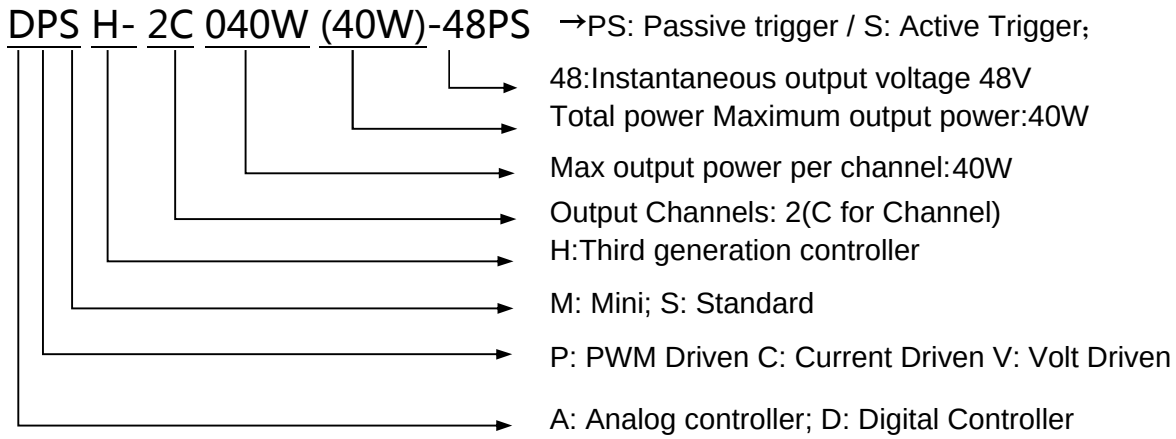
DPSH-2C040W(40W)-48PS

Machine vision light controller operating instructions

Version：V1.0

Content

1、Controller Classification and Naming



Standard Controller：Supply voltage is AC100~220V

MiniController：Supply voltage is DC24V

Passive trigger: Transmit state signal to the controller channels to trigger and control it from outside.

Active Trigger: Externally trigger the channel switch to ON / OFF (open circuit or short circuit triggers the channel pins).

2、Specifications

Features	Values	Description
Control Mode	PWM	Pulsed drive
Input Voltage	AC 110-220V	-
Output voltage	DC 48V	Instant
Channels	2 Channel	-
Manual Control	yes	Adjusted by pressing the key
Remote Control	yes	Through the upper computer software adjustment
Brightness Level Memory	yes	Automatic memory starts in 3s after adjustment
RS232 Baud rate	9600	-
Adjustable Brightness Level	0-999 Level	Manual adjustment by encoder or theupper computer software adjustment
Single channel output power	40W	Single channel light source power ≤40W
External triggering mode	High level trigger	Effective trigger voltage range: 5-24VDC
External trigger delay time	H，ON →OFF＜10us	H:High level trigger； ON and OFF represent the on and off state of LED light
External trigger frequency	＜1/5T	Determined by the external trigger signal, but will be affected by the stroboscopic pulse width
Working condition	Temperature：-10~50℃	-
	Humidity：20~80%	
Storage environment	Temperature：-20~70℃	-
	Humidity：10~90%	
Stand-by power consumption	＜1W	-
Dimension	123×85×158mm	L×W×H

3、Main Functions

◆ The instantaneous 48V output of the controller makes the 24V light source realize the brightening effect.

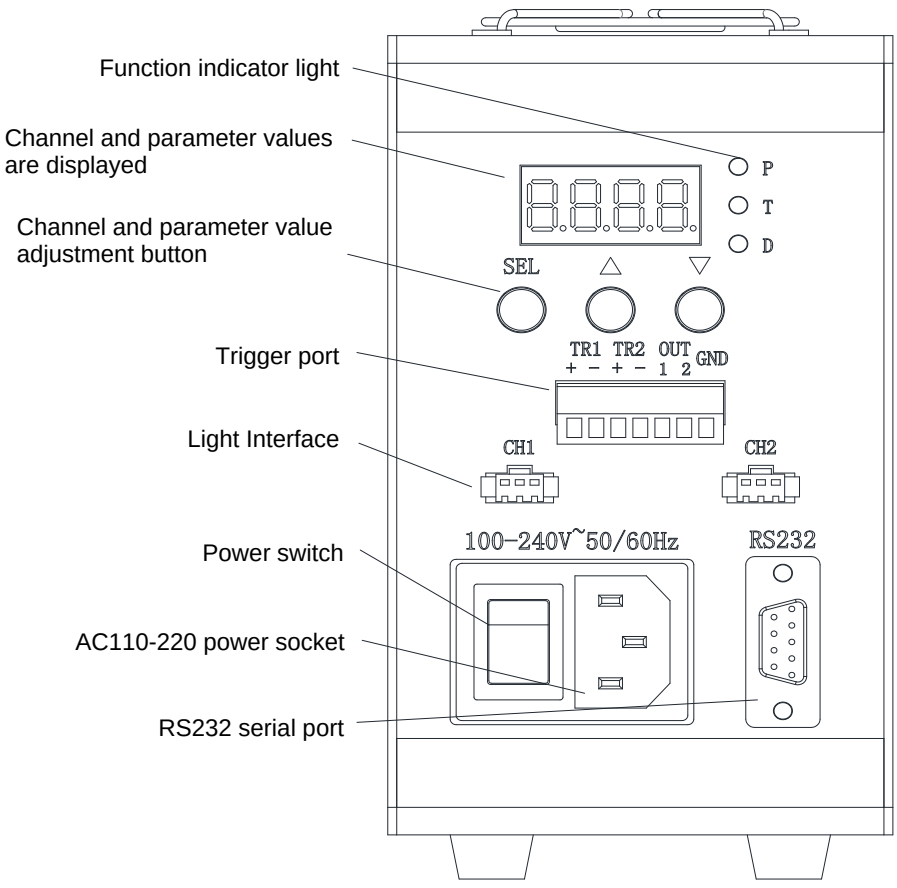
It is divided into two modes: internal trigger mode and external trigger mode.

◆ Internal trigger mode: strobe pulse width adjustable, range 0-999us; Strobe period adjustable, range 5-999ms.

In the internal trigger mode, the controller strobes automatically according to the set strobe.

◆ External trigger mode: strobe pulse width adjustable, range 0-999us; Strobe period root with the external signal (note: external signal period *20%> strobe pulse width); Trigger delay can be set, ranging from 0 to 999ms.

4、Instructions



4.1Manual manipulation

◆ Indicator light:

P represents the strobe pulse width, which is lit when this parameter is set.

T represents the internal trigger period, which is lit when setting this parameter.

D represents the external trigger output delay time, which is lit when setting this parameter.

◆ Digital tube:

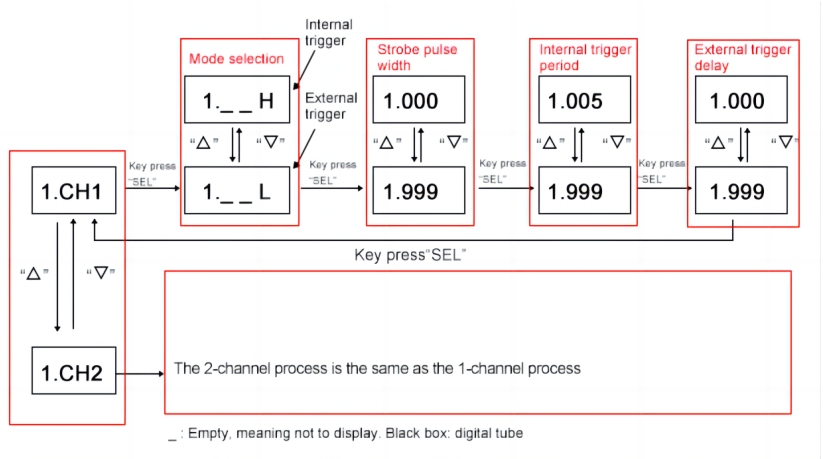
Bit 1: represents the current channel. Last 3 bits: the value in the currently selected mode.

◆ Key: "SEL" is the function switch key. "+" and "-" refer to the increase or decrease operation under the corresponding function.

◆ Operation instructions (Note: if there is no operation for 10S, the digital tube will return to the channel selection interface by default)

Functional options	Indicator light	Digital tube last three digits display
Channel selection	"P" "T" "D" No light	CH1 is channel 1, and CH2 is channel 2
Mode selectio	"P" "T" "D" No light	H/L selection (trigger inside H, trigger outside L)
Stroboscopic pulse width	Only "P" lights up	0-999(Unit: us)
Internal trigger period	Only "T" lights up	5-999(Unit: ms)
External trigger output delay	Only "D" lights up	0-999(Unit: ms)

Digital tube display process is as follows:

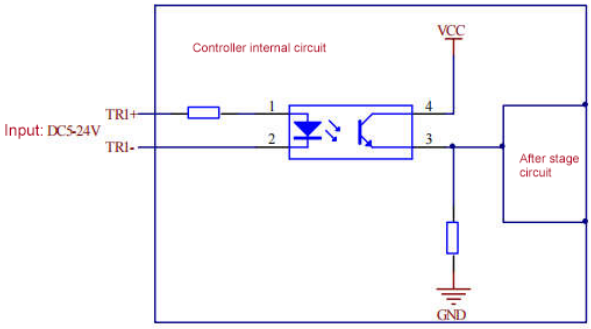


4.2 Port definition

◆ Trigger port:“TR1+”“TR1-”“TR2+”“TR2-”is the external trigger access port.

Trigger signal is high level, DC5-24V.

Wiring diagram is as follows:

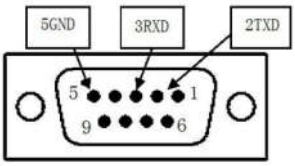


"OUT1" and "OUT2" : represent the positive terminal of the trigger signal to the camera from channel 1 and channel 2 respectively, GND is the common ground terminal, which is used to synchronously trigger the camera to take pictures, and the voltage is 12V.

◆ Light interface: "CH1" and "CH2" are 2-way light source interfaces.

◆ RS232 serial port: connect the computer through the RS232 communication interface. Then through the host computer, the brightness level of each channel is set, and the current brightness level of each channel can be read.

Serial port connection is defined as follows:



◆ Brightness memory function

Through the button on the controller panel or the host computer application software, after adjusting the brightness level of each channel, stop 3S, the controller automatically remembers the brightness level of each channel, and the power is not lost.

4.3 Remote operation

(1) Open the "stroboscope brightening controller host computer V1.0.exe" execution file, the following interface appears:

(2) Interface description

COM port: Select the serial port

COM status: Serial port is not open, serial port is connected

4.4 Communication protocol

Hardware specification

Baud rate	Data length	Stop bit	Parity check
9600 bps	8 bits	1 bit	Without

Data format (frame format)

1byte	1byte	1byte	3byte	2byte
Tagged word	Command word	Channel word	Data	Xor and check words

Note:All communication bytes are in ASCII

- Tagged word＝$
- Command word＝ 1，2，3，4，5，6，7，8。

Defined respectively as：

1：Set the corresponding channel strobe pulse width

2：Read out the corresponding channel strobe pulse width

3：Set the internal trigger period

4：Read out internal trigger period

5：Set the corresponding channel trigger delay time

6：Read out the corresponding channel trigger delay time

7：Set trigger mode (internal trigger/external trigger)

8：Read out the current trigger mode

When the command word is 1,3,5,7, if the controller receives the command successfully, the feature word $ is returned. If the controller fails to receive the command, it returns &.

When the command word is 2, if the controller receives the command successfully, the strobe pulse width parameter of the corresponding channel is returned (the return format is the same as the sending format). If the controller fails to receive the command, it returns &.

When the command word is 4, if the controller receives the command successfully, the cycle parameter of the corresponding channel is returned (the return format is the same as the sending format). If the controller fails to receive the command, it returns &.

When the command word is 6, if the controller receives the command successfully, the trigger delay parameter of the corresponding channel is returned (the return format is the same as the sending format). If the controller fails to receive the command, it returns &.

When the command word is 7, the trigger mode instruction is set to a fixed format as follows. If the controller setup command fails, t returns &.

	Set internal trigger mode	Set the external trigger mode
1 Channel	$7100012	$7100113
2 Channel	$7200011	$7200110

When the command word is 8, if the controller receives the command successfully, the trigger mode parameter of the corresponding channel is returned (the return format is the same as the sending format). If the controller fails to receive the command, it returns &. If the middle three data bits of the return value are "000", it means that the current internal trigger mode is used. If it is "001", it means that the current mode is external trigger.

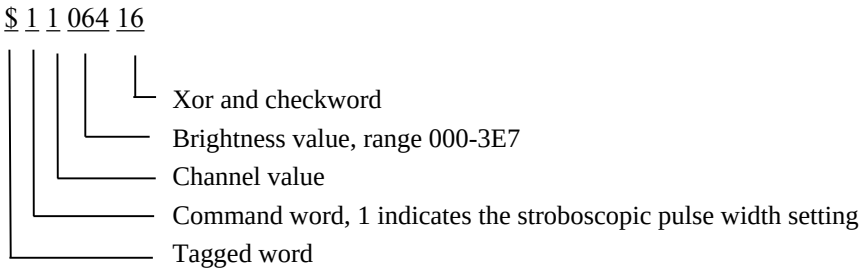
◆ Channel words =1,2 indicates two output channels.

◆ Data = XXX (any value within XXX=000 ~ 3E7), corresponding to the setting parameters of the channel power supply, high bit in the front, low bit in the back.

◆ Xor and checkword = The XOR checksum of bytes (including: feature words, command words, channel words, and data) other than the checkword, with the highest half byte ASCII code first and the lowest half byte ASCII code next.

◆ Note: In the operation process of the four functional XOR check words of command words 2, 4, 6 and 8, the value of the three bytes of the data has no effect on the XOR result, and the format is guaranteed to be XXX (XXX=000 ~ 3E7 any value).

◆ **Example:** Set the first channel strobe pulse width to 100us, then write down "$1106416" in ASCII code



Xor check word operation process is as follows:

	Character string		ASCII code		ASCII codes are represented in hexadecimal		The high half byte and the low half byte are represented by 8421 codes, respectively
Tagged word	$		36		24		0010 0100
Command word	1		49		31		0011 0001
Channel word	1	→	49	→	31	→	0011 0001
Data	0		48		30		0011 0000
	6		54		36		0011 0110
	4		52		34		0011 0100
Xor sum							0001 0110
Xor check word							1 6

Set the success return value: $ Sets the failure return value: &

Set the trigger period value in the second channel to 300ms, then write down "$3212C65" in ASCII code.

	Character string		ASCII code	ASCII codes are represented in hexadecimal		The high half byte and the low half byte are represented by 8421 codes, respectively	
Tagged word	$	→	36	→	24	→	0010 0100
Command word	3		51		33		0011 0011
Channel word	2		50		32		0011 0010
Data	1		49		31		0011 0001
	2		50		32		0011 0010
	C		67		43		0100 0011
Xor sum							0110 0101
Xor check word							6 5

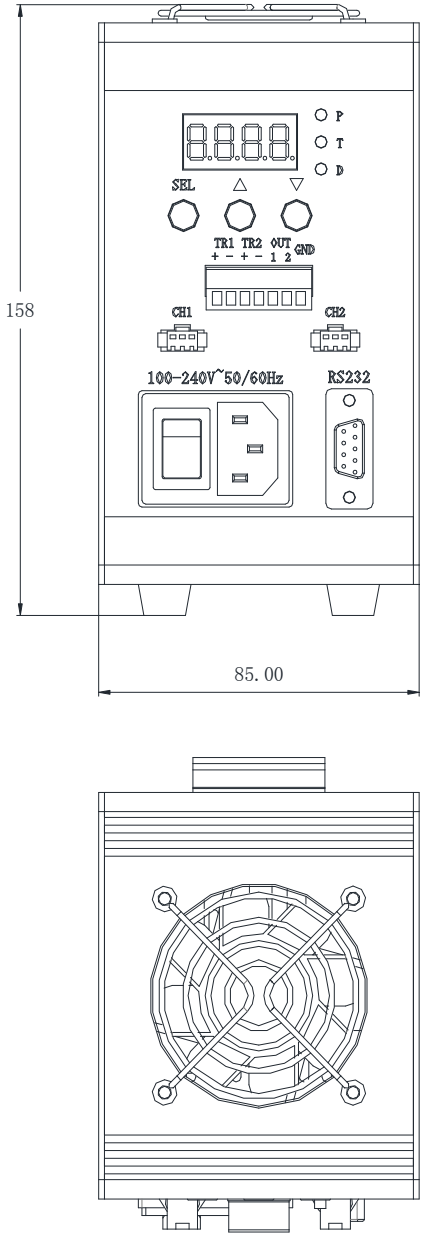
Set the success return value: $ Sets the failure return value: &

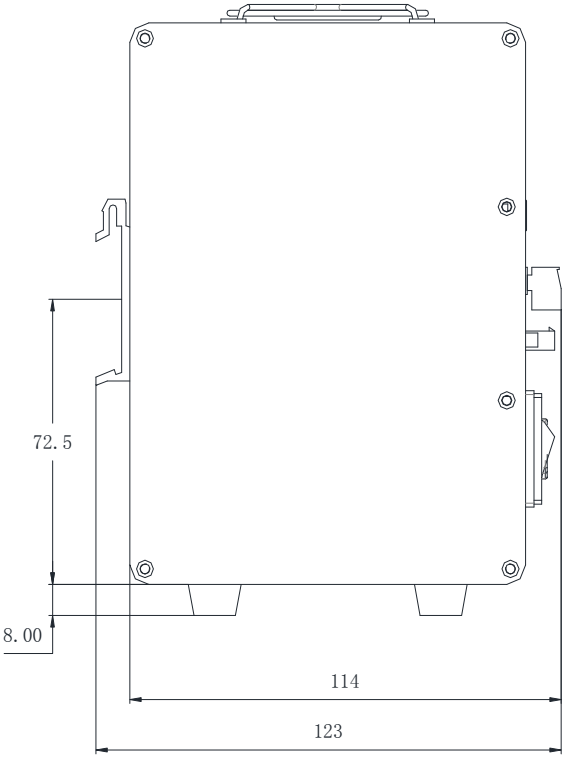
Read the second channel mode, if the second channel is currently in external trigger mode, write down "$820001E" in ASCII code.

	Character string		ASCII code	ASCII codes are represented in hexadecimal		The high half byte and the low half byte are represented by 8421 codes, respectively	
Tagged word	$	→	36	→	24	→	0010 0100
Command word	8		56		38		0011 1000
Channel word	2		50		32		0011 0010
Data	0		48		30		0011 0000
	0		48		30		0011 0000
	0		48		30		0011 0000
Xor sum							0001 1110
Xor check word							1 E

Returned value：$820011F (Note: 000 means internal trigger, 001 means external trigger)

5、Dimensions





Accessory List

Name	Quantity	Remark
DPSH-2C040W(40W)-48PS controller	1	
RS232 serial port line	1	
7PIN Green male terminal	1	
220V/10A power cable	1	