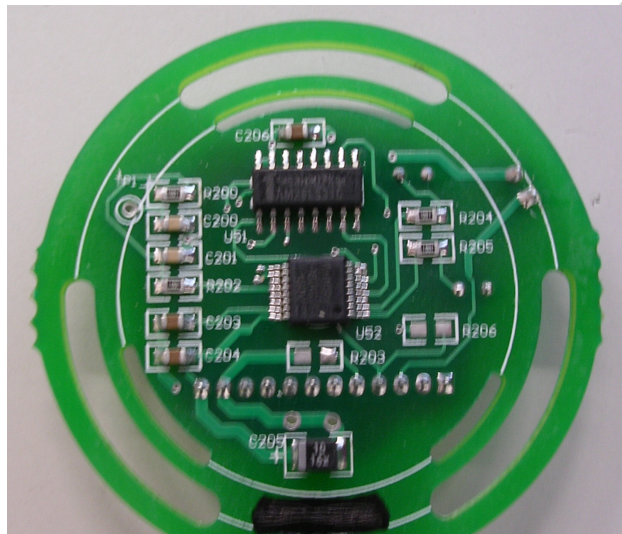


PL-4096R Datasheet  
Issue 4, Oct 23, 2014

## Magnetic encoder module and Magnetic actuator

### PL-4096R Magnetic encoder module



### Magnetic Actuator

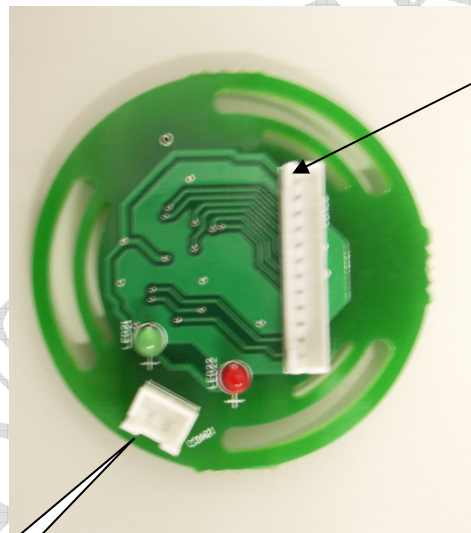


## 1. General Description

The PL-4096R encoder module is designed for easy installation with a self aligning metal mounting flange. The low cost module can be provided with an integrated connector. The encoder module consists of a magnetic actuator and a separate sensor board. An internal voltage regulator allows the PL-4096R to operate at either 3.3 V or 5 V supplies.

The PL-4096R module can be used in a wide range of applications including motor control and industrial automation.

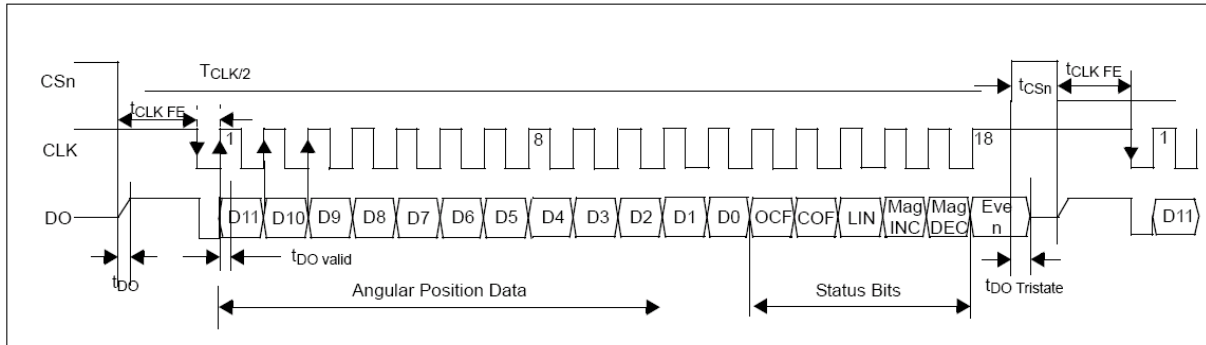
## 2. Pin Configuration



Pin12-NC
Pin11-5V
Pin10-0V
Pin 9-Z+
Pin 8-Z-
Pin 7-B-
Pin 6-B+
Pin 5-A-
Pin 4-A+
Pin 3-CSN
Pin 2-DO
Pin 1-CLK

### 3. Synchronous Serial Interface (SSI)

Figure 5. Synchronous serial interface with absolute angular position data



### 4. Timing Characteristics

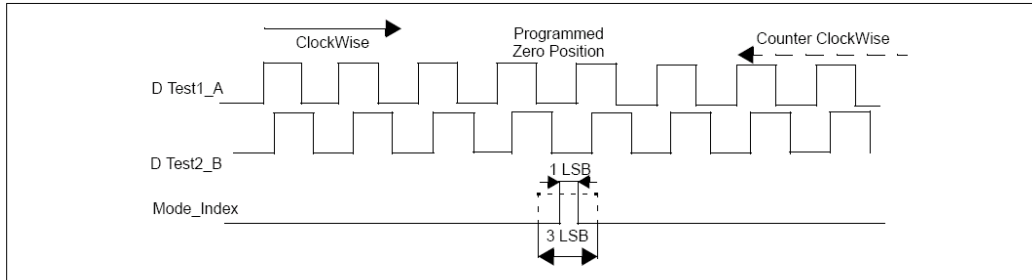
TAMB = -40 to +150 °C, VDD5V = 3.0 to 3.6V (3V operation) VDD5V = 4.5 to 5.5V (5V operation), unless otherwise noted.

Table 6. Timing Characteristics

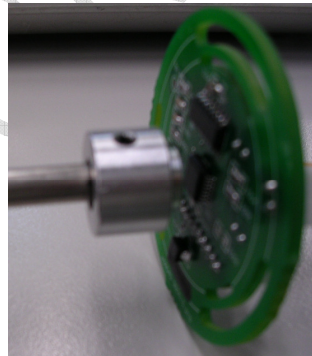
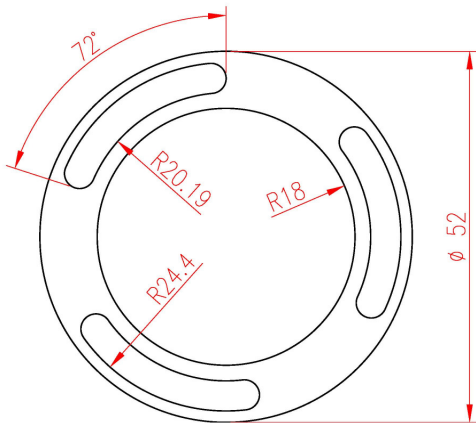
Symbol	Parameter	Conditions	Min	Typ	Max	Units
<b>Synchronous Serial Interface (SSI)</b>						
tDOactive	Data output activated (logic high)	Time between falling edge of CSn and data output activated			100	ns
tCLKFE	First data shifted to output register	Time between falling edge of CSn and first falling edge of CLK	500			ns
TCLK/2	Start of data output	Rising edge of CLK shifts out one bit at a time	500			ns
tDOvalid	Data output valid	Time between rising edge of CLK and data output valid			413	ns
tDOtristate	Data output tri-state	After the last bit DO changes back to "tri-state"			100	ns
tCSn	Pulse width of CSn	CSn =high; To initiate read-out of next angular position	500			ns
fCLK	Read-out frequency	Clock frequency to read out serial data	>0		1	MHz
<b>Pulse Width Modulation Output</b>						
fPWM	PWM frequency	Signal period = 4098µs ±5% at TAMB = 25°C	232	244	256	Hz
		Signal period = 4098µs ±10% at TAMB = -40 to +150°C	220	244	268	
PWMIN	Minimum pulse width	Position 0d; angle 0 degree	0.90	1	1.10	µs
PWMAX	Maximum pulse width	Position 4098d; angle 359.91 degrees	3686	4096	4506	µs
<b>Programming Conditions</b>						
tPROG	Programming time per bit	Time to prog. a single fuse bit	10		20	µs
tCHARGE	Refresh time per bit	Time to charge the cap after tPROG	1			µs
fLOAD	LOAD frequency	Data can be loaded at n x 2µs			500	kHz
fREAD	READ frequency	Read the data from the latch			2.5	MHz
fWRITE	WRITE frequency	Write the data to the latch			2.5	MHz

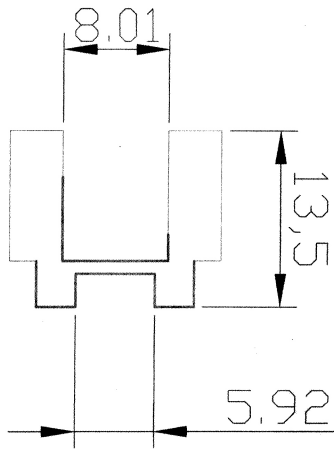
## 5. Output

Figure 6. Incremental Output



## 6. Package Drawings & Magnetic Actuator





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