	ASCII

Communication format

Preamble	STX	Equipment No.	Command	Digit-number	Type	Target	Actual	Advancement	Accomplishment rate	Plan	ETX	BCC

Preamble	Dummy data. FFH is added by 5 bytes around.	5 bytes around
STX	Start byte (02H)	1 byte
Equipment No.	Indicator unit's equipment No. "00" – "99"	2-byte
Command	"0" (30H): lights off after 30 seconds "1" (31H): Display latch "2" (32H): flashes "3" (33H): lights off	1-byte
Digit-number	"4" (34H) 4-digit type "5" (35H) 5-digit type	1-byte
Type	"0" (30H): 123 "1" (31H): 523 "2" (32H): 124 "3" (33H): 524 "4" (34H): 152 "5" (35H): 1523 "6" (36H): 1524	1-byte
Target	Target quantity "0000" - "9999"	5-byte
Actual	Quantity of productions "0000" - "9999"	5-byte
Advancement	Degree of advancement "-0000" - "+9999"	5-byte
Accomplishment rate	Accomplishment rate "0000" - "9999"	5-byte
Plan	Planned quantity "0000" - "9999"	5-byte
ETX	End byte (03H)	1-byte
BCC	CRC-CCITT of equipment No ～ETX Devisor of 11021H: Created polynomial equation: $X^{16}+X^{12}+X^{5}+1$) As a result of computation, 2-byte is delimited in steps of 4bit from high order, and is converted into 4-byte by means of "OR" with 50H. Ex) As a result of computation, for 12H, 34H, "51H, 52H, 53H and 54H" are obtained.	4-byte

6-3. Changing the error check system

Normally, the error for communication format can be checked according to the aforementioned “Equipment No～ETX’ s CRC-CCITT”, however, it can be changed into “Compare (twice)” system.

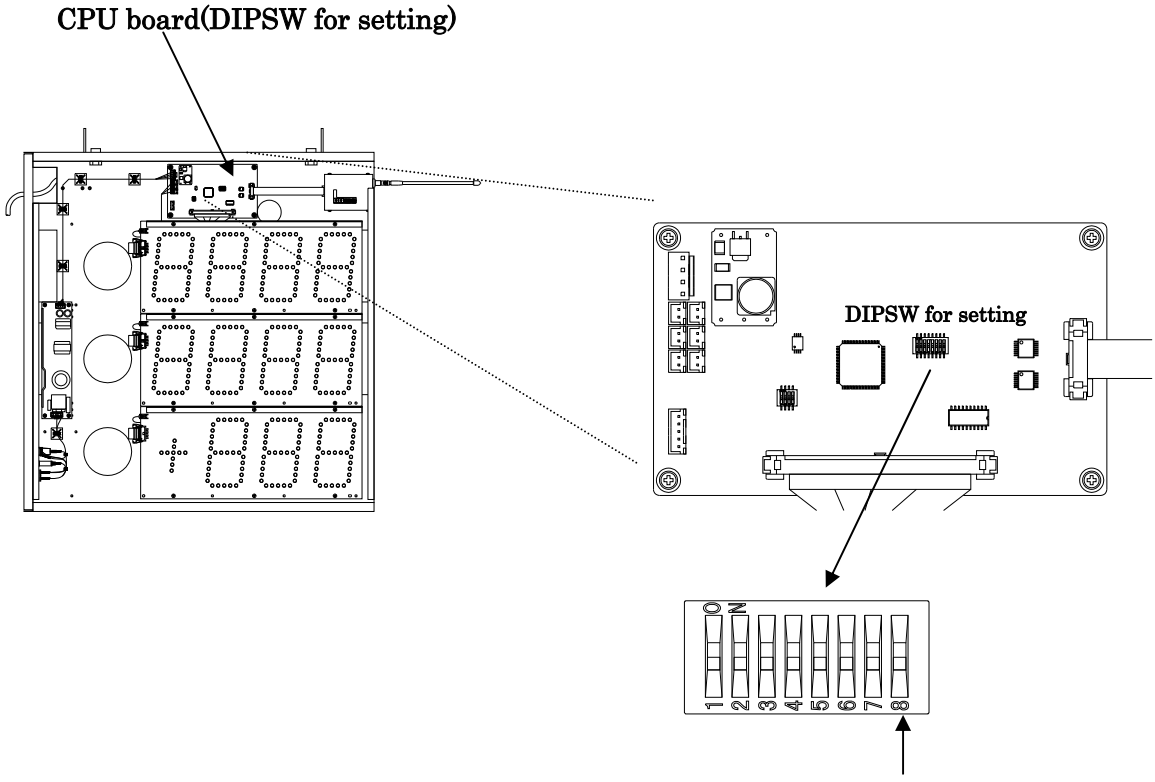
To change the communication checking system, use the DIPSW “8” on CPU board built in the Indicator unit.

Turn off the power source before changing the setting.

Check system	DIPSW 8
CRC-CCITT system	OFF
Compare (twice) system	ON

For the Compare (twice) system, unless the same transmitted sentence is repeated twice continuously, it will be judged as an error. Compared with the “CRC-CCIT” system, it takes longer time for error checking, however, since there is no need to add the BCC, the processing at transmitter side can be relieved.

Also, if the compare system is used, the same transmitted sentences of plural quantity (3 formats or more) should be sent.



7.Warranty

■ Provisions of warranty

The provisions of warranty are set forth by us for warranty of the product after shipment so that the product can be used with a sense of security after purchased. In case our product is out of order, we will provide repair or replacement under the provisions of warranty.

■ Warranty period

Besides, as long as there is not providing, the warranty period shall be 13 months after shipping the products. During the warranty period, we will provide free-of-charge repair subject to the provisions of warranty set forth in the warranty certificate.

If you have anything unclear about the repair or follow-up service during the warranty period, please contact the outlet store through which you purchased the product or our Sales Office.

■ Scope of warranty

If the product should get out of order under the normal conditions of use by the customer, we will repair the failed section(s) free of charge or exchange the new one free of charge subject to the provisions of warranty. Please contact the outlet store through which you purchased the product or our Sales Office.

Also, the warranty period shall be 13 months after shipping the product or shall be 6 months after shipping substituting goods. The warranty periods will be applied the period visited later.

Note, however, that free-of-charge repair under this warranty is limited to the hardware components of the product. Even during the warranty period, the customer shall be responsible for repair cost if any of the following applies:

1. Troubles or damages occurring due to improper handling by the customer, such as a fall, a shock, etc. during transportation or movement of the product by the customer.
2. Troubles caused by overhaul or remodeling of the main body by the customer.
3. Troubles or damages caused by fire, earthquake, flood damage, or other natural disasters, as well as by abnormal voltage.
4. Troubles resulting from any trouble of devices connected to the product, which devices are other than those designated by us.
5. Troubles with the accessories (AC adapter, antenna, connection cables, or the like) except the main body.
6. Repairing, adjustment, modification by except our company
7. Replacement of consumables and limited-life items (including batteries).

Consumables and limited-life items include, but not limited to:

(1) Switches (limit switches, pushbutton switches, or the like)

(2) Battery cells or batteries (dry batteries, button batteries, or the like)

(3) Other items subject to consumption or limitation of life caused by use.

8. Troubles occurring due to handling against the use instructions or precautions specified in this operation manual.

■ Initial defects

The period within 30 days from the date of shipping the product is defined as the initial defect period for the product. The product will be replaced with a new one or repaired free of charge provided that it is returned to the outlet store through which you purchased the product or our Sales Office, checked, and recognized as having initial defects. For initial defects, we shall be responsible for the shipping cost.

But it is in Japan only. In case of purchasing the products out of Japan, it will be decided after conference about shipping cost for returning back, insurance cost, custom duty.

■ Disclaimer

We will assume no liability for any damages or monetary losses, direct or indirect, arising out of troubles, failures, or use of the product.

■ Repair service period

Only if we have the stock of parts for repairing, even if after finishing the warranty period, we will repair the product within 5 years after end of production for a fee.

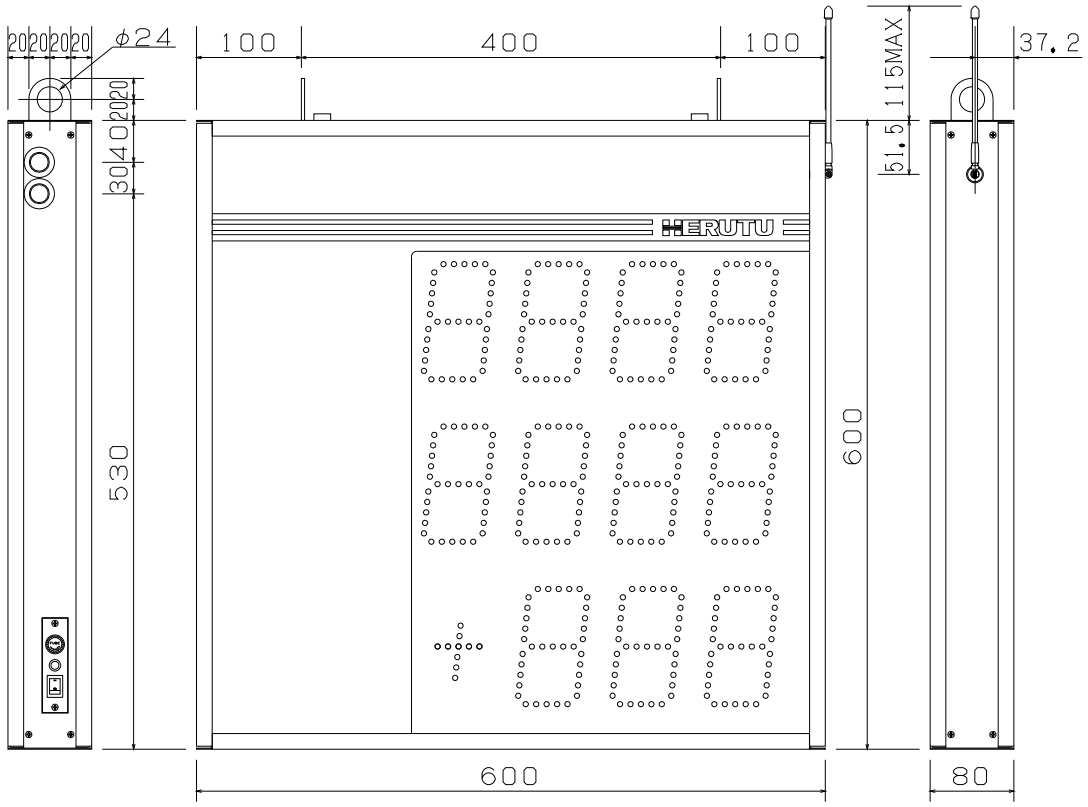
However, we reserve the right to use substitute parts or devices for repairing purposes if there are unavoidable reasons such as unavailability of service parts.

■ Others

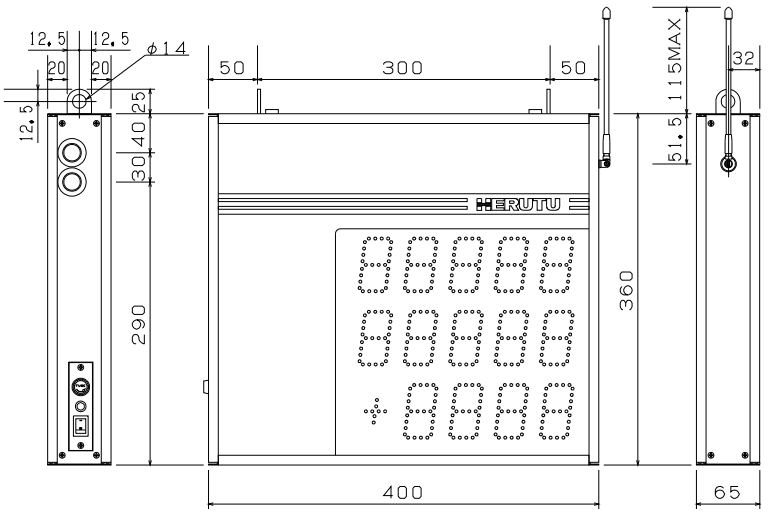
- ●Independent of the warranty period, the product to be repaired shall in principle be brought into our site because of the necessity of using measuring instruments or the like for adjustments etc., and the shipping cost etc. incurred in bringing the product into our site shall be borne by the customer.
- ●In such cases where you request a trip to your place for repair or need substitute devices during the warranty period, please contact the outlet store through which you purchased the product or our Sales Office. We will correspond for a fee.
- ●We reserve the right to refuse replacement or repair if we are unable to reproduce the concerned failure at our engineering department after receipt of a request for repair. In addition, an additional charge may be made to the customer for the technical examination cost incurred in reproducing the failure.
- ●The information in this manual, our website, catalog we supply, is subject to change without prior notice. Please be forewarned.

Dimensional drawing

<<3-command large-sized type>>



<<3-command middle-sized type>>

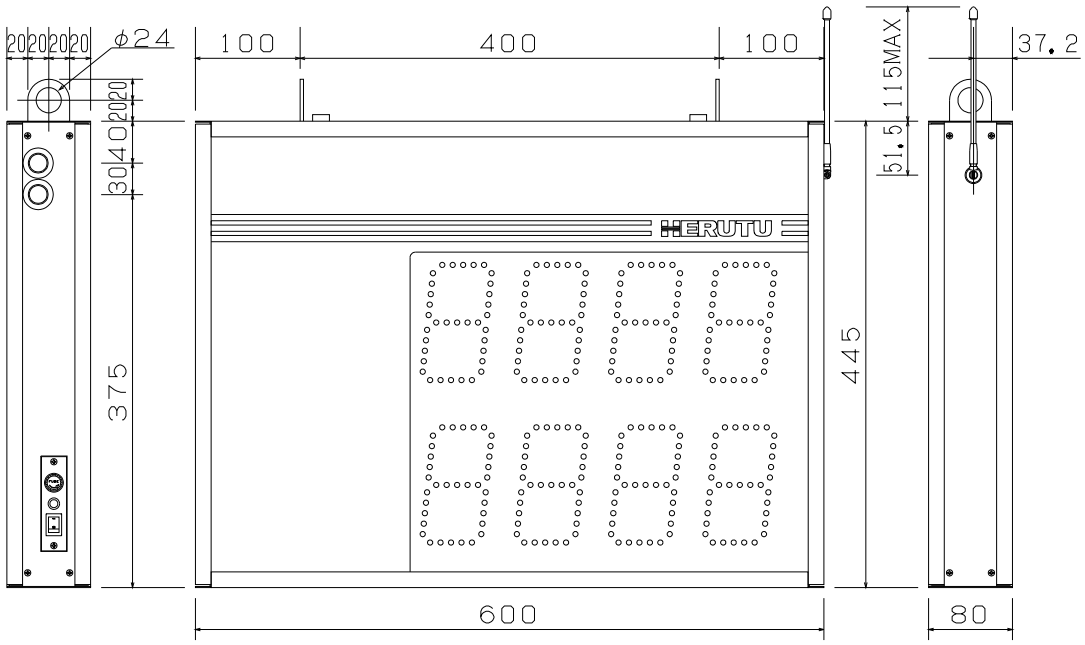


*The 485D type does not have an antenna.

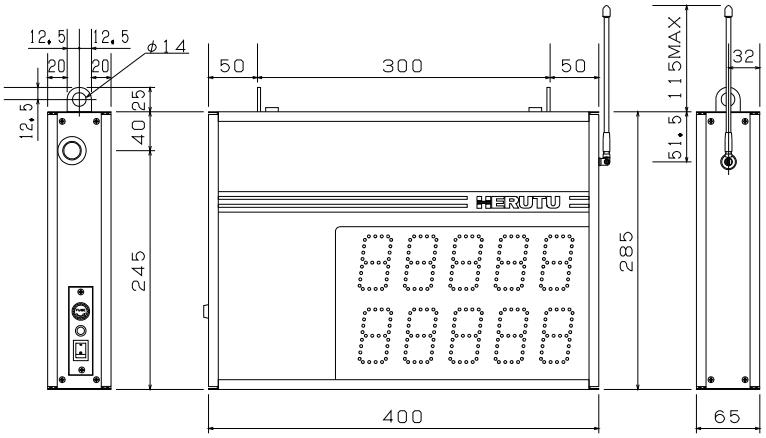
*For the 265D type, the antenna length is different.

Dimensional drawing

<<2-command large-sized type>>



《2-command middle-sized type》

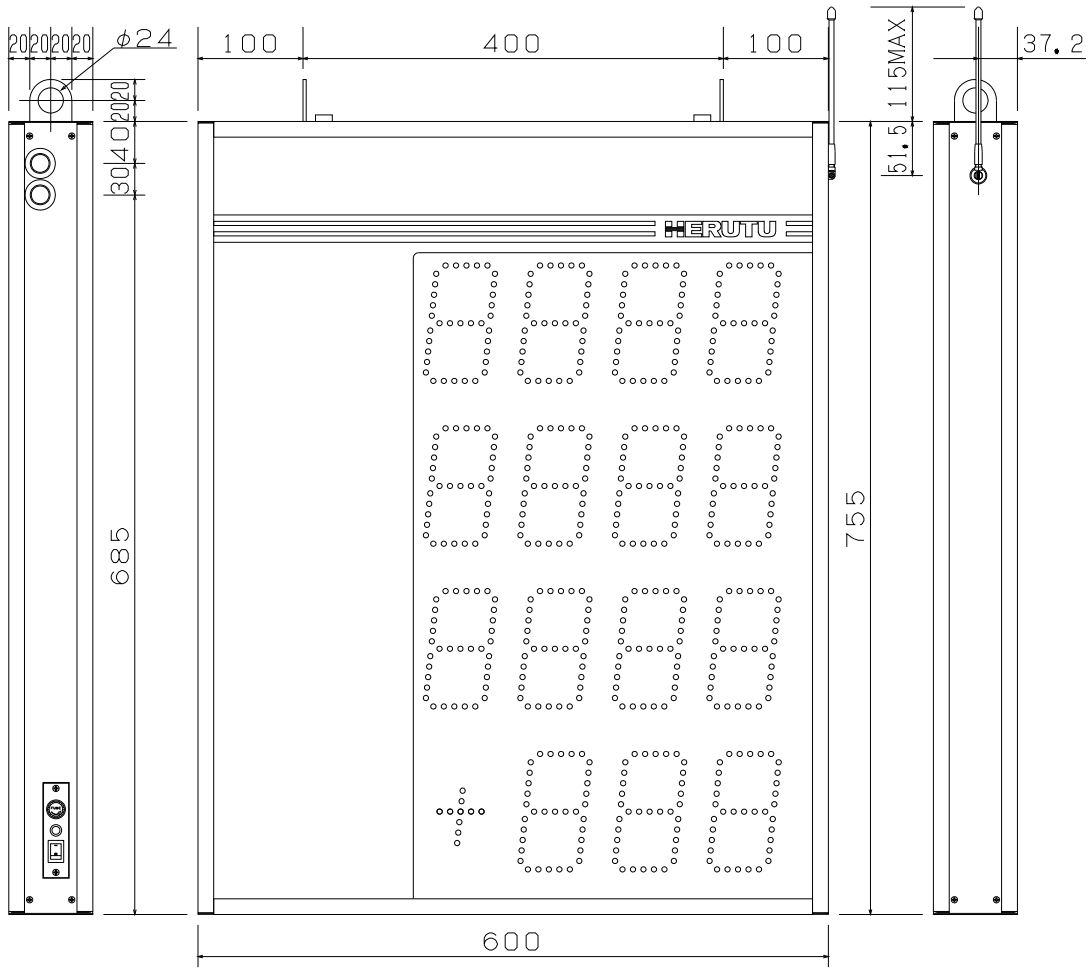


*The 485D type does not have an antenna.

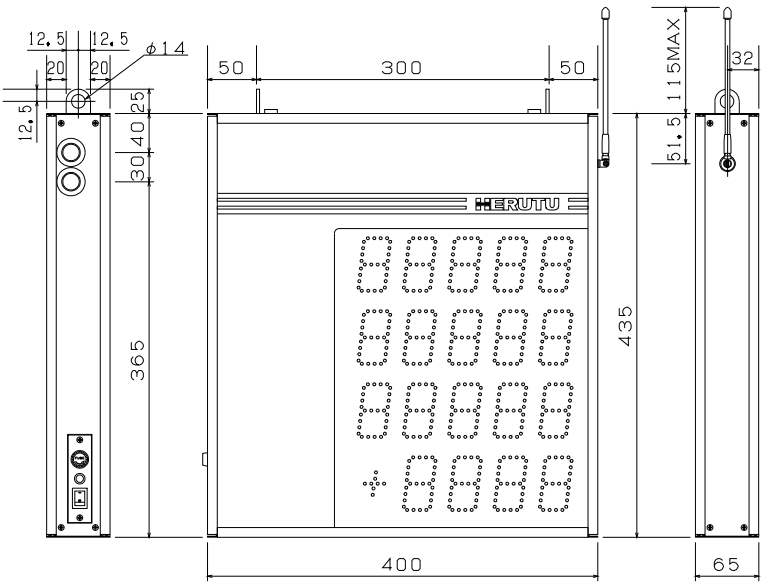
*For the 265D type, the antenna length is different.

Dimensional drawing

<<4-command large-sized type>>



<<4-command middle-sized type>>



*The 485D type does not have an antenna.

*For the 265D type, the antenna length is different.