

# Servo Driver Solutions for Optical Scanning

## Analog Series

### Product Highlights

Our performance PID drivers are fully-featured servos available in compact, dual-axis, and high power configurations. Delivering both accuracy and power, our driver solutions support even the most demanding applications requiring fast speeds with high repeatability, linearity, and stability. The combination of size, performance, and flexibility make our analog servos the ideal choice for your integrated scanning systems.

### Get value-for-performance in a compact size with maximum drive power

- Designed for stability and high-bandwidth control that enables maximum throughput
- Compact product sizes ensure flexible, easy integration within complex systems
- On-board protection circuitry provides reliability during evaluation and operation
- Includes convenient outputs for galvanometer position, error, and velocity signals
- Fully-optimized performance with Cambridge Technology scanning products

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Product Specifications	671 Series	672 Series	673 Series
Number of Axes	Single	Single	Dual
Output Stage	Differential	Single-Ended	Differential
Analog Input Impedance	200K +/- 1% ohms (Differential) 100K +/- 1% ohms (Single Ended)	200K +/- 1% ohms (Differential) 100K +/- 1% ohms (Single Ended)	200K +/- 1% ohms (Differential) 100K +/- 1% ohms (Single Ended)
Analog Output Impedance	1K +/- 1% ohms (for all other observation outputs)	1K +/- 1% ohms (for all other observation outputs)	2K +/- 1% ohms (for the Position Output and Current Monitor observation pins) 4.75k +/- 1% ohms for all other observation pins
Position Input Scale Factor	0.5 volt/mechanical degree (2 degrees/volt), other configurations available	0.5 volt/mechanical degree (40° system), 0.67 volt/degree (30° system)	0.5 volt/mechanical degree (2 degrees/volt), other configurations available
Position Input Range	+/- 10 volts, maximum	+/- 10 volts, maximum	+/- 10 volts, maximum
Position Offset Range	+/- 5% of Input Range, typical	+/- 5% of Input Range, typical	+/- 5% of Input Range, typical
Digital Position Input Range	2 <sup>16</sup> dac counts	N/A	N/A
Non Linearity of 16-Bit Digital Input	0.006% of full scale, maximum	N/A	N/A
Position Output Scale Factor	0.5 volt/degree	0.5 volt/degree	0.5 volt/degree
Error Output Scale Factor	0.5 volt/degree	0.5 volt/degree	N/A
Velocity Output Scale Factor	Analog output (scaled by position differentiator gain)	Analog output (scaled by position differentiator gain)	Analog output (scaled by position differentiator gain)
Fault Output	Open collector: 1K ohm output impedance (pulls down to -15V), with 10mA sink capability	TTL output pulled up to a +5V supply voltage with a 100k resistor. High level = 2.5V, low level = 0V	CMOS output with 4.75k ohm in series High level = 11.5V, low level = .05V
Temperature Stability of Electronics	20 ppm per °C	20 ppm per °C	20 ppm per °C
Power Supply Requirements	+/- 15 to +/- 28VDC configurations available	+/- 15 to +/- 28VDC configurations available	+/- 15 to +/- 28VDC configurations available
Maximum Drive Current Limit	10 amps peak <sup>1</sup> 5 amps rms (power supply and load dependent)	10 amps peak 5 amps rms (power supply and load dependent)	10 amps peak 5 amps rms (power supply and load dependent)
Operating Temperature Range	0 - 50°C	0 - 50°C	0 - 50°C
Dimensions (Board with heatsink bracket; approximate, cm)	10.16 cm x 6.68 cm x 2.69 cm	5.40 cm x 6.03 cm x 2.69 cm	10.03 cm x 7.75 cm x 3.07 cm

### Notes:

All angles are in mechanical degrees, unless otherwise noted. All specifications apply after a 1 minute warm up period. All specifications are subject to change without notice.

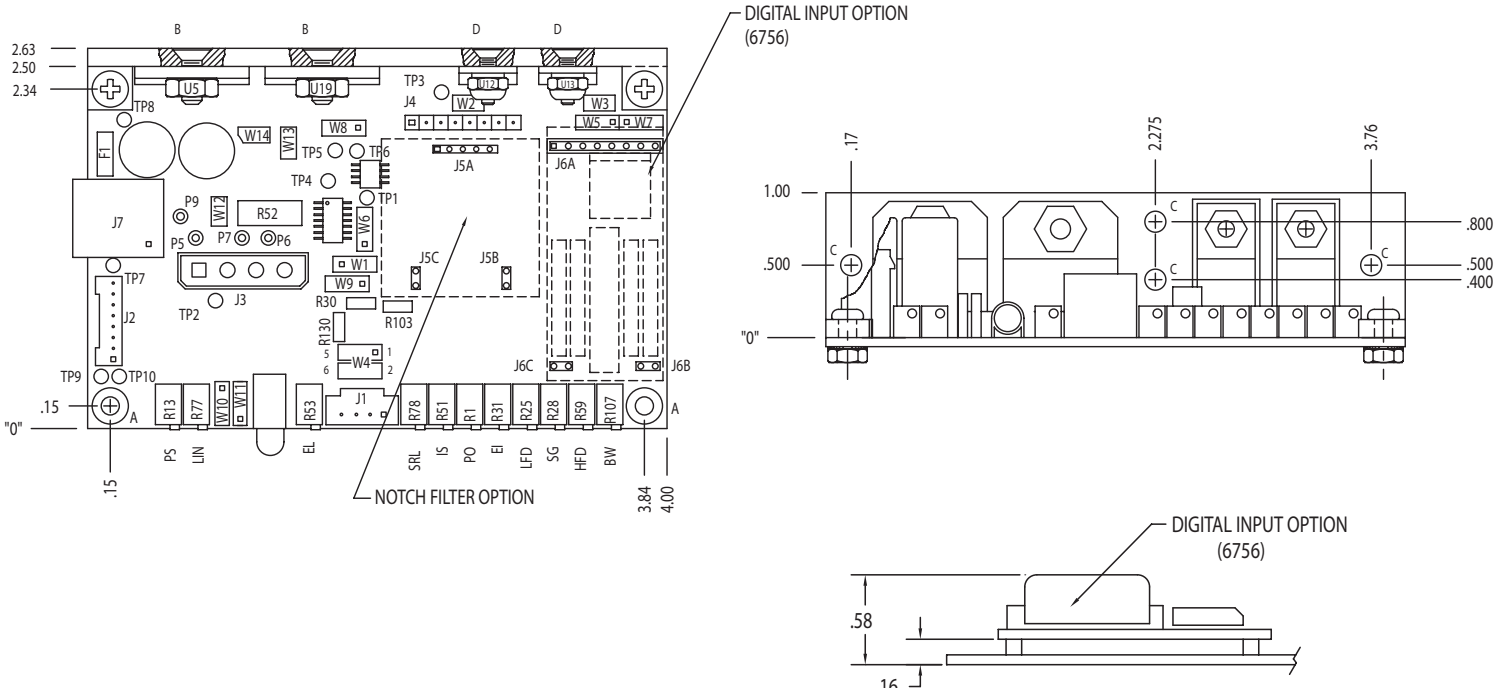
### Reference:

1. Higher drive current available for 671 driver using High Power Option.

# Servo Driver Solutions for Optical Scanning

## Analog Series

### 671 Series



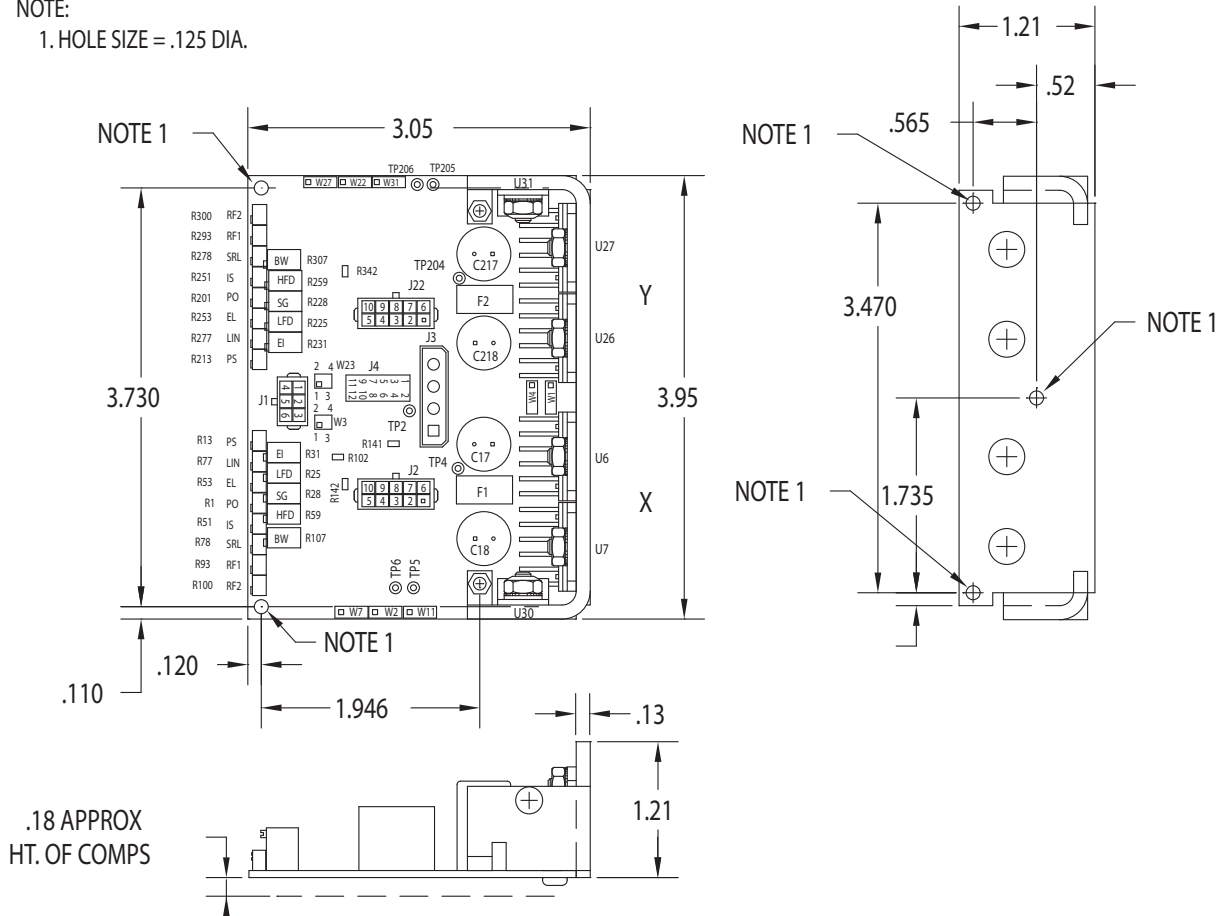
**Notes:**  
 All dimensions are in inches, unless otherwise noted. All specifications are subject to change without notice.  
 Higher drive current available for 671 driver using High Power Option.

# Servo Driver Solutions for Optical Scanning

## Analog Series

### 672 Series

NOTE:  
1. HOLE SIZE = .125 DIA.



Notes:  
All dimensions are in inches, unless otherwise noted. All specifications are subject to change without notice.

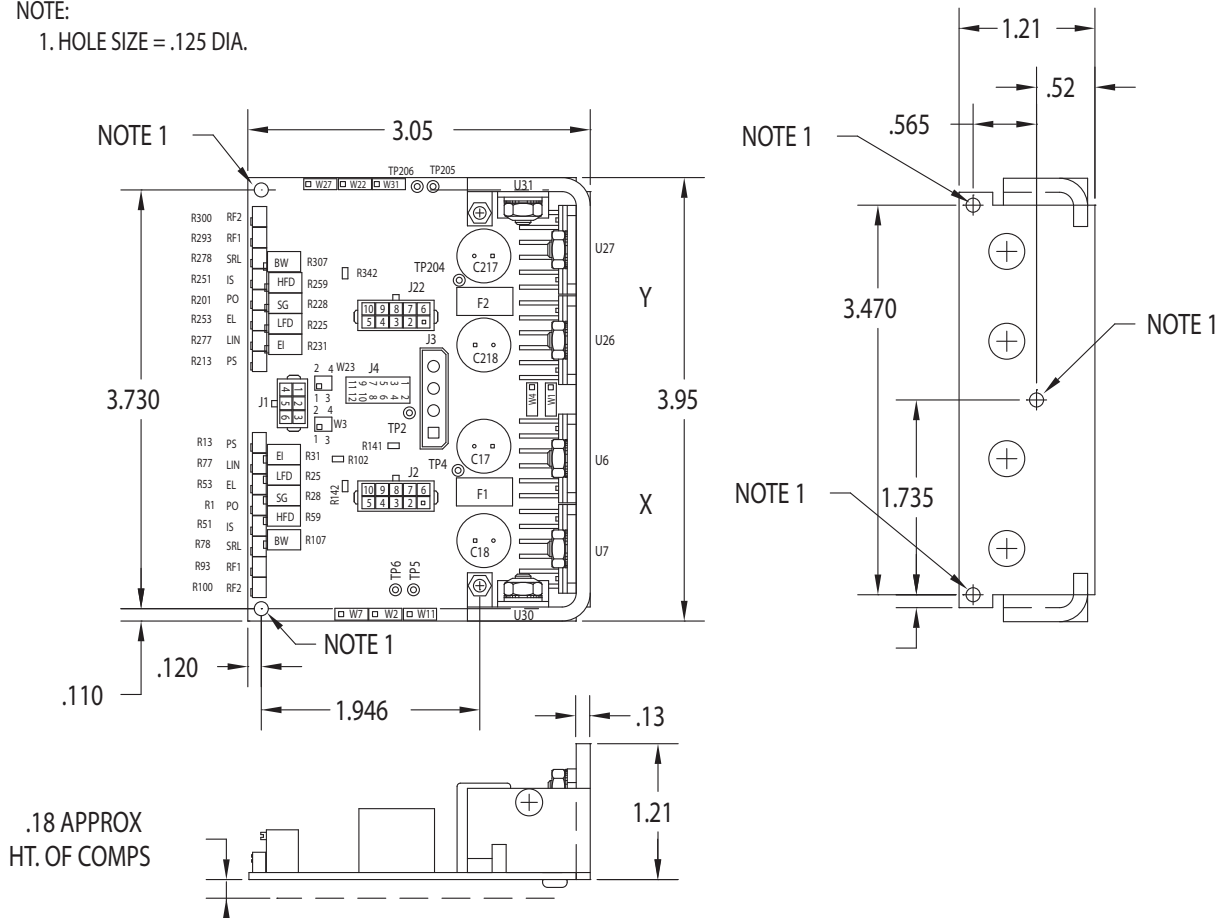
# Servo Driver Solutions for Optical Scanning

## Analog Series

**673 Series** D075606 RevR

NOTE:

1. HOLE SIZE = .125 DIA.



**Notes:**

All dimensions are in inches, unless otherwise noted. All specifications are subject to change without notice.

## About Cambridge Technology

With close to 50 years of expertise, Cambridge Technology designs, develops, and manufactures innovative beam steering solutions including polygon- and galvanometer-based optical scanning components, 2-axis and 3-axis scan heads, scanning subsystems, high power scanning heads, and controlling hardware and software. We excel in collaborating with our key OEM partners to engineer products that meet their needs from the largest engineering solution to the smallest component. Key market applications include advanced industrial processes like additive manufacturing, laser converting, laser marking, and via-hole drilling, and medical applications such as laser treatment and optical coherence tomography. Cambridge Technology is a Novanta company.

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