- **Print switch mode / Command mode**   Function setting "*Prt 2*"
  When the [PRINT] switch is pressed while the weight value is stable (STABLE indicator is on), the scale transmits the value.

- **Auto-print mode +/- data / Command mode**   Function setting "*Prt 3*"
  The scale transmits the weight value when the display is stable (STABLE indicator is on) and the value is more than +4d or less than -4d. The next output can be obtained after the value returns to be more than -4d and less than +4d.
  d = minimum display (Refer to "**Specifications**" of the scale instruction manual.)
  Even the counting mode uses "d" for judgment.

- **Auto-print mode + data / Command mode**   Function setting "*Prt 4*"
  The scale transmits the weight value when the display is stable (STABLE indicator is on) and the value is more than +4d. The next output can be obtained after the value returns to be less than +4d.
  d = minimum display (Refer to "**Specifications**" of the scale instruction manual.)
  Even the counting mode uses "d" for judgment.

3.4. Command mode

In the command mode, the scale is controlled by commands that come from the external device such as a personal computer.

Command list

- " Q " command   Command to request the current weight value.

  Command | Q | C_R | L_F |

  Reply | S | T | , | + | 0 | 0 | 1 | 2 | 3 | . | 4 | 5 | _ | k | g | C_R | L_F |

- " Z " command   Same operation as the [ZERO] switch.

  Command | Z | C_R | L_F |

- " T " command   Same operation as the [TARE] switch.

  Command | T | C_R | L_F |

Reply to the command

- When the command cannot be executed, for example, because the scale is unstable, " I " will be sent.

  Reply | I | C_R | L_F |

- If the received command is not for the SC/SE series scale, the scale will send " ? ".

  Reply | ? | C_R | L_F |

  - When "*ACP 0*" is selected, there is no reply except the " Q " command.

SCE-03 RS-232C Serial Interface and Comparator Relay Output Instruction Manual

1. Features

- This interface allows the scale to be connected to a printer or a personal computer.
- It also allows outputting the comparison results of [HI], [OK] or [LO] obtained using the comparator function as a relay signal.

Note: SCE-02 and SCE-03 can not be installed at the same time.
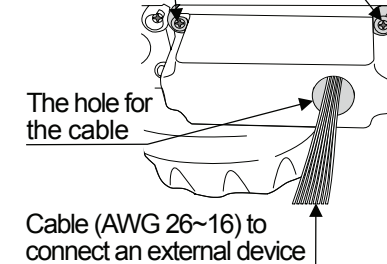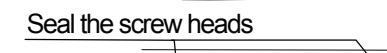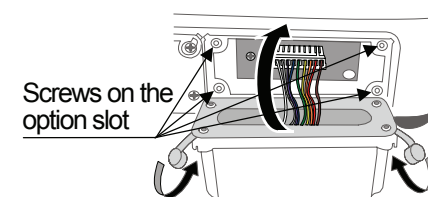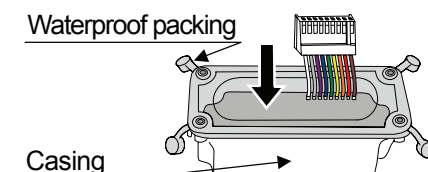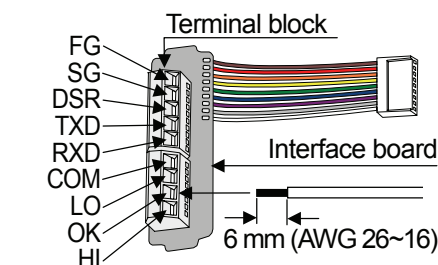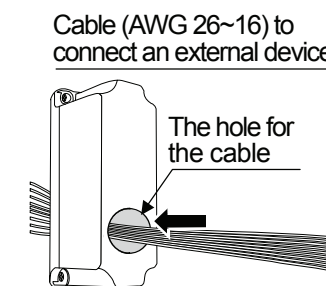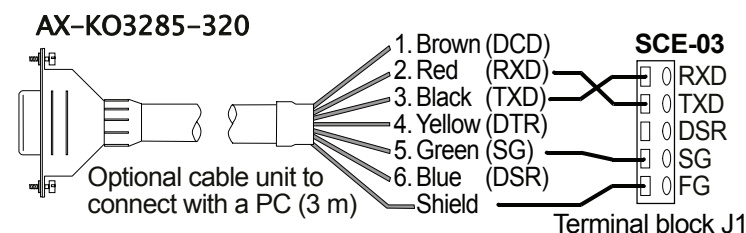
2. Installation Procedure

Note: Before installing the SCE-03 board, be sure to remove the batteries from the scale.

Step 1   Pass the cable to connect an external device through the hole on the casing and connect it to the terminal block on the interface board.

Step 2   Insert the interface board into the casing.

Step 3   Place the waterproof packing on the casing, aligning its holes with the casing screw holes.

Step 4   Remove the four screws on the option slot panel located on the bottom of the display.

Step 5   Insert the interface board into the option slot.

Step 6   Secure the casing to the display, using the four screws provided with the casing.

Step 7   Seal the screw heads with the tabs attached to the waterproof packing.

- **Cable connection using optional cables (sold separately)**
  When connecting to an external device with hardware flow control, communication will be impossible using a cable without RTS and CTS connected. In that case, connect RTS and CTS. This will disable hardware flow control, but enable communication.
  - When the AX-KO3285-320 cable is used, RTS and CTS are internally connected and the above operation id unnecessary.
  - When the connector of an external device is a D-sub 9-pin connector, pin 7 is RTS and pin 8 is CTS.

AX-KO3285-320

1. Brown (DCD)
2. Red   (RXD)
3. Black (TXD)
4. Yellow (DTR)
5. Green (SG)
6. Blue   (DSR)
Shield

Optional cable unit to connect with a PC (3 m)

SCE-03
RXD
TXD
DSR
SG
FG
Terminal block J1

Cable (AWG 26~16) to connect an external device

The hole for the cable

Terminal block
FG
SG
DSR
TXD
RXD
COM
LO
OK
HI

Interface board

6 mm (AWG 26~16)

Waterproof packing

Casing

Screws on the option slot

Seal the screw heads

The hole for the cable

Cable (AWG 26~16) to connect an external device

D–Sub 9 Pin Connector

D-Sub 9 pin Connector		Connections	SEC-03, Terminal block J1	
Pin	Signal name		Pin	Signal name
1	DCD			
2	RxD	←	2	TxD
3	TxD	→	1	RxD
4	DTR			
5	SG	←	4	SG
6	DSR	←	3	DSR
7	RTS	⌐ Shorted		
8	CTS	⌐		
9	–			
Blank heat shrink tubing covered wire		←	5	FG

AX–KO3341–320

1.Brown
2.Red
3.Orange
4.Yellow
5.Green
6.Blue
7.Purple
8.Gray
9.White
10.Black

Optional cable unit
to connect with
AD-8121B printer (3 m)

SCE-03

⯀ RXD
⯀ TXD
⯀ DSR
⯀ SG
⯀ FG

Terminal block J1
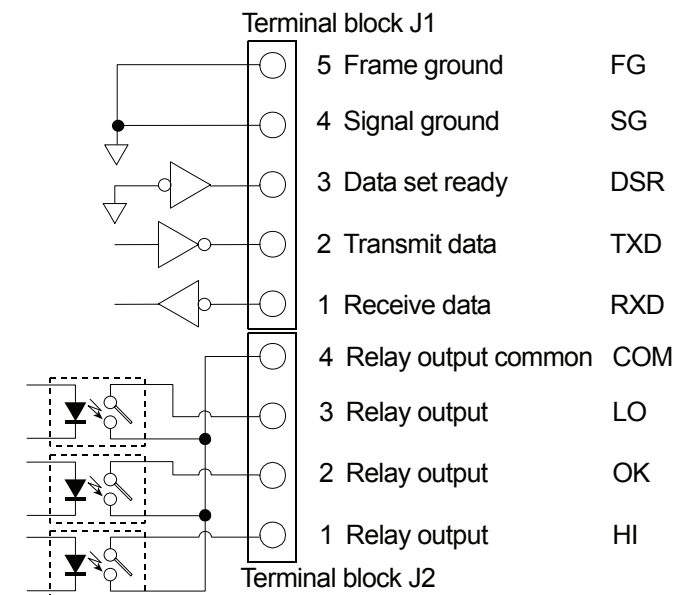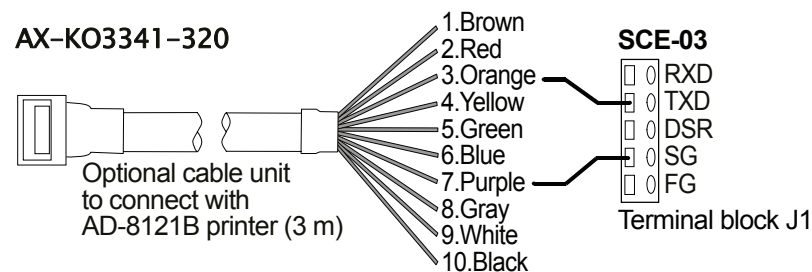
3. SCE–03 RS–232C Serial Interface

- The RS-232C serial interface has four output modes; Stream mode, Command mode, Print switch mode and Auto-print mode. For details, refer to "**3.3. Data output mode**".
- Set the parameters of the functions "*bPS*", "*Prt*" and "*ACE*" as necessary.

3.1. Interface specifications

- Data format

Baud rate:	2400, 4800, 9600 bps
Data bits:	7 bits + parity 1 bit (even)
Start bit:	1 bit
Stop bit:	1 bit
Code:	ACII
Terminator:	$C_R L_F$ (C_R: 0Dh, L_F: 0Ah)

LSB						MSB			1 (-15V~-5V)
0	1	2	3	4	5	6			0 (5V~15V)

Stop bit
Parity bit
Data bits
Start bit

- Relay output maximum rating

Maximum voltage:	50V DC
Maximum current:	100mA DC
Maximum ON resistance:	8Ω

Terminal block J1

5	Frame ground	FG
4	Signal ground	SG
3	Data set ready	DSR
2	Transmit data	TXD
1	Receive data	RXD
4	Relay output common	COM
3	Relay output	LO
2	Relay output	OK
1	Relay output	HI

Terminal block J2

3.2. Data format

S	T	,	+	0	0	0	0	0	.	0	0	_	k	g	C_R	L_F

Header — Separator — Data — Unit — Terminator
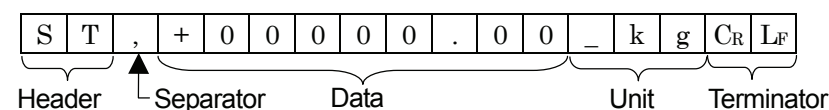
Note: "_" indicates a space.

- Four types of headers are available:
  - ST : Stable weight data
  - QT : Stable counting data
  - US : Unstable weight data (including counting data)
  - OL : Out of weighing range
- The data is always 9 digits including a sign and a decimal point.
- Four units are available:
  - _kg : Weight data in "kilograms" (kg)
  - _PC : Counting data in "pieces" (pcs)
  - _lb : Weight data in "decimal pounds" (lb)
  - _oz : Weight data in "decimal ounces" (oz)
- The terminator is always $C_R L_F$.
- Example of output data:

Weight data "kg"

S	T	,	+	0	0	1	2	3	.	4	5	_	k	g	C_R	L_F

Counting data "pcs"

Q	T	,	+	0	0	0	1	2	3	4	5	_	P	C	C_R	L_F

Out of weighing range "kg" (+)

O	L	,	+	9	9	9	9	9	.	9	9	_	k	g	C_R	L_F

Out of weighing range "pcs" (–)

O	L	,	–	9	9	9	9	9	9	9	9	_	P	C	C_R	L_F

3.3. Data output mode

- **Stream mode / Command mode**   Function setting "*Prt 0*"
  The scale outputs the current display data in sync with the display update of approximately 10 times per second. The scale does not output data while it is in the setting mode.

- **Command mode only**   Function setting "*Prt 1*"
  The scale replies only to a command. For details, refer to "**3.4. Command mode**".