



# TECHMOR

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ND-1

Numeric Display

USER MANUAL

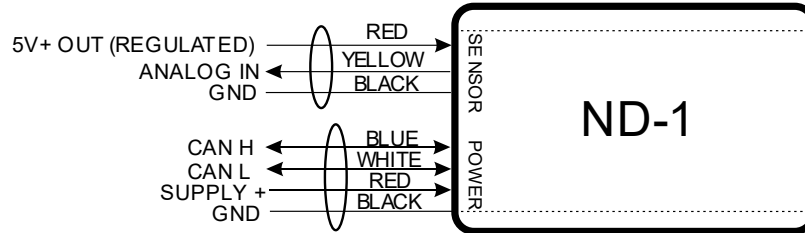
Rev. A 5/25/2023

## Overview

The Techmor ND-1 is a lightweight, compact module that reads 0-5V analog voltage or CAN Bus and displays the result on a 4-Digit LED.

## Connections

All connections to the ND-1 are through the two multi-conductor cables on the enclosure.



**Caution: Do not feed more than 5V into the analog input.**

## Input

The ND-1 has one 16-bit 0-5 volt analog channel. The input is accessed via the 3-conductor cable. The channel is single-ended and shares a common ground.

Number of Analog Channels	1	-
Input Voltage Range	0-5	V
Resolution	16-Bit	-
Accuracy	0.1% F.S.	-

## Electrical

The ND-1 can be supplied with 6-30V DC via the red and black wires on the 4-conductor cable on the Power/CAN side of the enclosure.

Supply Voltage	6 - 30	V DC
Current (No Load)	35	mA
Excitation Voltage	5	V DC
Excitation Current	75	mA

## CAN Bus Message Format

CAN Message Bits

Default CAN Message ID	Bits 0-15	Bits 16-31	Bits 32-47	Bits 48-63
11 (0x00B)	AN1	GAIN	OFFSET	SERIAL NUMBER

Note: All Messages are Unsigned 16-bit Words (U16)

## CAN Bus Message Decode

Channel Output (Voltage) = Counts \* 0.0001

## Changing the ND-1 Settings

### CAN ID

The CAN ID of the ND-1 can be set by sending a special CAN programming message to the unit. The message format is as follows:

#### Change CAN ID

Message ID	Bits 0-15	Bits 16-31	Bits 32-47	Bits 48-63
0x7FE	0x9269	0x0000	ID to write (0x0 to 0x7FD)	Serial # of device to program

Note: The serial number engraved on the unit is in decimal form, and may need to be converted to hex, depending on your CAN communication tool.

## **CAN Bus Bitrate**

(programmable for units with serial number xxx-0536 and higher)

The CAN Bus Bitrate of the ND-1 can be set by sending a special CAN programming message to the unit. The message format is as follows:

### **Change CAN Bus Bitrate**

<b>Message ID</b>	<b>Bits 0-15</b>	<b>Bits 16-31</b>	<b>Bits 32-47</b>	<b>Bits 48-63</b>
0x7FE	0x9269	0x0001	CAN Bus Bitrate Code (see Table below)	Serial # of device to program

Note: The serial number engraved on the unit is in decimal form, and may need to be converted to hex, depending on your CAN communication tool.

<b>CAN Bus Bitrate</b>	
<b>Bus Bitrate</b>	<b>Code</b>
1Mbit/s	0x0001
500kbit/s	0x0002
250kbit/s	0x0003

**Note: After receiving the CAN Bus Bitrate change message, the ND-1 will immediately restart, using the new CAN Bus bitrate. The communication tool's CAN bitrate must be adjusted accordingly to view the new messages.**

## Gain

### Change Gain

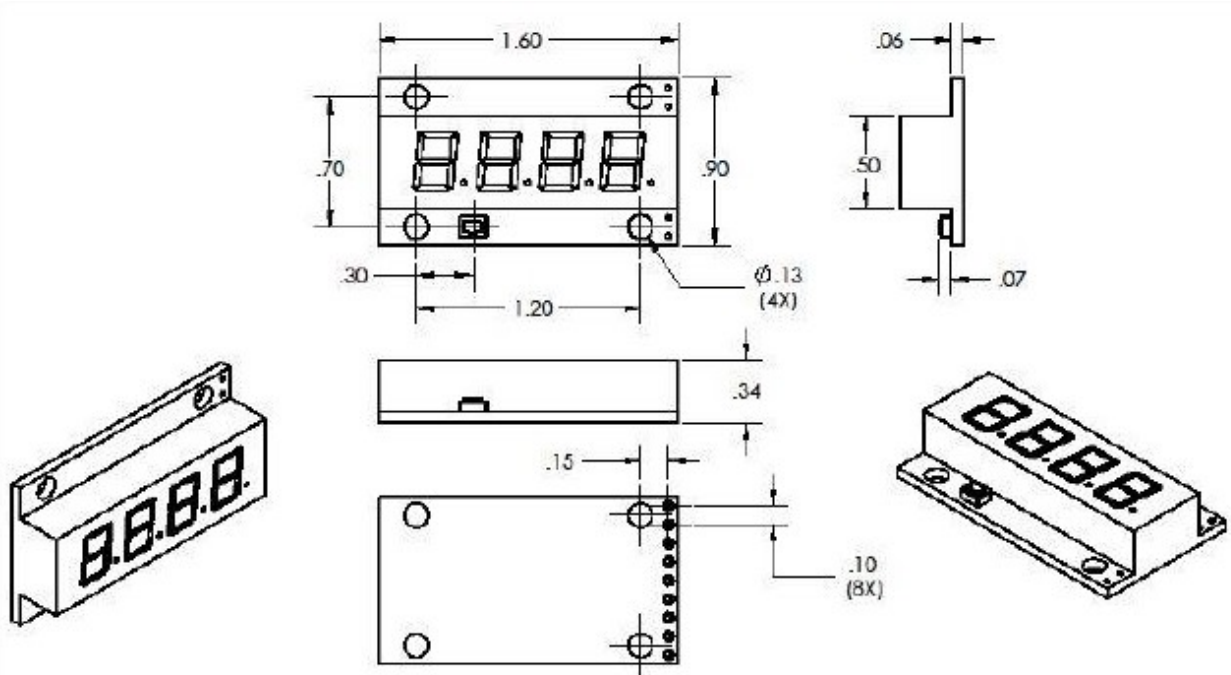
Message ID	Bits 0-15	Bits 16-31	Bits 32-47	Bits 48-63
0x7FE	0x9269	0x0004	Gain	Serial # of device to program

## Offset

### Change Offset

Message ID	Bits 0-15	Bits 16-31	Bits 32-47	Bits 48-63
0x7FE	0x9269	0x0005	32768 + Offset	Serial # of device to program

# Mechanical Dimensions



DIMENSIONS ARE IN INCHES

## Ordering and Contact Information

### Ordering Information

ND-1

### Company Information

Techmor, Inc. creates advanced test and measurement equipment. Techmor is a world leader in innovation for aerospace, automotive and industrial systems.

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