

RS422A OUTPUT FOR GZ /GZH SERIES

VIBRA

3. Output Data : TRANSMISSION DATA

One of following two formats is selectable by function setting of SHINKO Balance.

(1) Six-digit numeric format

Composed of 14 characters, including the terminators (CR = 0DH, LF = 0AH).

1	2	3	4	5	6	7	8	9	10	11	12	13	14
P1	D1	D2	D3	D4	D5	D6	D7	U1	U2	S1	S2	CR	LF

(2) Seven-digit numeric format

Composed of 15 characters, including the terminators (CR = 0DH, LF = 0AH). A parity bit can also be appended.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
P1	D1	D2	D3	D4	D5	D6	D7	D8	U1	U2	S1	S2	CR	LF

(3) Six-digit numeric format for model provided with an auxiliary scale interval

Composed of 15 characters, including the terminators (CR=0DH, LF=0AH), with “/” added to the left of the auxiliary-scale-interval place.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
P1	D1	D2	D3	D4	D5	D6	D7	D8	U1	U2	S1	S2	CR	LF

(4) Seven-digit numeric format for model provided with an auxiliary scale interval

Composed of 16 characters, including the terminators (CR=0DH, LF=0AH), with “/” added to the left of the auxiliary-scale-interval place.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
P1	D1	D2	D3	D4	D5	D6	D7	D8	D9	U1	U2	S1	S2	CR	LF

3.1 Polarities (P1: one character)

P1	Code	Description
+	2BH	When data is zero or positive
-	2DH	When data is negative
(SP)	20H	When data is zero or positive

3.2 Numeric data

Six-digit numeric format: (D1–D7: seven characters)

Seven-digit numeric format: (D1–D8: eight characters)

Six-digit numeric format for model provided with an auxiliary scale interval:
(8 characters, from D1 to D8)

Seven-digit numeric format for model provided with an auxiliary scale interval:
(9 characters, from D1 to D9)

D1–D7 (D8)	Code	Description
0–9	30H–39H	Numerical value 0–9
.	2EH	Decimal point (floating position) When the data is an integer, it may be omitted and replaced with a blank space (SP) in the lowest-order place.
(SP)	20H	Space: zero of leading portion of value (leading zero suppress)
/	2FH	Delimiter to be inserted to the left of the auxiliary-scale-interval place

3.3 Units (U1, U2: two characters)

All the codes are ASCII codes.

U1	U2	Meaning	Balance indicators
K	G	Kilogram	kg
P	C	Pieces	Pcs
(SP)	G	Gram	g
(SP)	T	ton	t

3.4 Result of judgment when operating the balance with the limit function

(S1: one character)

S1	Code	Description
L	4CH	LO (LOW)
G	47H	OK (GOOD)
H	48H	HI (HIGH)
(SP)	20H	No limit value specified
T	54H	Total value

3.5 Status (S2: one character)

S2	Code	Description
S	53H	Data stable
U	55H	Data unstable
E	45H	Data error (data other than S2 is invalid.) [0 - E r r], [u - E r r]
(SP)	20H	No status specified

4.INPUT COMMAND : RECEPTION DATA

Users can control the balance remotely by transmitting commands from an external device. Two types of control commands are available:

- (1) Instruction for tare subtraction
- (2) Setup of output control

4.1 Command Transmission Method

- (1) A command is transmitted to the balance from an external device. Since the data flow (transmission and reception) is stored by a full-duplex system, commands can be transmitted regardless of their data-transmission timing.
- (2) When the balance has executed the received command, it activates a normal end response or transmits the requested data, via the transmitting command. If the balance was unable to execute the command or received an erroneous command, it transmits an error end response. If the balance is working properly, it usually returns a response within a second after it receives the transmitted command. If the balance receives a transmission while it is conducting a procedure (such as the setup of a function or a span adjustment), it will transmit a response when the procedure finishes.
- (3) When transmitting more than one command to the balance from a remote device, wait until you have received a confirmation on the first transmission before transmitting the next.

4.2 Command format

- (1) Command format
Composed of four characters (ASCII), including the terminators (CR=0DH, LF = 0AH)

1	2	3	4
C1	C2	CR	LF

- (2) Instruction for tare subtraction (zero adjustment)

C1	C2	Code		Description	Value	Response
T	(SP)	54H	20H	Instruction for tare subtraction (zero adjustment)	None	A00: Normal end E01: Tare subtraction cannot be executed due to an error in the weight value.

(3) Setup of output control

C1	C2	Code		Description
O	0	4FH	30H	Stop output
O	1	4FH	31H	Output continuous at all times
O	2	4FH	32H	Output continuous if stable (stop output if unstable)
O	3	4FH	33H	Outputs once by pressing <input type="button" value="print"/> key (irrespective of whether stable).
O	4	4FH	34H	Outputs once if stable. Outputs if the balance is stable when a sample is loaded after the preceding sample has been removed and the balance indicated zero, or less.
O	5	4FH	35H	Outputs once if stable, and stops output when unstable. Even if the sample is not replaced, the balance is output once when it stabilizes next time (including the zero indication).
O	6	4FH	36H	Outputs once if stable, and outputs continuously when unstable. Even if the sample is not replaced, output of the balance stops when it stabilizes after being output once.
O	7	4FH	37H	Pressing <input type="button" value="print"/> key causes the balance to output once when stable.
O	8	4FH	38H	Output once immediately.
O	9	4FH	39H	Output once after stabilization.

The output controls executed with commands [O0] - [O7] work the same as the output controls executed through function setup on the main unit of the balance.

The commands [O8] and [O9] are data request commands issued to the balance.

Once any command from [O0] to [O9] is executed, the balance runs that function until another command is entered. However, if the balance is switched off and on again, the output control is reset to the initial function (function set value).

5.SETTING OF BALANCE FUNCTION

Output format, Output control, Transmission speed and parity bit are selectable by setting balance functions. The contents are as in the following table. As to setting operation, refer to operation manual of the balance.

Displayed when [5. 1.F. □] is set to [1] or [2]

Item	Set Value		Description
Output Control	5 1 O.C.	0	Stop output
		1	Output continuous at all times
		2	Output continuous if stable (stop output if unstable)
		3	Outputs once by pressing <input type="button" value="Set"/> key (irrespective of whether stable).
		4	Outputs once if stable. Outputs if the balance is stable when a sample is loaded after the preceding sample has been removed and the balance indicated zero, or less.
		5	Outputs once if stable, and stops output when unstable. Even if the sample is not replaced, the balance is output once when it stabilizes next time (including the zero indication).
		6	Outputs once if stable, and outputs continuously when unstable. Even if the sample is not replaced, output of the balance stops when it stabilizes after being output once.
Baud Rate	5 2 b.L.	1	1200 bps
		2	2400 bps
		3	4800 bps
Parity	5 3 P.R.	0	None
		1	Odd
		2	Even
(2)Ext.tare	5. E.L.	1	Operation by relay contact input(Tare terminal)
		2	Operation by input command from PC, etc.

The data interval in continuous output mode is 0.1 to 1 second. (The interval varies depending on weighing conditions and other factors.)

2 Select "5. E.L. 2" for external tare function.

6.EXAMPLE OF CONNECTION

