MBs-3SSI

## Synchronous Serial Interface Module

Introduction

MBs-3SSI is one of the special function modules of MERITEK MBs series PLC. By applying the MBs-3SSI module, the MBs PLC can read out the position data generated by the absolute position sensing device which has the Synchronous Serial Interface (SSI). SSI interface is driven by the digital differential signal which can reduce the possibility of error occurrences caused by the interference of electric noise.

Specification

**Total Channel**- 3 channels

Clock Frequency – ~ 200KHz

Data Update Rate- less than 2ms

Input Data Bit- MSB first, 12~32 bit length selectable

Input Data Encoding Format- Binary or Gray Code

Error Indication- Signal or wiring error(*$_1$)

System Capability- up to 4 MBs-3SSI modules

Signal Isolation- Output: None   Input: Opto-coupler

Indicators- power LED

Internal Power Consumption- 5V, 100mA

Working Temperature- 0 ~ 60 ℃

Storage Temperature- -20 ~ 80 ℃

Interface Signals

Signal Name	Description
DI0+,DI1+,DI2+	Positive data signal for CH 0,1 and 2
DI0-,DI1-,DI2-	Negative data signal for CH 0,1 and 2
CK0+,CK1+,CK2+	Positive clock signal for CH 0,1 and 2
CK0-,CK1-,CK2-	Negative clock signal for CH 0,1 and 2

Note(*$_1$): The reading value will be 40000000H(Hex value) when the signal or wiring is incorrect.

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Module Outline
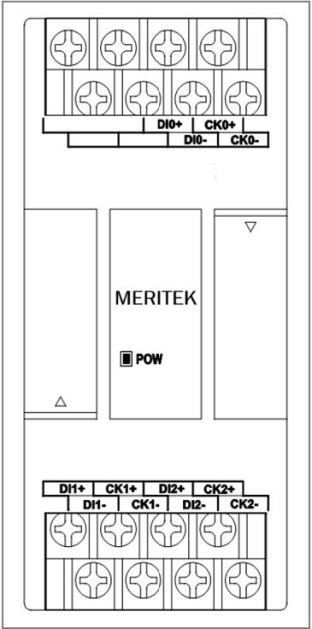
Illustrated Wiring Diagram
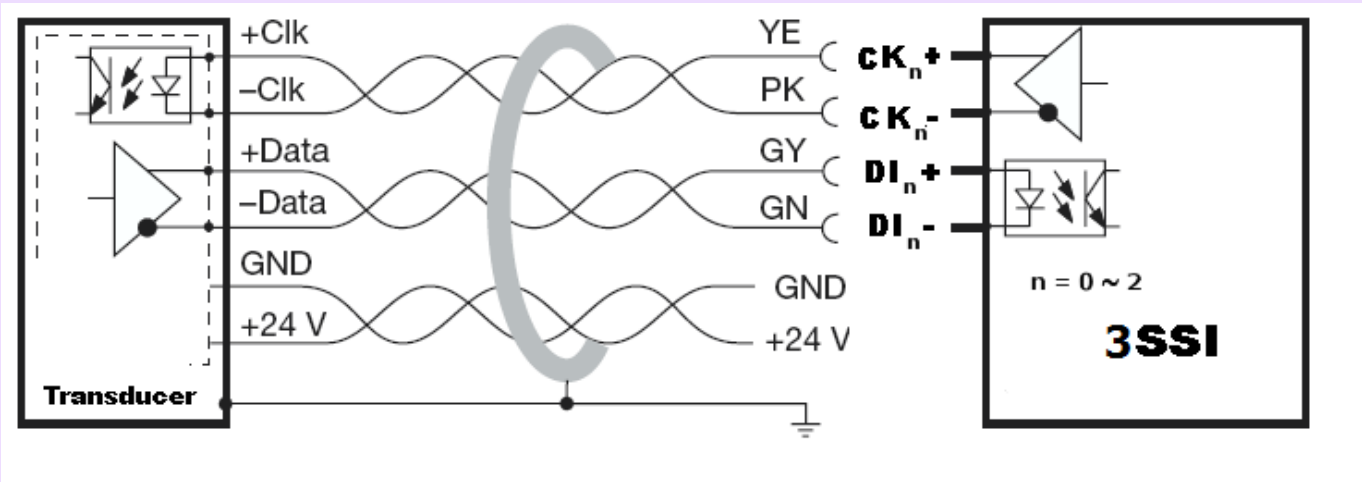
LED Indicator

POW: power indication, red LED.

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I/O Configuration Setup

The data format and bit length of SSI interface is varied for different brands and models of absolute positioning device. The configuration setup of MBs-3SSI, in order to work with the device with specific SSI interface, can be carried out by using the Winproladder utility. There is an I/O configuration page dedicated for MBs-3SSI module as below.

The descriptions of each input field are described at below

Starting Address of Configuration Table: The starting register number of a register block allocated to hold the configuration data. The configuration table is consisted of 4 consecutive registers. In the above example table, R5000~R5003 are used to hold the configuration data.

Starting Address of Data Register: The starting register number of a register block to hold the reading data. In the above example table, DR0, DR2 and DR4 are used to hold the reading sensor data.

Bit Size: the data bit length of the sensor. The applicable range is 12~32. There should be noted that no matter the bit length is small than 16 or not, it requires 2 words to hold the data for each channel.

Code: encoded output data format of the sensor. There are two choices, BINARY or GRAY code.

Signed: signed or unsigned output data format of the sensor. Select NO for unsigned, YES for signed format. Most often the sensor data is of unsigned.

A single PLC can support up to 4 MBs-3SSI modules.

Note(*2): The support for MBs-3SSI module is only available for PLC OS not older than V4.71