Multi-Function Stroboscope with memory

TYPE 0130

OVERVIEW

The 0130 stroboscope is a bright white LED strobe unit with a 4-digit LED readout. It is suitable for use in a broad range of applications in the field of periodic motion, including:

- Inspection, performance monitoring and diagnosis of rotating machinery in operation;
- Vibration and resonance studies; measurement of amplification factors:
- Timing and phasing adjustments;
- Precision speed and frequency measurements;

PRODUCT OUTLINE

The 0130 multi-function strobe generates a variable-frequency flash using high-intensity white LED's, yielding sharp, bright strobe images. The frequency in flashes per minute is derived from an embedded microcontroller and the value is displayed on a large 4-digit LED readout. The operator controls are simply a 5-key tactile keypad and a multi-turn fine frequency adjustment.

With this handheld unit, all of the above measurements can be made at a safe distance from the object under test. The machine or apparatus does not need to be shut down or modified in any way.

A built-in memory function facilitates the performance of tests involving diverse speed/frequency measurements, or repeated readings of the same parameter.

Unlike many strobe units, the control response is virtually instantaneous, and there is no discernible delay between a step change in the frequency settings and the new flash rate.

The keypad is fully sealed and has large well-spaced buttons which allow convenient one-handed use, even when the operator is wearing gloves.

Type 0130 is electrically and mechanically rugged, and is well suited for use in plant rooms, boiler houses, and other hostile operating environments.

The unit operates from safe low voltages using either a step-down mains adaptor or a 12V sealed lead-acid battery, as appropriate. The battery is supplied in a convenient carry bag to enable tether-free operation in the field and in indoors locations remote from power outlets.

Provision is made for tripod mounting to facilitate the conduct of longer-term tests and investigations, and tests where personnel must remain at a distance for safety reasons.

The strobe can be triggered from an external input as an alternative to the built-in precision frequency control.

To conserve battery power, the flash head can be turned off separately from the main power switch. This leaves the internal memory function and all operating controls unaffected.

The frequency controls include **UP** and **DOWN** buttons, a fine-tuning knob, and a ***/2** (multiply /divide by two) button. The latter control provides a convenient means of checking for double images (see below).

The internal memory feature can be used to store readings for later recall. This is useful for pre-selecting commonly used values of speed and frequency, and also for comparing/recording the values obtained in a series of measurements.

A socket is provided for an external trigger input where required. The detection of the external trigger pulses is automatic, and this signal then controls the flash independently of the user control settings. The strobe continues in the **external trigger** mode until one of the keypad buttons is next depressed, when it will automatically return to **internal** mode.

OPERATION

Operation of the 0130 strobe is straightforward. The strobe light is aimed at the target object and the flash frequency is adjusted. When the flash rate approaches synchronism with the target, the image appears to slow, and a stationary image will be obtained at exactly one flash per revolution or cycle of the relevant object.

Since a stationary image can also be obtained at *one-half* the correct flash rate, it is sometimes necessary to check that true synchronism has been achieved.

Using the ***/2** button, the frequency can be instantly advanced to twice the current setting. If a double image results, then the original frequency was correct and this setting can be restored by a second operation of the ***/2** button. However, if a brighter single image is obtained, then the new (higher) frequency is correct.

Of course, these steps are unnecessary if the target speed/frequency is approximately known from the outset.

ORDERING INFORMATION

0130SX multi-function strobe including handheld unit, 120 - 240V ac power adaptor, AC power cord, and operator manual;

0130.01 sealed lead-acid battery with 1.5 metre connecting cable, in carry bag with shoulder strap;

0130.02 automatic battery charger to suit 130.01 battery;

0130.03 shielded 5-metre external trigger cable;

0130.04 instrument-quality adjustable mounting tripod;

0130.05 cable for external (non-standard) battery or dc power source.

SPECIFICATIONS

Parameter	Value	Units
Speed/freq. range	230-9999	min^{-1}
Accuracy	±1	min^{-1}
Display resolution	±1	min^{-1}
Display update delay	<200	ms
Strobe irradiance#	21	W/m^2
Power supply	100…240V ac, 50…60Hz	
	10…14V dc	
Operating temperature	0…45	ºC
External trigger signal	TTL level	
0130.01 battery pack		
-capacity	7.0	A.h
-operating endurance	5 (typ)	h

Measured at 300mm distance. Further photometric data is available on request.

DIMENSIONS

0130SX handheld unit	222 x 88 x 45mm 420g (approx.)
0130SX ac power adaptor	118 x 58 x 37mm 286g (approx.)
0130.01 battery pack	190 x 85 x 148mm 2940g (approx.)

ELECTROMAGNETIC COMPATIBILITY

Type 0130 is fully compliant with the requirements of Australian and New Zealand Electromagnetic Compatibility Standards. **N10563**

`

DISTRIBUTOR

GNS ASSOCIATES PTY LTD
1 HORACE STREET MALVERN VIC. 3144
AUSTRALIA
TEL +61 3 9509 2203 FAX +61 3 9576 0635
EMAIL info@gnsassoc.com.au
WEB www.gnsassoc.com.au