

YH-3D Weighing Controller

For: Ration Packing Scale

Operation Manual V6.4

Preface

Thank you very much for your purchase!

This manual covers safety precautions, technical specifications, operation interface, installation& connection, function&operation and so on. In order to make the product running at its best, please read this manual in advance, and reserve it for the future reading.

The continuous technology update, performance perfection and quality improvement may lead to some differences between this manual and the physical product, please understand.

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Main Features:

- ◇ Suitable for Ration Packing Scale. Optional Application Modes: Single-hopper-weighing Mode [Single-scale Mode], Double-hopper-weighing Mode [Double-scale Mode] and Bag-weighing Mode with Auto Bag-releasing or Manual Bag-releasing.
- ◇ EMC design with high anti-jamming capability, suitable for industrial environment.
- ◇ 14-bit red LED digit display screen for English character and digit display.
- ◇ Menu&Shortcut mode operation with key tone.
- ◇ 24-bit High-precision and high-speed Σ - Δ A/D conversion module with 1,000,000 internal code used and max. sampling frequency 800Hz.
- ◇ Special filtering algorithm for ensuring the weighing stability and accuracy when there is strong vibration on the load receptor, and the rapid response capability when the weight signal changes.
- ◇ Max. Connection Quantity: 4 Loadcells (350 Ω).
- ◇ Data Calibration and Load Calibration available.
- ◇ Auto-locking, Key-locking, Key-unlocking, Digital Setting&Calibration and I/O Testing functions available.
- ◇ 6 Normally open switch inputs [DI] and 8 normally open transistor switch outputs [DO].
- ◇ Optional 'Fast/Medium/Slow Feeding' DOs for feeding control.
- ◇ 1 Optional and definable analog signal AO[4~20mA] for weight signal output or 'Fast/Medium /Slow Feeding' control.
- ◇ Optional 'Fall Value Auto Correction' function.
- ◇ Optional 'Auto Pause while Deviation Alarming' function.
- ◇ Optional 'Target Batch & Target Totalized Weight Control' function [With Target Batch Finished or Target Totalized Weight Finished, the packing process will stop automatically].
- ◇ Optional RS232 or RS485 communication ports for linking to IPC/PLC and remote display terminal.
- ◇ With the multitasking mode, the weighing&control process will not be interrupted by parameter setting and the other operations.

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1. Safety Precautions

Prohibit using the product under dangerous environment

Prohibit using the product under the dangerous environment with combustible gas and explosive dust. If you have this need, please use our explosion-proof products.

Avoid using the product under overheated environment

Make sure that the product works under the environment with allowed temperature range to get good performance and long working life.

Please keep the product away from direct sunlight. If it is installed in a cabinet, please install cooling fans on the top of the cabinet.

Controller Grounding Protection

The product, as a low-voltage equipment, should be kept away from the high-voltage equipments.

For avoiding bodily injury from electric shock accident and keeping the product separate from strong interference, the metal shell of the product should be grounded directly and the ground resistance should be less than 4Ω .

Scale Frame Grounding Protection

For avoiding bodily injury from electric shock accident and keeping the loadcells separate from strong interference, the scale frame should be connected with the electronic scale grounding net and the ground resistance should be less than 4Ω .

Cable Laying

Weighing signal, analog signal and communication signal cables should be laid in pipes, and do not lay them together with power cables.

Power Supply

Please make sure that the power supply is correct before power-on.

Environmental Protection

Although the product is made of the lead-free components, after used in the industrial environments, it's possible to be polluted. So, while being discarded as worthless, the product should be processed lawfully as leady industrial waste for environment protection.

Other Notes

The installation, wiring and maintenance should be operated by the engineers with the relevant professional knowledge and safety operation ability. Although being not described in this manual, the relevant safety operating procedures and standards should be followed.

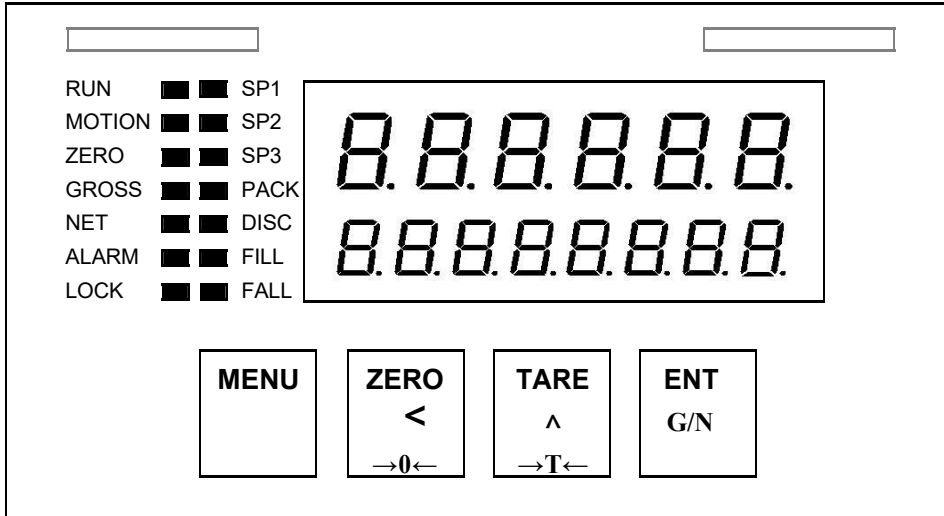
2. Technical Specifications

- Power Supply
 - ◇ Operating Voltage: DC24V \pm 20%.
 - ◇ Max. Power: 5W.
- Display
 - ◇ 14-bit red LED digit display screen for English character and digit display.
- Keypad
 - ◇ 4 keys for Menu&Shortcut mode operation with key tone.
 - ◇ Auto-locking, Key-locking, Key-unlocking, Digital Setting&Calibration and I/O Testing functions available.
- Loadcell Signal Input Interface (LOADCELL)
 - ◇ 1 Weighing Signal Input: 0~22.5mV.
 - ◇ Excitation Voltage Output: DC9V.
 - ◇ Max. Connection Quantity: 4 Loadcells (350 Ω).
- Weighing Accuracy
 - ◇ 24-bit Σ - Δ ADC with 1,000,000 internal code used.
 - ◇ Max. Sampling Frequency: 800Hz.
 - ◇ Zero Drift: \pm 0.1 μ V/ $^{\circ}$ C RTI (Relative to Input).
 - ◇ Gain Drift: \pm 5ppm/ $^{\circ}$ C.
 - ◇ Non-linearity: 0.005%FS.
- Switch Signal Input DI Interface (CN1)
 - ◇ 6 Normally Open Switch Inputs.
- Switch Signal Output DO Interface (CN2)
 - ◇ 8 Normally Open Transistor Switch Outputs.
 - ◇ Capacity of Transistor Switch: DC24V, 250mA.
- Analog Signal Output AO Interface (CN1)
 - ◇ 1 Optional and definable analog signal AO[4~20mA] for weight signal output or 'Fast/Medium/Slow Feeding' control.
 - ◇ Non-linearity: 0.05%FS.
- Digital Communication Interface (COM1)
 - ◇ Optional: RS232/RS485.
 - ◇ Connectable: IPC/PLC and Remote Display Terminal.
- Outline Dimension
 - ◇ 110 \times 62 \times 150 mm (W \times H \times D).
- Cut Dimension
 - ◇ 94 \times 47 mm (W \times H).

- Weight
 - ◇ Approx. 0.5kg.
- Temperature and Humidity
 - ◇ Service Temperature: -25°C to +40°C.
 - ◇ Storage Temperature: -30°C to +60°C.
 - ◇ Relative Humidity: Max. 85%RH.
- IP Grade
 - ◇ IP50.

3. Operation Interface

3.1 Operation Interface Diagram



3.2 Alarm Signs

Sign	Alarm Cause	Solution
Err0	CPU Failure. RAM	Replace the chip CPU.
Err1	Failure.	Replace the chip RAM.
Err2.1 Err2.2	EEPROM Failure.	Replace the chip EEPROM.
Err3	Signal Reversed. Not connected.	Connect the loadcell correctly.
Err4	ADC Failure.	Replace the ADC module.
oL	Overload.	1. Check if the loadcell is connected. 2. Check if the capacity of loadcell is too small. 3. Check if the loading weight is too big.
HI	Gross Weight Upper Limit Alarm.	Refer to parameter [210] ‘Gross Weight Upper Limit’.
OV-PAUSE	Pause because of Positive Deviation Alarm.	Press DI button ‘Start/Dev.Ack’ to recover running.
dn-PAUSE	Pause because of Negative Deviation Alarm.	It’s allowed to do ‘SP3 Manual Feeding’. Press DI button ‘Start/Dev.Ack’ to recover running.
bAt-End	Alarm or Auto-stop because of ‘Target Batch Finished’ or ‘Target Totalized Weight Finished’.	Refer to parameter [208] ‘Target Batch’, [209] ‘Target Totalized Weight’ and [301] ‘Target Batch Control’. Clear Screen to clear the message.
LAST-bAt	Last Batch.	The message will disappear after the present batch finished.
oV-nZ	Over ‘Zero Fine Adjusting Range’.	Refer to parameter [123] ‘Zero Fine Adjusting Range’.
oV-tr	Over ‘Auto Tare Range’.	Refer to parameter [128] ‘Auto Tare Range’.
AuZr	Auto Zero Fine adjustment.	Refer to parameter [302] ‘Batch Count for Auto Zero Fine Adjustment’.
Autr	Auto Tare.	Refer to parameter [303] ‘Batch Count for Auto Tare’.

3.3 State Indication

LED lights	Description
[RUN]	ON: Running state. OFF: Stop or Calibrating state.
[MOTION]	Weight value is changing: The Weight Variance value per [107] 'Dynamic Detection Time' exceeds [106] 'Dynamic Detection Range'.
[ZERO]	Net Weight value \leq No-load Zero Range.
[GROSS]	Gross Weight display.
[NET]	Net Weight display.
[ALARM]	Positive/Negative Deviation Alarm. Pause State.
[LOCK]	ON: Key-locked. OFF: Key-unlocked.
[PACK]	ON: Bag-clamping state. OFF: Bag-releasing state.
[SP1]	Fast Feeding.
[SP2]	Medium Feeding.
[SP3]	Slow Feeding.
[FILL]	Stop state: Weight value is increasing.
	Running state: It's in the feeding process.
[DISC]	Stop state: Weight value is reducing.
	Running state of APPL1/3 Hopper-weighing Mode: It's in the discharging process.
[FALL]	ON: Fall Value Auto Correction function is open.

3.4 Keypad Operation

If there is not any keypad operation in one minute and it's not in the processes of 'F2 Calibration' & 'F6 Factory Adj.', the controller will return to 'Main Display Interface' automatically.

3.4.1 Menu Operation

Key Name	Description
【MENU】	Enter Main Menu. Exit.
【ENT】	Enter. Save. Alarm Acknowledge.
【◀】	Cursor shifts left. Display the previous option.
【▲】	Display the next interface or option. Digit input: +1 (0~9 loop).

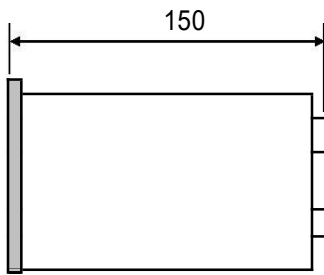
3.4.2 Quick Operation

Key Name	Description
【*】	◇ Key-locking. ◇ Key-unlocking.
【◀】 (【SET】)	Setpoint parameters setting.
【ZERO】 【→0←】 *	◇ [=ZEro=] Zero Fine Adjustment: The operation will be valid when Gross Weight display value is within 'Zero Fine Adjusting Range'. However, the original Zero Value will not be modified. Gross Weight will return to zero, but Tare Weight will not return to Zero, Net Weight + Tare Weight = 0, and the controller will switch to Gross Weight display. ◇ [-ZEro-] Zero Calibration: It's not limited by 'Zero Fine Adjusting Range', and the original Zero Value will be modified. Gross Weight, Tare Weight and Net Weight will return to Zero, and the controller will switch to Gross Weight display.
【TARE】 【→T←】 *	◇ [=tArE=] Manual Tare: Tare Weight RAM value = Present display value of Gross Weight. Net Weight = 0, and the controller will switch to Net Weight display. If the Tare Weight RAM value is need to be saved, please do operation [-PStr-]. ◇ [-PStr-] Preset&Save Tare Weight: Net Weight = Gross Weight - Tare Weight, and the controller will switch to Net Weight display. ◇ [-rStr-] Tare Weight Returns to Zero: Net Weight = Gross Weight, and the controller will switch to Net Weight display.
【G/N】	Gross Weight / Net Weight display switch.

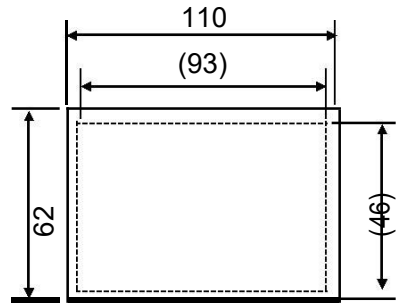
*: Keep the key pressed for 2 seconds.

4. Installation&Connection

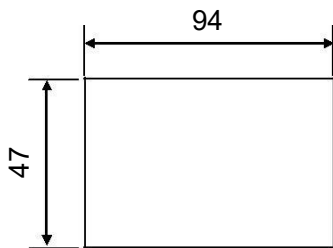
4.1 Installation



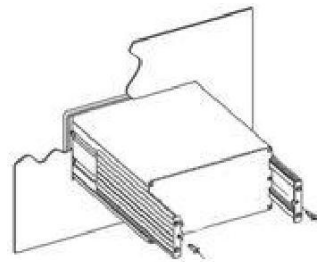
Outline dimension



Panel dimension



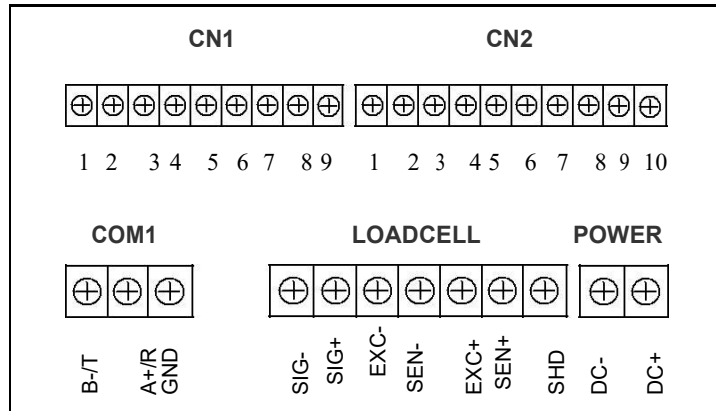
Cut dimension



Installation mode

Outline dimension W×H×D [mm]	Panel dimension W×H [mm]	Box dimension W×H [mm]	Cut dimension W×H [mm]
110×62×150	110×62	93×46	94×47

4.2 Terminal



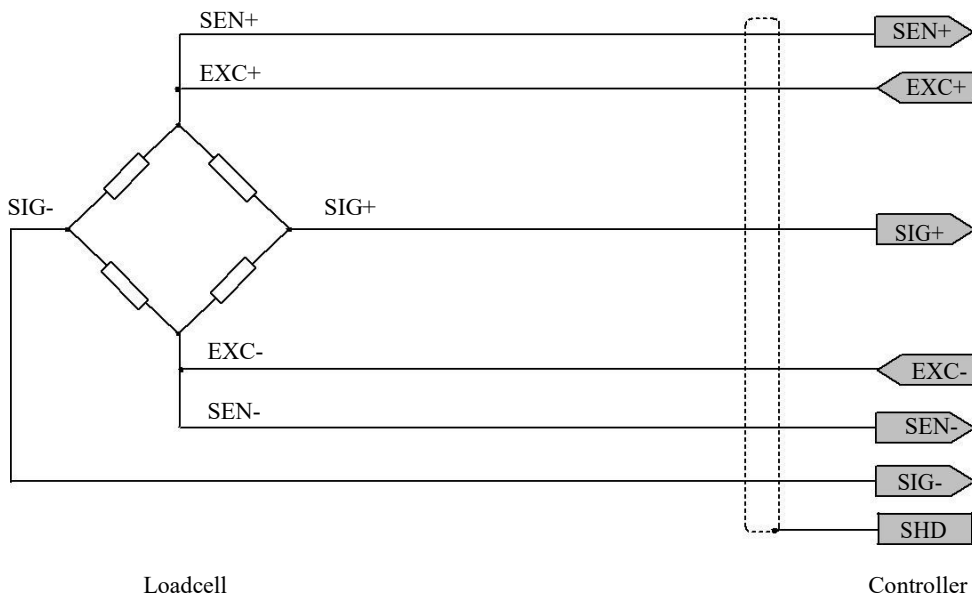
4.3 Connection

4.3.1 Loadcell Connector (LOADCELL)

The shielded cable must be used and kept separate from the AC cable and other noise generating cables. Please use loadcells with the same capacity, bridge resistance & sensitivity (mV/V) for parallel connection.

No.	Pin	Description
1	SIG-	Weighing Signal (mV) Input -.
2	SIG+	Weighing Signal (mV) Input +.
3	EXC-	Excitation Voltage Output - for Loadcell.
4	SEN-	Voltage Feedback - from Loadcell. [4-wire connection: short to 'EXC-']
5	EXC+	Excitation Voltage Output + for Loadcell (DC9V).
6	SEN+	Voltage Feedback + from Loadcell. [4-wire connection: short to 'EXC+']
7	SHD	Shield.

Loadcell Connection:



4.3.2 Switch Input/Output [DI/DO] Connector (CN1/CN2)

6 Normally open switch inputs are used for receiving control signals from external devices.

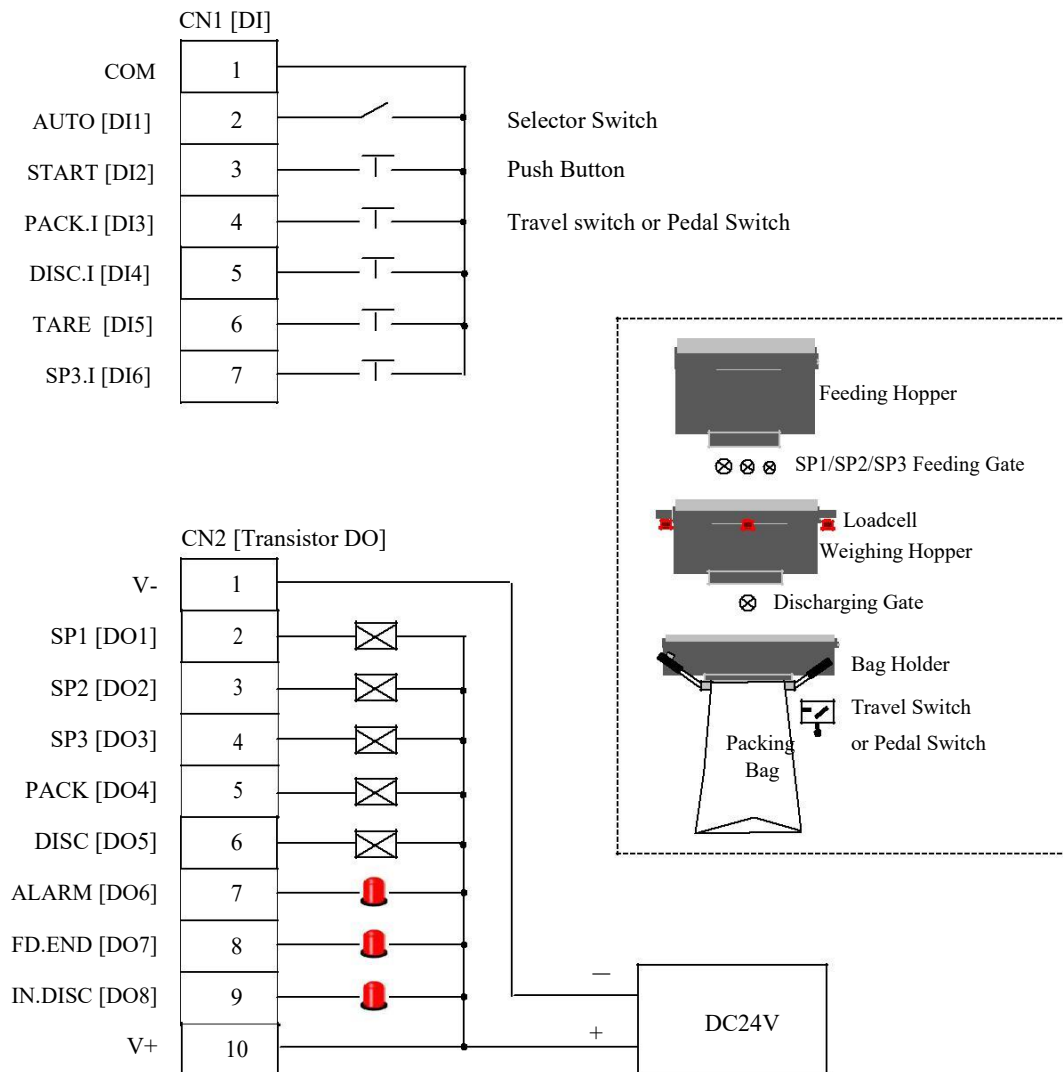
8 Normally open transistor (DC24V, 250mA) switches are used for outputting alarm/control signals to external devices.

CN1 [DI]			
No.	Pin	Signal Name	Description
1	COM	COM	DI Common Terminal [DC-].
2	DI1	AUTO	Auto/Manual. ON: Auto state. OFF: Manual state / Emergency Stop.
3	DI2	START	Start/Dev.Ack [Deviation Alarm Acknowledge] In running process: Dev.Ack. Pause state: Dev.Ack & Recover Running. OFF→ON→OFF.
4	DI3	PACK.I	Bag-clamping/releasing Request. OFF→ON→OFF.
5	DI4	DISC.I	Manual Discharging. Used for APPL1/3 Hopper-weighing Mode. Valid at Manual state. ON: Start discharging. OFF: Stop discharging.
6	DI5	TARE	APPL1 Single-hopper-weighing Mode: Manual Tare. APPL2/4 Bag-weighing Mode: Manual Tare.
		HDSK.I	APPL3 Double-hopper-weighing Mode: Double-scale Handshake Input.
7	DI6	SP3.I	SP3 Manual Re-feeding. Valid at Manual state and Auto-pause state with Negative Deviation Alarm. ON: Start SP3 Slow Feeding. OFF: Stop SP3 Slow Feeding.

CN2 [Transistor DO]			
No.	Pin	Signal Name	Description
1	V-	V-	The ground terminal of external input power. DO Common Terminal.
2	DO1	SP1	Fast Feeding.
3	DO2	SP2	Medium Feeding.
4	DO3	SP3	Slow Feeding.
5	DO4	PACK	Clamping/Releasing Bag. ON: Clamp Packing Bag. OFF: Release Packing Bag.
6	DO5	DISC	Discharging. Used for APPL1/3 Hopper-weighing Mode. ON: Open Discharging Gate. OFF: Close Discharging Gate.
7	DO6	ALARM	ON: Deviation Alarm [DEV] ◇ OVER: Positive Deviation Alarm. ◇ UNDER: Negative Deviation Alarm.
			ON: Gross Weight Upper Limit Alarm.
			Pulse (ON: 1s; OFF: 1s): Pause State.
8	DO7	FD.END	Feeding Ended. After the present batch finished, this signal's hold time ≤ 10s, and it will reset automatically when the next batch starts.
9	DO8	IN.DISC	APPL1 Single-hopper-weighing Mode: ON: In Discharging Process.
		HDSK.O	APPL3 Double-hopper-weighing Mode: Double-scale Handshake Output.
10	V+	V+	The positive terminal of external input power DC24V.

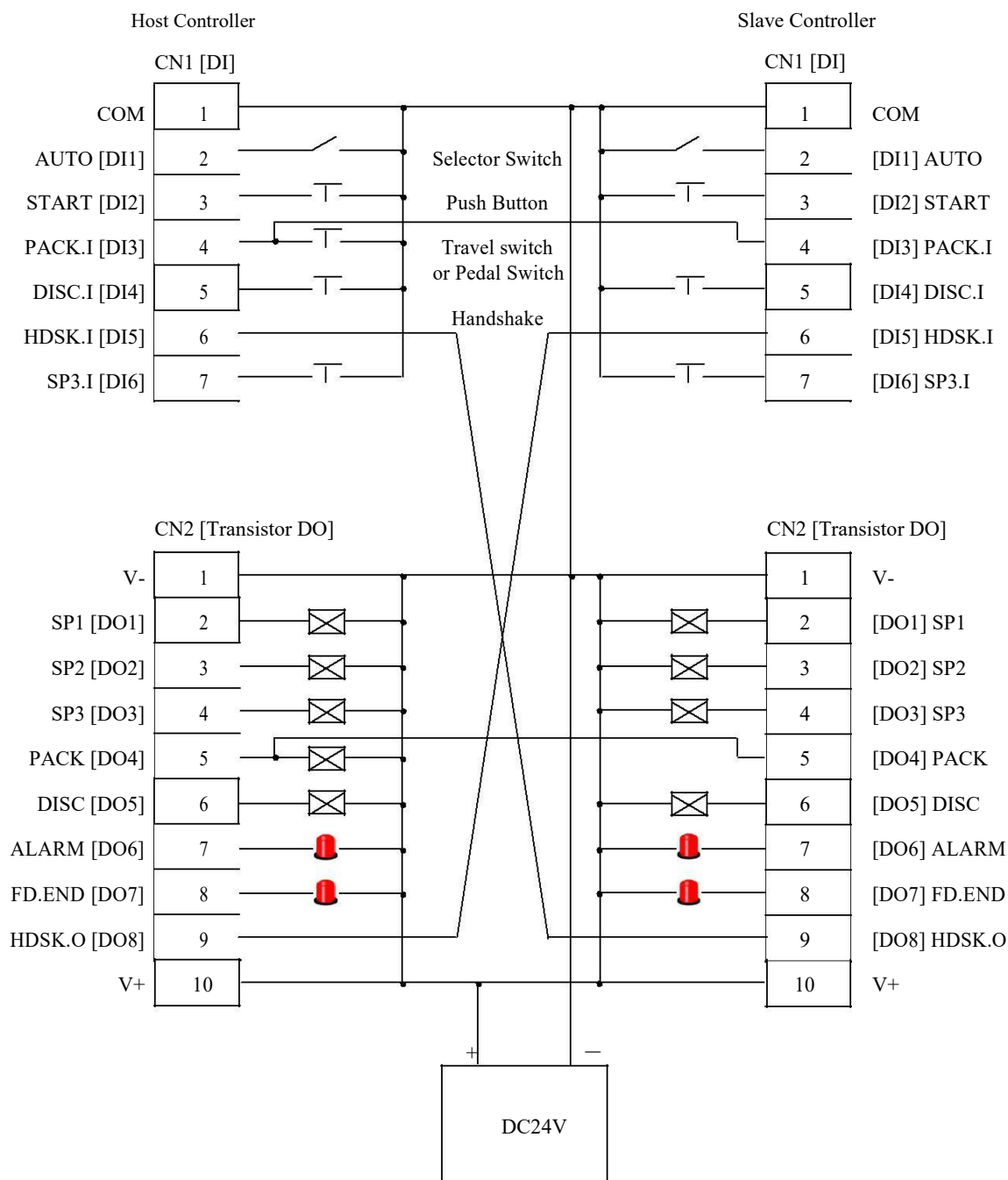
4.3.2.1 DI/DO Connection for APPL1 Single-hopper-weighing Mode

Parameter [300] 'Application Mode APPL'='1. HOP0 [APPL1 Single-hopper-weighing Mode]'.

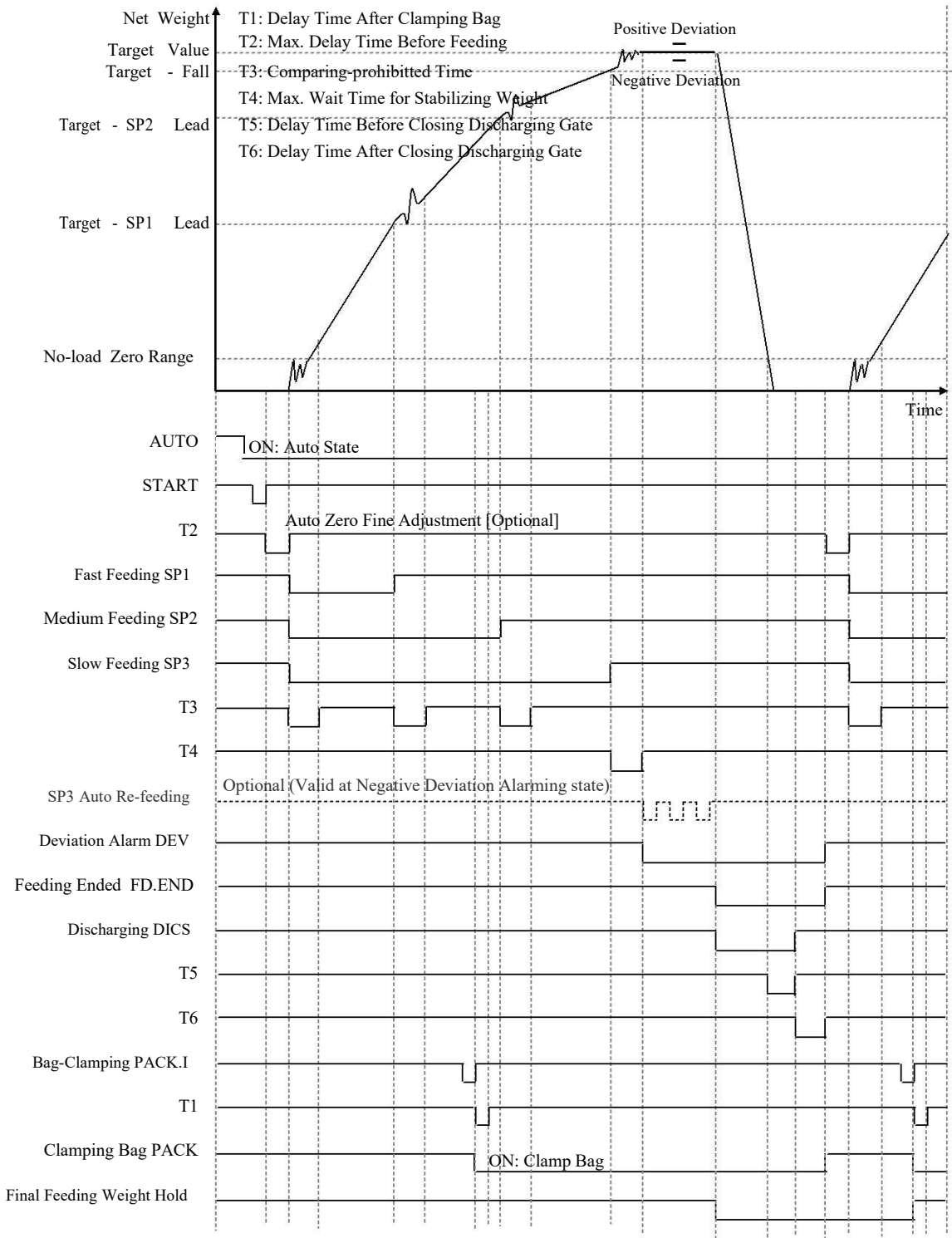


4.3.2.2 DI/DO Connection for APPL3 Double-hopper-weighing Mode

Host Controller: Parameter [300] 'Application Mode APPL'= '3. HOP1 [APPL3 Host Controller of Double-hopper-weighing Mode]'.
 Slave Controller: Parameter [300] 'Application Mode APPL'= '4. HOP2 [APPL3 Slave Controller of Double-hopper-weighing Mode]'.

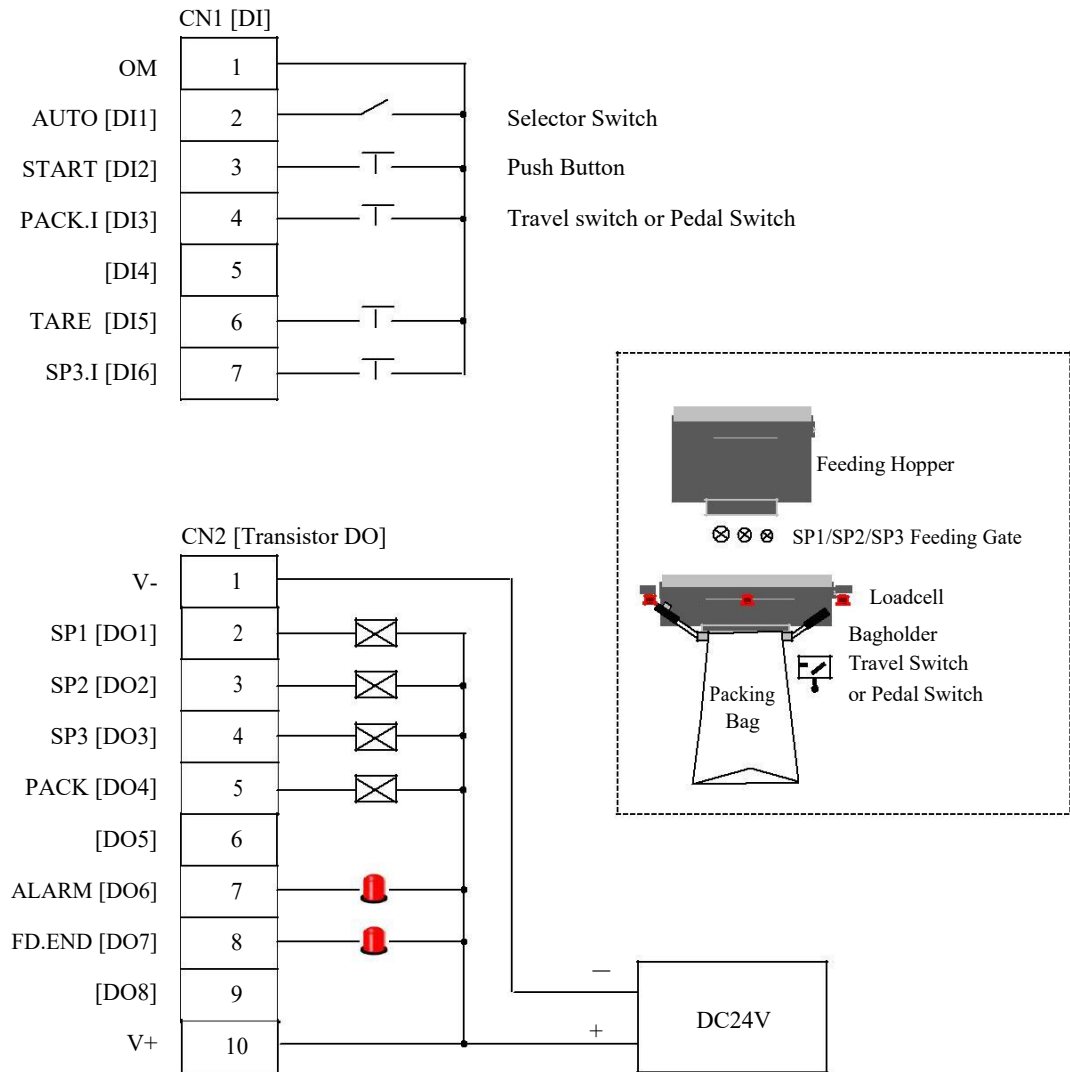


4.3.2.3 Timing Diagram of APPL1/3 Hopper-weighing Mode

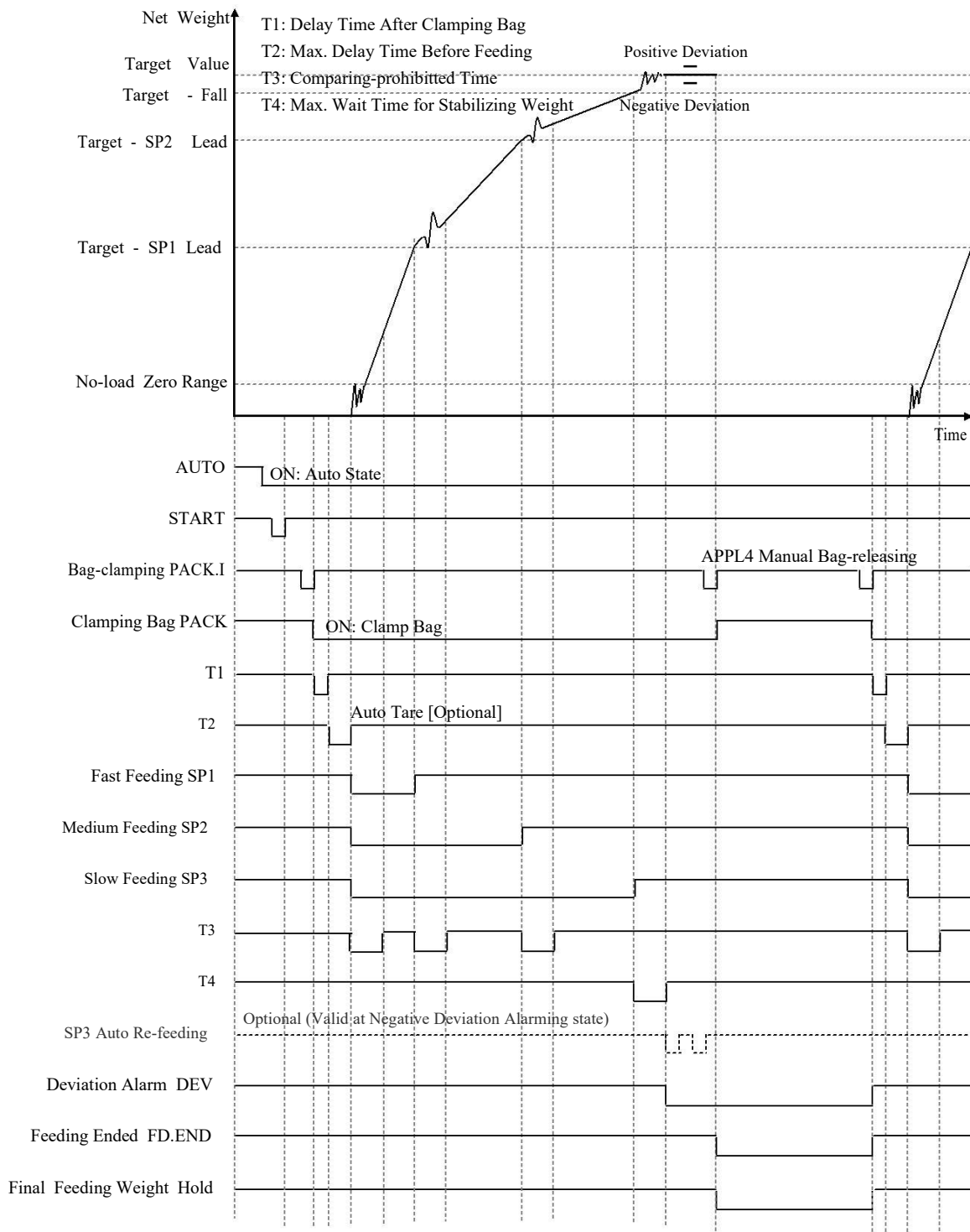


4.3.2.4 DI/DO Connection for APPL2/4 Bag-weighing Mode

Parameter [P300] 'Application Mode APPL'= '2. bAg0 [APPL2 Bag-weighing Mode with Auto Bag-releasing]'. Parameter [P300] 'Application Mode APPL'= '5. bAg1 [APPL4 Bag-weighing Mode with Manual Bag-releasing]'.



4.3.2.5 Timing Diagram of APPL2/4 Bag-Weighing Mode

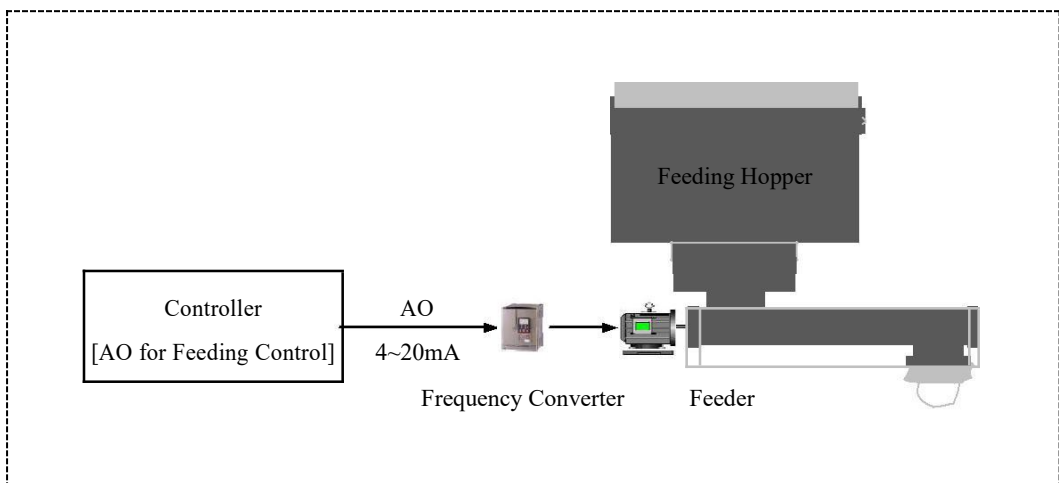
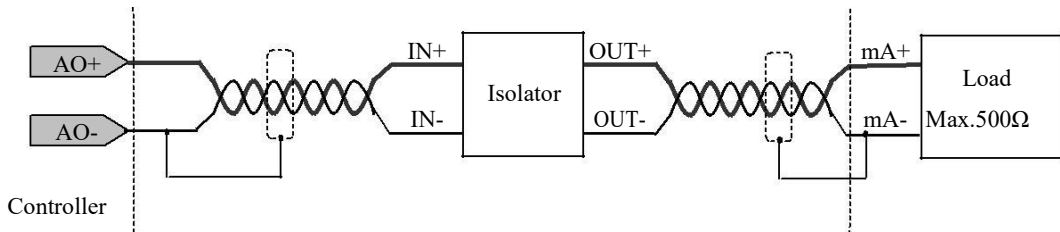


4.3.3 4~20mA Analog Output [AO] Connector (CN1)

1 Optional and definable analog signal AO[4~20mA] for outputting weight signal to external devices or outputting 'Fast/Medium/Slow Feeding' control current to the speed-adjustable feeding device. The control current for 'Fast/Medium/Slow Feeding' can be set.

CN1 [AO]		
No.	Pin	Description
8	AO+	4~20mA Output +.
9	AO-	4~20mA Output -.

4~20mA Output Connection:



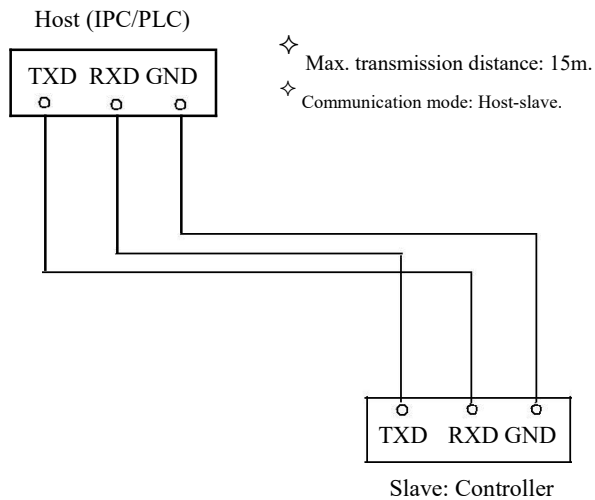
4.3.4 Digital Communication Port Connection (COM1)

COM1 Optional: RS232/RS485.

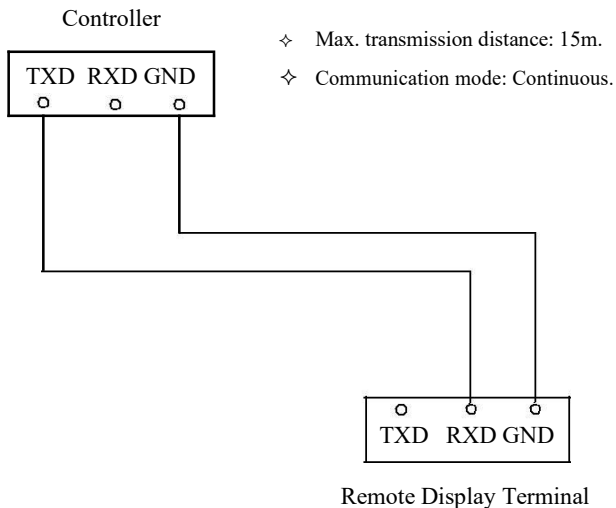
Connectable: IPC/PLC and Remote Display Terminal.

No.	COM1	
	RS232	RS485
1	T [TXD]	B-
2	R [RXD]	A+
3	GND	GND

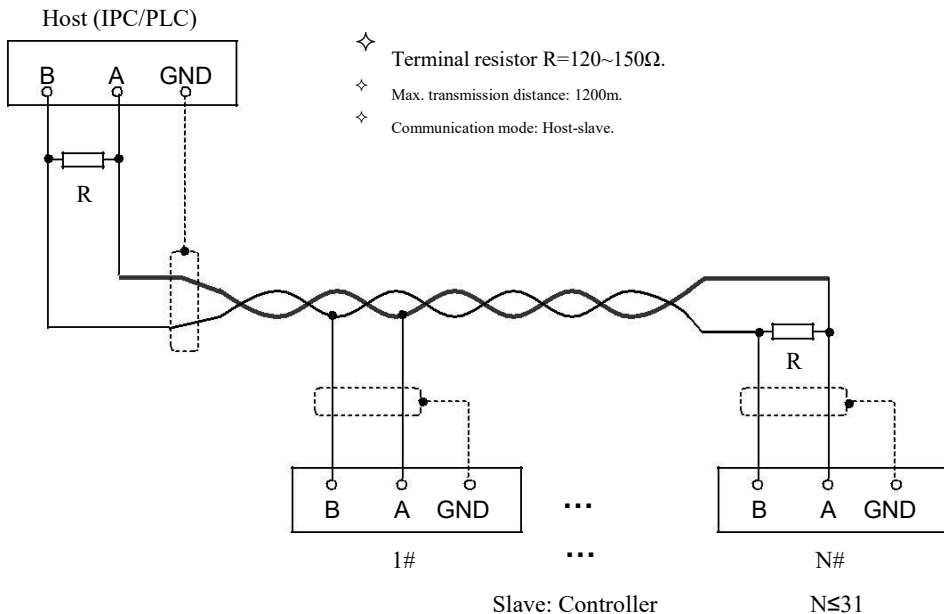
4.3.4.1 RS232 to IPC/PLC Host-slave&Point-to-point Network



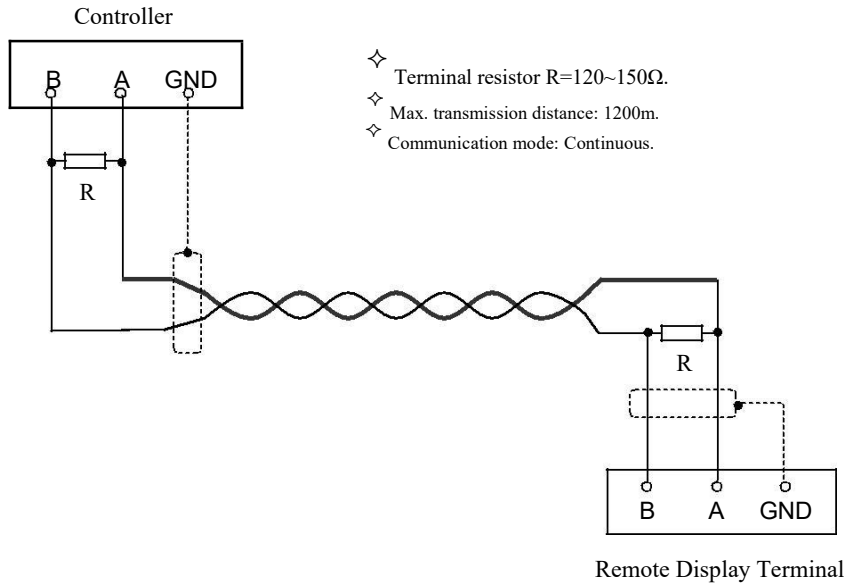
4.3.4.2 RS232 to Remote Display Terminal Point-to-point Network



4.3.4.3 RS485 to IPC/PLC Host-slave Data-bus Network



4.3.4.4 RS485 to Remote Display Terminal Point-to-point Network



4.3.5 Power Supply Connector (POWER)

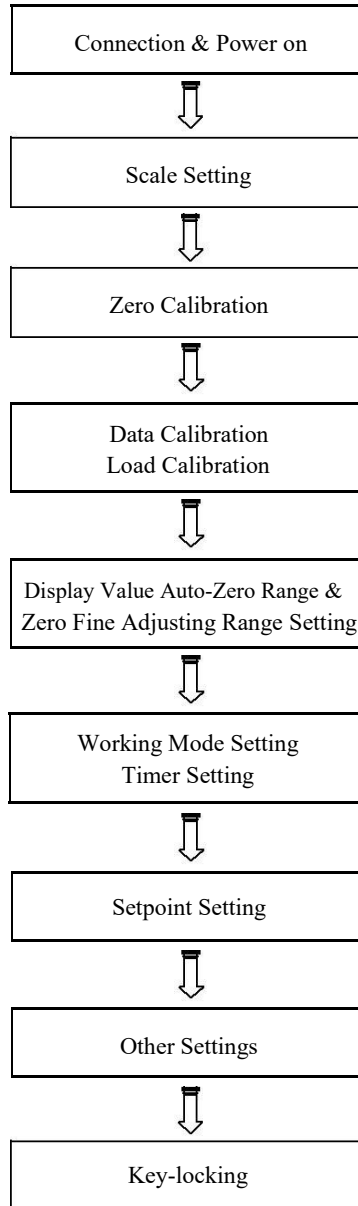
Please make sure that the power supply is correct before power-on.

Pin	Description	Voltage
DC-	DC Input -.	DC24V \pm 20%.
DC+	DC Input +.	

4.3.6 Ground Protection

For avoiding electric shocks, the metal shell should be grounded directly.

5. Operation Procedure



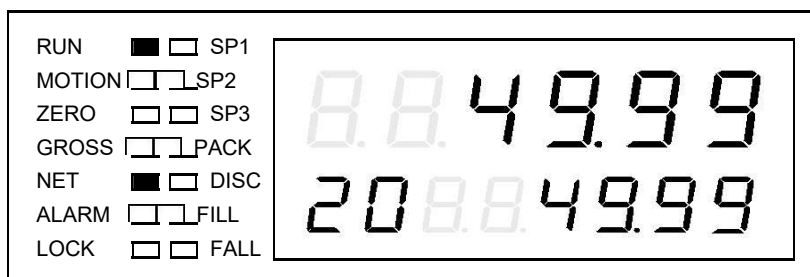
6. Function&Operation

6.1 Main Display Interface

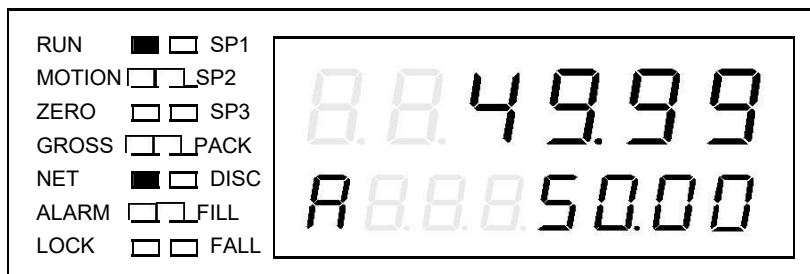
【G/N】 : Gross Weight / Net Weight display switch.

【▲】 : Display interface switch.

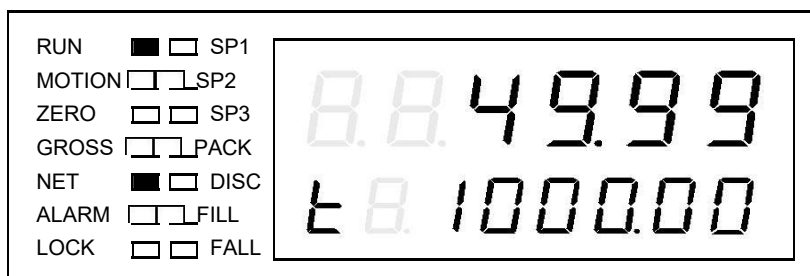
6.1.1 Gross Weight [GROSS] / Net Weight [NET], Batch Count, Feeding Weight



6.1.2 Gross Weight [GROSS] / Net Weight [NET], Target Value ['A']



6.1.3 Gross Weight [GROSS] / Net Weight [NET], Totalized Weight ['t']



6.1.4 Gross Weight [GROSS] / Net Weight [NET], Batch Count ['P']

RUN	<input checked="" type="checkbox"/>	<input type="checkbox"/>	SP1
MOTION	<input type="checkbox"/>	<input type="checkbox"/>	SP2
ZERO	<input type="checkbox"/>	<input type="checkbox"/>	SP3
GROSS	<input type="checkbox"/>	<input type="checkbox"/>	PACK
NET	<input checked="" type="checkbox"/>	<input type="checkbox"/>	DISC
ALARM	<input type="checkbox"/>	<input type="checkbox"/>	FILL
LOCK	<input type="checkbox"/>	<input type="checkbox"/>	FALL

8.8.49.99

P8.8.8.8.20

P: Batch Count (0~9999999).

6.1.5 Gross Weight [GROSS] / Net Weight [NET], AO Output Value ['Ao']

RUN	<input checked="" type="checkbox"/>	<input type="checkbox"/>	SP1
MOTION	<input type="checkbox"/>	<input type="checkbox"/>	SP2
ZERO	<input type="checkbox"/>	<input type="checkbox"/>	SP3
GROSS	<input type="checkbox"/>	<input type="checkbox"/>	PACK
NET	<input checked="" type="checkbox"/>	<input type="checkbox"/>	DISC
ALARM	<input type="checkbox"/>	<input type="checkbox"/>	FILL
LOCK	<input type="checkbox"/>	<input type="checkbox"/>	FALL

8.8.49.99

Ao8.8.12.00

AO: 4.00~20.00mA.

6.1.6 Gross Weight [GROSS] / Net Weight [NET], Working State

RUN	<input checked="" type="checkbox"/>	<input type="checkbox"/>	SP1
MOTION	<input type="checkbox"/>	<input type="checkbox"/>	SP2
ZERO	<input type="checkbox"/>	<input type="checkbox"/>	SP3
GROSS	<input type="checkbox"/>	<input type="checkbox"/>	PACK
NET	<input checked="" type="checkbox"/>	<input type="checkbox"/>	DISC
ALARM	<input type="checkbox"/>	<input type="checkbox"/>	FILL
LOCK	<input type="checkbox"/>	<input type="checkbox"/>	FALL

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Au.8.8.8.run

Hd: Manual State; Au: Auto State.
Run: Running State; PAUS: Pause State; StoP: Stop State.

6.2 Main Menu

Main Menu		Second Menu	
Sign	Function	Sign	Description
F1-SEt	Parameter Setting	-SCAL-	Scale parameters setting.
		-CALP-	Calibration parameter setting.
		-SEtP-	Setpoint parameters setting.
		-APPL-	Working mode parameters setting.
		--tI--	Timer parameters setting.
		-SErP-	Communication parameters setting.
		-dISP-	Display and operation interface parameters setting.
F2-CAL	System Calibration	-ZEro-	Zero Calibration without loading on the weigher for correcting the original Zero Value.
		-DAtA-	Data Calibration: Input Total Capacity of Loadcells, Output Sensitivity of Loadcell and the other parameters according to the actual configure of the weighing system for correcting Span Coefficient. If there is no access to get these parameters, only do Load Calibration.
		-LoAd-	Load Calibration: After doing Data Calibration, if there are conditions for Load Calibration, do Load Calibration with loading standard weight on the weigher for correcting Span Coefficient further.
F3-rEC			Unused.
F4-CLn	Data Clearing	--CLS-	Clear Screen: Clear the display value of Feeding Weight, Totalized Weight and Batch Count.
F5-Loc	Key-locker	-oPEn-	Key-unlocking.
		-LoCC-	Key-locking.
		-PASS-	Password Set. Exfactory Passwords: <ul style="list-style-type: none"> ✧ Operator Password: 000000. ✧ Administrator Password: 000001.

Main Menu		Second Menu	
Sign	Function	Sign	Description
F6-FAC	Factory Adjustment	-SPAn-	Exfactory Span Adjustment: Use standard weighing test equipment to adjust the weighing controller for normalizing Span Coefficient to 1.
		-AdtS-	AD Value of Weighing Signal Linearity Test.
		-AoZr-	AO Zero Adjustment.
		-AoFL-	AO Full Range Adjustment.
		-AotS-	AO Linearity Test.
		-dotS-	DO Output Test.
		-dItS-	DI Input Test.
		-dEFU-	RAM Reset: Reset to factory defaults.
		-dStS-	Display Test.
F7-InF	Product Information	--VEr-	Version No. (Only for query).
		--Sn--	Serial No. (Only for query).
		-dAtE-	Exfactory Date (Only for query).
F8-Aud	Audit Trail	-Cntr-	Operation Audit Trail Counter [0~999999] (Only for query).
		-oPtr-	Operation Trail (Only for query). ✧ nonE: No Operation. ✧ SCAL: Scale Setting. ✧ dEFU: RAM Reset.

6.3 F1-SET Parameter Setting

6.3.1 Weighing Parameters (SCAL)

No.	Sign	Range	Default	Description	Set
100	UnIt	0~3	1	Weight Unit 0: None; 1: kg; 2: t; 3: g	
101	dot	0~4	ooo.oo	Decimal Point 0: ooooo; 1: ooooo.0; 2: ooo.oo; 3: oo.ooo 4: o.oooo	
102	SCAL	1~100000	10000	Max. Capacity Max. loading weight of the load receptor. Max. Capacity \leq (Loadcell Capacity \times Loadcell Quantity) – Load Receptor Weight. When ‘Weight value = Max. Capacity’, AO of weight signal will output current 20mA.	
103	dIV	1~500	1	Display Division 1, 2, 5, 10, 20, 50, 100, 200, 500 If the Weight Variance without Decimal Point is less than Display Division value, the display value will not change.	
104	ZERo	-2000~ +99999	0 [*]	Zero Value 【▲】: Optional ‘0’ or ‘-’ (negative sign) at the highest bit. Only for query.	
105	SPAn	>0	1.0000 [*]	Span Coefficient Max. display value: 99.9999. Only for query.	
106	dyn.r	1~500	5	Dynamic Detection Range <i>Set Value \times Display Division</i>	
107	dyn.t	0.1~5.0	0.5	Dynamic Detection Time [s]	
108	FrE	50~800	400	Sampling Frequency [Hz] 50, 100, 200, 400, 800	
109	FILt	0~5	5	Sampling Filter Degree 0, 1, 2, 3, 4, 5	
110	AdC	0~1	1 [*]	ADC Module Selection 0: 302 1: 304 Factory set. Only for query.	
111	StAb	0~1	1	Anti-Vibration Level 0. L0 [Low] 1. H1 [High]	

*: ‘RAM Reset’ operation has no effect on the parameter.

6.3.2 Calibration Parameters (CALP)

No.	Sign	Range	Default	Description	Set
120	dS.Zr	0~1	0	Display Value Auto-Zero Permission 0: <i>oFF</i> 1: <i>oN</i>	
121	Zr.tI	0.0~9.9	0.5	Display Value Auto-Zero Time [s]	
122	ZrAg	1~500	1	Display Value Auto-Zero Range <i>Set Value × Display Division</i> When Weight display value without Decimal Point keeps within this range in 'Display Value Auto-Zero Time', its display value will return to zero automatically. However, the Zero Value will not be modified.	
123	nZ	0~50000	50	Zero Fine Adjusting Range When Gross Weight display value is within this range, Manual and Auto Zero Fine Adjusting operation will be valid. However, the new Zero RAM Value will not be saved as the original Zero Value.	
124	LoAd	1~100000	9000 [*]	Calibrating Weight Loading Weight for Span Calibration.	
125	totL	1~100000	10000 [*]	Total Capacity of Loadcells Total Capacity of Loadcells = Loadcell Capacity × Loadcell Number.	
126	SEnS	0.500~5.000	2.000 [*]	Output Sensitivity of Loadcell [mV/V]	
127	Ao.Er	-2.00~+2.00	0.00	AO Offset Value [mA] Try to change 'AO Offset Value' for making the AO current display value of the AO receiving terminal the same as that of the weighing controller. If the AO current display value of the AO receiving terminal is smaller than that of the weighing controller because of signal attenuating, the 'AO Offset Value' should be set to positive value. If the AO current display value of the AO receiving terminal is bigger than that of the weighing controller because of interference signal superposing, the 'AO Offset Value' should be set to negative value.	
128	t.rAg	0~50000	50	Auto Tare Range Used for APPL2/4 Bag-Weighing Mode. Only when Gross Weight is within this range, Auto Tare is valid.	

*: 'RAM Reset' operation has no effect on the parameter.

6.3.3 Setpoint Parameters (SEtP)

No.	Sign	Range	Default	Description	Set
201	SEt	0~60000	5000	Target Value Set value = 0: The feeding system does not work.	
202	Ld1	0~60000	2000	SP1 Initial Lead Value for Fast Feeding Set value = 0: The DO switch 'SP1 Fast Feeding' will not participate in the feeding process. Set value > 0: When 'Feeding Weight \geq (Target Value - SP1 Lead)' in the feeding process, the DO switch 'SP1 Fast Feeding' will turn off automatically.	
203	Ld2	0~60000	200	SP2 Initial Lead Value for Medium Feeding Set value = 0: The DO switch 'SP2 Medium Feeding' will not participate in the feeding process. Set value > 0: When 'Feeding Weight \geq (Target Value - SP2 Lead)' in the feeding process, the DO switch 'SP2 Medium Feeding' will turn off automatically.	
204	FALL	0~60000	50	SP3 Fall Value for Slow Feeding When 'Feeding Weight \geq (Target Value - SP3 Fall)' in the feeding process, the DO switch 'SP3 Slow Feeding' will turn off automatically.	
205	OV	0~60000	5	Positive Deviation Permission Value Positive Deviation = Feeding Weight - Target Value. If 'Positive Deviation > Permission Value', the DO switch 'Positive Deviation Alarm' will turn on automatically.	
206	Und	0~60000	5	Negative Deviation Permission Value Negative Deviation = Target Value - Feeding Weight. If 'Negative Deviation > Permission Value', the DO switch 'Negative Deviation Alarm' will turn on automatically.	

No.	Sign	Range	Default	Description	Set
207	nuLL	0~60000	50	<p>No-load Zero Range</p> <p>APPL1/3 Hopper-weighing Mode: In the auto-discharging process, 'Net Weight \leq No-load Zero Range' is used as the judging condition that the materials in the weighing hopper have been discharged completely.</p> <p>APPL2/4 Bag-weighing Mode: After the auto-feeding process finished, 'Net Weight \leq No-load Zero Range' will be used as the judging condition that the packing bag filled with materials has separated from the bagholder; after the DO switch 'Clamping/Releasing Bag' turned off, if the Net Weight is still greater than No-load Zero Range, it means that the packing bag is still hanging on the bagholder, in the meantime, the DI signal of 'Bag-clamping/releasing Request' will only be used for releasing bag.</p>	
208	PCS	0~9999	0	<p>Target Batch</p> <p>Set value = 0: No judging 'Target Batch Finished'. Set value > 0: After Batch Count reached to this set value, the controller will display prompt message.</p>	
209	tot	0~999999	0	<p>Target Totalized Weight</p> <p>Its Display Unit is $1000 \times$ '[100] Weight Unit', and its Decimal Point is in accordance with the set value of [101]. Set value = 0: No judging 'Target Totalized Weight Finished'. Set value > 0: After Totalized Weight reached to this set value, the controller will display prompt message.</p>	
210	HI	0~100000	0	<p>Gross Weight Upper Limit</p> <p>Set value = 0: No judging 'Gross Weight Upper Limit'. Set value > 0: If 'Gross Weight \geq Upper Limit', the controller will display alarm message.</p>	

6.3.4 Working Mode Parameters (APPL)

No.	Sign	Range	Default	Description	Set
300	APPL	1~5	1/2/3/4/5 [*]	<p>Application Mode</p> <p>1. <i>HOP0</i> [APPL1 Single-hopper-weighing Mode] 2. <i>bAg0</i> [APPL2 Bag-weighing Mode with Auto Bag-releasing] 3. <i>HOP1</i> [APPL3 Host Controller of Double-hopper-weighing Mode] 4. <i>HOP2</i> [APPL3 Slave Controller of Double-hopper-weighing Mode] 5. <i>bAg1</i> [APPL4 Bag-weighing Mode with Manual Bag-releasing]</p> <p>To Double-weighing-hopper Packing Scale, one of the controllers should be set as Host Controller, the another as Slave Controller.</p> <p>Only after Key-unlocking with Administrator Password, this parameter is allowed to be modified.</p> <p>* 'RAM Reset' operation has no effect on this parameter.</p>	
301	P.Ctr	0~1	0	<p>Target Batch Control Target Totalized Weight Control</p> <p>0: <i>oFF</i> 1: <i>on</i> [With Target Batch Finished or Target Totalized Weight Finished, the packing process will stop automatically]</p>	
302	Au.Zr	0~99	1	<p>Batch Count for Auto Zero Fine Adjustment Used for APPL1/3 Hopper-weighing Mode.</p> <p>Set value=0: No doing 'Auto Zero Fine Adjustment'. Set value > 0: After Batch Count reached to this set value, the controller will do 'Auto Zero Fine Adjustmen' before feeding if Gross Weight display value is within 'Zero Fine Adjusting Range'.</p>	
303	Au.tr	0~99	1	<p>Batch Count for Auto Tare Used for APPL2/4 Bag-weighing Mode.</p> <p>Set value = 0: No doing 'Auto Tare'. Set value > 0: After Batch Count reached to this set value, the controller will do 'Auto Tare' before feeding if Gross Weight display value is within 'Auto Tare Range'</p>	
304	FEEd	0~1	0	<p>DO Feeding's Start Mode</p> <p>0: 'SP1/SP2/SP3 Start at the same time' Mode 1: 'SP1/SP2/SP3 Start one by one' Mode</p>	

No.	Sign	Range	Default	Description	Set
305	SP3	0~1	0	<p>SP3 Slow Feeding Mode</p> <p><i>0: Continuous Feeding Mode</i></p> <p><i>1: Continuous-Inching Feeding Mode</i> [In Fast/Medium Feeding process: SP3 Continuous Feeding Mode; After Medium Feeding process ended: SP3 Inching Feeding Mode. DO Inching Feeding Mode: Output ON/OFF; AO Inching Feeding Mode: Output 4mA/‘Control Current for SP3 Slow Feeding’]</p>	
306	tI.A	0.10~9.99	3.00	<p>SP3 OFF Holding Time Ta [s]</p> <p>Used for SP3 Inching Feeding Mode.</p>	
307	tI.b	0.10~9.99	1.00	<p>SP3 ON Holding Time Tb [s]</p> <p>Used for SP3 Inching Feeding Mode.</p>	
308	F.SP3	0~1	0	<p>SP3 Auto Re-feeding for Fall Point</p> <p><i>0: oFF</i></p> <p><i>1: on</i> [If the auto-feeding process stops abnormally because of large impact on the weighing hopper, and ‘Feeding Weight < (Target Value – SP3 Fall)’, the DO switch ‘SP3 Slow Feeding’ will turn on again automatically for re-feeding. When ‘Feeding Weight ≥ (Target Value – SP3 Fall)’, the DO switch ‘SP3 Slow Feeding’ will turn off automatically and stop feeding]</p>	
309	d.SP3	0~1	0	<p>SP3 Auto Re-feeding for Negative Deviation</p> <p><i>0: oFF</i></p> <p><i>1: on</i> [After the processes of auto-feeding and ‘SP3 Auto Re-feeding for Fall Point’ stopped, the controller will calculate the ideal value of ‘SP3 Fall’. If ‘Feeding Weight < (Target Value – Negative Deviation Permission Value)’, the DO switch ‘SP3 Slow Feeding’ will turn on again automatically for re-feeding. When ‘Feeding Weight ≥ (Target Value – Ideal Value of SP3 Fall)’ or ‘Feeding Weight ≥ (Target Value – Negative Deviation Permission Value)’, the DO switch ‘SP3 Slow Feeding’ will turn off automatically and stop feeding]</p>	

No.	Sign	Range	Default	Description	Set
310	PAUS	0~1	0	<p>Auto Pause while Deviation Alarming</p> <p>0: <i>oFF</i></p> <p>1: <i>on</i> [The controller will display alarm message in Pause state. In Pause state of Negative Deviation Alarm, it's allowed to press the DI button 'SP3.I' to do 'SP3 Manual Re-feeding', when 'Feeding Weight \geq (Target Value - Negative Deviation Permission Value)', the Re-feeding process will stop automatically, and then press the DI button 'Start/Dev.Ack' to recover running]</p>	
311	F.Cor	0~1	0	<p>Fall Value Auto Correction</p> <p>0: <i>oFF</i></p> <p>1: <i>on</i></p>	
312	Cor.n	1~99	3	<p>Interval of Fall Value Auto Correction N</p> <p>After Deviation Alarm Count reached to N, Fall Value will be corrected automatically.</p>	
313	C.rAg	1~60000	50	<p>Fall Value Auto Correction Range</p> <p>If the absolute value of deviation exceeds this range, it will not be used for the calculation of Fall Correction Value.</p>	
314	C.rAt	(25~100)%	50%	<p>Fall Value Auto Correction Ratio [%]</p> <p>25%</p> <p>50%</p> <p>100%</p> <p>New Fall Value = Original Fall Value + Deviation Value \times Fall Value Auto Correction Ratio.</p> <p>Deviation Value = Feeding Weight - Target Value.</p>	
315	Ao	0~4	0	<p>AO Signal</p> <p>0. <i>groS</i> [Gross Weight]</p> <p>1. <i>nEt</i> [Net Weight]</p> <p>2. <i>dISP</i> [Displayed Weight]</p> <p>3. <i>bAt</i>[Final Feeding Weight of Present Batch]</p> <p>4. <i>FEEd</i> [Control Current for Fast/Medium/ Slow Feeding]</p>	

No.	Sign	Range	Default	Description	Set
316	A.SP1	4.00~20.00	18.00	Control Current for SP1 Fast Feeding [mA] It's valid only when the parameter [315] 'AO Signal' is set to '4. FEED'.	
317	A.SP2	4.00~20.00	12.00	Control Current for SP2 Medium Feeding [mA] It's valid only when the parameter [315] 'AO Signal' is set to '4. FEED'.	
318	A.SP3	4.00~20.00	6.00	Control Current for SP3 Slow Feeding [mA] It's valid only when the parameter [315] 'AO Signal' is set to '4. FEED'.	

6.3.5 Timer Parameters (-tI-)

No.	Sign	Range	Default	Description	Set
400	t1.PC	0.00~9.99	1.00	<p>Max. Delay Time After Clamping Bag T1 [s] After 'Bag-clamping Request' DI signal took effect, the DO switch 'Clamping/Releasing Bag' will turn on automatically for clamping the packing bag. The delay time T1 is used for ensuring the action of 'Clamping Bag' finished.</p> <p>APPL1/3 Hopper-weighing Mode: Only after the action of 'Clamping Bag' being finished, it's allowed to enter the auto-discharging process. If there is a 'Bag-releasing Request' signal inputted in the auto discharging process, the discharging process will stop immediately, and the discharging gate will close. After delaying time 1.50s for ensuring the discharging gate closed, the packing bag will be released automatically.</p>	
				<p>APPL2/4 Bag-weighing Mode: Only after the action of 'Clamping Bag' being finished, it's allowed to enter the auto-feeding process. If there is a 'Bag-releasing Request' signal inputted in the auto feeding process, the feeding process will stop immediately, and the feeding gate will close. After delaying time 1.50s for ensuring the feeding gate closed, the packing bag will be released automatically.</p>	
401	t2.Fd	0.00~9.99	0.50	<p>Max. Delay Time Before Feeding T2 [s] Delay Time Before Auto Zero Fine Adjustment & Auto Tare. If Auto Zero Fine Adjustment and Auto Tare (set via the parameters [302]/[303]) are not necessary before feeding, the feeding process will start immediately without delaying T2. In the T2 delaying process, if the delayed time is up to 2s, then once the weight value is stable (The Weight Variance value per [107] 'Dynamic Detection Time' is in [106] 'Dynamic Detection Range'), the delaying process will end immediately. Then the controller will do 'Auto Zero Fine Adjustment' or 'Auto Tare' and start the feeding process.</p>	

No.	Sign	Range	Default	Description	Set
402	t3.nC	0.00~9.99	0.80	<p>Comparing-prohibited Time T3 [s]</p> <p>When ‘SP1 Fast Feeding’ / ‘SP2 Medium Feeding’ starts and stops, the weighing hopper will vibrate because of the impact and sudden stop. In order to ensure that the feeding process runs well, the comparison between Feeding Weight and Target Value will be prohibited in time T3.</p>	
403	t4.Sb	0.00~9.99	1.50	<p>Max. Wait Time for Stabilizing Weight T4 [s]</p> <p>When ‘SP3 Slow Feeding’, ‘SP3 Auto Re-feeding’ or ‘SP3 Manual Re-feeding’ stops, some materials have left the feeding hopper but still in mid-air, it need to wait some time to ensure that all of the materials in mid-air fall into the weighing hopper or packing bag. In the T4 delaying process, if the delayed time is up to 2s, then once the weight value is stable (The Weight Variance value per [107] ‘Dynamic Detection Time’ is in [106] ‘Dynamic Detection Range’), the delaying process will end immediately. Then the controller will do Feeding Weight Detection, Deviation calculation and Deviation alarm.</p> <p>The Final Feeding Weight will be kept displaying till the next ‘Bag-Clamping Request’ signal is inputted.</p>	
				<p>APPL1/3 Hopper-weighing Mode:</p> <p>Then the DO switch ‘Discharging’ will turn on automatically for opening the discharging gate to enter the discharging process.</p>	
				<p>APPL2 Bag-weighing Mode with Auto Bag-releasing:</p> <p>Then the DO switch ‘Clamping/Releasing Bag’ will turn off automatically for releasing the packing bag.</p> <p>APPL4 Bag-weighing Mode with Manual Bag-releasing:</p> <p>Then the DO switch ‘Clamping/Releasing Bag’ will be turned off by the DI signal of ‘Bag-releasing Request’ for releasing the packing bag.</p>	

No.	Sign	Range	Default	Description	Set
404	t5.C1	0.00~9.99	0.50	<p>Delay Time Before Closing Discharging Gate T5 [s] APPL1/3 Hopper-weighing Mode: After 'Net Weight \leq No-load Zero Range' in the auto-discharging process, the delay time T5 is necessary for ensuring all of the materials in the weighing hopper discharged completely, then the DO switch 'Discharging' will turn off automatically for closing the discharging gate.</p>	
405	t6.C2	0.00~9.99	0.50	<p>Delay Time After Closing Discharging Gate T6 [s] APPL1/3 Hopper-weighing Mode: After delaying time T6 for ensuring the discharging gate closed, the discharging process will stop, and the DO switch 'Clamping/Releasing Bag' will turn off automatically for releasing the packing bag, and then the next ration feeding process will start automatically.</p>	
406	t7.In	0.00~9.99	0.50	<p>Time Interval of Bag Clamping/Releasing T7 [s] After 'Bag-clamping/releasing Request' signal took effect, it will not be responded again in time T7 for avoiding misoperation of 'Bag-clamping/releasing'.</p>	

6.3.6 Communication Parameters (SErP)

No.	Sign	Range	Default	Description	Set
800	Adr	0~99	1	Communication Address	
801	bPS1	0~5	3	COM1 Baud Rate <i>0: 1200bps</i> <i>1: 2400bps</i> <i>2: 4800bps</i> <i>3: 9600bps</i> <i>4: 19200bp</i> <i>5: 115200bps</i>	
802	CHC1	0~2	0	COM1 Parity Check <i>0. none</i> [None Check] <i>1. EVEn</i> [Even Check] <i>2. odd</i> [Odd Check]	
803	Con1	0~2	0	COM1 Communication Mode <i>0. HASC</i> [Host-slave, Modbus ASCII] <i>1. Hrtu</i> [Host-slave, Modbus RTU] <i>2. Cont</i> [Continuous Sending ASCII]	
804	dAtA	0~4	2	Data for Continuous Sending Mode <i>0. groS</i> [Gross Weight] <i>1. nEt</i> [Net Weight] <i>2. dISP</i> [Displayed Characters] <i>3. bAt</i> [Final Feeding Weight of Present Batch] <i>4. tot</i> [Totalized Weight]	
805	rAtE	1~20	5	Continuous Sending Frequency [Hz]	

6.3.7 Display Parameters (dISP)

No.	Sign	Range	Default	Description	Set
901	dS.tI	0.00~1.00	0.20	Display Refreshing Time [s]	
902	A.Loc	0~1	0	Auto-Locking <i>0: oFF</i> <i>1: on</i> [If there is not any keypad operation in one minute and it's not in the processes of 'F2 Calibration' & 'F6 Factory Adj.', the controller will lock the keypad and return to 'Main Display Interface' automatically]	

6.3.8 A Parameter Setting Sample

Modify the parameter '[102] Max. Capacity'.

Main Display Interface

↓ 【MENU】 + 【◀】 【▲】 : F1-Set
 【ENT】 + 【◀】 【▲】



↓ 【ENT】 + 【◀】 【▲】



↓ 【ENT】



【◀】 : Moving cursor; 【▲】 : Digit input.

↓ 【MENU】 : Exit 【ENT】 : Save



6.4 F2-CAL System Calibration


After doing 'System Calibration', Tare Weight value will return to zero automatically.

6.4.1 Zero Calibration (ZEro)

Do Zero Calibration with no loading on the weigher. The measured result of Zero Calibration will be saved as the original zero value.

Main Display Interface

(M) ↓ 【MENU】 + 【◀】 【▲】 : F2-CAL
【ENT】 + 【◀】 【▲】 :-
ZEro- 【ENT】



0.00457
10482Er0

【◀】 【▲】 :
◇ 104: New Zero Value (-2000~+99999).
◇ oLd: Original Zero Value.
◇ Er: Error = New Value - Original Value.
If Zero Value exceeds allowed range, it's not allowed to be saved.

【MENU】 : Exit ↓ 【ENT】 : Save

(M)

6.4.2 Data Calibration (dAtA)

Input Total Capacity of Loadcells, Output Sensitivity of Loadcell and the other parameters according to the actual configure of the weighing system for correcting Span Coefficient. If there is no access to get these parameters, only do Load Calibration.

Main Display Interface



【MENU】 + 【◀】 【▲】 : F2-CAL

【ENT】 + 【◀】 【▲】 :-
dAtA- 【ENT】

0 100000
In 8.8 totL

Input 'Total Capacity of Loadcells' [totL]: 1~100000 Weight Unit.



【ENT】

8.8 2.0000
In 8.85 EnS

Input 'Output Sensitivity of Loadcell' [SEnS]: 0.500~5.000mV/V.



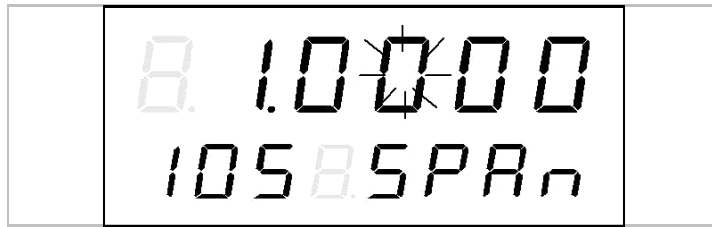
【ENT】

8. 1.0000
In 8.8 Vol.r

Input 'Voltage Ratio' [VoL.r]: 1.0000~2.0000.



【ENT】



【◀】 【▲】 :

- ◇ 105: New Span Coefficient value (Max. Display Value: 99.9999).
- ◇ oLd: Original Span Coefficient value.
- ◇ Sr: Span Correction Ratio = New Value / Original Value (Display range: 0.00001~9.99999).

【MENU】 : Exit  **【ENT】 : Save**





Note:


- ◇ Total Capacity of Loadcells = Loadcell Capacity × Loadcell Number.
- ◇ Voltage Ratio = Excitation Voltage on the terminal of Controller / Excitation Voltage on the terminal of loadcells.
- ◇ The rated excitation voltage for loadcells is DC9V. It's best to measure the actual voltage value.
- ◇ 4-wire connection: The voltage attenuation is big, the voltage on both sides should be measured.
- ◇ 6-wire connection: The voltage attenuation is small, Voltage Ratio can be set to 1.0000.

6.4.3 Load Calibration (LoAd)

After doing Data Calibration, if there are conditions for Load Calibration, do Load Calibration with loading standard weight on the weigher for correcting Span Coefficient further. The loading weight should be bigger than 50% of Max. Capacity value.

Main Display Interface



【MENU】 + 【◀】 【▲】 : F2-CAL
【ENT】 + 【◀】 【▲】 :-
 LoAd- **【ENT】**



Input 'Calibrating Weight': 1~100000 Weight Unit.



【ENT】



【◀】 【▲】 :

- ✧ 105: New Span Coefficient value (Max. Display Value: 99.9999).
- ✧ oLd: Original Span Coefficient value.
- ✧ Sr: Span Correction Ratio = New Value / Original Value (Display Range: 0.00001~9.99999).
- ✧ Ad: AD Value (Checking Range: -131071~+131071. Display Range : -99999~+131071).

If AD Value ≤ Zero Value, display 'Err', and it's not allowed to save Span Coefficient.

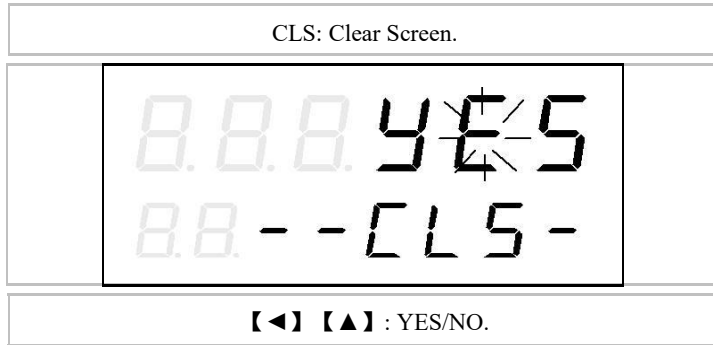
【MENU】 : Exit
 
【ENT】 : Save



6.5 F4-CLN Data Clearing

Main Display Interface

(M) ↓ 【MENU】 + 【◀】 【▲】 : F4-CLn
【ENT】 + 【◀】 【▲】 : --CLS-
【ENT】



【MENU】 : Exit ↓ 【ENT】 : Enter

(M)

6.6 F5-LOC Key-locker

6.6.1 Key-unlocking (oPEn)

Main Display Interface

(M) ↓ 【MENU】 + 【◀】 【▲】 : F5-Loc
 ↓ 【ENT】 + 【◀】 【▲】 : -
 oPEn- 【ENT】



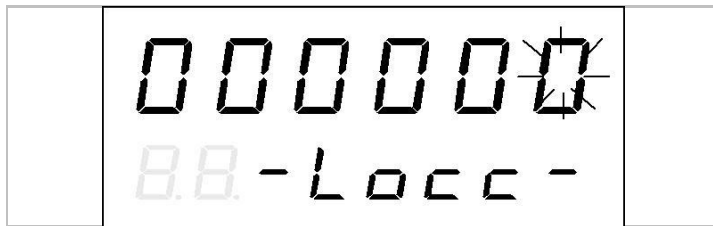
↓ 【ENT】 : If inputted password is correct, Key-unlocking will be valid and [LOCK] will turn off.

(M)

6.6.2 Key-locking (Locc)

Main Display Interface

(M) ↓ 【MENU】 + 【◀】 【▲】 : F5-Loc
 ↓ 【ENT】 + 【◀】 【▲】 : -
 Locc- 【ENT】





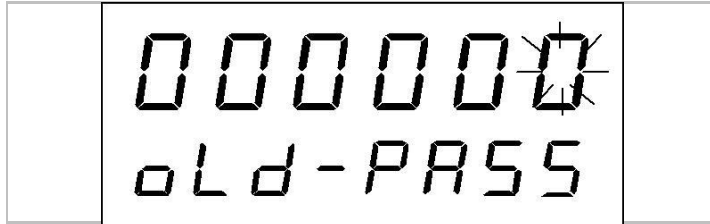
↓ 【ENT】 : If inputted password is correct, Key-locking will be valid and [LOCK] will turn on.

(M)

6.6.3 Password Set (PASS)

Main Display Interface



【MENU】 + 【◀】 【▲】 : F5-Loc
【ENT】 + 【◀】 【▲】 : -PASS-
【ENT】




【ENT】


If inputted is Operator Password, this operation interface will be skipped; if inputted is Administrator Password, 'Administrator Password [AP]' or 'Operation Password [oP]' can be modified via **【◀】 【▲】** .




【ENT】



Input the new Password. Please remember it.

【MENU】 : Exit  **【ENT】** : Save



6.7 F6-FAC Factory Adjustment

Only after Key-unlocking with Administrator Password, this operation will be valid.

6.7.1 Exfactory Span Adjustment (SPAN)



Use standard weighing test equipment to adjust the controller for normalizing Span Coefficient to 1.


Adjusting Tools:

- ✧ 1 Platform Scale: Total Capacity of Loadcells 100kg, Output Sensitivity 2.0mV/V, Non-linearity 0.03%FS.
- ✧ 2~4 Standard Weights [25kg].

Note: Total Capacity of Loadcells = Loadcell Capacity × Loadcell Number.


Main Display Interface



【MENU】 + 【◀】 【▲】 : F6-FAC
【ENT】 + 【◀】 【▲】 :-
SPAN- 【ENT】



Input 'Total Capacity of Loadcells' [totL]: 1~100000kg.


【ENT】



Input 'Output Sensitivity of Loadcell' [SEnS]: 0.500~5.000mV/V.


【ENT】



Keep the platform scale at no-load state.

The display shows two lines of seven-segment digits. The top line displays "8.8.8457" and the bottom line displays "Ld008.8Ad". The "Ld" and "Ad" characters are smaller and positioned at the beginning and end of the bottom line respectively. The "008.8" is the central part of the bottom line.

Display AD Value. when AD Value is stable, press **【ENT】** .



【ENT】

Load on the platform scale. The load weight should be 25~100% of Total Capacity of Loadcells.

The display shows two lines of seven-segment digits. The top line displays "101181" and the bottom line displays "Ld118.8Ad". The "Ld" and "Ad" characters are smaller and positioned at the beginning and end of the bottom line respectively. The "118.8" is the central part of the bottom line.

Display AD Value. When AD Value is stable, press **【ENT】** .



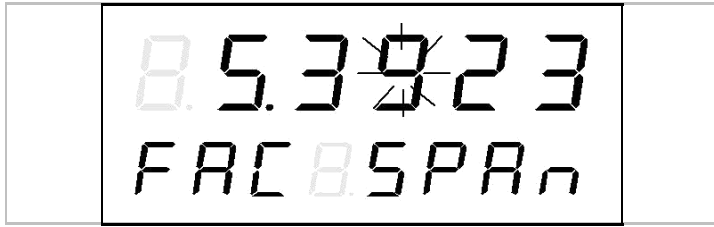
【ENT】

The display shows two lines of seven-segment digits. The top line displays "0100.00" and the bottom line displays "Ln8.8LoAd". The "Ln" and "Ad" characters are smaller and positioned at the beginning and end of the bottom line respectively. The "8.8Lo" is the central part of the bottom line.

Input actual 'Load Weight' [LoAd]: 1~100000kg.



【ENT】



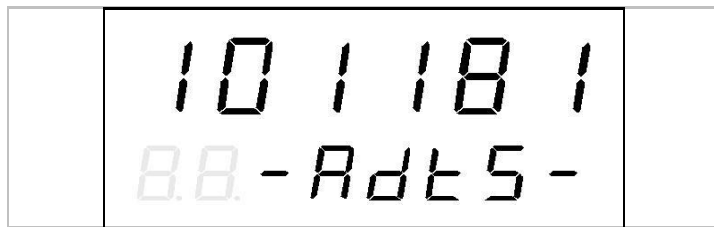
【◀】 【▲】 :
 ✦ FAC: New Exfactory Span Coefficient value (Range: 0.0001~10000; Max. Display Value: 99.9999).
 ✦ oLd: Original Exfactory Span Coefficient value.
 If Exfactory Span Coefficient value exceeds allowed range, it's not allowed to be saved.

【MENU】 : Exit ↓ **【ENT】** : Save
 [105] Span Coefficient returns to 1.0000.
 (M)

6.7.2 AD Value of Weighing Signal Linearity Test (AdtS)

Main Display Interface

(M) ↓ **【MENU】 + 【◀】 【▲】** : F6-FAC
【ENT】 + 【◀】 【▲】 :- AdtS- **【ENT】**



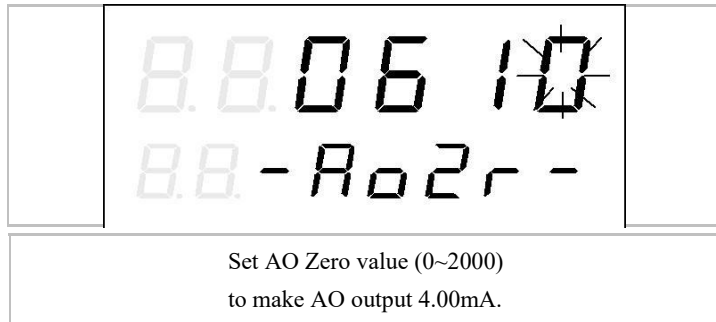
Input weighing signal 0~22.5mV to test linearity of AD value.
 Checking Range: -131071~+131071. Display Range: -99999~+131071.

↓ **【MENU】**
 (M)

6.7.3 AO Zero Adjustment (AoZr)

Main Display Interface

(M) ↓ **【MENU】 + 【◀】 【▲】 : F6-FAC**
【ENT】 + 【◀】 【▲】 : -AoZr-
【ENT】

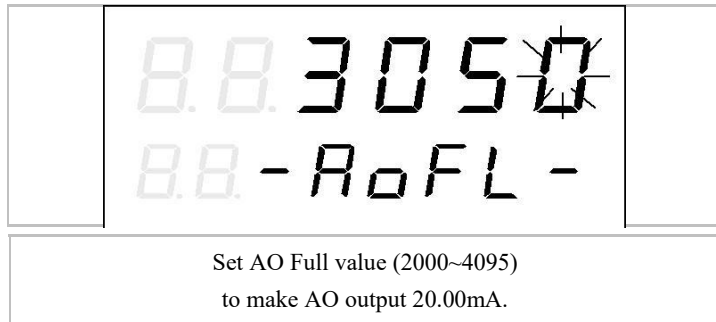


【MENU】 : Exit ↓ **【ENT】 : Save**
(M)

6.7.4 AO Full Range Adjustment (AoFL)

Main Display Interface

(M) ↓ **【MENU】 + 【◀】 【▲】 : F6-FAC**
【ENT】 + 【◀】 【▲】 : -AoFL-
【ENT】

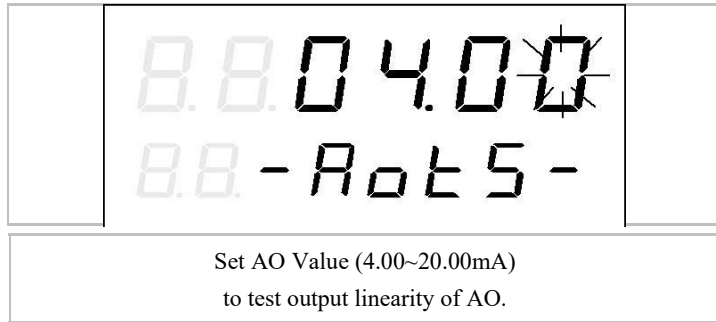


【MENU】 : Exit ↓ **【ENT】 : Save**
(M)

6.7.5 AO Linearity Test (AotS)

Main Display Interface

(M) ↓ 【MENU】 + 【◀】 【▲】 : F6-FAC
【ENT】 + 【◀】 【▲】 : -AotS-
【ENT】



8.8.04.00
8.8.-AotS-

Set AO Value (4.00~20.00mA)
to test output linearity of AO.

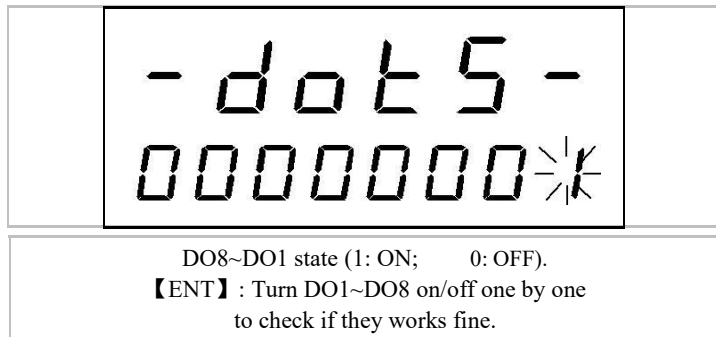
↓ 【MENU】 / 【ENT】

(M)

6.7.6 DO Output Test (dotS)

Main Display Interface

(M) ↓ 【MENU】 + 【◀】 【▲】 : F6-FAC
【ENT】 + 【◀】 【▲】 : -dotS-
【ENT】



- dotS -
00000000



DO8~DO1 state (1: ON; 0: OFF).
【ENT】 : Turn DO1~DO8 on/off one by one
to check if they works fine.

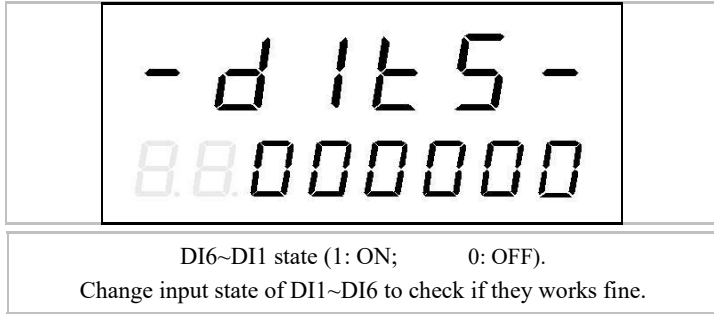
↓ 【MENU】

(M)

6.7.7 DI Input Test (dItS)



Main Display Interface



 【MENU】 + 【◀】 【▲】 : F6-FAC
 【ENT】 + 【◀】 【▲】 : -dItS-
 【ENT】





The display shows two lines of seven-segment characters. The top line displays "- d 1 1 5 -" and the bottom line displays "8.8.000000". Below the display, a text box contains the following instructions:

DI6~DI1 state (1: ON; 0: OFF).
Change input state of DI1~DI6 to check if they works fine.


 【MENU】


6.7.8 RAM Reset (dEFU)



Main Display Interface



 【MENU】 + 【◀】 【▲】 : F6-FAC
 【ENT】 + 【◀】 【▲】 : -dEFU-
 【ENT】



The display shows two lines of seven-segment characters. The top line displays "8.8.8.4E5" and the bottom line displays "8.8.-dEFU-". Below the display, a text box contains the following instruction:

【◀】 【▲】 : YES/NO.

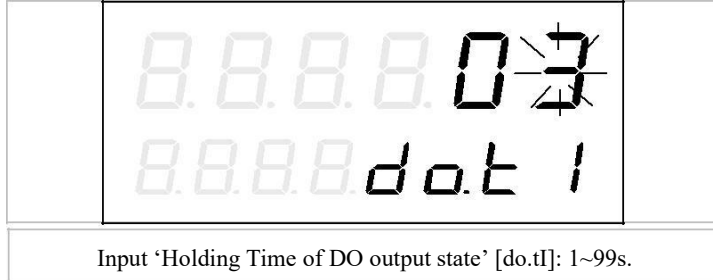

 【MENU】 : Exit 【ENT】 : Enter


6.7.9 Display Test (dStS)

Main Display Interface



【MENU】 + 【◀】 【▲】 : F6-FAC
【ENT】 + 【◀】 【▲】 : -dStS-
【ENT】



【ENT】

- (1) All of the display units turn off.
- (2) All of the DO switches turn off.
- (3) The display units light one by one.
- (4) The DO switches turn on and off one by one.
- (5) This process will go on cyclically.





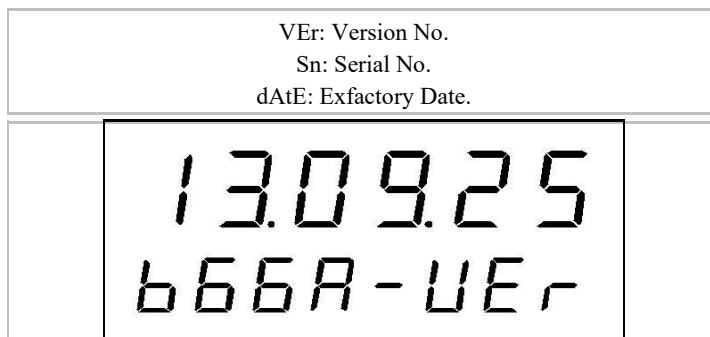
【MENU】





6.8 F7-INF Product Information

Main Display Interface





 【MENU】 + 【◀】 【▲】 : F7-InF
 【ENT】 + 【◀】 【▲】 : --VEr-
 【ENT】

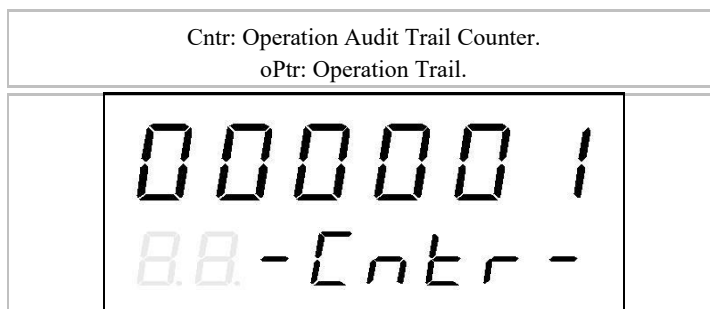





 【MENU】


6.9 F8-AUD Audit Trail

Main Display Interface



 【MENU】 + 【◀】 【▲】 : F8-Aud
 【ENT】 + 【◀】 【▲】 : -Cntr-
 【ENT】




 【MENU】


Appendix A. Register Table of Host-Slave MODBUS[ASCII/RTU]

Data Name	Type	Address	Attribute	Command [HEX]	Description
Gross Weight	Long	40001	R	03	
Net Weight	Long	40003	R	03	
Running State 1	UnShort	40005.0	R	03	1: Auto; 0: Manual.
		40005.1			1: Running.
		40005.2			1: Last Batch.
		40005.3			1: Positive Deviation Alarm.
		40005.4			1: Negative Deviation Alarm.
		40005.5			1: Pause.
		40005.6			
		40005.7			
		40005.8			
		40005.9			
		40005.10			
		40005.11			
		40005.12			1: No-load Zero Range.
		40005.13			1: Weight Value is stable.
		40005.14			1: Overload Alarm.
40005.15	1: Controller Fault.				
Running State 2	UnShort	40006.0	R	03	1: Fast Feeding.
		40006.1			1: Medium Feeding.
		40006.2			1: Slow Feeding.
		40006.3			1: Bag-clamping. 0: Bag-releasing.
		40006.4			1: Discharging.
		40006.5			1: Deviation Alarm.
		40006.6			1: Feeding Ended.
		40006.7			1:Gross Weight Upper Limit Alarm.
		40006.8			1: Target Batch Finished.
		40006.9			
		40006.10			
		40006.11			
		40006.12			
		40006.13			
		40006.14			
40006.15					

Data Name	Type	Address	Attribute	Command [HEX]	Description
DO State	UnShort	40007.0	R	03	1: DO1 ON; 0: DO1 OFF.
		40007.1			1: DO2 ON; 0: DO2 OFF.
		40007.2			1: DO3 ON; 0: DO3 OFF.
		40007.3			1: DO4 ON; 0: DO4 OFF.
		40007.4			1: DO5 ON; 0: DO5 OFF.
		40007.5			1: DO6 ON; 0: DO6 OFF.
		40007.6			1: DO7 ON; 0: DO7 OFF.
		40007.7			1: DO8 ON; 0: DO8 OFF.
		40007.8			
		40007.9			
		40007.10			
		40007.11			
		40007.12			
		40007.13			
		40007.14			
40007.15					
Operation	UnShort	40008.0	W	06	1: Start / Deviation Alarm Ack.
		40008.1			1: Emergency Stop.
		40008.2			1: Last Batch.
		40008.3			1: Manual Discharging.
		40008.4			1: Stop Manual Discharging.
		40008.5			1: SP3 Manual Feeding.
		40008.6			1: Stop SP3 Manual Feeding.
		40008.7			
		40008.8			
		40008.9			
		40008.10			1: Clear Screen.
		40008.11			1: Manual Tare.
		40008.12			1: Deviation Alarm Acknowledge.
		40008.13			1: Zero Fine Adjustment.
		40008.14			1: Zero Calibration.
40008.15	1: Load Calibration Do Span Calibration with [124] 'Calibrating Weight' as loading weight value.				
Calibrating Weight	UnLong	40009	R/W	03/10	
Totalized Weight	UnLong	40011	R	03	
Batch Count	UnLong	40013	R	03	

Data Name	Type	Address	Attribute	Command [HEX]	Description
Target Batch	UnShort	40015	R/W	03/06	
No-load Zero Range	UnShort	40016	R/W	03/06	
Gross Weight Upper Limit	UnLong	40017	R/W	03/10	
	UnShort	40019	R/W	03/06	Unused.
	UnShort	40020	R/W	03/06	Unused.
Final Feeding Weight	UnShrot	40021	R	03	
Target Value	UnShort	40022	R/W	03/06	
SP1 Initial Lead Value for Fast Feeding	UnShort	40023	R/W	03/06	
SP2 Initial Lead Value for Medium Feeding	UnShort	40024	R/W	03/06	
SP3 Fall Value for Slow Feeding	UnShort	40025	R/W	03/06	
Target Totalized Weight	UnLong	40026	R/W	03/10	

UnShort: Unsigned Short Int; UnLong: Unsigned Long Int; Long: Signed Long Int.

Appendix B. Data Frame Format of Continuous Sending [ASCII]

Filed Name		Code	HEX	Description	Example
START [Byte1]		=	3D		=
Weighing State [Byte2]		O	4F	Overload	S
		S	53	Stable	
		M	4D	Motion	
Data Name [Byte3]		G	47	Gross Weight	N
		N	4E	Net Weight	
		B	42	Final Feeding Weight of Present Batch	
		T	54	Totalized Weight	
		D	44	Displayed Characters	
		U	55	Unused	
Data [9 Bytes]	Format A: Weight Data [Byte4~12]	+/-	2B/2D	Sign	+00123.4k [DEC]
		Weight Value [7 Bytes]	30~39	0~9	
		Unit [1 Byte]: (Space)	20	Decimal Point ‘.’	
		k	6B	Space: None	
		t	74	k: kg	
	Format B: Displayed Characters [Byte4~12]	d	64	ID Code	d
		Point Code [1 Byte]	00~FF	BIT7=0: Unused	2. dISP
				BIT6=0: Unused	
				If BIT5=1: Highest Bit's Point: ON	
				If BIT4=1: Bit5's Point: ON	
				If BIT3=1: Bit4's Point: ON	
				If BIT2=1: Bit3's Point: ON	
				If BIT1=1: Bit2's Point: ON	
	If BIT0=1: Lowest Bit's Point: ON	Highest Bit's Point: ON			
	Characters [6 Bytes]	XX XX XX XX XX XX	ACSII	Point Code =20H	
SUM Check [Byte13]		d	64	ID Code	d
END [Byte14~15]		1 Byte	XX	SUM=Byte1+Byte2+... +Byte12	<CR>
		<CR>	0D		<LF>
		<LF>	0A		

Example 1. Sending Weight Data '+00123.4kg'

Byte	Field Name	HEX	Note
1	START	3D	=
2	Weighing State	53	S
3	Data Name	4E	N
4	Sign	2B	+
5	Weight Value	30	0
6	Weight Value	30	0
7	Weight Value	31	1
8	Weight Value	32	2
9	Weight Value	33	3
10	Weight Value	2E	.
11	Weight Value	34	4
12	Unit	6B	k
13	SUM	CC	SUM=Byte1+Byte2+...+Byte12
14	END	0D	<CR>
15	END	0A	<LF>

Example 2. Sending Displayed Characters '2. dISP'

Byte	Field Name	HEX	Note
1	START	3D	=
2	Weighing State	53	S
3	Data Name	44	D
4	ID Code	64	d
5	Point Code	20	
6	Displayed Characters	32	2
7	Displayed Characters	20	Space
8	Displayed Characters	64	d
9	Displayed Characters	49	I
10	Displayed Characters	53	S
11	Displayed Characters	50	P
12	ID Code	64	d
13	SUM	5E	SUM=Byte1+Byte2+...+Byte12
14	END	0D	<CR>
15	END	0A	<LF>

User's Memo

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