Optical Communication Adapter

AD-1611

INSTRUCTION MANUAL

A&D Company, Limited

SAFETY PRECAUTIONS

All safety messages are identified by the following, **"WARNING"** or **"CAUTION"**, of ANSI Z535.4 (American National Standard Institute: Product Safety Signs and Labels). The meanings are as follows:

⚠ WARNING	A potentially hazardous situation which, if not avoided, could result in death or serious injury.
⚠ CAUTION	A potentially hazardous situation which, if not avoided, may result in minor or moderate injury.

❑ This manual is subject to change without notice at any time to improve the product.
❑ Product specifications are subject to change without any obligation on the part of the manufacturer.
❑ When using the AD-1611, the following safety precautions should always be observed.

⚠ CAUTION

❑ Do not disassemble the AD-1611. Disassembling may cause damage to the AD-1611. Damage caused by disassembling will not be covered by the warranty. Contact your local A&D dealer if the AD-1611 needs service or repair.

❑ If a problem has occurred and you cannot resolve it, stop using the AD-1611.

PRECAUTIONS FOR USE

AD-1611 main body
❑ The AD-1611 is not explosion-proof or waterproof. Do not place it where there is a risk of explosion or where it may get wet.

❑ When the optical port is not used or the AD-1611 is stored, attach the protective cap provided to the port. Otherwise, dust may enter the connector in the optical port and cause a communication error.

Power supply
❑ Power is supplied to the AD-1611 by the accessory AC adapter or by a personal computer (PC) connected using the accessory USB cable.

❑ When the USB cable is used for communication, power is supplied by a PC. Only a PC can be connected to the USB port. Do not connect other devices to the USB port nor take power from an outside source.
When an RS-232C cable is used for communication, use the AC adapter to supply power.

Communication

❑ The AD-1611 is a unidirectional communication unit to receive data (optical signals) output from a balance/scale and transmit electric signals to external devices/PC through RS-232C or USB. It cannot transmit commands from external devices/PC to the balance/scale.

❑ To use the USB cable, install a USB driver beforehand. Refer to "3.2. Preparation".

❑ When a PC is used to view the output data, the Windows communication tools software (WinCT) can be used to see the results. Refer to "3.2. Preparation".

❑ If communication is not stable, use the ground terminal to ground the AD-1611. Refer to "2.1. AD-1611".

Optical fiber cable

❑ Use the recommended cables below.
Using other cables may cause damage to the connector or may cause a communication error.

Cables available as options (recommended)
AX-KS5456-010 (10 m)
AX-KS5456-030 (30 m)
AX-KS5456-060 (60 m)

If you want to use a commercially available cable, use an H-PCF (Hard plastic clad fiber, 200/230 μm) cable with an F05 connector (IEC 60874-17, F05 type).

❑ To prevent cables from breaking, do not bend the cables sharply or lay cables on the ground when performing wiring.
The minimum bending radius of the optional cables is 30 mm.

❑ A loose cable may cause a communication error. Hold the connector by the surfaces with no lever and insert it until it clicks into place.
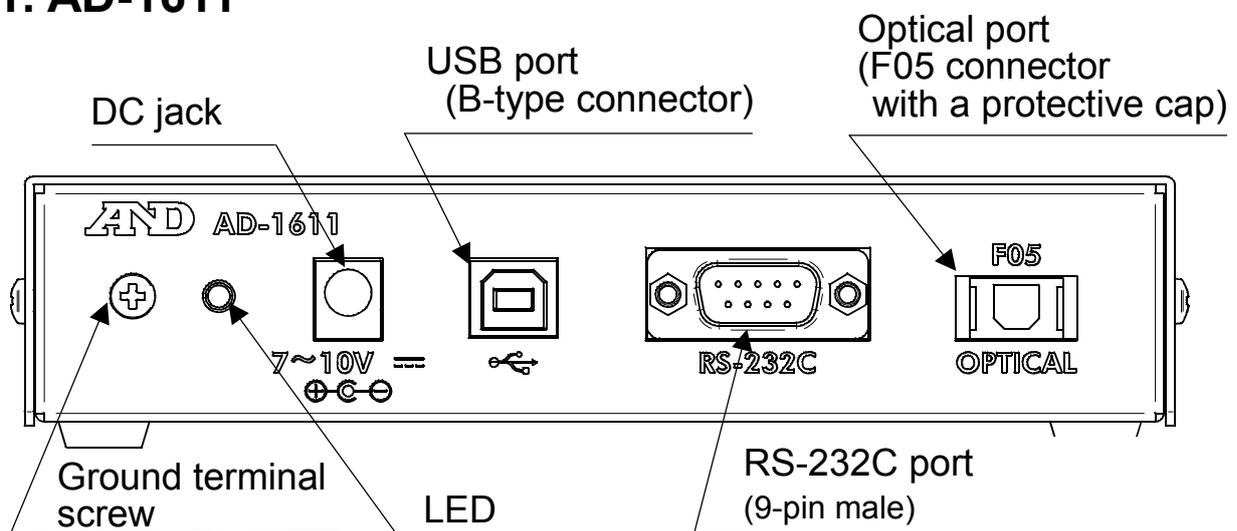
1. INTRODUCTION

This manual describes how the AD-1611 Optical Communication Adapter works and how to get the most out of it in terms of performance.
Read this manual completely before using the AD-1611.

The AD-1611 is a relay device to output signals from a balance/scale to an external device or a PC. When connected to a balance/scale with the optical connector, the AD-1611 converts optical signals to electric signals and output them through RS-232C or USB.

2. PARTS DESCRIPTION/ACCESSORIES

2.1. AD-1611

2.2. Accessories

- ❑ AC adapter
- ❑ USB cable: B-A type 1 m
- ❑ Instruction manual (this document)

Note   Optical fiber cables and RS-232C cables are sold separately.

3. COMMUNICATION

3.1. Items required for communication

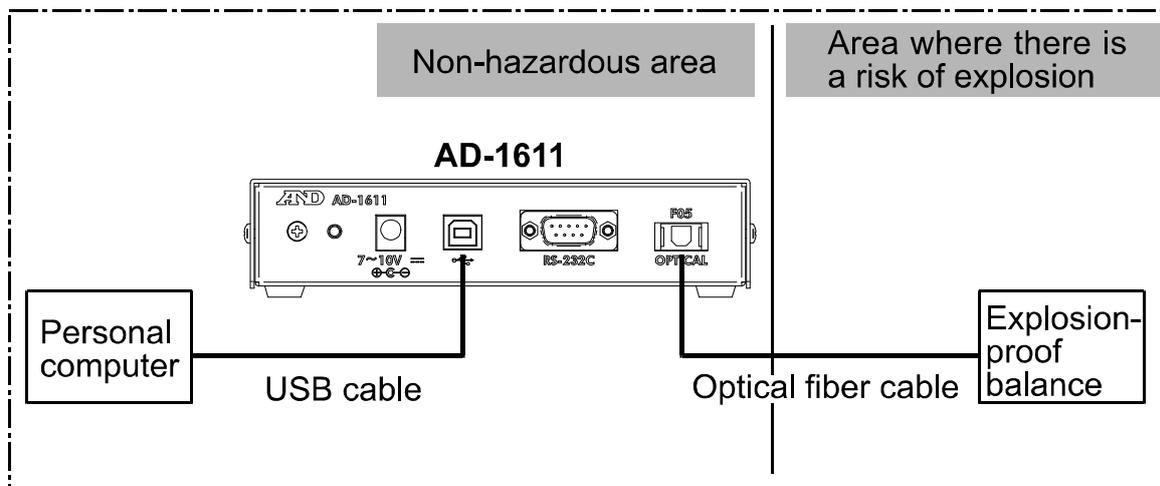|	Name	Accessory/Option*	Type	Remarks
1	AD-1611			
2	Optical fiber cable	Option	H-PCF (200/230 μm) F05/F05 connector (IEC 60874-17, F05 type)	
3	USB cable	Accessory	B male to A male	
	RS-232C cable	Option	D-Sub 9-pin female to female straight	
4	AC adapter	Accessory		Not required when "USB cable" is selected for 3, above.

* Accessories are provided as standard and options are sold separately.
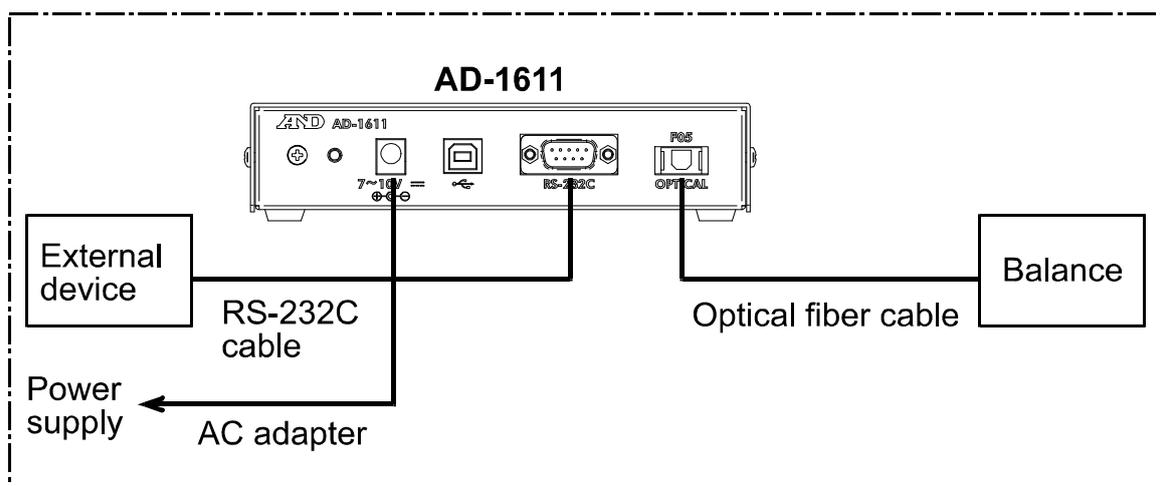
3.2. Preparation

1. When USB is used:
   Install a USB driver on a PC.
   A USB driver is available for download at our website:
   http://www.aandd.jp/products/software/software.html

2. When the AD-1611 is connected to a PC:
   Install the Windows communication tools software (WinCT) on a PC.
   WinCT is also available for download at our website:
   http://www.aandd.jp/products/software/software.html

3. Set the values of parity, data bits and baud rate for the external device or PC, the same as those for the balance/scale.

3.3. Connection

Example 1: To output data from an explosion-proof balance through the USB port

Example 2: To output data from a balance through the RS-232C port.

No setting is required for the AD-1611.
When the AD-1611 is used for the first time, the cables are reconnected or the power is turned on, such as after the balance/scale battery replacement, check as follows before use:
Press the ⌐PRINT⌐ key on the balance/scale two or three times to confirm that the weight value is displayed in a stable way on the external device or PC

4. LED OPERATION

The LED blinks when the AD-1611 receives data.
Whether the LED blinks or turns off depends on the serial interface data output mode setting of the balance/scale. Refer to the balance/scale instruction manual to set the data output mode on the balance/scale.

4.1. PRINT key mode

	Operation	LED	AD-1611
1	The balance/scale ⌷PRINT⌷ key is pressed.	Blinks. See note 1 below.	Receives data.
2	The balance/scale ⌷PRINT⌷ key is not pressed. Or The AC adapter or USB is not connected.	Off	Receives no data. Is turned off.

Note 1 Each time the balance/scale ⌷PRINT⌷ key is pressed, the LED on the AD-1611 blinks once.

4.2. Stream mode

	Operation	LED	AD-1611
1	The balance/scale is turned on.	Blinks. See note 2 below.	Is receiving data.
2	The AC adapter or USB is not connected.	Off	Is turned off.

Note 2 When the balance/scale baud rate is set to be lower than 2400 bps, the LED may appear to illuminate.

If the operation is not correct, refer to "5. TROUBLESHOOTING".

5. TROUBLESHOOTING

	Phenomenon	Probable causes	Remedies
1	The LED does not blink, even if the ☐ PRINT ☐ key is pressed.	When power is not supplied to the AD-1611.	
		The specified AC adapter is not used.	Use the AC adapter provided with the AD-1611.
		AC adapter connection error	Insert the AC adapter firmly until it stops.
		USB connection error	Insert the USB cable firmly until it stops.
		When optical communication is not established.	
		Optical fiber cable connection error	Insert the optical fiber cable firmly until it clicks.
		The balance/scale is turned off.	Turn the balance/scale on.
		The balance/scale does not transmit data.	Set the data output mode to the print key mode or stream mode. Check the balance/scale for malfunctioning.
		The optical fiber cable used is not one that is recommended.	Use a recommended cable.
		The optical fiber cable is damaged. (Broken, cracked)	Use a cable in good conditions.
2	The LED performance is normal, but the output results are not displayed.	The cable connector is not connected securely.	Check the RS-232C connector or USB connector and make sure the connection is secure.
		The COM port is not correct.	Select a correct port.
		The USB driver has not been installed properly.	Reinstall the USB driver.
		Communication settings for external devices/PC and the balance/scale are not the same.	Check the settings for external devices/PC and the balance/scale.

Note   If the remedies above do not resolve the problem or if other problems occur, contact your local A&D dealer.
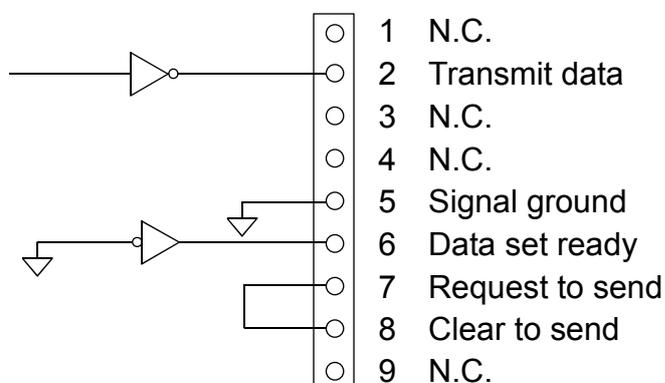
6. SPECIFICATIONS

6.1. General

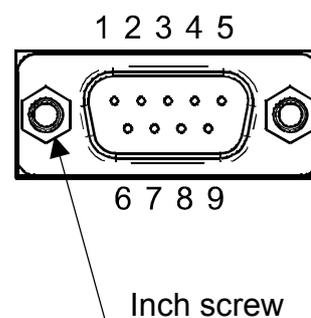| Model	AD-1611
Power supply	AC adapter or USB
Operating temperature range	-10°C to 40°C, no condensation
Dimensions (WxDxH)	160 x 58 x 38 mm
Mass (Main body only)	Approximately 380 g
Accessories	AC adapter, USB cable, Instruction manual

6.2. Communication

Devices that can be connected	Balances or scales manufactured by A&D with a specified optical connector installed (Visit our website for available balances or scales.)
Baud rate	According to the value set on the balance/scale
Receiving connector	F05 (IEC 60874-17, F05 type)
Sending connector	RS-232C (D-Sub 9-pin) or USB (B-type)
Optical transmission distance	Max. 60 m (No extension available)

6.3. RS-232C pin assignment

1 N.C.
2 Transmit data
3 N.C.
4 N.C.
5 Signal ground
6 Data set ready
7 Request to send
8 Clear to send
9 N.C.

D-Sub 9-pin male connector

1 2 3 4 5

6 7 8 9

Inch screw

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