

ELECTRO-OPTICAL PRODUCTS CORP.

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LOW FREQUENCY OPTICAL MODULATOR/SHUTTER CH-61 VARIABLE FREQUENCY CHOPPER



FEATURES AND ADVANTAGES:

- *Frequency from DC to 50 Hz
- *LOW COST
- *Aperture 0.34" (8.7mm) Dia
- *Jitter free operation
- *High frequency stability (to 0.005%)
- *Small size
- *Withstands shock and vibration
- *High reliability, long life
- *Accepts external clock input
- *Phase locking to an external input
- *Can be stopped in the "ON" or "OFF" position
- *No radiated electromagnetic interference (EMI)
- *Bright or dark blade
- *A BOXED chopper optional
- *Special pricing for OEM applications.



Patents No.: US 6,046,836
US 6,215,575 B1
US 6,466,353 B2

DESCRIPTION:

The VARIABLE LOW FREQUENCY modulator Model CH-61 consists of a blade (vane) mounted on a motor with a limited rotation angle. The position of the blade follows the direction of the current in the motor winding. Current in one direction will set the chopper to the open position and current in the other direction will set the chopper to the closed position. Alternating the current will cause the blade to open and close the chopper at a frequency range from DC to 50Hz. This method of chopping is jitter free. High reliability and long life is achieved by eliminating the use of a brush type motor or gear heads.

The model **CH-61-B** is a boxed chopper (1.90" W x 3.00" L x 1.25" D) with a 0.34" (8.7mm) Dia. window (cutout) for laser light, a larger cutout is available.

The model **CH-60-NF** indicates the motor assembly with the blade and cable but without the frame.

The model **CH-60-IR** offers an integrated IR emitter (black body).

Using our **DCH-60** driver with the δ MODE selector switch provides two modes of operation for the **CH-60** chopper/shutter: internal mode and external mode.

In the internal mode the **CH-60** is used as a variable low frequency chopper. The chopping frequency is set by an internal oscillator adjustable from 1 Hz to 50 Hz.

In the external mode the **CH-60** is used as a chopper or as a shutter and is controlled by an external TTL signal input. δ high input keeps the CH-60 open , δ low input keeps it close. Response time is 10msec. Maximum frequency for TTL input is 50Hz.

The chopper is especially suitable for low cost dedicated applications, OEM, built into an instrument/system, and for portable systems.

SPECIFICATIONS:

(When used with the DCH-60 Driver)

APERTURE SIZE: 0.34" (8.7mm) Dia

FREQUENCY RANGE: DC to 50Hz

RESPONSE TIME: 10 mSec, from an OPEN position to CLOSED position, or vice-versa

FREQUENCY STABILITY:

0.1% internal clock

0.005% with external crystal clock input

EXTERNAL CLOCK INPUT:

DC to 50Hz TTL level input

5V or "OPEN" to open the chopper

0V or "GND" to close the chopper

SETTLING TIME TO EXTERNAL CLOCK: 20 mSec

MONITOR OUTPUT: TTL level output

"Hi" indicates the chopper is open

"Lo" indicates the chopper is closed

POWER REQUIREMENTS:

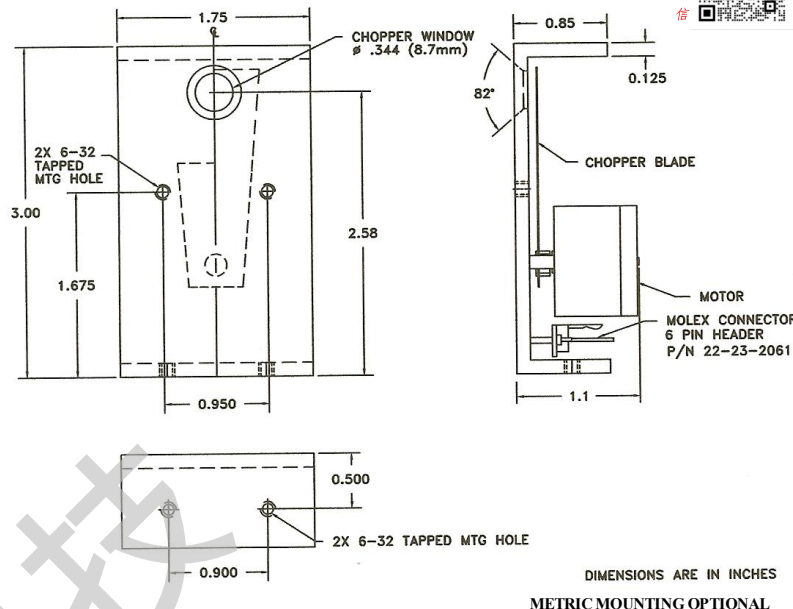
The CH-61 and driver board: 15V dc, 250 mA

CHOPPER SIZE: 1.75" W X 3.0" H X 1.0" D

(1.90" W x 3.00" L x 1.25" D-boxed)

CHOPPER WEIGHT: 2.5 Oz (70 grams)

OPERATING TEMPERATURE: 0-65°C



CH-61 CHOPPER OUTLINE DRAWING

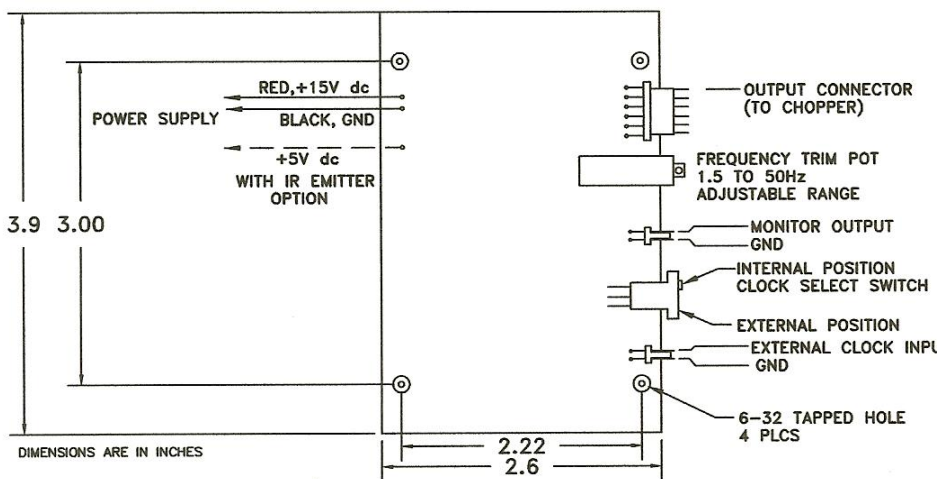
THE DCH-60 DRIVER CONFIGURATION:

The DCH-60 Driver is available in two configurations:

Model DCH-60-PC: A board level driver

Model DCH-60-110 or 220: A cased driver, 5.3" x 5.3" x 2"

Operating from a line voltage of 110V ac or 220V ac



DCH-60 DRIVER HOOK UP DIAGRAM



DCH-60 DRIVER