PCE-LES 400

FIXED LED STROBOSCOPE

USER MANUAL

Preface

Thank you so much for purchasing our products. To ensure optimal performance and safety, read the following instructions.

Read this manual before operation. Wrong installation or use can lead to product damage or personal injury.

The Company follows the principle of continuous development and is subject to changes in product specifications or use manuals without notice. The improved product has a new instruction manual or instructions.

Proprohibited, any transformation of this product! The company shall not assume any responsibility for the accident caused by the unauthorized transformation.

The company guarantees users that each product is strictly in accordance with the company's process production, strict quality control.

Note: Please read the following notes carefully before use

- **operate**

- To avoid instrument failure, use it within the voltage range specified by the product.
- Strobe devices are non-explosion proof product, please do not use in environments with flammable or explosive gas.
- Do not disassemble, process, transform or repair this instrument without authorization, otherwise there will be abnormal action, electric shock or fire possibility.
- Be careful not to allow dust, wire heads, iron chips or other things to enter when installing the instrument, otherwise misoperation or failure will occur.
- Please use a dry cloth to wipe the instrument, do not use alcohol, gasoline or other organic solvents to wipe, do not pour water on the instrument, if the instrument is immersed in water, please immediately stop the use, otherwise there is a danger of electricity leakage, electric shock or fire.
- **Patients with epilepsy who watch the lamp may cause epilepsy, please use it with caution.**

- **keep in repair**

- It is forbidden to disassemble, process, transform or repair the instrument without authorization, otherwise there will be the possibility of misaction, electric shock or fire. For repair, please contact our company.

Chapter 1 The strobe instrument function

The strobe is also called a strobe camera or tachometer, strobe light, etc. The strobe itself can emit a short and dense flash. Adjust the flash frequency of the strobe, make it with the rotation of the measured object (or movement speed close to (or synchronization, although the measured object in high speed movement, but it is slow movement or relatively static, using this kind of visual temporary phenomenon, human eye can easily observe the high speed movement object surface quality and running condition, the strobe flash frequency is the detected object (e. g., motor) speed or movement frequency.

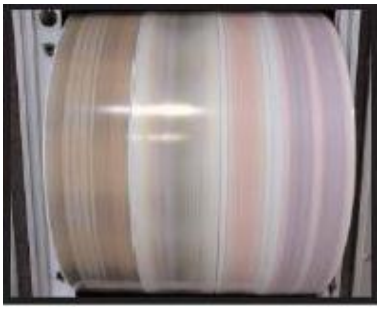


Figure 1. Visual inspection

Figure 2. Use of strobe lights

The duration of the flash flash and the relative brightness of the light can affect the sharpness of the image. The longer the flash duration, the more blurred the image.

It is recommended that the strobe flash brightness is 4 times the brightness of the surrounding environment.

An Overview of Chapter 2

2.1 Overview

The fixed LED stroboscope PCE-LES 400 is a new generation of new energy strobe developed by our company. Internal high-performance microcomputer processing unit, efficient program processing, high precision strobe; LCD screen display data, convenient and intuitive interaction, efficient energy conversion chip, stable and reliable energy output, environmental protection, long life, high brightness, low heat of the whole machine; and array LED beads are arranged with high and uniform brightness.

This strobe instrument is suitable for printing industry, paper industry, textile industry, steel cold rolling, large generator, aluminum foil industry, machinery manufacturing and other industries.

2.2 Product features

- Strobe units Hz, f / m, m / min can be selected, suitable for different use occasions;
- Adopt imported high-power LED, built-in high-performance power module, improve the flash brightness and irradiation distance;
- High luminous efficiency, more uniform light;
- Frequency brightness can be adjusted;

2.3 Main technical indicators

- Working power supply: AC 100V~240V, 50~60Hz;
- Trigger frequency range: 50.0 times / min ~24000.0 times / minute, adjustment accuracy of 0.1 times / minute;1.00Hz ~ 600.00Hz, with the adjustment accuracy of 0.01Hz;
- Flstrobe accuracy: ± 0.01%;

- Frequency display: LCD display screen;
- Working mode: internal trigger and four external trigger modes;
- Strobe units are optional: f / m, Hz, m / min;
- Brightness adjustable: 3-1% flash period, maximum 100us.
- Product series and overall dimensions: 120125125mm

Chapter 3 Introduction to working Methods

3.1 Internal trigger mode

The internal trigger mode refers to the strobe signal provided inside the strobe, and the flash frequency can be adjusted by the button on the operation panel.

3.2 External trigger mode

The external trigger working mode is provided by the external photoelectric eye, Hall switch / proximity switch, photoelectric encoder and other sensors, and the strobe flashes according to the signal frequency to realize the automatic tracking function. The external trigger mode is divided into four working modes: single pulse, perimeter length, encoder and gear.

In the single-pulse operation mode, the strobe detects an external signal and flashes once, which is generally used when the printing pattern movement frequency is consistent with the signal frequency detected by the sensor. For example: with the color mark sensor (photoelectric eye) to detect the color mark of the printing pattern, each after a pattern, the sensor detected a signal, strobe flash once, to achieve automatic tracking.

When the signal detected by the strobe is not consistent with the operating frequency of the pattern, the circumference length, encoder and gear mode can be selected according to the connected sensor.

3.3 Parameter introduction

Parameters of the single-pulse mode: time delay

Delay-represents the angle of the delay, set to range from 0 to 359 degrees.

Parameters of the perimeter standard length mode: perimeter C, standard length d

C-represents the circumference,refers to the length corresponding to two consecutive signals, in mm, maximum 999.9mm; for example, a magnet signal on the driven roller detected by Hall sensor, a signal is generated for each turn of the driven roller, when C is set to the circumference of the driven roller.

The d-represents the distance between two consecutive identical printed patterns, the starting position of the first pattern to the second pattern in mm and maximum 999.9mm.

Parameters of the encoder mode: standard length d

Mode of d-same length.

Parameter of the gear mode: number of teeth t

Teeth number t-represents the number of teeth corresponding to the distance between two identical patterns, set to range from 10 to 200.

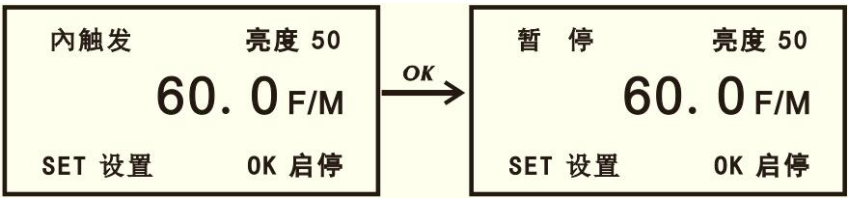
Chapter IV Operating instructions

4.1 Introduction of the operation panel

Key / socket	function declaration
SET	Set the parameters. After the corresponding parameters are back-displayed, press ▲, ▼, +, -key or knob to adjust the data; Long press this key to enter the parameter setting interface
OK	Start strobe or pause strobe function; used to exit the setting interface when setting parameters
▲	Number by 2; for parameter setting, select the menu

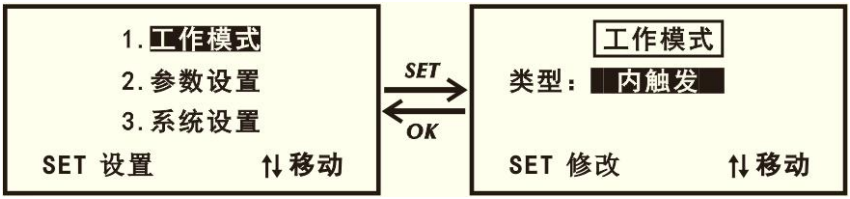
	item up
▼	Number divided by 2; when parameter setting, select the menu item down
+	Number plus one; hold this key for a long time
-	Number minus one; hold this key for a long time
	Modify the frequency or the parameter values
	Power supply master switch
	External trigger signal input socket

4.2 Start up or stop the flash



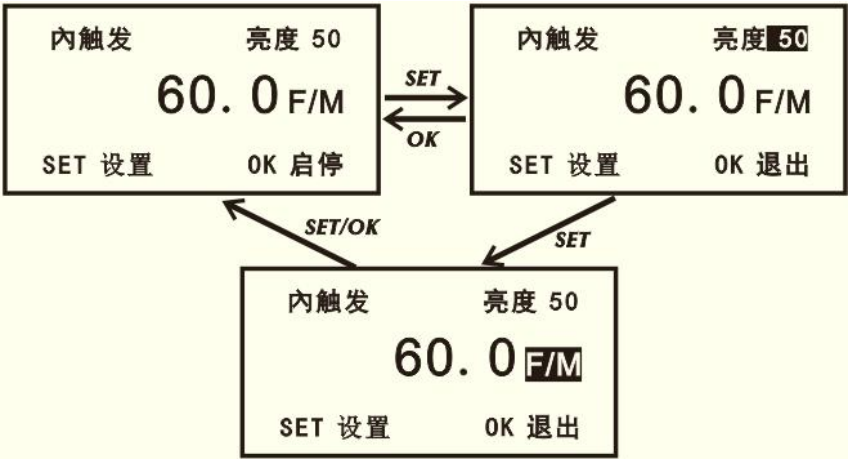
Press OK to start or pause the strobe.

4.3 Switching of working mode



Long press 'SET' to enter the menu setting interface, press ▲▼ to select, working mode, options, press 'SET' to enter the working mode setting interface, press 'SET' to modify the required working mode, press 'OK' to exit the interface.

4.4 Parameter settings



Press SET to select the parameters to be set, press +, -, or turn the knob to modify the corresponding parameters or select the display unit.

4.5 Language settings

Long press "SET 'key to enter the menu setting interface, press' ▲ 'and' ▼ 'key to select" 3. System Settings ", press" SET' key to enter the "System Settings" interface, press "▲ ',' ▼ 'key to select" System Parameters "option, press" SET' key to enter the setting interface, when the language option back, press "SET 'key to switch" in Chinese "and" English ", press' OK" key to exit the setting.

4.6 Estimate the flash frequency

When using the internal trigger operation mode (F00), if you do not know which flash frequency value to adjust to, it can be calculated according to the following formula:

flashing rate $n = \frac{v}{d} \times 1000$

n: Trigger frequency in the strobe device, unit: time / minute;

v: Running speed of the machine in m / min.

d : The distance between two consecutive identical printing patterns, that is, the starting position of the first pattern to the starting position of the second pattern, in unit: mm;

v d For example: speed =100 m / min, pattern spacing =50 mm; trigger flash frequency n = (10050) 1000=2000 times / min. After adjusting the frequency of the strobe to 2000, the pattern is seen standing still or moving slowly, and then fine-tune the situation until the pattern is relatively static.

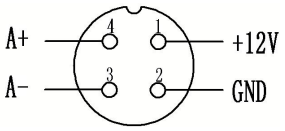
Chapter V. Description of the external interface

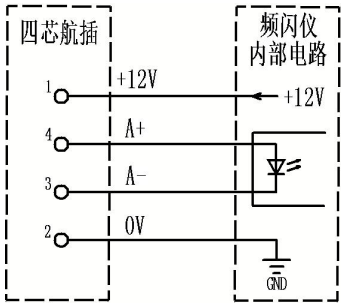
5.1 External trigger wiring

The external trigger interface pin is defined as follows:

- 1 pin —— + 12V —— strobe inside the DC12V ground
- 2 pins —— GND —— strobe internal DC12V power supply
- 3 pins —— A- —— triggers the negative input of the signal A, connected to the photocoupling negative end of the strobe
- 4. The plus input of the trigger signal A is connected to the photocoupling plus end of the strobe

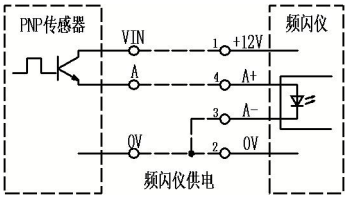
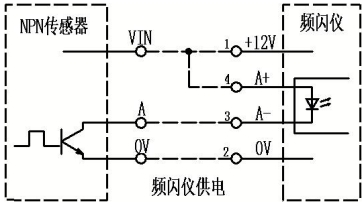
The connection between the four-core air socket and the strobe circuit is shown in the figure below:

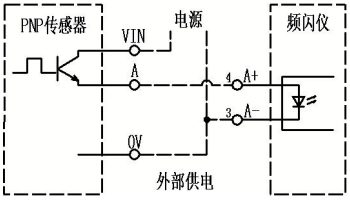
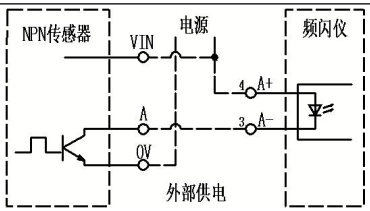




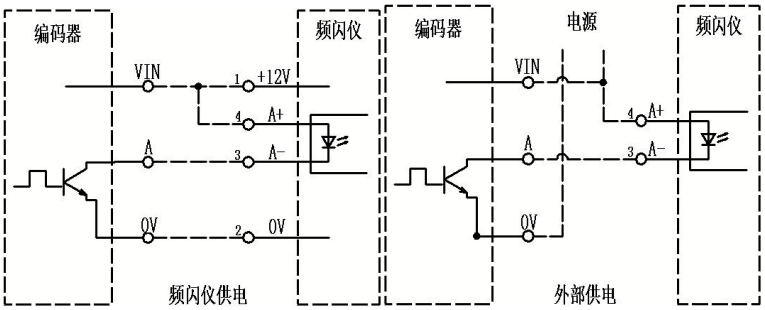
5.2 Sensor wiring instructions

- PNP and NNP type sensor wiring and connection method (using A signal only):

	PNP, sensor	NPN, sensor
Flash power supply		

External power supply		

- Encoder wiring method, connect to phase A or phase B.



Chapter 6 Complete set list

1 x fixed LED stroboscope PCE-LES 400
1 x aluminium slot profile
1 x 4-pin coupling
1 x connection cable
1 x external trigger sensor
1 x fixing screws
1 x user manual

Chapter 7 Disposal

For the disposal of batteries in the EU, the 2006/66/EC directive of the European Parliament applies. Due to the contained pollutants, batteries must not be disposed of as household waste. They must be given to collection points designed for that purpose.

In order to comply with the EU directive 2012/19/EU we take our devices back. We either re-use them or give them to a recycling company which disposes of the devices in line with law.

For countries outside the EU, batteries and devices should be disposed of in accordance with your local waste regulations.

If you have any questions, please contact PCE Instruments.

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