ELECTRO-OPTICAL PRODUCTS CORP.

P.O. BOX 650441 . FRESH MEADOWS, NY 11365 . TEL: (718) 456-6000 . FAX: (718) 456-6050 . www.EOPC.com

RESONANT OPTICAL CHOPPERS LOCKED IN A MASTER/SLAVE MODE

(PLD-2C DRIVER)

DESCRIPTION:

The [sub]system consists of two **resonant optical choppers** (type CH), chopper "A" and chopper "B", in a **MASTER/SLAVE mode**, to provide **ultra stable modulating beam motions**. The system can be used as a ñstand aloneò unit, in the laboratory or as a portable instrument, or incorporated into a larger instrument/system. The two modulators are **ONE FIXED FREQUENCY each**, picked from the range of 5 Hz to 20 kHz. They are small size, light weight, low cost and long life devices. They require low power drive electronics and do not radiate any electromagnetic interference (EMI). The choppers have high amplitude stability and high frequency stability. They are IR, VIS, UV and high vacuum capable (to 10-10 torr) and can be used in a large temperature range. Reference signal and position output available.

The **PLD-2C** driver phase locks **two** choppers. Chopper "B" is phase locked to chopper "A" (the slave is locked to the master). The phase relationship to the master is factory set to customerôs requirement (0o to 360o) and is front panel adjustable in a range of +/-45o min. The driver can be a fully integrated driver with front panels controls and internal power supplies or a printed circuit board level driver. The dimensions of the cased driver are: 12ò x 10ò x 3.8ò. The **PLD-2C-PC** driver is a printed circuit board level driver, which requires an external +/-15V DC power supply.

CHARACTERISTICS:

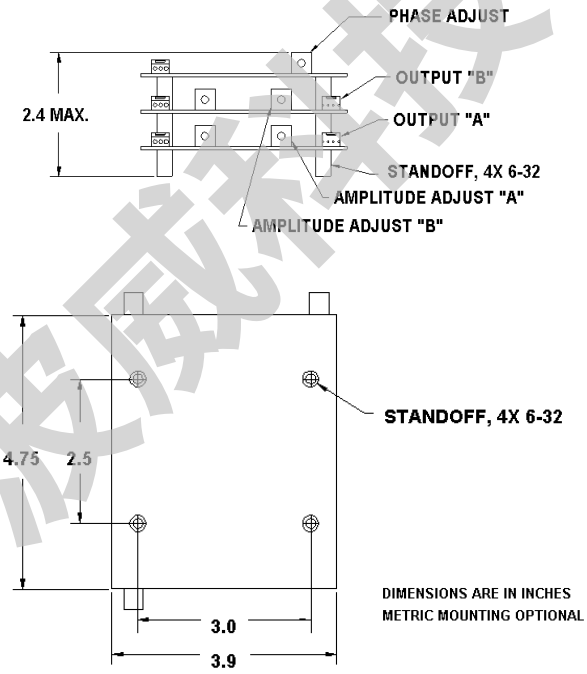
Frequency range: 5 Hz to 20 KHz.
External clock signal: Sine or TTL level square wave (1V PTP to 20V PTP).
External clock stability: +/-50 PPM.
External clock accuracy: 100 PPM.
Choppersôamplitude stability: .01% or better.
Reference output: Sine and TTL level square wave.
Phase adjustment range: +/-45o min.
Phase stability: .01%
Phase relationship: factory set to customerôs spec.
Operating temperature range: 0-60oC.
Power input: 110V ac or 220V ac, 50-60 Hz, 20W.

FRONT PANEL CONTROLS:

POWER: Power switch to turn the drive "ON".
OUTPUT A: To interconnect chopper "A" (master) to the driver.
SINE A: Reference sine wave output of chopper "A", BNC connector.
TTL A: Reference TTL output of chopper "A", BNC connector.
OUTPUT B: To interconnect chopper "B" (slave) to the driver.
SINE B: Reference sine wave output of chopper "B", BNC connector.
PHASE: To adjust the phase of the chopper "B" in relationship to chopper "A", +/-45o min. range of adjustment around the set level.

APPLICATIONS:

The [sub] system provides inexpensive high performance for a multitude of applications. Small size/low cost scanners are used in small instruments for laser inspection. Large aperture scanners are used for robotics positioning, machine vision, and non-invasive research high-resolution display system and machine vision. Many medical, aerospace and military applications are in the IR & UV, some in harsh conditions.



DIMENSIONS ARE IN INCHES

PLD-2C-PC OUTLINE DRAWING

ORDERING INFORMATION:

A) CHOPPERS INFORMATION:

TYPE [CH-20]; DUTY CYCLE [%]; VANE [B=bright or D=dark]; FREQUENCY [Hz]
Example: PART NO. CH20-90D2000. This part number specifies the model CH-20 chopper, 90% duty cycle, dark vanes and a 2 KHz operating frequency.
Special configurations and elements other than mirrors are available on special order. Consult factory.
Special pricing for OEM applications.

B) DRIVER INFORMATION:

customerôs specifications