PLD-XYG DRIVER LOCKS
A RESONANT SCANNER
WITH A GALVANOMETER
TO GENERATE AN
X,Y RASTER SCAN SYSTEM

DESCRIPTION:

The **PLD-XYG** driver phase locks a high frequency resonant optical scanner ("X") and a low frequency galvo scanner ("Y") to gernerate an X,Y raster scanning system. The resonant scanner has one FIXED FREQUENCY, picked from the range of up to 16 kHz, and is operating at its resonant frequency in a sinusoidal motion. The Galvo moves in a linear motion generated from the frequency of the resonant scanner (constant speed with a fast flyback). The choice of the resonant scanner "X" depends on:
- The frame rate
- The number of lines per frame
- The desired scan angle of the resonant scanner
- The desired mirror size of the resonant scanner

The basic raster scanning system we offer consists of:
- A Resonant scanner
- A galvo scanner
- A mount for both scanners
- A driver box w/ power supply w/ drive electronics for both scanners

Additional features are optional:
- External DC voltage inputs to control the scan angle for "X" and "Y"
- Y independent of X :
If you wish to use the function generator for the galvo scanner (Y axis) we can add a feature to disconnect the internal signal to the galvo scanner and switch to an external input from the function generator.
- Remote control for amplitude of the scanners.

The **PLD-XYG-110** or **PLD-XYG-220** driver is a fully integrated boxed driver for 110V or 220V (please specify). The driver has front panel controls for amplitude and phase and internal power supplies. The dimensions of the cased driver are: 12 X 10 X 3.8"
The **PLD-XYG-110/220** is a version of the boxed driver with a line switch selector for operating from a line voltage of 110Vac or 220Vac.

The system can be used as a "stand alone" unit or can be incorporated into an instrument or a system. Although the scanners can be used in a large temperature range this driver is not recommended for use in temperature sensitive applications.

APPLICATIONS:

X,Y scanning systems provide inexpensive high performance for limitless applications involving beam deflection and imaging displays: TV, HDTV, for 2D and 3D scanned objects, for color separation, to generate images stored in computer memory and project them onto a screen, to generate data and/or transfer data directly to production units (CAD/CAM) and for inspection systems to name a few. The scanning systems are used for robotics, medical non-invasive research and testing, transportation, non-impact printing and laser scanning, inspection systems and high speed, high-resolution display system and machine vision. Many aerospace and military applications are in the IR & UV wavelength, high vacuum or cryogenic conditions.

FRONT PANEL CONTROLS	
POWER	Power switch to turn the drive "ON"
AMPLITUDE X	Scans amplitude adjustment POT for the X scanner
MONITOR X	Analog position output for scanner X, BNC connector
OUTPUT X	Output connector for scanner X
AMPLITUDE Y	Scans amplitude adjustment POT for the Y scanner (galvo)
MONITOR Y	Analog position output for scanner Y, BNC connector
OUTPUT Y	Output connector for scanner Y
PHASE CONTROL POT	Phase adjustment of the scanners in relationship to each other, +/- 45
POSITION MONITOR	Scanner position output each scanner, BNC connector
AMPLITUDE CONTROL	Scan amplitude adjustment POT for each scanner
OUTPUT	Output connector to interconnect to each scanner

SPECIFICATIONS	
Frequency range	Up to 16 kHz for the "X" scanner
Scanner's amplitude stability	0.01% or better
Position monitor	Analog position outputs
Scanner's amplitude stability	0.01% or better
Phase stability	0.01%
Frequency ratio Fx/Fy	Factory set to customer's specifications
Operating temperature range	0-60°C
Power input	110V ac or 220V ac, 50-60 Hz, 20W

ORDERING INFORMATION:

A) <u>SCANNER INFORMATION:</u>
TYPE [SC-XX]; MIRROR SIZE [mm]; ANGLE [P-P Deg. optical]; FREQUENCY [Hz]
Example: PART NO. SC-30-10×10-20-100. *This part number specifies the model SC-10 scanner, a 10mm square mirror, a 2° peak to p optical scan angle and a 100 Hz operating frequency.*.

B) <u>DRIVER INFORMATION:</u>
TYPE [PLD-XYG:] Per Customerøs specifications