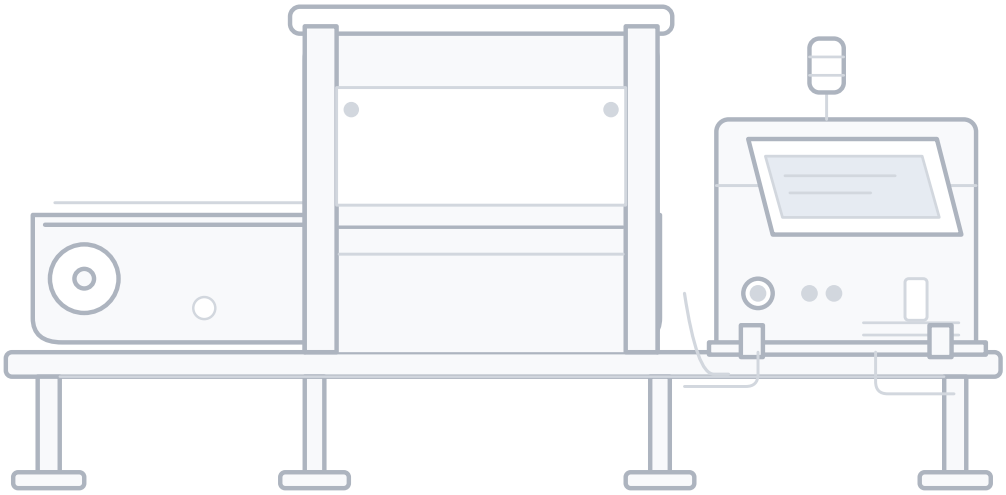
TOUCH-SCREEN NEEDLE DETECTOR

Operation Manual · General Edition

Installation · Operation · Settings · Communication Protocol



SHANGHAI DINGLI NEEDLE DETECTOR INSTRUMENT CO., LTD.

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Edition English Edition · First Edition

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Chapter 1 Product Introduction

- Basic functions
- Fully independent intellectual property rights; an original work
- 32BITS high-speed MCU, performing one hundred and sixty million operations per second
- Built-in DSP with high-speed signal processing gives excellent anti-interference capability
- Industrial-grade full isolation ensures stable and reliable operation of the product; instability of the external power supply has almost no effect here
- 20 independent channels and 10 differential channels, designed to suit their respective applications
- Accurate counting function
- Data is stored in ferroelectric memory, reliably kept for twenty years
- This is the manual for the general edition. In this series there are many variants with slight differences: for example, products without a motor have no “rewind distance” — they show “alarm length” instead — no photoelectric adjustment option, and no rewind function in the working modes.
- This manual covers the full range of functions; some versions may not have certain functions. Please consult your dealer!

Chapter 2 Operation

Home

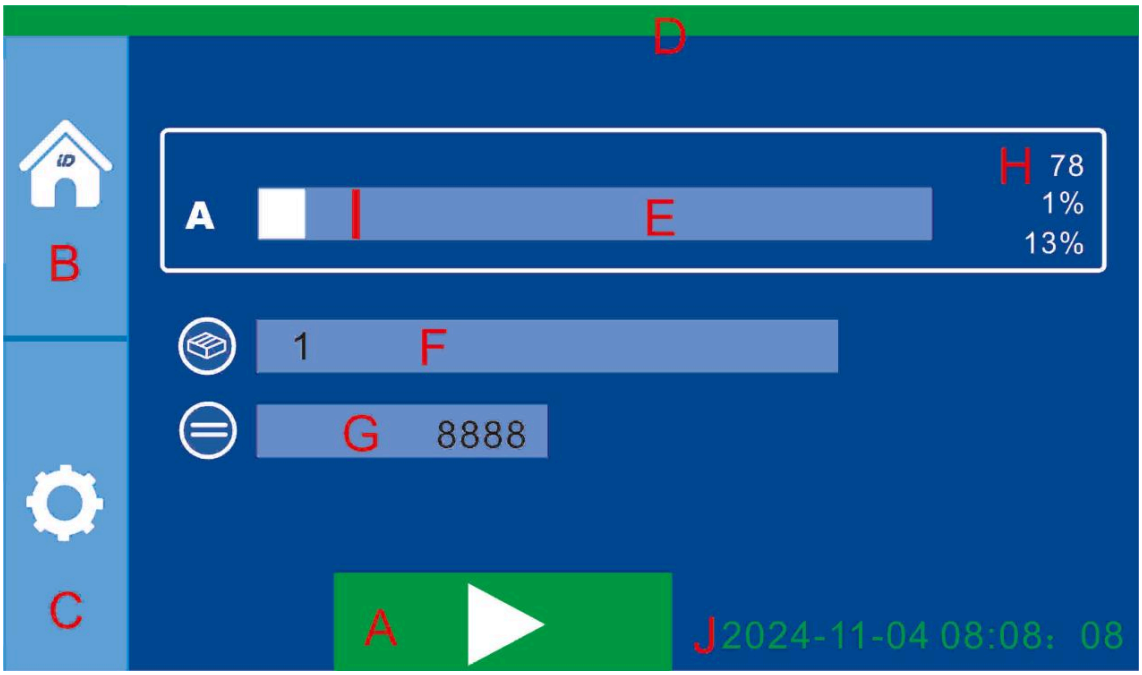


Figure 2-1 Home screen

Start/Stop

A toggle button: in the stopped state the key acts as Start; in the running state it acts as Stop. It is green when stopped and red when running.

External start button (not connected on all machines)

It has three functions: 1, Start — while stopped, press for less than 1 second and release, and the machine runs; 2, Rewind — while stopped, press and hold for more than 1 second, the machine reverses, release and the machine stops; 3, Emergency stop — while running, press it and the machine motor stops immediately.

On products without a motor, rewind means alarm.

Bar E shows the probe signal

- When the E signal exceeds the red line, metal has been detected and an alarm is triggered

Sensitivity display: H

D status bar: nothing shown when stopped, green bar flashing when running

F is the product code, 1-50, and can also show the goods description

Chapter 3 Settings

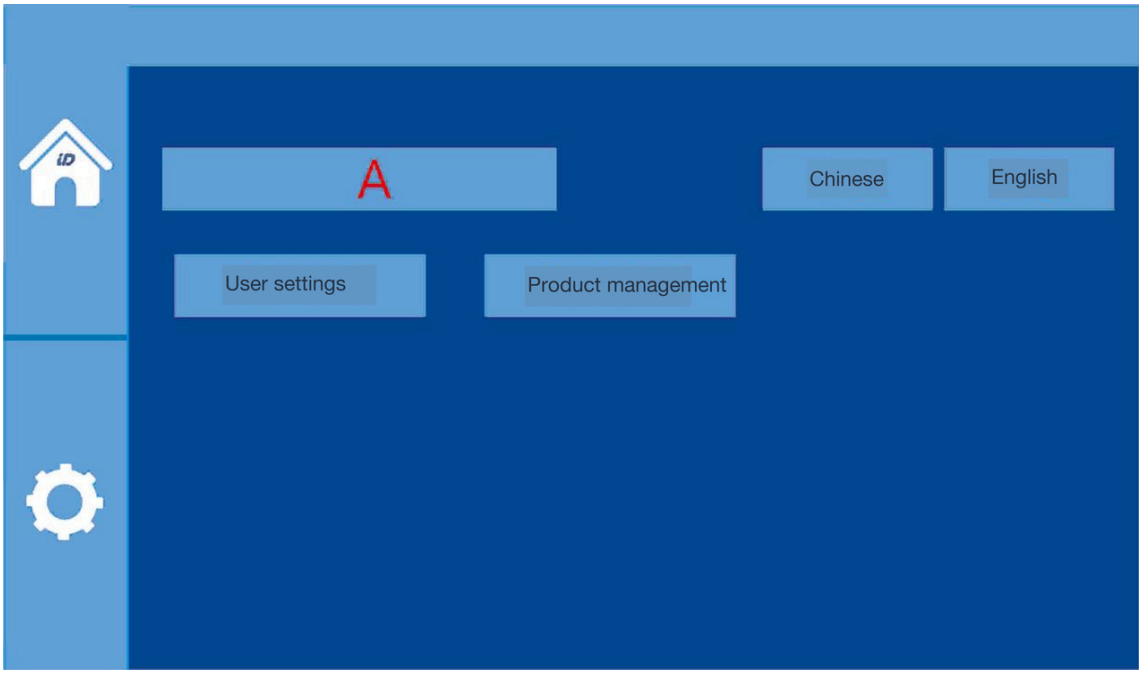


Figure 3-1 Settings page

- User settings require a password (on machines without a password, ignore this)
- A is the password field
- If “User Settings” is not displayed, entering user password 18931226 makes it appear
- Once the password is valid, “User Settings” stays displayed; a restart resets this
- Enter the correct password in A to enter user settings; up to 8 digits.
- To cancel the user password, enter 19040822 in CODE; the password is disabled, and from then on all parameters can be adjusted without a password, also after restarting. Data then becomes easy to tamper with, so we do not recommend this.
- To restore the password, enter 18931226 again; the password is valid again, even after a restart.
- Enter password 18931227 to set a password of your own, up to 8 digits.
- The original password always remains valid.
- Once the correct password has been entered it stays valid until power-off. After power-on the power-on password must be entered again.

Chapter 4 User Parameter Settings Page

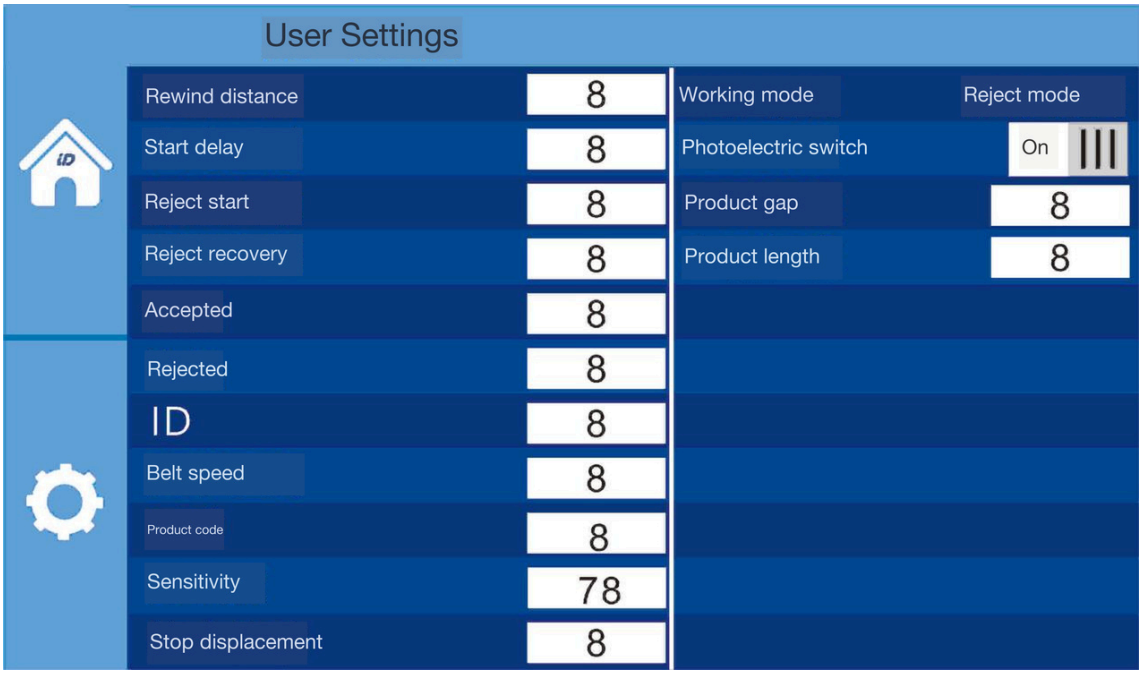


Figure 4-1 User parameter settings page

- Good-product count: press and hold the text for two seconds to clear
- Defective-product count: press and hold the text for two seconds to clear
- Photoelectric gap: the minimum spacing at which the photoelectric sensor can distinguish two items, in centimeters. The smaller the value, the faster the counting response. For creased items, a setting that is too small causes over-counting, while one that is too large — larger than the usual gap between products — counts two items as one. Normally set to 5cm.
- Rewind distance: unit cm; the length of the rewind
- Start delay: unit 10 ms; the delay between machine start and normal detection. If set too short, the machine may not start normally, and vibration at start-up can easily cause false alarms; if set too long, detection right after start-up is not in time.
- Reject start time: unit 10 ms; delay adjustment for starting the reject device on detection. No effect on machines without this function.
- Reject recovery time: unit 10 ms; delay adjustment for the reject device to recover. No effect on machines without this function.
- Belt speed: approximately 35.
- Working mode: this display indicates the working mode; there are several working modes, and the customer taps to select as required. 0: stop automatically after detection; 1: return and stop after detection; 2: return and run automatically after detection; 3: reject.
- Photoelectric switch: tap to switch the photoelectric sensor on or off. 0: off; 1: on
- Sensitivity adjustment: 0-100, entered directly
- Stop displacement: unit cm; the distance travelled past the probe before stopping once a stop is triggered.
- Product length: unit cm; affects the reject position

Chapter 5 Communication Protocol

485 9600 8N1

RX: address code (1) + function code (1) + register start (2) + data length (2) + CRC check (2)

Address 1: 0x1 (the last two digits of the ID);

	Description	Register address	Data	Write command (example)
1	Start 1: LCD start; 3: external physical switch start; 4: 485 communication start	0x0000	1	01 06 00 00 00 01 48 0A
2	Stop		0	01 06 00 00 00 00 89 CA
3	Rewind		2	01 06 00 00 00 02 08 0B
4	Good count	0x0001		01 06 00 01 00 00 D8 0A
5	Defective count	0x0002		01 06 00 02 00 00 28 0A
6	Position lamp	0x0003		01 06 00 03 00 00 79 CA
7	Set sensitivity to X	0x0004		01 06 00 04 00 00 C8 0B
8	Reject stop	0x0005	0	01 06 00 05 00 00 99 CB
9	Reject start		1	01 06 00 05 00 01 58 0B
10	Product number	0x0006		01 06 00 06 00 01 A8 0B
11	Buzzer	0x0007		01 06 00 07 00 01 F9 CB
12		0x0008		01 06 00 07 00 00 08 08
13		0x0009		01 06 00 09 00 00 59 C8
14		0x000A		01 06 00 0A 00 00 A9 C8
15		0x000B		01 06 00 0B 00 00 F8 08

Note: for 485 start, sending data 1, 3 or 4 all start the machine and the reply data is always 4; the start data read back indicates the different start methods

Read command

01 03 00 00 00 0F 05 CE

When a write command is accepted, the same command is returned; if it is not accepted, there is no reply.

Thank you for using our product!

Appendix A Applicable Standard

This product is manufactured in accordance with the light industry standard of the People's Republic of China **QB/T 2638-2023 “Belt-Type Needle Detector”**. The standard was issued by the Ministry of Industry and Information Technology on 2023/7/28 and took effect on 2024/2/1, replacing QB/T 2638-2004. Our company is one of the drafting units of this standard.

The product also holds EU CE certification.

Appendix B Product Warranty Form

Dear user: Thank you for choosing our product. To make our service more satisfactory to you, and to protect your interests, please fill in this form carefully after purchase and keep it safely.

> The product name, model and specification, serial number and production date are those marked on the machine nameplate.

User name	Date of purchase
Contact person	Telephone
Address	Product name
Model and specification	Serial number
Dealer name	Dealer stamp

Warranty terms

1. Warranty period: one year (from the date of purchase).
2. The conveyor belt is a wear part and is not covered by the free warranty; users may contact the dealer to purchase a replacement.
3. In any of the following cases the repair is not covered by the free warranty, and our company has the right to charge repair costs:
   · beyond the warranty period;
   · damage caused by force majeure (flood, fire, earthquake, lightning, typhoon, etc.) or by improper operation or use;
   · the user has had the product serviced, modified, had components changed or wiring altered, on their own initiative or through a third party;
   · this warranty form has been altered, or does not match the product.
4. Products exported to overseas regions are not covered by the free warranty service; paid repair service can be purchased through the dealer.
5. The user should read this manual carefully and operate as specified. After purchase, please return this form to our company (or send a photo of it) for our records as soon as possible.

Manufacturer information

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