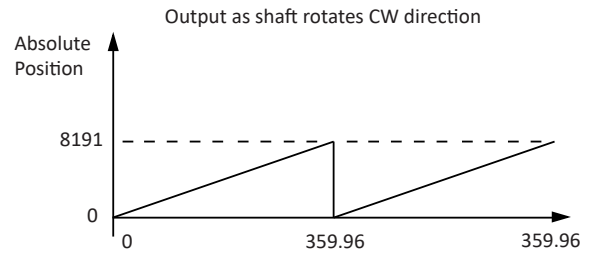


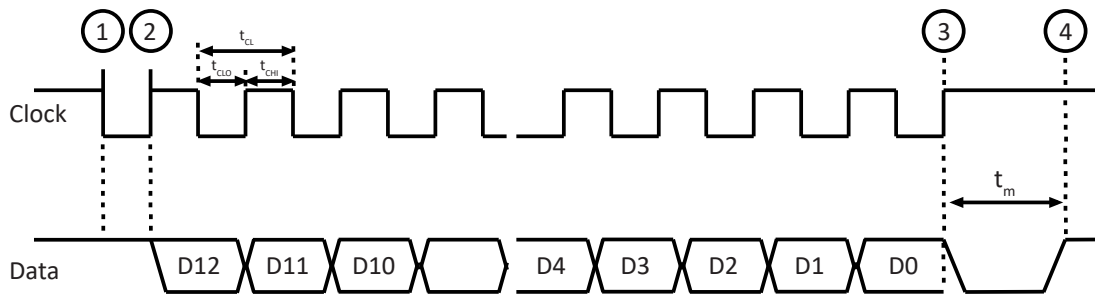
## GENERAL INFORMATION

Synchronous Serial Interface (SSI) provides serial output data to the computer upstream in 13 bits as it reads the CLOCK and DATA signals to interpret the absolute position of the shaft from the encoder.

Absolute position value varies from 0 to 8191, corresponding to 0 to 359.96 degrees of rotation.



## SSI CLOCK AND DATA TIMING



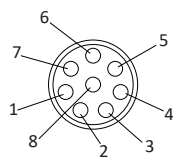
Parameter	Symbol	Minimum	Maximum
Clock Period	$t_{cl}$	250 ns	$2 \times t_M$
Clock High	$t_{chl}$	25 ns	$t_M$
Clock Low	$t_{clo}$	25ns	$t_M$
Monoflop Time	$t_M$	12.5 us	20.5 us

The controller reads the absolute position of the encoder by sending a pulse train to the encoder's CLOCK input. The CLOCK signal must be in the high state before the pulse train begins. The first high to low transition of the CLOCK signal (point 1) latches the current 12-bit position of the encoder into parallel-to-serial converter. At the first low-to-high transition of the CLOCK (point 2), the most significant bit (MSB, bit 12) of binary code is transmitted to the encoder's DATA output. With each transition of the CLOCK signal, the next bit is sent. After the least significant bit (LSB) is sent (point 3), the DATA output of the encoder goes to low. The controller must wait with the CLOCK line in a high state longer than the  $t_M$  maximum before it can read the position again (point 4).

## MATING CONNECTOR

The encoder requires power, ground (common), and the CLOCK and DATA lines. CLOCK is a differential input to the encoder. DATA is a differential output from the encoder.

- 1: D+ (Data +)
- 2: V+ (6 to 30 VDC)
- 3: D- (Data -)
- 4: CL+ (Clock +)
- 5: CL- (Clock -)
- 6: unused
- 7: G (Ground/common)
- 8: unused



\*The SSI Output is available in the 30mm and 40mm encoder housings.