DS822-L Series belt scale

Operating instruction

DINGSONG

(Chinese version V1.1)

Hangzhou Dingsong Automatic
Control Equipment Co., LTD

MC Zhejiang no. 00000505

Thanks for your using of ds822-L series controller, please accept our sincere thanks.

In order to enable you to correctly use the controller, give full play to the ds822-L series controller's superior performance and powerful functions, I hope you must read the operation manual in detail before using the controller.

Note:

※ Part or all of the contents of this manual shall not be reproduced without authorization.

※ In the future, the manual will be modified and supplemented without further notice.

※ Although this manual is being compiled, it is hard to avoid some doubts, mistakes and omissions

Please let me know when you find any omissions. Thank you for your cooperation.

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Ds822-l series instrument model summary table

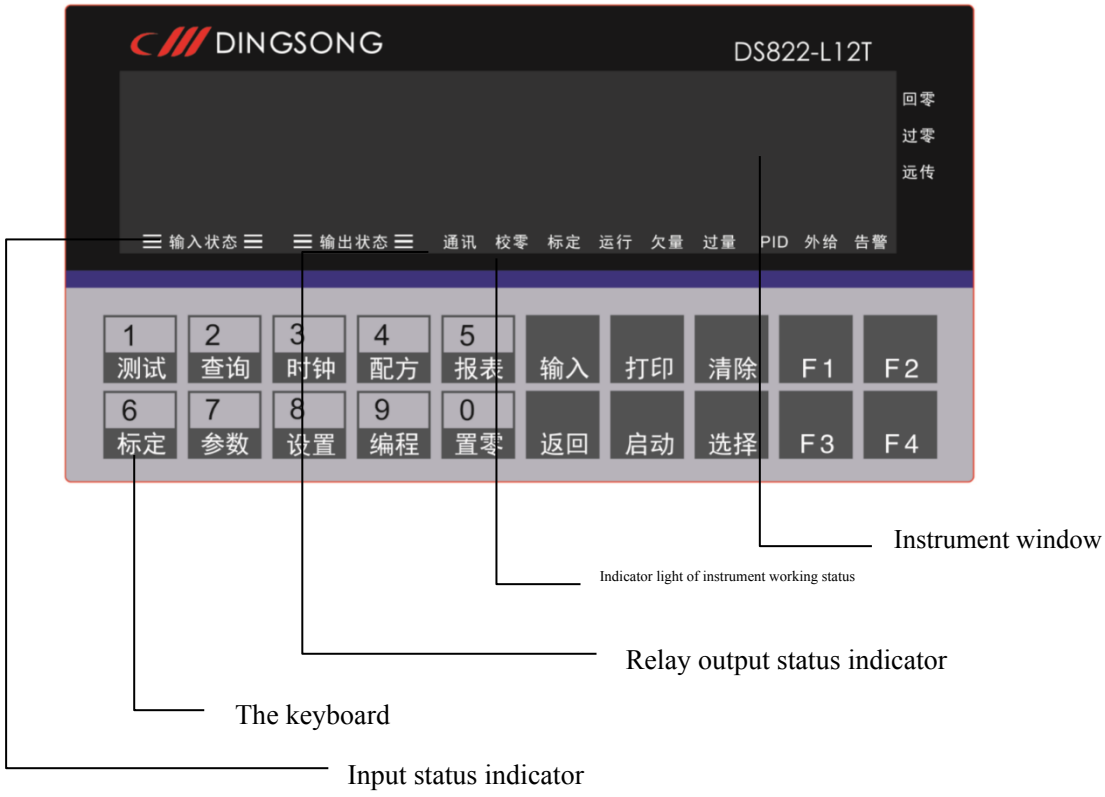
mode / categ		DS822-L12T	DS822-L12TZ	DS822-L8(L8P)
Whether or not the body		no		
specifications (mm)	The front panel	160 x 85		300 * 200 * 220 (Table vertical shape) Without micro printer (L8) And with micro printer (L8P)
	The host	151 * 75 * 126		
	Opening size	152 x 76		
The power supply		AC100-240V 50-60Hz	DC 24V	AC100-240V 50-60Hz
Output relay type		Relay (1 normally open contact)		There is none (pure measuring belt scale instrument)
Signal input and output ports	Input points	6	6	There is none (pure measuring belt scale instrument)
	The output points	4 way relay + 2 OC gate road	4 way relay + 2 OC gate road	
	4-20 ma input	1	1	
	4-20 ma output	2	2	
communication		Isolate 485 and 232 communications		

Main features:

- Set weighing control, flow adjustment, programmable control, relay output in one, can accurately and conveniently achieve a variety of complex control, suitable for: belt scale, plate flow scale and other measurement and control;
- All the way high precision A/D conversion, used for weighing sensor measurement;
- Following a 4 to 20mA input for external current or voltage signal measurement appliances
- Two way 4 ~ 20mA output;
- 4-10 external input signal detection port;
- 4-8 relay outlet,2 OC door output;
- Strong anti-interference performance, high reliability;
- The control state is automatically protected when the power is off unexpectedly in the control process.After power, the controller will return to the state before power failure;
- Can store more than 2 years of class production data, query and print are very convenient;
- With accurate clock, calendar, automatic leap year, leap month, not affected by power outage;
- Can realize flow adjustment control;
- With serial communication interface, one or more controllers can be easily networked with computers.

The main performance

A/D input signal range: - 20 mv ~ + 20 mv
A/D maximum net input signal: 40mV
A/D code: 1 million
A/D conversion speed: 100 times per second
A/D nonlinearity: < 0.01% FS
Gain drift: 8 PPM / ℃ (TYP)
Zero drift: 0.3μV/℃(MAX)
Load cell supply: DC5V, I>350mA can be connected to 12 350 Ω sensors or 24 700 Ω sensors
Power supply: DC24V/AC220V
Service temperature: - 10 ℃ to 40 ℃
Relative humidity: < 90%

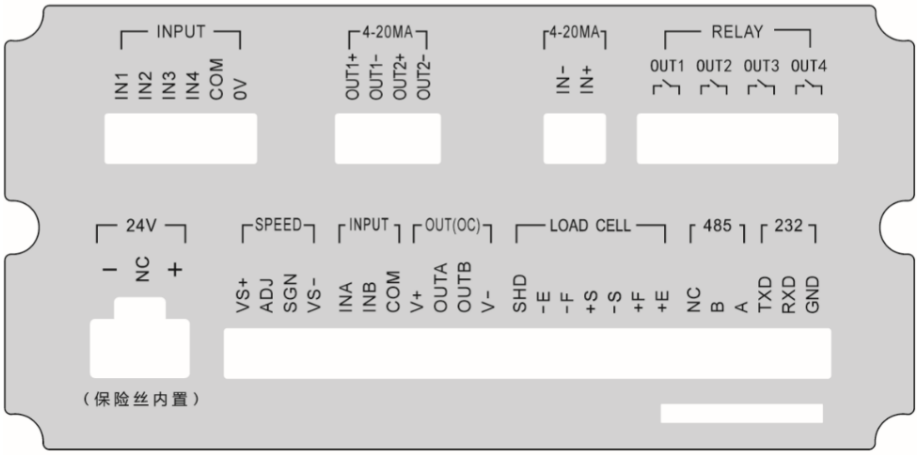


(Front panel)

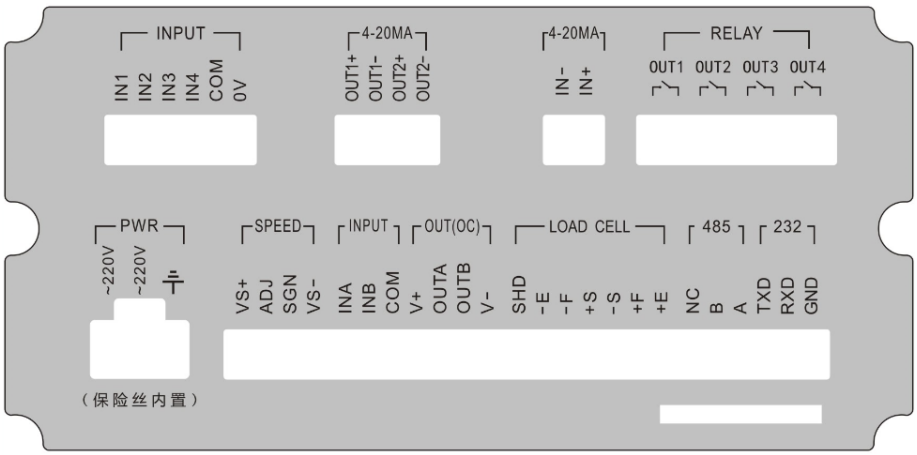
Meaning of indicator light of working status of each instrument:

- "Communication" ---- When the serial port of the instrument works, the indicator is on
- "Zero at school" ---- The light indicates zero at school (running skin)
- "Calibration" ---- The indicator light indicates that the calibration is in progress
- "Running" ----The indicator light indicates that the belt is running.
- "Underload" ----The indicator on indicates that the flow rate in PID adjustment is lower than the set value. And exceeds the allowable error.
- "Excessive" ---- The indicator light indicates that the flow rate in PID adjustment is higher than the set value and exceeds the allowable error.
- "PID" ---- If the indicator is on, the instrument is being adjusted by PID
- "External feed" ---- The indicator light indicates that the flow set value is through 4-20mA the input port is given externally.
- "Alarm" ---- Various alarms

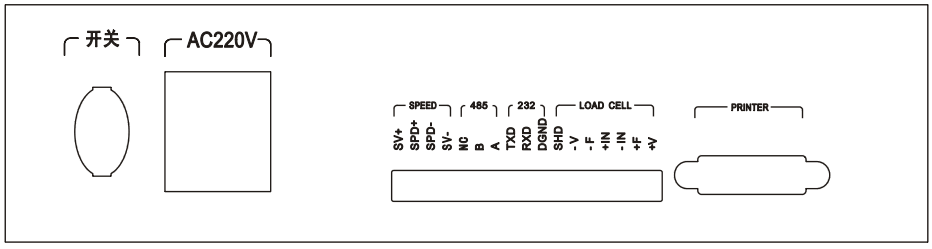
- "Far transmission" ---- The light indicates that the meter is accumulating output through the relay
- "Zero crossing" ---- The indicator on indicates that the instantaneous flow is in the zero range.
- "Zero"---- indicates that the zero of the scale is normal



(Ds822-L12TZ rear panel diagram)



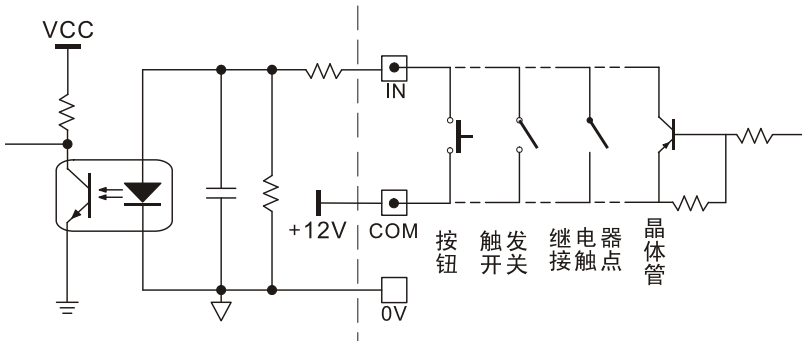
(Ds822-L12T rear panel diagram)



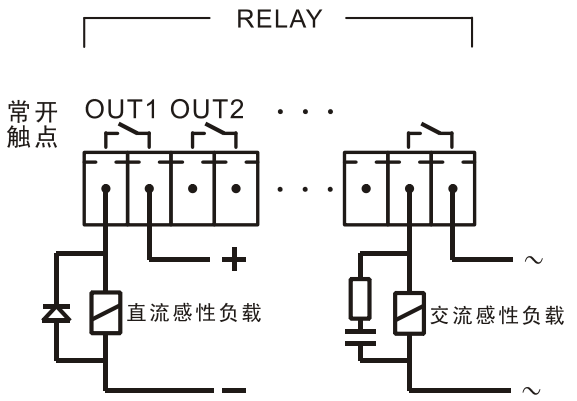
(Ds822-L8 /L8P rear panel diagram)

1. Switching input and output connection method

The input		When DC6 ~ 24V voltage is applied to an input port (connecting IN* port and COM port), the input port is regarded as Signal available (or "active"), and the minimum hold time of effective signal is >=60ms When the voltage on an input port is less than DC3V(the connection is disconnected), the input port is considered to have no signal (or "invalid"). Each input port can be connected with a button, switch (travel switch), proximity switch, etc. (see the picture below).
The output	Ac inductive load	If the load of the output relay is an AC inductive load (such as an AC contactor), the RC suction circuit must be connected to the load to suppress the reverse high voltage generated on the inductive load when it is cut off. Otherwise it may burn the output contact of the relay or the varistor at the output of the relay. Resistance R can be selected from 100 ~ 300 ohms, capacitance C can be selected by 0.3 micro method (see figure below).
	Dc inductive load	If the output relay is loaded with a DC inductive load (such as a DC contactor), a diode discharge loop must be connected to the load to suppress the reverse high voltage generated on the inductive load when it is cut off. Otherwise it may burn the output contact of the relay or the varistor at the output of the relay (see figure below).



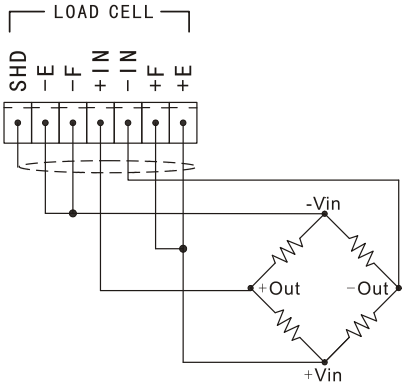
The input interface



Output
interfac
e

1, the connection method of the force sensor

The excitation voltage of the controller is DC5V, and the maximum excitation current is 200mA. It can be connected with 12 350 ω sensors in parallel. The figure below shows the meaning of each pin.



The plug end no.	meaning
1. (+V)	Excitation voltage (bridge supply) positive
2, (+F)	Positive feedback voltage
3, (-in)	Negative output signal
4. (+IN)	Positive output signal
5, (-f)	Negativefeedback voltage
6, (-v)	Excitation voltage (bridge supply) is negative
7. (SHD)	shielding

(1) If the connection of the sensor is 6-wire (long line compensation method), the connection of the sensor must use 6-core shielded wire, and it should be separated from the line with strong interference (power equipment wiring, digital instrument wiring, etc.) and AC line. 1 and 2, 5 and 6 of the sensor plug on the controller side are disconnected

(2) If the sensor is connected with a 4-core shielded wire, connect 1 and 2, 5 and 6 to the sensor plug on the controller end. **If not connected, the controller will not work.**

When you have connected all the sensor cables, it is recommended that you use the test function of our instrument immediately to determine whether your connection is correct

Operation method: In weighing state, press [test] [5] [input] successively.

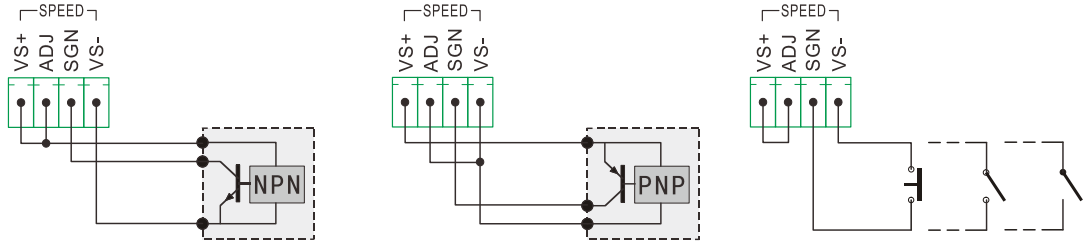
Instrument display [T-AD1 **.***]

The value displayed is the signal millivolts of the current sensor. The digital display should be stable and increase in a positive direction as weight is loaded.

Common faults: if the number is negative when no load, the excitation voltage or signal line is connected inversely;When loading, the value becomes smaller or larger in the negative direction, then the signal cable is connected inversely.

2. Connection method of speed sensor (high-speed pulse input port)

The input	High-speed pulse	The instrument has a high-speed pulse input port (SPEED), the internal high-speed optical coupler for electrical isolation, the port can be connected with the SPEED sensor, can also be used as a common switching input port. See Section 7.2 for details



NPN型测速传感器　　PNP型测速传感器　　作普通开关量输入口用

FIG. 4.6 Schematic diagram of high-speed pulse input port connection

When you have connected all the connections of the speed sensor, it is recommended that you use the test function of our instrument immediately to determine whether your connection is correct

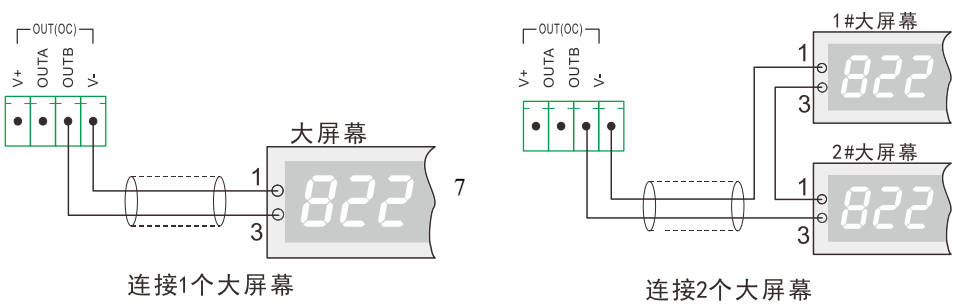
Operation method:

Plug in the calibration head and press [Test] [9] [Input] instrument display [PUSL 00000]

At this time, start running belt, so that the speed sensor into the working state, the instrument will display the current speed sensor pulse number, no display, check the wiring.

3, transistor OC door connected to the large screen display

The output	Communication current loop	This meter can be connected to 1 or 2 large screen monitors. It should be noted that this interface is multiplexed with the OC gate output, and only one function can be selected. To use the function, you must set parameter Y-n. For details, see Parameter Settings on page 10



连接1个大屏幕　　连接2个大屏幕

FIG. 4.7 Schematic diagram of connection of large screen display

Note: Two large screens can also be connected in parallel, as shown in the figure on the left, the two input lines of the two large screens can be connected in parallel

Press the [test] key in the weighing display state, you can test the hardware functions of the instrument.

The operation method is as follows: Press the [Test] key in the weighing display state to display [Test 01]. Press the number key to select the test item and then press the [Enter] key to start the test.

1, [TEST 01]: Check whether the software version number, nixie tube and LED indicator are in good condition

2, [TEST 02]: When detecting the keyboard keys, the controller displays [test-key 00]. Each key press at this time will display the code of the key, but when pressing [Back], the test item selection will be returned.

3, [TEST 03]: When detecting the output of relay, the controller will display [test-O 0000]. At this time, input the code of relay with the digital key, and then press [Input], the corresponding relay will be closed. This feature is useful to the debugger, as it can be used to debug whether parts of the system are behaving properly. Press the [Back] key to return to the test item selection.

4, [TEST 04]: When detecting the switch input, the controller displays [test-in 00]. At this time, if an external input is valid, the code of the input will be displayed. The codes of input signals for channels 1-10 are 01-10 respectively. Press the [Back] key to return to the test item selection.

5, [TEST 05]: When detecting the sensor signal or A/D board, the controller displays [T-AD1 **.***] the number behind is the millivolt of the sensor's output signal.

6, [TEST 06]: Detection of communication interface, display [test-SSIO --] detection method is to use 0.1uF capacitor lpu RS232 communication between two signal lines RXD, TXD, display: [TES T-SSIO 1] RS232 communication is normal. Connect A 0.1uF capacitor between two signal lines A and B for RS485 communication. [test-SSIO 2] indicates that RS485 communication is normal.

7, [TEST 07]: Check the print port. Print test heads must be used.

8, [TEST 08]: If RAM is detected, [test good] should be displayed, indicating that RAM is normal.

9, [TEST 09]: Measure the pulse number of the speed input port, press the [input] key to stop counting or start counting again from zero.

10, [TEST10]: Test no. 1 4-20mA outlet. The controller displays [T-DA1 04.0] at this time, the output of port 1# is 4.0mA. The method to modify the output current is: input milliamperes with the digital key, and then press the [Input] key to confirm. For

example, press the number key [1], [0], [0] and the display: [T-DA1 10.0], and then press the [Input] key. At this time, the output current of port 1# is 10.0mA.If it is not accurate enough, adjust it using [F1][F2][F3][F4]. **[F1] - Fast addition [F2] - Slow addition [F3] - Fast subtraction [F4] - Slow subtraction, must be first 4.0mA alignment, and then 20.0mA alignment.**

[TEST11]: Check no. 2 4-20mA outlet. If it is not accurate enough, adjust it using [F1][F2][F3][F4]. **[F1] - Fast addition [F2] - Slow addition [F3] - Fast subtraction [F4] - Slow subtraction, must be first 4.0mA alignment, and then 20.0mA alignment.**

[TEST12] : Test the 4-20mA input port. If it is not accurate enough, adjust it using [F1][F2][F3][F4].

[F1] - fast addition [F2] - slow addition [F3] - fast subtraction [F4] - slow subtraction, should be first 4.0mA alignment, and then 20.0mA alignment.

[TEST13]: Measure the number of speed pulses at the set time

When measuring the pulse number of the whole lap [P-A], first measure the time of running A whole lap of the belt. When using test 13 to measure the pulse number, press the input and the instrument will display [P-T 000.00] input the whole lap time of the belt. After the input, the left side of the instrument will display the countdown and the right side will display the pulse number. The number of pulses displayed at this time is the number of pulses in the whole cycle we want [P-A].

Parameter Settings **Table**

steps	Operating as a	show	explanation
1		[PASS ****]	In the weighing state
2	[calibration]	[pp1 -----] [pp1 822]	Send the password "PP1" (factory setting: 822), if the parameter is set to no password control, directly go to the next step
3	[enter]	[sel 0]	Selection method: 0- Parameter setting 1- Calibration of empty scale (running skin) 2- Calibrate the weighing weight 3- Detection of the maximum error of the empty belt in the whole lap accumulation 4 - View the calibration result 5 - Static calibration with uniform weight 6 - View the last running time 7 - View the last calibration time 8- Restore the accumulated weight before calibration 9- Correction of weighed weight (i.e. displayed weight)
4	[enter]	[Cal-p 0]	Enter the location of the decimal point. For example, set it to 1

5	[enter]	[SPEEd 00]	Speed measurement method: 0 -- Constant speed (10 pulses per second) 1-10 The speed is measured through the speed port, and the frequency division of the speed pulse is 1-10 11-19 corresponding external input port IN1-IN9 has a signal to indicate the belt operation, when running, the instrument automatically generates 10 pulses per second 21-29 corresponding to the external input port IN1-IN9 no signal indicates that the belt is running, when running, the instrument will automatically generate 10 pulses per second 31 -- 38 Corresponding output relay OUT1-OUT8 operation indicates that the belt is running, and 10 pulses per second are automatically generated in the instrument during operation 41 -- 48 Corresponding output relay OUT1-OUT8 does not work, indicating that the belt is running. When running, the instrument automatically generates 10 pulses per second 50 - Through the 4-20mA input port, the belt speed is detected. 53-IN4 =0 pulse speed measurement, IN4=1 constant speed (measured speed, can automatically determine whether the belt is running). 54 - Constant speed (10 pulses per second, can automatically determine whether the belt is running)
6	[enter]	[P - A 0 0 0 0 0 0]	Number of pulses in the whole cycle (measured by [test][1][3]) For details, see page 7
7	[enter]	[p - 000.00]	Pulse number per meter (calculated or measured in practice, this parameter is only useful for calculating band speed. If it is not necessary to measure band speed, this parameter can be left unset)

Parameter Settings

steps	Operating as a	show	explanation
8	[enter]	[Y - n p a b c]	P= set to 1: OUTB as large screen output; a= b= C =0: close automatic zero tracking;C =1: zero automatic tracking function is open;
9	[enter]	[t y p e x y]	X: 0- Prints through parallel ports 1- Prints through serial ports 2- Use our built-in micro printer Y: 0- Print invalid 1- Other brand micro printer 2-24 needle printer (such as Panasonic 1121, 1131, etc.) 4- Top Loose micro printer
10	[enter]	[m o d e 0 2]	Communication method: 0 -- Instruction reply mode, data format :7 bit ASC code +1 bit parity check bit 1 -- Instruction response mode, data format: 7-bit ASC code + 1-bit parity bit 2 -- Instruction reply mode, data format: 8-bit ASC code no parity bit 3 -- Instruction response mode, data format :7 bit ASC code +1 bit parity bit but accept data, do not check whether the check word (CHK) is correct or not. 4: Continuous transmission mode, data format: 7-bit ASC code + 1-bit parity bit 5: Continuous transmission mode. Data format: 7-bit ASC code + 1-bit parity bit 6: Continuous transmission mode, data format: 8-bit ASC code No parity bit 7: Continuous transmission mode, data format: 7-bit ASC code + 1-bit parity bit 8 -- For serial printing output, can be connected to the top loose micro printer 20-- Modbus RTU format 8 data bits, 1 parity bit, 1 stop bit 21-- Modbus RTU format 8 data bits, 1 parity bit, 1 stop bit 22 - Modbus RTU format 8-bit data bit, no parity bit, 2-bit stop bit 23 - Modbus RTU format 8-bit data bit, none parity bit, 1-bit stop bit
11	[enter]	[a d d r 0 1]	Correspondence address: 1 to 26 corresponds to A to Z

12	[enter]	[bt 8]	Communication signal baud rate: 1-600 2-1200 3-1800 4-2400 5-4800 6-9600 7-19200-8-38400-9-57600-115200

Parameter Settings

steps	Operating as a	show	explanation
13	[enter]	[typ-20ma1 0]	No. 1 4-20mA analog output corresponding flow (0) or PID adjustment (9)
14	[enter]	[typ-20ma2 0]	No. 2 4-20mA analog output corresponding flow (0) or PID adjustment (9)
15	[enter]	[ful20 0000]	20mA indicates the flow corresponding to the analog output
16	[enter]	[unit 0]	Unit of weight: See the corresponding table of Unit parameter setting (page 11)
17	[enter]	[00.00] filt w a s t e	The standby
18	[enter]	[dsp 00000]	Display content selection 1 -- Working state (the display window shows the millivolt output signal of the force sensor) 3 - The left side shows the band speed (4 bits) and the right side shows the flow 4 -- Accumulated pulse number of the speed sensor (prompt [PUSL *****] is displayed in the display window,**** means accumulated pulse number) 5 -- average pulse number of speed sensor (display window displays prompt [SUdo **.**],**.** indicates average pulse number per second) 6 -- Left side shows flow (bit 4), right side shows accumulated quantity (bit 7) 7 -- Set flow is displayed on the left and instantaneous flow is displayed on the right 8 -- Display the accumulated amount (display window display prompt [A **********], display the accumulated amount with all 10 LED display) For example, if dSP is set to 00008, only the accumulative quantity is displayed DSP is set to 00038: it can display instantaneous flow, and can display cumulative amount, switch with [back] key.However, the display content specified by the last digit "8" is priority, that is, the initial state (startup state).
19	[enter]	[t1 00.00.00]	The starting time of three classes is required: T1 < T2 < T3;If there are two shifts, set T3 to 0

20	[enter]	[t2 00.00.00]	If the first shift starts at zero, t1 cannot be set to 24, it must be set to 0
21	[enter]	[t3 00.00.00]	
22	[enter]		Return to weigh status

Note 1: Press [F3] key to return to the previous parameter and press [F4] key to enter the next parameter

The Unit value	0	1	2	3	4	5	6
Unit of weight	Tons of	kg	Tons of	kg	Tons of	kg	Tons of
Flow unit	Tons/SEC.	Kg/SEC.	Kilotons/hour	Tons/hour	T/points	Kg/min	Tons/hour

2. Calibration of empty scale (running skin) (* : original setting value)

steps	Operating as a	show	explanation
1		[sel 0]	Enter calibration options according to steps 1-3 in Table 8-1
2	The number keys [1]	[sel 1]	Select calibration empty scale (running skin)
3	[enter]	[loop 001]	Enter the number of laps
4	After entering the number of laps, press [Enter]	[-**.**-cal-0]	Indicates that the detection is in progress, and the remaining winding number is displayed in front.
5		Return to original display status	Zero is set, zero indicator light is on

If the user needs to run the skin again, he can press the "zero" key. Pressing "zero" to run does not affect the value of "R-oset"

3. Physical or chain code calibration (* : original setting value)

steps	Operating as a	show	explanation
1		[sel 0]	Enter calibration options according to steps 1-3 in Table 8-1
2	The number keys [2]	[sel 2]	Select physical or chain code calibration
3	[enter]	[00000000]	The first two display the number of laps, and the accumulated amount of the real object or chain code is displayed behind. After all the real objects are measured, press the [Input] key, and the first two blink at this time. After running the last whole lap, the blink and accumulated stop and automatically enter the next step.
4	Input target weight	[df *********]	Input target weight (chain code calibration = length x chain code weight per meter)
5	[enter]	Return to weigh display	End of the calibration

4. In order to ensure that the empty belt does not accumulate during operation, the operation analysis of the empty belt is carried out

after the calibration, and the maximum error of the empty belt in the whole circle is detected

steps	Operating as a	show	explanation
1		[sel 0]	Enter calibration options according to steps 1-3 in Table 8-1
2	The digital key [3]	[sel 3]	Detect the maximum error of the empty belt in the whole circle
3	[enter]	**--] [-**	Indicates that the detection is in progress, and the remaining winding number is displayed in front.The maximum error of empty belt accumulation is displayed at the back
4	[enter]	Return to weigh display	End of the calibration

5.Check calibration results

steps	Operating as a	show	explanation
1		[sel 0]	Enter calibration options according to steps 1-3 in Table 8-1
3	The number keys [4]	[sel 4]	Select operation content: 4 - View the calibration result
4	[enter]	[01.100] ooo	Zero millivolt number of empty balance (mv) (automatically measured by [calibration][1] skin running operation)
5	[enter]	[r ****.******]	Calibration coefficient (automatically measured during the calibration operation of [calibration][2])
6	[enter]	[r - oset 00.100]	Range of zero zone (unit: MV) (automatically measured by [calibration][1] skin running operation)
7	[enter]	[e - o *******]	Maximum error of empty belt cumulative amount of whole ring (automatically measured by [calibration][3] operation)
8	[enter]	Return to weigh display	End of the calibration

Note 1: Press [F3] key to return to the previous parameter and press [F4] key to enter the next parameter

Note 2: The calibration coefficient "R" can be calculated according to the parameters of the scale, which can be fed into the instrument. It is the most convenient method to calibrate by theoretical calculation, and better accuracy can be obtained when the calculation is accurate.The calculation method is as follows:

(1) Calculate the force transmission ratio (Q): load with weight of G is evenly distributed on the effective measurement section of the scale, so that the force of the sensor is G', then Q =G'/G, such as: the force transmission ratio of the cantilever beam supporting belt scale is 0.5

(2) The effective measuring length (L) of the scale, in meter

(3) Maximum range of sensor (M) (unit: kg) and output sensitivity coefficient U (mv/ V)

(4) Average number of pulses per meter P (i.e. the number of pulses output by the speed sensor per 1 meter of belt walking)

(5) Calibration coefficient R =M/(qpLu)

For example: M=100 kg, q=0.5, P =50, L=3.5(M),u=2 mV /v

Calibration coefficient R =100/(0.5＊50＊3.5＊2)=0.5714

6.Correct weighed weight (current displayed weight)

steps	Operating as a	show	explanation
1		[s e l 0]	Enter calibration options according to steps 1-3 in Table 8-1
2	The number keys [9]	[s e l 9]	
3	[enter]	[df ********]	Input calibrated target weight
4	[enter]	Return to weigh display	End of the calibration

7.Static calibration operation method

Static calibration method is our patented technology, with high precision, simple operation, convenient and other advantages

Notes for static calibration:

1、Calibration requires a known weight or so

2、Calibration needs to accurately measure the pulse number per meter (P-L) of the belt, this parameter has a direct impact on the final measurement accuracy, please accurately measure, measurement method is introduced in the following instructions

3、The coverage of weights or chains during calibration should exceed the length of the measuring section

4、The final target value entered into "Cal-F" is weight density (weight per meter), not total weight

steps	Operating as a	show	explanation
1	Firstly, the pulse number of the whole belt is measured and sent into the parameter P-A. For the measurement method, see step 5 and Step 6 of the quick commissioning guide The number of pulses per meter is fed into the parameter P-L, and the measurement method is shown in the table below		
2		[s e l 0]	Enter calibration options according to steps 1-3 in Table 8-1
3	The number keys [5]	[s e l 5]	Static calibration
4	[enter]	[c a l - f * * * * * *]	
5	[remove]	[cal-f 000000]	After pressing the clear button, the right side of the instrument will display OK and return to zero

6	The input Weight density value	[cal-f ******]	A weight uniformly distributed over the measuring section Note: 1. The whole measurement section must be covered, and the distribution scope should be beyond the measurement section as far as possible 2. The input value is the weight density, i.e. the total weight divided by the length covered
7	[enter]		After calibration, return to weighing status

Here's how to do it

Pulse number per meter measurement method:

Method 1: Measure the perimeter of the speed sensor. Use the pulse number of the whole circle of the speed sensor (generally, the speed sensor will directly give this parameter) to remove the circumference (converted into meters) to get the pulse number per meter

Method 2. The instrument works in the state of test pulse number (Test 9). Let the speed sensor work for a distance on the running belt to accurately measure the distance traveled by the speed sensor. The result is the measured pulse number divided by the distance (converted into meters).

1, THE BOOT

1) After the power is switched on, the display displays the software version number [L9-C2 ******] and enters the working state after a few seconds. During the display of the version number, all 12 status indicators should be off, otherwise it indicates that the instrument itself is faulty.

If Communication is on ----, data in the RAM is lost.

If the value ---- is on, data in the EEPROM is lost.

If the calibration indicator is on ----, the buttons on the panel may be faulty.

If the Running indicator is on ----, the real-time clock is incorrect.

If the undervoltage indicator is on ----, the power failure detection is incorrect.

If excessive is on ----, the RAM is incorrect.

2) The controller will remember the control state before power failure.

3) After the power is switched on, if all the following conditions can be met, the controller will automatically set zero:

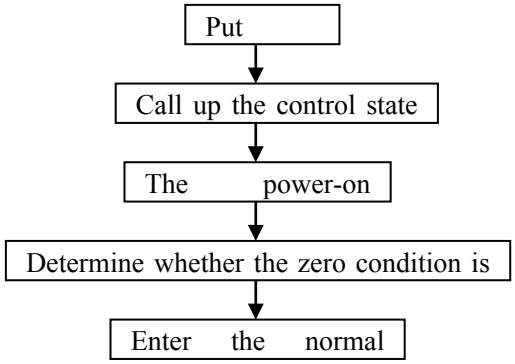
① The controller is not in feeding or discharging control state before power failure

② Stable weight data will be collected within 6 seconds after power is switched on

③ The weight value is in the zero range

4) When the power is switched on, the controller performs the power-on trigger function. (Power-on trigger function is set in the program)

5) use block diagram to show the working condition of the controller when it is powered on:



2, zero

(1) press the [zero] key to calibrate the zero position of the belt

scale (i.e. running skin);After correct skin running, the meter's flow display should be 0, and the "zero crossing" indicator light is on.The accumulated weight remains the same.

steps	Operating as a	show	explanation
1	(zero)	[pp1 -----]	Enter password (factory setting 822)
2	Enter the password and press [Enter]	[- * . * * - c a l - 0]	Indicates that the detection is in progress, and the remaining winding number is displayed in front.
3		Return to original display status	Zero is set, zero indicator light is on

3. Clear accumulated quantity and shift production records

Press the [Clear] key, the controller will display: [CLR 0] select the content to clear, press [0][Enter] to deny, press [1][enter] to clear the cumulative amount.Press [2][input] to clear shift production records. Whether the calibration head needs to be inserted depends on parameter "CLR".

4. Date and time Settings

steps	keystrokes	show	Solution release
1		[pass *****]	In the weighing display state
2	[clock]	[d yy .mm .dd]	Yy, MM and DD are year, month and day respectively
3	[0] [1] [0] [3] [0] [6]	[d 01 .03 .06]	For example, set the date to March 06, 01
4	[enter]	[t hh .mm .ss]	Hh, mm, ss, respectively
5	[1] [6] [3] [0] [3] [5]	[t 16 .30 .3s]	For example, set it to 16:30min 35s
6	[enter]	[p a s s * * * * *]	Returns the weighing display status

5. Query output data

(1) According to [query][0] : sequence query class output (backward check)

(2) according to [query][1] : the cumulative amount of the query period

(3) Press [Query][2] to query the zero clearance time of the accumulated quantity

(4) According to [query][3] : query class output in sequence (forward check)

6. Printer connection and printing operation

1. The printer interface adopts standard serial port or parallel output. The parallel connector adopts 15-core RS232 plug. The connection of the printer must use our company's special print line and conversion interface (provided separately).
2. This controller can control almost any kind of needle printer through parallel interface.
3. Print the value result

   1) The tyPE and mode must be set correctly

2) Print accumulated weight

The controller prints the current weight by pressing the [print] button in the weighing display state.

3) Print it

In the weighing display state, press [print report] key,

When the controller displays [D0 **.**.**], enter the start date and press [Enter]

When the controller displays [d1 **.**.**], enter the end date and press [Enter]

The controller then prints out the entire shift production during that period

Ds822-I series controller for some important operations, in order to prevent misoperation and lead to error, can be set as password control mode. Operations that can be set to password control are:

1、Press the [formula] key to enter the formula setting, and the control password is PP1
2、Press [Parameter 1] to enter the inspection and modification of open parameters in the process, and the control password is PP1
3、Press [Parameter 2] to check and modify system parameters, and the password of control is PP1
4、Press the [calibration] key to enter the calibration process, and the control password is PP1
5、Press the [programming] key to enter the programming input, and the password of control is: PP2

To set password control and change passwords PP1 and PP2, perform the following steps:

keystrokes	show	Solution release
	[pass *****]	In the weighing display state
[test]	[test 01]	
The number keys [0]	[test 00]	
[enter]	[pp2 *****]	Indicates that please input password "PP2" or universal password, universal password can be calculated according to "******", calculation method can be called to consult our company
[8] [2] [2]	[pp2 00822]	Passwords PP1 and PP2 are set to 822
[enter]	[lock labcde]	For critical operations (calibration, programming, testing, etc.) you can choose either cryptographic control or calibration head control. L-1: password control, 0-calibration head control (the calibration head is to short-circuit the serial port 485A and RXD) A - B - C -; D -;

		E - Clock modification control.
[enter]	[pp1-n -----]	"PP1" is the password required to enter formula setting, parameter 1, parameter 2 and calibration. Please enter a new password
[enter]	[pp1-r -----]	Please enter a new password
[enter]	[pp2-n -----]	PP2 indicates the password required to enter the program and change the password. Enter a new password
[enter]	[pp2-r -----]	Please enter a new password
[enter]	[test 00]	The password setting is complete. Press Cancel to return

(1), If [-----] is displayed, please wait for 10 seconds
(2), Display [print]: indicates that data is being transferred between the monitor and the printer
(3), If [NO] is displayed, there is no corresponding record
(4), Display [end]: prompt for the end of data inspection
(5), Displays [sure *]: Select confirm and deny when clearing data records
(6), If [err P] is displayed, the printer is disconnected or a printer error occurs. Press any key to exit
(7), [Err 06]: The sensor is incorrectly connected
(8), Display [Err 31]: The calibration header is incorrectly used
(9) Display [err 32]: Because it is in control state, your wrong operation is rejected.To exit the control, press [Select] and [5] keys
(10), Display [err 33]: Because the keyboard operation state is not exited,Press start, Print, Select

Ds822-1 series controller has 10 workflows, among which 0-6 workflows are fixed and cannot be rewritten. Workflow 7~9 is programmable workflow, users can realize various control through programming.

1. Functions of each control key:

① Press [Start] to only start process executor 0 from the first step;

② press [Select], [1] to suspend the work of all actuators;

③ Press [Select], [2] to continue the work of all actuators;

④ Press [Select] and [3] to abandon the current displayed process that is being executed and perform the next step;

⑤ press [Select], [4] to stop the work of all process actuators (the timer continues to work);

⑥ press [Select], [5] emergency stop (stop the work of all process actuators and timers).

⑦ press [F1] to select the display content. (If the function of the [F1] key is not reset in the process)

⑧ Press [F3] to pause/continue. (If the function of the [F3] key is not reset in the process)

⑨ press [F4] to make an emergency stop. (If the function of the [F4] key is not reset in the process)

2. Replication of workflow:

Ds822-1 series controllers can copy a flow in workflow 0 to 9 to a flow in workflow 7 to 9, for example, copy workflow 3 to workflow 8, as shown in Table 8-2

steps	keystrokes	show	explanation
1	Plug in head	[pass *****]	In the weighing display state
2	Programming key	[pp2 *****]	Please enter the password "PP2", when the programming operation is set to no password control, go to step 4 directly
3	[8] [2] [2]	[pp2 00822]	The factory setting of password "PP2" is 822
4	The input	[line *]	
5	Numeric keys 3	[line 3]	Enter the workflow number to be copied

6	print	[line 3-3]	
7	The number keys 8	[line 3-8]	Enter the workflow number copied to (8)
8	The input	[pass *****]	Return to the weighing display

In practice, you may need process replication for a variety of reasons:

For example, workflow no. 3 is basically consistent with your requirements, but it needs to be modified slightly, and workflow No. 3 is a fixed workflow and cannot be modified. In this case, you can copy workflow No. 3 into workflow No. 9, modify workflow No. 9, and finally make the controller work according to workflow No. 9.

Another example: When you have entered the workflow you wrote in Process 9 and want to keep a backup in process 8, you simply copy process 9 into Process 8.

Fixed process no. 3:

(1) Working process:

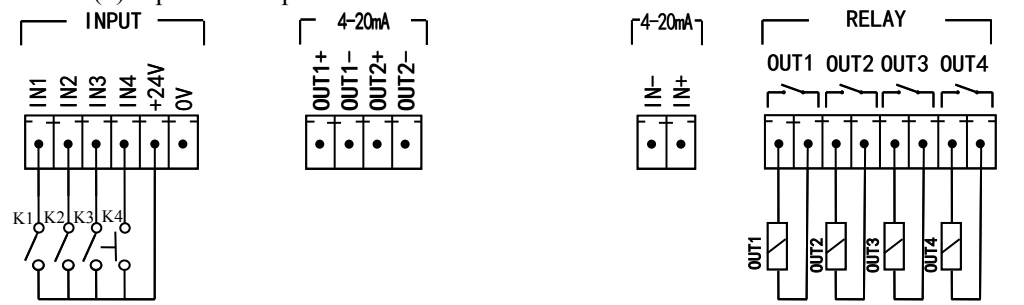
In01 has signal -- given outside of start In01 has no signal -- given outside of stop

In02 if there is a signal, start the accumulative quantity pulse output. In02 if there is no signal, stop the accumulative quantity pulse output

In03 There is a signal -- PID starts working. In03 There is no signal -- PID stops

In04 Change from no signal to signal or press [F4] key -- stop all controls (PID control, external set, remote transmission)

(2) Input and output:



K1 on/off -- Start/stop flow is given
K2 On/off -- Start/stop cumulative pulse output
K3 On/Off - Enable/stop PID control

OUT1-- Cumulant pulse output
OUT2-- Run signal
OUT3-- Alarm signal

(3) Setting method:

A. Press [Flow] to set the current flow LinE to 0.

steps	keystrokes	show	explanation
1		[line *]	Refer to Steps 1-4 in Table 8-2 to enter process operation options
2	The number keys 0	[line 0]	
3	The input	[pro- 1]	
4	The input	[pass *****]	Return to the weighing display

B. Press [formula] key to set PID flow setting value:

L10-df ---- PID traffic setting:

"L30-na" ---- Fixed current ma, start the belt control current.

Note: Press [F2] key to control belt operation with fixed current for convenient calibration. (If the PID is running, press the [F4] key first to stop the PID.) To adjust the speed of the belt, reset L30-NA and press [F2]. Press [F4] to stop the belt operation. Press the [Start] key to restart PID

C. Press [Parameter 1] key to set control parameters:

"L10 - PE" ---- Allowable fluctuation range of flow in PID control. The value should be slightly larger than the flow fluctuation when the PID output is constant; otherwise, the PID control effect will be affected

"L10 - t1" ---- PID Adjustment interval (unit: second).

"L10 - HA" ---- Upper limit of PID output current.

"L10 - LA" ---- Lower limit of PID output current.

"L10 - IO" ---- Initial PID current.

"L10 - t2" ---- PID Time of initial output current (unit: second).

"L10 - t3" ---- PID response time (automatic detection)

"L10 - t4" ---- PID response stability time (automatic detection)

"L10 - Lm" ---- 12mA output traffic (automatic detection)

Note: when either of the two parameters of "L10-T4" and "L10-LM" is 0, the instrument automatically detects the three parameters of "L10-T3", "L10-T4" and "L10-LM" when starting PID

D. Press [Param 2] to set control parameters.

"L16-d" ---- Accumulated weight corresponding to pulse output.

"L16-t" ---- The width of the cumulative output pulse.

4, 4 fixed process:

(1) Working process:

After pressing [start], the output of instrument No. 1 and No. 2 (standby) relays will be effective, and the display of accumulated quantity will automatically start from 0 until the set value is reached, and the output of instrument No. 1 and No. 2 (standby) relays will be disconnected. The accumulated quantity is displayed as the total accumulated quantity.

(2) Input and output interface

In01 -- Start button, same as [Start] button

Out1 - The output interface that controls start and stop

Out2 -- Output interface to control start and stop (as an alternative to OUT1)

(3) Setting method:

A. Press [Flow Settings] to set the current flow LinE to 4.

B. Press the [formula] key to set the quantitative value: "C01-R" -- quantitative value

C. Press [Parameter 1] to set: "C01-BL" -- advance quantity

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