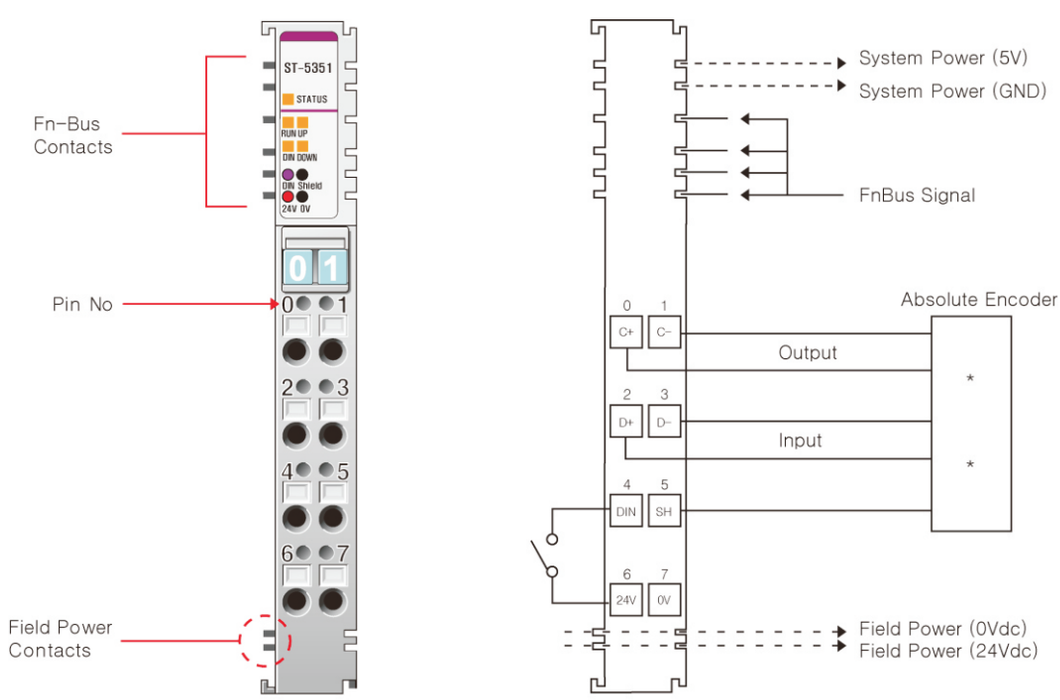
1 Channel SSI Interface

- ST-5351는 1 Channel SSI Interface Module입니다.
- 통신속도는 62.5K, 100K, 125K,250K,500K,1M,2Mbps 지원합니다.
- 이 Module에는 5개의 상태표시 LED가 있으며, 하나는 Module의 상태, 나머지는 통신 상태를 나타냅니다.
- FnBus와 통신 입,출력 신호선 사이에는 Photocoupler를 사용하여 전기적 절연이 되어 있습니다.

Items	Specification
Module Specification	
Number of Channels	1 Ch SSI Interface
Indicators	1 Green/Red FnBus Status 4 LEDs RUN/WARN, UP DIN, DOWN
SSI Data Rate	62.5K, 100K, 125K,250K,500K,1M,2Mbps
SSI Data Width	Max. 30bit
SSI Data Delay Time	20usec~10msec
SSI Output	C+,C- RS422 Differential Output
SSI Input	D+,D- RS422 Differential Input
SSI Data Code Type	Gray Code or Natural Binary
Digital Input	24Vdc Input nominal, Sink Type Voltage Range : 11~28.8Vdc
Diagnostic	Field Power, SSI Frame
Common Type	1 Common, 1 Shield
General Specification	
Power Dissipation	Max. 150mA@5.0Vdc
Isolation	I/O to Logic : Photocoupler Isolation I/O to Field Power : Non-Isolation
Field Power	Supply Voltage : 24Vdc nominal Voltage Range : 11~28.8Vdc Power Dissipation : Max. 40mA@24Vdc
Wiring	I/O Cable Max. 2.0mm²(AWG#14)
Weight	70g
Module Size	12mm x 99mm x 70mm
Environment Condition	Refer to " Environment Specification"(page : 1-261)

Pin No	Description
0	C+ (RS422 Differential Output)
1	C- (RS422 Differential Output)
2	D+ (RS422 Differential Input)
3	D- (RS422 Differential Input)
4	DIN (Digital Input, Sink Type)
5	SH (Shield)
6	Field Power 24V
7	Field Power 0V, Common

Wire diagram



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I/O Process Image Table

Input Data

Byte Offset	Decimal Bits Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
Byte #0	Current SSI Data LL							
Byte #1	Current SSI Data LH							
Byte #2	Current SSI Data HL							
Byte #3	Current SSI Data HH							
Byte #4	Latched SSI Data LL							
Byte #5	Latched SSI Data LH							
Byte #6	Catched SSI Data HL							
Byte #7	Catched SSI Data HH							
Byte #8	RUN	WARN	LDF	----	DEC	INC	----	DIN
Byte #9	----	----	----	WFP	----	----	WSSIF	WSSID

- SSI Data word is a 32bit-wide data.
- RUN : SSI Clock Output Enabled Flag
- WARN : Warning. Any warning has occurred, WFP, WSSIF or WSSID.
- LDF : Latched Data Flag, if terminal's DIN goes OFF=>ON, sets the flag and updates Latched SSI Data.
- DEC : SSI Data Decrement. It was set, it lasts until INC.
- INC : SSI Data Increment. It was set, it lasts DEC.
- DIN : Digital Input Current Status.
- WFP : Warning of Field Power (SSI Power).
- WSSIF : Warning of SSI Frame. The last bit of frame data is not trailed with 0.
- WSSID : Warning of SSI Data. SSI Data is 0 during gap of frames. Generally when invalid wiring or cross wiring.

Output Data

Byte Offset	Decimal Bits Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
Byte #0	RUN	GRAY	LDFCLR		SSI Data Lengh (0~30)			
Byte #1	SSI Data Delay Time Selection				SSI Data Rate Selection			

- RUN : SSI Clock Output Command, 1:Run, 0:Stop
- GRAY : Conversion Binary to Gray code. 1:Gray, 0:Binary
It has effect on Current SSI Data and Latched SSI Data.
- LDFCLR : LDF(Latched Data Flag) Clear, it acts on both edge (0=>1, 1=>0).
- SSI Data Length : Sensor Resolution Bit + Sensor Number of turn Bit.
Example) Sensor Resolution (Step/Resolution)=8192 => 13bit, Sensor Number of turn=4092 => 12bit
SSI Data Length must be 25 (13bit + 12bit).

SSI Data Rate Selection

Value	Description
0(B'0000)	125Kbps (default)
1(B'0001)	62.5Kbps
2(B'0010)	100Kbps
3(B'0011)	125Kbps
4(B'0100)	250Kbps
5(B'0101)	500Kbps
6(B'0110)	1Mbps
7(B'0111)	2Mbps

SSI Data Delay Time Selection

Value	62.5K	100K	125K	250K	500K	1M	2M
0 (B'0000)	300usec (default)						
1 (B'0001)	400usec	300usec	200usec	100usec	70usec	35usec	20usec
2 (B'0010)	400usec	300usec	200usec	100usec	70usec	35usec	
3 (B'0011)	400usec	300usec	200usec	100usec	70usec		
4 (B'0100)	400usec	300usec	200usec	100usec			
5 (B'0101)	400usec	300usec	200usec				
6 (B'0110)	400usec	300usec					
7 (B'0111)	400usec						
8 (B'1000)	500usec						
9 (B'1001)	750usec						
10 (B'1010)	1msec						
11 (B'1011)	2msec						
12 (B'1100)	3msec						
13 (B'1101)	4msec						
14 (B'1110)	5msec						
15 (B'1111)	10msec						

Configuration Parameter Table

Byte Offset	Decimal Bits Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
0	Reserved							
1	Reserved							