OPERATION MANUAL
LED DIGITAL STROBOSCOPE
40.0 to 99,999 FPM

Please read the following instructions carefully before putting the LED Stroboscope to use

FEATURE

This stroboscope / tachometer employs an exclusive one-chip microprocessor circuit and crystal time base and signal generator which result in extraordinary accuracy over a wide, dynamic range.

Crystal time base and microprocessor circuit, do not necessary take any external calibration process.

The model DS-9000 is microprocessor circuit design, high accuracy, digital readout, keyboard operating, light duty STROBOSCOPE / TACHOMETER that is ideal for inspecting and measuring the speed of moving gears, fans, centrifuges, pumps, motors, grinders and virtually all processing equipments used in general industrial maintenance, production, quality control, laboratories , academic applications etc. And it is also ideal for demonstrating strobe action in schools and colleges
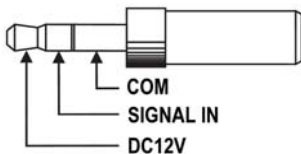
OPERATION

1) Plug into a properly power source. Press the power switch to turn on the power, and the strobe will flash at last FPM before turn off.
2) Aim the light beam at the marks object under observation
3) Press the △ / ▽ / ÷2 / ×2 to increase or lowers the currently FPM value until the images become stop motion.

STROBOSCOPE DESCRIPTION
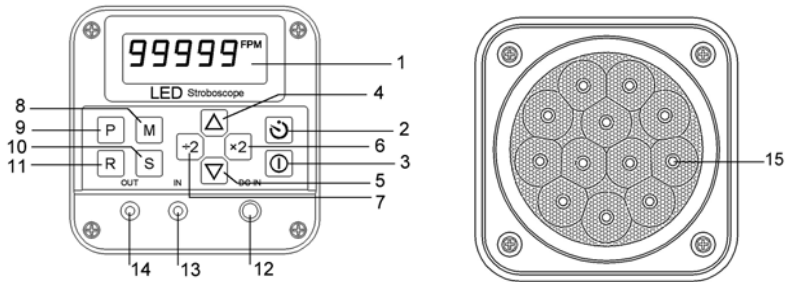

1) Display
2) Timer
3) Power Switch / Enter
4) Up Counter Adjusting
5) Down Counter Adjusting
6) Double FPM (x2)
7) Halves FPM (÷2)
8) Mode Function Select
9) Internal Trigger Phase Shift Adjusting
10) Store Memory (M1, M2, M3)
11) Recall Memory (M1, M2, M3)
12) Power Adaptor Input (2.5 mm Shaft)
13) External Trigger socket (3.5mm phone socket) see Fig. A
14) Signal Output Socket (3.5mm phone socket) see Fig. B
15) LED Flash Lamp

A. External Signal Trigger Plug   B.   Signal Output

COM
SIGNAL IN
DC12V

COM
SIGNAL OUT
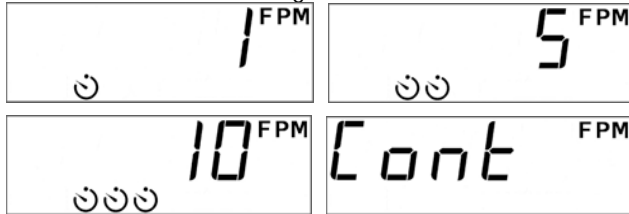
2
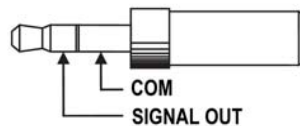
KEYBOARD OPERATING DESCRIPTION

POWER SWITCH / ENTER

Pressing the POWER switch button for power ON or OFF.
When store the setting FPM to memory M1, M2 or M3, and recall FPM from M1, M2 or M3, it should press "ENTER" for done.

TIMER

Pressing the TIMER button for turn off the units after 1, 5 10 minutes or continue working.
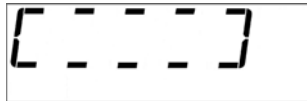
MODE

Pressing the Mode button for select function FPM / Hz or External trigger.

TRIGGER PHASE SHIFT

Internal Flash mode trigger phase shift. It will change the degree of phase shift 1° per step when the button is held down.

MEMORY RECALL

Recall the FPM setting from memory M1, M2 or M3, pressing the button for select and press "ENTER" button for done. It will give up after 20 seconds if not pressing "ENTER".

3

STORE TO MEMORY

S
STORE

Store the currently set FPM to memory M1, M2 or M3. Press the button for select and press "ENTER" button for done. It will give up after 20 seconds if not pressing "ENTER".

INCREASE SETTING FPM

△

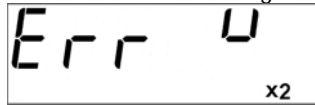Pressing and held down this button, it will increase currently FPM.

LOWER SETTING FPM

▽

Pressing and held down this button, it will lower currently FPM.

DOUBLES THE SETTING FPM

×2

Pressing the button will doubles the current FPM, the maximum is 99,999 FPM. It will show the error message when doubles the setting value is over the maximum range.
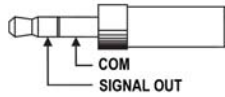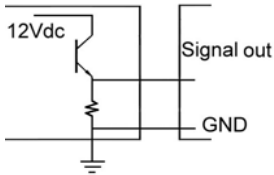
$$Err \; U$$
×2

HALVES THE SETTING FPM

÷2

Pressing the button will halves the current FPM, the minimum is 40.0 FPM. It will show the error message when halves the setting value is lower the minimum range.
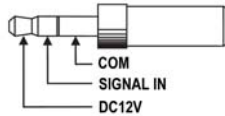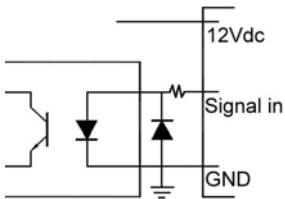
$$Err \; n$$
÷2
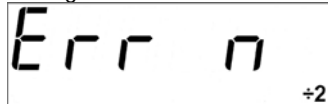
SIGNAL OUTPUT

Suitable 3.5mm jack
(not included)

Signal output can be used for DS-9000 (LED), DS-1000 (Tube) or other stroboscopes trigger signal source.

SIGNAL INPUT

Suitable 3.5mm jack
(not included)

External trigger input signal maximum 12,000 RPM (200 Hz). It will turn off the LED lamp and LCD show flash mark "Ext" when input signal over 200 Hz..

⚠ This instrument contains no operator serviceable parts. Service by qualifier persons only.

⚠ Stroboscopes give the illusion of stopped motion. Do not touch the machine or object being observed.

⚠ This appliance is not intended for use by persons (including children) with reduced physical , sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.

CHECKING SPEED

When checking speed, care must be taken to insure that the strobe is flashing in unison (one to one) with the object being monitored.

A stroboscope will also stop motion at 1/2, 1/3, 1/4, etc., this is normally referred to as harmonics.

To obtain correct rpm, from high rpm down to low rpm. When the first single image appears, it is the true rpm.

True RPM	Stroboscope Display	Multiple	Stop Motion Images
	12,000	4	4
	9,000	3	3
3,000	6,000	2	2
	3,000	1	1
	1,500	1/2	1
	1,000	1/3	1

Mark of True Speed

Marks of Stop Motion Images

GENERAL SPECIFICATION		
Model No.	DS-9000	DS-9001
LED Lamp	12 pcs - 8mm 1Watt LED Lamps	
Range Flashes	40.0 – 99,999 FPM	40.0 – 10,000 FPM
Resolution	0.1 RPM / FPM (BELOW 2,000 FPM) 1 RPM / FPM (ABOVE 2,000 FPM)	
Display	5 Digits 10 mm LCD with backlight	
Accuracy	$\pm$(0.02%+3 digits) of setting	
Timer	1, 5, 10 Minutes, Continue	
Internal Phase Shift	Trigger Phase Adjustable	
External Triggers	12Vdc for Sensor (max. 12,000 FPM / 200Hz)	
Signal Output	12V Signal output (3.5mm Phone Jacks)	
Memory	M1, M2, M3	
Flash Duration	Automatic Adjusting from 4.5 uS. to 68 uS.	
Power Supply	AC100V - 240V / DC 5V 3A Adaptor	
Power Consumption	About 4 Watts. (at 60,000 FPM)	
Operating Temperature	0 – 45°C (32 – 113°F)	
Operating Humidity	Below 85%	
Dimension	115 x 115 x 200 mm (Not including handle)	
Weight	About 1.5 Kg / 3.3 Lbs	

AFTER SERVICE CENTER