Contents in this document may change without prior notice.
Please obtain the delivery specification for the latest design.

InfoSOSA™ Series
4.3” Touchscreen Display

IS731-4

Model: IS731-4WQ2-D05

Product Specification

DMC Co., Ltd.
https: //www.dush.co.jp/english/

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APPENDIX:

4.3” OUTLINE (SM3-002524-10)

1. Summary

This specification describes the InfoSOSA™ series of HMI with touch screen display.
You can operate your device by interactive operations of the touchscreen, made possible by communicating with the host device.

2. IS731-4 Product

2-1 General Specification

Model	Specification Distinction*			
	Display size	Resolution	Rated voltage	Maximum support language
IS731-4WQ2-D05	4.3”	WQVGA (480 x 272)	5VDC	1 language[*1]

*1 language (Maximum of 1 system font language can be used.)

3. Packaged Content

3-1 Standard Specification

- **4.3”**

Packaged Content	Specifications
	IS731-4WQ2-D05
・Main Unit	10 units/box

4. Unit Specification

4-1 Performance

- **4.3”**

Items		Specifications
		IS731-4WQ2-D05
Display	Type	4.3” TFT LCD
	Resolution	480(W) x 272(H)
	Color	65,536 Colors
	Backlight	LED Backlight (Brightness can be adjusted by 8 levels) On/Off function, automatic Off function
	Language	System Font[*1] Select 1 from below languages: Japanese Korean English and European language
		Image Font[*2]
Memory Capacity	User Flash Memory	20MB[*3]
Touch Screen	Type	Analog Resistive
	Resolution	480 x 272
	Input Method	Finger or R0.8 Polyacetal pen
	Touch Sound	Yes
Serial I/F	SIO1	RS232 Nylon Connector
	SIO2	RS422/485 Nylon Connector
Sheet Key I/F	Switch	Maximum 24 points (Matrix Key 4 x 6) (FFC Connector)
	LED	Maximum 8 points (FFC Connector)
Battery I/F		Nylon Connector
Other I/O	Buzzer	Variable Frequency
	RTC[*4]	±65 seconds/month (Error at room temperature, no power flow.)

*1 English (alphabet) is included in all languages.

*2 Fonts installed in the computer can be displayed as bitmaps.

*3 This area contains font data.

*4 External battery needs to be connected to Battery I/F in order to back up the RTC.
Set to correct time on a regular basis when using on systems where time error is a problem.

4-2 Electrical Specification

- **4.3”**

Items	Specifications
	IS731-4WQ2-D05
Absolute Maximum Rated Voltage	0-6V DC
Rated Power Voltage Range	5V DC±5%
Power Consumption	TYP. 250mA [*1]
	MAX. 450mA
Backup Current (RTC)[*2]	TYP. 60μA
	MAX. 80μA
GND Frame Connection	GND (Signal GND) and Frame (Sheet metal) are connected inside the unit.

*1 LCD display set at brightness level 4 in 25 degrees Celsius.

External battery needs to be connected to Battery I/F in order to back up the RTC.

Note: When gentle power source is used for rising and falling of power, it may not operate properly. Also, when rebooting, leave it off for a while after turning off; do not turn the power back on immediately. It may not boot up accurately.

4-3 Appearance Specification

- **4.3”**

Items	Specifications
	IS731-4WQ2-D05
External Dimension (Does not include projections)	139(W)×73(H)×20.6(D)mm [*1]
Weight	Approximately 220g

*1 Error margin not included. Please refer to outline diagram for detail.

4-4 Environment Specification

- **4.3”**

Items	Specifications
	IS731-4WQ2-D05
Ambient Operating Temperature	0 to 55 degrees Celsius
Ambient Storage Temperature	-20 to 80 degrees Celsius
Ambient Operating Humidity	10 to 90%RH (Non-condensing, Wet bulb temperature is 39 degrees Celsius or less)
Ambient Storage Humidity	10 to 90%RH (Non-condensing, Wet bulb temperature is 39 degrees Celsius or less)
Dust	0.1mg/m^2 or less (conductive dust prohibited.)
Corrosive Gas	Prohibited
Vibration Resistance	5 to 9Hz Half amplitude 3.5mm 9 to 150Hz Fixed acceleration 9.8m/s^2 X,Y,Z each direction 10 times (for 100 minutes) (JIS B 3502, IEC61131-2 Compliant)

4-5 Compliance

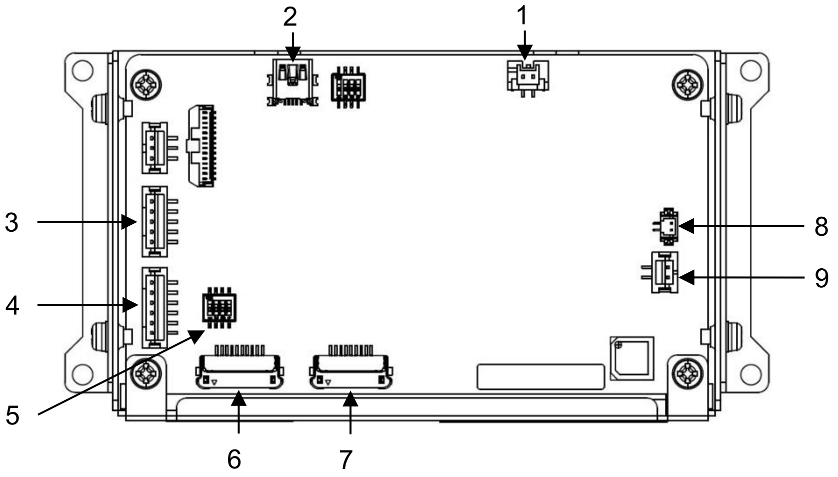
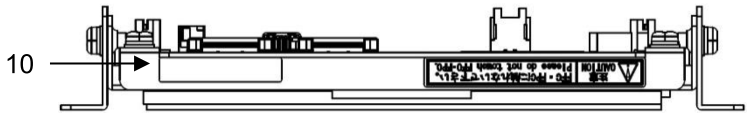
4-5-1 RoHS Directive

- **4.3”**

Complies with the RoHS Directive of EU.

4-6 Name of each part

■ **4.3”**

Specifications
IS731-4WQ2-D05
■Back side 
■Bottom side 
1. Power Connector (5VDC) 2. USB Device Interface 3. Serial Ports (SIO1) 4. Serial Ports (SIO2) 5. Communication mode setting Switch 6. Sheet Key Interface (for Switch) 7. Sheet Key Interface (for LED) 8. Battery Interface 1 9. Battery Interface 2 10. Product Label

4-7 External Interface

4-7-1 Power Connector

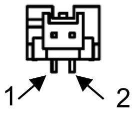
■ **4.3”**

Specifications
IS731-4WQ2-D05

Interface: 5VDC IN

Connector: Nylon Connector

Model: BM02B-PASS-1-TFT (JST)

Pin No.	Signal	Outline
1	+5V	
2	GND	

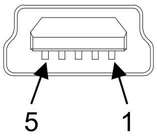
4-7-2 USB Device Interface

■ **4.3”**

Specifications
IS731-4WQ2-D05

Interface: USB 2.0

Connector: USB Mini-B

Pin No.	Signal	Outline
1	USB_VCC	
2	D-	
3	D+	
4	NC[*1]	
5	GND	

*1 NC stands for ‘Not Connected’.

4-7-3 Serial Ports (SIO1 / SIO2)

Set the communication specification with the InfoSOSA builder.

4-7-4 SIO1

- **4.3”**

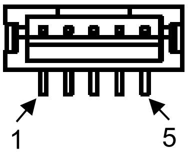
SIO1 can be used at Host Communication and at download.

Specifications
IS731-4WQ2-D05

Interface:RS232C

Connector: Nylon Connector

Model: B5B-PH-SM4-TB (JST) equivalent

Pin No.	Signal	Direction	Outline
1	RXD	InfoSOSA <- Host	
2	TXD	InfoSOSA -> Host	
3	GND	-	
4	RTS	InfoSOSA -> Host	
5	CTS	InfoSOSA <- Host	

Communication

Items	Specification
Baud Rate	4800/9600/19200/38400/57600/115200bps
Data Length	8 Bit
Parity	None/Odd/Even
Stop Bit	1 Bit
Flow Control	None/Hardware flow control (RTS/CTS control)

Default Setting

Communication specification at factory state:

Items	Specification
Baud Rate	115200bps
Data Length	8 Bit
Parity	None
Stop Bit	1 Bit
Flow Control	Hardware flow control (RTS/CTS control)

4-7-5 SIO2

■ 4.3”

SIO2 can be used at Host Communication.

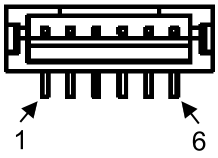
Specifications
IS731-4WQ2-D05

Interface:RS422/485

RS422/485 setting enable to change by SW1

Connector: Nylon Connector

Model: B6B-PH-SM4-TB (JST) equivalent

Pin No.	RS422		RS485		Outline
	Signal	Direction	Signal	Direction	
1	TXD+	InfoSOSA -> Host	DATA+	InfoSOSA <-> Host	
2	TXD-	InfoSOSA -> Host	DATA-	InfoSOSA <-> Host	
3	GND	-	GND	-	
4	RXD+	InfoSOSA <- Host	(DATA+)	Internally connected to pin 1	
5	RXD-	InfoSOSA <- Host	(DATA-)	Internally connected to pin 2	
6	GND	-	GND	-	

SW1 Communication mode setting

Pin No.	RS422	RS485	Detail
1	ON/OFF		ON: Terminating enable / OFF: disable
2	OFF	ON	RS422/485 setting
3	OFF	ON	
4	OFF	ON	

Communication

Items	Specification
Baud Rate	4800/9600/19200/38400/57600/115200bps
Data Length	8 Bit
Parity	None/Odd/Even
Stop Bit	1 Bit

Default Setting

Communication specification at factory state:

Items	Specification
Baud Rate	115200bps
Data Length	8 Bit
Parity	None
Stop Bit	1 Bit
Communication mode	RS422
Terminating	enable

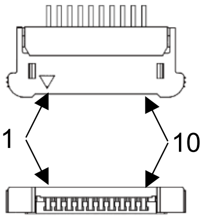
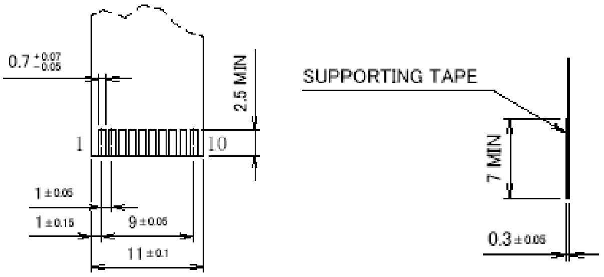
4-7-6 Sheet Key Interface (for Switch)

- **4.3”**

Specifications

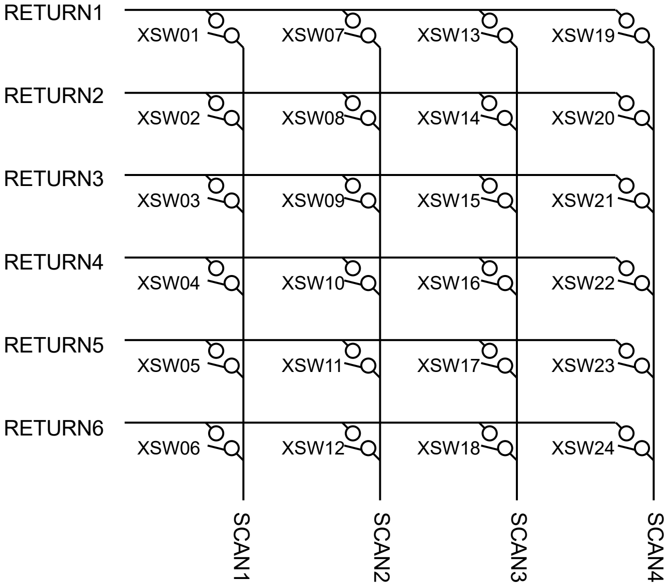
IS731-4WQ2-D05

Connector: FFC Connector (1mm Pitch bottom contact)
Model: 00-6200-510-130-000+ (KYOCERA Corporation)

Pin No.	Signal	Outline	Specification of compatible cable
1	SCAN4		 0.7 +0.07 −0.05 2.5 MIN 1 10 1±0.05 1±0.15 9±0.05 11±0.1 SUPPORTING TAPE 7 MIN 0.3±0.05
2	SCAN3		
3	SCAN2		
4	SCAN1		
5	RETURN6		
6	RETURN5		
7	RETURN4		
8	RETURN3		
9	RETURN2		
10	RETURN1		

Maximum 24 switch input is possible with the key matrix.
(Scan 4 x Return 6)

Switch of the matrix circuit as shown in the below diagram can be connected.
Switch input is recognized with the numbers shown below with the InfoSOSA.
* Do not press multiple switches simultaneously. It may result in incorrect input.

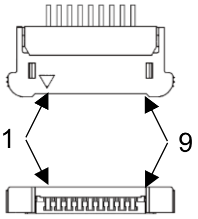
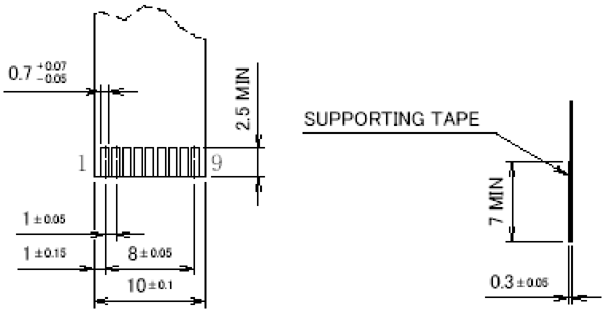

RETURN1
XSW01
XSW07
XSW13
XSW19
RETURN2
XSW02
XSW08
XSW14
XSW20
RETURN3
XSW03
XSW09
XSW15
XSW21
RETURN4
XSW04
XSW10
XSW16
XSW22
RETURN5
XSW05
XSW11
XSW17
XSW23
RETURN6
XSW06
XSW12
XSW18
XSW24
SCAN1
SCAN2
SCAN3
SCAN4

4-7-7 Sheet Key Interface (for LED)

- **4.3”**

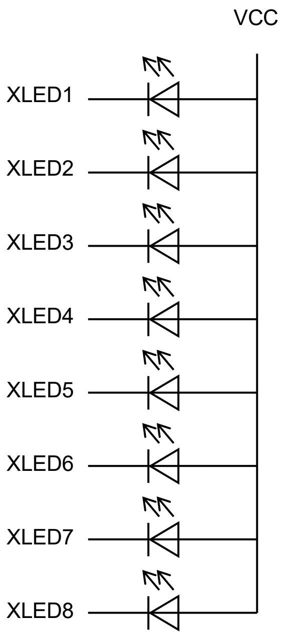
Specifications
IS731-4WQ2-D05

Connector: FFC Connector (1mm Pitch bottom contact)
Model: 00-6200-509-130-000+ (KYOCERA Corporation)

Pin No.	Signal	Outline	Specification of compatible cable
1	LED_VCC	 	 0.7 $^{+0.07}_{-0.05}$ 2.5 MIN SUPPORTING TAPE 1 9 7 MIN 1 ±0.05 1 ±0.15 8 ±0.05 10 ±0.1 0.3 ±0.05
2	XLED1		
3	XLED2		
4	XLED3		
5	XLED4		
6	XLED5		
7	XLED6		
8	XLED7		
9	XLED8		

Maximum of 8 points

LED of the LED circuit of below diagram can be connected.
By outputting to the LED number shown below with the InfoSOSA,
the LED will can be turned ON or OFF.


VCC
XLED1
XLED2
XLED3
XLED4
XLED5
XLED6
XLED7
XLED8

VCC：5V
Limiting Resistor：1KΩ(Built in to Substrate)

4-7-8 Battery Interface

Battery Interface1

■ **4.3”**

The battery should be a primary battery.

Use a battery with a nominal voltage of 3VDC.

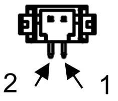
Do not apply a voltage higher than 3.6VDC.

Battery Interface1

Specifications
IS731-4WQ2-D05

Connector

Model: DF13C-2P-1.25V (21) (Hirose electric)

Pin No.	Signal	Outline
1	+	
2	-	

Compatible battery: Maxell CR2032WK11

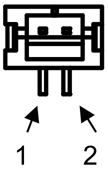
A primary battery with a nominal voltage of 3VDC may be used in addition to the compatible batteries listed above.

Battery Interface2

Specifications
IS731-4WQ2-D05

Connector

Model: B2B-PH-SM4-TB (JST)

Pin No.	Signal	Outline
1	+	
2	-	

Compatible batteries: Maxell "CR17450 A WK 41", "CR17450 A 2WK 35", "CR17335 A WK 11".

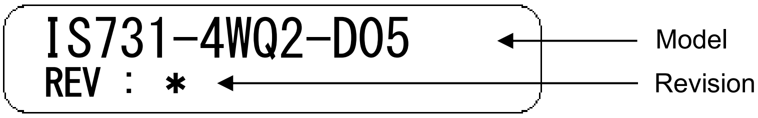
A primary battery with a nominal voltage of 3VDC may be used in addition to the compatible batteries listed above.

*There are two battery interface connectors.

If two connectors are connected, the one with the higher voltage will be used first.

4-8 Product Label

- **4.3”**



Above is an example image of the product label.

The following information will be printed on the label of the actual product.

・Model : Model of the purchased product
・Revision : Alphabet (One letter from A to Z) according to the shipped product revision

5. Developing Environment

Editing Screens of InfoSOSA is possible by using our development tool that we provide.

5-1 Development Tool

- **4.3”**

InfoSOSA Screen Editor Software: InfoSOSA Builder (IS-BUILDER)

Screen data can be registered to the FlashROM equipped in the InfoSOSA Builder.
The maximum number of screens that can be registered to the parts that structure the screen change.

* When using image files, please use ones that were created by individual users.
Using and distributing, without permission, files protected by the copyright is strictly prohibited by law.
Please note some free materials might have using restrictions
DMC will not be held responsible for any troubles that may have occurred due to the copy right of the image files.

* Please refer to the “InfoSOSA Builder Operation Manual” for more details.

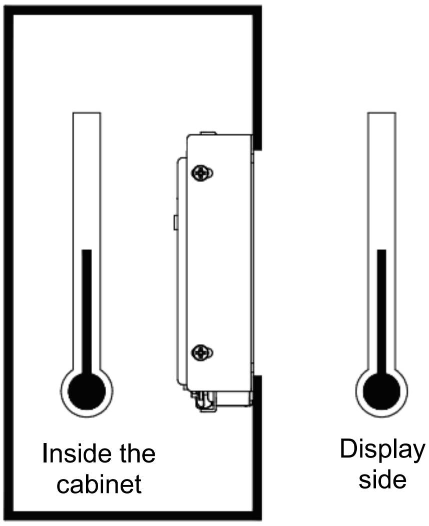
6. Mounting the Unit

6-1 Mounting Condition

■ 4.3”

- When mounting, be sure to have enough room between the unit, structure and part and also consider the operation temperature.
- Be sure that the ambient operating temperature and the ambient humidity are within their designated ranges.

*1 (Ambient operating temperature indicates the temperature of both the display side and inside the cabinet.)



6-2 Mounting

- **4.3”**

  ・When mounting the unit, design the chassis referring to the panel opening examples and the attached outline diagrams.

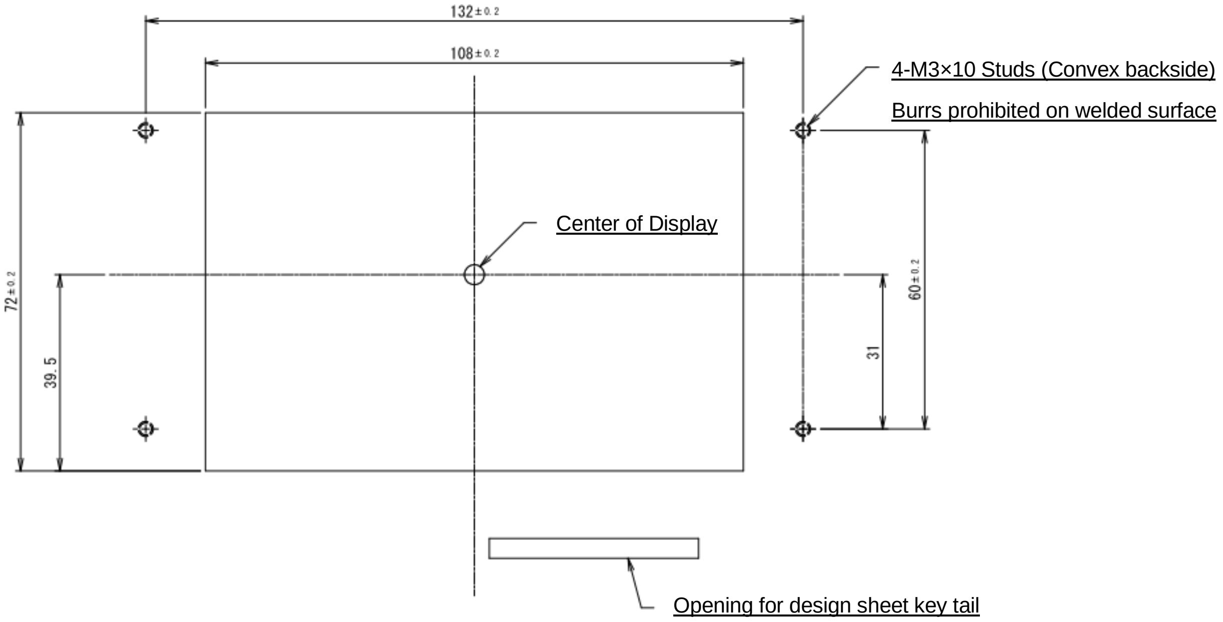
  ・Design the chassis so that there is no distortion or twisting.

6-3 Panel Opening Example

- **4.3”**

  Below is the panel opening dimension example for when applying sheets and etc. to the surface by opening the entire touch screen surface.
  Design the chassis accordingly to the actual installing method.

  *Diagram from the front side of panel (panel thickness: 1.6mm or less).


132±0.2
108±0.2
4-M3×10 Studs (Convex backside)
Burrs prohibited on welded surface
Center of Display
72±0.2
39.5
31
60±0.2
Opening for design sheet key tail

・If using the design sheet key, you will need an opening for the tail matching the design sheet.
  * To avoid damage to the design sheet key tail, do not directly come in contact with the edge of the panel opening. If damaged, it may cause a switch or the LED performance defect.

7. Warranty

7-1 Warranty Period

- **4.3”**

The warranty period is limited to12 months (1 year) from the date of shipment. Warranty for any repair needed to the same repaired part of the same product is three months. Any defects that occur upon normal use under conditions specified herein will be repaired (factory repair) free of charge.

Any defected parts under proper use will be examined by the supplier and replaced by the new parts if the defect is considered to be caused by the supplier.

The replacement is subject to be included in the next lot.

7-2 Warranty Exception

- **4.3”**

You will be liable for all repair fees even within the warranty period for any conditions listed below:

(1) Any malfunctions, defects, and/or damages that occurred during transport, transfer, or mishandling by the user after delivery

(2) Any malfunctions, defects, and/or damages caused by natural or man-made disaster.

(3) Any malfunctions and damages caused by static electricity.

(4) If the product is used under any condition, in any environment, or by any method other than those specified in the specifications, catalogs, manuals, notes, and/or other documents.

(5) Any replacement of consumables.

(6) Any malfunctions, defects, and/or damages caused by associated equipment and/or usage of inappropriate consumables and media.

(7) If the product is repaired, remodeled, modified, or disassembled by a party other than DMC.

(8) If the product cannot be identified by a serial number.

(9) Any malfunctions, defects, and/or damages that are to have been caused on your behalf.

This warranty covers only the product itself. Any damages, on-site repairs and replacement driven by the failure of the product will be decided upon discussion by both parties as necessary.

This product is structurally not repairable. All damaged parts are subject for replacement and freight will be charged.

8. Production Discontinuance

- **4.3”**

In the event of production discontinuance, an announcement will be made on our guidance six months prior to the last possible order reception date.

9. Others

If you have comments or questions, please feel free to contact us.

North South America area
✉ technical-global@dush.co.jp

Asia Pacific area
✉ technical-global-asia@dush.co.jp

Europe, Middle East, Africa area
✉ technical-global-eu@dush.co.jp

FAQ
🌐 **www.dush.co.jp/english/support/faq/**

1st Edition January 2025
DMC Co., Ltd.
Office hours: 9:00 - 17:00 weekdays (JST)
(except Saturdays, Sundays, national holidays, and year-end and New Year holidays)
URL: https: //www.dush.co.jp/english/

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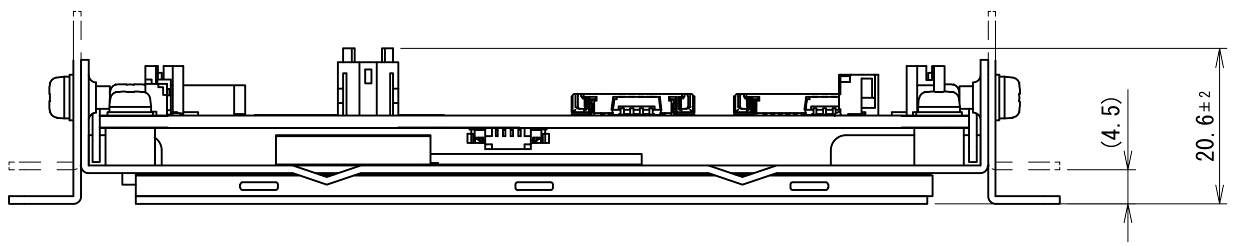
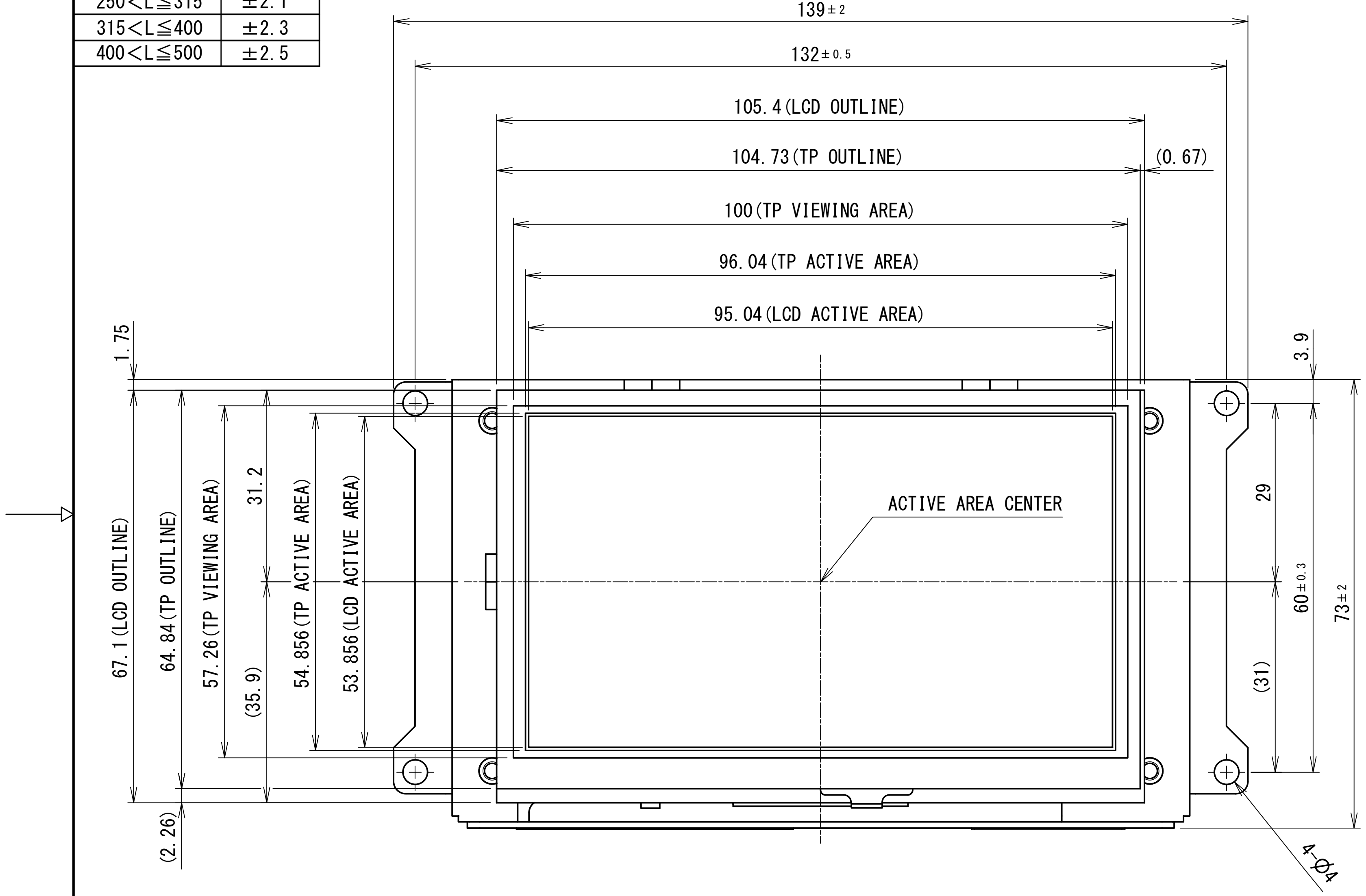
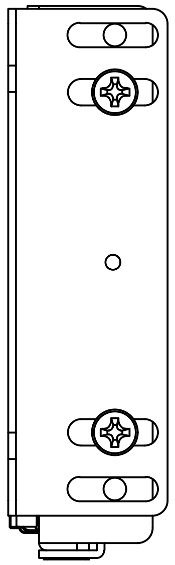
寸法許容差 TOLERANCE	
呼び寸法 Nominal Dimensions	
L≦3	±0.4
3＜L≦6	±0.48
6＜L≦10	±0.58
10＜L≦18	±0.7
18＜L≦30	±0.84
30＜L≦50	±1.0
50＜L≦80	±1.2
80＜L≦120	±1.4
120＜L≦180	±1.6
180＜L≦250	±1.85
250＜L≦315	±2.1
315＜L≦400	±2.3
400＜L≦500	±2.5

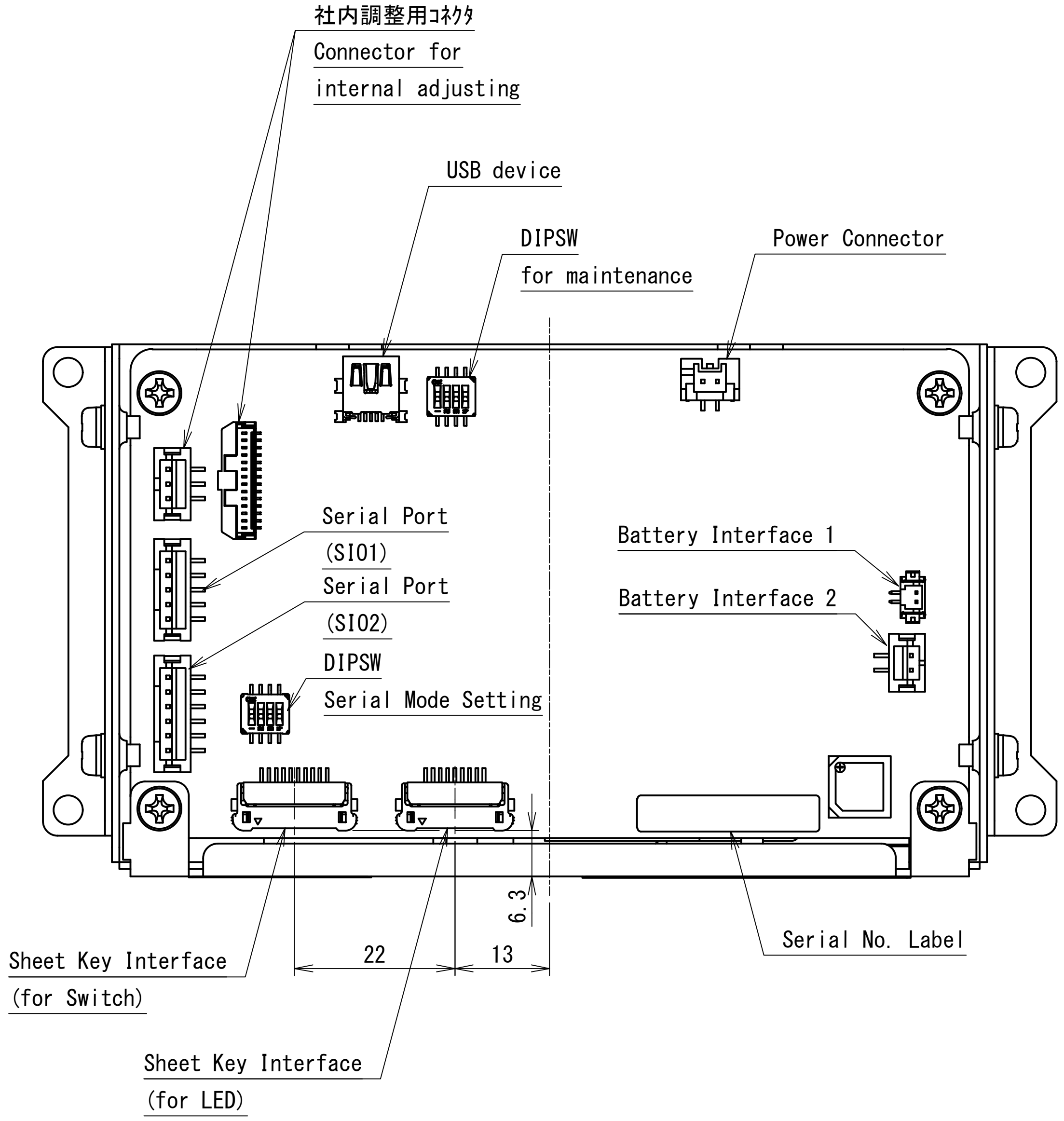
SYM	改訂日 DATE	改 訂 内 容 DESCRIPTION	ページ PAGE	担当 DESIGNED
	2024.12.20	新規図面登録	—	M.Mitani



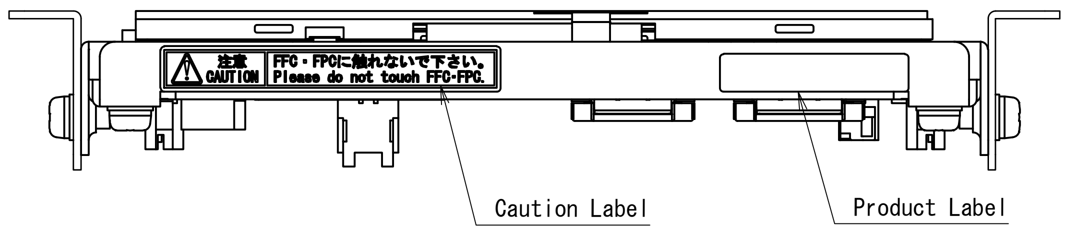


139±2
132±0.5
105.4(LCD OUTLINE)
104.73(TP OUTLINE)
(0.67)
100(TP VIEWING AREA)
96.04(TP ACTIVE AREA)
95.04(LCD ACTIVE AREA)
1.75
3.9
ACTIVE AREA CENTER
67.1(LCD OUTLINE)
64.84(TP OUTLINE)
57.26(TP VIEWING AREA)
31.2
(35.9)
54.856(TP ACTIVE AREA)
53.856(LCD ACTIVE AREA)
29
(31)
60±0.3
73±2
(2.26)
4-Φ4





社内調整用ｺﾈｸﾀ
Connector for
internal adjusting
USB device
DIPSW
for maintenance
Power Connector
Serial Port
(SI01)
Serial Port
(SI02)
DIPSW
Serial Mode Setting
Battery Interface 1
Battery Interface 2
6.3
22
13
Serial No. Label
Sheet Key Interface
(for Switch)
Sheet Key Interface
(for LED)



注意 CAUTION
FFC・FPCに触れないで下さい。
Please do not touch FFC・FPC.
Caution Label
Product Label

NOTES

1. 指示なき寸法公差は一般寸法公差とする。
   Tolerance shall be of general dimensional tolerance unless specified otherwise.
2. 社内調整用ｺﾈｸﾀは、お客様での使用はございません。
   Connector for internal adjustment; cannot be used by customer.

製図日 ISSUED	2024.12.20	部署 SECTION	Technical Dept.	尺度 SCALE	1:1
承 認 APPROVED	検 図 CHECKED	製 図 DRAWN	設 計 DESIGNED	単 位 UNIT	mm
T.Okada	S.Yoshimoto	M.Mitani	M.Mitani		
DMC Co., Ltd.			A3		

CAD登録名 CAD FILE NAME	24K009-1_IS731-4WQ2_OUTLINE	RoHS対応品 RoHS compliant	
製品名 MODEL	IS731-4WQ2-D05		
図 名 TITLE	OUTLINE	ﾍﾟｰｼﾞ PAGE	1 /1
図 番 DWG No.	SM3-002524-10		