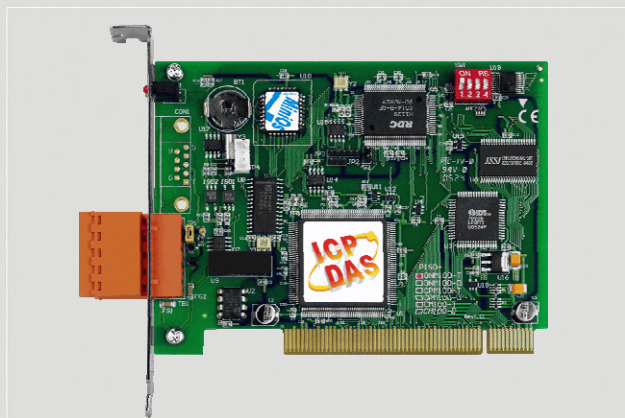# DeviceNet Series Products

1 Port Intelligent DeviceNet Master Board

CE FC

PISO-DNM100-D

PISO-DNM100-T

DeviceNet is a simple low cost open industrial networking system. It provides the communication service needed by various types of applications such as sensor, switches, bar-code scanner, AC/DC drives etc. DeviceNet supports the Master/Slave connection model. The PISO-DNM100 module acts the DeviceNet master device and communicates with the remote slave devices. There is a complete DeviceNet protocol firmware in the PISO-DNM100. The users can easily access the slave device via PISO-DNM100 by using DLL library functions and need not to deal with the complex DeviceNet protocol. The uses can use as easy as "Read/Write" functions to access slave I/O data.

Features

- DeviceNet Version: Volume I & II, Release 2.0
- Programmable master MAC ID and baud rate
- Baud rate: 125 kbps, 250 kbps, 500 kbps
- Support Group 2 and UCMM connection
- I/O Operating Modes: Poll, Bit-Strobe, Change of State / Cyclic
- I/O Length: max 512 input bytes and 512 output bytes per slave
- Slave Node : 63 nodes max
- Support auto-search slave device function.
- Support on-line adding and removing devices
- Support auto-detect Group 2 and UCMM device
- Auto-reconnect when the connection is broken
- LED: Status , ERR
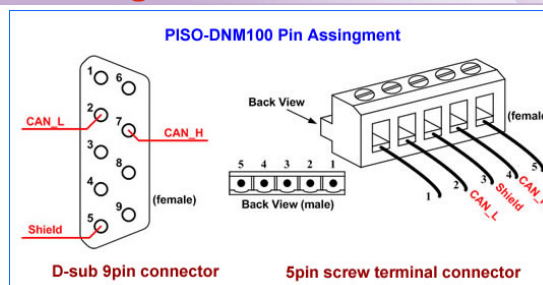
Block Diagram

Utility Features

This utility supports to search all devices and specific devices in the network and can configure the I/O connection of the devices by searching devices or manual setting. It can easily to access the I/O data of all the slave devices.
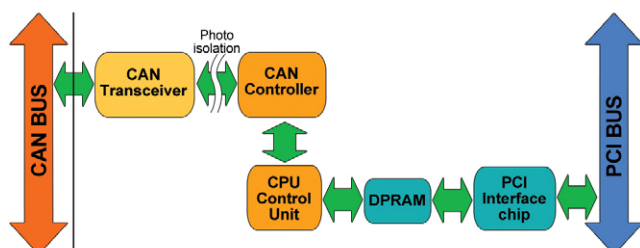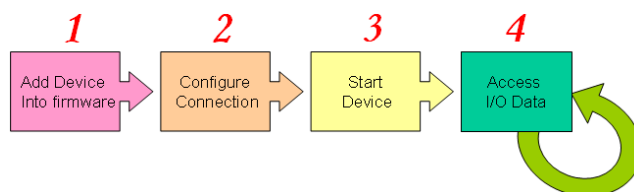
Pin Assignments

Establish Connection Flowchart

1 Add Device Into firmware
2 Configure Connection
3 Start Device
4 Access I/O Data

Hardware Specifications

Model Name	PISO-DNM100-D	PISO-DNM100-T
Bus Interface		
Type	PCI bus, 5 V, 33 MHz, 32-bit, plug and play	
Board No.	By DIP switch	
CAN Interface		
Controller	NXP SJA1000T with 16 MHz clock Microprocessor inside with 80186 80MHz	
Transceiver	NXP 82C250	
Channel number	1	
Connector	9-pin male D-Sub (CAN_GND, CAN_L, CAN_SHLD, CAN_H, CAN_V+, N/A for others)	5-pin screwed terminal block (CAN_L, CAN_SHLD, CAN_H, N/A for others)
Baud Rate (bps)	125 k, 250 k, 500 k	
Transmission Distance (m)	Depend on baud rate (for example, max. 1000 m at 50 kbps)	
Isolation	3000 V_{DC} for DC-to-DC, 2500 Vrms for photo-couple	
Terminator Resistor	Jumper for 120 Ω terminator resistor	
Specification	ISO-11898-2, CAN 2.0A and CAN 2.0B	
Protocol	DeviceNet Volumn I ver2.0, Volumn II ver2.0	
LED		
Round LED	Green LED, Red LED	
Software		
Driver	Windows 2K/XP/7/8 (32-bit/64-bit OS)	
Library	VB 6.0, VC++ 6.0, BCB 6.0, Visual Studio .NET	
Power		
Power Consumption	300 mA @ 5 V	
Mechanism		
Dimensions	138mm x 22mm x 92mm (W x L x H)	
Environment		
Operating Temp.	0 ~ 60 ℃	
Storage Temp.	-20 ~ 70 ℃	
Humidity	5 ~ 85% RH, non-condensing	

LED indicators

LED	Status	Description
Green LED	Off	The firmware is not running
	Twinkle	The DeviceNet firmware is waiting for configuration.
	On	This indicates that the DeviceNet firmware is running. The PISO-DNM100 is communicating with the slave devices.
Red LED	Off	there is no error on the bus and about the MAC ID
	twinkle	This indicates that there are errors on the bus which maybe the situations as shown bellow: (a) The CAN connector doesn't connect to the slave devices. (b) The power of the slave devices is off. (c) The MAC ID collision between master and slave devices is occurring.

Application
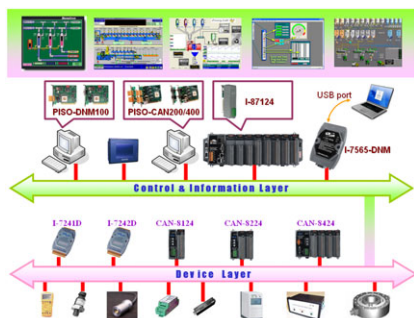
Terminal Resistor
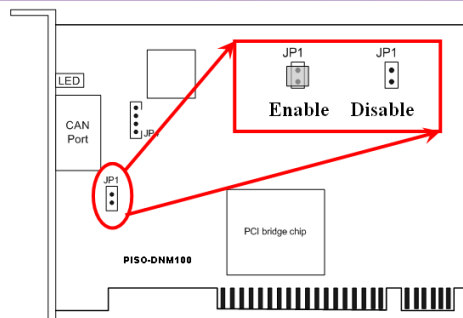
Ordering Information

PISO-DNM100-D	1 Port Intelligent DeviceNet Master Board for 9-pin male D-Sub connector.
PISO-DNM100-T	1 Port Intelligent DeviceNet Master Board for 5-pin screwed terminal connector.