

THE ECONOMICAL TERMINAL INPUT NODES HAVE BEEN DESIGNED FOR BOTH LABORATORY AND LONG-TERM MONITORING APPLICATIONS. EITHER 4 OR 16 ANALOG SENSOR INPUTS ALONGSIDE AN EQUAL NUMBER OF THERMISTOR INPUTS MAKE THESE NODES IDEAL FOR COLLECTING HIGH-SPEED DATA AND CORRECTING FOR TEMPERATURE AT THE SAME TIME.



FEATURES

- + No programming required!
- + Modular rugged design
- + Expandable up to 1,000 channels
- + Sample Rates up to 1000 Hz per channel
- + Quick-Connect terminal blocks
- + Accepts a large range of structural testing sensors
- + Variety of power options including solar & PoE
- + Optional wireless communication
- + All channels are lightning/surge protected



SPECIFICATIONS

MODEL	STS4-4-TE4	STS4-16-TE4
MEASUREMENT TYPES: ANALOG INPUT TEMPERATURE INPUT	Analog Single-ended or Differential 3K Ω NTC Thermistor	Analog Single-ended or Differential 3K Ω NTC Thermistor
PROCESSOR	Stellaris® Arm® Cortex™-M3	Stellaris® Arm® Cortex™-M3
MAXIMUM SAMPLE RATE: ANALOG INPUT TEMPERATURE INPUT	1,000 S/s ~1 S/s (non user adjustable)	250 S/s ~1 S/s (non user adjustable)
SAMPLE MODE	Sequential	Sequential
NODE-TO-NODE DATA SYNCHRONIZATION	+/-2.5 samples @ 1,000 S/s	+/-2.5 samples @ 250 S/s
PROGRAMMABLE GAIN SETTINGS	11	11
ANALOG TO DIGITAL CONVERTER (ADC)	24-bit ADC (Sigma delta)	24-bit ADC (Sigma delta)
VOLTAGE REFERENCE SYSTEM ¹	Ratiometric	Ratiometric
ADC TEMPERATURE TOLERANCE	Gain drift 1 ppm/°C	Gain drift 1 ppm/°C
INPUTS & OUTPUTS		
INPUT CHANNELS	4	16
THERMISTOR INPUTS	4	16
INPUT VOLTAGE RANGE GAIN STAGES²:		
1: 0.25X SINGLE ENDED	+40.0 V _{dc}	+40.0 V _{dc}
2: 0.50X SINGLE ENDED	+20.0 V _{dc}	+20.0 V _{dc}
3: 1X DIFFERENTIAL	±5.00 V _{dc}	±5.00 V _{dc}
4: 2X DIFFERENTIAL	±2.50 V _{dc}	±2.50 V _{dc}
5: 4X DIFFERENTIAL	±1.25 V _{dc}	±1.25 V _{dc}
6: 8X DIFFERENTIAL	±625 mV	±625 mV
7: 16X DIFFERENTIAL	±312 mV	±312 mV
8: 32X DIFFERENTIAL	±156 mV	±156 mV
9: 64X DIFFERENTIAL	±78 mV	±78 mV
10: 128X DIFFERENTIAL	±39 mV	±39 mV
11: 256X DIFFERENTIAL	±19 mV	±19 mV
INPUT VOLTAGE RANGE ACCURACY	±10%	±10%
SERIAL COMMUNICATION	RS232/422/485	RS232/422/485
DIGITAL I/O	Isolated Digital In (to 24V), 2x Digital Out	Isolated Digital In (to 24V), 2x Digital Out
VOLTAGE OUTPUT	+15 V _{dc} @ 200 mA	+15 V _{dc} @ 800 mA
MEMORY		
SYSTEM MEMORY	16 MB (Operating System)	16 MB (Operating System)
INTERNAL MICROSD MEMORY	8 GB	8 GB
EXCITATION VOLTAGES		
VX (PROGRAMMABLE)	+0 to +5 V _{dc} @ 20 mA (per channel)	+0 to +5 V _{dc} @ 20 mA (per channel)
V+15	+15 V _{dc} @ 400 mA (combined)	+15 V _{dc} @ 200 mA (per group of 4)
ANALOG VOLTAGE ACCURACY		
VX (PROGRAMMABLE)	16 bit resolution, typ. 5 ppm/°C	16 bit resolution, typ. 5 ppm/°C
V+15	±5%	±5%
POWER		
DC SUPPLY	+24 V _{dc} @ 1.0 Amp	+24 V _{dc} @ 2.0 Amp
POWER OVER ETHERNET	+24 V _{dc} Passive PoE @ 0.5 Amp	+24 V _{dc} Passive PoE @ 0.5 Amp



STS4 | 4- OR 16-CHANNEL TERMINAL NODES

MODEL	STS4-4-TE4	STS4-16-TE4
TYPICAL POWER CONSUMPTION		
BASE CONSUMPTION (VX ON)	1.8 W	2.7 W
BASE CONSUMPTION (VX & V+15 ON)	2.5 W	3.2 W
TYPICAL ACQUISITION ³	1.8 W	2.7 W
STAND BY MODE	1.0 W	1.0 W
SLEEP MODE	<0.01 W	<0.01 W
COMMUNICATION		
WIRELESS	n/a	n/a
ETHERNET	10T-Base (TCP/IP)	10T-Base (TCP/IP)
SENSOR INTERFACE		
CONNECTOR	8-pin spring loaded wire terminal	8-pin spring loaded wire terminal
INTELLIDUCER SUPPORT ⁴	No	No
PHYSICAL		
ENCLOSURE	Powder coated aluminum extrusion	Powder coated aluminum extrusion
PROTECTION	Dustproof	Dustproof
SIZE (W X L X H)	4.2 x 7.5 x 2.5 in (107 x 191 x 63 mm)	6.2 x 9.6 x 2.13 in (157 x 243 x 54 mm)
WEIGHT	1.43 lb (650 g)	2.56 lb (1,165 g)
TEMPERATURE		
Operating	-4° to +140 °F (-20° to +60 °C)	-4° to +140 °F (-20° to +60 °C)
Storage Temperature	-4° to +140 °F (-20° to +60 °C)	-4° to +140 °F (-20° to +60 °C)
Warranty	3 Years	3 Years

¹ Ratiometric: The system reference voltages are all derived from the same high precision ultra stable source. Any residual drift would change excitation and ADC reference effectively canceling drift out.

² Selectable through STS-LIVE

³ Power consumption is based on wireless as the default communication mode.

⁴ Typical power drain is calculated with four 350Ω full bridge strain transducer connected to the system and collecting data at the highest sample rate possible. This does not include battery charging power consumption.

⁵ Intelliducer support refers to BDI's intelligent sensor connector interface. The intelligent sensor interface contains the sensor ID, calibration factor, gain setting, etc. within a memory chip inside the sensor connector.