

ZONEX™

101COMM Communicating Thermostat

SINGLE and MULTIPLE STAGE MODELS

with AUTO CHANGEOVER

101COMM 1 Heat / 1 Cool

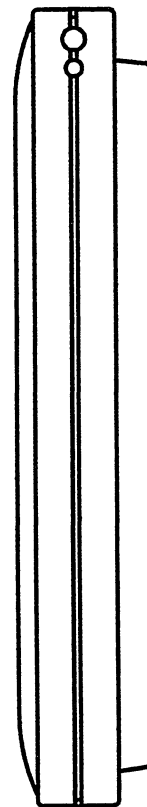
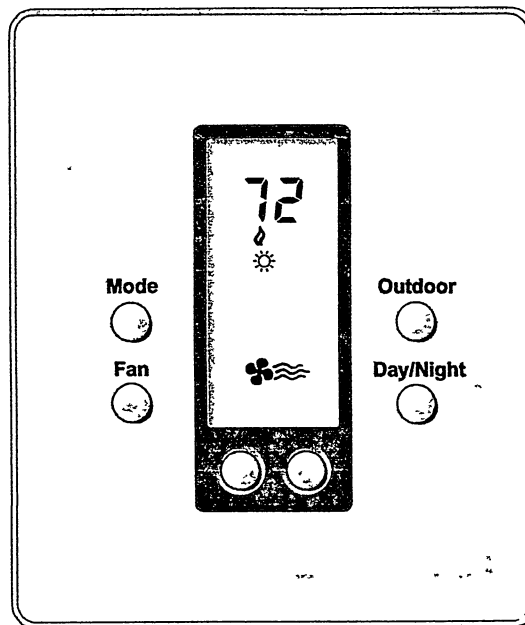
101MST 2 Heat / 2 Cool

GENERAL DESCRIPTION

The 101COMM communicating thermostats are designed for new or replacement commercial or residential conventional applications. The Serial-Stats represent the latest in solid-state surface mount electronics and manufacturing techniques incorporated into an extremely low-profile, ultra-slim white ABS plastic case. Both units offer "user-friendly" control of the heating/cooling equipment along with an easy-to-read vertical LCD that displays complete operating status. An included 2-wire communications port allows complete remote control and status with a hardware adapter. A direct-wire, easy-to-install subbase mounts directly on a standard vertical outlet box or any drywall surface using hardware provided.

STANDARD FEATURES

- ✓ Selectable Celsius or Fahrenheit temperature display
- ✓ Fan selector for continuous fan operation
- ✓ Built-in anticipation and droop
- ✓ Built-in short cycle protection
- ✓ Electronic circuitry replaces conventional mechanical anticipator
- ✓ Internal switch to lockout the keypad to prevent unauthorized tampering
- ✓ Day/Night (Occupied/Unoccupied) button allows setpoint setback for energy savings
- ✓ No battery required (maintains last setpoint/mode of operation following power outages)
- ✓ Lockable access cover
- ✓ Front panel lockout with 1 hour temporary override; +/- 3°F adjustment during override
- ✓ Plenum fan switch
- ✓ MST-1 has 2 LED lights available for status indication with switchable LCD icons
- ✓ Automatic changeover from heat-to-cool and cool-to-heat
- ✓ 2°F (1°C) minimum Heat/Cool separation
- ✓ Complete control and status via XC-SSA Serial-Stat communications adapter family
- ✓ Selectable minimum on/off time (2 or 4 minutes)
- ✓ HVAC equipment control using dry contact relays
- ✓ Optional remote indoor, outdoor and wet location sensing modules



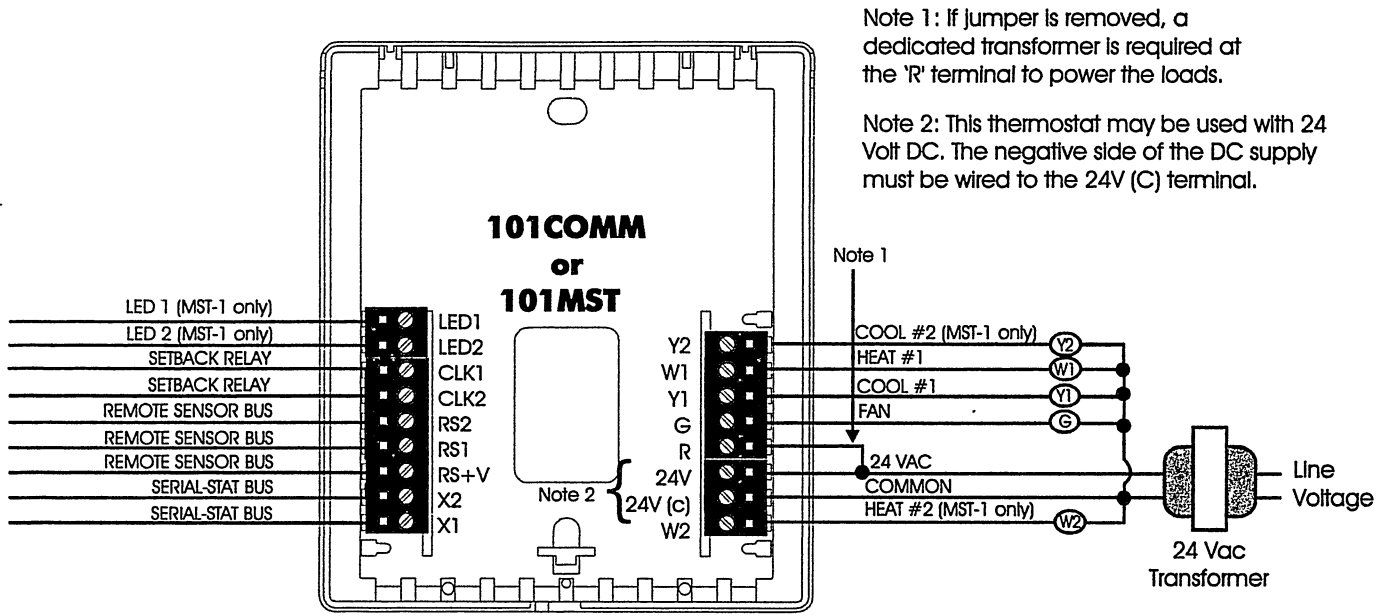
NOTE: Specifications are subject to change without notice.

ACTUAL SIZE

SPECIFICATIONS

Rated Voltage :	20 to 30Vac, DC 24 nominal
Rated A.C. Current :	0.05 to 0.75 Amp continuous per output, with surges to 3 Amps maximum
Rated D.C. Current :	0.0 to 0.75 Amp continuous per output, with surges to 3 Amps maximum
Control Range :	Heating : 38 to 88°F in 1° steps (6 to 30°C in 1° steps) Cooling : 60 to 108°F in 1° steps (16 to 40°C in 1° steps)
Thermostat	
Measurement Range :	28 to 124°F or 0 to 48°C
Control Accuracy :	+/- 1°F @ 68°F (0.5°C @ 20°C)
Minimum Deadband :	(between heating and cooling) 2°F or 1°C
Dimensions :	4.5" H x 4" W x 7/8" D (114mm x 102mm x 22mm)
Equipment Terminations :	R-switching voltage, W1-heat stage 1, Y1-cool stage 1, G-fan MST-1 only - Y2-cool stage 2, W2-heat stage 2
Power Terminations :	24V - power, 24V(c) - power common
Communication Terminations :	X1 - comm(+), X2 - comm(-)
Sensor Terminations :	RS+V - sensor power, RS1 - comm(+), RS2 - comm(-)
Setback Terminations :	CLK1, CLK2 dry contact closure

NOTE: This thermostat contains electronic circuitry that replaces the conventional mechanical anticipator



OUTPUT TERMINAL FUNCTIONS

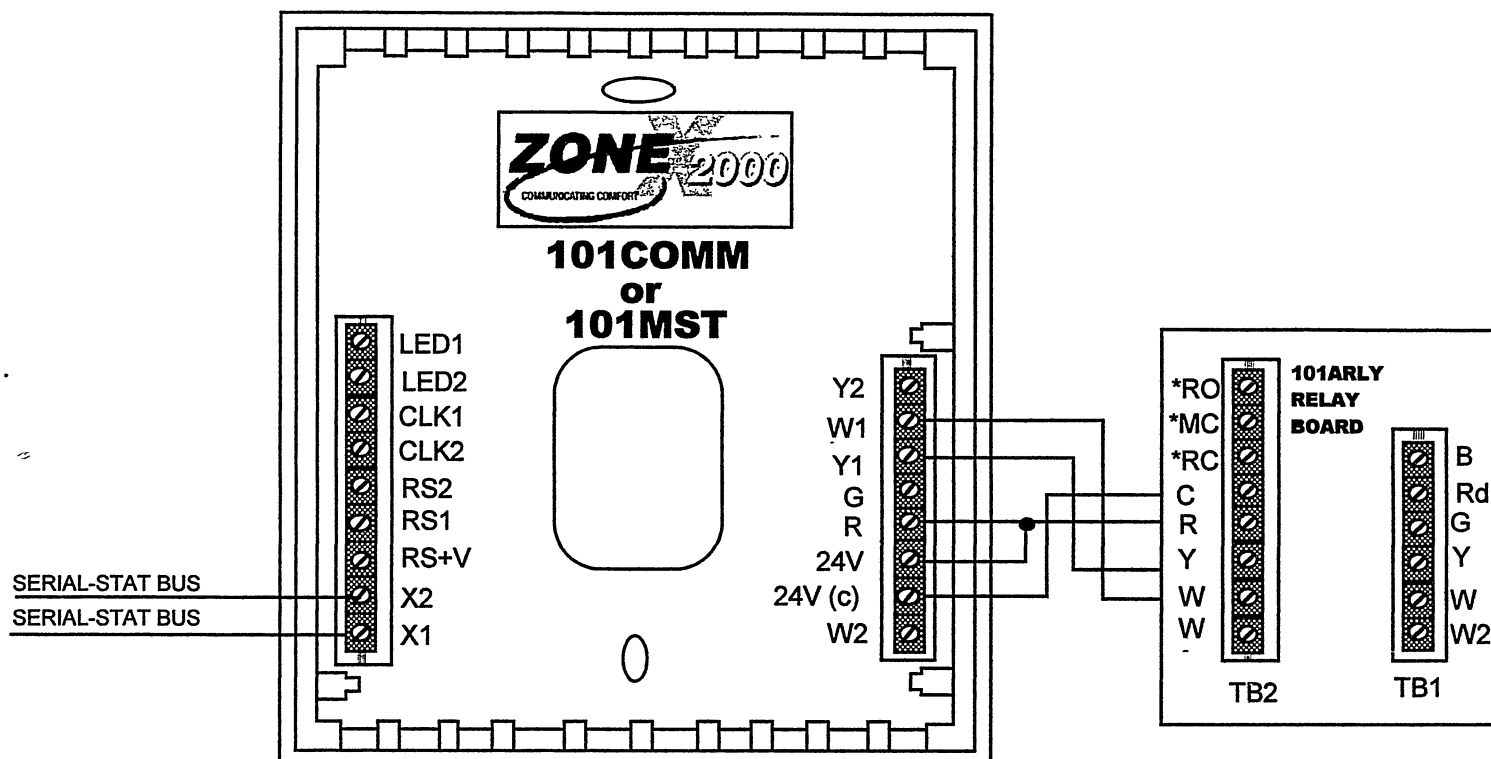
LED1	Free light for status or function indication	Y2	Energizes on a call for second stage cool, MST-1 only
LED2	Free light for status or function indication	W1	Energizes on a call for first stage heat
CLK1	Dry contact closure input for setback	Y1	Energizes on a call for first stage cool
CLK2	Dry contact closure input for setback	G	Energizes the fan circuit
RS2	Remote indoor, outdoor and/or wet location sensor	R	Independent Switching Voltage
RS1	location sensor	24V	24Vac
RS+V	Power for remote sensors	24V(c)	24Vac Common
X2	Communications bus input/output	W2	Energizes on a call for second stage heat, MST-1 only
X1	Communications bus input/output		

ZONE X2000 THERMOSTAT WIRING WITH SYSTEM 1000/2000 CONTROLLERS



The Zoning Systems Company

(800) 228-2966



Notes:
* Damper motor terminals

Thermostat Master Bedroom

73

Mode

Fan

Outdoor

Day/Night

Mode

Auto Heat Cool

Off

OK

Cancel

Fan

Auto

On

Temperature

Indoor

Outdoor

Help

Day/Night

Day

Night

Data Source

Thermostat

File

Stage

Heat	Cool
<input checked="" type="radio"/> 1	<input type="radio"/> 1
<input type="radio"/> 2	<input type="radio"/> 2
<input type="radio"/> 3	<input type="radio"/> 3

Heat

68

Send Setpoints

Cool

74

Copy to File

Network Address

Serial-Stat: 1

Adapter: 1

ZONEX™

Serial-Stat Adapter Pt. #101AD

**CALIFORNIA
ECONOMIZER**
The Zoning Systems Company

CONTROL UP TO 32 SERIAL-STATS & optional REAL-TIME CLOCK/CALENDAR (2) RS-232C and (1) RS-485 Port GENERAL DESCRIPTION

The ZONEX serial communications adapter controls up to 32 Serial-Stat thermostats. The 101AD/CLK includes a real-time clock/calendar which allows simple, yet robust environment control. The ZONEX Serial-Stat Adapter enables simple integration with any control system or personal computer. Two RS-232C and one RS-485 ports are included with the adapter for complete versatility of environments. Removable screw terminals are included for power, RS-485 and the Serial-Stat bus for communications, and a serial cable is included for RS-232C connection. The serial adapter accepts simple ASCII commands using a published open protocol and replies with readable text answers. The entire family of adapters has built-in intelligence to correct illegal thermostat settings that might damage equipment.

Standard Features

Hardware

- Two RS-232 Serial Ports; One RS-485 Serial Port; Operates at 9600 baud
- Allows full control of up to 32 thermostats on each adapter
- No additional hardware needed at the thermostat
- Any Serial-Stat can be up to 1000' away; Combined total of 5000' for all thermostats
- Any mix of home-run, daisy-chain or multi-drop wiring can be used
- Serial-Stat booster available to increase distances several times
- Only two wires needed for communications with the thermostat
- Advanced protection circuitry for data inputs/outputs; All input/output/power on removable connectors
- Adapters Addressable from 1 – 255
- Non-volatile clock/calendar setpoint memory
- Integrated Real-Time Clock/Calendar allows 896 timed programs

RS-232 Features

- One port connects directly to any PC or control system
- One port connects directly to the External Modem (included with CE's 101AD)

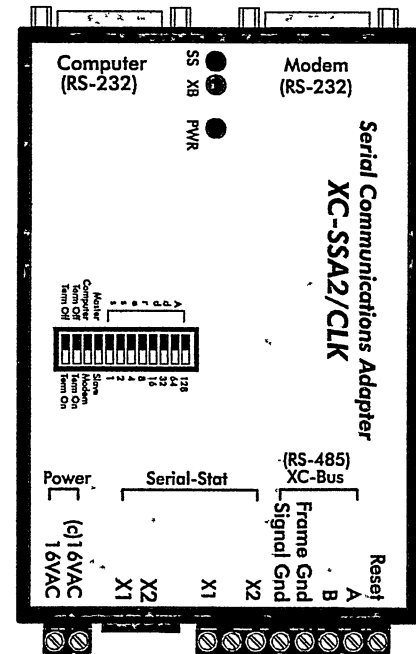
RS-485 Features

- 4-wire multi-drop configuration (2 data, signal ground, frame ground)
- Up to 255 adapters on multi-drop (total of 8160 thermostats)
- Supports any combination of adapters, sensors and modules for a total of 255 units

Software/Manuals

- Open ASCII Protocol allows custom software development
- Two Operation Modes with ASCII Protocol; **Polled, Periodic Update**
- ASCII Protocol Summary and complete Protocol Manual available
- Installation Manual included; Pre-wire Manual available
- Command Center, Windows-based software included

Note : Specifications subject to change without notice.

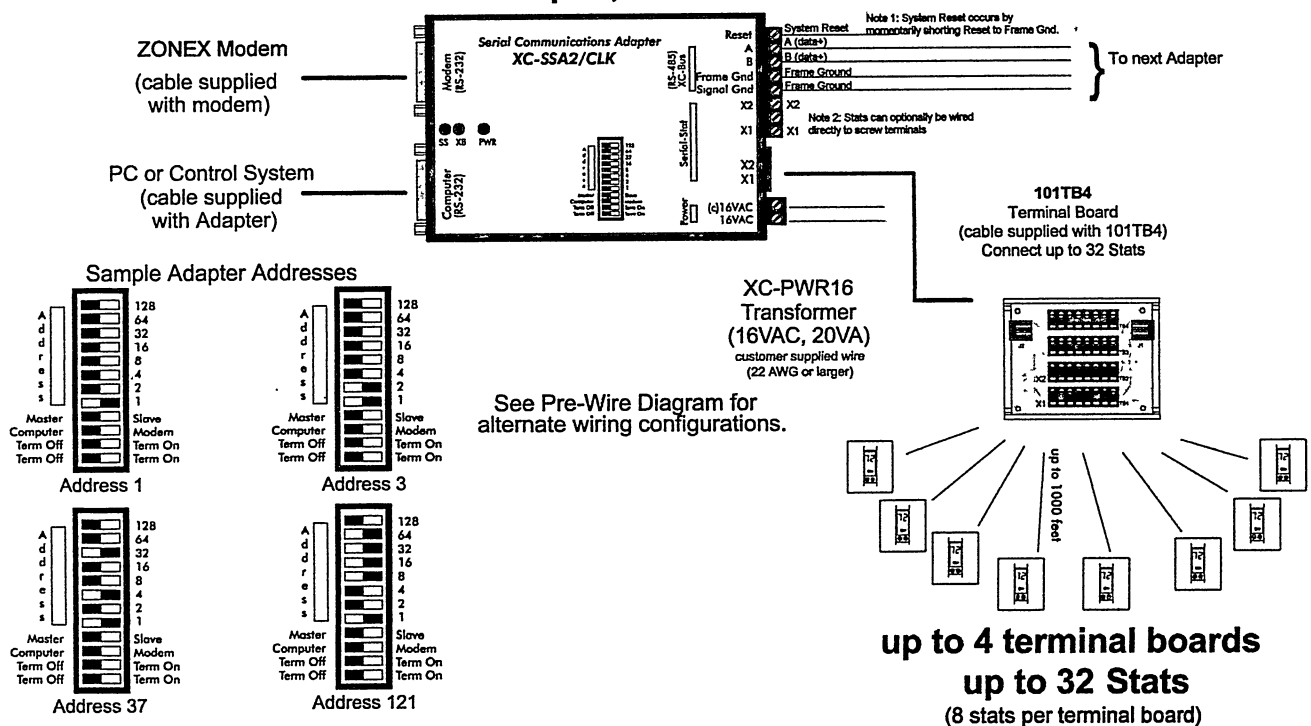


SPECIFICATIONS

Rated Voltage :	16VAC nominal, +/- 20 %
Rated A.C. Current :	250 mA maximum
RS-485 Mode :	Master / Slave; front panel switchable
RS-485 Addressing :	1 - 255; front panel switchable
RS-485 Termination :	Front panel switchable
Comm Port Priority Control:	Modem or Computer front panel switchable
Indicator LEDs :	PWR (power) blinking - normal operation; steady - system interruption occurred
	SS (Serial-Stat) flashing - transmission in progress
	XB (XC-Bus) flashing - transmission in progress
Dimensions :	3.6" H x 6.25" W x 7/8" D (91mm x 159mm x 22mm)
Power Terminations :	16VAC - power, 16VAC(c) - power common
Communication Terminations :	X1 - comm(+), X2 - comm(-); alt. connection via RJ-45 Connector
RS-232 Terminations :	Modem - 9-Pin Female D-Sub, pins 2, 3, 5; 7 & 8 opt.
(RTS/CTS)	Computer - 9-Pin Male D-Sub, pins 2, 3, 5; 7 & 8 opt.
(RTS/CTS)	
RS-485 Terminations :	A (data +), B (data -), Signal Ground, Frame Ground
System Reset Terminations:	Reset

Typical Wiring Diagram

Serial-Stat Adapter, Pt.#101AD



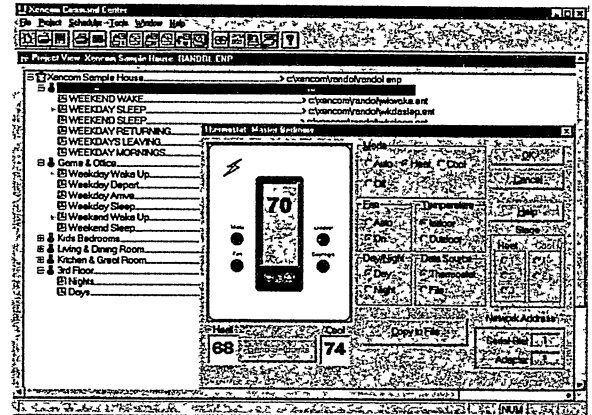
Serial-Stat™

Zonex Communications Software

WINDOWS-BASED HVAC CONTROL & FACILITY MANAGEMENT SOFTWARE with LOCAL/REMOTE CAPABILITIES

GENERAL DESCRIPTION

The Zonex Command Center software allows full update and control of all communications based hardware. The software includes user-friendly features which allow simple, yet robust environment control. Only a personal computer with a modem is needed to gain access to all local and remote capabilities. Features include full thermostat control and monitoring of all operating modes, setpoints and temperatures, clock/calendar timers for hands-free energy control, and facilities management windows which allow easy groupings and manipulation of complete buildings. The software operates as easily off site as it does locally, and includes built-in intelligence to help correct illegal operator settings which might damage equipment.



Standard Features

Hardware Requirements

- 80386 or better personal computer with a mouse
- 2MB of RAM, 5MB of hard disk space
- One available standard PC serial port (RS-232) for connection of any XCI Serial-Stat Adapter
- 9600 BPS or better modem (needed for remote dial-up capabilities only)

Software Requirements

- Microsoft Windows 3.1x or Windows 95 operating environment

Software Features

Thermostat Environment

- User definable thermostat names and addresses
- Monitor any Serial-Stat mode of operation, setpoints and current temperatures
- Change any Serial-Stat mode of operation or setpoints

Timer Environment

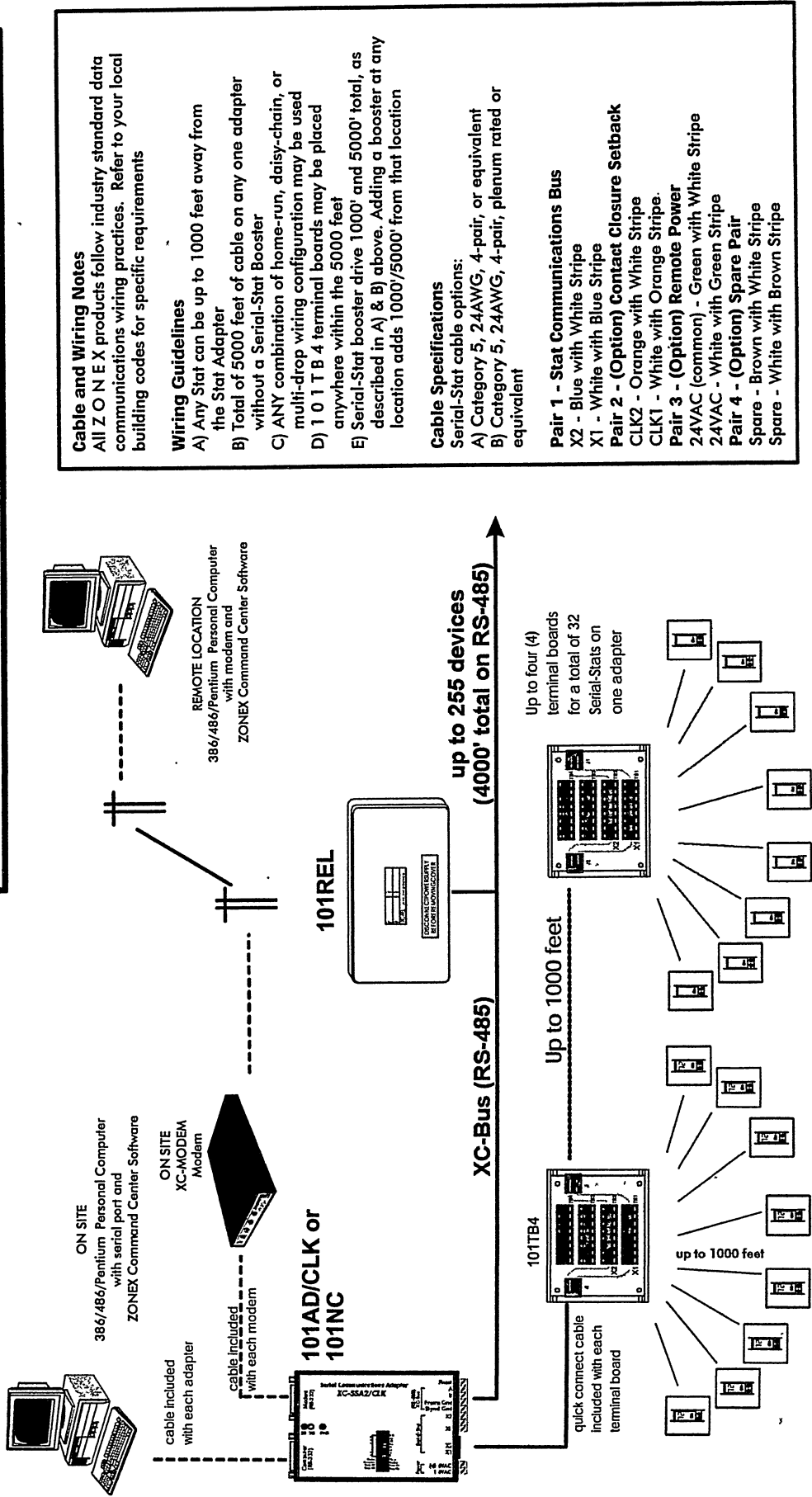
- Create, store and execute unlimited number of timers
- Four timer types - Day / Night / Day of Week / Date
- Timers can set all operating conditions of the Serial-Stat
- Use any timer with one or multiple Serial-Stats for control
- Use PC clock to initiate timers, or
- Download timer information to the 101AD/CLK Serial-Stat Adapter

Facility Environment

- Group multiple thermostats with a building
- Group multiple timers with one or more thermostats
- Monitor and record operating conditions of multiple thermostats in a tabular format

Note : Specifications subject to change without notice.

Typical RS-232C Serial Communications Network



8 - 101COMM Stats 8-101COMM Stats

Total of 32 thermostats on one (1) ZONEX (101AD) Stat Adapter

Cable and Wiring Notes
All ZONEX products follow industry standard data communications wiring practices. Refer to your local building codes for specific requirements

Wiring Guidelines

- A) Any Stat can be up to 1000 feet away from the Stat Adapter
- B) Total of 5000 feet of cable on any one adapter without a Serial-Stat Booster
- C) ANY combination of home-run, daisy-chain, or multi-drop wiring configuration may be used
- D) 101TB4 terminal boards may be placed anywhere within the 5000 feet
- E) Serial-Stat booster drive 1000' and 5000' total, as described in A) & B) above. Adding a booster at any location adds 1000'/5000' from that location

Cable Specifications

- Serial-Stat cable options:
A) Category 5, 24AWG, 4-pair, or equivalent
B) Category 5, 24AWG, 4-pair, plenum rated or equivalent

Pair 1 - Stat Communications Bus

- X2 - Blue with White Stripe
- X1 - White with Blue Stripe
- Pair 2 - (Option) Contact Closure Setback**
- CLK2 - Orange with White Stripe
- CLK1 - White with Orange Stripe
- Pair 3 - (Option) Remote Power**
- 24VAC (common) - Green with White Stripe
- 24VAC - White with Green Stripe
- Pair 4 - (Option) Spare Pair**
- Spare - Brown with White Stripe
- Spare - White with Brown Stripe



List Pricing – 1/1/01

	<u>LIST PRICE</u>	<u>PART NO.</u>
1. Network Adapters		
A. Network Adapter /Clock/Software	1,360.00	101AD
B. Communications Package	2,045.00	101ADM
Includes Network Adapter/Clock/Software with Modem and terminal board		
2. COMMUNICATING THERMOSTATS		
A. Zone Thermostat	427.00	101COMM
B. Multistage 2heat / 2 cool	600.00	101MST
C. Heat Pump 2heat / 1 cool	530.00	101HPT
D. Two Stage Heat Pump 3ht/2cl	645.00	101HP3
3. REMOTE SENSORS		
A. Remote Indoor Sensor	140.00	101IDS
B. Outdoor Remote Sensor	150.00	101ODT
C. Remote Indoor Duct Sensor	200.00	101DUC
4. ACCESSORIES		
A. Modem – External – configured	690.00	101XCM
B. Terminal Board	100.00	101TB4
C. Relay Module	437.00	101REL
D. Ethernet Lan	1,103.00	101LAN
5. Wiring – Between network adapters and communicating thermostats is <u>Field supplied.</u> Use only Category 5, 24AWG, 4 – pair wire.		

Contact California Economizer (800) 228-2966 or your local Sales Manager

