

Instruction Manual SB

XENON HANDHELD STROBOSCOPE



This stroboscope is a complex and advanced instrument, small in size, light and convenient to handle. It is mainly used to

- visualize oscillations and movements of fast moving objects
 - find out the rotation speed of fast moving objects
- Please read the following instruction manual carefully and always keep it within easy reach.

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1. Features

* When the speed of a moving object matches the flash rate of the stroboscope, the moving object seems to stand still. This phenomenon is called visual persistence, because the user is given the illusion of a "stopped motion". In actuality the observed object is in motion. With a slight adjustment, the movement can be viewed in an apparent slow motion. With this, the observer is enabled to study the process in action.

- * Wide measuring range and high resolution
- * The digital display gives an exact reading without any errors.
- * Flash timer control conserves flash tube life.
- * External trigger allows the instrument to be automatically synchronized with the equipment.
- * Strong flash light at low range and weak flash light at high range.

2. Specifications

Display: 10mm (0.4") LCD (Liquid Crystal Display)

Parameters measured: FPM (Flashes per Minute)

Ranges: SB 12K0.1: 50 to 12000 FPM
SB 20K0.1: 50 to 20000 FPM
SB 30K0.1: 50 to 30000 FPM
SB 40K0.1: 50 to 40000 FPM

Resolution: 0.1 FPM (50- 999.9 FPM)
1 FPM (over 1000 FPM)

Accuracy: $\pm (0.05\%n+ 1d)$

Sampling time: 0.3 seconds

Internal/ external triggering conversion
External trigger level: 3-24V



H/L range: flashing light is much brighter at low range than at high range

Strobe flash tube type: Xenon lamp

Brightness: 51 Lux (at 1 m distance)

Operating conditions: Temperature 0 to 40°C
Humidity < 85%RH

Power supply: 220V A.C. (Default)
110V A.C.

With x2, :2 for fast check

Size: 215 x 85 x 180mm (8.5 x 3.3 x 7.1 inch)

Weight: about 1000g

Accessories: Carrying case
Operation manual
Spare flash tube

3. Front panel description



- 3- 1 Flash tube
- 3- 2 Power Switch
- 3- 3 Display
- 3- 4 Range switch
- 3- 5 Coarse (Flashing rate adjusting knob)

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- 3- 6 Fine (Flashing rate adjusting knob)
- 3- 7 Jack for external triggering signal
- 3- 8 Internal/ external triggering button
- 3- 9 "x2" button for fast check
- 3-10 ":2" button for fast check

4. Measuring procedure

4.1 The object to be measured has to be "marked" by either visually noting an inherent distinguishing characteristic (such as a label, scratch, etc.) or it has to be marked physically with a small piece of tape, pencil mark, etc.

4.2 The supplied power cable has to be plugged into the power cable jack of the instrument. The other end of the cable has to be plugged into an appropriate AC power source. It may not be plugged into an incorrect power source, the instrument will be damaged.
With the button 3-2 ON/ OFF the instrument can be turned on/ off.

4.3 The H/L button 3-4 has to be pressed to select the high range or the low range. For different models, the upper limits vary. It has to be remarked that flashing light is much brighter at low range than at high range, in order to prolong lifetime of the strobe light.

4.4 The Coarse knob 3-5 or the Fine knob 3-6 has to be adjusted from the highest FPM downward. The true RPM can be noted once the frozen appears and the first single image of "Mark" appears. For this, see the chart in table 1 and the accompanying diagram for further explanation.

4.5 To verify the RPM reading, ":2" has to be pressed and a single image should appear again. If "x2" is pressed, two images should appear.

4.6 The RANGE button has to be used to select the desired range while measuring. The low range is used for measurements below 2.500 RPM (for E type) or 5.000 RPM (for A to D type). At low range, flashing light is much brighter.

4.7 The Ext/ Int button has to be used to select the external trigger or internal trigger way as desired.

5. Notes

5.1 The instrument was established to visualize fast rotating objects and let them appear to stand still. Precaution, any contact with the moving objects can cause an accident!

5.2 Do not look at the emitted light for long periods of time; It can be harmful to the eyes.

5.3 The flash tube may not be touched.

5.4 The instrument may not be used or stored in following surroundings: explosive areas, near water, oil, dust, chemicals or areas where the temperature is too high.









6. Flash tube replacement

In case if the reading is displayed but the instrument is not flashing, it might be necessary to replace the tube.

7. Auto stop flashing

The strobe light of the stroboscope will stop flashing about 5 minutes after it has been powered on in order to prolong lifetime.

Table 1

Shaft Rotation n and Flashing n_0 relationship	Stopped Images	note
$n=n_0$		Single images
$n=k n_0$ $k=1, 2, \dots$		Single images
$n= \frac{1}{2} n_0$		2 images
$n= \frac{3}{4} n_0$		4 images
$n= \frac{5}{2} n_0$		2 images
$n= \frac{1}{3} n_0$		3 images
$n=n_0-\Delta n$		single image moving oppositely
$n=n_0+\Delta n$		single image moving same direction

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8. Declaration of conformity



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Konformitätserklärung

Declaration of conformity for apparatus with CE mark
 Konformitätserklärung für Geräte mit CE-Zeichen
 Déclaration de conformité pour appareils portant la marque CE
 Declarația de conformitate pentru aparate cu marca CE
 Dichiarazione di conformità per apparecchi contrassegnati con la marcatura CE

- English:** We hereby declare that the product to which this declaration refers conforms with the following standards.
- Deutsch:** Wir erklären hiermit, dass das Produkt, auf das sich diese Erklärung bezieht, mit den nachfolgenden Normen übereinstimmt.
- Français:** Nous déclarons avec une responsabilité que le produit, auquel se rapporte la présente déclaration, est conforme aux normes citées ci-dessous.
- Italian:** Manifestiamo in la presente sul il prodotto al quale si riferisce esta dichiarazione est "a di accordo con le norme seguenti.
- Italian:** Dichiaro con ciò che il prodotto al quale si presente dichiarazione si riferisce è conforme alle norme di seguito citate.

Stroboscope: SAUTER SB

Mark applied	EU Directives	Standards
	EMC Directive 89/329/EEC	EN 61326 (2007) IEC 61326-1:2007 EN 61326-2-1:2007

Date: 07.01.2008

Signature:



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