

# **E10 Numerical Display System Operation Manual**

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# Chapter 1 Introduction

Thanks for buying E10 CNC controllers. Before using our E10 CNC controllers, I suggest you read this manual very carefully.

Compared with conventional CNC units, E10 has much better cost performance, good looks and higher brightness display, in addition, it also has many special functions to meet the special need of press-braking machine and shearing machinery, such as back gauge single directional gap prompt, X/Y axis screw pitch tolerance offset, soft limit position, time relay, and so on.

The major functions of E10:

- back gauge single directional gap prompt
- soft limit position
- time relay
- counting
- Reference point searching automatic

Basic functions

**E10-D** CNC unit special for press-braking machine

- Press-braking counter
- X/Y axis integration display
- X axis single directional positioning gap prompt
- Y axis screw rod transmitting gap auto offset
- X/Y axis soft limit position
- X/Y axis position teach-in
- 4 groups of internal time replay
- Free setting of proportional factors
- Metric / English conversion
- Position in memory in case of power loss

**E10-S** CNC unit special for Shearing machine

- Cutting counter
- X axis single directional positioning gap prompt
- X axis soft limit position
- X axis position teach-in
- 4 group of internal time replay
- Free setting of proportional factors
- Position in memory in case of power loss
- Metric / English conversion

The above technical specifications are to change without further notice!

# Chapter 2 Specification

## Technical Specification

- 1、 Mounting dimension:
  - Outer housing mount: 186\*138\*84
  - Panel mount: 171\*122\*84
  
- 2、 Panel specification:
  - 2 rows of [6\*7] segment LED display
  - Filmy key-presses of high quality metal spring plate
  
- 3、 Axis specification:

- Stroke range of X axis	0-999999mm/inch
- Stroke range of Y axis	0-999999mm/inch
- X axis display precision	0.1mm/inch
- Y axis display precision	0.01mm/inch
  
- 4、 I/O channel specification:
  - Output channel:

Relay normal on output, touch point electrical current  
1A/DC24V or 0.5A/AC125V
  - Input channel:

15mA input
  
- 5、 Encoder specification:
  - 50KHZ counting frequency
  - Input voltage: DC 12V +/- 4%
  - Maximum current: 200mA
  
- 6、 Input power specification:
  - DC 24V +/- 10%
  - Maximum current: 1A
  
- 7、 Surroundings temperature

- Working temperature	0~50℃
- Storage temperature	-20~70℃

## Chapter 3 Installation and debugging

This chapter will be made available to you to install and the correct method of wiring. For the sake of system security, and ensure that the machine be able to operate normally, you must read the user manual carefully before the installation / wiring.

### 3.1 Installation and wiring Notes

In implementation of the installation, wiring, be sure to turn off the power (Example: the installation of encoder).

Misuse power terminal access, improper connected input and output lines, the output line short circuits cause the system is major injury. So check in before power on, it is necessary to check carefully the power supply and the grounding wires, input and output lines are connected properly.

E10 Series systems' grounding terminal must be properly grounded. And so does as the shell.

Recommend the use of switching power supply.

Separate high voltage from low voltage in the electric cabinet by use of the metal hose, which is connected to the earth.

Installation of inductive load such as electromagnetism valve and AC contactor must connect RC absorber.

In order to avoid any failure, please do not take down the system privately,.

Electronic components of E10 system are all sensitive to static electricity. It will not be allowed to fall into any foreign body insertion or touch the control circuit boards of E10 system.

Select the safety region to install E10 system, prevent heat and direct sunlight, avoid moisture and splash water drop splash.

Do not use in surroundings which has heat, condensate water, dust, soot, conductive dust, corrosive gases, flammable gases.

### 3.2 Installation direction and space

E10 Series systems are in general inlaid in the control panel, keep enough space with the adjacent components and baffle (shell).

### 3.3 Installation surroundings

Free droplets, steam, dust and oily dust places.

No inflammable, explosive, corrosive gases.

No strong electromagnetic noise interference.

Make sure the ambient temperature is at 0 °C between 50 °C. If the ambient temperature exceeds 40 °C, please make sure it is a well-ventilated place.

Make sure the relative humidity is below 90%.

### 3.4 Overall dimensions

E10 Series systems are in the same model dimensions. There are two methods: plastic shell installation and panel installation.

Installation Method 1: plastic shell installation, refer to Appendix 2.

Installation Method 2: panel-type installation, refer to Appendix 3.

## 3.5 Rear Panel

### 3.5.1 Rear panel

On the rear panel (Figure 3-1), there are input instructions, output instructions, encoder interface and connection port (wirings see appendix). The significance of the indicator light will make the following introduction.

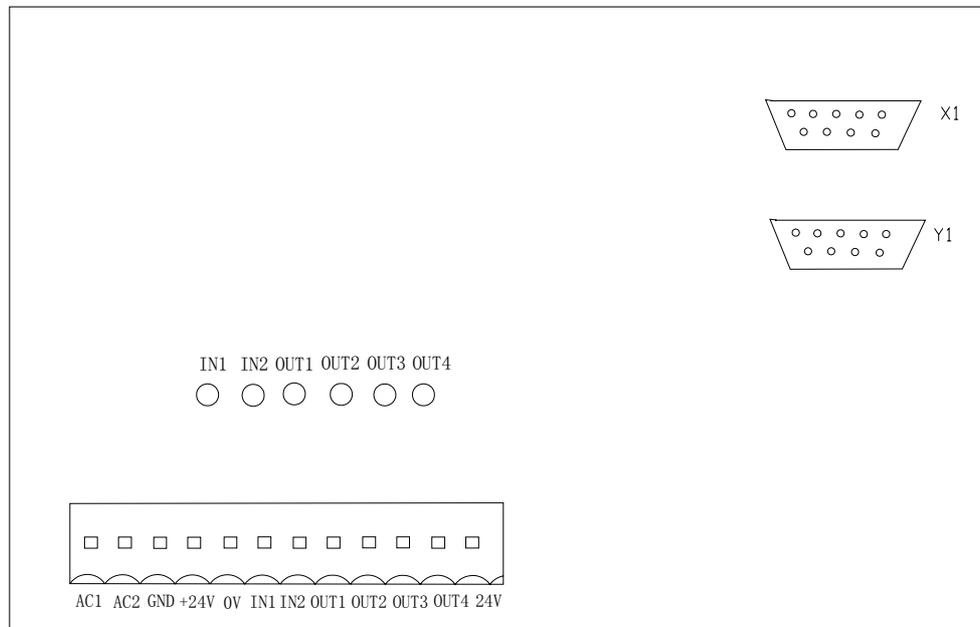


Figure 3-1 Rear Panel

### 3.5.2 Power supply

AC1	-----	power supply of +24 V, or one end of AC power.
AC2	-----	power supply of 0 V, or the other end of AC power.
GND	-----	GND.
+24 V	-----	24 V.

### 3.5.3 Input and output signals

IN1	-----	input channel 1 input (shears for shearing count input signal).
IN2	-----	input channel 2 input.
OUT1	-----	output channel 1 output.
OUT2	-----	output channel 2 output.
OUT3	-----	output channel 3 output.
OUT4	-----	output channel 4 output.
0V	-----	common port of input and output channels.
24V	-----	common port of output channels.

### 3.5.4 Input instructions

Input signal are normally closed (IN1 input shearing signal is normally open), input light lights in the absence of input signal, and extinguishes when the input signal has.

Input indicator light mean:

IN1 ----- indicator light goes out, and input channel 1 has input signal.

IN2 ----- indicator light goes out, and input channel 2 has input signal.

### 3.5.5 Output instructions

In the absence of soft-limit function, the 4 output indicator lights mean:

OUT1 ----- indicator light is light, and output channel 1 has output signal.

OUT2 ----- indicator light is light, and output channel 2 has output signal.

OUT3 ----- indicator light is light, and output channel 3 has output signal.

OUT4 ----- indicator light is light, and output channel 4 has output signal.

In action of soft-limit function, 4 output indicator lights mean:

OUT1 ----- indicator light goes out, and X-axis position is less than the min.

OUT2 ----- indicator light goes out, and X-axis position is larger than the max.

OUT3 ----- indicator light goes out, and Y-axis position is less than the min.

OUT4 ----- indicator light goes out, and Y-axis position is larger than the max.

### 3.5.6 Encoder interface

E10 system panel has two 9-pin encoder interfaces: X-axis encoder interface and Y-axis encoder interface. From top-down look, the first for the X-axis encoder interface; and the second for the Y-axis encoder interface. Pin connection is as follows:

9-pin plug pin encoder phase

Pin No. 1,6 ----- OV-phase encoder

Pin No. 2,7 ----- VCC phase encoder

Pin on the 3rd ----- encoder C / Z phase

Pin on the 4th ----- encoder phase B

Pin on the 5th ----- encoder A-phase

The other pins of the 9-pin plug do not be connected.

## 3.6 System debugging steps

### 3.6.1 Preparation before debugging

Make sure the power cord, grounding line, input and output signal lines and encoder plug are connected and reliable and accurate.

Check input and output wirings.

Make sure the power supply voltage is normal, and check whether it lacks of phase.

Disconnect all air switches to the system power supply before power on, and confirm DC power supply to the system is normal.

Make all air switches electrified after the confirmation of all above.

### 3.6.2 Debugging

1. You must check power and ground wire as well as other wiring is correct before power on.
2. Check if system is working properly, and power off immediately if not.
3. Check the digital interface, all digital tubes should be lit in this time.
4. Enter the interface of the machine parameters, set the machine parameters, then enter the teach in parameters interface, set the parameters of teach in, check digital tube display if the value is correct.
5. Check the input signals.
6. Check the output signals.
7. Measure a machine screw gap through the following simple method.

X-axis is expected to specify as an example.

Firstly, confirm the screw gap parameter of X-axis is set as '0'.

Secondly, make X-axis to walk away at least two screw-pitches in the increasing direction to the location of '100.0', then measure the actual location of X-axis, write it down as X1;

Thirdly, make X-axis to walk away at least two screw-pitches in the decreasing direction to the location of '100.0', then measure the actual location of X-axis, write it down as X2.

And the value of  $(X2-X1)$  is actual screw gap value of X-axis.

Enter the X-axis screw gap value to PAN07 (bending machine) PAN04 (shearing machine).

Measuring for Y-axis is the same as X-axis, and input the value to the PAN08 (only bending machine).

When moving is not one-way positioning manner, the alarm indicator light will be lit.

The alarm shows a one-way positioning must be made.

Make X-axis to walk away some distance (at least greater than the transmission gap) in the increasing direction, and then make X-axis to walk away in the decreasing direction to the origin location, and the alarm indicator light goes out.

### 3.6.3 Actual processing

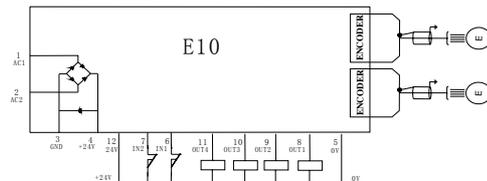
When all the above steps complete, teach in X, Y axis as the actual location.

Do actual processing, measure the finished work-piece, and then adjust the error correction if there is difference.

Note:

1. It is necessary to observe closely whether the motor is running normal.
2. Power off if emergent.
3. Determine whether a output has output by the corresponding indicator light on the rear panel.

### 3.7 E10 electrical design typical application example



**Electrical Design Description:**

The input access method:

1, has to find a reference point function:

Shearing machine : input IN1 (normally open signal) as the shear count signal input, then input IN2 accesses reference point.

Bending machine: input IN1 and IN2 access the reference point.

2, there is no function to find a reference point:

1, has soft-limit function:

Shearing machine : input IN1 (normally open signal) as the shear count signal input, an external relay. IN2 may not access.

Bending machine: input IN1, and IN2 not access.

2, there is no soft limit function:

Shearing machine: input IN1 (normally open signal) as the shear count signal input, an external relay. Input IN2 as a time relay input.

Bending machine: with the Shearing machine, input IN1, IN2 (normally closed) as a time relay input, the signal mode is optional.

Note: input IN1 (normally open signal) as a count signal input, an external relay. Input IN1, IN2 (normally closed) as a time relay input, the signal trigger method is optional (see parameter description 'input level mode').

Detailed in the table below:

Signal	Function			
	Bending Machine		Shearing Machine	
	0	1	0	1
Input 1	Top point	X search ref-point	Top point	
Input 2	Switch point	Y search ref-point	Switch point	X search ref-point

Output access methods:

When E10 has soft limit function:

Shearing machine : the output OUT1 and OUT2 access relay coil externally.

Bending machine: the output OUT1,OUT2,OUT3 and OUT4 access relay coil externally.

When E10 hasn't soft limit function:

Shearing machine : the output OUT1, OUT2, OUT3, OUT4 can be an external relay coil as a time relay output.

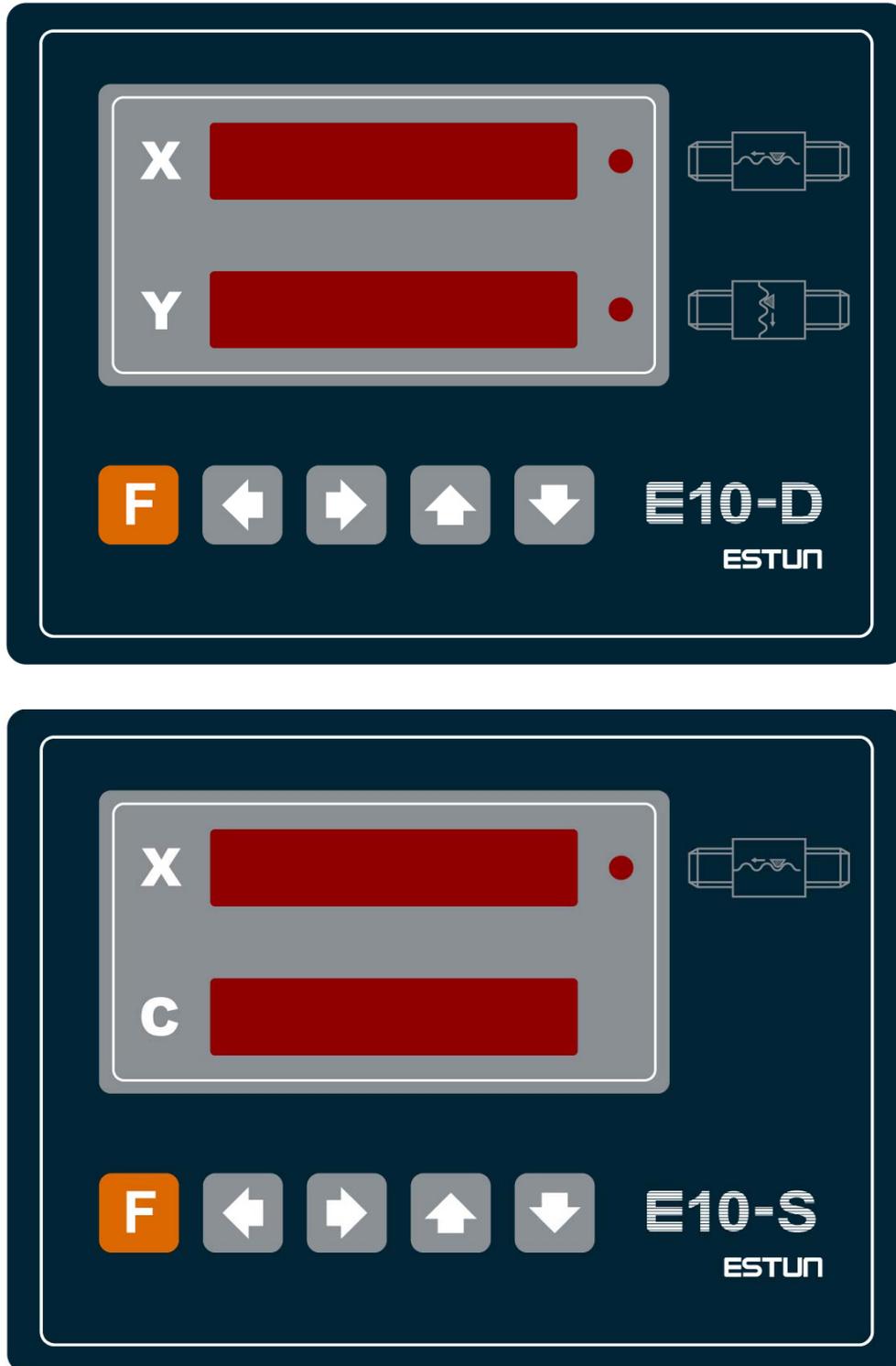
Bending machine: with the Shearing machine.

Detailed in the table below:

Signal	Function					
	0	1	2	3	4	5
Output 1	X min limit	Relay1	Relay2	Relay 3	count	
Output 2	X max limit	Relay1	Relay2	Relay 3	count	
Output 3	Y min limit	Relay1	Relay2	Relay 3	count	
Output 4	Y max limit	Relay1	Relay2	Relay 3	count	

## Chapter 4 Operation Functions

### 4.1 Operation panel



4-1 Front panel

## 4.2 introduction

### 4.2.1 LED lamp

#### **There's one LED lamp in the front panel:**

LED lamp behind the first line digital display

-----Alarm LED. It will be lit if there's no one-side positioning on X-axis, which means screw rod gap still remains.

### 4.2.2 Keys

There are 5 membrane keys in front panel which could be divided into function key, positioning keys and numerical keys according to the functions.

Function keys:



-----Mode key. Used for switching interface or canceling the modification of the parameters.

Positional keys:



-----Leftward moving key, used during parameter editing to move the cursor from current digit to one digit leftward.



-----Enter key. Used for confirming the modification of the parameters.

Numerical keys:

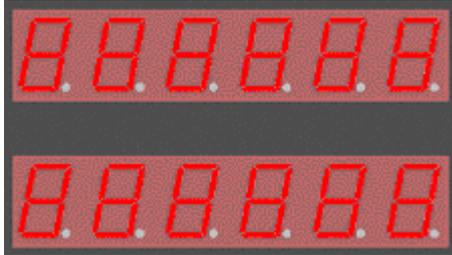


-----Increase key, used during parameter editing to increase current parameter value with 1. (when current value is 9, it will be 0 after pressing this key.)



-----Decrease key, used during parameter editing to decrease current parameter value with 1. (when current value is 0, it will be 9 after pressing this key.)

### 4.2.3 Digital display



There are 12 characters displayed in two lines

Display in normal status:

The first line displays X-axis position.

The second line displays Y-axis position (shearing counters displayed in shearing machine .)

Display in teach-in parameter and machine tool parameter modifications:

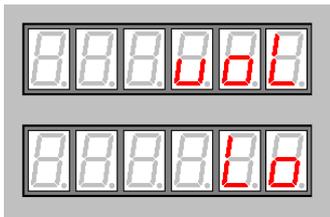
The first line displays parameter numbers.

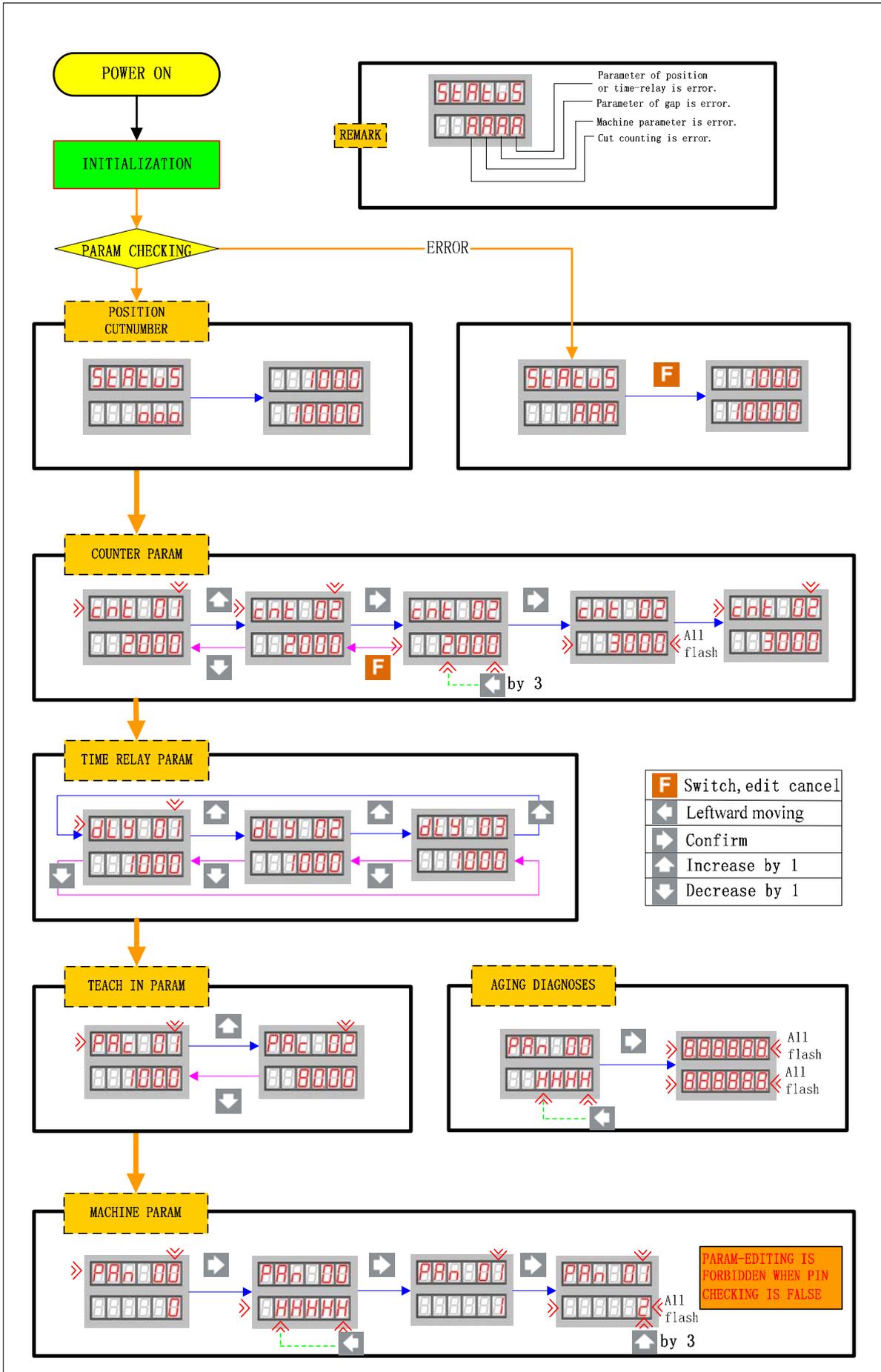
The second line displays the content of corresponding parameter.

### 4.3 Operation process flow

The chart underside describes process of switching all operation interfaces, and how to modify a parameter value.

This interface describes that the voltage is over-low:





## Chapter 5 Parameters

### 5.1 Set a parameter

Power on, press  to enter each parameter interface. Then the first line of digital display shows the parameter num and the second line shows the value of the parameter. Only the value of flashing digit can be edited.

#### 1. Find out the teach-in parameter number that need to be changed

Press numerical keys to change the existing value and press the positioning keys to select the digit to be changed. After entering the new value, press  (enter key) to confirm.

#### 2. Edit the contend of the parameters

Press numerical keys to change the existing value and press the positioning keys to select the digit to be changed. After entering the new value, press  (enter key) to confirm.

#### Notice:

1. Edit of current positions of X-axis and Y-axis must be performed with power OFF.
2. The parameters of machine tools must be set first and then the teach-in parameters if it is the first time setting the parameters.
3. Every parameter has its range. If the preset value exceeds the range, then the parameter will be the max limits as its value.

I will show you how to change the value of parameter 'PAC02' as "100.0" (It is supposed the original value of parameter 'PAC02' is "0.0")

Press  to enter 'teach-in' parameter interface.

Then the first line of digital display shows 'PAC 01' and the last digit "1" will flash.

Press  (increase key) to edit '1' to '2' and press  (enter key).

After that, the digits of first line will all flash once and digit "1" stops flashing. While second line displays 0.0, and the last digit "0" will flash.

Press  (the leftward moving key) for 3 times, and digit "0" on the fourth will be flashing.

Press  (increase key) to edit '0' to '1', then the second line will display 100.0 and digit "1" is flashing.

Press  (enter key) to confirm the edit. After that, all digits of the second line will flash.

Finally, press  to exit Teach-in parameter edit interface.

## 5.2 Counting parameters

CNT 01. Current counting  
Range: 0 — 999999  
Unit:  
Default:

CNT 02. Preset counting  
Range: 0 — 999999  
Unit:  
Default:

Notes:

- 1、 Increasing mode: When the value of CNT01 (current counting) increase to the value of CNT02 (preset counting), counting arrives and port exports.
- 2、 Decreasing mode: When finishing setting parameter CNT02 (preset counting), the value of CNT01 (current counting) will be set the same value automatically. When the value of CNT01 (current counting) decrease to '0', counting arrives and port exports.
- 3、 When parameter CNT02 (preset counting) is set as '0', E10 will count and not export any output signals.
- 4、 If the parameter of port function for counting arrived is not set, then there will be no output.

## 5.3 Time relay parameters

DLY 01. T1 time setting used to set time for relay 1  
Range: 10 — 50000  
Unit: ms  
Default: 1000

DLY 02. T2 time setting used to set time for relay 2  
Range: 10 — 50000  
Unit: ms  
Default: 1000

DLY 03. T3 time setting used to set time for relay 3  
Range: 10 — 50000  
Unit: ms  
Default: 1000

## 5.4 Teach in parameters

### Teach-in parameters for press-braking machine

**PAC 01. X-axis current position** Display X-axis current position  
Range: 0 — 999999  
Unit: Display Unit  
Default : 0

**PAC 02. Y-axis current position** Display Y-axis current position

Range: 0 — 999999  
Unit: Display Unit  
Default : 0

**Teach-in parameters for shearing machine:**

**PAC 01. X-axis current position** Display X-axis current position  
Range: 0 — 999999  
Unit: Display Unit  
Default : 0

## Chapter 6 Machine Parameters

### 6.1 Set machine parameters

- 1、 Press  to enter machine parameter interface. ;
- 2、 Press  to confirm the edit parameter 'PAN— 00', then input pin number '\_\_\_\_\_', ;
- 3、 Press  to confirm, and the interface shows ;
- 4、The first line of digital display shows the parameter num and the second line shows the value of the parameter. Only the value of flashing digit can be edited.

#### Notice:

1. By pressing  and  on the sixth digit ,you can select the value as positive or negative when editing a parameter.
2. Every parameter has its range. If the preset value exceeds the range, then the parameter will be the min limits as its value.
- 3.the range of press-braking machine is“0—75”, and the value will be set as ‘1’ if the preset value exceeds the range.
4. the range of shearing machine is “0—47”, and the value will be set as ‘1’ if the preset value exceeds the range.

### 6.2 Parameters description

#### Press-braking machine parameters:

Parameter No.	Parameter names	Default	User's setting
PAN01	Decimal point position on X-axis	1	
PAN02	Decimal point position on Y-axis	2	
PAN03	Multiple factor of X-axis	4	
PAN04	Multiple factor of Y-axis	4	
PAN05	Dividing factor of X-axis	1	
PAN06	Dividing factor of Y-axis	1	
PAN07	Screw gap of X-axis	0	
PAN08	Screw gap of Y-axis	0	

PAN09	Counter direction of X-axis	1	
PAN10	Counter direction of Y-axis	1	
PAN11	X-axis min position	5.0	
PAN29	X-axis max position	6000.0	
PAN31	Y-axis min position	5.00	
PAN49	Y-axis max position	600.00	
PAN56	Recover the default value	0	
PAN57	Outputs definition	1	
PAN58	X-axis reference point searching set	0	
PAN59	X-axis reference point value	0	
PAN60	Y-axis reference point searching set	0	
PAN61	Y-axis reference point value	0	
PAN62	IN1 level mode	0	
PAN63	IN2 level mode	0	
PAN64	OUT1 level mode	1	
PAN65	OUT2 level mode	1	
PAN66	OUT3 level mode	1	
PAN67	OUT4 level mode	1	
PAN68	OUT1 function mode	0	
PAN69	OUT2 function mode	0	
PAN70	OUT3 function mode	0	
PAN71	OUT4 function mode	0	
PAN72	RLY1 function mode	1	
PAN73	RLY2 function mode	2	
PAN74	RLY3 function mode	0	
PAN75	Counting direction	0	

**Shearing machine parameters:**

Parameter No.	Parameter names	Default	User's setting
PAN01	Decimal point position on X-axis	1	
PAN02	Multiple factor of X-axis	4	
PAN03	Dividing factor of X-axis	1	
PAN04	Screw gap of X-axis	0	
PAN05	Counter direction of X-axis	1	
PAN06	X-axis min position	5.0	
PAN24	X-axis max position	6000.0	
PAN30	Recover the default value	0	

PAN31	Outputs definition	1	
PAN32	X-axis reference point searching set	0	
PAN33	X-axis reference point value	0	
	PAN34	IN1 level mode	0
	PAN35	IN2 level mode	0
	PAN36	OUT1 level mode	1
	PAN37	OUT2 level mode	1
	PAN38	OUT3 level mode	1
	PAN39	OUT4 level mode	1
	PAN40	OUT1 function mode	0
	PAN41	OUT2 function mode	0
	PAN42	OUT3 function mode	0
	PAN43	OUT4 function mode	0
	PAN44	RLY1 function mode	1
	PAN45	RLY2 function mode	2
	PAN46	RLY3 function mode	0
	PAN47	Counting direction	0

Since the difference between shearing machine and press-braking machine only lies in the parameter numbers while the meanings, units, default values are all the same. So we only illustrate the parameters of the press-braking machine in details.

**PAN 01. Decimal point of X- axis**

Range : 0 - 4

Unit: None

Default: 1

Description: Used to fix the position of decimal point of the numbers displayed

**PAN 02. Decimal point of Y- axis**

Range : 0 - 4

Unit: None

Default: 2

Description: Used to fix the position of decimal point of the numbers displayed

**PAN 03. Multiple factor on X-axis**

Range : 1 - 9999

Unit: None

Default: 4

Description: controller accepts pulse signals from the external and displayed in mm. This requires a switching process, which explains why the multiple factor and dividing factor exist.

Multiple factor = number of encoder wires × multiple frequency constant of encoder × display resolution.

The display resolution is relative with the decimal point position. If it is not a decimal number, then the resolution is 1; if it has one digit after decimal point, then the resolution is 0.01; if it has two digits after decimal points, then the resolution is 0.001.

Multiple frequency constant of encoder: the constant in the decode circuit, its value is always 4.

Number of encoder wires: decided by the encoder.

**PAN 04. Y -axis multiple factor**

Range : 1 - 9999

Unit: None

Default: 4

Description: the same as PAN 03

**PAN 05. X-axis dividing factor**

Range : 1 - 9999

Unit: None

Default: 1

Description: dividing factor = screw rod pitch × deceleration ratio between encoder and transfer screw rod.

F = multiple factor / dividing factor.

That is to say, F is used to display the unit plus one, the number of pulse generated from Encoder. Deceleration ratio between encoder and transfer screw rod: the encoder cycle numbers when the transfer screw rod cycles once.

MM:

Multiple frequency constant = 4

Resolution = 0.1

Screw rod pitch = 10mm

Deceleration ratio between encoder and transfer screw rod = 1

That is  $F = 100 \times 4 \times 0.1 / 10 = 4 / 1$

Enter multiple factor 4, dividing factor 1; every 4 pulse represent one displayed unit (0.1mm)

**PAN 06. Y-axis dividing factor**

Range : 1 - 9999

Unit: None

Default: 1

Description : the same as PAN 05

**PAN 07. Screw rod pitch of X -axis**

Range : 0 - 99999

Unit: Display Unit

Default: 0

Description : There are some gaps between screw rods, as for X axis, when the system is working, if the alarm for one-side positioning not done will be triggered is decided by the existence of gap and the distance of the gap.

**PAN 08. Screw rod pitch of Y -axis**

Range : 0 - 99999

Unit : display Unit

Default: 0

Description : There are some gaps between screw rods. As for Y-axis, when gap exists, it could be compensated to avoid fault and position more accurately

**PAN 09. X -axis counter direction**

Range : 0 - 1

Unit: None

Default: 1

Description: 0: Minus  
1: plus

**PAN 10. Y-axis counter direction**

Range : 0 - 1

Unit: None

Default: 1

Description: 0: Minus  
1: plus

**PAN 11. X-axis min position**

Range : 0 - 999999

Unit: Display Unit

Default: 5.0

Description : X-axis min position.

**PAN 29. X-axis max position**

Range : 0 - 999999

Unit: Displays Unit

Default: 6000.0

Description : X-axis max position

**PAN 31. Y-axis min position**

Range : 0 - 999999

Unit: Display Unit

Default: 5.00

Description : Y-axis min position

**PAN 49. Y-axis max position**

Range : 0 - 999999

Unit: Display Unit

Default: 600.0

Description : Y-axis max position

**PAN 56. recover the default value**

Range : 0 - 1

Unit: None

Default: 0

Description : When the parameter is 0, it is not effective. When the parameter is set as '1', all the parameters will recover to the default value.

**PAN57. Outputs definition**

Range : 0 - 1

Unit:

Default: 1

Description : It is suggest not to edit .

**PAN58. X-axis reference point searching set**

Range :0-1

Unit: None

Default: 0

Description: The function of searching for X-axis reference point is available when the value of this parameter sets as '1'.

**Note: When setting the value of this parameter as '1', be sure to modify the location of reference points.**

**PAN 59. X-axis reference point value**

Range: 0 - 999999

Units: Display unit

Default: 0

Description: When the function of searching for X-axis reference point is available, the parameter sets the value as a reference point.

**PAN60. Y-axis reference point searching set**

Range: 0-1

Unit: None

Default: 0

Description: The function of searching for Y-axis reference point is available when the value of this parameter sets as '1'.

**Note: When setting the value of this parameter as '1', be sure to modify the location of reference points.**

**PAN 61. Y-axis reference point value**

Range: 0 - 999999

Units: Display unit

Default: 0

Description: When the function of searching for Y-axis reference point is available, the parameter sets the value as a reference point.

**PAN 62. Input level mode**

Range: 0 - 1

Unit:

Default: 0

Description: level mode selection of input IN1, 0: always; 1: normally close.

**PAN 63. Input level mode**

Range: 0 - 1

Unit:

Default: 0

Description: level mode selection of input IN1, 0: always; 1: normally close.

**PAN 64. Output level model**

Range: 0 - 1

Unit:

Default value: 1

Description: level mode selection of output OUT1, 0: always; 1: normally close.

**PAN 65. Output level model**

Range: 0 - 1

Unit:

Default value: 1

Description: level mode selection of output OUT2, 0: normal open; 1: normal close.

**PAN 66. Output level model**

Range: 0 - 1

Unit:

Default value: 1

Description: level mode selection of output OUT3, 0: normal open; 1: normal close.

**PAN 67. Output level model**

Range: 0 - 1

Unit:

Default value: 1

Description: level mode selection of output OUT4, 0: normal open; 1: normal close.

**PAN 68. Output functionality mode**

Range: 0 - 4

Unit:

Default: 0

Description: function mode selection of output OUT1, 0: Y max limit; 1-3: Timing Relay 1-3; 4: counting to output.

**PAN 69. Output functionality mode**

Range: 0 - 4

Unit:

Default: 0

Description: function mode selection of output OUT2, 0: Y max limit; 1-3: Timing Relay 1-3; 4: counting to output.

**PAN 70. Output functionality mode**

Range: 0 - 4

Unit:

Default: 0

Description: function mode selection of output OUT3, 0: Y max limit; 1-3: Timing Relay 1-3; 4: counting to output.

**PAN 71. Output functionality mode**

Range: 0 - 4

Unit:

Default: 0

Description: function mode selection of output OUT4, 0: Y max limit; 1-3: Timing Relay 1-3; 4: counting to output.

**PAN 72. Relay functionality mode**

Range: 0 - 2

Unit:

Default: 0

Description: function choice of Relay 1, the input port trigger selection, 0: prohibited; 1: IN1 trigger; 2: IN2 trigger.

**PAN 73. Relay functionality mode**

Range: 0 - 2

Unit:

Default: 0

Description: function choice of Relay 2, the input port trigger selection, 0: prohibited; 1: IN1 trigger; 2: IN2 trigger.

**PAN 74. Relay functionality mode**

Range: 0 - 2

Unit:

Default: 0

Description: function choice of Relay 3, the input port trigger selection, 0: prohibited; 1: IN1 trigger; 2: IN2 trigger.

**PAN 75. Counting direction**

Range: 0 - 1

Unit:

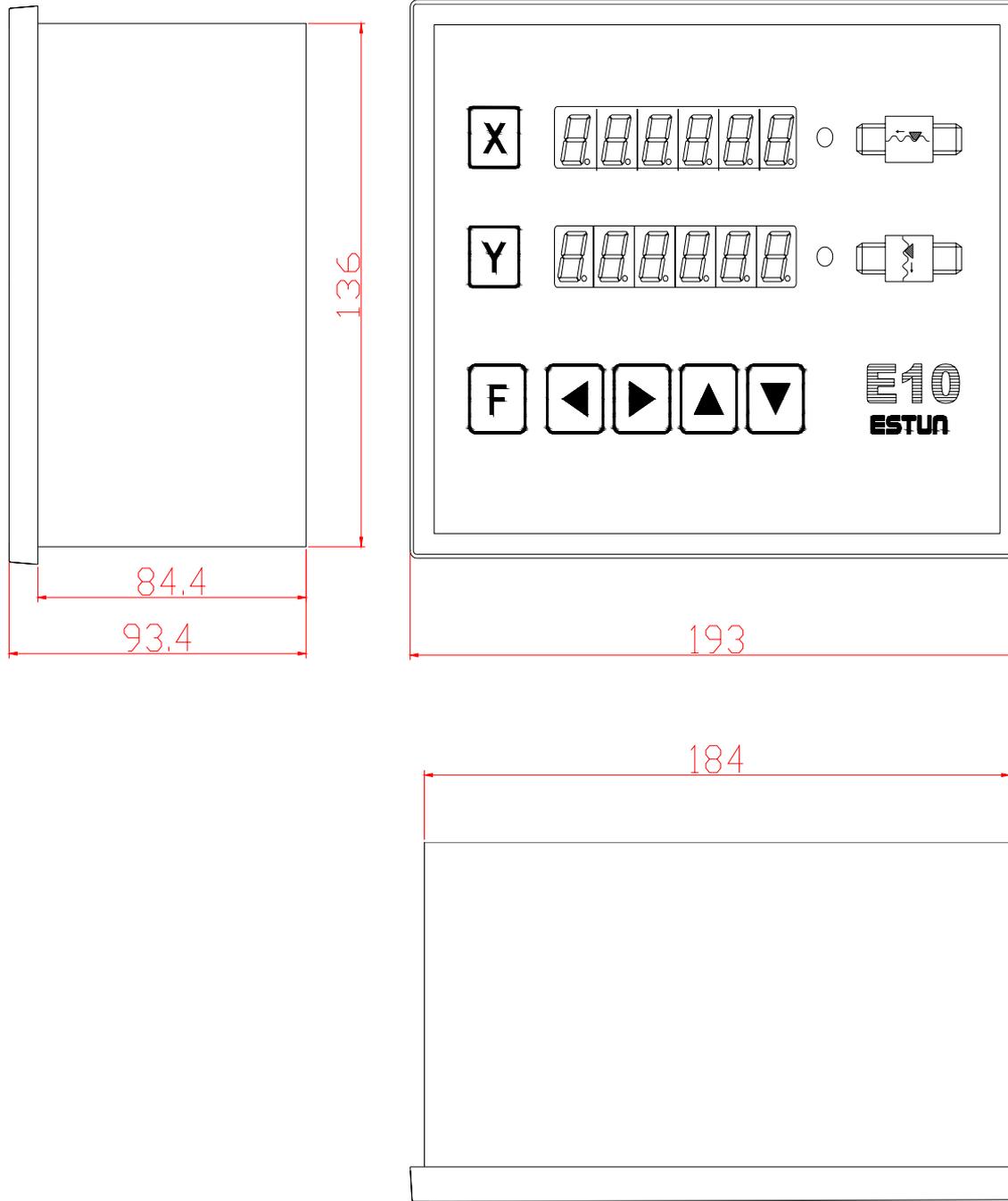
Default: 0

Description: Process counting direction selection, 0: increase counting; 1: decrease counting.

## Appendix 1 Q&A

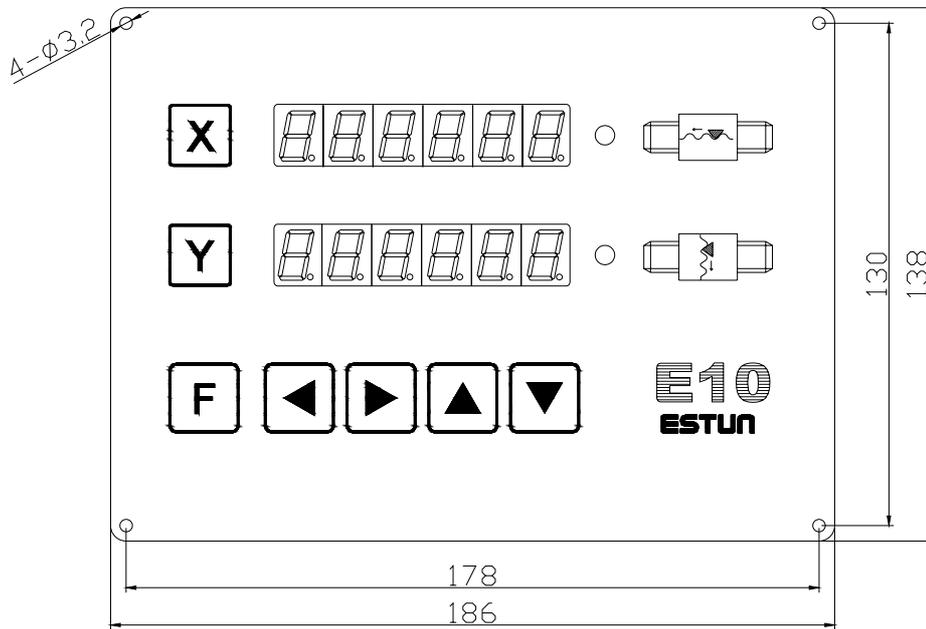
1. Power on, the system has no display. Check the power supply access is correct.
2. If the machine is in run-time, the location of axis does not show or change, check the encoder cable is well-connected.
3. If the system has the input signal but no output signal, then check the timing relay settings are set correctly, and then check the indicator light of corresponding input channel is lit.
4. If the difference between the display value and actual value of the location is too much, please check the multiplication factor, division factor parameters setting is correct.
5. If the counting num keeps zero all the time, please check the shearing count signal accesses to the corresponding input channel correctly.





unit: mm

## Appendix 3 Panel Installation



unit: mm