



ELECTRO-OPTICAL PRODUCTS CORP.

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VARIABLE LOW FREQUENCY CHOPPER OPTICAL MODULATOR SHUTTER / BEAM DEFLECTOR CH-40

FEATURES AND ADVANTAGES:

- *VARIABLE frequency from DC to 30 Hz
- *Large aperture
- *Small size/lightweight
- *No radiated electromagnetic interference (EMI)
- *Metal vanes are standard, mirrors, prisms, gratings, lenses or optical attachments optional ¹

¹ Available as a special order



DESCRIPTION:

The **variable low frequency** chopper (optical modulator)/ shutter/ beam deflector is a chopping vane mounted on a motor with a limited rotation angle. The position of the rotor follows the input current with respect to amplitude and frequency. The mechanical rotation of the vane relative to its rest position depends on the direction and the magnitude of the current in the drive coil. The chopper covers a frequency range from DC to 30 Hz. It can hold very large vanes, mirrors, gratings and other optical and electro-optical devices. The chopper is used when very low frequencies are desired. It is used for large light beam chopping or for simultaneous chopping of multiple optical beams. It is also used as a shutter. If the vane is replaced with a mirror, it is used as an optical beam deflector. The chopper/ beam deflector/ shutter comes in two versions:

- 1) The **CH-40-LS** is a **low speed, wide-angle chopper**
- 2) The **CH-40-HS** is a **high speed, narrow angle chopper**

The **LFC driver** is used to drive the chopper.

SPECIFICATIONS:

MECHANICAL ROTATION:

Model **CH-40-LS**: 24° peak to peak

Model **CH-40-HS**: 15° peak to peak

RESPONSE TIME:

Model **CH-40-LS**: About 20mSec, depending on the vane size

Model **CH-40-HS**: About 5mSec, depending on the vane size

DRIVE CURRENT SENSITIVITY:

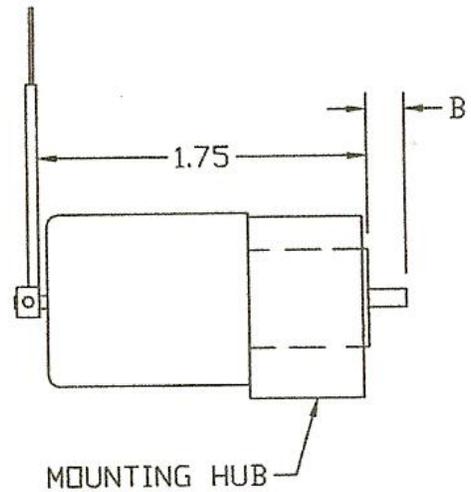
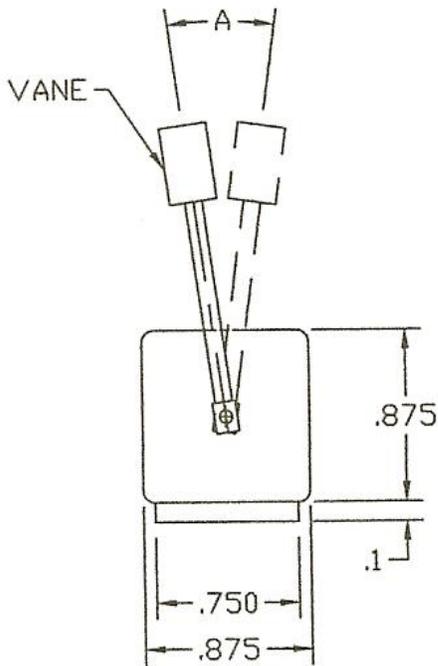
Model **CH-40-LS**: 50mA/degree, +/-600mA max.

Model **CH-40-HS**: 80mA/degree, +/-600mA max.

DRIVE COIL RESISTANCE: 7 ohms

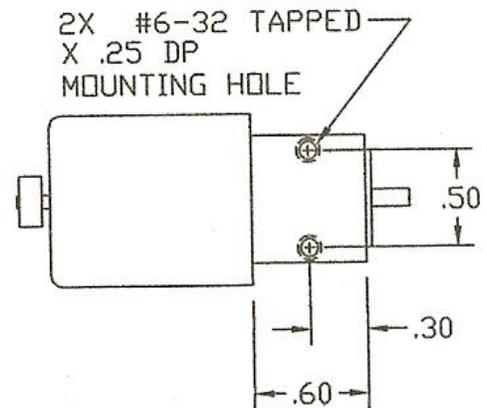
DRIVE COIL INDUCTANCE: 5mH

BACK EMF CONSTANT: .23mV/degree/second



NOTES:

- 1) A = 15° FOR CH-40-HS
24° FOR CH-40-LS
- 1) B = .2 FOR CH-40-HS
.4 FOR CH-40-LS
- 2) THE SIZE AND HEIGHT OF THE VANE ARE DEFINED BY THE USER
- 3) MAX. FREQUENCY TO BE DETERMINED BY THE SIZE OF THE VANE



DIMENSIONS ARE IN INCHES
METRIC MOUNTING OPTIONAL

CH-40 OUTLINE DRAWING

ORDERING INFORMATION:

TYPE [CH-40]; VANE SIZE [mm]; ANGLE [P-P]

Example: PART NO. CH40-20x30x5-15. This part number specifies the model CH-40 chopper, a 20x30mm x 5mm thick vane and a 15° peak-to-peak angle.

Special configurations and elements other than specified are available as a special order. Consult factory. Drive electronics with different package, regulation and power supply options are available.

Special pricing for OEM applications.