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Digital I/O Connectivity and Signal Conditioning

Cables, Connector Blocks, and Signal Conditioning

Choose your Digital I/O cables, connector blocks, and signal conditioning in two easy steps.

Step 1. Choose your connector block and cable. (see digital I/O accessories section for details)

Device	Connector Block	Cables
PCI-6527, PXI-6527	CB-100 Kit SCB-100 CA-1000, CB-50, CB-50LP	Kit includes R1005050 cable SH100-100-F R1005050 (splits into two 50-pin connectors); with this cable, you can use two accessories from this group with one NI 6527 device
PCI-6503, PC-DIO-24	CA-1000, CB-50, CB-50LP	SH50-50 or NB1
DAQCard-DIO-24	CA-1000, CB-50, CB-50LP	PSH27-50F-D
PCI-DIO-96, PXI-6508	CB-100 Kit SCB-100 CA-1000, CB-50, CB-50LP	Kit includes R1005050 cable SH100-100-F NB5 (Splits into two 50-pin connectors); with this cable, you can use two accessories from this group with each device.
PC-DIO-96	CB-100 Kit SCB-100 CA-1000, CB-50, CB-50LP	Kit includes NB5 cable SH100-100-F NB5 (Splits into two 50-pin connectors); with this cable, you can use two accessories from this group with each device.

Step 2 (Optional). Choose your signal conditioning hardware and enclosures.

Device	SCXI Signal Conditioning System (Page 270)	SSR Series Modules (Page 349)	SC-206x Device (Page 349)	ER-8, ER-16 Electromechanical Relays (Page 349)	CA-1000 Custom Connectivity Enclosure (Page 351)
PCI-6527	–	–	–	–	✓
PXI-6527	–	–	–	–	✓
PCI-DIO-96	✓	✓	✓	✓	✓
PXI-6508	✓	✓	✓	✓	✓
PC-DIO-96	✓	✓	✓	✓	✓
PCI-6503	✓	✓	✓	✓	✓
PC-DIO-24	✓	✓	✓	✓	✓
DAQCard-DIO-24	✓	✓	✓	✓	✓

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Digital I/O Accessories and Cables



Figure 1. SCXI High-Performance Signal Conditioning



Figure 2. Digital Signal Conditioning Accessories



Figure 3. CA-1000 Configurable Signal Connectivity Solution



Figure 4. SCB-100 Shielded Connector Blocks



Figure 5. CB-50 I/O Connector Block

Accessories for Digital I/O

SCXI – High-Performance Modular Signal Conditioning (See Figure 1)

SCXI is a modular high-performance signal conditioning system that serves as a front end to your DIO device. The SCXI modules for DIO offer isolation, extended voltage ranges (up to 250 Vrms), increased current switching capabilities, and expanded channel counts (up to 3,072 I/O lines). In addition to SCXI modules for DIO, your SCXI signal conditioning system can include modules for analog output and general-purpose switching when cabled to a DIO device. With SCXI, you can create integrated, flexible high-channel-count measurement systems with signal conditioning components tailored to your needs. See page 270 for details on SCXI signal conditioning.

SCC – Portable Modular Signal Conditioning

National Instruments offers SCC modules for portable low-channel-count digital signal conditioning. These modules mount in a compact, versatile carrier. See page 251 for details on SCC signal conditioning.

Digital Signal Conditioning Assessories (See Figure 2)

National Instruments also offers several options for low-channel-count digital signal conditioning. These accessories provide a cost-effective solution for digital I/O systems requiring isolated I/O or relays for controlling external devices. Most of these products cable directly to your National Instruments digital I/O device. See page 349 for details on digital signal conditioning accessories.

CA-1000 (See Figure 3)

Configurable signal connectivity solution for connecting DIO devices to different types of standard I/O connectors and for incorporating switches and LED indicators. You can place this connector box under a laptop PC, on a benchtop, or in a 19 in. rack.

CA-1000 ..... See page 351

Dimensions – 30.7 by 25.4 by 4.3 cm (12.1 by 10 by 1.7 in.)

SCB-100 (See Figure 4)

Shielded I/O connector block for easy connection of I/O signals to 100-pin digital I/O devices. The screw terminals are housed in a metal enclosure for protection from noise corruption. Combined with shielded cables, the SCB-100 provides rugged, very low noise signal termination. It also includes general breadboard areas – three on the SCB-100.

SCB-100 776990-01

Dimensions – 19.5 by 15.2 by 4.5 cm (7.7 by 6.0 by 1.8 in)

CB-50 I/O Connector Block with DIN-Rail Mounting (See Figure 5)

Termination accessory with 50 screw terminals for easy connection of field I/O signals to NI 650x and NI 6527 devices. Includes one 50-pin header for direct connection to 50-pin cables. The CB-50 includes a protective plastic base and hardware for mounting the accessory on either a standard DIN rail or flush on a wall or panel.

CB-50 776164-90

Dimensions – 13.5 by 7.3 cm (5.3 by 2.9 in.)

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Digital I/O Accessories and Cables

CB-50LP I/O Connector Block (See Figure 6)

Termination board with 50 screw terminals for easy connection of field I/O signals to NI 650x and NI 6527 devices. Includes one 50-pin header for direct connection to 50-pin cables. The CB-50LP includes metal standoffs for use on a desktop or for mounting on a custom panel.

CB-50LP.....777101-01

Dimensions – 13.26 by 7.19 cm (5.22 by 2.83 in.)



Figure 6. CB-50LP I/O Connector Block

CB-100 I/O Connector Kit (See Figure 7)

The first CB-100 kit includes two CB-50 I/O connector blocks and an R1005050 ribbon cable for connecting to a PCI-6527, PXI-6527, PCI-DIO-96, PXI-6508 device. The second CB-100 kit includes two CB-50 I/O connector blocks and/or an NB5 ribbon cable for direct connection to a PC-DIO-96 device. Each CB-50 block includes hardware for mounting the accessory on a standard DIN-rail or panel.

CB-100 with 1 m R1005050 cable 777812-01

CB-100 with 1 m NB5 cable.....776455-02



Figure 7. B-100 I/O Connector Kit

RTSI Bus Cables

Use RTSI bus cables to connect timing and synchronization signals among measurement, vision, motion, and CAN boards for PCI and ISA. For systems using both long and short boards, order the extended RTSI cable.

2 boards 776249-02

3 boards 776249-03

4 boards 776249-04

5 boards 776249-05

Extended, 5 boards 777562-05



Figure 8. H50-50 Shielded Cable

SH50-50 (See Figure 8)

Shielded 50-conductor cable that connects to a PCI-6503 or PC-DIO-24 device and terminates with a 50-pin connector. The kit includes the shielded cable and a 3 in. ribbon cable for connection flexibility.

1 m 777720-01

2 m 777720-02



Figure 9. SH100-100-F Shielded Cable

SH100-100-F (See Figure 9)

Shielded 100-conductor cable that connects to a PCI-6527, PXI-6527, PCI-DIO-96, PXI-6508, or DAQPad-6508 and terminates with a 100-pin 0.050 series D-type connector that attaches directly to 100-pin accessories.

2 m 185095-02

PSH27-50F-D1 for DAQCard-DIO-24

Shielded cable that connects to the DAQCard-DIO-24 and is terminated with a 50-pin female connector that attaches directly to 50-pin accessories.

0.5 m 776989-0R5

1 m 776989-01

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Digital I/O Accessories and Cables



Figure 10. R1005050 Ribbon Cable



Figure 11. NB1 Cable



Figure 12. NB5 Cable



Figure 13. PCB Mounting Connectors



Figure 14. PCMCIA Strain-Relief Accessory

Ribbon Cables

R1005050 (See Figure 10)

Ribbon cable that connects to a PCI-6527, PXI-6527, PCI-DIO-96, PXI-6508 and is terminated with two 50-pin IDC connectors.

1 m 182762-01
2 m 182762-02

NB1 Cable (See Figure 11)

50-conductor ribbon cable that connects any device with a 50-pin connector to 50-pin connector accessories.

1 m 180524-10
2 m 180524-20

NB5 Cable (See Figure 12)

100-conductor ribbon cable that connects to a PC-DIO-96 device (100-pin connector) and is terminated with two 50-pin connectors.

1 m 181304-10
2 m 181304-20

PCB Mounting Connectors for Custom Accessories (See Figure 13)

PCB connectors for use in building custom accessories that connect to 100-conductor shielded and ribbon cables. Two types of connectors are available, one for right-angle and one for vertical mounting onto a PCB.

100-pin, female, right-angle mounting 777778-01
100-pin, female, vertical mounting.....777779-01

PCMCIA Strain-Relief Accessory (See Figure 14)

Accessory that attaches to the bottom of your notebook computer and provides adjustable strain relief for one or two PCMCIA cables attached to the installed PCMCIA card(s).

PCMCIA strain-relief accessory 777550-01

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