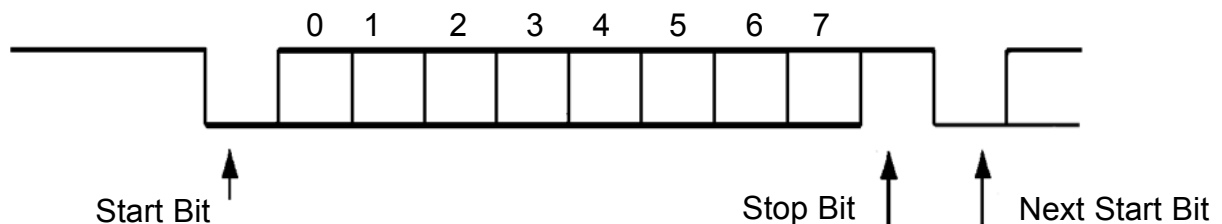# *DX-Series* Serial Communications Specification

1.0 Software

The serial communications uses an SCI protocol, which communicates via a receive data in (RDI) pin. The NRZ data format is as shown below.

The configuration is as described below:

    The communications setup:
        4800 bps, 1 start bit, 8 data bits, 1 stop bit, No Parity

    Each message string always begins with the SOH character and ends with the checksum character and is 8 characters in length. All status and checksum characters are in binary, all other charaters are in ASCII. Any leading zeros are transmitted as ASCII spaces.

    The data packet format:

    Byte 1: Start byte   The value of this bite is 01H (ASCII SOH char) when there is data to send.

    Byte 2: Flag byte   (Status byte) This byte is made up as follows:
                bit 0: Low battery
                bit 1: Low ambient temperature
                bit 2: High ambient temperature
                bit 3: Low target temperature
                bit 4: High target temperature
                bit 5: deg C / deg F units, 0 is deg F, 1 is deg C
                bit 6: RAM or ROM error
                bit 7: EEPROM error

    Bytes 3-4: NA

    Bytes 5-8: Temperature/display data. The format for the data is in ASCII.

Byte 9: Decimal point placement

The decimal equivalent value in this byte is equal to the power of 10 to divide the temperature display by to obtain proper decimal point placement. For example, if bye 7 contains 31H, the value on the display is XXX.X. During Error code messages, the value is 20H which is an ASCII space character.

Byte 10: Checksum. The checksum is the sum of characters in bytes 1 through 9.

Byte 11: CR   This is the ASCII carriage return character (OD)

Byte 12: LF   This is the ASCII line feed character (OA)

2.0 Hardware

Connector*: 9 pin Dsub connector, male. Pin 2 = signal (transmit), Pin 5 = signal return (GND)

Signal voltage level meets EIA-232E minimum driver output levels for worst case operation.

$$V_{signal} = \pm \ 8 \text{ volts typical with 5K load}$$
$$= \pm \ 5 \text{ volts typical with 3K load}$$

This device has transmit (output) function only. There is no receive (input) function.

*Standard serial communication port connector for PC. Any connector with 2 or more pins can be used.