User's Guide of FBs-32DGI Module

FBs-32DGI is a multiplex input module. One 32DGI module can support up to 32 digits thumbwheel switch or 128 discrete switch inputs. Thanks to the I/O control chip that incorporated in this module, the update rate of the input status is irrelevant to CPU scan time. The input refresh time of this module is mere 10 mS. Owing to the scan nature of PLC, though the multiplex input task is not performed by CPU, the over-all refresh time of this input module is still constrained by the CPU scan time if the scan time is larger than 10mS.

1. Signals

Pin Number	Signal Name	Pin Number	Signal Name
1	FG	2	+24V
3	-24V	4	No Connection
5	D0	6	D1
7	D2	8	D3
9	D4	10	D5
11	D6	12	D7
13	D8	14	D9
15	D10	16	D11
17	D12	18	D13
19	D14	20	D15
21	No Connection	22	S1
23	S2	24	S3
25	S4	26	S5
27	S6	28	S7
29	S8	30	No Connection

The I/O control chip built in the module multiplexes the 32 digits of thumbwheel switch or 128 discrete switch inputs by eight times scan, each scan reads in 4 digits of thumbwheel switch or 16 discrete switch inputs. The input selection signals S1~S8 listed in the above table are all low active output signal (NPN output). The multiplex data input signals D0~D15 are sink type input signals. Each times of scan, data are read from D0~D15 inputs and stored in I/O control chip.

2. Input Status

The status of 32 digits of thumbwheel switch or 128 discrete switch inputs are directly mapped to 8 input registers as shown in following table. The IR is the first input register allocated for corresponding module.

Thumbwheel Switch Input

Input Register	D15	D14	D13	D12	D11	D10	D9	D8	D7	D6	D5	D4	D3	D2	D1	D0
IR+0	DIG3				DIG2				DIG1				DIG0			
IR+1	DIG7				DIG6				DIG5				DIG4			
IR+2	DIG11				DIG10				DIG9				DIG8			
IR+3	DIG15				DIG14				DIG13				DIG12			
IR+4	DIG19				DIG18				DIG17				DIG16			
IR+5	DIG23				DIG22				DIG21				DIG20			
IR+6	DIG27				DIG26				DIG25				DIG24			
IR+7	DIG31				DIG30				DIG29				DIG28			

Discrete Switch Input

Input Register	D15	D14	D13	D12	D11	D10	D9	D8	D7	D6	D5	D4	D3	D2	D1	D0
IR+0	I15	I14	I13	I12	I11	I10	I9	I8	I7	I6	I5	I4	I3	I2	I1	I0
IR+1	I31~I16															
IR+2	I47~I32															
IR+3	I63~I48															
IR+4	I79~I64															
IR+5	I95~I80															
IR+6	I111~I96															
IR+7	I127~I112															

The I0 is the bit0 of DIG1, the I15 is the bit3 of DIG3 and so forth.

3. **Sample Wiring Diagram**