SCXI Terminal Blocks

SCXI Terminal Blocks

- Terminal blocks for quick, easy connections
- Strain-relief clamps for reliable wiring
- Connectivity options including BNC and thermocouple plugs
- Shielded front-mount terminal blocks
- Rack and DIN-rail mount options available
- Terminal block options for specific measurement types
- Onboard temperature sensor for cold-junction compensation
- Isothermal construction for high-accuracy thermocouple measurements
- High-voltage attenuation
- AC/DC coupling
- Bridge offset nulling, shunt calibration
- Current inputs

Overview

National Instruments SCXI terminal blocks provide a convenient method for connecting and disconnecting signals to your system. The NI SCXI-13xx front-mount terminal blocks feature direct connections to transducers at the screw terminals located within a fully shielded enclosure or at front-mounted BNC connectors. Strain-relief clamps hold the signal wires safely in place. You can also choose either the TC-2095 or BNC-2095 rack-mount terminal blocks for minithermocouple connectors or BNC connectors. These terminal blocks are ideal solutions for high-channel-count temperature or voltage applications.

TBX DIN-rail mount terminal blocks are an alternative to the SCXI-13xx terminal blocks which attach directly to the front of an SCXI module. The TBX system includes shielded cables that connect the front I/O connector of an SCXI module to a TBX terminal block.

Some terminal blocks are designed for specific input types, such as thermocouples, strain gages, and high-voltage inputs. See tables 2, 3, and 4 to determine which SCXI terminal blocks are compatible with your SCXI module.

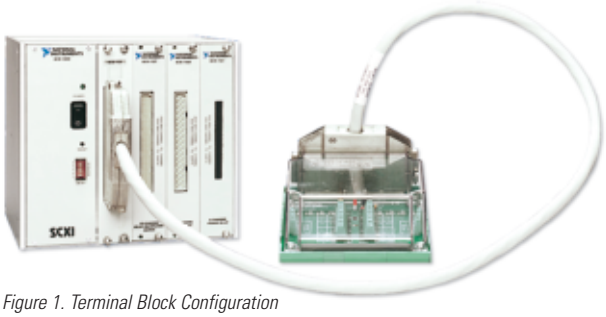

Figure 1. Terminal Block Configuration

Terminal Block	Compatible SCXI Modules	Cabling	CJC	Special Features
TBX-1303	SCXI-1100, SCXI-1102, SCXI-1102B/C, SCXI-1181	SH96-96 or R96-96	✔	Open TC detection isothermal construction, selectable ground referencing
TBX-1316	SCXI-1120/D, SCXI-1125, SCXI-1126	SH32-32-A	–	200:1 attenuation (up to 1,000 VDC)
TBX-1325	SCXI-1124	SH48-48-A	–	High-voltage 250 VDC
TBX-1326	SCXI-1162, SCXI-1162HV, SCXI-1163, SCXI-1163R	SH48-48-B	–	High-voltage 250 VDC
TBX-1328	SCXI-1120, SCXI-1120D, SCXI-1121, SCXI-1125, SCXI-1126	SH32-32-A	✔	Sockets for current input resistors, isothermal construction, high-voltage 250 VDC
TBX-1329	SCXI-1120, SCXI-1120D, SCXI-1121, SCXI-1125, SCXI-1126	SH32-32-A	–	Selectable AC coupling (rejects up to 250 VDC)
TBX-96	SCXI-1100, SCXI-1102, SCXI-1102B/C	SH96-96 or R96-96 SCXI-1104, SCXI-1181, SCXI-1104C	–	–
TBX-24F[1]	All modules	User-supplied wiring	–	–
CB-50	SCXI-1180	NB1	–	–

[1] The TBX-24F is a general-purpose feedthrough terminal block that you can use with any SCXI module or front mounting terminal blocks.

Table 1. TBX Terminal Block Selection Guide

NATIONAL INSTRUMENTS™

TBX Terminal Block

Selection Guide

Use the following steps to select the correct combination of TBX terminal blocks and cables for your SCXI system:

1. Select the required terminal blocks – For each SCXI module, use table 1 to select the proper TBX terminal block. If a TBX-13xx terminal block is not available for your SCXI module, select the appropriate number of general-purpose TBX-24F feedthrough terminal blocks.

2. Select cabling – For each TBX terminal block, table 1 lists the cable needed to connect the TBX terminal block to the SCXI module. Shielded cables are available in lengths of 1, 2, and 5 m. If using the TBX-1303, you also have the option to build a custom cable using the SBS-96F backshell kit. For each TBX-1303 for which you will build a custom cable, select two SBS-96F kits. If using the TBX-24F, you will use discrete wires to connect the TBX-24F to an SCXI front-mounting terminal block. Therefore, select the appropriate SCXI front-mounting terminal block for each SCXI module that will use the TBX-24F.

3. Rack-mount accessory (optional) – If mounting for 19 in. rack enclosures is needed, use table 2 to select the appropriate number of TBX-RM1 rack-mount kits.

4. Calibration – Calibration of cold-junction sensors and attenuation terminal blocks is available for some devices. For more information, please visit **ni.com/calibration**.

Module	Terminal Blocks	CJC[1] Sensor	Other Terminal Block Functions
SCXI-1100	SCXI-1303[2]	✓	Isothermal, signal ground referencing, and open thermocouple detection
SCXI-1102	SCXI-1300[3]	✓	–
SCXI-1102B	SCXI-1308	–	Current input, 249 Ω resistor across each input
SCXI-1102C	BNC-2095	–	BNC connectors, signal ground referencing
	TC-2095	✓	Thermocouple plugs, signal ground referencing, isothermal
SCXI-1104/C	SCXI-1300	–	–
SCXI-1120	SCXI-1305	–	BNC connectors, AC/DC coupling and ground referencing
SCXI-1120D	SCXI-1320	✓	–
SCXI-1126	SCXI-1327	✓	Extends signal input range to 300 V_{rms}, switch configurable per channel
	SCXI-1328	✓	Isothermal, high-accuracy design for thermocouples
	SCXI-1338	✓	Current input, 249 Ω resistor across each input
SCXI-1125	SCXI-1304/5	–	BNC connectors, AC/DC coupling and ground referencing
	SCXI-1313A	✓	Extends signal input range to 150 V_{rms}, programmable per channel
	SCXI-1320	✓	–
	SCXI-1327	✓	Extends signal input range to 300 V_{rms}, switch configurable per channel
	SCXI-1328	✓	Isothermal, high-accuracy design for thermocouples
	SCXI-1338	✓	Current input, 249 Ω resistor across each input
SCXI-1121	SCXI-1320	✓	–
	SCXI-1321	✓	Offset nulling and shunt calibration for strain gages
	SCXI-1327	✓	Extends signal input range to 300 V_{rms}, switch configurable per channel
	SCXI-1328	✓	Isothermal, high-accuracy design for thermocouples
	SCXI-1305	–	BNC connectors, AC/DC coupling and signal ground referencing
SCXI-1122	SCXI-1322	✓	–
SCXI-1124	SCXI-1325	–	–
SCXI-1127	SCXI-1331	✓	–
SCXI-1128	SCXI-1332	–	Set up an 8 column by 4 row matrix
SCXI-1129	SCXI-1333	–	Configures SCXI-1129 as quad, 4 x 16 (2-wire) matrix
	SCXI-1334	–	Configures SCXI-1129 as 4 x 64 (2-wire) matrix
	SCXI-1335	–	Configures SCXI-1129 as 8 x 32 (2-wire) matrix
	SCXI-1336	–	Configures SCXI-1129 as 16 x 16 (2-wire) matrix
	SCXI-1337	–	Configures SCXI-1129 as a dual 8 x 16 (2-wire) matrix
	SCXI-1339	–	Configures SCXI-1129 as a dual 4 x 32 (2-wire) matrix
SCXI-1140	SCXI-1301	–	–
	SCXI-1304	–	AC/DC coupling and signal ground referencing (configurable per channel)
	SCXI-1305	–	BNC connectors, AC/DC coupling and signal ground referencing
SCXI-1141	SCXI-1304	–	AC/DC coupling and signal ground referencing (configurable per channel)
SCXI-1142	SCXI-1305	–	BNC connectors, AC/DC coupling and signal ground referencing
SCXI-1143	SCXI-1301	–	–
SCXI-1160	SCXI-1324	–	–
SCXI-1161	–	–	Screw terminals located in module
SCXI-1162/HV	SCXI-1326	–	–
SCXI-1163/R	–	–	–
SCXI-1180	SCXI-1302	–	50-pin terminal block
SCXI-1181	SCXI-1300	✓	–
SCXI-1181K	SCXI-1301	–	–
SCXI-1503	SCXI-1306	✓	–
SCXI-1520	SCXI-1314	–	Quarter-bridge completion/shunt resistor
SCXI-1540	SCXI-1315	–	–
SCXI-1581	SCXI-1300	–	–

[1] Cold-junction compensation (CJC) sensor for thermocouple measurements. [2] Recommended for thermocouples; includes isothermal design and high-precision CJC sensor. [3] Recommended for RTDs when using both SCXI-1102 and SCXI-1581.

Table 3. SCXI-13xx, TC, and BNC Selection Guide

Terminal Block	Width Required (TBX-RM1 Rack-Mount)
TBX-1303	One-half
TBX-1325, TBX-1326, TBX-1328, TBX-1329, TBX-24F, CB-50	One-third

Table 2. Rack-Mount Widths of TBX Terminal Blocks

Module	Connector and Shell Assembly
SCXI-1100, SCXI-1102B/C, SCXI-1140, SCXI-1141, SCXI-1181	SCXI-1310
SCXI-1120, SCXI-1120D, SCXI-1121, SCXI-1126, SCXI-1181	SCXI-1330

Table 4. Custom Cabling Accessories

SCXI Terminal Blocks

Figure 1. SCXI-1303 Terminal Block

Figure 2. SCXI-1305 Terminal Block

Figure 3. SCXI-1310 Connector and Shell Assembly

SCXI-1300 777687-00
The SCXI-1300 connects input signals to the SCXI-1100, SCXI-1102/B/C, and SCXI-1104/C modules. The SCXI-1300 is a general-purpose terminal block with an onboard temperature sensor for cold-junction compensation. Also works with SCXI-1181 and SCXI-1181K modules.

SCXI-1301 777687-01
20-screw terminal block for the SCXI-1140, SCXI-1181, and SCXI-1181K modules.

SCXI-1302 777687-02
50-screw terminal block for the SCXI-1180 feedthrough panel.

SCXI-1303 (see Figure 1) 777687-03
Terminal block for use with the SCXI-1100 and SCXI-1102/B/C modules. Designed especially for high-accuracy thermocouple measurements, the SCXI-1303 includes isothermal construction that minimizes errors caused by thermal gradients between terminals and the cold-junction sensor. The SCXI-1303 also includes circuitry for open-thermocouple detection as well as automatic ground referencing for floating (nongrounded) thermocouples.

SCXI-1304 777687-04
The SCXI-1304, for the SCXI-114x modules, includes AC coupling circuitry, with switches on each channel. Each channel also includes a switchable connection to ground through a 100 kΩ bias resistor to provide a reference for floating input sources.

SCXI-1305 (see Figure 2) 777687-05
Includes convenient BNC connectors for use with the SCXI-1120/D, SCXI-1121, SCXI-1125, SCXI-1126, and SCXI-114x. Functionally equivalent to the SCXI-1304 terminal block, the SCXI-1305 includes switchable AC coupling circuitry and ground referencing on each channel.

SCXI-1306 779698-01
Terminal block for the SCXI-1503 RTD module. Provides 16 pairs of screw terminals for differential input signals and 16 pairs of screw terminals for current excitation signals. You can configure each channel for voltage or resistive measurements.

SCXI-1308 777687-08
Current input terminal block for the SCXI-1100 and SCXI-1102/B/C analog input modules. Each input includes a 249 Ω precision resistor so you can read 0 to 20 mA and 4 to 20 mA current inputs.

SCXI-1310 (see Figure 3) 777687-10
Connector and shell assembly used to create custom cabling solutions from the SCXI-1100, SCXI-1102/B/C, SCXI-1104/C, SCXI-114x, and SCXI-1181 to custom terminations. A low-cost alternative to SCXI terminal blocks, it consists of a hardened plastic enclosure and one connector with solder pins for signal connections.

SCXI-1313A 777687-13
Extends the input range of the SCXI-1125 to 150 V_{rms} or 150 VDC, on a per-channel basis programmatically through software commands. The SCXI-1313A also includes an onboard temperature sensor for thermocouples cold-junction compensation.

SCXI Terminal Blocks

Figure 4. SCXI-1320 Terminal Block

Figure 5. SCXI-1321 Terminal Block

Figure 6. SCXI-1327 Terminal Block

Figure 7. SCXI-1328 Terminal Block

SCXI-1314 777687-14
Front-mounting terminal block for the SCXI-1520 module. With factory-installed and socketed 350 Ω quarter-bridge completion resistors for each channel. Eight 120 Ω resistors for use with 120 Ω quarter-bridge strain gauges are included, but not installed. It also includes two factory-installed, socketed 100 kΩ shunt calibration resistors per channel.

SCXI-1315 777687-15
8-channel front-mounting terminal block for the SCXI-1540 LVDT with six terminals for each LVDT channel – CH+, CH-, EX+, EX-, Synch, and GND.

SCXI-1320 (see Figure 4) 777687-20
General-purpose terminal block for connecting signals to the SCXI-1120/D, SCXI-1121, SCXI-1125, and SCXI-1126 modules. It includes an onboard temperature sensor for cold-junction compensation using thermocouples, but the SCXI-1328 is recommended for precision thermocouple measurements.

SCXI-1321 (see Figure 5) 777687-21
Adds nulling and shunt calibration to SCXI-1121 strain guage applications. With a front-panel trimming potentiometer, you can manually null out the offset voltage of bridge transducers. Each channel includes shunt calibration circuits. When activated, a switch connects a 301 kΩ shunt resistor in parallel with the strain gauge. Both the nulling resistor and the shunt resistor are socketed for easy customization.

SCXI-1322 777687-22
Terminal block required to connect signals to the SCXI-1122 module that includes an onboard temperature sensor for cold-junction compensation.

SCXI-1324 777687-24
High-voltage terminal block with 48 screw terminals for the SCXI-1160 relay module.

SCXI-1325 777687-25
26-screw terminal block for the SCXI-1124 module.

SCXI-1326 777687-26
High-voltage terminal block with 48 screw terminals for the SCXI-1162 Series and SCXI-1163 Series modules.

SCXI-1327 (see Figure 6) 777687-27
With the SCXI-1327 you can extend the input range of the SCXI-1120/D, SCXI-1121 and SCXI-1125 to ±300 V_{rms}, and extend the threshold level of the SCXI-1126 module from 5 V up to 300 V. The extended input voltage range is enabled or disabled on a per-channel basis using switches located within the SCXI-1327. The SCXI-1327 also includes an onboard temperature sensor for cold-junction compensation with thermocouples. Using the SCXI-1327 reduces the input impedance of your SCXI module to 1 MΩ.

SCXI-1328 (see Figure 7) 777687-28
Isothermal terminal block with a high-precision cold-junction sensor for high-accuracy thermocouple applications with the SCXI-1120/D, SCXI-1121, or SCXI-1125.

SCXI Terminal Blocks

Figure 8. SCXI-1331 Terminal Block

Figure 9. SCXI-1332 Terminal Block

Figure 10. BNC-2095

SCXI-1330.....777687-30
Connector and shell assembly (hardened plastic enclosure and solder pins) used to create custom cabling solutions from the SCXI-1120/D, SCXI-1121, SCXI-1125, SCXI-1126, and SCXI-1181 to custom terminations.

SCXI-1331 (see Figure 8) 777687-31
General-purpose terminal block for the SCXI-1127 multiplexer/matrix module with 64 generic screw terminals and a cold-junction compensation sensor. For SCXI-1127 multiplexer applications or matrix configurations other than a multiple of eight columns by four rows. Includes sockets for matrix expansion cables.

SCXI-1332 (see Figure 9) 777687-32
Multiplexer/matrix terminal block for the SCXI-1127 configures the SCXI-1127 as an eight column by four row switching matrix. You can connect signals to both the columns and rows using screw terminals.

SCXI-1333.....777687-33
SCXI-1334.....777687-34
SCXI-1335.....777687-35
SCXI-1336.....777687-36
SCXI-1337.....777687-37
SCXI-1339.....777687-39
These terminal blocks are designed for use with the SCXI-1129 high-density matrix switching module. Each of these terminal blocks gives the high-density matrix a different configuration.

SCXI-1338.....777687-38
Current input terminal block for the SCXI-1120/D, SCXI-1125, and SCXI-1126. Each input includes a 249 Ω precision resistor for reading 0 to 20 mA or 4 to 20 mA current inputs.

BNC-2095 (see Figure 10).....777508-01
The BNC-2095 has 32 labeled BNC connectors, one for each input channel of the SCXI-1100 or SCXI-1104/C. The BNC-2095 also includes circuitry for configurable signal referencing. You can enable or disable both the pull-up and pull-down resistors on a per-channel basis using switches.

TC-2095.....777509-01
The TC-2095 has 32 miniature uncompensated thermocouple plugs, one for each input channel of the SCXI-1100 or SCXI-1102/B/C and a thermistor for accurate cold-junction compensation. In addition, the TC-2095 includes circuitry for configurable signal referencing. You can enable or disable both the pull-up and pull-down resistors on a per-channel basis using switches located on the rear of the TC-2095. The TC-2095 is not recommended for use with the SCXI-1104/C. The TC-2095 requires the SH96-96 or R96-96 for connection to an SCXI module.

SCXI TBX Terminal Blocks

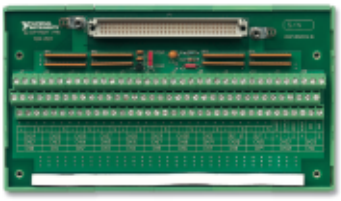

Figure 11. TBX-1303

Figure 12. TBX-1316

Figure 13. TBX-1326

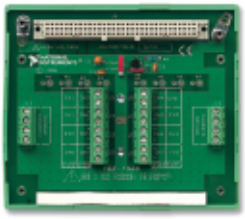

Figure 14. TBX-1328

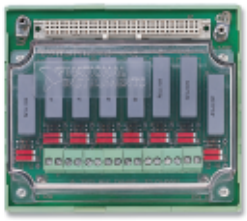

Figure 15. TBX-1329

TBX-1303 (see Figure 11) 777207-03
Designed for thermocouples, with cold-junction compensation sensor, isothermal construction with a plastic cover to minimize thermal gradients, open-thermocouple detection circuitry, and automatic ground-referencing circuitry. With the SCXI-1102B/C, the TBX-1303 provides a high-impedance path to ground so that systems work reliably with either floating or ground-referenced thermocouples. For applications with the SCXI-1100, you can configure the channels as ground-referenced or floating in blocks of eight channels. The TBX-1303 also works with the SCXI-1181 breadboard module.

TBX-96 777264-01
Mass termination terminal block that provides a generic solution for the SCXI-1100, SCXI-1102B/C, SCXI-1104/C, and the SCXI-1140 series.

TBX-1316 (see Figure 12) 777207-16
High-voltage terminal block for extending the input range of the SCXI-1120/D, SCXI-1125, or SCXI-1126 modules to ±1000 VDC (680 V_{rms}). Each input channel includes a 200:1 attenuation circuit and offers a positive, negative, and ground terminal for up to 12 AWG wire. You can panel mount this enclosure or simply place it on a desktop. The hinged lid makes accessing the signals easier and key locked for safety. The TBX-1316 is rated for Category III installations.

TBX-1325 777207-25
Terminal block with 30 screw terminals for signal connections to the SCXI-1124 module. You cable the TBX-1325 to the SCXI-1124 with the SH48-48-A shielded cable.

TBX-1326 (see Figure 13) 777207-26
High-voltage terminal block with 48 screw terminals for signal connections to the SCXI-1162, SCXI-1162HV, SCXI-1163, and SCXI-1163R modules. You can cable the TBX-1326 to the SCXI module with the SH48-48-B shielded cable. Warning: The TBX-1326 and SH48-48-B limit the maximum working common-mode voltage between banks or between banks and earth ground to 250 V_{rms} maximum.

TBX-1328 (see Figure 14) 777207-28
Terminal block for the SCXI-1120/D, SCXI-1121, SCXI-1125, and SCXI-1126 modules. The TBX-1328 includes a total of 24 screw terminals, including three terminals (CH+, CH-, and chassis ground) for each input channel and sockets for the installation of resistors for 4 to 20 mA inputs. When used with thermocouples, the TBX-1328 maximizes measurement accuracy with an isothermal construction and a plastic cover that minimizes thermal gradients across the terminal block and the resulting errors.

TBX-1329 (see Figure 15) 777207-29
Provides selectable AC coupling for the SCXI-1120/D, SCXI-1121, SCXI-1125, and SCXI-1126 modules.

TBX-24F 777276-01
The TBX-24F is a general-purpose screw terminal block with feedthrough connections for 24 signal lines. You connect the TBX-24F to the SCXI module with discrete wires connected to a standard SCXI terminal block.

Specifications

Typical for 25 °C unless otherwise noted.

SCXI-13xx

Cold-Junction Sensor

Accuracy and repeatability[1]

Terminal Block	Accuracy		Repeatability
	15 to 35 °C	0 to 15 °C and 35 to 55 °C	
SCXI-1300	1.3 °C	1.3 °C	0.5 °C
SCXI-1303[2]	0.5 °C	0.85 °C	0.35 °C
SCXI-1320	1.3 °C	1.3 °C	0.5 °C
SCXI-1321	1.3 °C	1.3 °C	0.5 °C
SCXI-1322	0.8 °C	1.2 °C	0.4 °C
SCXI-1327	0.9 °C	1.3 °C	0.5 °C
SCXI-1328	0.5 °C	0.9 °C	0.2 °C

Sensor output for SCXI-1300, SCXI-1320, SCXI-1321 ..... ±10 mV/°C

SCXI-1303/1322/1327/1328..... 1.91 V (at 0 °C) to 0.58 V (at 55 °C) (thermistor)

Maximum field wire gauge

for SCXI-1300/1302/1303/1314/1322/1324 ..... 26-16 AWG

1301/1304/1313A/1315/1320/1321/1325/1327/1328/1331/1332 ..... 26-14 AWG

AC coupling (SCXI-1304 and SCXI-1305)..... The AC coupling circuitry on each channel has a corner frequency of 0.16 Hz, rejection capacity of ±50 VDC, and input impedance of 2 MΩ differential, 1 MΩ common mode

Corner frequency ..... 0.16 Hz 1-pole RC

DC rejection capacity ..... ±50 VDC

Current input SCXI-1308/1338 ..... 0 to 20 mA

BNC-2095, TC-2095

Input connectors

BNC-2095..... 32 BNC connectors

TC-2095..... 32 thermocouple plugs, uncompensated

Output (to SCXI module)..... 96-pin DIN

Cold-junction sensor (TC-2095)

Output ..... 1.91 V (0 °C) to 0.58 V (55 °C)

Accuracy (15 to 35 °C)[3] ..... 0.5 °C for SCXI-1102/B/C

0.65 °C for SCXI-1100

Repeatability (15 to 35 °C)[3] ..... 0.35 °C for SCXI-1102/B/C

0.5 °C for SCXI-1100

Signal referencing

CH+ input ..... 10 MΩ to +5 V, user switchable

CH- input..... 10 MΩ or +10 Ω to ground, user switchable 1-pole RC

Physical

Dimensions..... 49.3 by 4.3 by 18.8 cm (19.0 by 1.7 by 7.4 in.)

TBX Series

Typical for 25° C unless otherwise noted.

Maximum working voltage (signal + common mode)

TBX-1316 ..... 1000 VDC, 680 V_{rms}

TBX-1325 ..... 250 V_{rms}

TBX-1326/1328/1329/24F ..... 300 V_{rms}

Signal referencing on TBX-1303

CH+ input ..... 10 MΩ to +5 V (socketed)

CH- input..... 10 MΩ or 10 Ω to ground (user configurable, socketed)

Input impedance for TBX-1316

Differential..... 40 MΩ

Single-ended..... 20 MΩ

Absolute accuracy for TBX-1316

Gain error..... 1%

Temperature drift..... 20 ppm/°C

AC coupling (TBX-1329 only)

Corner frequency ..... 0.072 Hz 1-pole RC

DC rejection capacity ..... 250 VDC

Wire resistance of cables..... 0.21 Ω/m per conductor

Cold-Junction Sensor (TBX-1303 and TBX-1328)

Accuracy and repeatability[4]

Terminal Block	Accuracy		Repeatability
	15 to 35 °C	0 to 15 °C and 35 to 55 °C	
TBX-1303[3]	0.5 °C	0.85 °C	0.35 °C
TBX-1328	0.5 °C	0.9 °C	0.2 °C

Sensor output..... 1.91 V (at 0 °C) to 0.58 V (at 55 °C) (thermistor)

General

Physical

Compatible DIN rails[5] ..... DIN EN 50 022, DIN EN 50 035

Screw terminal size

TBX-1316 ..... 26-12 AWG

Others ..... 26-14 AWG

Dimensions

TBX-13036..... 19.7 by 11.2 by 7.62 cm (7.8 by 4.4 by 3.0 in.)

TBX-1316..... 30 by 20 by 8.1 cm (11.8 by 7.9 by 3.2 in.)

TBX-1325/1326/1328/13296 ..... 12.7 by 11.2 by 7.62 cm (5.0 by 4.4 by 3.0 in.)

TBX-24F ..... 12.4 by 4.3 by 5.1 cm (4.9 by 1.7 by 2.0 in.)

TBX-96..... 19.8 by 12.6 by 6.3 cm (7.8 by 4.9 by 2.5 in.)

Certification and Compliance

SCXI-1320/1321/1326/1327/1328/1338	300 V, CAT II working voltage
SCXI-1322/1324/1325	250 V, CAT II working voltage
TBX-1316	1000 V, CAT III working voltage
TBX-1328/1329	300 V, CAT II working voltage
TBX-1325/1326	250 V, CAT II working voltage

European Compliance

EMC	EN 61326 Group I Class A, 10 m, Table 1 Immunity
Safety	EN 61010-1

North American Compliance

EMC	FCC Part 15 Class A using CISPR
Safety (SCXI-1320/1321/1326/1327/1328/1338/SCXI-1322/1324/1325)	UL Listed to UL 3111-1 CAN/CSA C22.2 No. 1010.1
Safety (TBX-1325/1326/1328/1329)	UL Listed to UL 3111-1 CAN/CSA C22.2 No. 1010.1

Australia and New Zealand Compliance

EMC (except TBX-1316)	AS/NZS 2064.1/2 (CISPR-11)

[1]Accuracy and repeatability include combined effects of sensor, circuitry, and thermal gradients between the sensor and any screw terminal. Thermal gradients for nonisothermal terminal blocks (SCXI-1300, SCXI-1320, SCXI-1321, SCXI-1322, and SCXI-1327) are assumed to be 0.4 °C.
[2]With SCXI-1102 module. With SCXI-1100 module, add error of 0.15 °C.
[3]Accuracy and repeatability include combined effects of sensor, circuitry, and thermal gradients between the sensor and thermocouple connection.
[4]Accuracy and repeatability include combined effects of sensor, circuitry, and thermal gradients between the sensor and any screw terminal.
[5]TBX-1316 is not DIN-rail mountable.
[6]Height dimension (7.62 cm) includes DIN-rail mounting and plastic cover.

For a definition of specific terms, please visit **ni.com/glossary**.

NI Services and Support

NI has the services and support to meet your needs around the globe and through the application life cycle – from planning and development through deployment and ongoing maintenance. We offer services and service levels to meet customer requirements in research, design, validation, and manufacturing. Visit **ni.com/services**.

Training and Certification

NI training is the fastest, most certain route to productivity with our products. NI training can shorten your learning curve, save development time, and reduce maintenance costs over the application life cycle. We schedule instructor-led courses in cities worldwide, or we can hold a course at your facility. We also offer a professional certification program that identifies individuals who have high levels of skill and knowledge on using NI products. Visit **ni.com/training**.

Professional Services

Our NI Professional Services team is composed of NI applications and systems engineers and a worldwide National Instruments Alliance Partner program of more than 600 independent consultants and integrators. Services range from start-up assistance to turnkey system integration. Visit **ni.com/alliance**.

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OEM Support

We offer design-in consulting and product integration assistance if you want to use our products for OEM applications. For information about special pricing and services for OEM customers, visit **ni.com/oem**.

Local Sales and Technical Support

In offices worldwide, our staff is local to the country, giving you access to engineers who speak your language. NI delivers industry-leading technical support through online knowledge bases, our applications engineers, and access to 14,000 measurement and automation professionals within NI Developer Exchange forums. Find immediate answers to your questions at **ni.com/support**.

We also offer service programs that provide automatic upgrades to your application development environment and higher levels of technical support. Visit **ni.com/ssp**.

Hardware Services

NI Factory Installation Services

NI Factory Installation Services (FIS) is the fastest and easiest way to use your PXI or PXI/SCXI combination systems right out of the box. Trained NI technicians install the software and hardware and configure the system to your specifications. NI extends the standard warranty by one year on hardware components (controllers, chassis, modules) purchased with FIS. To use FIS, simply configure your system online with **ni.com/pxiadvisor**.

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NI recognizes the need to maintain properly calibrated devices for high-accuracy measurements. We provide manual calibration procedures, services to recalibrate your products, and automated calibration software specifically designed for use by metrology laboratories. Visit **ni.com/calibration**.

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