Functional Specification

DeviceNet™
16 Point Sealed Input Block

DN-IDS16

Rev. 1.00

HURON
NET
WORKS

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1. INTRODUCTION

The DN-SB16 provides a DeviceNet connection for up to 16 sensor inputs. These inputs may be either sourcing or sinking inputs. The network connection will implement the DeviceNet specification. Power for the sensors will come from the network power supply.

2. HARDWARE COMPONENTS

Quantity	*Part*
1	68HC705X4
1	DS2401
1	74AC175
2	74HC541
1	LM78M05CT
1	82C250
1	X24C04
1	MAX809L
1	1N5817
1	MPSA64
1	Resettable Fuse
8	LM339
1	16 MHz Crystal
2	Bi-Color Status LED
2	5-Pin DeviceNet Connector
8	4-Pin Micro Connectors
1	Box of appropriate dimensions to contain DN-SB16 Hardware (See Figure 1-1 for an example)
*	Miscellaneous Resistors and Capacitors

The DN-SB16 Hardware System

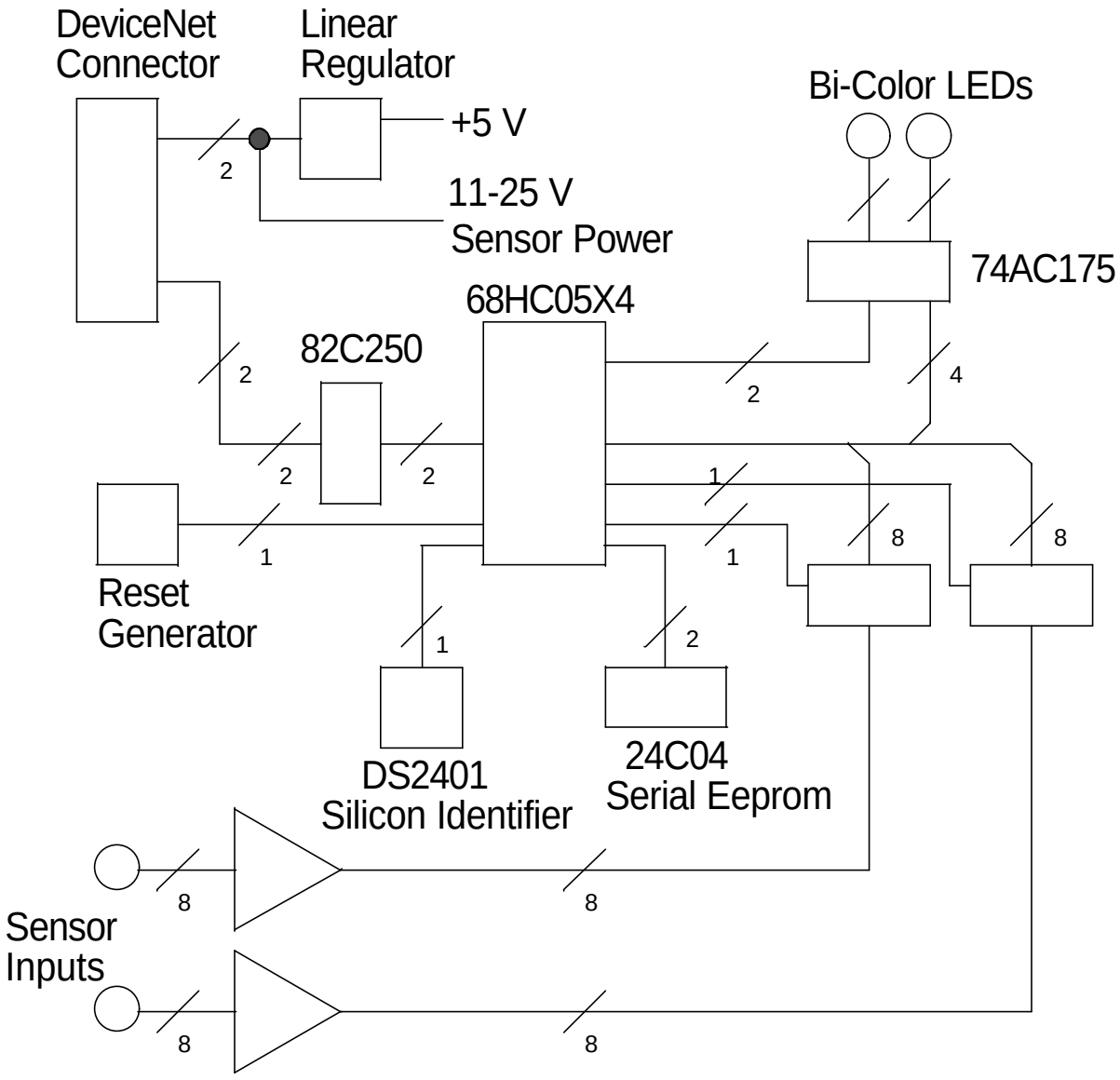
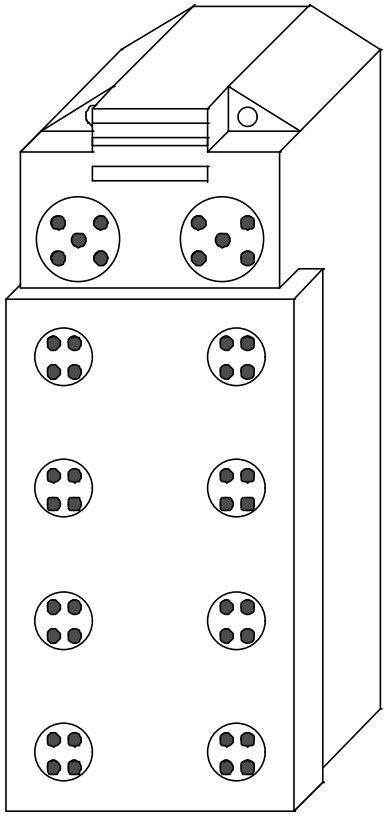

DeviceNet
Connector
Linear
Regulator
+5 V
11-25 V
Sensor Power
Bi-Color LEDs
74AC175
68HC05X4
82C250
Reset
Generator
DS2401
Silicon Identifier
24C04
Serial Eeprom
Sensor
Inputs
2
2
2
2
2
4
1
1
1
8
8
1
2
8
8
8
8

Figure 1-1



3. FIRMWARE

3.1. DeviceNet Communication Stack

The communication system that the DN-SB16 implements is the DeviceNet predefined master / slave connection set. The DN-SB16 supports both poll and strobe connections. The poll consumption size is zero and the poll produced size is two; the strobe produced size is two.

3.2. Serial EePROM

The serial EePROM stores the MACID and the baudrate.

3.3. Dallas 2401

The Dallas 2401 contains an absolute unique serial number from any other Dallas 2401. The serial number in the Dallas contains 48 bits. The DN-SB16 requires a 32-bit serial number. Thus the 48-bit serial number of the Dallas 2401 is mapped to the DeviceNet 32-bit serial number of the DN-SB16.

DS2401 Memory Map

8-Bit CRC Code	48-Bit Serial Number	8-Bit Family Code (01h)