HB-8260

SMART DIGITAL TYPE WEIGHING INDICAOR

OPERATION MANUAL

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HOLBRIGHT

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Introduction

Thank you for your HB-8260 Smart Digital Load Cell Indicator purchase. The HB-8260 is the best choice for static weighing application requiring quality, performance and economy. Please read this operational manual before operation to achieve the best performance of the HB-8260 and to operate it correctly

This operational manual is composed of 4 chapters and 1 appendix. The first chapter of the manual provides the main features and specifications of the HB-8260. Chapter 2 presents the outline, panel descriptions and installation of the HB-8260. In Chapter 3, the F-Functions of the HB-8260 is introduced. Chapter 4 is devoted to the most important topic of the HB-8260 application for the various type of weighing. Finally, the display messages of the HB-8260 are given in Appendix A.

Warming:
1. It is illegal to copy the part or whole contents of this manual to other purpose.
2. It won't to be notified later if it needs to revise this manual's contents in the future.

Holbright Weighing Systems Co., Ltd.

CH 1 Features and Specifications

1.1 HB-8260 Main Specification

1. Full digital Function Specifications:

Digital Transmission — HB-8260 can be composed with those digital products
as below:
HBDLC--- HB Digital Load Cell
HBSDJB-4P 4-channel Digital Junction Box (can be connected 1 to 4 LCs)
HBSDJB-8P 8-channel Digital Junction Box (can be connected 5 to 8 LCs)
Whether new or former weighing systems, using HB-8260 series products
can help you meet full digital weighing system demand with less cost.

Stable Performance — the weight value signal transform to digital signal in the
weigher side then convey to the HB-8260; it is different from traditional
weighing system trans messages via weak analog signal therefore HB-8260
enhances the ability of anti-interference and transmission distance, the weighing
system becomes more stable.

Convenient Calibration — Each LC of the multi-LCs weighing system does
digital transmission itself; it is different from traditional weighing system's LCs
parallel connection and decreases the difficulty in calibration substantially.

Easy Repair — Each LC's load point has it's own weight value indication in the
multi-LCs weighing system; therefore the user can differentiate the weighing
system's deviation or LCs' bug. It is convenient to maintenance and repair.

Multi-Matching — The Digital Junction Box can be connected with any brand,
kinds of Analog Load Cell then upgrade the traditional Analog weighing system
to Digital weighing system directly.

Data Collection — The HB-8260 is provided with DATA Logger design, the
DATA Logger design can analyze and online detect by collecting each Digital
LC's data.

2. HB-8260 Installation and Operation Specifications:

Convenient Installation —HB-8260's frame design combines desk and panel
types. It is easily for the user to install it on the operation desk or on control
panel.

Display — a. 128X64 dot matrix backlight LCD Module. It will easy to see
the weight value, message indication and status indication.
b. It can show 8 individual Load Cell A/D value at the same time.

Keyboard　— a. Through 22 touchable filmic keyboard design, the user can operate the complex weighing application easily.

　　　　　　b. The PS2 KB can be used with the Panel Keyboard at the same time.

3.　Hardware Specifications:

Wire Transmission　— Digital Wire Transmission is composed with CAN BUS design, CAN BUS is applied in universal motor vehicle industries widely, is provided with high stable, low deviation rate, high baud rate, tel-transmission distance、low assembly line cost and so on specifications.

Wireless Transmission　— The HB-8260 can be collocated with HBCAN-RF Wireless Transmission/Receiver to proceed to wireless Digital Transmission and to avoid the difficulties and cost from piping and wiring.

Standard Interface　— HB-8260 Standard is composed with:
Digital Wire Transmission CAN BUS Interface (CAN Port 1)	X 1
Peripheral Transmission CAN BUS Interface (CAN Port 2)	X 1
DIO Interface (4 Pt. DI，4 Pt. DO) (DIO Port 1)	X 1
RS-232 Interface (Serial Port 1)	X 1

Option Interface Purchase　— The user can purchase HB-8260's option interface as below:
Centronics Parallel Interface (Parallel Port) for printer	(OP-01)
DIO Interface (4 Pt. DI，4 Pt. DO)(The Second DIO Port 2)	(OP-02)
Analog Output Interface (AO Port)	(OP-03)
RS-232 Interface (Serial Port 2)	(OP-04)
RS-485 Interface (Serial Port 2)	(OP-05)
USB Interface (Serial Port 2)	(OP-06)

Above Mentioned, the user only can purchase one of OP-04, 05, 06, the others can be purchased together.

Peripheral Purchase— The user can purchase HB-8260's peripheral as below:
HBDRD-L	Large Remote Display	(CANBUS/RF)
HBDRD-M	Middle Remote Display	(CANBUS/RF)
HBDRD-S	Small Remote Display	(CANBUS/RF)
HBCAN-RF	CANBUS to RF Wireless Transmission/Receiver	

4. **Software Specification:**

Weight Functions－HB-8260 is provided with the perfect Weight Functions:
>
> Zero Reset Function
> Tare Function
> Tare Reset Function
> Gross/Net Function
> Zero Tracking Function
> Motion Detection Function
> Power-On Auto Zero Function

Operational Interface － HB-8260 is provided with simple-clear operational interface and operational leads.

Calibration － HB-8260 is provided with superior calibration function for you to calibrate your weigher's accuracy easily.
HB-8260 is provided with multiple calibration ways as below to fit your weigher's requirements in application and accuracy purposes:
>
> Zero Reset
> Zero Adjustment
> Digital Corner Adjustment
> Digital Span Calibration (without test weight)
> Traditional Span Calibration (by test weight)

Serial Data － HB-8260 is provided Serial Data Port Functions as below:
>
> Continuous Weight Data Output
> 6 selectable output formats
> Data Output for demanded Function

Printer Output － HB-8260 is provided with data printout functions as below:
>
> Parallel or Serial Data printout functions
> Auto or manual printout functions
> 6 selectable printout formats

Print Content － Date, Time, Serial No. ID (Truck No.), Gross, Tare and Net.

Password Protection －We design three levels of password setting to avoid unrelated person's unpolitic operation and protect HB-8260. HB-8260 has special design in operation entrance to avoid the inconvenience to re-enter password.

1.2 General Specification

Power	5Vdc 2.4A
Operational Environment	Op. Temperature: -10℃～+50℃ (+14°F～+122°F) Op. Humidity: 85% Relative Humidity or less (Non-Condensing)
Dimensions	213 ㎜(L)X178 ㎜(W)X108 ㎜(D)
Panel Specification	213 ㎜(L)X178 ㎜(W)
Weight	1.00Kg

1.3 Display Specifications

Display	128X64 dot matrix backlight LCD Module
Weight Indication	8 digits, 10mm Height
Message Indication	1 6 digit X 4 line，5X7 dots digit display
Zero Indication	▼ ZERO　　　Center of Zero(0±0.25D)
Stable Indication	▼ STAB　　　Weigher is stable
Gross Indication	▼ GROSS　　Gross Weight Mode
Tare Indication	▼ TARE　　　Tare Weight Mode
Net Indication	▼ NET　　　Net Weight Mode
Setting Indication	▼ FUNC　　　F-Function Setting Mode
Display Resolution	300 ～ 50,000

1.4 Interface Specifications

1. CAN BUS Interface: Standard 2 Ports, CAN Port 1 and 2

2. Centronics Parallel Interface: (OP-01, Parallel Port) for printer

   Type of Interface: Centronics Parallel Interface
   Signal Level:　　TTL-Level

3. DIO Interface: (Standard 1 Port, DIO Port 1) & (OP-02, DIO Port 2)

   External Input Signals:　4 points of DI, Contact input or open-collector input isolated with photocouplers.
   External Output Signals:4 points of DO, open-collector output isolated with photocouplers.

   Control Mode:　　Mode 0:　User Defined I/O Mode
   　　　　　　　　　Mode 1:　Hopper Charge Mode
   　　　　　　　　　Mode 2:　Hopper Discharge Mode
   　　　　　　　　　Mode 3:　Truck Scale I/O Mode

4. Analog Interface: (OP-03, AO Port)

   Conversion Method: 14 bits D/A Conversion
   Signal Accuracy: 1/10000
   Driving Capability: 4～20mA : 350Ω Load (Max)

5. RS-232 Interface: (Standard 1 Port, Serial Port 1) & (OP-04, Serial Port 2)

   Signal Level: EIA RS-232C Standard
   Transmission Distance: 15m
   Transmission Method: Half- duplex, Asynchronous
   Baud Rat: 1200, 2400, 4800, 9600 bps
   Start Bit: 1 bit
   Data Bit: 7/8 bits
   Stop Bit: 1/2 bits
   Parity Bit: None/Odd/Even Parity
   Data I/O Mode: Stream/Command/Manual/Printing Mode

6. RS-485 Interface: (OP-05, Serial Port 2)

   Signal Level: EIA RS-422/RS-485 Standard
   Transmission Distance: 1000m
   Transmission Method: Half- duplex, Asynchronous
   Baud Rat: 1200, 2400, 4800, 9600 bps
   Start Bit: 1 bit
   Data Bit: 7/8 bits
   Stop Bit: 1/2 bits
   Parity Bit: None/Odd/Even Parity
   Data I/O Mode: Stream/Command/Manual/Printing Mode

7. USB Interface: (OP-06, Serial Port 2)

1.5 Memory Specifications

1. Setting Data Memory: NOV RAM
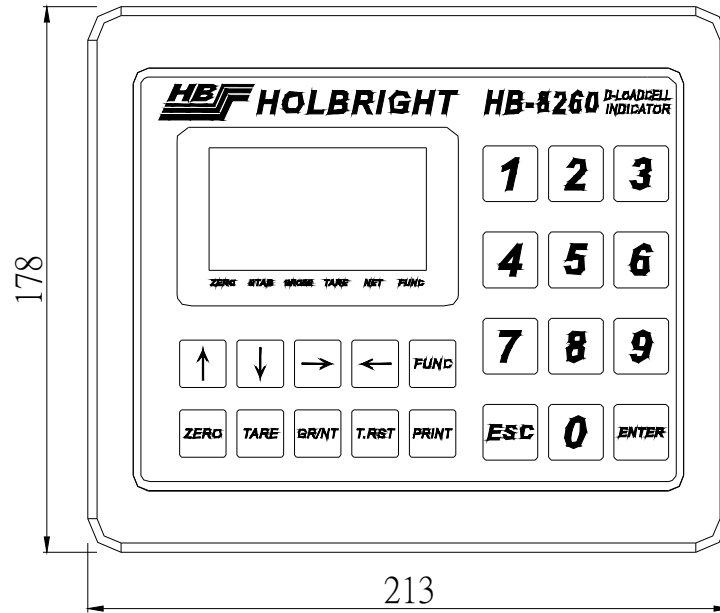
   Memorize Capacity: 2048 Bytes
   Endurance: 10000 Times (Min)
   Data Retention: 10 Years (Min)

2. Weighing Data Memory:

   Memorize Capacity: 2048 Bytes
   Endurance: 10000 Times (Min)
   Data Retention: 10 Years (Min)

CH 2 Panel Description and Installation

2.1 Dimensions

Front View
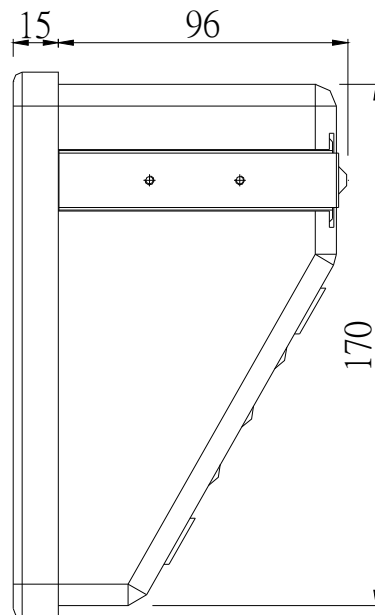
Side View

2.2 Front Panel Specifications
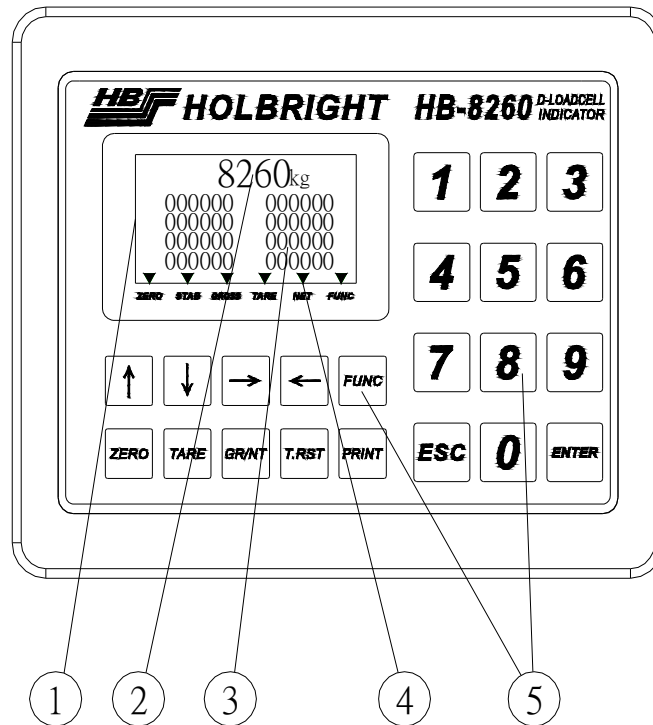
1. Display: 128X64 dot matrix backlight LCD Module

2. Weight Indication: Weight Value Display, 8 digits, 10mm Height.

3. Setting Indication: Weighing period: display each LC's weight value.

Loadcell 1	000000	000000	Loadcell 2
Loadcell 3	000000	000000	Loadcell 4
Loadcell 5	000000	000000	Loadcell 6
Loadcell 7	000000	000000	Loadcell 8

Setting period: display setting value or function indication.

Password:Level 1	(Password Field)
Function:F00	(Function Field)
	(Setting Field)
Enter Func. No.	(Message Field)

4. Status Annunciator: ▼ ZERO   Center of Zero(0±0.25D)
                             ▼ STAB   Stable Indication
                             ▼ GROSS   Gross Indication
                             ▼ TARE   Tare Indication
                             ▼ NET   Net Indication
                             ▼ FUNC   F-Function Indication

5. Operational Keys:

    [ZERO]   Key: Press this key to return the display to the center of zero when the weighing device is empty.

    [TARE]   Key: Press this key to set the gross weight as the tare weight.

    [GR/NT]   Key: Press this key to switch between gross weight display and net weight display.

    [T.RST]   Key: Press this key to reset the tare weight.

    [PRINT]   Key: Press this key to proceed to print.

    [↑]/[↓]   Key: Press this key to upward/downward

    [→]/[←]   Key: Press this key to rightward/leftward

    [FUNC]   Key: Press this key to proceed to "F-Function" operation.

    [0]～[9]   Key: Press this key to enter the digit from 0 to 9

    [0]   Display Switch Key: While weighing operation, the user can press this key to switch the display screen in blue-light back or white-light back.

    [1]   Recall Keyboard Key: If the HB-8260 is connected with PS2 KB, the user can press this key to recall original Keyboard.

    [2]   Aqua-Truck Weighing Key: If the Aqua-Truck on the weighing system or there is a stiff wind while weighing, the shake of the truck's weight value will make the Weight Value become unstable, the user can press this key to make the Weight Value become stable quickly.

    [ENTER]   Key: Press this key to enter the setting data

    [ESC]   Key: Press this key to escape from setting operation.

2.3 Rear Panel Specifications
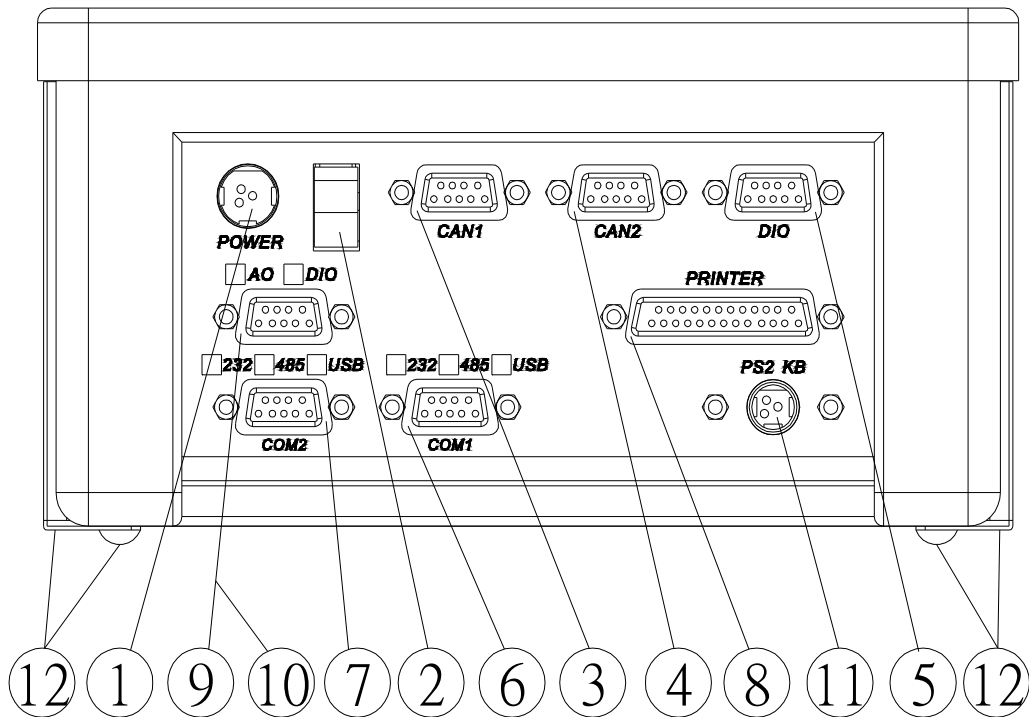
1. AC Power Connector

2. Power Switch

3. CAN1:   Digital Wire Transmission CAN BUS

Pin	Function
1	+VD: +5Vdc Output
2	CAN_L: CAN - Signal
3	GND: Ground
4	CAN_H: CAN + Signal
5	NC: Not Connected
6	GND: Ground
7	CAN_H: CAN + Signal
8	CAN_H: CAN + Signal
9	+VD: +5Vdc Output

4. CAN2:   Peripheral Transmission CAN BUS

Pin	Function
1	+VD: +5Vdc Output
2	CAN_L: CAN - Signal
3	GND: Ground
4	CAN_H: CAN + Signal
5	NC: Not Connected
6	GND: Ground
7	CAN_H: CAN + Signal
8	CAN_H: CAN + Signal
9	+VD: +5Vdc Output

5. DIO: Standard DIO Interface

Pin	Function
1	DI1: External Output Signals 1
2	DI2: External Output Signals 2
3	DI3: External Output Signals 3
4	DI4: External Output Signals 4
5	IOCM: IO Common
6	DO1: External Output Signals 1
7	DO2: External Output Signals 2
8	DO3: External Output Signals 3
9	DO4: External Output Signals 4

6. Communication Port 1:   Standard (232) and Expanded (485/USB) Serial Communication Interface (Serial Port 1)

7. Communication Port 2:   Expanded (232/485/USB) Serial Communication Interface (Serial Port 2)

RS-232 Serial Communication Interface: (Standard orOP-04)

Pin	Function
1	NC: Not Connected
2	TXD: Transmission Data
3	RXD: Received Data
4	NC: Unused (short with Pin 6)
5	SG: Signal Ground
6	NC: Not Connected (short with Pin 4)
7	NC: Not Connected (short with Pin 8)
8	NC: Not Connected (short with Pin 7)
9	NC: Not Connected

RS-485 Serial Communication Interface: (OP-05)

Pin	Function
1	NC:　　　Not Connected
2	TX＋　:　Transmitted Data
3	RX＋　:　Received Data
4	TX－　:　(short with Pin 6)
5	SG:　　　Signal Ground
6	TX－　:　Transmitted Data (short with Pin 4)
7	RX－　　Received Data (short with Pin 8)
8	RX－　:　short with Pin 7
9	NC:　　　Not Connected

USB Serial Communication Interface: (OP-06)

Pin	Function
1	Vbus: 4.75-5.25 Vdc
2	D-: USB - Signal
3	D+: USB + Signal
4	GND: Ground

8. PRN: Expanded Centronics Parallel Interface (OP-01, Parallel Port)

Pin	Signal	I/O	Function
1	-STB	OUT	StroBe
2	DATA1	OUT	
3	DATA2	OUT	
4	DATA3	OUT	
5	DATA4	OUT	8 bits Parallel Data
6	DATA5	OUT	
7	DATA6	OUT	
8	DATA7	OUT	
9	DATA8	OUT	
10	NC		Unused
11	BUSY	IN	BUSY Indication
12	PE	IN	Paper Empty Indication
13	SLCT	IN	SeLeCT Indication
14	NC		Not Connected
15	-ERR	IN	ERRor Indication
16	-INIT	OUT	INITial
17	NC		Not Connected
18 to 25	GND		GrouND

9. DIO: Expanded DIO Interface (OP-02, DIO Port 2)
               (The same as Standard DIO Interface)

10. AO: Expanded Analog Output Interface (OP-03, AO Port)

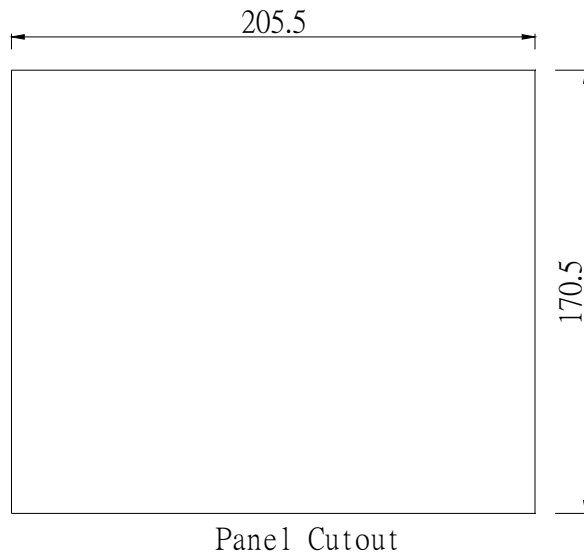| Pin	Function
1	Vout: 0-10Vdc Signal Output
2	Vout: short with Pin 1
3	Iout: 4-20m A Signal Output
4	Iout: short with Pin 3
5	SG: Signal Ground
6	SG: Signal Ground
7	SG: Signal Ground
8	SG: Signal Ground
9	SG: Signal Ground

11. PS2 KB: OP-07, PS2 Key Board Port
12. Slide-Locks and Screws for Panel Mounting

2.4 Installation

1. To Mount the HB-8260 into a Panel:

(1)

205.5

170.5

Panel Cutout

(2)
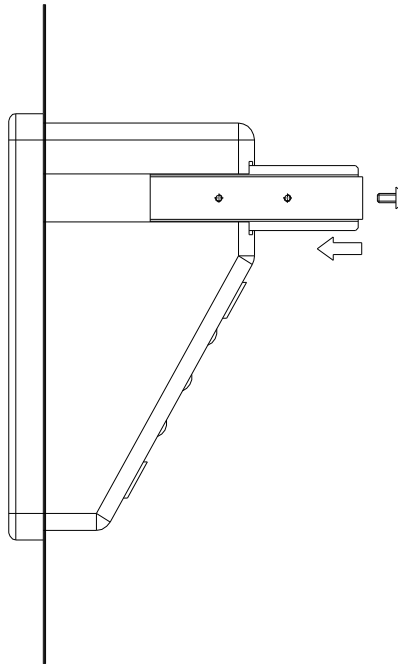
2. Installation Hints:

    1. Frame Ground (FG): Earth the indicator to the FG screw located on the rear panel. Do not earth directly to other equipment.

    2. Power: The HB-8260 is selected to use a 12Vdc power

    3. Operational Environment:
      3.1 Op. Temperature: -10℃～+40℃ (+14℉～+104℉)
      3.2 Op. Humidity: 85% Relative Humidity or less (Non-Condensing)
      3.3 Don't install the indicator in direct sunshine.

CH 3   F- Function

3.1 F-Function List

All the Function Setting, Parameter Setting and Calibration of the HB-8260 are called F-Function. As below graph, we can see all the F-Function and setting value. (In which, ，that marked by bold and italic is the ex-factory setting value.)

Item	Function	F-Function	Password Protection	Page
1	General F-Function Setting	F00 to F19	Level 1	3-1
2	Serial Port 1 Setting	F20 to F25	Level 2	3-3
3	Serial Port 2 Setting	F26 to F31	Level 2	3-3
4	DIO Port 1 Setting	F32 to F45	Level 2	3-4
5	DIO Port 2 Setting	F46 to F59	Level 2	3-6
6	Printer Setting	F60 to F72	Level 2	3-7
7	AO Port Setting	F73 to F76	Level 2	3-8
8	Parameter Setting	F80 to F89	Level 3	3-9
9	DLC Serial Number Setting	F880 to F888	Level 3	3-10
10	DLC Data Setting	F8900 to F8928	Level 3	3-10
11	Calibration Setting	F90 to F94	Level 3	3-12
12	Password Setting and Reversion	F980 to F984	Level 3	3-12

1. General F-Function Setting: F00 ～ F19 (Password Level 1)

F-Function	Function	Setting
F00	Tare Setting	*000000* (000000 ～ 999999)
F01	Set Point 1, SP1	*000000* (000000 ～ 999999)
F02	Set Point 2, SP2	*000000* (000000 ～ 999999)
F03	Set Point 3, SP3	*000000* (000000 ～ 999999)
F04	Near Zero Setting	*000050* (000000 ～ 999999)
F05	Limit Weight Setting	*000500* (000000 ～ 999999)
F06	Over Weight Setting	*060000* (000000 ～ 999999)
F07	Over Load Setting	*080090* (000000 ～ 999999)

F-Function	Function	Setting
F08	Display Update Rate	*0: 16 times/sec.* 1: 08 times/sec. 2: 04 times/sec.
F09	Auto Net Weight Display	*0: OFF* 1: ON
F10	Digital Filter	0 : Fastest Response 1 : FF Response 2 : FM Response 3 : FS Response *4 : MF Response* 5 : MM Response 6 : MS Response 7 : SF Response 8 : SM Response 9 : Slowest Response
F11	Zero Tracking	0: Inhibit 1: 0.5 d/2.0 sec. 2: 0.5 d/1.0 sec. 3: 1.0 d/2.0 sec. *4: 1.0 d/1.0 sec.* 5: 2.0 d/2.0 sec. 6: 2.0 d/1.0 sec. 7: 3.0 d/2.0 sec. 8: 3.0 d/1.0 sec. 9: 4.0 d/2.0 sec.
F12	Stable Detection	0: 1.0 d/1.0 sec. 1: 1.5 d/1.0 sec. *2: 2.0 d/1.0 sec.* 3: 2.5 d/1.0 sec. 4: 3.0 d/1.0 sec. 5: 1.0 d/0.5 sec. 6: 2.0 d/0.5 sec. 7: 3.0 d/0.5 sec. 8: 4.0 d/0.5 sec. 9: 5.0 d/0.5 sec.
F13	Power-On Auto Zero	*0: OFF* 1: ON
F14	[ZERO] Key Inhibition	*0: OFF* 1: ON (Inhibition)
F15	[TARE] Key Inhibition	*0: OFF* 1: ON (Inhibition)

F-Function	Function	Setting
F15	[TARE] Key Inhibition	*0 : OFF* 1 : ON (Inhibition)
F16	[GR/NT] Key Inhibition	*0 : OFF* 1 : ON (Inhibition)
F17	[T.RST] Key Inhibition	*0 : OFF* 1 : ON (Inhibition)
F18	[PRINT] Key Inhibition	*0 : OFF* 1 : ON (Inhibition)
F19	Software Version	

2. Serial Port 1 Setting: F20 ～ F25 (Password Level 2)

F-Function	Function	Setting
F20	Frame Format	*0: n, 8, 1* 1: n, 8, 2 2: o, 7,1 3: o, 7, 2 4: e, 7, 1 5: e, 7, 2
F21	Baud Rate	*0: 9600* 1: 4800 2: 2400 3: 1200
F22	Output Mode	*0: Stream Mode* 1: Manual Mode 2: Command Mode 3: Printing Mode
F23	Output Data for the Stream Mode	*0: Display Weight* 1: Gross Weight 2: Net Weight
F24	String Format for the Stream Mode	*0: HB-8210* Compatible 1: AD-4321 2: IQ-600HB 3: UMC-2000 4: FORMOSA 5: TTL
F25	Station Number	*0 0*

3. Serial Port 2 Setting : F26 ～ F31 (Password Level 2)

F-Function	Function	Setting
F26	Frame Format	*0: n, 8, 1* 1: n, 8, 2 2: o, 7, 1 3: o, 7, 2 4: e, 7, 1 5: e, 7, 2
F27	Baud Rate	*0: 9600* 1: 4800 2: 2400 3: 1200
F28	Output Mode	*0: Stream Mode* 1: Manual Mode 2: Command Mode 3: Printing Mode
F29	Output Data for the Stream Mode	*0: Display Weight* 1: Gross Weight 2: Net Weight
F30	String Format for the Stream Mode	*0: HB-8210* Compatible 1: AD-4321 2: IQ-600HB 3: UMC-2000 4:FORMOSA 5:PC 6.LOG
F31	Station Number	*0 0*

4. DIO Port 1 Setting: F32 ～ F45 (Password Level 2)

F-Function	Function	Setting
F32	Control Mode	*0: User Defined I/O Mode* 1: Hopper Charge Mode 2: Hopper Discharge Mode 3: Truck Scale I/O Mode
F33	User Defined Comparison Weight, CW)	*0: CW = Gross* 1: CW = Net 2: CW = | Net |

F-Function	Function	Setting
F34	User Defined DO1 Output Mode	*0 : CW ≧ Set Point 1 (F01)* 1 : CW < Nero Zero (F04) 2 : Gross ≧ Limit Weight (F05) 3 : Gross ≧ Over Weight (F06) 4 : Gross ≧ Over Load (F07) 5 : Stable Status Output
F35	User Defined DO2 Output Mode	*0 : CW ≧ Set Point 2 (F02)* 1 : CW < Nero Zero (F04) 2 : Gross ≧ Limit Weight (F05) 3 : Gross ≧ Over Weight (F06) 4 : Gross ≧ Over Load (F07) 5 : Stable Status Output
F36	User Defined DO3 Output Mode	*0: CW ≧ Set Point 3 (F03)* 1: CW < Nero Zero (F04) 2: Gross ≧ Limit Weight (F05) 3: Gross ≧ Over Weight (F06) 4: Gross ≧ Over Load (F07) 5: Stable Status Output
F37	User Defined DO4 Output Mode	*0: CW ≧ Limit Weight (F05)* 1: CW < Nero Zero (F04) 2: Gross ≧ Limit Weight (F05) 3: Gross ≧ Over Weight (F06) 4: Gross ≧ Over Load (F07) 5: Stable Status Output
F38	User Defined DI1 Input Mode	*0: [ZERO] Input* 1: [TARE] Input 2: [GR/NT] Input 3: [T.RST] Input 4: [PRINT] Input
F39	User Defined DI2 Input Model	*0: [ZERO] Input* 1: [TARE] Input 2: [GR/NT] Input 3: [T.RST] Input 4: [PRINT] Input
F40	User Defined DI3 Input Mode	*0: [ZERO] Input* 1: [TARE] Input 2: [GR/NT] Input 3: [T.RST] Input 4: [PRINT] Input

F-Function	Function	Function Setting
F41	User Defined DI4 Input Mode	**0 : [ZERO] Input** 1 : [TARE] Input 2 : [GR/NT] Input 3 : [T.RST] Input 4 : [PRINT] Input
F42	Control Timer 1	**2.0 sec.** (0.1 ～ 9.9 sec.)
F43	Control Timer 2	**2.0 sec.** (0.1 ～ 9.9 sec.)
F44	Control Timer 3	**2.0 sec.** (0.1 ～ 9.9 sec.)
F45	Control Timer 4	**30 sec.** (01 ～ 99 sec.)

5. DIO Port 2 Setting: F46 ～ F59 (Password Level 2)

F-Function	Function	Function Setting
F46	Control Mode	**0: User Defined I/O Mode** 1: Hopper Charge Mode 2: Hopper Discharge Mode 3: Truck Scale I/O Mode
F47	User Defined Comparison Weight, CW	**0: CW = Gross** 1: CW = Net 2: CW = ｜Net｜
F48	User Defined DO1 Output Mode	**0: CW≧Set Point 1 (F01)** 1: CW＜Nero Zero (F04) 2: Gross≧Limit Weight (F05) 3: Gross≧Over Weight (F06) 4: Gross≧Over Load (F07) 5: Stable Status Output
F49	User DefinedDO2 Output Mode	**0: CW≧Set Point 2 (F02)** 1: CW＜Nero Zero (F04) 2: Gross≧Limit Weight (F05) 3: Gross≧Over Weight (F06) 4: Gross≧Over Load (F07) 5: Stable Status Output
F50	User Defined DO3 Output Mode	**0: CW≧Set Point 3 (F03)** 1: CW＜Nero Zero (F04) 2: Gross≧Limit Weight (F05) 3: Gross≧Over Weight (F06) 4: Gross≧Over Load (F07) 5: Stable Status Output

F-Function	Function	Setting
F51	User Defined DO4 Output Mode	*0 : CW ≥ Limit Weight (F05)* 1 : CW ＜ Nero Zero (F04) 2 : Gross ≥ Limit Weight (F05) 3 : Gross ≥ Over Weight (F06) 4 : Gross ≥ Over Load (F07) 5 : Stable Status Output
F52	User Defined DI1 Input Mode	*0 : [ZERO] Input* 1 : [TARE] Input 2 : [GR/NT] Input 3 : [T.RST] Input 4 : [PRINT] Input
F53	User Defined DI2 Input Mode	*0 : [ZERO] Input* 1 : [TARE] Input 2 : [GR/NT] Input 3 : [T.RST] Input 4 : [PRINT] Input
F54	User Defined DI3 Input Mode	*0 : [ZERO] Input* 1 : [TARE] Input 2 : [GR/NT] Input 3 : [T.RST] Input 4 : [PRINT] Input
F55	User Defined DI4 Input Mode	*0 : [ZERO] Input* 1 : [TARE] Input 2 : [GR/NT] Input 3 : [T.RST] Input 4 : [PRINT] Input
F56	Control Timer 1	*2.0 sec.* (0.1 ～ 9.9 sec.)
F57	Control Timer 2	*2.0 sec.* (0.1 ～ 9.9 sec.)
F58	Control Timer 3	*2.0 sec.* (0.1 ～ 9.9 sec.)
F59	Control Timer 4	*30 sec.* (01 ～ 99 sec.)

6. Centronics Parallel Setting: F60 ～ F72 (Password Level 2)

F-Function	Function	Setting
F60	Serial No. Printout Setting	*0 0 0 0 0 1* (0 0 0 0 0 1 ～ 9 9 9 9 9 9)
F61	Code No. Printout Setting	*0 0 0 0 0 0* (0 0 0 0 0 0 ～ 9 9 9 9 9 9)

F-Function	Function	Setting
F62	System Date Setting	*dd/mm/yy*
F63	System Time Setting	*hh:mm:ss*
F64	Auto Printout Timer	*0.0 sec.* (0.0 ～ 9.9 sec.)
F65	Auto Printout Limit Weight	*0 0 0 0 0 0* (0 0 0 0 0 0 ～ 9 9 9 9 9 9)
F66	Label Printout	*0 : None* 1 : Serial Port 1 2 : Serial Port 2 3 : Parallel Port
F67	Label Printout Format	*0: Format A* 1: Format B 2: Format C 3: Format D 4: Format E
F68	Label Printout Tabs	*05 tabs* (00～40 tabs of 10 tabs/in)
F69	LF Before Label Printout	*00 line* (00～60 lines of 6 lines/in)
F70	LF After Label Printout	*06 lines* (00～60 lines of 6 lines/in)
F71	List Printout	*0: None* 1: Serial Port 1 2: Serial Port 2 3: Parallel Port
F72	List Printout Format	*0: Format A* 1: Format B 2: Format C 3: Format D 4: Format E

7. AO Port Setting: F73 ～ F76 (Password Level 2)

F-Function	Function	Setting
F73	AO Output Data	*0: Gross Weight* 1: Net Weight
F74	Set Iout = 4 mA	*000*
F75	Set Iout = 20 mA	*100*

F-Function	Function	Setting
F76	Set Iout = (xx/100) X 16mA + 4mA	*00* (00 ～ 99%)
F77	Unused	
F78	Unused	
F79	Unused	

8. Weight Parameter Setting: F80 ～ F89 (Password Level 3)

F-Function	Function	Setting
F80	Zero Range	*0 : 002% of Scale Capacity* 1 : 005% of Scale Capacity 2 : 025% of Scale Capacity 3 : 100% of Scale Capacity
F81	Weight Unit	*0: kg* 1: g 2: t (tonne) 3: lb 4: ton (short ton)
F82	Decimal Place	*0: X X X X X X* 1: X X X X X.X 2: X X X X.X X 3: X X X.X X X
F83	Min. Division Setting	0: 01 1: 02 2: 05 *3: 10* 4: 20 5: 50
F84	Max. Capacity Setting	*0 8 0 0 0 0* (0 0 0 3 0 0 ～ 9 9 9 9 9 9)
F85	G1	*9.7 9 8 0*
F86	G2	*9.7 9 8 0*
F87	The Number of LCs	1: 1 LC 2: 2 LCs 3: 3 LCs 4: 4 LCs 5: 5 LCs 6: 6 LCs 7: 7 LCs *8: 8 LCs*

F-Function	Function	Setting
F88	DLC Device Setting	*0 : HBDJB* 1 : HBDLC
F89	Read Individual LC Data	*0 : Read All LCs* 1 : Read LC1 2 : Read LC2 3 : Read LC3 4 : Read LC4 5～8 : Read LC5～LC8

9. HBDJB Serial Number Setting : F880 ～ F888 (Password Level 3)

F-Function	Function	Setting
F880	HBDJB Serial Number	*0 0 0 0 0 0 0 0*
F881	HBDLC LC1 Serial Number	*0 0 0 0 0 0 0 0*
F882	HBDLC LC2 Serial Number	*0 0 0 0 0 0 0 0*
F883	HBDLC LC3 Serial Number	*0 0 0 0 0 0 0 0*
F884	HBDLC LC4 Serial Number	*0 0 0 0 0 0 0 0*
F885	HBDLC LC5 Serial Number	*0 0 0 0 0 0 0 0*
F886	HBDLC LC6 Serial Number	*0 0 0 0 0 0 0 0*
F887	HBDLC LC7 Serial Number	*0 0 0 0 0 0 0 0*
F888	HBDLC LC8 Serial Number	*0 0 0 0 0 0 0 0*

10. Unit of All LCs Setting : F8900 ～ F8928 (Password Level 3)

F-Function	Function	Setting
F8900	Unit of All LCs	*0: kg* 1: lb
F8901	Unit of LC1	*0: kg* 1: lb
F8902	Unit of LC2	*0: kg* 1: lb
F8903	Unit of LC3	*0: kg* 1: lb

F-Function	Function	Setting
F8904	Unit of LC4	*0 : kg* 1 : lb
F8905	Unit of LC5	*0 : kg* 1 : lb
F8906	Unit of LC6	*0 : kg* 1 : lb
F8907	Unit of LC7	*0 : kg* 1 : lb
F8908	Unit of LC8	*0 : kg* 1 : lb

F-Function	Function	Setting
F8910	Capacity of All LCs	*0 3 0 0 0 0* (0 0 0 0 0 1 ～ 9 9 9 9 9 9)
F8911	Capacity of LC1	*0 3 0 0 0 0* (0 0 0 0 0 1 ～ 9 9 9 9 9 9)
F8912	(Capacity of LC2	*0 3 0 0 0 0* (0 0 0 0 0 1 ～ 9 9 9 9 9 9)
F8913	Capacity of LC3	*0 3 0 0 0 0* (0 0 0 0 0 1 ～ 9 9 9 9 9 9)
F8914	Capacity of LC4	*0 3 0 0 0 0* (0 0 0 0 0 1 ～ 9 9 9 9 9 9)
F8915	Capacity of LC5	*0 3 0 0 0 0* (0 0 0 0 0 1 ～ 9 9 9 9 9 9)
F8916	Capacity of LC6	*0 3 0 0 0 0* (0 0 0 0 0 1 ～ 9 9 9 9 9 9)
F8917	Capacity of LC7	*0 3 0 0 0 0* (0 0 0 0 0 1 ～ 9 9 9 9 9 9)
F8918	Capacity of LC8	*0 3 0 0 0 0* (0 0 0 0 0 1 ～ 9 9 9 9 9 9)

F-Function	Function	Setting
F8920	Output of All LCs in 0.1uV/V	*2. 0 0 0 0* (0. 2 0 0 0 ～ 9. 9 9 9 9)
F8921	Output of LC1 in 0.1uV/V	*2. 0 0 0 0* (0. 2 0 0 0 ～ 9. 9 9 9 9)
F8922	Output of LC2 in 0.1uV/V	*2. 0 0 0 0* (0. 2 0 0 0 ～ 9. 9 9 9 9)
F8923	Output of LC3 in 0.1uV/V	*2. 0 0 0 0* (0. 2 0 0 0 ～ 9. 9 9 9 9)

F-Function	Function	Setting
F8924	Output of LC4 in 0.1uV/V	*2.0 0 0 0* (0.2 0 0 0 ～ 9.9 9 9 9)
F8925	Output of LC5 in 0.1uV/V	*2.0 0 0 0* (0.2 0 0 0 ～ 9.9 9 9 9)
F8926	Output of LC6 in 0.1uV/V	*2.0 0 0 0* (0. 2 0 0 0 ～ 9. 9 9 9 9)
F8927	Output of LC7 in 0.1uV/V	*2. 0 0 0 0* (0. 2 0 0 0 ～ 9. 9 9 9 9)
F8928	Output of LC8 in 0.1uV/V	*2. 0 0 0 0* (0. 2 0 0 0 ～ 9. 9 9 9 9)

11. Calibration Setting: F90 ～ F94 (Password Level 3)

F-Function	Function	Setting
F90	Zero Adjustment	
F91	Corner Adjustment	
F92	Section Adjustment	
F93	Span Calibration	*0 4 0 0 0 0* (0 0 0 0 0 1 ～ 9 9 9 9 9 9)
F94	Zero Reset	

12. Password Setting and Reversion: F980 ～ F984 (Password Level 3)

F-Function	Function	Setting
F980	Level 1 Password	*0 0 0 0* (Password Level 1) (0 0 0 0 No Password Protection)
F981	Level 1 Password	*0 0 0 0* (Password Level 2) (0 0 0 0 No Password Protection)
F982	Level 3 Password	*8 2 6 0* (Password Level 3) (0 0 0 1 ～ 9 9 9 9)
F983	Reset Function Settings	F00 to F76
F984	Reset Weighing Settings	F80 to F94 F880 to F888 F8900 to F8928 F980 to F982

3.2 F-Function Setting

1．Press [FUNC] key to enter F-Function setting operation.

```
Password:_

Enter Password
```

Password Field
Function Field
Setting Field
Message Field

Under this operational screen, the user should press [ESC] to escape F-Function to return general weighing operation.

2. Password: (Related information please see CH 4.1)

Enter 4 digits of password when after press F-Function key.

Please enter 4 digits of password

```
Password: ****_

Enter Password
```

Password Field
Function Field
Setting Field
Message Field

After entered 4 digits password, please press [ENTER] to confirm.

Before press [ENTER], please press [ESC] to escape F-Function to return general weighing operation.

If the password is wrong, the Message Field will appear [Error Password]. The user must re-enter 4 digits of password.

If correct, the system will enter F-Function

```
Password: Level 1
Function: F00

Enter Func. No.
```

Password Field
Function Field
Setting Field
Message Field

3. : F-Function

Please press 2～4 digits F-Function code

```
┌─────────────────────┐
│ Password: Level 1   │    Password Field
│ Function: F00_       │    Function Field
│                     │    Setting Field
│ Enter Func. No.     │    Message Field
└─────────────────────┘
```

After entered 2～4 digits F-Function code, please press [ENTER] to confirm.
Before press [ENTER], please press [ESC] to escape F-Function to return password operation.

If the F-Function code setting is wrong then the Message Field will show [Error Func. No.].
The user must re-enter 2～4 digits of F-Function number.

If the F-Function code setting is not fit the password setting's level then the Message Field will show [Password Reject]
Please press [ESC] to return password operation; after re-enter the correct password for this level, the user can enter F-Function.

If the setting of F-Function code is correct, the system will enter this F-Function capacity.

```
┌─────────────────────┐
│ Password: Level 1   │    Password Field
│ Function: F00        │    Function Field
│ _                   │    Setting Field
│ Tare Setting        │    Message Field
└─────────────────────┘
```

4. Value Setting:

If the user's choice is Value Setting in F-Function, please enter Value Setting Code in Setting Field.

```
┌─────────────────────┐
│ Password: Level 1   │    Password Field
│ Function: F00        │    Function Field
│ 2000_               │    Setting Field
│ Tare Setting        │    Message Field
└─────────────────────┘
```

After entered Value Setting, please press [ENTER] to confirm.

Before press [ENTER], please press [ESC] to escape Value Setting to return F-Function operation.

If Value Setting is correct, the system will back to F-Function; the F-Function code will add 1 automatically at the same time to wait for the user to enter next F-Function.

```
Password: Level 1
Function: F01


Enter Func. No.
```
Password Field
Function Field
Setting Field
Message Field

5. Option Setting:

   If the user's F-Function choice is Option Setting, there will show Appointed Option in the Setting Field. The user can press Upward/Downward key to change or press digits key to appoint his option.

```
Password: Level 1
Function: F08
0:16times/sec.
Dsp. Update Rate
```
Password Field
Function Field
Setting Field
Message Field

   After Option Setting, please press [ENTER] to confirm.

   Before press [ENTER], please press [ESC] to escape Option Setting to return F-Function operation.

   After Option Setting, the system will back to F-Function; the F-Function code will add 1 automatically at the same time to wait for the user to enter next F-Function.

```
Password: Level 1
Function: F09


Enter Func. No.
```
Password Field
Function Field
Setting Field
Message Field

Ch 4 Password, Parameter Setting and Calibration

4.1 Password Description

Based on through F-Function key can control all the weigh, operation, input/output, calibration functions in the HB-8260; to avoid unrelated person's unpolitic operation, we design three levels of password setting to protect HB-8260. Please see as follows:

1. The three levels protection of password setting's range:

As the below graph，we can see Password Level 3 is the highest level of password in this system. After entering Password Level 3, you can enter any F-Function functions in this system. Password Level 3 is set in F982.

Password Level 2 is the second level of password in this system. After entering Password Level 2, you can enter F-Function functions those are protected by Password Level 2 and Password Level 1 in this system; but can't enter F-Function functions those are protected by Password Level 3. Password Level 3 is set in F981.

Password Level 1 is the lowest level of password in this system. After entering Password Level 1, you can enter F-Function functions those are protected by Password Level 1 in this system; but can't enter F-Function function those are protected by Password Level 3 and Password Level 2. Password Level 1 is set in F980.

```
(Password Level 3) : F80～F94,   F880～F888
                                F8900～F8928,   F982～F984

    (Password Level 2) : F20～F76 及 F981

        (Password Level 1) : F00～F19 及 F980
```
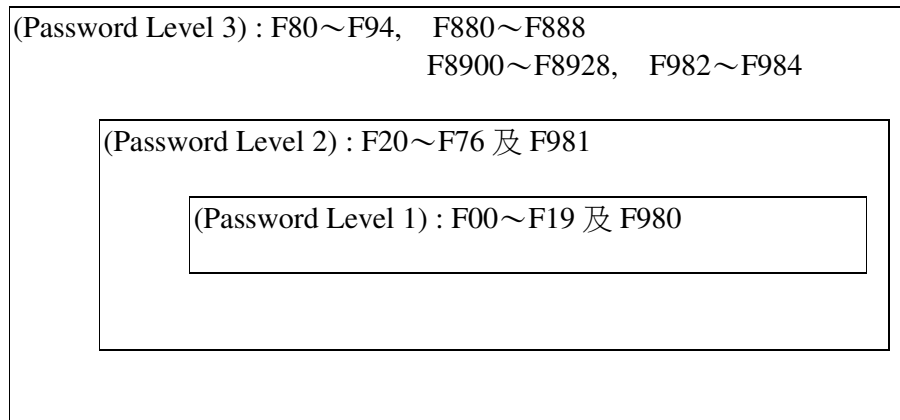
2. Enter Password:

In general weighing process, press [FUNC] key，you can enter F-Function function. After entering F-Function, first of all you should enter 4 digits of password:

```
Password:_

Enter Password
```

Password Field
Function Field
Setting Field
Message Field

If the password is correct，the system will enter F-Function。At the same time the Password Field appears what Level's password you should enter. If the password is wrong，the Message Field will appear [Error Password], the user must re-enter 4 digits of password.

```
Password: Level 1       Password Field
Function: F00           Function Field
                        Setting Field
Enter Func. No.         Message Field
```

After entered the correct password, the user can use any F-Function functions those are protected by the Password Level you have chosen in this system. (Enter 2 ～4 digits function code)

If the function you choose is not fit the Password Level, then [Password Reject] will appear in the Message Field blank. Please press [ESC] key first, when back to the Password Field then enter the password that fit the Password Level you want to enter the F-Function function choice.

Before completely escape the F-Function operations, the password you have entered is still valid. The user can carry out all the F-Function functions those protected in this Password Level. You won't be demanded to re-enter password from the system and cause your confusion.

3. Password Setting:

Password Setting is from F980～F982 in the F-Function. In which，Password Level 1 is set in F980, Password Level 2 is set in F981 and Password Level 3 is set in F982.

The Password Setting is to set 4 digits of password; the Password Level 2 and Password Level 1's password can be set from 0000 to 9999. Among which, if the password is 0000, that's " No Password Protection", the user can enter any 4 digits password or direct press [ENTER] key to enter F-Function.

Based on the Password Level 3 protects Calibration, Parameter Setting and so on important F-Functions；so its password must be set from 0001 to 9999 and can't be set in " No Password Protection". If you don't need to set in given password, we recommend you can use the ex-factory password "8260" for Password Level 3's password.

If you forget the password you have set, please press [FUNC] key to enter Password Setting; then you short between all DI and I/O Common point on Connector (means all DI status are 'ON') then use the "8260" super password to enter F-Function, you can check the original password set or revise it.

4.2 Parameter Setting and Calibration

1. The Parameter Setting: F80 ～ F89 (Password Level 3)
   Zero Range: F80

The HB-8260 allows the user to press the 〔ZERO〕key to return the display to the center of zero when the weighing device is empty. This function only works if the offset value is within the set limit, which is called Zero Range, of the weighing device full capacity. The user can select a Zero Range via F80. The default value for the Zero Range is"1: 2% capacity.

The Zero Range of HB-8260 is to 2%，5%，25%，100% Full Weighing Capacity. You can set via F80 by evaluating your need or your local institution 's related policy.

F81 Weight Unit:

The user can select the Weight Unit of the display weight value to kg，g，t，lb or ton via F81. The default for the Weight Unit is"1: Kg".

F82 Decimal Place:

The user can select the Decimal Place of the display weight value via F82.   The default for the Decimal Place is"0: XXXX.X".

F83 Min. Division Setting:

Min. Division Setting can be set to 1, 2, 5, 10, 20, or 50 via F83.

F84 Max. Capacity:

The Maximum Capacity is the full scale that you want your weighing device to handle. This could be the rated capacity of the Load Cells, or some other limit you wish to set.

The Maximum Capacity also has a relationship to the Display Resolution. In general, the Display Resolution of an indicator has the form of a ratio of the maximum capacity to the Minimum Division. The Display Resolution of the HB-8260 can be from 300 to 50000. Thus,

$$300 \leqq \frac{\text{The Maximum Capacity}}{\text{The Minimum Division}} \leqq 50000$$

F84 allows you to set the Max Capacity.

F85, F86 Gravitational Acceleration:

Via F85, F86 can set the Gravitational Acceleration. Among which，F85 is to set G1 and F86 is to set G2.

If you use test weights to proceed to calibrate your weighing system locale, there is no need to set G1.

Remark: The user can set F85 and F86 in the same value, or in ex-factory value.

If your weigher is directly set in ex-factory LC's calibration data (No test weights calibration and suitable for the place has difficulty to proceed to test weights calibration.). The user can enter ex-factory LC's calibration data and G2 to revise the weigher's deviation via F85 and F86.

F87 The Number of Load cells:

The user can set the correct number of Load Cells in his/her weighing system via F87.

F88 DLC Device:

The user must set your Weighing System's digital Load Cell via F88 correctly.

F89 Read Individual LC Data:

If your Weighing System's sensor device is HBDLC, and has calibrated by Factory, the related weighing parameter data will be stored in the LCs and can be read in HB-8260 via F89 and doesn't need to set by each.

2. Digital Load Cell Serial Number Setting : F880 ～ F888 (Password Level 3)

F880 HBDJB Serial Number Setting:

If your Weighing System's sensor device is 'HBDJB' (HB-Digital Junction Box), you should set the LC's Product Serial Number via F880 correctly to offer the indicator to identify the LC.

F881～F888 HBDLC Serial Number Setting:

If your Weighing System's sensor device is 'HBDLC' (HB-Digital Load Cell), all the LCs' Product Serial Number must set via F881～F888 in order correctly to offer the indicator can identify the LCs.

3. Unit of All LCs Setting : F8900 ～ F8908 (Password Level 3)

F8900 Unit of All LCs:

The user can set the Unit of All LCs via F8900. When the setting of F8900 has been confirmed, the system will write in the setting contents of F8900 in order automatically.

F8901～F8908 Unit of LC Setting:

If your scale is directly set in ex-factory LC's calibration data (No testing weights calibration and suitable for the place has difficulty to proceed to testing weights calibration.) then HB-8260 allows the weighing system use LCs which with different Unit specifications. The user can set each LC's Unit in order via F8901～F8908.

4. Capacity of All LCs Setting : F8910 ～ F8918 (Password Level 3)
   F8910 Capacity of All LCs Setting:

The user can set the Capacity of All LCs via F8910. When the setting of F8910 has been confirmed, the system will write in the setting contents of F8910 in order automatically.

F8911～F8918 Capacity of individual LC Setting :

If your scale is directly set in ex-factory LC's calibration data (No testing weights calibration and suitable for the place has difficulty to proceed to testing weights calibration.), then HB-8260 allows the weighing system use LCs which with different Capacity specifications. The user can set each LC's Unit in order via F8911～F8918.

5. The Output of All LCs Setting: F8920 ～ F8928 (Password Level 3)
   F8920 Output of All LCs in mV/V Setting:
   The user can set the Output of All LCs via F8920. When the setting of F8920 has been confirmed, the system will write in the setting contents from F8921 to F8928 in order automatically.

F8921～F8928 Output of individual LC in mV/V Setting:

If your scale is directly set in ex-factory LC's calibration data (No testing weights calibration and suitable for the place has difficulty to proceed to testing weights calibration.). The user can set each LC's Output in order via F8921～F8928.

6. Calibration : F90 ～ F94 (Password Level 3)
   F90 Zero Adjustment:

The Zero Adjustment is a process to give the HB-8260 a base reference point, "Zero", to the weighing device when it has no weight on it. The user can execute "Zero Adjustment" via F90.

F91 Corner Adjustment:
As for Load Cells, although they are the same brand and specifications still have differences in the produce process and material so that every ex-factory LC will has a bit of difference in Full Weighing Output.

This kind of difference will make multiple-LCs weighing system has different weight value when the same weight on the different side of the scale.

The goal of Corner Adjustment is to balance each LC's output to have the same weight value when the same weight on the different side of the scale.
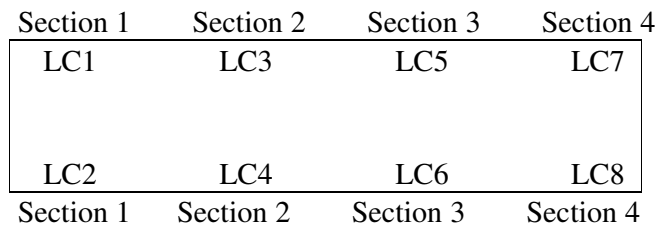
When the user want to start F91 Corner Adjustment, each LC must set in the same Unit and Capacity in F-Function correctly.

If your LC supplier has supreme brand image and record it's LCs' weight parameter detailed and accurate in ex-factory data sheet through whole quality control process. You can set each LC's output directly via F8921~F8928 instead of proceeding Corner Adjustment via F91.

F92 Section Adjustment:
The goal of Section Adjustment is to correct the weighing deviation of truck scale or huge flat scale. The weight on any place of the scale has the same weighing value.

There are 6 or 8 LCs in the Truck Scale or huge flat scale and must be installed and connected in the same place of the scale longitudinally, the 2 LCs those are installed and connected in the same place of the scale longitudinally compose a weighing section, as below graph:

Section 1	Section 2	Section 3	Section 4
LC1	LC3	LC5	LC7
LC2	LC4	LC6	LC8
Section 1	Section 2	Section 3	Section 4

F93 Span Calibration:
The goal of Span Calibration is to make the display value on the indicator as the same as the load weight on the weighing system.
It is necessary to use test weight to calibration via F93.

F94 Zero Reset:
When the user use F94 Zero Reset key will release the memory of Zero Adjustment to show the whole weight on the Load Cell. The function can be proceed after the scale is new built or maintenance.

Then under the weight value display, the user check each LC's weight value of the weigher's structure's Dead Load to compare with the weigher's structure's data to judge the completeness of the weigher's installation.

4.3 Calibration Process

1. Calibration Without Test Weights:

   1. Timing:

      <1>. When the user has difficulty in using test weights for calibration. For example: huge silo, the industrial weigher that has huge capacity in the narrow place…

      <2>. When the user's weighing system is damaged in LCs, it is necessary to replace a different specification LCs (Capacity, Unit or Output is different from others) for the damaged ones to make urgent repair on time.

          Remark：If you need to replace different specification for the damaged ones, please make sure the replacement meet weigher's safe load rage and in similar specification.

          Example： There are 8 30t-LCs in the weighing system which Max Capacity is 80t. If there is a LC damaged in the weighing process, the user can replace another 60klb-LC for it. (It is still tally with the weigher's safe load rage and in similar specification.)

   2. Terms:

      <1>. When your sensor device is "HBDJB" (HB-Digital Junction Box), you still can use traditional LCs in the weighing system. But your LC supplier must have supreme brand image and record it's LCs' weight parameter detailed and accurate in ex-factory data sheet through whole quality control process.

      <2>. When your sensor device is 'HBDLC' (HB-Digital Load Cell) , your LCs must calibrated by Factory, and store the related weight parameter data in the LCs.
      <3>. When the user try to calibrate without testing weights, the load cells could have unmatched capacities.

   3. Processes: Related F-Function Capacities please see Ch 4.2

      Step 0：Installation

      Step 1：Parameter Setting：F80～F88

      Step 2：DLC Device Serial Number Setting：F880～F888

Step 3： The choice of HBDJB：

        Unit of All LCs Setting：F8901～F8908
        Capacity of All LCs Setting：F8911～F8918
        Output of All LCs Setting ：F8921～F8928
        The choice of HBDLC：
        Read each LC's Data：F89

Step 4：Zero Reset：F94

Press F94 to back to weight value display, the user can check the weight value of each LC to judge the scale's Installation. If the user have completed then can proceed to next step；if the installation is not faultless, please adjust the mechanical structure to make each LC can burden the scale's weight averagely.

Step 5：Zero Adjustment：F90

Make sure there is no weight on the weigher then the user can start Zero Adjustment via F90. After completing F90, your weigher is useable.

2. Calibration With Test Weight:

   1. Timing:
      <1>. When your weighing system has enough space to calibrate with standard testing weights.
         For example: truck scale, floor scale and so on

      <2>. When your weighing system must test its accuracy by standard test weight.

   2. Terms:
      <1>. When your Device is "HBDJB" (HB-Digital Junction Box), you still can use traditional LC in the weighing system. Based on the judgement of saving cost, you still can use the LCs without accurate calibration. (Thus, your weighing system must test its accuracy by standard test weights.)

      <2>. When your Device is "HBDLC" (HB-Digital Load Cell), you still can use the LC without Accurate Calibration in the weighing system. Based on the judgement of saving cost, you still can use the LCs without accurate calibration. (Thus, the user must calibrate the weighing system with standard testing weight.)

      <3>. When using standard test weights to calibrate, the load cells should have matched capacities.

3. Processes: Related F-Function Information please see Ch. 4-2

    Step 0：Installation

    Step 1：Parameter Setting ：F80～F88

    Step 2：DLC Device Serial Number Setting：F880～F888

    Step 3：HBDJB：

        Unit of All LCs Setting：F8900
        Capacity of All LCs Setting：F8910
        Output of All LCs Setting：F8920

Remark: Based on the standard testing weights calibration must use the LCs under the same capacity. So all the LCs' data can be set via F8900、F8910、F8920 instead of setting in order. Among which, the LC output can be set in approximate value (Ex: 2.0000 mV/V), and doesn't need to set in accurate value (Ex: 1.9973 mV/V)；after completing all the calibration processes, the HB-8260 will according the calibration's result to build each LC's accurate output automatically.

    HBDLC:

    The user can proceed to read each LC's data via F89.

    Step 4：Zero Reset：F94

Press F94 to back to weight value display, the user can check the weight value of each LC to judge the scale's Installation. If the user have completed then can proceed to next step；if the installation is not faultless, please adjust the mechanical structure to make each LC can burden the scale's weight averagely.

    Step 5：Zero Adjustment：F90

Make sure that there is no weight on the scale then the user can start Zero Adjustment via F90.

    Step 6：Corner Adjustment：F91

    <1>. Press F91 key to proceed to Corner Adjustment.

    <2>. After entered F91, please make sure that there is no weight on the scale then press ENTER key to confirm that have completed Zero Adjustment before Corner Adjustment.

<3>. Place 10%～20% fixed weight of Full Scale on LC1 of the sensor device. Please close and center on this LC's load point then press ENTER to confirm.

<4>.   The user does as <3> to proceed to each LC in order.

<5>. Press ENTER key to make sure to proceed to Corner Adjustment

<6>. The user should move all the weights out the scale. After make sure there is no weight on it then press ENTER key to start Zero Adjustment. (Zero before weight calibration)

<7>. Placing the standard weight (test weight) that is exceed 20%~50% Full Scale, the closer the better; then press the digital keys to enter weight value, when weight display is stable, press ENTER key to confirm.

<8>. After completed <1> to <7>，please press ESC key back to weight display.

Step 7 : Section Adjustment：F92

     If your weighing system is truck scale, you can drive a small-heavy truck its weight is exceed the 20% of Full Scale on the scale's front, middle, and back section to record its weight value after completing F-91 Corner Adjustment. Then turn the small-heavy truck to enter the truck scale in other direction and also record the front, middle, and back section's weight value. Thus, the user can get 6 weight value data. If each weight value's deviation is in the acceptable range, the calibration of the truck scale has done; if not, the user has to proceed to Section Adjustment to adjust the scale's accuracy. The steps of Section Adjustment are as follows:

<1>. Press F92 key to proceed to Section Adjustment.

<2>. After entered F92, please make sure that there is no weight on the scale then press ENTER key to confirm that have completed Zero Adjustment before Section Adjustment.

<3>. Drive a small-heavy truck its weight is exceed the 20% of Full Scale on the scale's front section; when the weight value is stable, press ENTER key to confirm Test pt. 1.

<4>. Drive the small-heavy truck on the scale's middle section; when the weight value is stable, press ENTER key to confirm Test pt. 2.

<5>. Drive the small-heavy truck on the scale's back section; when the weight value is stable, press ENTER key to confirm Test pt. 3.

<6>. Turning the small-heavy truck to enter the truck scale in other direction and drive to the scale's back, middle, and front point to do Test pt. 4, 5, 6 as mentioned 3, 4, and 5 steps.

<7>. After completed six pt. Testing, drive the small-heavy truck out the scale, the user press ENTER to confirm then the system will auto to calculate and revise each section's deviation.

<8>. After completed <1> to <7>，please press ESC key back to weight display.

Remark：Based on the Section Adjustment will revise each section's deviation so it might make some change in the calibrated weight value. After Section Adjustment, the user still needs to proceed to Span Calibration (F93).

Step 8：Zero Adjustment：F90

Make sure that there is no weight on the scale then the user can start Zero Adjustment via F90.

Step 9 : Span Calibration：F93

<1>. Press F93 to proceed to Span Calibration.

<2>. After placed the known-weight truck or standard test weights on the scale and using numerical key to enter its weight; then press ENTER key to confirm, the system will auto to calibrate the weight value.

<3>. After finished <1> and <2>，please press ESC key back to weight display.

CH5 Related Application

5.1 Operation of Truck Scale

1.   PS2 KB Description of Keyboard Functions:

ESC : Escape Key. The user can press this key to clear setting or out of Chiro-Weighing Operation then back to Normal Weighing Operation.

F1 :   Zero Key. The user can press this key to zero the weighing system.

F5 :   Weighing Label Print Key. The user can press this key to print the Weighing Label out.

F6 :   Weighing Memory Key. "Twice Weighing" When the user operates the First Weighing, can press this key to memory the truck's ID (truck's No.) and weight data then print the Weighing Label out.

F10 :   Chiro-Weighing Function Optional Key. During Normal Weighing Operation the user can press this key to enter the Chiro-Weighing's "Twice Weighing " Operation directly；then press this key again can enter Chiro-Weighing's " Single Weighing " Operation；then press this key once to back to Normal Weighing Operation.

F12 :   Aqua-Truck Weighing Key: If the Aqua-Truck on the weighing system or there is a stiff wind while weighing, the shake of the truck's weight value will make the Weight Value become unstable, the user can press this key to make the Weight Value become stable quickly.

2.   Twice Weighing Operation:

Step 1 : During Normal Weighing Operation, the user press Chiro-Weighing Function Optional Key (F10) once:

```
ID:_          #000
G:000000 kg
T:000000 kg
N:        kg
M2:Set Truck ID
```

The Display Screen can show as above, the "M2" means " Twice Weighing".

Step 2 : In Bound: when the truck entered the weighing system, the user enter truck No. then press [Enter] Key to confirm. (The First Weighing)

Step 3 :   Put the Weighing Label into the printer then press Weighing Memory Key (F6) to keep memory the First Weighing Data (the truck's No.、the truck's weight), and print the Weighing Label out.

Step 4 :   Out Bound: when the truck entered the weighing system，the user enters truck No. then press [Enter] Key to confirm. (The Second Weighing)

Step 5 :   The user put Weighing Label into the printer then press Weighing Print Key (F5) to print Weighing Label out.

Step 6 :   Back to Normal Weighing Operation may press (ESC) Key to escape Chiro-Weighing Operation.

Note: If it has some mistake when enter the truck No., the user can press (ESC) Key to clear the reenter again.

3.   Single Weighing Operation:
   Step 1 : During Normal Weighing Operation, the user press Chiro-Weighing Capacity Optional Key (F10) twice:

```
ID:_         #000
G:000000 kg
T:     0 kg
N:000000 kg
M1:Set Truck ID
```

The Display Screen can show as above, the "M1" means "Single Weighing".

Step 2 :   When the truck entered the weighing system then entering ID (Truck) No. then press[Enter] Key to confirm。

Step 3 :   Press Numerical Key to enter the truck's weight value then press [Enter] Key to confirm. The Truck's Weight is 6 Digits, the user must enter extra "0" before the Truck's Weight; for example: ***8000 kg*** the user must enter ***008000 kg***。

Step 4 :   Put Weighing Label into the printer then press Weighing Label Key (F5) to print Weighing Label out.

Step 5 :   Back to Normal Weighing Operation may press (ESC) Key to escape Chiro-Weighing Operation.

Note: If any mistake has happened when entering the truck No. or truck's weight, the user can press (ESC) Key to clear then enter again。

4.   Repeat Weighing Testing Operation:

During Normal Weighing Operation, the user can put the Weighing Label into the printer then press Weighing Label Key (F5) directly to print the Duplicate Weighing Testing Weight out。

During the Normal Weighing Operation, the Display Screen's bottom can show the each Load cell's weighing weight of the weighing system as below：

Loadcell 1	000000	000000	Loadcell 2
Loadcell 3	000000	000000	Loadcell 4
Loadcell 5	000000	000000	Loadcell 6
Loadcell 7	000000	000000	Loadcell 8

If the System is not under the Normal Weighing Operation, the user can press (ESC) Key to back to the Normal Weighing Operation.
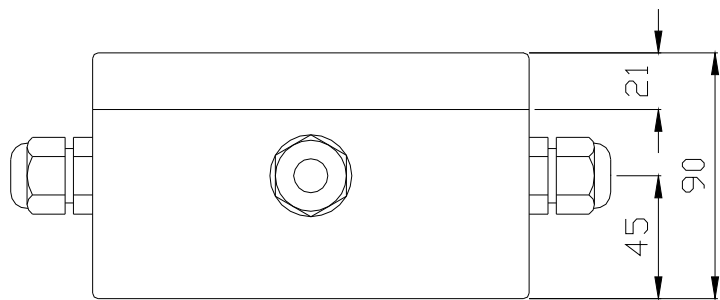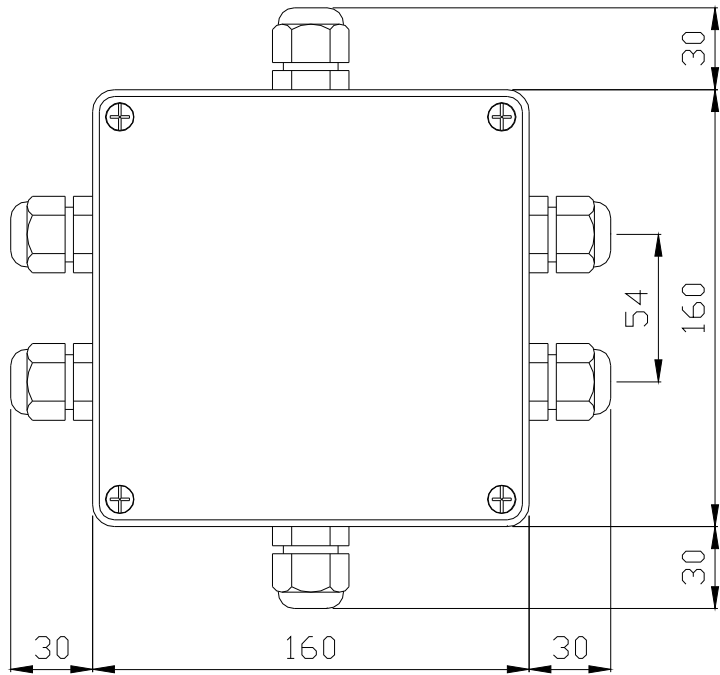
The Truck Scale's Calibration Record and important Parameter Setting：

F-Function	# 1 Scale's Setting	# 2 Scale's Setting	# 3 Scale's Setting
F10			
F11			
F12			
F20			
F21			
F22			
F23			
F24			
F26			
F27			
F28			
F29			
F30			
F32			
F46			
F66			
F67			
F80			
F81			
F82			
F83			
F84			
F87			
F88			
F880			
F8900			
F8910			
F8921			
F8922			
F8923			
F8924			
F8925			
F8926			

APPEDIX A   Message Memory

A.1 Indicator Message

1. ------   Over Load

CAN_BUS COMMUNICATION TO HB-8260 INDICATOR

30

160

54

30

30   160   30

21

90

45

DIGITAL TYPE JUNCTION BOX

load cell

100VAC TO 240VAC POWER LINE IN

DIGITAL TYPE JUNCTION BOX wiring

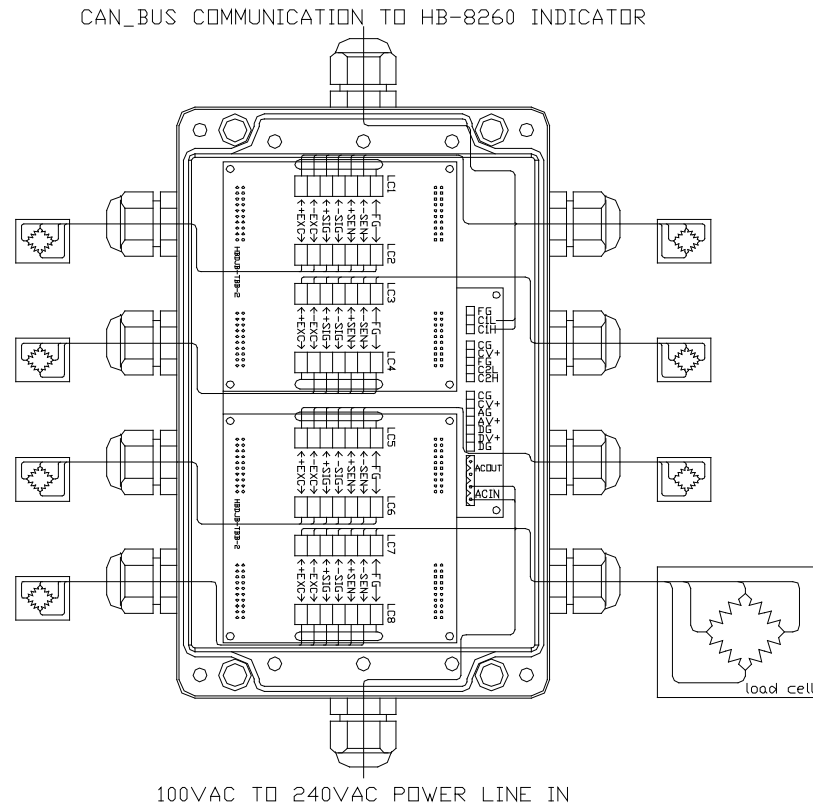| MODEL NO :	HB-DJB4
A/D Channels	HBDJB-4 : 4-Independent 24-bits Sigma Delta A/D
Conversation Rate	128 samples/second
Internal Resolution	16,000,000 divisions
Graduattion Resolution	50,000 divisions industrial; 10,000HB44
Signal Sensitivity	0.1 uV/graduation (min)
Signal Range	0.5 mV/V to 3 m V/V
Load Cell Excitation	5 ± 0.25 Vdc
Drive Capability	Total 120mA for up to 8 (350 ohm) load cells
Signal Range	0.5 mV/V to 3 mV/V
Power Supply	Universal switching power supply, 100~240 VAC± 10%, 50/60 HZ

⚠				繪圖	Tom	**HB**	HOLBRIGHT WEIGHING SYSTEMS	圖名	HB-DJB4 Digital JUNCTION BOX	單位	mm	件號	品　名		材　質		數量	備註
⚠				設計	Tom					比例	1:2.5	圖紙	A4					
記號	日期	更 改 事 由	更改者	檢圖				圖號	DJB4-001-00	出圖日期		95.06.13						

DIGITAL TYPE JUNCTION BOX

CAN_BUS COMMUNICATION TO HB-8260 INDICATOR

100VAC TO 240VAC POWER LINE IN

load cell
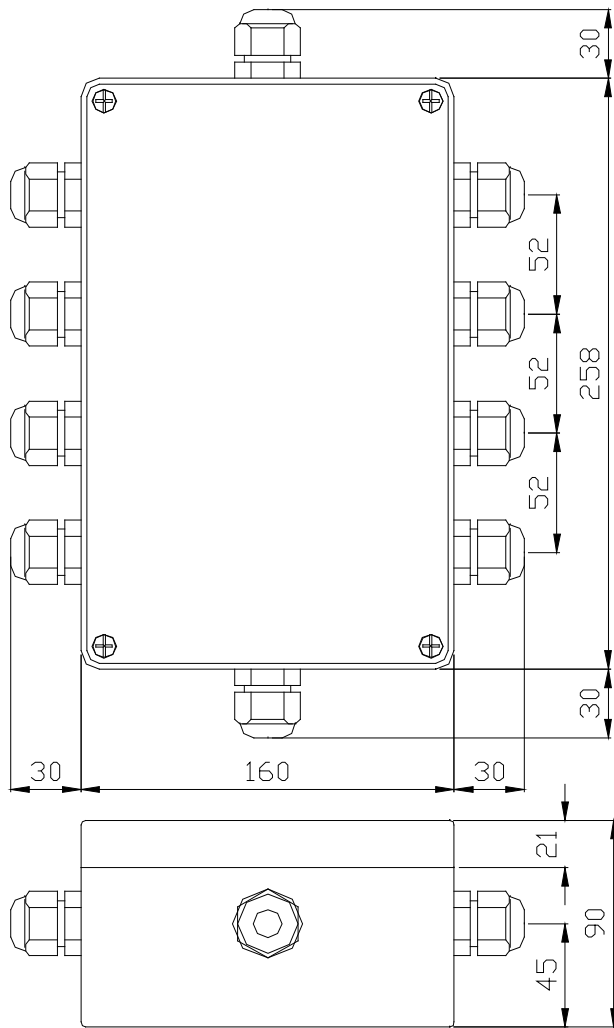
DIGITAL TYPE JUNCTION BOX wiring

MODEL NO :	HB-DJB8
A/D Channels	HBDJB-8 : 8-Independent 24-bits Sigma Delta A/D
Conversation Rate	128 samples/second
Internal Resolution	16,000,000 divisions
Graduattion Resolution	50,000 divisions industrial; 10,000HB44
Signal Sensitivity	0.1 uV/graduation (min)
Signal Range	0.5 mV/V to 3 m V/V
Load Cell Excitation	5 ± 0.25 Vdc
Drive Capability	Total 120mA for up to 8 (350 ohm) load cells
Signal Range	0.5 mV/V to 3 mV/V
Power Supply	Universal switching power supply, 100~240 VAC ± 10%, 50/60 HZ

⚠ 1				繪圖	Tom	HB	HOLBRIGHT WEIGHING SYSTEMS	圖名	HB-DJB8 Digital JUNCTION BOX	單位	mm	件號	品　名		材　質	數量	備註
⚠ 2				設計	Tom					圖號	DJB8-001-00				比例	1:3	圖紙 A4
記號	日 期	更 改 事 由	更改者	檢圖											出圖日期	95.06.13	