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D930ISADNA DeviceNet Interface (ISA)

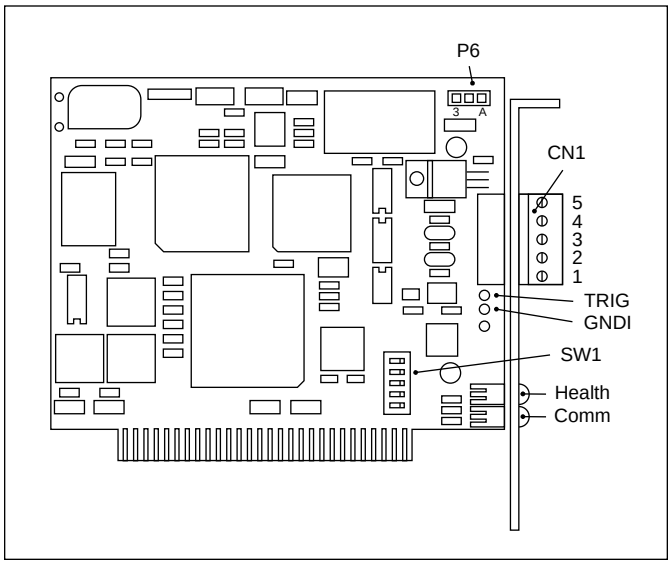


Fig. 1

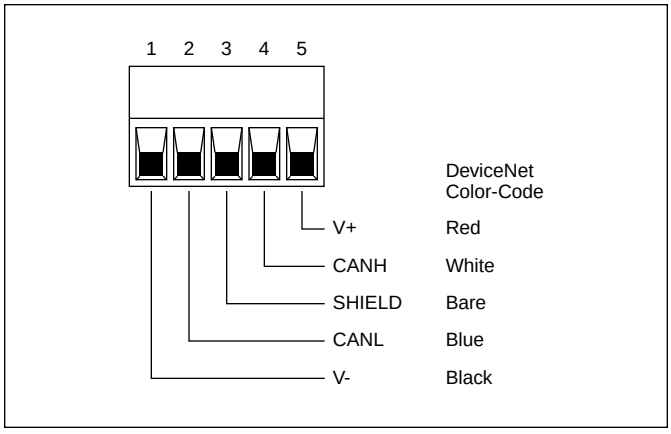


Fig. 2

DESCRIPTION

The D930ISADNA is a 1/4 length 8 bit ISA DeviceNet interface card. Each of the illustrated features is described below.

CN1 — DeviceNet Connector

The DevieNet connector is a standard 5-pin removable connector that conforms to the standard DeviceNet pinout.

V+, V-

Power supply for the isolated section of the DeviceNet interface. Connect to 24V DC power supply.

CAN_H, CAN_L

DeviceNet CAN High and CAN Low communication bus, use only shielded twisted quad cable.

SHIELD (Drain)

Connection for the network cable shield. This pin is connected to earth ground via an R/C snubbing circuit. The shield should be connected directly to earth ground at one point in the network.

TRIG — Scope Trigger Test Point

This test point is located directly below CN1. It provides an oscilloscope trigger point for use with network diagnostic application modules. The ground reference for this signal is either the GND1 test point immediately below the TRIG test point or the SHIELD terminal.

Health Indicator

The HEALTH indicator is a bicolor LED indicating the health of the D930ISADNA interface card.

Color	Status
OFF	No Power
Green	Application module loading and running.
Red	Application module not loaded, or an error occurred during the load.

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COMM Indicator (Network Status LED)

The COMM indicator is a bicolor LED indicating the status of the communication channel as follows:

COMM Indicator	Status
OFF	Offline
Flashing Green	Online
Solid Green	Online and Scanning
Solid Red	Bus Off

SW1 — DIP Switch

The 6 position DIP switch is used to set the base I/O address. Switch settings are as follows:

I/O	SW1 Setting						Comment
Address	1	2	3	4	5	6	
0X200	0	0	0	0	0	0	Game Port
0X208	1	0	0	0	0	0	
0X210	0	1	0	0	0	0	
0X218	1	1	0	0	0	0	
0X220	0	0	1	0	0	0	
0X228	1	0	1	0	0	0	
0X230	0	1	1	0	0	0	
0X238	1	1	1	0	0	0	
0X240	0	0	0	1	0	0	
0X248	1	0	0	1	0	0	
0X250	0	1	0	1	0	0	Default
0X258	1	1	0	1	0	0	
0X260	0	0	1	1	0	0	
0X268	1	0	1	1	0	0	
0X270	0	1	1	1	0	0	
0X278	1	1	1	1	0	0	LPT2
0X280	0	0	0	0	1	0	
0X288	1	0	0	0	1	0	
0X290	0	1	0	0	1	0	
0X298	1	1	0	0	1	0	
0X2A0	0	0	1	0	1	0	
0X2A8	1	0	1	0	1	0	
0X2B0	0	1	1	0	1	0	
0X2B8	1	1	1	0	1	0	
0X2C0	0	0	0	1	1	0	
0X2C8	1	0	0	1	1	0	
0x2D0	0	1	0	1	1	0	
0x2D8	1	1	0	1	1	0	
0X2E0	0	0	1	1	1	0	
0X2E8	1	0	1	1	1	0	Com Port 4
0X2F0	0	1	1	1	1	0	
0X2F8	1	1	1	1	1	0	Com Port 2
0X600	0	0	0	0	0	1	Game Port
0X608	1	0	0	0	0	1	
0X610	0	1	0	0	0	1	
0X618	1	1	0	0	0	1	
0X620	0	0	1	0	0	1	
0X628	1	0	1	0	0	1	
0X630	0	1	1	0	0	1	
0C638	1	1	1	0	0	1	
0X640	0	0	0	1	0	1	
0X648	1	0	0	1	0	1	
0X650	0	0	1	1	0	1	
0X658	1	0	1	1	0	1	
0X660	0	0	1	1	0	1	
0X668	1	0	1	1	0	1	
0X670	0	1	1	1	0	1	
0X678	1	1	1	1	0	1	LPT2
0X680	0	0	0	0	1	1	
0X688	1	0	0	0	1	1	
0X690	0	1	0	0	1	1	
0X698	1	1	0	0	1	1	
0X6A0	0	0	1	0	1	1	
0X6A8	1	0	1	0	1	1	
0X6B0	0	1	1	0	1	1	
0X6B8	1	1	1	0	1	1	
0X6C0	0	0	0	1	1	1	

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I/O	SW1 Setting						Comment
Address	1	2	3	4	5	6	
0X6C8	1	0	0	1	1	1	
0X6D0	0	1	0	1	1	1	
066D8	1	1	0	1	1	1	
0X6E0	0	0	1	1	1	1	
0X6E8	1	0	1	1	1	1	Com Port 4
0X6F0	0	1	1	1	1	1	
0X6F8	1	1	1	1	1	1	Com Port 2

DEVICE INSTALLATION AND CONFIGURATION

WARNING

DO NOT INSTALL OR PERFORM MAINTENANCE ON THIS DEVICE WHILE THE (OVERLOAD/ CONTROLLER) IS ENERGIZED. DEATH OR SEVERE PERSONAL INJURY CAN RESULT FROM CONTACT WITH ENERGIZED EQUIPMENT. VERIFY THAT NO VOLTAGE IS PRESENT BEFORE PROCEEDING WITH INSTALLATION OR MAINTENANCE.

Only qualified persons, as defined in the National Electric Code, who are familiar with the installation, maintenance and operation of this device and the equipment onto which is to be installed, as well as applicable local, state and national regulations and industry standards and accepted practices regarding safety of personnel and the equipment safety should be permitted to install, maintain or operate this device. These instructions are provided only as a general guide to such qualified persons and are not all-inclusive. They do not cover every application or circumstances which may arise in the installation, maintenance or operation of this equipment. Users are advised to comply with all local, state and national regulations and industry standards and accepted practices regarding safety of personnel and the equipment safety.

1. Locate an unused I/O port address and set the scanner DIP switches

Record the used I/O port addresses for the target PC. The default I/O port address for the D930ISADNA is 0X250. Using the SW1 DIP Switch Table, choose a port address that does not conflict with any other hardware used by the PC.

CAUTION

SOME INTERFACE CARDS DO NOT FULLY DECODE THE I/O ADDRESS. THIS CAN CAUSE AN I/O CARD LOCATED IN THE 0x200-0x2FF RANGE TO ALSO RESPOND TO ACCESSES IN THE 0x600-0x6FF RANGE. IF A CARD USES A 0x2XX I/O ADDRESS THE CORRESPONDING 0x6XX ADDRESS SHOULD BE AVOIDED TO ELIMINATE THE POSSIBILITY OF A CONFLICT.

Note: Keep in mind that eight I/O addresses are used. Selecting 250 actually uses 250 through 257.

Configuring Multiple Cards

Multiple D930ISADNA cards may be installed in the same machine. Each card must be configured with a unique I/O port and memory address.

2. Install the card into the PC

Use the following procedure to install the D930ISADNA into your computer:

1. Turn the computer off and disconnect the power cord.
2. Remove the cover from your computer. Consult the computers user manual for instructions.
3. Locate an unused 8 or 16 bit ISA slot in your computer. While the D930ISADNA only requires an 8 bit slot (1 connector), it may be installed into a 16 bit slot (2 connectors) if an 8 bit slot is unavailable.
4. Remove the slot cover for the empty slot and keep the screw (pay attention to the location of the slot cover prior to removal).
5. Wear an anti-static strap for the remaining steps. If an anti-static strap is not available, leave the power cord connected and try to keep in contact with the metal case of your computer to eliminate the possibility of damaging the D930ISADNA.
6. Take the D930ISADNA out of the anti-static bag, trying to touch only the metal bracket. Do not touch the edge connector or the surface of the board.
7. Set the DIP switches to the selected I/O address.

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8. Install the card into the empty slot. Make sure the gold edge-connector seats firmly into the expansion slot connector and the metal bracket is in the same position as the slot cover removed in Step 4. Secure the card with the slot cover screw.
9. Replace the cover on your computer.

Grounding

The SHIELD and V- terminals on the 5-pin connector are connected to earth ground (via the PC) with a high impedance R/C snubbing network. The network shield should be connected directly to earth ground at only one point.

3. Connect the network cable

Connect a DeviceNet Drop cable to the 5-pin connector according to the color code shown in the CN1-CAN Connector section. Make sure that no strands of wire are bent and possibly shorting to the adjacent terminal.

Note: Directly connecting DeviceNet trunk cable is not recommended due to the mechanical stress placed on the connector by the heavy trunk cable. If a trunk cable must be attached, it must be secured such that no undue stress is placed on the 5-pin connector.

Termination Resistor

The D930ISADNA does not have a built-in termination resistor. If the card is at the extreme end of the network (end of trunk) a 120 ohm, 1% metal film, 0.25 watt termination resistor should be connected from pin 2 to pin 4 of the 5-pin connector. This resistor can be inserted along with the DeviceNet cable prior to tightening the screws.

4. Launch the PC application

The card is now ready to use. Make sure there are no conflicts with any other hardware installed in the PC.

SPECIFICATIONS

Environmental

Power requirements.....5V ± 5%, 500 mA
Operating Temperature .....0°C to 50°C
Storage Temperature .....-40°C to 85°C
Operating Humidity .....5% to 90% noncondensing

Network

Cable .....Shielded twisted quad, DeviceNet cable
External Power .....11 – 24V DC, 50 mA
Isolation 500V
Protocol.....CAN 2.0A
Data Rate.....Up to 1 Mbaud

PCbus

Size .....1/4 length 8 bit card
Memory Address.....8 bit R/W access, 16 or 32K window, base segment address settable from 0x8000 to 0xFC00
I/O Access .....8 bit R/W access, 8 consecutive I/O addresses in range of 0x200 to 0x2F8 or 0x600 to 0x6F8
Interrupts.....Software selectable IRQ2, 5 or 7 or polled (in I/O port)

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