User's Manual
Future Design Controls SNA10A Smart Network Adaptor

1.Features

* Supports both RS-485 and RS-422 Interface

* Baud Rate: 300 ~ 38400 bits/sec configurable

* Allows connection for 247 multi-drop units

* Automatic data direction control for RS-485 without the need to take care of RTS signal.

* Precision timing control for RS-485 allows fast switching between transmit and receive

* Universal (90 ~ 264 VAC) AC power input

* Isolated between RS-232 and RS-485 / 422 eliminate common mode noise problems

* Flexible installation: DIN rail mount or wall mount
* CE Approved

2.Introduction

SNA10A is a smart network adaptor which can be used to convert unbalanced RS-232 signals to balanced RS-485 or RS-422 signals. SNA10A is used for single node conversion or when communicating with 3rd party software including Future Design Controls MultiView software.

The RS-485 is an enhanced version of the RS-422A balanced line standard. It allows multiple drivers and receivers on a 2-wire system and reduces wiring cost. This 2-wire system can perform half-duplex transmission only. Because RS-422 is a 4-wire system, it can perform full-duplex transmission. The driving capability is dependent on the input impedance of the connected receivers.

As many as 32 standard units can be put on RS-422 or RS-485 port.
Up to 247 high impedance units, such as Future Design Control's interface products, can be put on RS-422 or RS-485 port.

3.RS-232C Interface 9 Pin female DCE Port

SN10A - Straight Cable DB9 to DB9

DTE to DCE Connections

| Computer 9pin Male (DTE) DB9		Signal Direction	SN10A 9pin Female (DCE) DB9	
Pin# DB9 RS-232 Signal Names			Pin# DB9 RS-232 Signal Names	
#1 Carrier Detector (DCD)	CD	⬅	#1 Carrier Detector (DCD)	CD
#2 Receive Data (Rx)	RD	⬅	#2 Receive Data (Rx)	RD
#3 Transmit Data (Tx)	TD	➡	#3 Transmit Data (Tx)	TD
#4 Data Terminal Ready	DTR	➡	#4 Data Terminal Ready	DTR
#5 Signal Ground/Common (SG)	GND	—	#5 Signal Ground/Common (SG)	GND
#6 Data Set Ready	DSR	⬅	#6 Data Set Ready	DSR
#7 Request to Send	RTS	➡	#7 Request to Send	RTS
#8 Clear to Send	CTS	⬅	#8 Clear to Send	CTS
#9 Ring Indicator	RI	⬅	#9 Ring Indicator	RI
Soldered to DB9 Metal - Shield	FGND	—	Soldered to DB9 Metal - Shield	FGND

4.Specifications

|	
Baud rate:	300 ~ 38400 bits/sec
Parity bit:	None, odd or even
Data bit:	8 bits
Stop bit:	1 or 2 bits
Connectors:	9-pin Female D-SUB (RS-232)
	Screw type terminal block (RS-485/422)
Receiver threshold:	0.8 V min. 2.4 V max. (RS-232)
	K0.2 V (RS-485/422)
Receiver input impedance:	3K ~ 7 Kohm (RS-232)
	96 Kohm (RS-485/422)
Transmission mode:	Single ended (RS-232)
	Differential (RS-485/422)
Transmission distance:	50 ft (RS-232)
	5000 ft (RS-485/422)
Common-mode voltage:	K25 V (RS-232)
	+12 V, -7V (RS-485/422)
Driving capability:	32 receivers (12 Kohm input)
	247 receivers (96 Kohm input)
Power:	90~264 VAC, 47~63 Hz, 10VA, 4W max.
Breakdown Voltage:	2500VAC, 1minute (power to RS-232, RS-485/422)
	400 VAC, 1 minute (between RS-232 and RS-485/422)
Isolation resistance:	>500 Mohm VS. 500 VDC
Ambient temperature:	0~50 LC
Storage temperature:	-20~80 LC
Agency Approvals:	CE Approved
Mounting method:	DIN rail mount or wall mount
Dimension:	4.02" (L) X 3.15" (W) X 1.18" (H) inches
Weight:	120 grams

5.Mechanical Data

UMSN10A
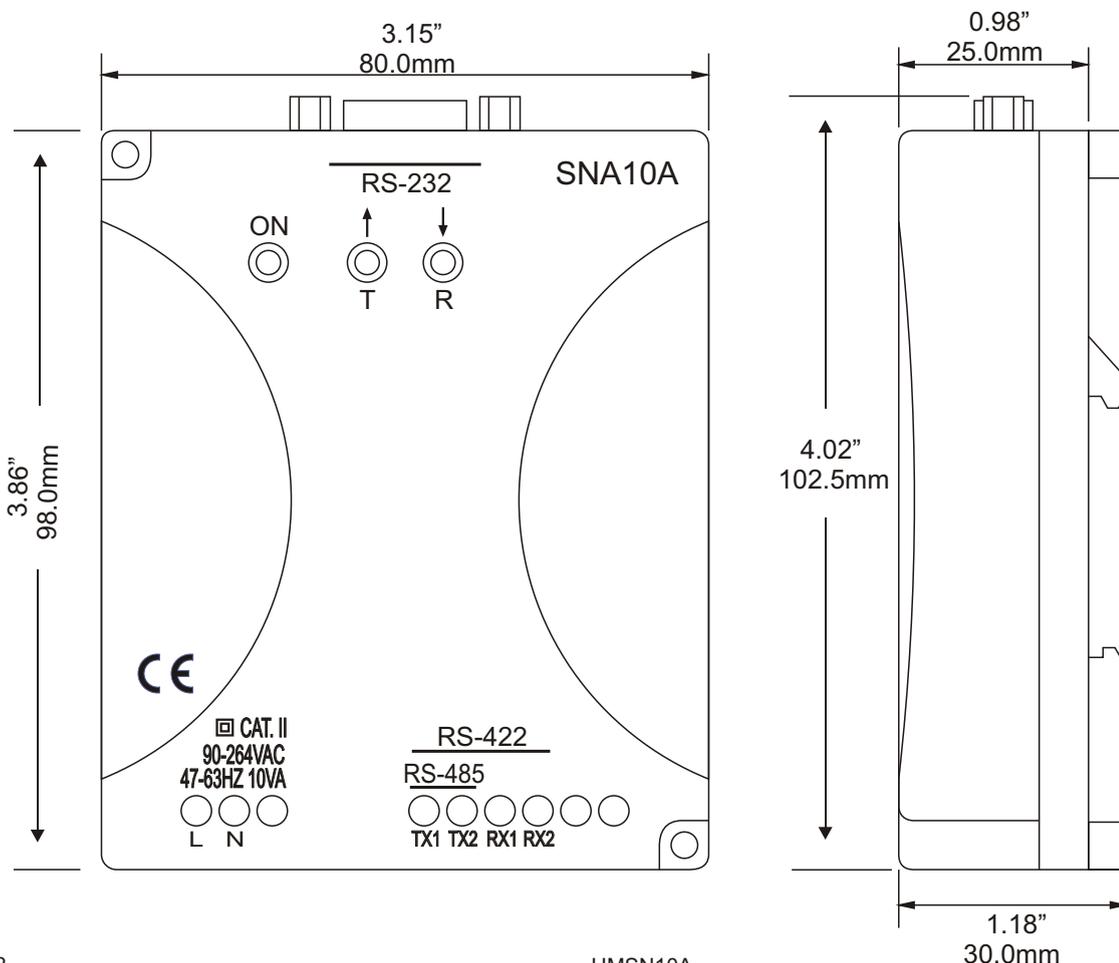
6.Application

(1) RS-485 Interface Wiring
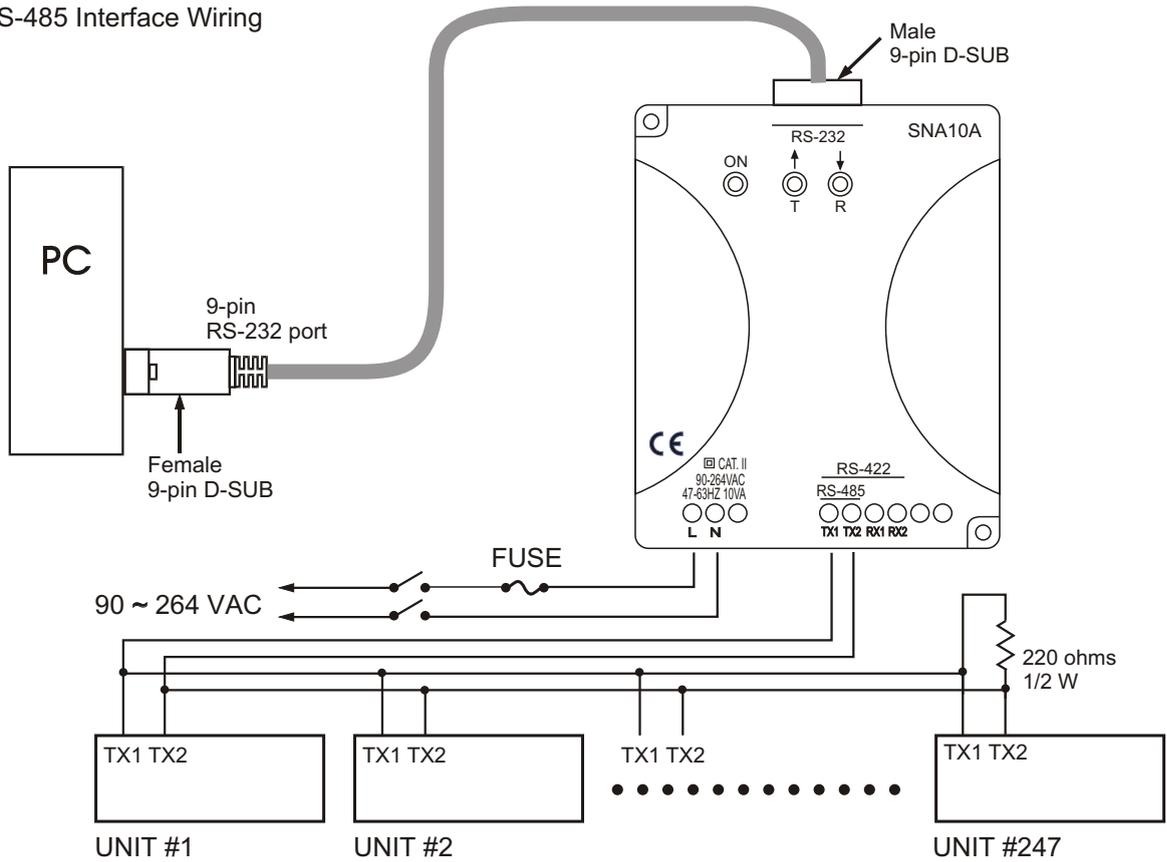
A 220 ohms 1/2 W termination resistor across the TX1 and TX2 terminals of the last unit in the network is required. (Resistor not included)

(2) RS-422 Interface Wiring
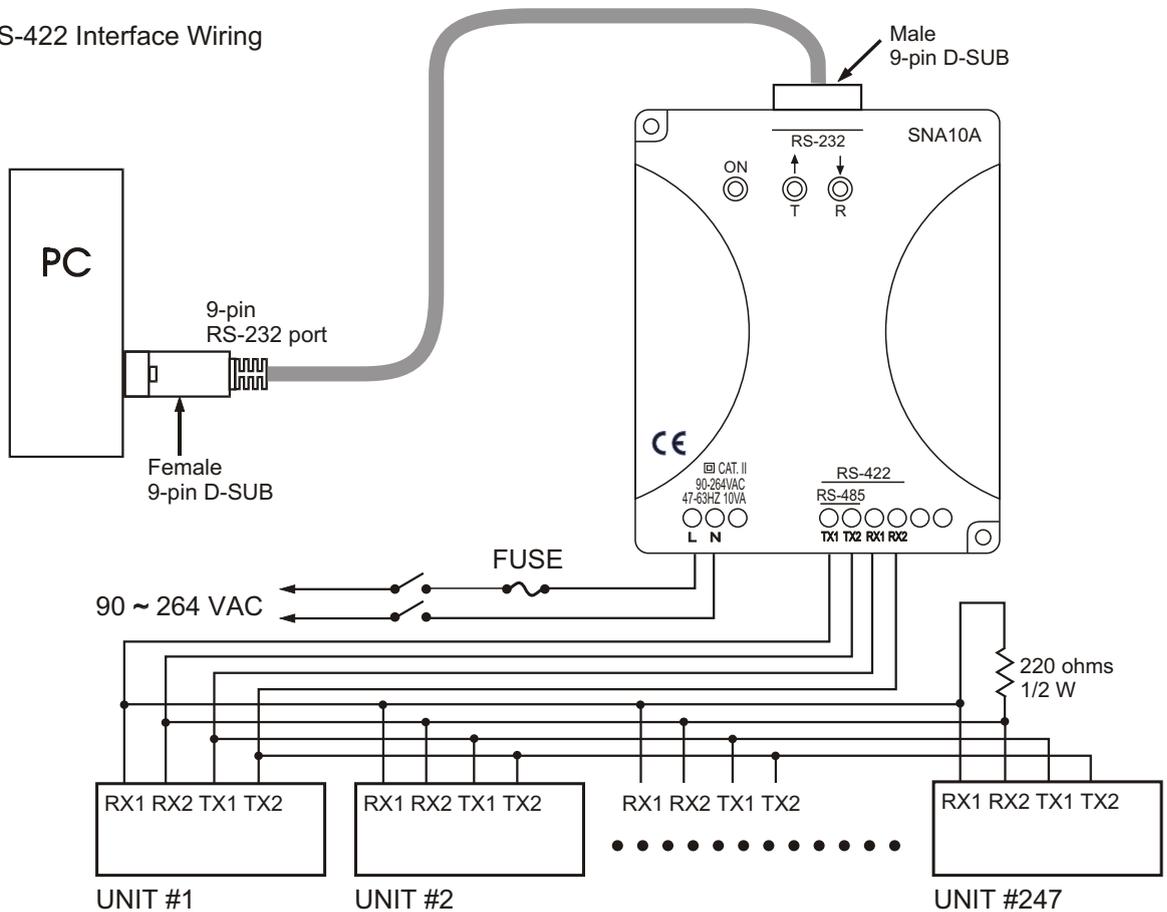
A 220 ohms 1/2 W termination resistor across the receive terminals of the last unit in the network is required.

7. DIP Switch Setting

SNA10 DIP SWITCH SETTING ■ = ON POSITION BLANK = OFF POSITION		1	2	3	4	5	6	7	8
Interface	RS-422	■							
Interface	RS-485								
Parity Bit	None		■	■					
Parity Bit	Even			■					
Parity Bit	Odd								
Stop Bit	1 bit				■				
Stop Bit	2 bit								
Baud Rate (bps)	300					■	■	■	■
Baud Rate (bps)	600						■	■	■
Baud Rate (bps)	1200					■		■	■
Baud Rate (bps)	2400							■	■
Baud Rate (bps)	4800					■	■		■
Baud Rate (bps)	9600						■		■
Baud Rate (bps)	14400					■			■
Baud Rate (bps)	19200								■
Baud Rate (bps)	28800					■	■	■	
Baud Rate (bps)	38400						■	■	

8. Ordering Data

SNA10A: Smart Network Adaptor for Future Design Controls mulit-drop Multiview software or third party software

SNA10A
Smart Network Adapter

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Rev 3 1/2017