

AD-8923-CC

**Remote Controller
(CC-Link)**

INSTRUCTION MANUAL



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1. INTRODUCTION

This manual describes how the AD-8923-CC remote controller works and how to get the most out of it in terms of performance.

Read this manual thoroughly before using the AD-8923-CC and keep it at hand for future reference.

1.1. Features

Connecting the AD-8923-CC remote controller to a weighing instrument will enable transmission of RS-232C weight data from the weighing instrument to a PLC using CC-Link.

- Displays the weight data transmitted from the weighing instrument.
- Can change the weighing speed of the AD-4212C, calibrate the AD-4212C using an external calibration weight and share the power supply with the AD-4212C.

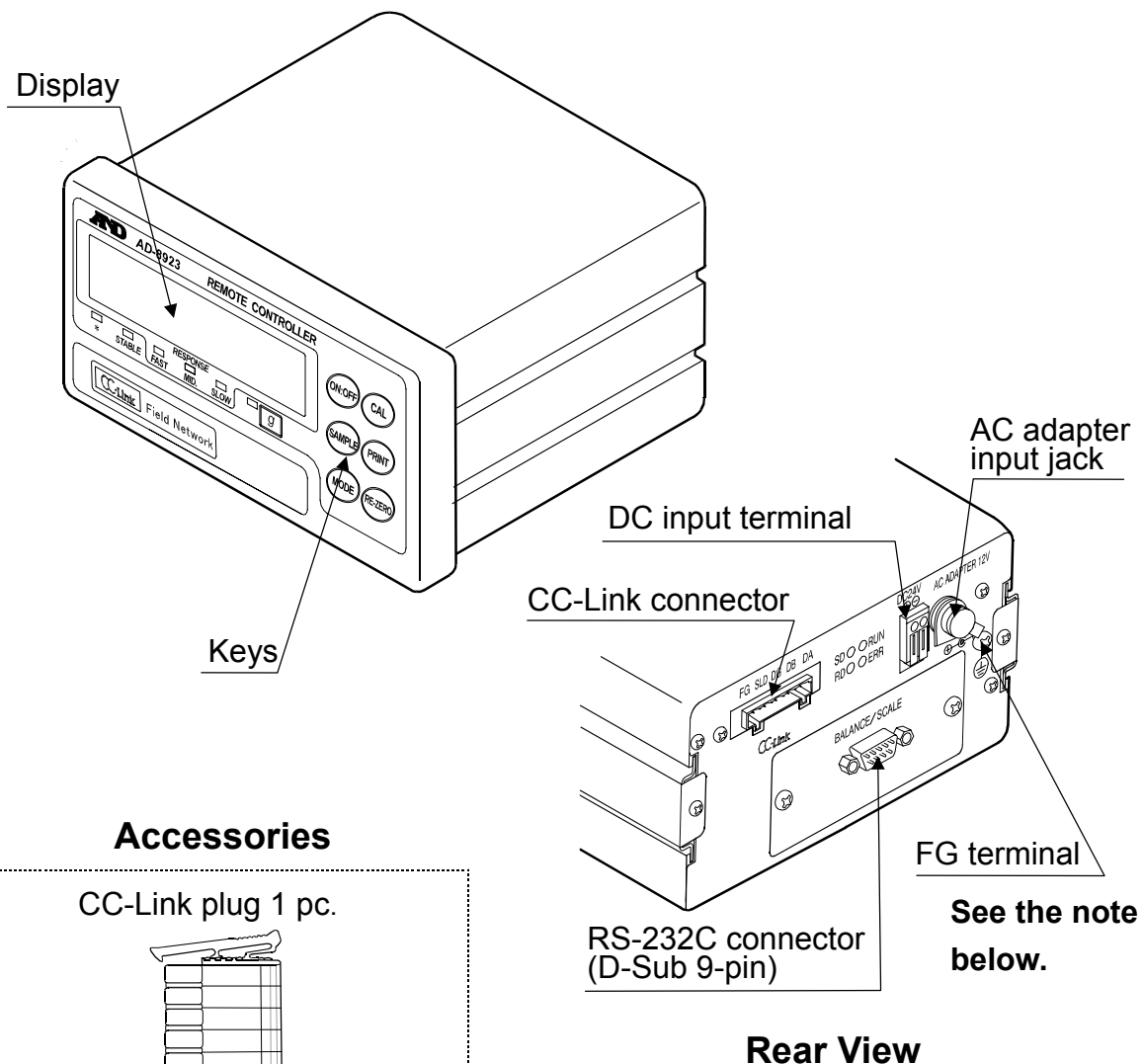
Note

- **When the AD-4212C is used as the weighing instrument, connecting power to either the AD-8923-CC or the AD-4212C will supply power to both devices. Refer to “3.3. Turning the power on.”**
- Using the CC-Link interface, one CC-Link master station can control up to 42 units consisting of an AD-8923-CC and AD-4212C, to receive data or perform re-zeroing.

Note

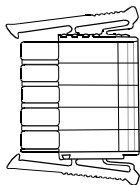
- **The AD-8923-CC CC-Link is a remote device station of CC-Link ver.1.10. CC-Link is a high-speed field network able to simultaneously handle both control and information data. With a high communication speed of 10 Mbps, CC-Link can achieve the maximum transmission distance of 100 meters and connect to 64 stations. When a CC-Link network is configured using the AD-8923-CC, the maximum number of stations (or units) will be 42.**

2. DESCRIPTION OF EACH PART

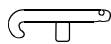


Accessories

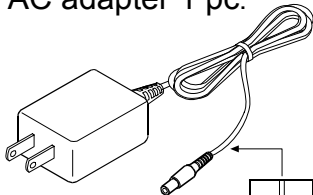
CC-Link plug 1 pc.



Connector operation lever 1 pc.



AC adapter 1 pc.

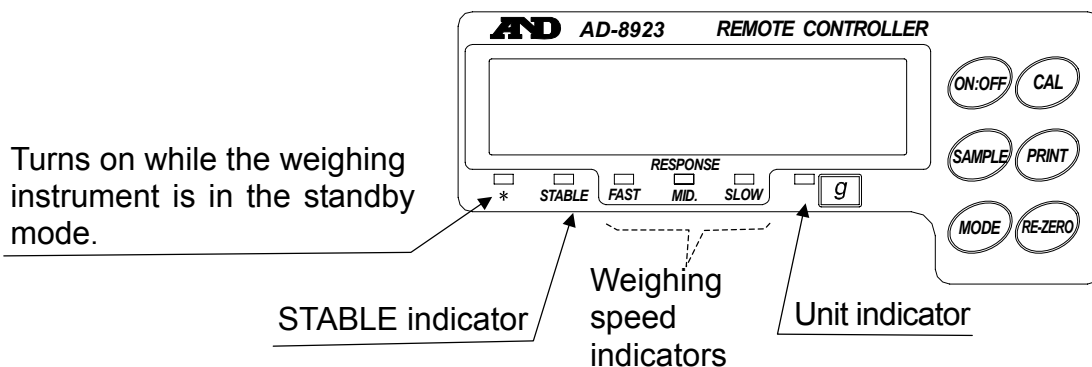


AD adapter ID label

Note

- When the AD-8923-CC is to be built into a weighing system, be sure to ground the FG terminal.
- Please confirm that the AC adapter type is correct for your local voltage and receptacle type.

2.1. Display



- Displays the weight data received. When the unit is “g” (gram), the unit indicator turns on. If the balance outputs RS-232C weighing data that exceeds six digits, the AD-8923-CC does not display the high-end digits.
- When the weight value is stable (the header of the weight data received is “ST”), the STABLE indicator turns on.
- If the AD-8923-CC does not receive the weight data for two seconds or more, is displayed (Bar display).
- Displays the AD-4212C weighing speed that is currently set, by turning on the weighing speed indicator. When connected to other instruments, the AD-8923-CC weighing speed indicators have no function.

2.2. Keys

- Operates the AD-4212C. For details, refer to “3.4. Operation”.
- To enter the function setting of the AD-8923-CC, press the key while holding down the key. For details, refer to “4. FUNCTION SETTING”.)

2.3. Connectors

- RS-232C connector D-Sub 9-pin (male)
Used for connection to the weighing unit. For the proper cable, refer to the instruction manual for the weighing instrument used.
- CC-Link connector 5-pin (male)
Used to connect to other AD-8923-CCs, PLCs or other CC-Link devices. For details, refer to “6. CC-Link CONNECTOR”.
- DC input terminal (24 DCV) / AC adapter input jack
Either power supply can be used. For details, refer to “3.3. Turing the power on”.

3. CONNECTION

3.1. Setting the weighing instrument and the AD-8923-CC

Set the following items so that the weighing instrument and the AD-8923-CC have the same value for each item.

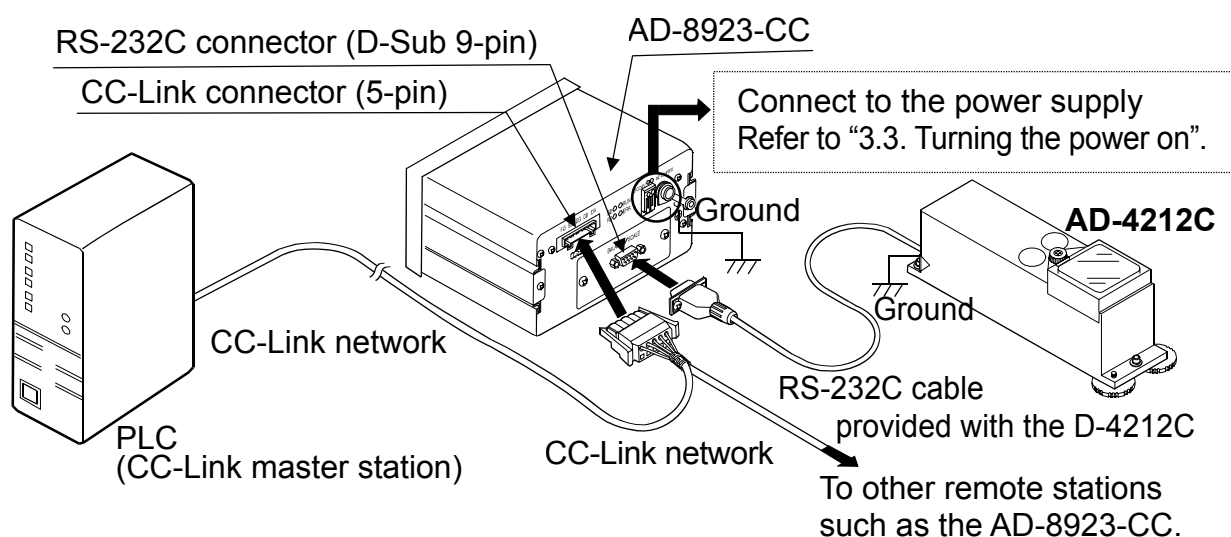
Item	Weighing instrument	AD-8923-CC
Baud rate	600, 1200, 2400*, 4800, 9600, 19200 bps	
Data bits, parity	7 bits EVEN*	
Stop bits	1 bit*	
Terminator	<CR><LF>*	
Data format	A&D standard format	–
Communication control	No RTS/CTS control	–
Data output mode	Stream mode	–

* Factory setting for the AD-8923-CC. The factory setting for the AD-4212C is the same unless otherwise specified.

3.2. Connecting the cables

Connect the cables using the connectors located on the rear of the AD-8923-CC.

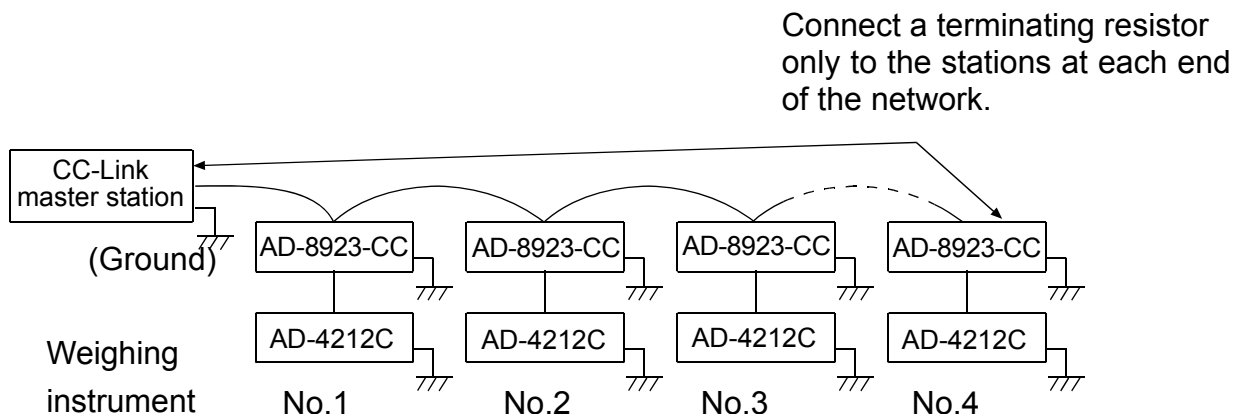
Connection example to the AD-4212C and a PLC



Note

- Be sure to ground the AD-4212C and the AD-8923-CC.

Connection example for the CC-Link network (weighing instruments No.1 through No.4)



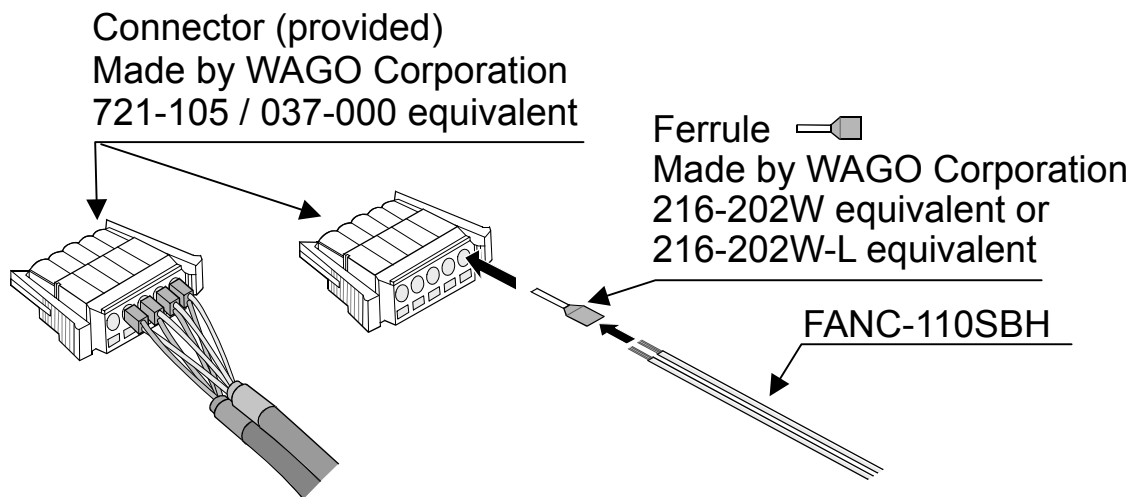
- The value of the terminating resistor varies depending on the CC-Link cable used.
- Use the same resistance value at each end of the network.

Cable	FANC-110SBH
Terminating resistor	110Ω 1/2 W

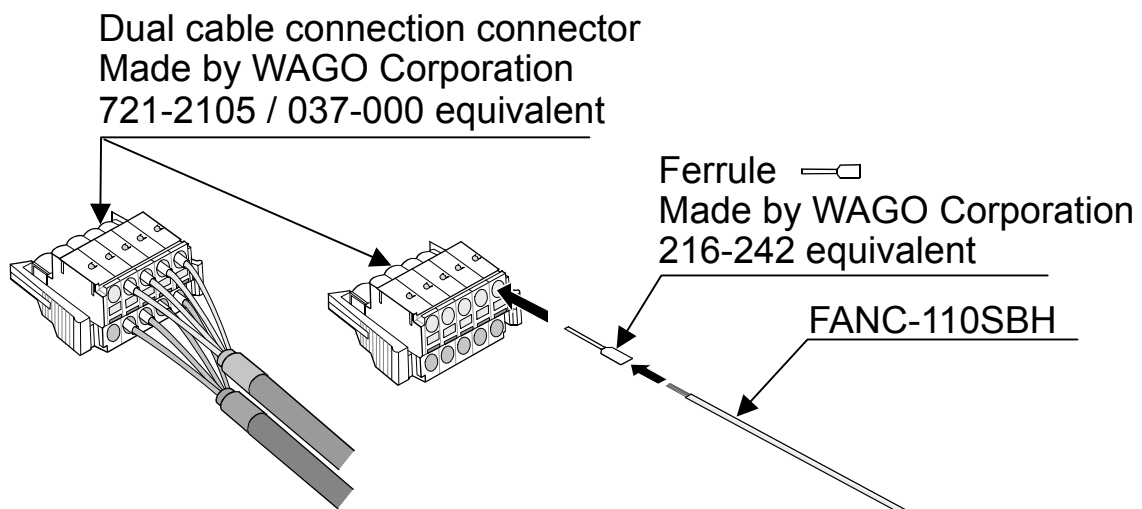
Terminating resistors are not provided.

- When connecting the AD-8923-CC to the CC-Link network using the connector provided (721-105 / 037-000 equivalent), use the ferrule listed below (sold separately).
(Example: when using the FANC-110SBH cable)

Insert the cable into the ferrule and crimp it using the Variocrimp4 206-204 crimping jig, and insert it into the connector.



- A dual cable connection is also available (not provided).
(Example: when using the FANC-110SBH cable)
Insert the cable into the ferrule and crimp it using the Variocrimp4 206-204 crimping jig, and insert it into the connector.



3.3. Turning the power on

As a power supply, an external 24-VDC power supply (24 VDC±10% / 700mA) or a 12-VDC AC adapter can be used.

Note

- **When the AD-4212C is used, connecting power to either the AD-8923-CC or the AD-4212C will supply power to both devices. So, instead of the AD-8923-CC, using the AC adapter on the AD-4212C will supply power to the AD-8923-CC. If the power is connected to both, no problems occur because the power to be used is selected automatically.**

When the external 24-VDC power supply is used

Connect an external 24-VDC power supply to the DC input terminal located on the rear of the AD-8923-CC.

Precautions on using the external power supply

 **CAUTION**

- Use a power supply within the rated voltage range (24 VDC±10%).
Never use a power supply with a voltage exceeding the rated range.
 - It may cause damage or heat buildup.
 - The AD-8923-CC may not function properly.
- Ground the FG terminal of the switching power supply used.
 - To avoid electrical shock and increase the system safety.
 - To increase the resistance against noises.
- Do not share the power line with other devices.
 - Strong noises introduced from other devices may cause damage to the AD-8923-CC.
 - Inrush current from other devices may cause the AD-8923-CC not to start up properly.
 - Circuit configuration of the AD-8923-CC may affect other devices to prevent them from functioning properly.

- Select a switching power supply with a capacity of approximately 700mA for each AD-8923-CC. Note that the AD-8923-CC may not start up with a capacity less than 700mA.
 - If the power supply capacity is not sufficient, the AD-8923-CC may not function properly.
- Be sure to add a noise filter on the front end of the switching power supply and ground the FG terminal.
 - This will increase the resistance against noises.
- Be sure to ground the FG terminal of the AD-8923-CC and the AD-4212C.
 - This will increase the resistance against noises.

Cable connection

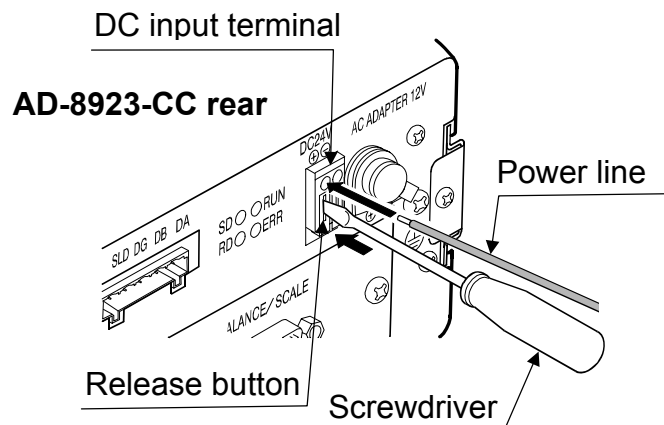


Before inserting the power line, make sure that the power to the AD-8923-CC is turned off.

(1) Inserting the power line

Press down the release button on the DC input terminal using a screwdriver and insert the power line.

The recommended stripping length for the power line is 10 mm.



Applicable wire range

- Single wire: $\phi 1.0$ mm (AWG 26) to $\phi 1.2$ mm (AWG 16)
- Twisted wire: 0.3 mm² (AWG 22) to 0.75 mm² (AWG 20)
Individual wire diameter $\phi 0.18$ mm or greater

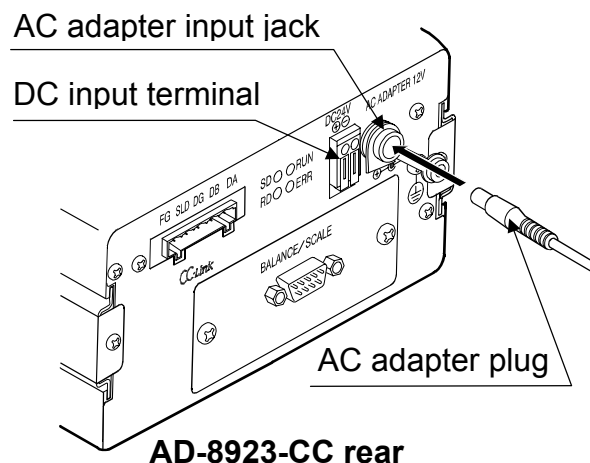
(2) Securing or removing the power line

To secure the power line, return the release button to the initial position using the screwdriver. The power line will be locked.

To remove the power line, press the release button again using the screwdriver, unlocking the power line.

When the AC adapter is used

Insert the AC adapter plug into the AC adapter input jack located on the rear of the AD-8923-CC and insert the AC adapter into an electrical outlet.



3.4. Operation

- Displays the data transmitted by the weighing instrument connected.
- The keys on the AD-8923-CC can control the weighing instrument. The key operation depends on the weighing instrument connected. For details, refer to “Table 2” of “8-1 Applicable Instruments”.

3.5. Calibrating the AD-4212C

The following is the calibration procedure when the AD-4212C is connected.
(A calibration weight is used.)

Caution

- Do not allow vibration, drafts or temperature change to affect the AD-4212C during calibration.

Caution on using an external calibration weight

- The accuracy of the weight can influence the accuracy of weighing.
Select an appropriate weight as listed below.
A calibration weight of 200 g (conforming to OIML, Class E2 or equivalent) is provided with the AD-4212C as a standard accessory.

Weighing instrument	Usable calibration weight
AD-4212C-300	50g, 100g, 200 g , 300g
AD-4212C-600	50g, 100g, 200 g , 300g, 400 g, 500 g, 600 g
AD-4212C-3000	50g, 100g, 200 g , 300g, 400 g, 500 g, 1000 g, 2000g, 3000g
AD-4212C-6000	200 g , 500 g, 1000 g, 2000g, 3000g, 4000 g, 5000 g, 6000 g

The calibration weight in bold type: factory setting

Display



- This indicator means “the AD-4212C is measuring calibration data”. Do not allow vibration, drafts or other external disturbances to affect AD-4212C while this indicator is displayed.

Calibration procedure

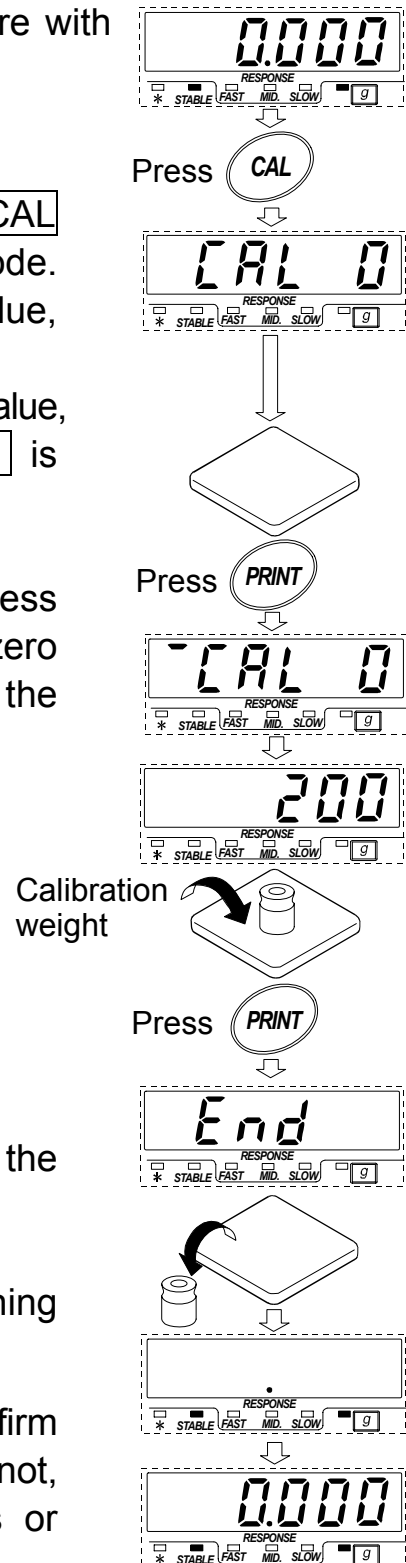
Calibrates the AD-4212C using the calibration weight.

Operation

1. Warm up the AD-4212C for 30 minutes or more with nothing on the pan.
2. Press the **CAL** key. **CAL 0** is displayed.
 - If you want to cancel calibration, press the **CAL** key. The display will return to the weighing mode.
 - If you want to change the calibration mass value, press the **SAMPLE** key. Press the **RE-ZERO** key to select the mass value, and press the **PRINT** key to store it. **CAL 0** is displayed.
3. Confirm that there is nothing on the pan and press the **PRINT** key. The AD-4212C measures the zero point. Do not allow vibration or drafts to affect the AD-4212C.
The calibration weight value is displayed.
4. Place a calibration weight, of the weight value displayed, on the pan and press the **PRINT** key. The AD-4212C measures the calibration weight. Do not allow vibration or drafts to affect the AD-4212C.
5. **End** is displayed. Remove the weight from the pan.
6. The display will automatically return to the weighing mode.
7. Place the calibration weight on the pan and confirm that calibration was performed correctly. If not, check the ambient conditions such as drafts or vibration, and repeat steps 2 through 7.

* It is also possible to carry out a calibration described above using the register of the CC-Link.

For details, refer to “6.4. Calibration with the AD-4212C using the register of the CC-Link”.



4. FUNCTION SETTING

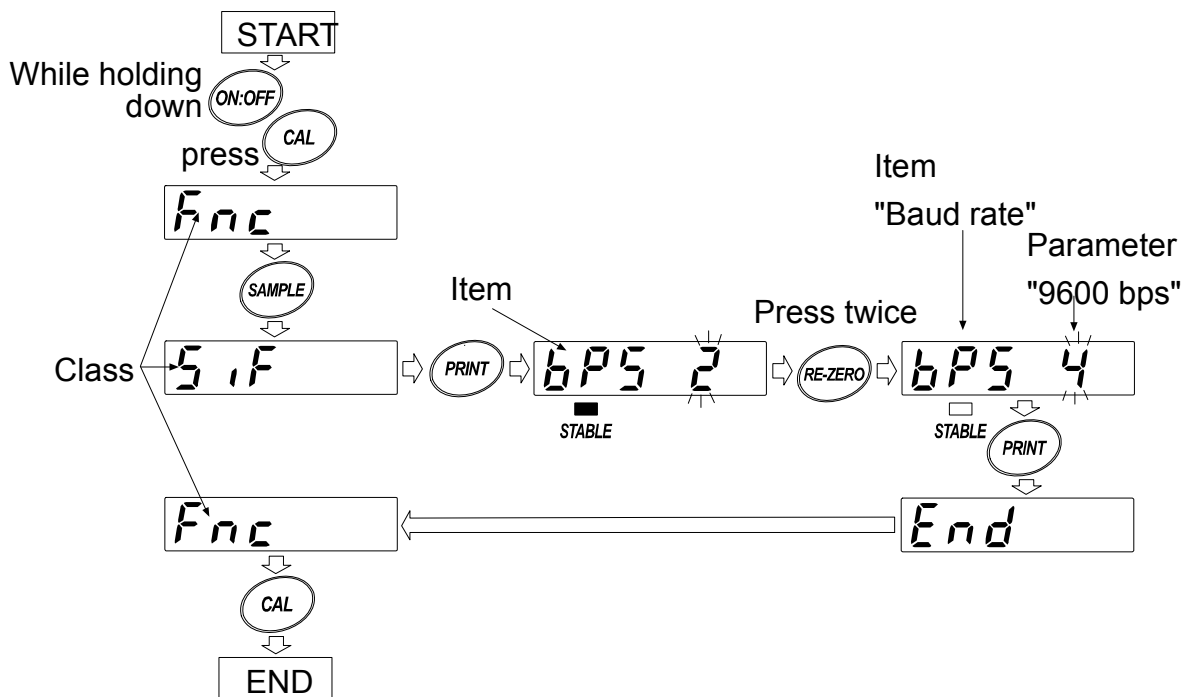
Function setting specifies the AD-8923-CC performance. The parameters are stored in non-volatile memory, and are maintained even if the power line or AC adapter is removed.

The function setting menu consists of two layers. The first layer is the “Class” and the second layer is the “Item”. Each item stores a parameter.

Press the **SAMPLE** key to select an item and press the **RE-ZERO** key to change the parameter. Then, press the **PRINT** key to store the new parameter.

Example

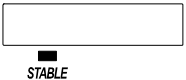




This example sets “Baud rate” to “9600 bps”.



Note

- The AD-8923-CC may not function properly, depending on the settings and operating environment. Check the settings and change them as necessary.

4.1. Display and keys

	The STABLE indicator turns on to indicate that the parameter displayed is in effect.
	Selects a class or item.
	Changes the parameter.
	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.
	When an item is displayed, cancels the new parameter and displays the next class. When a class is displayed, exits the function setting mode and returns to the weighing mode.

4.2. Function table

Class	Item and Parameter	Description		
<i>Fnc</i> Environment Display	<i>dPP</i> Decimal point position	▪ -	Not fixed	Displays the decimal point position of the weight data received.
		0 { 5	Fixed	Fixes the decimal point at the set digit. Even if the minimum display is switched using the SAMPLE key, the decimal point position does not change. For details, refer to “6.3. Fixed decimal point position.”
	<i>SAPL</i> Sample key function	0	Disabled	Disables the SAMPLE key function.
		▪ 1	Enabled	Enables the SAMPLE key function.
<i>5 iF</i> Serial interface	<i>bPS</i> Baud rate	0	600 bps	Set the same value as that of the weighing instrument to be connected.
		1	1200 bps	
		▪ 2	2400 bps	
		3	4800 bps	
		4	9600 bps	
		5	19200 bps	
<i>[[[</i> CC-Link interface	<i>nSt</i> Number of station	▪ 1 { 64	Number of station	Set the same value as that of the CC-Link master station to be connected
		<i>[-bP</i> CC-Link baud rate	0	
	1		625 Kbps	
	2		2.5 Mbps	
	3		5 Mbps	
	▪ 4		10 Mbps	

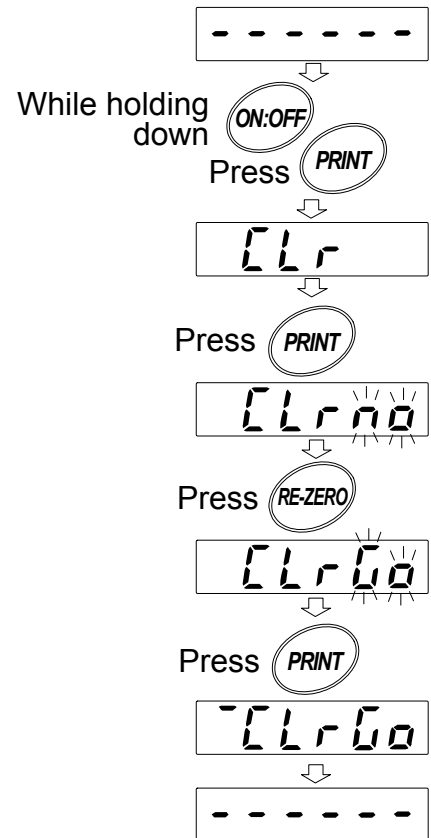
- Factory setting

4.3. Initializing the AD-8923-CC

Initialization restores the function settings of the AD-8923-CC to factory settings.

Operation

- 1 Turn the power on. - - - - - or weighing mode display appears.
- 2 While holding down the ON:OFF key, press the PRINT key. [Lr is displayed.
- 3 Press the PRINT key.
To cancel this operation, press the CAL key
- 4 Press the RE-ZERO key to select "Go".
- 5 Press the PRINT key to perform initialization.
After initialization, - - - - - or weighing mode display appears.



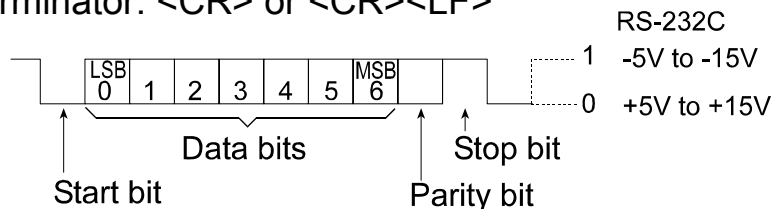
5. RS-232C CONNECTOR

The RS-232C cable provided with the AD-4212C can be connected directly.

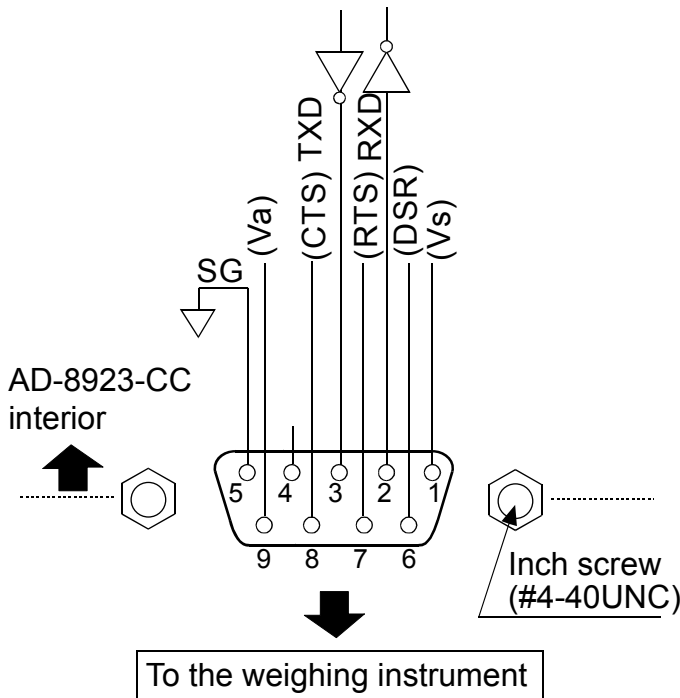
5.1. RS-232C serial interface specifications

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 or 8 bits
- Parity : 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>



Circuit



Connection to the weighing instrument
D-Sub 9-pin

Pin No.	Signal name	Direction	Description
1	(Vs)	–	Used internally
2	RXD	Input	Receive data
3	TXD	Output	Transmit data
4	–	–	N.C.
5	SG	–	Signal ground
6	(DSR)	–	Used internally
7	(RTS)	–	Used internally
8	(CTS)	–	Used internally
9	(Va)	–	Used internally

(The AD-8923-CC is a DTE device. Connect to a DCE device such as the AD-4212C, using a straight through cable.)

Note

- When the user prepares a cable, do not connect to the pins that are used internally.

6. CC-Link CONNECTOR

The AD-8923-CC CC-Link is a remote device station of CC-Link ver.1.10. When a CC-Link is used, the AD-8923-CC can be controlled by the PLC remote I/O or remote registers. So, the program can be simple. And connection to a PLC is simple, thus, a weighing system can be built easily. The setting values of CC-Link are changed in the function setting [LL].

6.1. CC-Link interface specifications

Number of station	1 to 64
Baud rate	156 kbps, 625 kbps, 2.5 Mbps, 5 Mbps, 10 Mbps

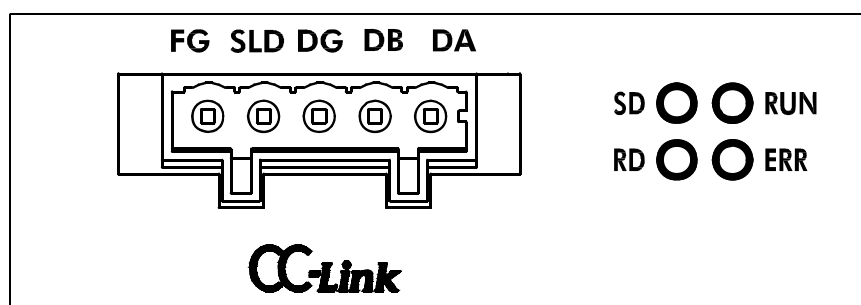
Communications connector

The connector used can be attached or removed while the power is ON. The function of each signal line is as follows.

DA	Signal DA
DB	Signal DB
DG	Signal ground
SLD	Shield
FG	Frame ground

Status LEDs

LED	ON	OFF	Blinking
RUN	Normal	<ul style="list-style-type: none"> • Resetting • No signal 	–
SD	Transmitting	–	–
RD	Receiving	–	–
ERR	<ul style="list-style-type: none"> • Setting error • CRC error • Station trouble 	Normal	When the setting values are changed



CC-Link connector and LEDs

Memory map

Remote register (Number of occupied stations: 1)

Blank "Name" column: internally reserved (not used).

AD-8923-CC --> Master station			Master station --> AD-8923-CC		
Remote register	Buffer memory	Name	Remote register	Buffer memory	Name
RWr0000	2E0	Weight value	RWw0000	1E0	
RWr0001	2E1		RWw0001	1E1	
RWr0002	2E2		RWw0002	1E2	
RWr0003	2E3		RWw0003	1E3	

Remote I/O (Number of occupied stations: 1)
 Blank "Name" column: internally reserved (not used).

AD-8923-CC --> Master station			Master station --> AD-8923-CC		
Remote input	Buffer memory	Name	Remote output	Buffer memory	Name
RX0000	0E0	State flag of calibration *1	RY0000	160	Re-zero
RX0001			RY0001		
RX0002			RY0002		Tare (Re-zero)
RX0003		State flag of calibration progress *1	RY0003		Calibration *1
RX0004			RY0004		Operation decision at calibration *1
RX0005			RY0005		
RX0006		CPU operation	RY0006		Changing of weighing speed *1
RX0007		Stable / Unstable	RY0007		
RX0008		Decimal point 2 ⁰	RY0008		
RX0009		Decimal point 2 ¹	RY0009		
RX000A		Decimal point 2 ²	RY000A		
RX000B		State flag of response characteristic *1	RY000B		
RX000C			RY000C		
RX000D			RY000D		
RX000E			RY000E		
RX000F		Weighing error flag *2	RY000F		
RX0010	0E1		RY0010		
RX0011			RY0011		
RX0012			RY0012		
RX0013			RY0013		
RX0014			RY0014		
RX0015			RY0015		
RX0016			RY0016		
RX0017			RY0017		
RX0018		Request flag of initialization	RY0018	161	Reply flag of initialization
RX0019		Reply flag of initial data setting	RY0019		Request flag of initial data setting
RX001A			RY001A		
RX001B		Remote READY flag	RY001B		
RX001C			RY001C		
RX001D			RY001D		
RX001E			RY001E		
RX001F			RY001F		

*1 This function can only be used when connecting the AD-8923-CC to the AD-4212C.

*2 When the connection between the AD-8923-CC and balance is severed, the flag turns on for after approx. 2 seconds.

Numeric values of the remote register

All the values are hexadecimal. Negative values are expressed by the two's complement.

Decimal	Hexadecimal (32 bits)
-10	FFFFFFFF6
-1	FFFFFFFF
0	00000000
1	00000001
10	0000000A

Weight value examples

1.000 will be 1000, thus expressed as 0x000003E8. (RWr0001: 0x0000, RWr0000: 0x03E8)

-1.000 will be -1000, thus expressed as 0xFFFFFC18. (RWr0001: 0xFFFF, RWr0000: 0xFC18)

Prohibited writing in the internally reserved areas

- Writing is prohibited in the internally reserved areas.
- Writing in the remote output (RY) and the remote register (RWw) of the internally reserved areas may cause the AD-8923-CC to malfunction.
- Values of the remote input (RX) and the remote register (RWr) of the internally reserved areas are not fixed.

Stable / Unstable

RX0007	
0	Unstable
1	Stable

Decimal point

RX0008 to RX000A, 3-bit binary notation

RX000A	RX0009	RX0008	Decimal point position
0	0	0	No decimal point
0	0	1	First digit
0	1	0	Second digit
0	1	1	Third digit
1	0	0	Fourth digit
1	0	1	Fifth digit

Decimal point position example

When displaying 1.000, express 3 as a decimal point at the third digit, thus 0x011. (RX000A: 0, RX0009: 1, RX0008: 1)

State flag of calibration *

RX0002	RX0001	RX0000	State
0	0	1	Waiting for zero point input
0	1	0	Waiting for calibration mass value input
0	1	1	Calibration completed
1	0	0	Calibration error

State flag of calibration progress *

RX0003	Data state
0	Data waiting
1	Data acquiring

State flag of response characteristic

RX000D	RX000C	RX000B	State of response characteristic
0	0	1	FAST
0	1	0	MID
1	0	0	SLOW

Re-zero / Tare

Sets the weighing instrument to zero.

When the remote I/O register turns on (1), re-zeroing is performed.

* This function can only be used when connecting the AD-8923-CC to the AD-4212C.

6.2. Timing chart

Below examples are when the station number is set to 1.

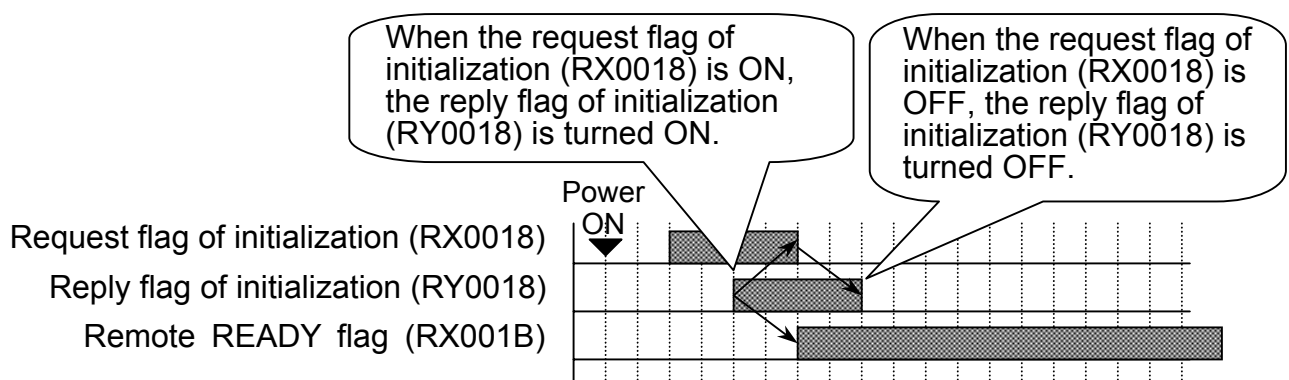
When connecting to a power supply

When the AD-8923-CC is connected to a power supply and the CC-Link is ready, the request flag of initialization (RX0018) becomes active.

The master station confirms that RX0018 is active, performs initialization and turns the reply flag of initialization (RY0018) ON.

The AD-8923-CC turns the request flag of initialization (RX0018) OFF and turns the remote READY flag (RX001B) ON.

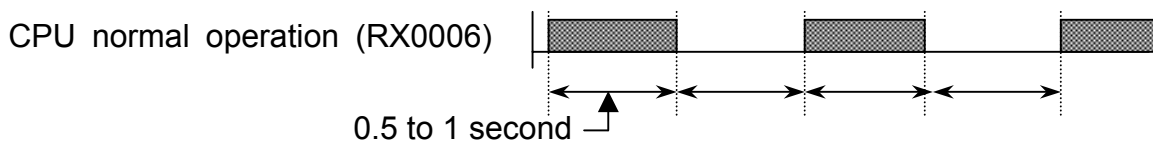
Turn OFF the reply flag of initialization (RY0018) in the master station.



Performance upon power-ON

CPU operation

The CPU normal operation (RX0006) is a signal to check that the AD-8923-CC is connected to a power supply and it functions normally. During normal operation, the signal is reversed at an interval of 0.5 to 1 second.



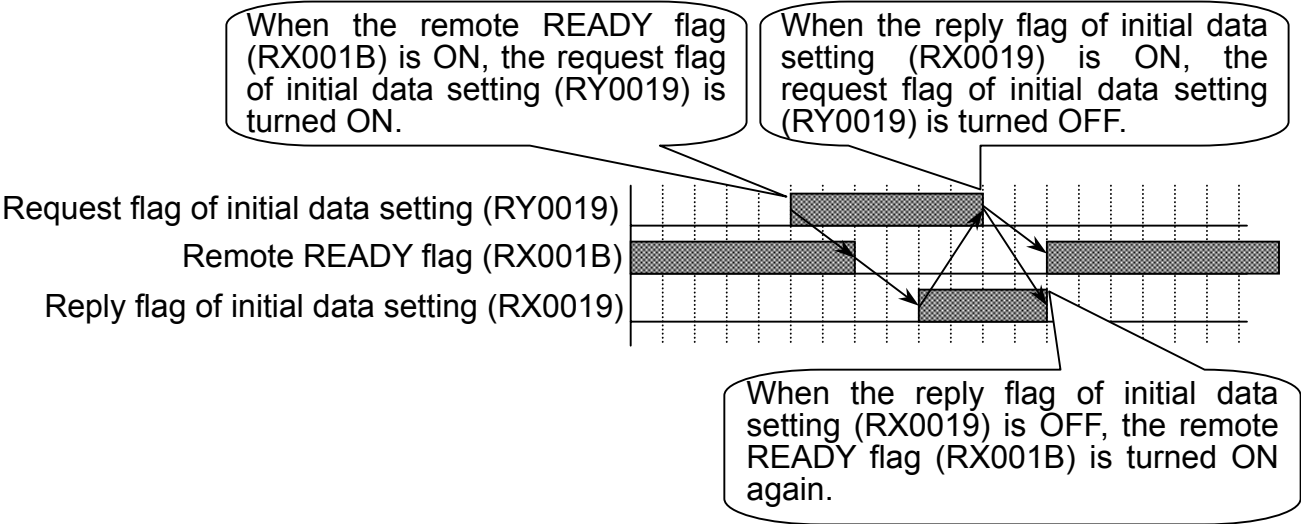
CPU normal operation signal

Requesting initialization from the master station

When requesting the initial data setting to the AD-8923-CC from the master station, turn the request flag of initial data setting (RY0019) ON while the remote READY flag (RX001B) is active.

The AD-8923-CC turns the remote READY flag (RX001B) OFF and performs initial data settings. When initial data settings are complete, the reply flag of initial data setting (RX0019) is turned ON.

Turn OFF the request flag of initial data setting (RY0019) in the master station.






Performance of request flag of initial data setting

6.3. Fixing the decimal point position

Using the function setting of dPP , the decimal point position of the value displayed on the AD-8923-CC and the decimal point position of the weight value output via CC-Link can be fixed.

In this way, even if the minimum display is switched using the **SAMPLE** key, the digit position for CC-Link output does not change.


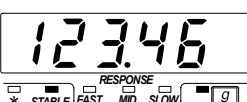
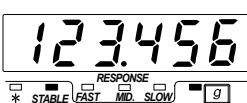
Example 1: Does not fix the decimal point position ($dPP -$) Factory setting

Key	Balance output	AD-8923-CC display	CC-Link output (Weight value) (Decimal point)
	S T , + 0 0 1 2 3 . 4 6 <input type="checkbox"/> <input type="checkbox"/> g <input type="checkbox"/> <input type="checkbox"/> C _R L _F		12346 Second digit
	S T , + 0 1 2 3 . 4 5 6 <input type="checkbox"/> <input type="checkbox"/> g <input type="checkbox"/> <input type="checkbox"/> C _R L _F		123456 Third digit

Note

- : space 20h
- When the minimum display is switched using the **SAMPLE** key, the digits of the weight values output via CC-Link don't align with each other.

Example 2: Fixes the decimal point position to the third digit ($dPP 3$)

Key	Balance output	AD-8923-CC display	CC-Link output (Weight value) (Decimal point)
	S T , + 0 0 1 2 3 . 4 6 <input type="checkbox"/> <input type="checkbox"/> g <input type="checkbox"/> <input type="checkbox"/> C _R L _F		123460 Third digit
	S T , + 0 1 2 3 . 4 5 6 <input type="checkbox"/> <input type="checkbox"/> g <input type="checkbox"/> <input type="checkbox"/> C _R L _F		123456 Third digit

Note

- : space 20h
- Even if the minimum display is switched using the **SAMPLE** key, the digits of the weight values output via CC-Link align with each other.
- If the balance outputs RS-232C weighing data that exceeds six digits, the AD-8923-CC does not display the high-end digits.

6.4. Calibration with the AD-4212C using the register of the CC-Link

The following describes the calibration procedure using the register of the CC-Link when connecting the AD-8923-CC to the AD-4212C. (Use calibration mass)

* Only AD-8923-CC software versions P2.05 or later are compatible with this function.

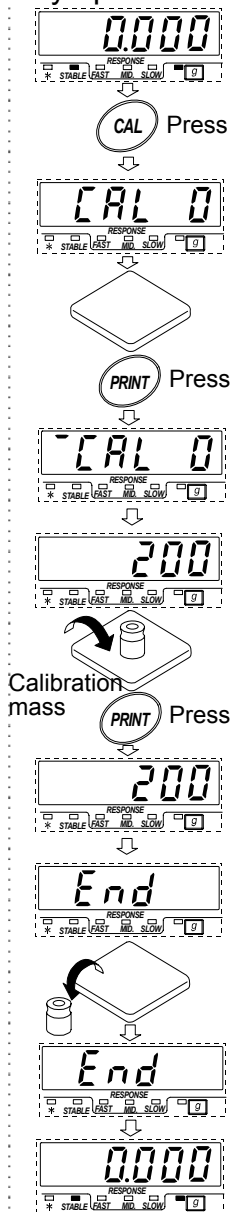
* When calibrating using the key operation, refer to the page 12 for the details.

Precautions to be taken in the calibration

While the calibration is being carried out, take care to use these instruments in an environment where they are not affected by vibration, drafts or temperature change.

RX0003	RX0002	RX0001	RX0000	RX0004	RX0003
Calibration in progress flag	State flag of calibration			Operation decision at calibration	Calibration

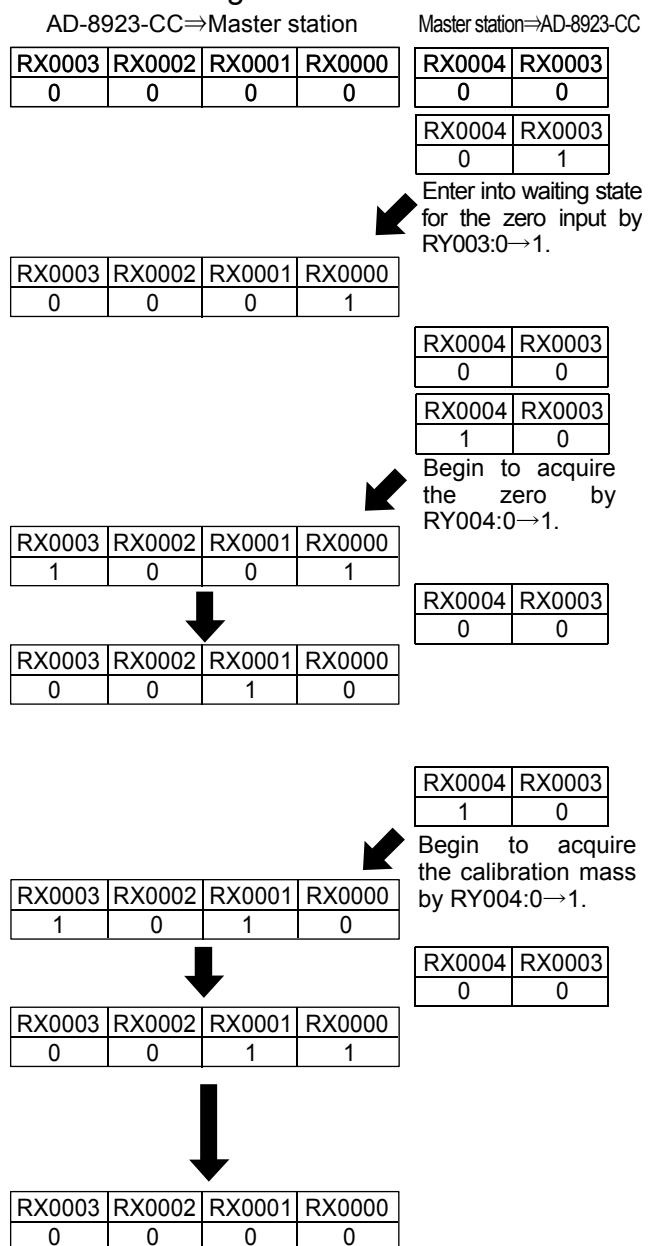
Calibration using key operation



State and operation of the balance

- Weighing state
- (CAL key input)
- Waiting state for zero input
- Confirm that there is nothing on the weighing pan.
- (PRINT key input)
- Acquiring zero state
- Waiting for calibration mass
- (PRINT key input)
- Acquiring calibration mass
- Calibration complete
- Remove the mass from the weighing pan.
- Weighing

Register to be used



When the calibration can not be carried out, the state flag of calibration becomes as follows.



Calibration error

RX0003	RX0002	RX0001	RX0000
0	1	0	0

7. TROUBLESHOOTING

Symptom	Description
<p>Error 10 appears.</p>	<p>Communication settings of the AD-8923-CC do not match with those of the weighing instrument.</p> <p>Check the settings such as baud rate and parity and correct them as necessary.</p> <p>For details, refer to “3.1. Setting the weighing instrument and the AD-8923-CC”.</p>
<p>----- (Bar display) remains and the weight value is not displayed.</p>	<ul style="list-style-type: none"> • Is the data output mode of the weighing instrument set to “stream mode”? In a mode other than “stream mode”, the weight values are displayed only when they are transmitted. • Check if the communication settings are correct. • Check if the cables are the correct type and are not damaged.
<p>The display flickers.</p>	<p>Electrical noise may cause this symptom.</p> <p>Ground the FG terminal located on the rear of the AD-8923-CC.</p>

8. SPECIFICATIONS

Power supply	: External 24-VDC power supply (24 VDC±10% / 700mA) or AC adapter (Output: 12 VDC / 1A) Please confirm that the AC adapter type is correct for your local voltage and receptacle type.
Transmission system	: CC-Link (CC-Link ver.1.10 remote device station), RS-232C
Communications connector	: D-Sub 9-pin (male) (RS-232C connector to the weighing instrument) 5-pin (male) (CC-Link connector)
External dimensions	: 144 (W) X 110 (D) X 72 (H) mm
Mass	: Approx. 620 g
Standard accessories	: CC-Link plug 1 pc. Connector operation lever 1 pc.

8.1. Applicable Instruments

The AD-8923-CC 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. (Refer to “Table 2”)

Table 1 Applicable weighing instruments and what is required

Weighing instrument	What is required to connect to a weighing instrument	
	Option for the instrument	Communications cable (Length 2 m)
AD-4212C	None (D-Sub 9-pin)	None (Use the cable provided for AD-4212C) *
AD-4212AB, GX, GF, GX-K, GF-K, GP, FP, GR, HR, MC	None (D-Sub 25-pin)	AX-KO1710-200
EK- <i>i</i> , EW- <i>i</i> , FC- <i>i</i> , FC- <i>Sj</i> , GH, HR- <i>i</i> , FZ- <i>i</i> , FX- <i>i</i> , BM, HR-AZ, HR-A	None (D-Sub 9-pin)	AX-KO2466-200
EK-G, EK-H, ET-W, EW-G	OP-03 (D-Sub 25-pin)	AX-KO1710-200
HV-G, HV-WP, HW-G, HW-WP	None (DIN 7-pin)	AX-KO1786-200
FG	OP-03 (DIN 7-pin)	AX-KO1786-200
FS, FS-KL	OP-03 (DIN 8-pin)	AX-KO1786-200
FG-L, FG-M	OP-23 (DIN 8-pin)	AX-KO1786-200

Note (*) - When connecting to the AD-4212C, use the cable provided as a standard accessory for the AD-4212C.

- The part number for standard accessory cable for the AD-4212C is AX-KO3590-1000 (10m).

Table 2 Applicable weighing instruments and key operations

Weighing instrument	AD-8923-CC key					
	ON:OFF	CAL	SAMPLE	PRINT	MODE	RE-ZERO
AD-4212C	Turns the weighing instrument display on or off. *1	Calibrates using the external mass. *4	Switches the minimum display. *2	When setting, decide the operation.	Switches the response characteristic.	Sets the display to zero.
AD-4212AB, GF, GF-K, HR, HR- <i>i</i> , FX- <i>i</i> , HR-A		Calibrates using the internal mass.			Switches the unit displayed. *3	
GX, GX-K, GP, GH, FZ- <i>i</i> , MC, BM, HR-AZ			—			
GR		—				
EK- <i>i</i> , EW- <i>i</i> , EK-G, EW-G, FC- <i>i</i> , FC-Si, FG, FG-L, FG-M, FP, FS, FS-KL, HV-G, HV-WP, HW-G, HW-WP	*5					

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

***1:** Switching the standby or weighing mode is available for the AD-4212C.

***2:** Not available for the counting mode or percent mode

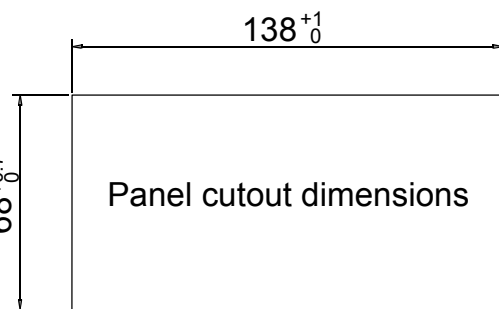
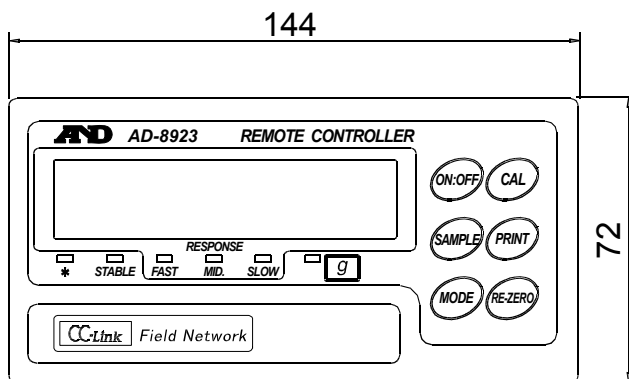
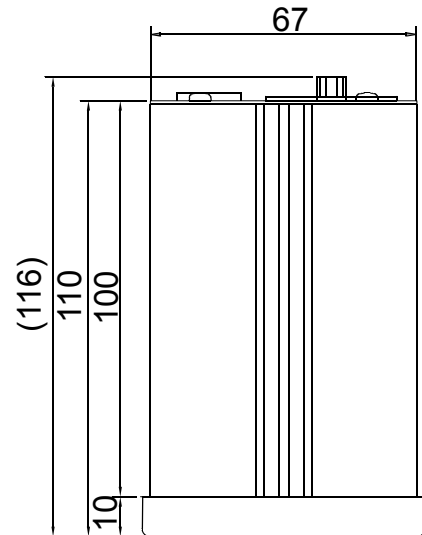
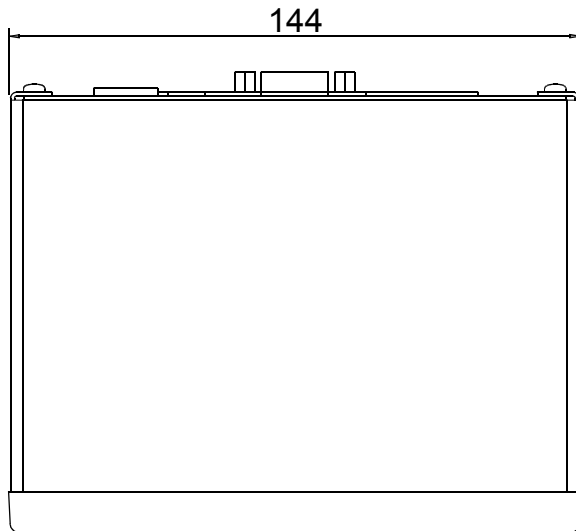
***3:** Not available for the AD-4212

***4:** The AD-8923-CC displays "-----".

Use the display on the balance.

***5:** Do not operate by using the key on the AD-8923-CC.

9. EXTERNAL DIMENSIONS



Panel cutout dimensions when panel mounted

Unit: mm



