AD-8922A Remote Controller

INSTRUCTION MANUAL





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1. Introduction

The AD-8922A is a remote controller. Read this manual completely before using the AD-8922A in order to ensure a sufficient understanding for proper use.

1.1. Outline

The AD-8922A is connected to an A&D manufactured weighing instrument, using the RS-232C serial interface.

- Displays the weighing data transmitted by the weighing instrument.
- Key operations remotely control the weighing instrument.
 (Entering the function setting mode of the weighing instrument is not available. Available operations depend on the weighing instrument used. See Table 2 in "1.3. Applicable Instruments".)
- The data the AD-8922A receives can be output, using the RS-232C serial interface. So, external devices such as a personal computer or a printer can be connected to the AD-8922A.
- Can be panel-mounted.
- When connected to the AD-4212C/D/F, the AD-8922A can change the response characteristic, adjust the sensitivity of the AD-4212C/D/F using the external mass, and both instruments can share power. (Power can be supplied to both instruments by plugging the AC adapter into either the AD-4212C/D /F or the AD-8922A. For details, refer to "3.3. Power supply connection".)

1.2. Safety Precautions

If this instrument is used in a manner other than that specified by A&D, the protection provided by the instrument may be impaired. Please read the following precautions carefully before using this instrument.

⚠WARNING

- Install a safety circuit external to this instrument so that the entire system operates safely even in the event of an abnormality in the external power supply or a malfunction of this instrument.
- Use this instrument indoors. Never use it in the following environments.
 - · Environments with corrosive or flammable gases.
 - Environment where this instrument may come in contact with oil, chemicals, or water.
- Before carrying out any wiring work, be sure to shut off all phases of the external power supply used by the system.

⚠ CAUTION

- Do not disassemble this instrument.
- If the front panel becomes dirty, wipe it with a soft cloth lightly dampened with water. Do not use organic solvents such as benzine, thinner, or alcohol as they may cause deformation or discoloration.

[Power supply connection]

- Separate the external power input terminal of this instrument from the power supply of other instruments.
- Ground the ground terminal of this instrument.
 - This avoids electric shock and improves the safety of the system.
 - · This may improve resistance to noise.
- When using an AC adapter, use the designated dedicated AC adapter.
 - · If you use the wrong AC adapter, it may not work properly.
 - Do not connect the provided AC adapter to other devices.
- For use as UL certified product
 - This instrument must be to be powered by a LPS, LIM (Limited-energy circuit) or Class 2 power supply.
 - The external connection port should be connected to a circuit that is isolated from hazardous voltages by using double/reinforced insulation.

1.3. Applicable Instruments

Applicable weighing instruments and what is required are shown in the table below.

Table 1 Applicable weighing instruments and what is required

		uired to connect to ng instrument	Cable required to connect to an external device such as	
Weighing instrument	Option for the instrument	Communications cable (2-m length)	Personal computer	AD-8129TH Compact thermal printer
AD-4212C/D	None (D-Sub 9-pin)	None (Use the cable provided for AD-4212) *1 *2		
AD-4212F	None (D-Sub 9-pin)	AX-KO7796-XXX *2		
GX, GF, GX-K, GF-K, GP, AD-4212A/B, GR, MC	None (D-Sub 25-pin)	AX-KO1710-200		
GX-A, GF-A, GX-M, GF-M, GX-L, GF-L, EK-i, EW-i, EK-L, FC-i, FC-Si, GH, HR-i, FZ, FX, BM, HR-A/AZ	None (D-Sub 9-pin)	AX-KO2741-180	AX-KO1786-200	AX-KO1786-200
EJ, HV-C, HV-CP, HW-C, HW-CP	OP-03 (D-Sub 9-pin)	AX-KO2741-180		
HV-G, HV-WP, HW-G, HW-WP	None (DIN 8-pin)	AX-KO1786-200		
FG-L, FG-M	OP-23 (DIN 8-pin)	AX-KO1786-200		

Notes

*1: When connecting to the AD-4212C, use the AX-KO3590-1000 (10 m) cable or AX-KO7796-1000(10 m) cable, provided as standard for the AD-4212C.

When connecting to the AD-4212D, use the AX-KO3590-200 (2 m) cable or AX-KO7796-200 (2 m) cable, provided as standard for the AD-4212D.

If the applicable model is a UL certified product, choose the cable from the option below; AX-KO7796-200 (2 m)、AX-KO7796-500 (5 m)、AX-KO7796-1000 (10 m)

*2: Choose the cable from the option below;

AX-KO7796-200 (2 m)、AX-KO7796-500 (5 m)、AX-KO7796-1000 (10 m)

The AD-8922A functions in two ways as follows, depending on the weighing instrument used:

- A remote controller that displays the weighing data and remotely controls the weighing instrument.
- A remote display that displays the weighing data.

Available key operations depend on the weighing instrument used, as shown below. Set the command set "[5]E" of the function setting, appropriate to the weighing instrument.

Table 2 Applicable weighing instruments and key operations

10.	AD-8922A key					Command	
Weighing instrument	ON:OFF	CAL	SAMPLE	PRINT	MODE	RE-ZERO	set *5
AD-4212C, AD-4212F		Adjusts the sensitivity using the external mass			Switches the response characteristic		ESEŁ I
		Adjusts the	Switches the			Sets the	CSEŁ I
GX, GX-A, GX-M, GX-L, GX-K, GP, GH, FZ, MC,		,	Readability *2	Outputs the received		display to	CSEŁ I
BM, HR-AZ		internal	2	data to an	Curitabaa tha	zero	
GR		mass		external	Switches the unit displayed		[SEŁ 2
GF, GF-A, GF-M, GF-L, GF-K, AD-4212A/B, HR-i, FX, HR-A		_		device *3	*4		CSEŁ 3
EK-i, EW-i, EK-L, EJ							[SEŁ Y
FC-i, FC-Si, FG-L, FG-M, HV-G, HV-WP, HW-G, HW-WP		_	_		_		CSEŁ O

Note: "—" in the table indicates that the key operation is not available.

1.4. Compliance

Compliance with FCC Rules

Please note that this equipment generates, uses and can radiate radio frequency energy. This equipment has been tested and has been found to comply with the limits of Class A digital devices pursuant to Part 15 of FCC rules. These rules are designed to provide reasonable protection against interference when equipment is operated in a commercial environment. If this unit is operated in a residential area, it may cause some interference and under these circumstances the user would be required to take, at his own expense, whatever measures are necessary to eliminate the interference.

(FCC = Federal Communications Commission in the U.S.A.)

^{*1:} Switching the standby or weighing mode is available for the AD-4212C/D/F.

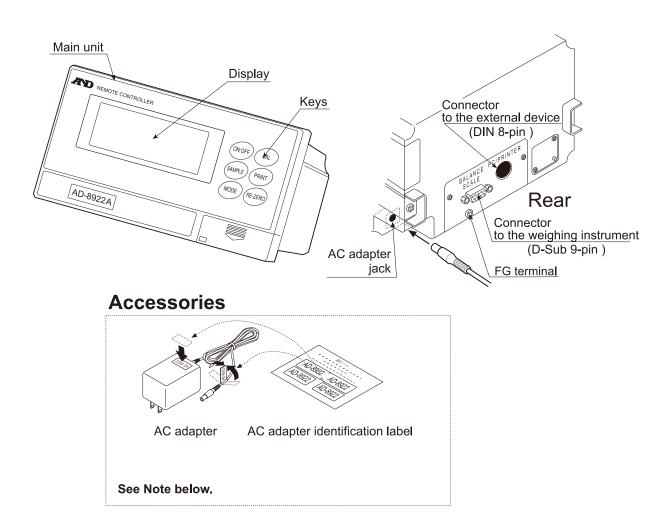
^{*2:} Not applicable to the counting mode and the percent mode.

^{*3:} Available when the AD-8922A is in key mode ("ວມະ /" or "ວມະວີ" of the function setting).

^{*4:} Not available for the AD-4212A/B

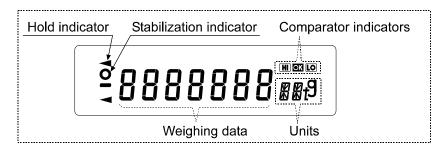
^{*5:} AD-8922A function settings

2. Description of Each Part



Note: Please confirm that the AC adapter type is correct for your local voltage and receptacle type.

Display



- Displays the weighing data and the unit (or mode) received. The unit (or mode) may be different from that of the weighing instrument.
- Turns on the stabilization indicator when the header of the weighing data received is "ST", "QT", or "WT".
- Turns on the comparator indicator when the comparison results are added to the data received. Applicable to GX-M, GF-M, GX-K, GF-K, GX-L, GF-L, GP and AD-4212A/B. (Function setting "[P-r"]
- When nothing has been received for two seconds or more, the bar display [-----] appears. By changing the function setting, the previous data received is displayed until the next data is received (Hold display). During the hold display, the hold indicator is turned on.

Note: When the data is in eight digits, the highest-order digit is displayed in the upper left corner as shown below.

For example, if the weighing data is 101.00000 g, the display is like

o 1.00000 a

2.1. Key Operation

Available key operations to control the weighing instrument depend on the weighing instrument used. For details, see Table 2 in "1.3. Applicable Instruments".

Set the command set "[5EL" of the function setting, appropriate to the weighing instrument.

To enter the function setting mode of the AD-8922A, press and hold the ON:OFF key and press the CAL key.

The weighing instrument has its own function settings and the AD-8922A can not change those settings.

2.2. Connectors

Connector to the weighing instrument (BALANCE / SCALE) ... D-Sub 9-pin male

Used to connect to the weighing instrument. The cable used for connection depends on the instrument. For details, refer to the instruction manual of the weighing instrument.

Connector to the external device (PC / PRINTER) ... DIN 8-pin female

Used to connect to an external device such as a personal computer or a printer (AD-8129TH). The cable used for connection depends on the device. For details, refer to the instruction manual of the device.

3. Getting Ready

3.1. Setting the Weighing Instrument and the AD-8922A

1. Set the data output mode of the weighing instrument to "Stream mode". For other settings, refer to the table below.

Table 3

Item	Weighing instrument	AD-8922A	
Baud rate	600, 1200, 2400 , 4800,	9600. 19200 bps	
Data bits, Parity bit	7 bits - EVEN, 7 bits - ODD, 8 bits - NONE		
Stop bits	1 bit or 2 bits		
Terminator	<cr> or <cr><lf></lf></cr></cr>		
Data format	A&D standard format	_	
Communication control	No RTS/CTS control	_	
Data output mode	Stream mode* —		

Items in bold face type: Factory settings for both the AD-8922A and the weighing instrument.

2. Set the command set "[5E]" of the function setting, appropriate to the weighing instrument. See Table 2 in "1.3. Applicable Instruments".

Note: Some items may not be available for the instrument used. For details on setting, refer to the instruction manual of each weighing instrument.

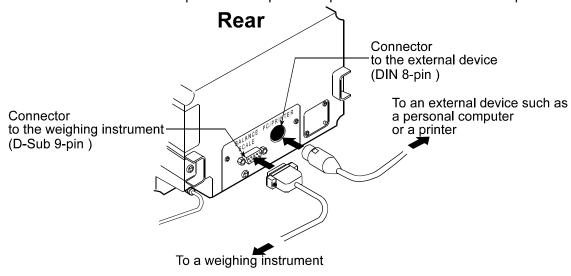
When connected to an external device such as a personal computer or a printer, set the output mode "aut" and time out "Hatd" of the function setting, and set the data output mode of the weighing instrument, appropriate to the use. (See Table 3 in "3.5. Example of Use".)

3.2. Connecting the AD-8922A

For information on cables required for connection, see Table 1 in "1.3. Applicable Instruments".

Connect the weighing instrument to the AD-8922A D-Sub 9-pin connector.

Connect an external device such as a personal computer or a printer to the AD-8922A DIN 8-pin connector.



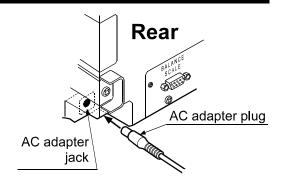
^{*} When connected to an external device, the settings can be changed to suit the use.

3.3. Power Supply Connection

Insert the AC adapter plug into the AC adapter jack located on the rear of the AD-8922A. Plug the AC adapter into an appropriate electrical outlet.

When connected to the following instruments, power can be supplied to both instruments by plugging the AC adapter into either the weighing instrument or the AD-8922A.

(Both instruments can have their AC adapter connected at the same time.)



Applicable instruments: AD-4212C, AD-4212D, AD-4212F, FZ, FX, GX-A, GF-A, GX-M, GF-M, GX-L,

GF-L, HR-AZ, HR-A

↑ CAUTION

For the power supply connection, refer to "1.2. Safety precautions".

3.4. Operation

- The AD-8922A displays the weighing data transmitted by the weighing instrument used.
- The AD-8922A key operations remotely control the weighing instrument.

Available operations depend on the weighing instrument. See Table 2 in "1.3. Applicable Instruments".

3.5. Example of Use

- A personal computer is connected to the AD-8922A and the weighing data can be transmitted to the personal computer, using Windows communication tools (WinCT).
- To protect against inadvertent operations, the AD-8922A keys can be disabled. (Function setting "[5EL []")
- When nothing has been received for two seconds or more, the bar display [-----] appears. By changing the function setting, the previous data received is displayed until the next data is received (Hold display). (Function setting "Hold I")
- About details on the settings of the weighing instrument or the external device, see the relevant instruction manual.

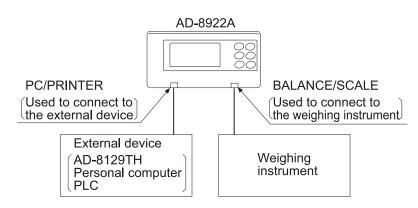


Table 4 Use of the AD-8922A

Example of use	Weighing instrument	AD-8922A setting		External device	
or use	instrument				setting [AD-8129TH]
	Stream mode (Outputs the weighing data continuously.)	Through mode	"out0"	Sends all of the received weighing data to the external device.	MAMUAL (Prints data when the AD-8129TH O (PRINT) key is pressed.)
Monitors the		Key mode 1	"out 1"	When the AD-8922A PRINT key is pressed, sends the latest weighing data received to the external device, regardless of the data status.	[AD-8129TH] EXT.KEY (Prints data when
weighing data of the weighing instrument remotely.		Key mode 2	"out2"	When the AD-8922A PRINT key is pressed, sends the latest weighing data received to the external device when the data is stable.	PRINT key is pressed.)
	Key mode or Auto print mode (Outputs the weighing data when the key is pressed or outputs the data automatically when stable.)	Through mode	"out 0"	Sends all of the received weighing data to the external device.	[AD-8129TH] EXT.KEY (Prints data according to the data output mode of the weighing instrument.)
Monitors the weighing data of the weighing instrument that is built into a weighing system.	Command mode * (Outputs the weighing data by the data request command.)	Through mode	"out0"	Sends all of the received weighing data to the external device.	[Personal computer or PLC] (The program to control the device is required.)

^{*} The command mode may not be available for weighing instruments of which command is always valid.

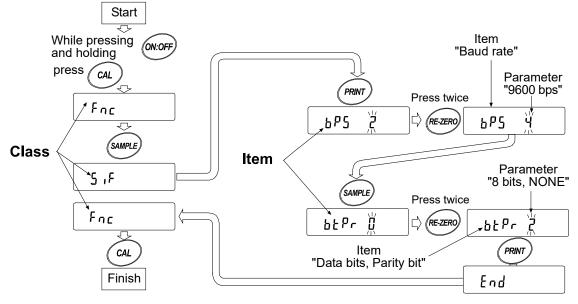
4. Function Settings

The function settings specify the parameters for the AD-8922A performance. These parameters stored, even if the AC adapter is removed, are maintained in non-volatile memory.

The function menu consists of two layers. The first layer is the "Class" and the second layer is the "Item". Each item is selected by the SAMPLE key. The parameter of the selected item is changed by the RE-ZERO key. Finally, the parameter is stored and is enabled by the PRINT key.

Example

This example sets "9600 bps" for "Baud rate" and "8 bits NONE" for "Data bits, parity bit".



Note: Use much care when changing parameters. The AD-8922A may not function properly when the settings and operational environment are not appropriate.

4.1. Display and Keys

Table 5

Display/Key	Description
0	The symbol "O" indicates that the parameter displayed is in effect.
SAMPLE	Selects the class or item in the function setting mode.
RE-ZERO)	Changes the parameter.
PRINT	When a class is displayed, moves to an item in the class. When an item is displayed, stores the new parameter and displays the next class.
CAL	When an item is displayed, cancels the new parameter and displays the next class. When a class is displayed, exits the function setting mode.

4.2. Function Table

Table 6

Class	Item	Parameter		Description
	[5EŁ Command set	0	Set 0	
		- ;	Set 1	
		2	Set 2	See Table 2 in "1.3. Applicable Instruments".
		3	Set 3	. motamono
		ч	Set 4	
		0	Through mode	Always outputs the data received by the D-Sub 9-pin connector, to the DIN 8-pin connector.
	out Output mode	ı	Key mode 1	Outputs the latest data received by the D-Sub 9-pin connector, to the DIN 8-pin connector, when the AD-8922A PRINT key is pressed.
Fnc	Cutput mode	• 2	Key mode 2	Outputs the latest stable data received by the D-Sub 9-pin connector, to the DIN 8-pin connector, when the AD-8922A PRINT key is pressed.
Environment Display	Hald Timeout	- ::	Bar display	Bar display if nothing has been received for two seconds or more.
		1	Hold display	Displays the previous data received if nothing has been received for two seconds or more, and turns on the hold indicator.
	ЬЕР Data receipt buzzer	- []	Not used	No buzzer upon data receipt.
		1	At intervals	Sounds buzzer when the data is received with an interval of two seconds or more.
		2	Used	Sounds buzzer upon each data receipt.
		• _	Not set	Sets the decimal at a specific position.
	dPP Position of decimal point	II to &	Set	When changing the Readability pressing SAMPLE key does not change the decimal point position. (For details, refer to "10.2".)
	SAPL	0	No function	The SAMPLE key does not function.
	Function of the SAMPLE key	- ;	Function	The SAMPLE key will function.
		ũ	600 bps	Choose a parameter appropriate to
		1	1200 bps	the weighing instrument.
5 ,F	bPS	رخ •	2400 bps	When the AD-8129TH compact
Serial	Baud rate	3	4800 bps	thermal printer is to be connected,
interface	Daud Tale	<u>-</u> -	9600 bps	leave the factory settings of the AD-
		5	19200 bps	8922A as is and set the weighing instrument.
		■ Eactory s	•	moduliont.

Factory setting

Class	Item	Parameter	Description	Class
	btPr	- 8	7 bits - EVEN	Choose a parameter appropriate
	Bit parity	1	7 bits - ODD	to the weighing instrument.
S iF		2	8 bits - NONE	When the AD-8129TH compact
וב ו Serial interface	StoP	- 8	1 bit	thermal printer is to be connected,
Seriai iliteriace	Stop bits	1	2 bits	leave the factory settings of the
	[rLF	• <i>B</i>	CR/LF	AD-8922A as is and set the
	Terminator	1	CR	weighing instrument.

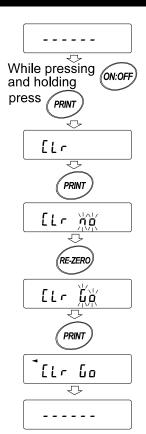
Factory setting

4.3. Initialization

Initialization restores the AD-8922A function settings to factory settings.

- 1. Connect the AC adapter. The bar display or the weighing data display appears.
- 2. While pressing and holding the ON:OFF key, press the PRINT key. "[Lr" appears in the display.
- 3. Press the PRINT key. (To cancel the operation, press the CAL key.)
- 4. Press the RE-ZERO key to select "ໂຜ".
- 5. Press the PRINT key to perform initialization.

 After initialization, the bar display or the weighing data display appears.



5. RS-232C Serial Interface

RS-232C

Transmission system : EIA RS-232C

Transmission form : Asynchronous, bi-directional, half duplex

Data format : Baud rate : 600, 1200, 2400, 4800, 9600, 19200 bps

Data bits : 7 bits or 8 bits

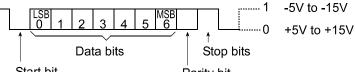
Parity bit : EVEN, ODD (Data bits 7 bits)

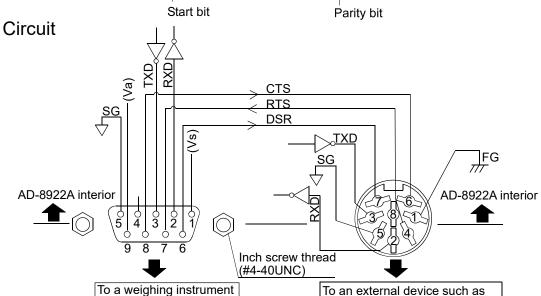
NONE (Data bits 8 bits)

Stop bits : 1 bit or 2 bits

Code : ASCII

Terminator: <CR> or <CR><LF> RS-232C





Connection to the weighing instrument

D-Sub 9-pin (male)

Pin	Signal	Direction	Description	
No.	name	Direction		
1	(Vs)	_	Used internally	
2	RXD	Input	Receive data	
3	TXD	Output	Transmit data	
4		_	N.C.	
5	SG	_	Signal ground	
6	DSR	Input	Data set ready	
7	RTS	Output	Request to send	
8	CTS	Input	Clear to send	
9	(Va) *1	_	Used internally	

(AD-8922A is a DTE. Connects to a DCE such as a weighing instrument using a straight through cable.)

When making the cable yourself, do not connect to the internally used terminals.

Connection to an external device

a personal computer or a printer

DIN 8-pin (female)

2 (F (.ee.)					
Pin	Signal	Direction	Description		
No.	name	Direction	Description		
1	FG		Frame ground		
2	RXD	Input	Receive data		
3	TXD	Output	Transmit data		
4	RTS	Input	Request to send		
5	SG		Signal ground		
6	CTS	Output	Clear to send		
7	DSR	Output	Data set ready		
8	_	_	N.C.		
8	_		N.C.		

(The signal names except TXD and RXD apply to the DTE such as a personal computer.)

*1 Used when connecting to some A&D measuring instruments. Using the wrong cable may damage the equipment. Be sure to check the applicable cables. For cables, refer to "1.3 Applicable instruments".

6. Troubleshooting

Shown below is a list of various phenomena of the AD-8922A and the remedies.

Table 7

Phenomenon	Cause and remedy
	The communications settings of the AD-8922A and the weighing
Error 10 appears.	instrument are not the same.
	Check the settings.
	The weighing instrument data format is incorrect.
Error II appears.	Set the data format to A&D standard format. Also check whether or
	not data other than weighing data is output.
	Is the weighing instrument in the stream mode?
	Only the stream mode displays the weighing data continuously. Other
The [] display	modes display the data only when received. When the hold display is
remains and no weighing	selected in the AD-8922A function setting, the previous data received
data appears.	is displayed until the next data is received.
	Are the communications settings correct?
	Is the cable correct?
	Electrical noises may affect the display.
The display flickers.	Using the grounding terminal located on the rear of the AD-8922A,
	ground the AD-8922A.

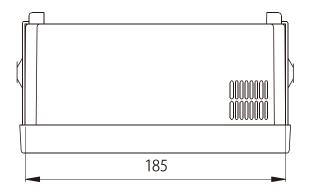
7. Specifications

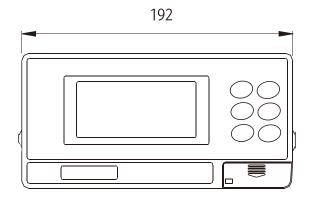
Power supply (AC adapter)	Confirm that the adapter type is correct for the local voltage and power		
	receptacle type.		
	Power consumption : approx. 30 VA (supplied to the AC adapter)		
	Current Consumption : DC12 V, approx. 0.15 A (excluding the AC)		
	adapter and weighing instrument)		
Transmission system	RS-232C *1		
Operating environment	5°C to 40°C (41°F to 104°F), 85%RH or less		
	(No condensation)		
Altitude	2000 m or less		
Pollution degree	2		
External dimensions	238 (W) x 132 (D) x 170 (H) mm		
Net weight	Approx. 1.0 kg		

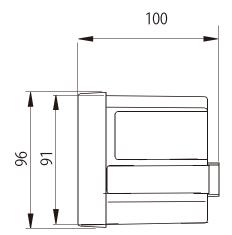
^{*1:} Power input/output is possible with some A&D measuring instruments and power supplies. I/O: DC12 V Current consumption: approx. 0.3 A

For models that can input and output power, refer to "3.3. Power supply connection".

8. External Dimensions



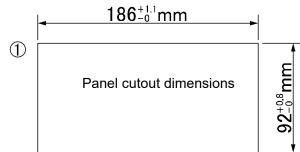


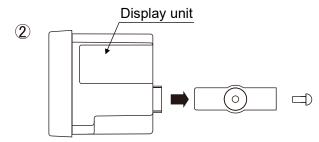


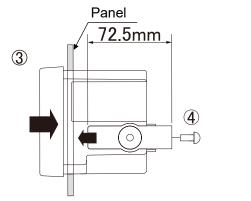
Unit: mm

8.1. Mounting to Panel

- Cut the panel according to the size of the display unit.
- Remove the screws (one on each side) that secure the metal fixtures from rear side of the display unit and pull the metal fixtures out.
- 3. Insert the display unit from the front side of the panel.
- 4. From the rear side of the panel, insert the metal fixtures in the channels located on both sides of the display unit, and secure it with the screws (one on each side).

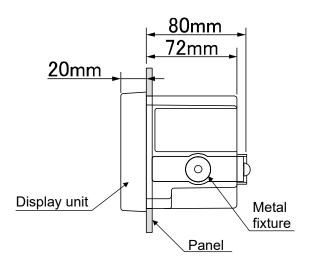






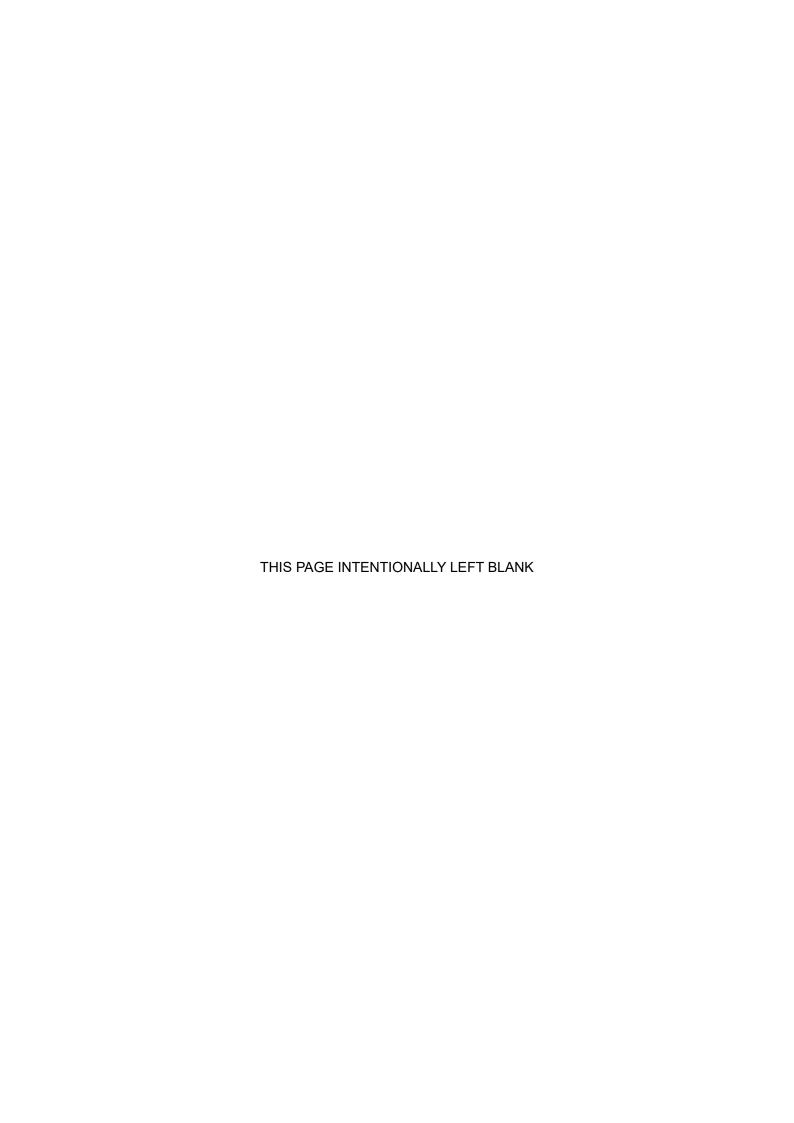
Panel thickness: 1.0 mm to 3.0 mm

Tightening torque: 120 Ncm



MEMO

MEMO	





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