DeviceNet Specification

Item	DeviceNet Series
Interface Specifications	
DeviceNet Type	Group 2 Only Slave
I/O Size	BT-8844 (In : 10byte, Out : 10byte) BT-DI32U (In : 4byte) BT-DO32U, BT-DO32P, BT-DO32N (Out : 4byte) BT-DH16P, BT-DH16N (In : 2byte, Out : 2byte)
Max. Length Bus Line	Max. 100m@500Kbps, Max. 250m@250Kbps, Max. 500m@125Kbps
Max. Nodes	64 nodes
Communication Speed	125Kbps, 250Kbps, 500Kbps auto baud supported (SW1.7~8)
Network Protocol	Poll, Bit strobe, cyclic, cos Interface connector : 5pin open male connector (Right Angle) (CN1)
Node MAC ID Setup	1 DIP Switch (SW1.1~6)
Indicator	MOD : Green/Red, Module Status NET : Green/Red, Network Status I/O(DI/DO) Green/1pt
General Specification	
System Power	Supply Voltage : 24Vdc nominal Supply Voltage Range : 11~28.8Vdc Protection : Output Current limit (Min. 1.5A) Reverse polarity protection
Power Dissipation	300mA typical@24Vdc
Isolation	DeviceNet to internal logic : Non-isolation Internal System to I/O driver : Isolation
Field Power	Supply Voltage : 24Vdc nominal Supply Voltage Range : 11~28.8Vdc
Weight	About 50g, TBD
Board PCB Size	70mm x 90mm, Thickness=13mm max.
Mounting Method	Refer to 6. Addition Information
Environment Condition	Refer to 'Environment Specification' (page :4-2)

DeviceNet Communication

Items	Descriptions	Remarks
Network Protocol	I/O Slave messaging (Group 2 Only slave) - Poll command - Bit Strobe command - Cyclic command - COS command	
Network length	Max 500Meter (125Kbps)	Max 100meter (500Kbps)
Indicators	1 green/red Module Status Indicator 1 green/red Network Status Indicator 1 green/red Expansion Module Status indicator 1 green Field Power Status indicator	
Number of Nodes	Max. 64 Nodes	DIP Switch
Communication Speed	125Kbps, 250Kbps, 500Kbps	Auto baud rate available
Isolation	Non-Isolation (DeviceNet to logic)	24V step down regulation

Environment Specification

Environmental Specifications	
Operating Temperature	-20℃ ~ 60℃, TBD
Storage Temperature	-40℃ ~ 85℃
Relative Humidity	5% ~ 90% non-condensing
Operating Altitude	2000m
General Specification	
Shock Operating	10g
Shock Non-Operating	30g
Vibration/shock resistance	Displacement : .0.012Inch p-p from 10~57Hz Acceleration : 2G's from 57~500Hz Sweep Rate : 1 octave Per Minute Axes to test : x, y, z Frequency Sweeps Per Axis : 10
EMC resistance burst/ESD	EMC Directive
Installation Pos. / Protect. Class	Variable/IP20
Product Certifications	UL/cUL, CE, TBD

DI (Digital Input)

Item	Specification
Input type	BT-8844 : Bi-Direction (Sink/Source) Input (8pt) BT-DI32U : Bi-Direction (Sink/Source) Input (32pt) BT-DH16P : Bi-Direction (Sink/Source) Input (16pt) BT-DH16N : Bi-Direction (Sink/Source) Input (16pt)
Indicator	1Led/point
On-state Voltage	24Vdc Nominal Min. 14Vdc to Max 26Vdc
Off-state Voltage	Max. 10Vdc
On-state Current	2.5mA max./point @24Vdc
Input Delay	OFF to ON : 0.5msec max. ON to OFF : 0.5msec max.
Nominal Input Impedance	10KΩ typical
General Specification	
Power Supply	From external, 24Vdc Nominal, 11~26Vdc
Power Dissipation	<100mA/24Vdc, TBD
Isolation	DI/DO to System : Photo coupler isolation
Environment Condition	Refer to 'Environment Specification' (page : 4-2)

DO (Digital Output)

Item	Specification
Input type	BT-8844 : Bi-Direction (Sink/Source) Output (8pt) BT-DO32U : Bi-Direction (Sink/Source) Output (32pt) BT-DO32P : Source Output (32pt) BT-DO32N : Sink Output (32pt) BT-DH16P : Soruce Output (16pt) BT-DH16N : Sink Output (16pt)
Indicator	1Led/point
On-state Voltage Range	Nominal 24Vdc, min. 11Vdc, max. 26Vdc
On-state Voltage Drop	Max. 0.2Vdc@25℃
On-state Current	Min. 1mA/channel
Output Delay	OFF to ON : 0.3msec max. ON to OFF : 0.3msec max.
Off-state Leakage Current	Max. 0.3mA
Output Current Rating	Max. 0.5A/channel, 4A/all channel
Surge Current Rating	1A for 10msec, repeatable every 3sec
Protection	Short, Reverse voltage protection on BT-DO32P, BT-DO32N, BT-DH16P, BT-DH16N
General Specification	
Power Supply	From external, 24Vdc Nominal, 11~26Vdc
Power Dissipation	<100mA/24Vdc, TBD expect Output Driver Current
Isolation	DI/DO to System : Photo coupler isolation
Environment Condition	Refer to 'Environment Specification' (page :4-2)

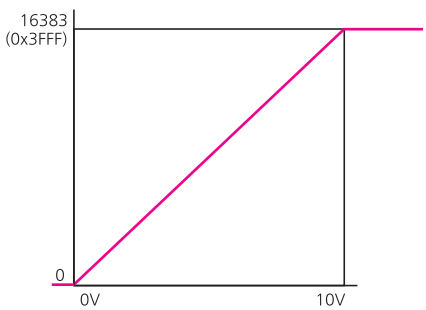
AI (Analog Input)

Item	Specification
Input type	BT-8844, Voltage Input, Differential Input (4ch)
Indicator	Nothing
Resolution in Ranges	14bits (0~10V : 0x0000~0x3FFF), about 0.6mV/bit
Input Voltage Ranges	0~10V nominal Absolute Input Range : -14~ +14V
Data Format	16bit Integer
Module Error	+-0.1% Full Scale @25℃ +-0.3% Full Scale @-20℃, 60℃
Input Impedance	About 470KΩ
Conversion Time	2msec/Channel
Calibration	Not Required
General Specification	
Power Supply	DCDC Converter included for AI, AO. No need external power
Power Dissipation	<20mA/24V without Output Load
Isolation	AI/AO to System : Photo coupler isolation
Environment Condition	Refer to 'Environment Specification' (page : 4-2)

* When needing Analog Input Range (-10~10V/0~5V/1~5V/0~20mA/4~20mA) or Conversion digital value, contact us.

Conversion Characteristic

Input Voltage	0V	2.5V	5V	10V
Data	0(0000 Hex)	4095(0FFF Hex)	8191(1FFF Hex)	16383(3FFF Hex)



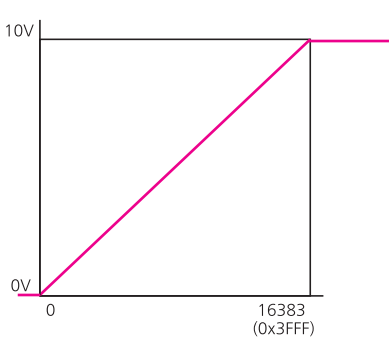
AO (Analog Output)

Item	Specification
Output type	BT-8844, Voltage Output, Single-ended (4ch)
Indicator	Nothing
Resolution in Ranges	14bits (0~10V : 0x0000~0x3FFF), about 0.6mV/bit
Output Voltage Ranges	0~10V
Data Format	16bit Integer
Module Error	+-0.1% Full Scale @25℃ +-0.3% Full Scale @-20℃, 60℃
Load Resistance	Min 5KΩ
Conversion Time	1msec/Channel
Calibration	Not Required
General Specification	
Power Supply	DCDC Converter included for AI, AO. No need external power
Power Dissipation	<20mA/24V without Output Load
Isolation	AI/AO to System : Photo coupler isolation
Environment Condition	Refer to 'Environment Specification' (page : 4-2)

* When needing Analog Output Range (-10~10V/0~5V/1~5V/0~20mA/4~20mA) or Conversion digital value, contact us.

Conversion Characteristic

Data	0(0000 Hex)	4095(0FFF Hex)	8191(01FFF Hex)	16383(3FFF Hex)
Input Voltage	0V	2.5V	5V	10V



MOD : Module Status LED

State	LED is :	To indicate :
No Power	Off	No power is supplied to the unit.
Device Operational	Green	The unit is operating in normal condition.
Device in Standby	Flashing Green	The EEPROM parameter is not initialized yet.
Minor Fault	Flashing Red	DIP Switch(SW1) Changed after power-on The unit has occurred recoverable fault in self-testing.
Unrecoverable Fault	Red	The unit has occurred unrecoverable fault in self-testing. - Hardware Fault or Firmware fault

NET : Network Status LED

State	LED is :	To indicate :
No Power Not On-line	Off	No power is supplied to the unit. - Not completed the Dup-MAC_ID test yet
On-line, Not connected	Flashing Green	Device is on-line but has no connections in the established state. - Passed the Dup-MAC_ID test yet - Not allocated to a master
On-line, Connected	Green	Device is on-line and allocated to a master
Connection Time-out (Recoverable Fault)	Flashing Red	One or more I/O connections are in the time-out state.
Critical Communication Failure. (Unrecoverable Fault)	Red	Failed communication - Duplicate MAC ID - Bus-off

Additional Information

Dimension

- All modules have same size
- 70 x 90mm, 1.6t
- Mounting : Screw M3, 4pcs

