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.

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 ðMODEð 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. ðhighð input keeps the CH-60 open, ðlowð 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
- **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

**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