ENCODER PRODUCTS COMPANY

Understanding EPC's SSI Encoders

SSI, or Simple Sensor Interface, is a simple serial communications protocol designed for data transfer between computers or user terminals and smart sensors. The SSI protocol is an application layer protocol.

Model MA and SA series absolute encoders from Encoder Products Company are always slave devices. The SSI Master controls the encoder data output by sending clock sequences to the encoder clock inputs. The encoder electronics responding to the first falling slope of the clock sequence freeze the actual value and start the serial output of the data bits. On every following rising slope, one bit is transmitted.

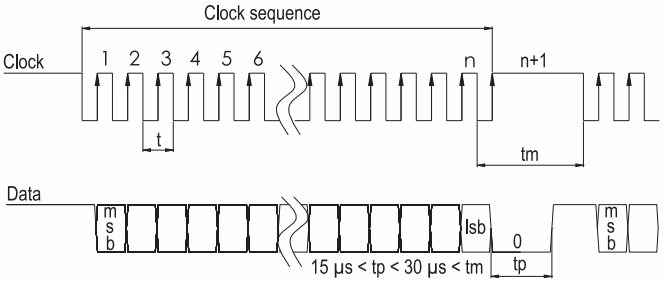
The order for the bits within one transmission is MSB to LSB. **The SSI Master must be configured to the data word length**. Without slopes the encoder electronics switch over after the time **tp** and permits the loading of a new measurement value.

The dataline is pulled to the low level until the point in time tp (see drawing below). After that the high level is set.

If the clock starts before the point of time **tp** is reached, the old data value is transmitted. This option is called multipath transmission and is meant to achieve a higher transmission security.

The MA and SA Series absolute encoders have two additional options. There is the preset wire, which defines the actual shaft position as zero position, if it is set to supply voltage level for more than two seconds.

The direction wire defines the positive direction of counting when the shaft rotates. The standard is defined as positive counting during CW rotation when viewed from the shaft end. In this case, the direction is connected to GND. By connecting the direction wire to supply voltage, the direction of counting changes to CCW. Changing the counting direction requires a reset of the encoder and may require an additional preset.



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ACCU CODER Brand Encoders

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