



PST-360: Instructions for use

HOW TO ORDER: **PST360-1S-C0000-ERA360-05K**
 OUTPUT TYPE: **Simple - SPI Protocol**
 SIGNAL OUTPUT **10% to 90% SPI Protocol (360° ERA)**

ROTOR: **14mm**
 OUTPUT FUNCTION: **Curve 0000**

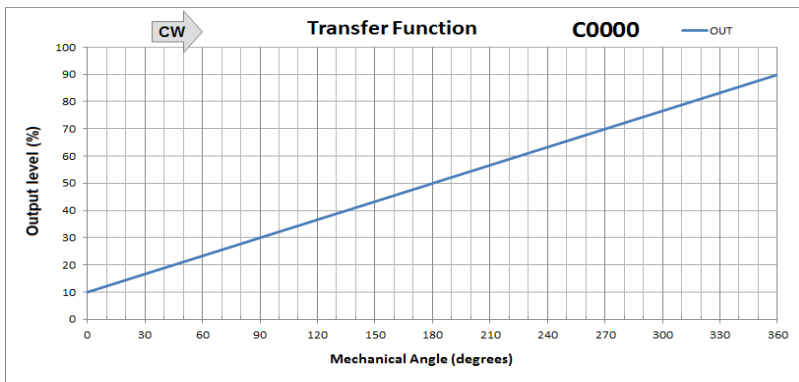
SUPPLY VOLTAGE: **5V ± 10%**
 TEMPERATURE: **-40 °C to +125 °C**

Connections scheme:

Wire color	Connection	Recommended connections
Brown	Power supply Vdd: 5V ± 10%	
Blue	Ground	
Black	MOSI	
White	/SS	
Grey	SCLK	

WARNING
 -In order to minimize the possibility of short circuits, we recommend to connect the power supply at the end

Signal output:



Reference position:

Rotor is shown at zero position



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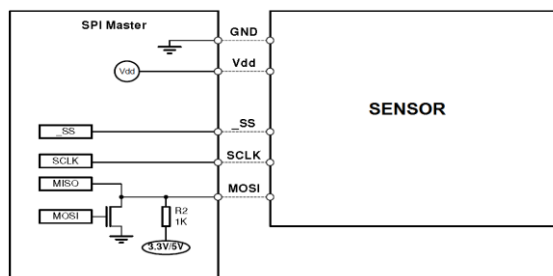
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The PST-360 features a digital Serial protocol mode. The PST-360 is considered as a Slave node. The serial protocol of the PST-360 is a three wires protocol (/SS, SCLK, MOSI-MISO):

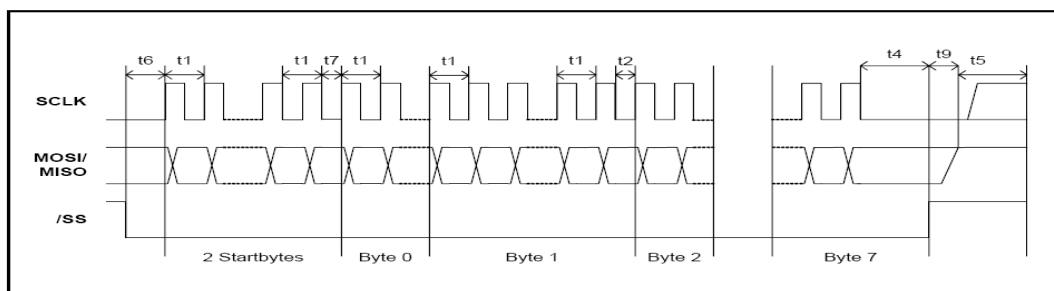
- /SS pin is a 5V tolerant digital input.
- SCLK pin is a 5V tolerant digital input.
- MOSI-MISO pin is a 5V tolerant open drain digital input/output.



1. Timing

To synchronize communication, the master deactivates /SS high for at least t_5 (1.5 ms). In this case, the Slave will be ready to receive a new frame. The master can re-synchronize at any time, even in the middle of a byte transfer.

Note: Any time shorter than t_5 leads to an undefined frame state, because the Slave may or may not have seen /SS inactive.



Timings	Min ⁽¹⁾	Max	Remarks
t1	6.9 μ s	-	No capacitive load on MISO. t1 is the minimum clock period for any bits within a byte.
t2	37.5 μ s	-	t2 the minimum time between any other byte.
t4	6.9 μ s	-	Time between last clock and /SS=high=chip de selection.
t5	1500 μ s	-	Minimum /SS=Hi time where it's guaranteed that a frame re-synchronizations will be started.
t5	0 μ s	-	Maximum /SS=Hi time where it's guaranteed that NO frame re-synchronizations will be started.
t6	6.9 μ s	-	The time t6 defines the minimum time between /SS=Lo and the first clock edge.
t7	45 μ s	-	t7 is the minimum time between the StartByte and the Byte0.
t9	-	< 1 μ s	Maximum time between /SS=Hi and MISO Bus High-Impedance.
T _{StartUp}	-	< 16 μ s	Minimum time between reset-inactive and any master signal change.

⁽¹⁾ Timings shown for oscillator base frequency of 7MHz (Slow mode)

2. Slave Reset

On internal soft failures the Slave resets after 1 second or after an (error) frame is sent. On internal hard failures the Slave resets itself. In that case, the Serial protocol will not come up. The serial protocol link is enabled only after the completion of the first synchronization (the Master deactivates /SS for at least 15).

3. Slave Start-Up

The Slave start-up (after power-up or an internal failure) takes 16 ms. Within this time /SS and SCLK is ignored by the Slave. The first frame can therefore be sent after 16 ms. MISO is Hi-Z (i.e. Hi-Impedance) until the Slave is selected by its /SS input. MTS-360 will cope with any signal from the Master while starting up.

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