X80

Rockwell PLC-5 to X80 I/O Migration Instruction Sheet

10/2020

Schneider Electric

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All pertinent state, regional, and local safety regulations must be observed when installing and using this product. For reasons of safety and to help ensure compliance with documented system data, only the manufacturer should perform repairs to components.

When devices are used for applications with technical safety requirements, the relevant instructions must be followed.

Failure to use Schneider Electric software or approved software with our hardware products may result in injury, harm, or improper operating results.

Failure to observe this information can result in injury or equipment damage.

Safety Information

Important Information

NOTICE

Read these instructions carefully, and look at the equipment to become familiar with the device before trying to install, operate, service, or maintain it. The following special messages may appear throughout this documentation or on the equipment to warn of potential hazards or to call attention to information that clarifies or simplifies a procedure.

The addition of this symbol to a "Danger" or "Warning" safety label indicates that an electrical hazard exists which will result in personal injury if the instructions are not followed.

This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

⚠ DANGER

DANGER indicates a hazardous situation which, if not avoided, **will result in** death or serious injury.

⚠ WARNING

WARNING indicates a hazardous situation which, if not avoided, **could result in** death or serious injury.

⚠ CAUTION

CAUTION indicates a hazardous situation which, if not avoided, **could result** in minor or moderate injury.

NOTICE

NOTICE is used to address practices not related to physical injury.

PLEASE NOTE

Electrical equipment should be installed, operated, serviced, and maintained only by qualified personnel. No responsibility is assumed by Schneider Electric for any consequences arising out of the use of this material.

A qualified person is one who has skills and knowledge related to the construction and operation of electrical equipment and its installation, and has received safety training to recognize and avoid the hazards involved.

Glossary

C

Cable Management System

An accessory that consists of a metal bar plus two sub-bases that are affixed to the X80 backplane. You can attach I/O adapter assembly cables of X80 modules on the upper X80 backplane to the metal bar. This allows the positioning of the upper X80 module cables, thereby providing an unobstructed view of the display blocks (I/O channel indicators) of the I/O modules located in the lower X80 backplane. The cable management system can also be used to provide a ground connection for analog cable shielding.

Cables

Used to connect the translator unit to the X80 module. Types include:

- Dedicated Cables: These cables have a molded connector on one end for connecting to the translator unit and an X80 connector on the other end for connecting to the X80 I/O module. These cables are wired pin 1 to pin 1, pin 2 to pin 2, and so forth. Types include:
  - High Power Cable: These cables have larger gauged wire for higher current and/or voltage. They have an in-line 20 pin molded connector for connection to the translator unit, and a 20 or 40 pin X80 connector to connect to the X80 module.
  - High Density Cable: These cables have smaller gauged wired for lower current and/or voltage. They have a 20 position high density connector for connection to the translator unit, and a 20 pin X80 connector to connect to the X80 module.
  - Analog Cable: These cables have smaller gauged wire for analog signals. They have a 20 position high density connector and a shield wire with ring lug for connection to the translator unit, and a 20 or 28 pin X80 connector to connect to the X80 module.

- Pig Tail Cables: These cables have a molded connector on one end for connecting to a translator unit/O adapter PCB and pig tail wires (flying leads) on the other end for connection to the X80 field connector. The pig tail wires are color coded and have wire number labels (1…20). The wires of the pig tail cable need to be connected to the X80 connector. I/O adapter assembly pigtail cables come with the appropriate X80 connector depending on the X80 module to which it will connect. Types include:
  - High Power Pig Tail Cable: These cables have larger gauged wire for higher current and/or voltage. They have an in-line 20 pin molded connector for connection to the translator unit and pig tail color coded/numbered wires on the other end. These wires are then connected to the X80 connector per the appropriate wiring guide.
  - High Density Pig Tail Cable: These cables have smaller gauged wire for lower current and/or voltage. They have a 20 position high density connector for connection to the translator unit and pig tail color coded/numbered wires on the other end. These wires are then connected to the X80 connector per the appropriate wiring guide.
  - Analog Pig Tail Cable: These cables have smaller gauged wired for analog signals. They have a 20 position high density connector and a shield wire with ring lug for connection to the translator unit and pig tail color coded/numbered wires on the other end. These wires are then connected to the X80 connector per the appropriate wiring guide.
- Replacement Cables: These cables are the same as listed in Dedicated and Pigtail sections, above with one exception: the Pig Tail replacement cables do not come with an X80 connector.

Chassis

A two-piece metal assembly which allow the X80 PAC system to be mounted to it and houses the I/O adapter assembly and PLC-5 field connectors. The parts include:
- Base plate: The back part of the chassis, which is mounted in the cabinet in the same location as the PLC-5 backplane. It houses the I/O adapter assemblies and PLC-5 field connectors.
- Front plate: The door on the front of the chassis, which opens and is removable. This is where the X80 backplanes are mounted.

I

I/O Adapter Assembly

Complete assembly that contains the translator unit (I/O adapter) and cable, which mount in the chassis and connects the field device wiring to the appropriate X80 module pins. Types include:
- Dedicated I/O Adapter Assembly: These assemblies mount to the chassis assembly and contain the translator unit that performs the wiring translations from PLC-5 to X80 connector pins. These assemblies use the dedicated cables. Some I/O adapter assemblies may require the addition of a power connection necessary for the X80 module. These connections can be added to the PLC-5 or X80 connector. Refer to the appropriate wiring maps for this information.
- Generic I/O Adapter Assembly: These assemblies mount to the chassis assembly and contain the translator units that **do not** perform the wiring translation. The signal translation is performed by the cable wiring only.

T

Translator Unit

Consists of a printed circuit board (PCB) assembly and a metal mounting plate. The PCB routes the PLC-5 field connections to the PCB mounting connector headers and the mounting plate holds the PCB and affixes it to the chassis.

W

Wiring Guide

Tables for the Generic Adapters that provide the wiring instructions necessary to complete the required signal translations at the X80 field connector(s). The translator unit does not provide the wiring translations from PLC-5 to X80 connector pins, only straight through connections.

NOTE: No circuit protection is provided by the generic translator unit or cable.

Wiring Map

Tables for the Dedicated Adapters that provide signal names and pin assignments from the PLC-5 module, to the X80 replacement module.

QGH66818 10/2020

PLC-5 1771 series to X80 I/O Migration

Introduction

The X80 Automation Series supports a full range of high performance I/O modules designed to interface with a wide variety of field devices. Schneider Electric Services offers a series of conversion products to ease the migration from Rockwell's PLC-5 1771 series I/O to X80 I/O.

The Evolution PLC-5 I/O Chassis (Figure 1) consists of a base plate and front plate. This assembly is designed to fit into the same footprint, and use the same mounting hardware, as the PLC-5 1771 rack. The assembly is made of aluminum and is available in both 19 and 27 inch sizes. The door is designed to hold 4, 6, 8 and 12 slot BMX (X Bus only) backplanes, and 4, 8, and 12 slot BME (X Bus plus Ethernet) backplanes.

NOTE: A BMX or BME 12-slot backplane fits only in the 27 inch assembly.
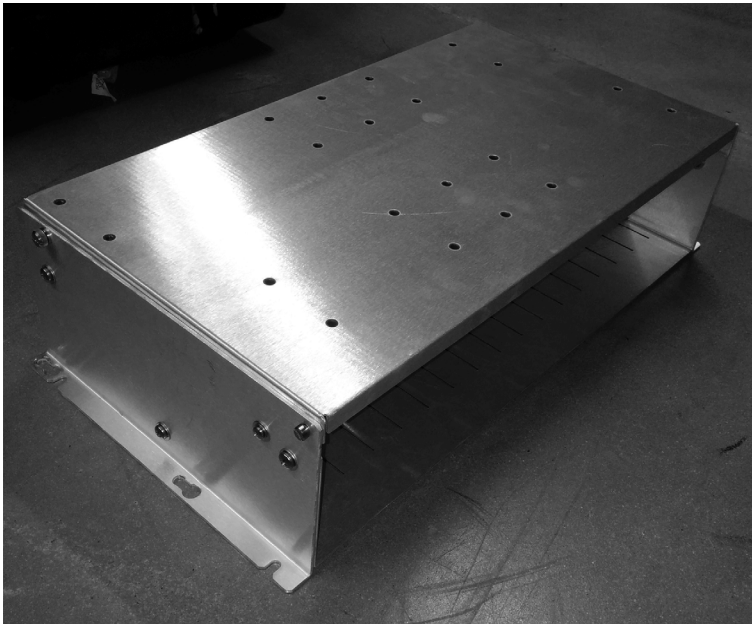
Figure 1

Refer to the list of Evolution PLC-I/O Chassis part numbers *(see page 23)*.

NOTE: Evolution PLC-I/O chassis part numbers do not include X80 backplanes. X80 backplanes must be ordered separately.

The conversion offer consists of an I/O adapter assembly to route the field wiring from the PLC-5 1771 series field connector to the X80 I/O module.

A series of Evolution I/O adapter assemblies are used for connecting the PLC-5 field wiring arm to the new X80 modules without disturbing the original field wiring. The Evolution I/O assemblies are pre-wired and are shown in Figures 2 through 6 below. The adapter assemblies come in three styles: high power (Figures 2, 3 and 4), and high density or analog (Figure 5).

The assemblies in Figures 2, 4, and 6 are for the replacement of one PLC-5 module by one X80 module. The assemblies in Figures 3 and 5 are for the replacement of one PLC-5 module by two X80 modules:
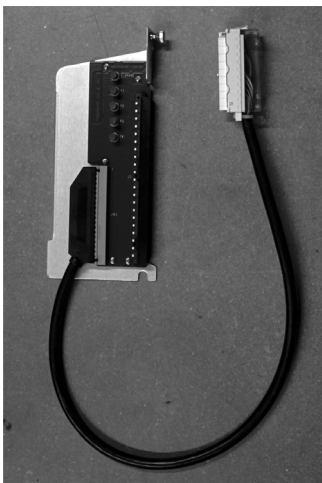
Figure 2
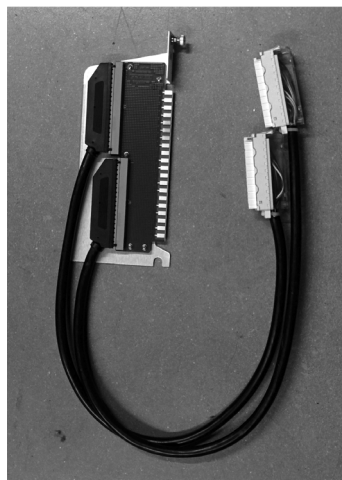
Figure 3
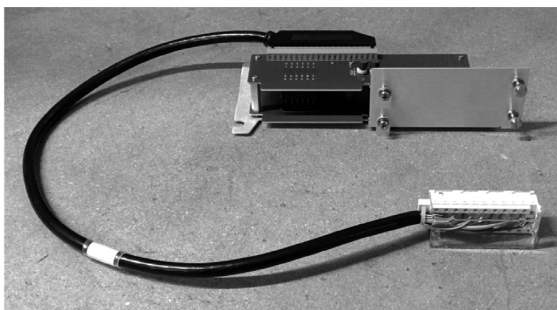
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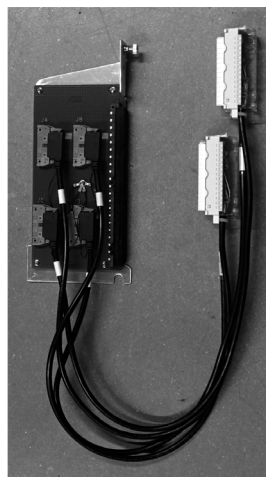
Figure 5
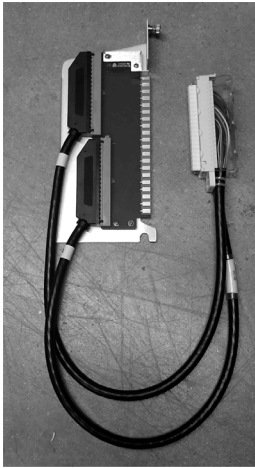
Figure 6
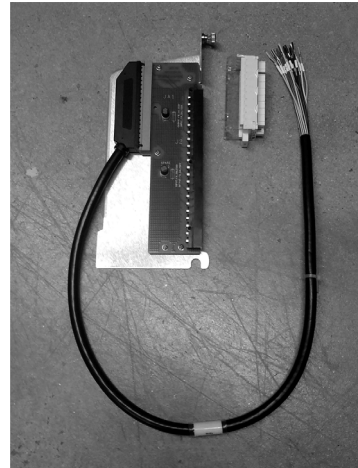
Figure 7

For less common I/O modules, there are generic adapter assemblies that have straight through connections. These adapter assembles come with a pigtail cable and a loose X80 field connector (Figure 7). The Generic Wiring Guides *(see page 61)* detail how to wire the pigtail cables wires to the X80 filed connector for the particular PLC5 I/O module. Each cable assembly includes a label displaying the supported from/to module combination.

Safety Precautions
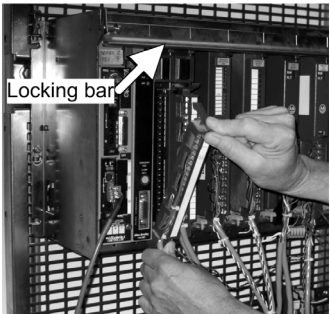
⚠ DANGER
HAZARD OF ELECTRIC SHOCK, EXPLOSION OR ARC FLASH
● Apply appropriate personal protective equipment (PPE) and follow safe electrical work practices. Follow local electrical codes and standards. ● Turn OFF all power before working on or inside equipment. ● Always use a properly rated voltage sensing device to confirm that power is OFF.
Failure to follow these instructions will result in death or serious injury.
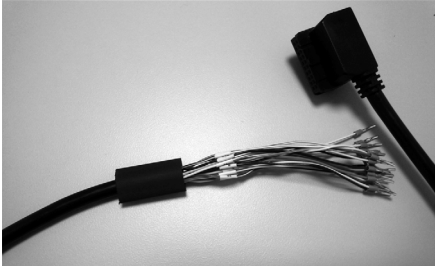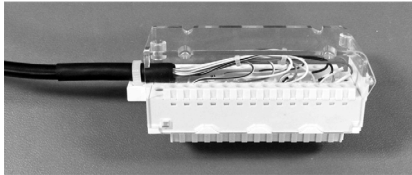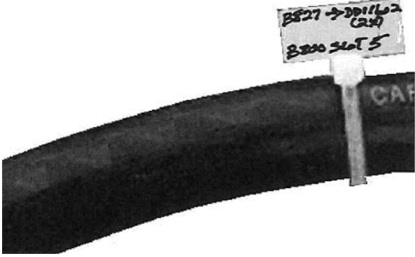
Removing Existing Modules and Housing

To remove existing modules and housing:

Step	Action	
1	Turn off all power to the PLC-5 1771 series I/O chassis, including field side power.	
2	Remove the Rockwell Remote I/O twisted pair cable – and any other communications cables that may be connected to the I/O housing – and set them aside (if applicable).	
3	(Recommended) Check each field wire connection to confirm it is tightly fastened.	Locking bar
4	(Recommended) Label the wiring arm with its original slot number and module part number.	
5	Remove the PLC-5 1771 hardware by pulling the locking pins out on either side of the backplane, and swinging up the locking bar (see Figure 8). NOTE: Each module has a built-in handle attached at the front of the module.	Figure 8
6	Release the wiring arm holding clip from the I/O module and pivot downwards. (Figure 8)	
7	Remove the wiring arm (field connector) from the horizontal bar and set aside.	
8	Lift the ejector tab to remove the I/O modules. (Figure 9)	
9	Remove the PLC-5 1771 series I/O chassis. NOTE: Retain the chassis mounting hardware for later re-use when mounting the migration base plate and front plate.	Figure 9
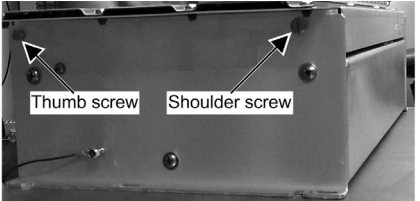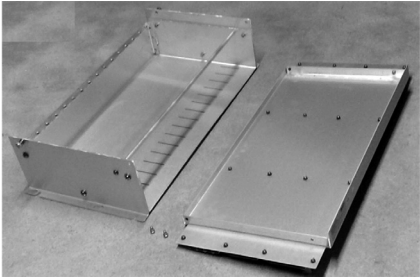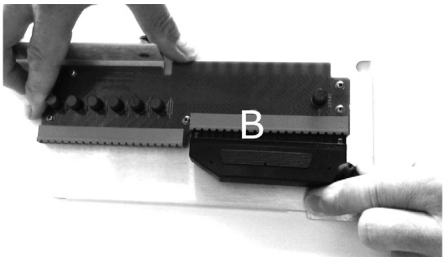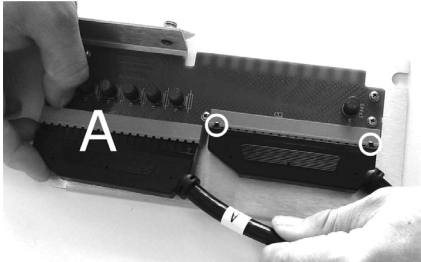
Generic Cable Assembly
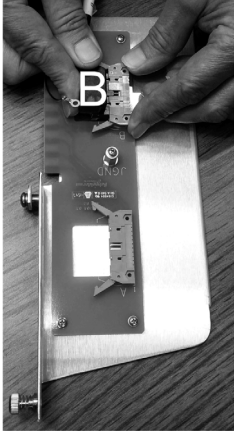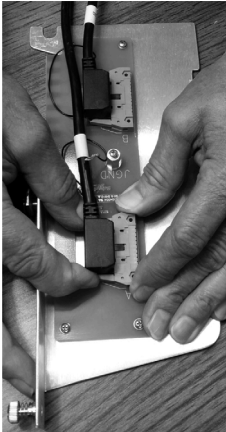
If you are using a generic adapter, assemble all of these cables (using the appropriate wiring guide) before beginning the modernization:
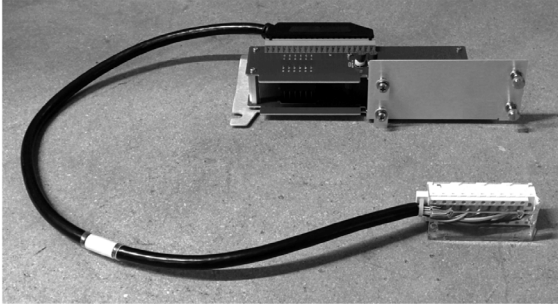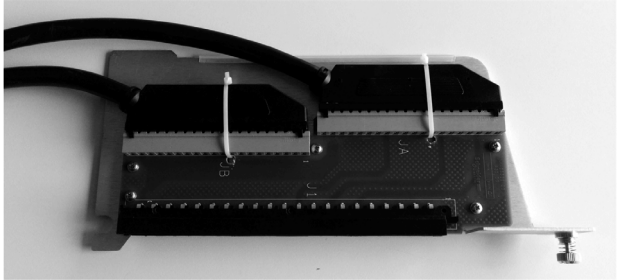
Step	Action
1	Before wiring the X80 connector to the cable, place the supplied shrink tube over the cable (Figure 10). After all wiring is completed, you can trim back the unused wires at the outer jacket and then shrink the tubing over the end of the jacket. Figure 11 depicts an example of a completed cable end.
	 Figure 10 Figure 11
2	Each generic cable comes with a marking flag tie wrap (Figure 12) included in the packaging. Schneider Electric recommends that you use the marking flag for easier identification of each cable during installation.
3	After the X80 connector wiring is completed, secure the cable to the connector with the supplied tie-wrap. Schneider Electric recommends that the tie-wrap connection point be on the cable jacket and not the individual wires.

Figure 12

Installing the Evolution PLC-I/O Base Plate and Front Plate

To install the Evolution PLC-I/O base plate and front plate:
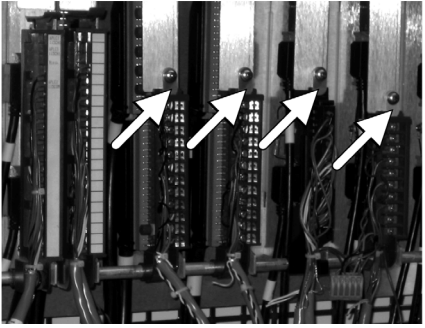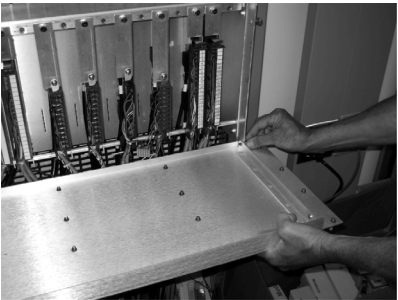
Step	Action
1	The Evolution PLC-I/O assembly is shipped with the front plate attached to the assembly. For ease of installation, the front plate can be detached before installing the assembly. To detach the front plate: 1. Loosen the two captive thumb screws fastening the top of the front plate to the (Figure 13). 2. Remove the two shoulder screws fastening the bottom of the front plate to the (Figure 13). 3. Remove the front plate from the assembly (Figure 14). Thumb screw Shoulder screw Figure 13 Figure 14
2	Securely fasten the Evolution I/O base plate to the existing PLC-5 chassis mounting location. The mounting hole pattern of the Evolution I/O base plate matches the mounting hole pattern of the PLC-5 chassis being replaced.
3	Connect the cable connectors to the I/O adapter card. If you are using the two cable high power I/O adapter, connect cable B first (Figure 15) to make the installation easier. Confirm that the two latches on the cable assembly wiring plug (circled in Figure 16) are engaged to the printed circuit board mounted connector. B A Figure 15 Figure 16

Step	Action
4	If you are using high density or analog translator units, connect the cable connectors to the I/O adapter latching headers (Figures 17 and 18). Connect cable B first (as shown in Figure 17, below) to make installation easier. Complete each connection by engaging the locking tabs (Figure 19).

Figure 17

Figure 18

NOTE: For an analog assembly, attach the cable shield ring lug to the ground standoff located between the two cable assembly connectors on the adapter card (Figure 20).

Figure 19

Figure 20

Step	Action
5	When replacing (2) PLC-5 modules with (1) X80 module, install (1) of the cable assembly wiring plugs into the upper connector on each I/O adapter card. (Figure 21)
	Figure 21
6	Optional: A supplied cable tie can be routed through clearance holes in the PC board and around the mated socket and wiring plug to help secure their connection (Figure 22).
	Figure 22

Step	Action
7	The I/O adapter assembly can be mounted at any available position in the base plate. Schneider Electric recommends that you horizontally align each X80 module so that it corresponds to the position of the associated field connector and I/O adapter. • Insert the adapter mounting plate U-shaped notch onto the migration chassis horizontal rod and rotate the plate alignment tab into the chassis slot (Figure 23). • Fasten the I/O adapter to the chassis assembly by tightening the captive screw. The tightening torque for these mounting screws is 5...7 lb-in (0.6...0.8 N•m). (Figure 24).
	Figure 23 Figure 24
8	Install the Rockwell wiring arm onto the horizontal rod and swing up to connect to the I/O adapter card. For 1771-WN 40 pin field wiring arms, verify that the retaining latch is engaged (as shown in Figure 25).
	Figure 25

Step	Action	
9	For half-height Rockwell wiring arms, fasten the adapter mounting plate retaining clip over the top of the wiring arm. The tightening torque is 9...11 lb-in (1.0...1.2 N•m). (Figure 26)	 Figure 26
10	(Optional) A ground post is included at the bottom right-side of the base plate (Figure 27). Use this to provide additional grounding for the base plate. If the ground post is used, use a nut of thread size 10-32 and a tightening torque of 15...20 lb-in (1.7...2.3 N•m.).	 Figure 27
11	If the front plate was removed, re-attach it to the base plate. Tighten both captive thumb screws and shoulder screws. The tightening torque for these screws is 15...20 lb-in (1.7...2.3 N•m.). (Figure 28)	 Figure 28

Installing the X80 System

To install the X80 system:
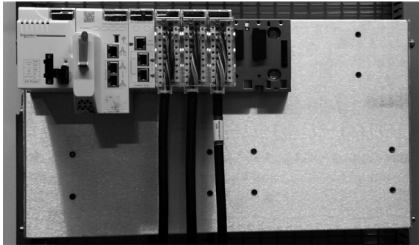
Step	Action
1	Attach X80 backplane(s) to the front plate. The recommended tightening torque for these screws is 25...30 lb-in (2.8...3.4 N•m). **NOTE:** • If you are installing an Ethernet X80 backplane or a non-Ethernet backplane (PV02 or later), use the shorter 16 mm (5/8 in) mounting screws that are supplied with the chassis assembly. • If you are installing a non-Ethernet X80 backplane (PV01 only), use the longer 19 mm (3/4 in) mounting screws that are supplied. • Note that there is a label attached to the top left lip of the front plate. Use the label to orient the door position when installing the X80 backplane(s). Figure 29
2	Mount all the required X80 modules (power supply, CPU, I/O, etc.) into the intended slots in the X80 backplane. Fasten each module by tightening the captive Phillips head screw at the top of the module. The tightening torque for this screw is 2...4 lb-in (0.23...0.45 N•m).
3	Plug each X80 I/O field connector into its corresponding I/O module. (Figure 29). Tighten the captive slotted head screw at the top and bottom of each connector. The tightening torque for these screws is 2.7...3.5 lb-in (0.3...0.4 N•m). Optional: Using the marking sheet located in the X80 connector cover, record the original Rockwell module part number and installation location.
4	If applicable, connect the Rockwell Remote I/O twisted pair cable to the ProSoft AN-X2-AB-DHRIO bridge, and re-attach any other communications cables that previously had been detached.

Maintenance

Strap Usage:

The front plate can be opened for ease of access. You can attach a strap (or similar implement) to the top shoulder screw and in the door hole to hold the front plate in place while it is open (Figure 30).
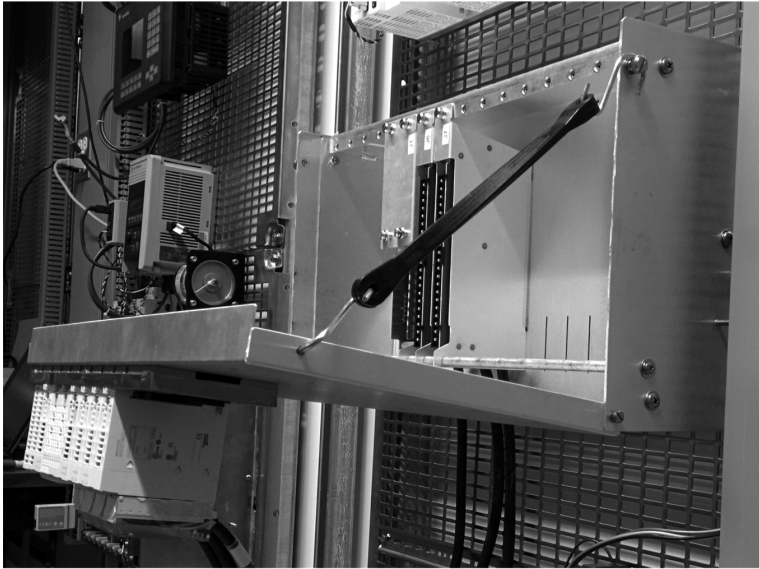
Figure 30

Fuse Replacement Procedure:

Some of the translator units have replaceable fuses. A spare fuse is located on the assembly in either the top or bottom position.

The fuses on the translator units are inaccessible when the system is assembled. If fuse replacement is required, the I/O adapter assembly needs to be dissembled and removed from the Evolution PLC-I/O Chassis:

Step	Action
1	Remove power from the system.
2	Unscrew the thumb screws at the top of the chassis assembly.
3	Remove the Rockwell wiring arm from the I/O adapter assembly.
4	Unscrew the fastening screws for the I/O adapter assembly.
5	Partially remove the I/O adapter assembly from the chassis assembly, then remove the interconnecting cables from the I/O adapter.
6	Remove the I/O adapter assembly from the chassis assembly.
7	Replace the blown fuse: 1. Pull the blown fuse straight out to remove it. 2. Line up the two pins on the fuse with the fuse socket on the adapter board, then push the new fuse into place.
8	Install the I/O adapter in the reverse order (steps 5 through 2, above).
9	Apply power to the system and verify operation.

Fuse Part Numbers:

Replacement fuses can be purchased from the following manufacturer:

Fuse Description	Fuse Rating	Part Number	Manufacturer
0.25 Amp, 250 Volt	F0.25AL250V	37002500410	Littelfuse, Inc.
0.5 Amp, 250 Volt	F0.5AL250V	37005000410	
2.0 Amp, 250 Volt	F2.0AL250V	37012000410	
6.3 Amp, 250 Volt	F6.3AL250V	37016300410	
NOTE: Littelfuse is the only recommended fuse manufacturer for use in the PLC-5 adapters.			

Fuse Rating

The components of the fuse rating are explained below, using the example F3.15AL250V:

F3.15AL250V

Speed — Breaking — Current Rating — Voltage Rating
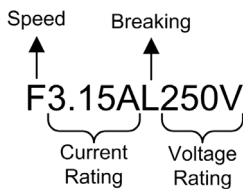
Fuse Speed		Fuse Breaking Capacity	
Speed Symbol	Description	Breaking Symbol	Description
FF	Very Fast Acting	H	High Breaking Capacity
F	Fast Acting	L	Low Breaking Capacity
M	Medium Acting		
T	Slow Acting		
TT	Very Slow Acting		

I/O Adapter Replacement Cables:

Replacement cables *(see page 30)* can be purchased from your Schneider Electric field services organization.

PLC-5 to X80 I/O Adapter Hardware References

Chassis Descriptions

Part Number	Description
990CHPC5X80120	PLC5 EVOLUTION CHASSIS W/O XBP 12 SLOT
990CHPC5X80160	PLC5 EVOLUTION CHASSIS W/O XBP 16 SLOT

Chassis Dimensions

Part Number	Dimensions			
	Width	Height	Depth (empty)	Depth (with M580 CPU)
990CHPC5X80120	482.6 mm (19 in)	314.3 mm (12.375 in)	152.4 mm (6 in)	287.5 mm (11.32 in)
990CHPC5X80160	609.6 mm (24 in)			

X80 Backplanes

Ethernet Rack Part Number	Number of Module Slots
BMEXBP0400(H)	4
BMEXBP0800(H)	8
BMEXBP1200(H)[1]	12
BMEXBP0602(H)[2]	6
BMEXBP1002(H)[3]	10
1. Slots 2, 8, 10 & 11: X Bus only. 2. Dual power supply. 3. Dual power supply. Slots 2 & 8: X Bus only.	

X Bus Rack Part Number	Number of Module Slots
BMXXBP0400(H)	4
BMEXBP0600(H)	6
BMEXBP0800(H)	8
BMEXBP1200(H)	12

Wiring Adapter Details

From PLC-5 I/O Module	To X80 Module	Evolution I/O Adapter Part Number	Description
1771-OB	BMXDDO1602	990ADPC5X80100	EVOL IO ADP 1771-OB to BMXDDO1602 2 FT
		990ADPC5X80101	EVOL IO ADP 1771-OB to BMXDDO1602 5 FT
(2) 1771-OB	BMXDDO1602	990ADPC5X80302	EVOL IO ADP (2) 1771-OB to BMXDDO1602 2 FT
		990ADPC5X80303	EVOL IO ADP (2) 1771-OB to BMXDDO1602 5 FT
1771-IM	BMXDAI0805	990ADPC5X80102	EVOL IO ADP 1771-IM to BMXDAI0805 2 FT
		990ADPC5X80103	EVOL IO ADP 1771-IM to BMXDAI0805 5 FT
1771-IxD	BMXDxI160x	990ADPC5X80104[1]	EVOL IO ADP 1771-IxD to BMXDxI160x 2 FT
		990ADPC5X80105[1]	EVOL IO ADP 1771-IxD to BMXDxI160x 5 FT
1771-OW16	BMXDRA1605	990ADPC5X80106	EVOL IO ADP 1771-OW16 to BMXDRA1605 2 FT
		990ADPC5X80107	EVOL IO ADP 1771-OW16 to BMXDRA1605 5 FT
1771-OFE1/2	BMXAMO0410	990ADPC5X80108	EVOL IO ADP 1771-OFE1/2 to BMXAMO0410 2 FT
		990ADPC5X80109	EVOL IO ADP 1771-OFE1/2 to BMXAMO0410 5 FT
1. The 990ADPC5X80104/105 adapters are not fused. If you want fusing, use the 990ADPC5X80128/129 adapters. 2. The 990ADPC5X80128/129 adapters are fused. If you do not want fusing, use the 990ADPC5X80104/105 adapters			

From PLC-5 I/O Module	To X80 Module	Evolution I/O Adapter Part Number	Description
1771-ID (AC)	BMXDAI0814	990ADPC5X80110	EVOL IO ADP 1771-ID (AC) to BMXDAI0814 2 FT
		990ADPC5X80111	EVOL IO ADP 1771-ID (AC) to BMXDAI0814 5 FT
1771-OAD	BMXDAO1605	990ADPC5X80112	EVOL IO ADP 1771-OAD to BMXDAO1605 2 FT
		990ADPC5X80113	EVOL IO ADP 1771-OAD to BMXDAO1605 5 FT
1771-OBD	BMXDDO1602	990ADPC5X80114	EVOL IO ADP 1771-OBD to BMXDDO1602 2 FT
		990ADPC5X80115	EVOL IO ADP 1771-OBD to BMXDDO1602 5 FT
1771-OA	BMXDAO1615	990ADPC5X80116	EVOL IO ADP 1771-OA/-OM/-ON to BMXDAO1615 2 FT
1771-OM	BMXDAO1615	990ADPC5X80117	EVOL IO ADP 1771-OA/-OM/-ON to BMXDAO1615 5 FT
1771-ON	BMXDAO1615		
1771-OD16	BMXDAO1615	990ADPC5X80118	EVOL IO ADP 1771-OD16/-ODD to BMXDAO1615 2 FT
1771-ODD	BMXDAO1615	990ADPC5X80119	EVOL IO ADP 1771-OD16/-ODD to BMXDAO1615 5 FT
1771-OD	BMXDAO1615	990ADPC5X80120	EVOL IO ADP 1771-OA/-OM/-ON to BMXDAO1615 2 FT
1771-ODC	BMXDAO1615	990ADPC5X80121	EVOL IO ADP 1771-OA/-OM/-ON to BMXDAO1615 5 FT
1771-OR	BMXDAO1615		
1. The 990ADPC5X80104/105 adapters are not fused. If you want fusing, use the 990ADPC5X80128/129 adapters. 2. The 990ADPC5X80128/129 adapters are fused. If you do not want fusing, use the 990ADPC5X80104/105 adapters			

From PLC-5 I/O Module	To X80 Module	Evolution I/O Adapter Part Number	Description
1771--ID (DC)	BMXDDI0604T	990ADPC5X80122	EVOL IO ADP 1771-ID (DC) to BMXDDI1604T 2 FT
		990ADPC5X80123	EVOL IO ADP 1771-ID (DC) to BMXDDI1604T 5 FT
1771-OQ	BMXDDO1602	990ADPC5X80124	EVOL IO ADP 1771-OQ to BMXDDO1602 2 FT
		990ADPC5X80125	EVOL IO ADP 1771-OQ to BMXDDO1602 5 FT
1771-IL	BMXAMI0810	990ADPC5X80126	EVOL IO ADP 1771-IL to BMXAMI0810 2 FT
		990ADPC5X80127	EVOL IO ADP 1771-IL to BMXAMI0810 5 FT
1771-IBD	BMXDDI1602	990ADPC5X80128[2]	EVOL IO ADP 1771-I*D to BMXD**160* 2 FT
1771-ICD	BMXDDI1603	990ADPC5X80129[2]	EVOL IO ADP 1771-I*D to BMXD**160* 5 FT
1771-IAD (AC)	BMXDAI1604		
1771-IAD (DC)	BMXDDI1604T		
1771-IND (AC)	BMXDAI1602		
1771-IND (DC)	BMXDAI1602		
1771-IMD (AC)	BMXDAI1615	990ADPC5X80130	EVOL IO ADP 1771-IMD to BMXDAI1615 2 FT
		990ADPC5X80131	EVOL IO ADP 1771-IMD to BMXDAI1615 5 FT
1771-IFE	BMXAMI0810	990ADPC5X80132	EVOL IO ADAP 1771-IF* to BMXAMI0810 2 FT
1771-IFF	BMXAMI0810	990ADPC5X80133	EVOL IP ADAP 1771-IF* to BMXAMI0810 5 FT
1. The 990ADPC5X80104/105 adapters are not fused. If you want fusing, use the 990ADPC5X80128/129 adapters. 2. The 990ADPC5X80128/129 adapters are fused. If you do not want fusing, use the 990ADPC5X80104/105 adapters			

From PLC-5 I/O Module	To X80 Module	Evolution I/O Adapter Part Number	Description
1771-IQ16 (positive logic)	BMXDDI1602	990ADPC5X80134	EVOL IP ADAP 1771-I*16 to BMXDDI160* 2 FT
1771-ID16 (DC)	BMXDDI1604T	990ADPC5X80135	EVOL IP ADAP 1771-I*16 to BMXDDI160* 5 FT
1771-IE	BMXAMI0800	990ADPC5X80136	EVOL IP ADAP 1771-IE to BMXAMI0800 2 FT
		990ADPC5X80137	EVOL IP ADAP 1771-IE to BMXAMI0800 2 FT
1771-IA/IA2 (AC)	BMXDAI1604	990ADPC5X80140	EVOL IO ADP 1771-I* to BMXD*I160* 2 FT
1771-IA/IA2 (DC)	BMXDDI1604T	990ADPC5X80141	EVOL IO ADP 1771-I* to BMXD*I160* 5 FT
1771-IB	BMXDDI1602		
1771-IC	BMXDDI1603		
1771-IH (48 VDC)	BMXDDI1603		
1771-IN	BMXDAI1602		
1771-IQ (positive logic)	BMXDDI1602		
1771-IQ (negative logic)	BMXDAI1602		
1771-IT	BMXDDI1602		
1771-IBN	(2) BMXDDI1602	990ADPC5X80200	EVOL IP ADAP 1771-I*N to (2) BMXD*I160* 2 FT
1771-IAN	(2) BMXDAI1604	990ADPC5X80201	EVOL IP ADAP 1771-I*N to (2) BMXD*I160* 5 FT
1771-IVN	(2) BMXDAI1602	990ADPC5X80202	EVOL IP ADAP 1771-IVN to (2) BMXDAI1602 2 FT
		990ADPC5X80203	EVOL IP ADAP 1771-IVN to (2) BMXDAI1602 5 FT
1. The 990ADPC5X80104/105 adapters are not fused. If you want fusing, use the 990ADPC5X80128/129 adapters. 2. The 990ADPC5X80128/129 adapters are fused. If you do not want fusing, use the 990ADPC5X80104/105 adapters			

From PLC-5 I/O Module	To X80 Module	Evolution I/O Adapter Part Number	Description
1771-ID01 (AC)	BMXDAI0805	990ADPC5X80304	EVOL IO ADAP GEN2 WD to (1) HP-PT 20/40 PIN X80 2 FT
1771-ODZ	BMXDAO1605	990ADPC5X80305	EVOL IO ADAP GEN2 WD to (1) HP-PT 20/40 PIN X80 5 FT
1771-OW	BMXDRA0805		
1771-OYL	BMXDRC0805		
1771-OZL	BMXDRA0805		
1771-OZ	BMXDRA0805		
1771-OZC	BMXDRA0805		
1771-IR	BMXART0814	990ADPC5X80306	EVOL IO ADAP GEN3 WF/WI to (2) 40 PIN FCN X80 2 FT
1771-IXE	BMXART0814	990ADPC5X80307	EVOL IO ADAP GEN3 WF/WI to (2) 40 PIN FCN X80 5 FT
1771-IXHR	BMXART0814		
1771-OAD (24 VAC)	BMXDAO1615	990ADPC5X80308	EVOL IO ADAP GEN4 WH to (1) HP-PT 40 PIN X80 2 FT
1771-OND	BMXDAO1615	990ADPC5X80309	EVOL IO ADAP GEN4 WH to (1) HP-PT 40 PIN X80 5 FT
1771-IQ16 (negative logic)	BMXDAI1602	990ADPC5X80310	EVOL IO ADAP GEN5 WN to (2) HP-PT 40 PIN X80 2 FT
1771-OAN	(2) BMXDAO1605	990ADPC5X80311	EVOL IO ADAP GEN5 WN to (2) HP-PT 40 PIN X80 5 FT
1771-OBN	(2) BMXDDO1602		
1771-OQ16	BMXDDO1602		
1771-OVN	(2) BMXDDO1602		
1771-OWN	(2) BMXDRA1605		
1771-OWNA	(2) BMXDRA1605		
1. The 990ADPC5X80104/105 adapters are not fused. If you want fusing, use the 990ADPC5X80128/129 adapters. 2. The 990ADPC5X80128/129 adapters are fused. If you do not want fusing, use the 990ADPC5X80104/105 adapters			

I/O Adapter Replacement Cables

Description	Part Number
High Power X80 I/O Adapter Replacement Cable 2 FT	990X80CABLE016
High Power X80 I/O Adapter Replacement Cable 5 FT	990X80CABLE516
High Power X80 I/O Adapter Replacement Pig Tail Cable 2 FT	990X80CABL016PT
High Power X80 I/O Adapter Replacement Pig Tail Cable 5 FT	990X80CABL516PT
Analog Shielded I/O Adapter Replacement Cable 20 pin conn. 2 FT	990X80CABLE018
Analog Shielded I/O Adapter Replacement Cable 20 pin conn. 5 FT	990X80CABLE518
Analog Shielded I/O Adapter Replacement Pig Tail Cable 2 FT	990X80CABL018PT
Analog Shielded I/O Adapter Replacement Pig Tail Cable 5 FT	990X80CABL518PT
Analog / Shielded X80 I/O Adapter Replacement Cable 28 pin conn. - 2 FT	990X80CABL019
Analog / Shielded X80 I/O Adapter Replacement Cable 28 pin conn. - 5 FT	990X80CABL519

I/O Adapter Replacement Cable Details

High Power 990X80CABLEx16 990X80CABLx16PT	
Wire #	**Wire Color**
1	Black
2	Brown
3	Red
4	Orange
5	Yellow
6	Green
7	Blue
8	Purple
9	Gray
10	White
11	Pink
12	Light Green
13	Black w/White
14	Brown w/White
15	Red w/White
16	Orange w/White
17	Green w/White
18	Blue w/White
19	Yellow w/White
20	Purple w/White

Analog / High Density 990X80CABLEx18 990x80CABLx19	
Wire #	Wire Color
1	Black
2	Brown
3	Red
4	Orenge
5	Yellow
6	Green
7	Blue
8	Purple
9	Gray
10	White
11	White w/Black
12	White w/Brown
13	White w/Red
14	White w/Orange
15	White w/Yellow
16	White w/Green
17	White w/Blue
18	White w/Violet
19	White w/Gray
20	Brown w/Black
None (Shield)	Black with ring lug

TC/RTD BMXFCW301S	
Connector #	**Wire Color**
B19	White w/Blue
A19	White w/Amber
B18	Blue w/White
A19	Amber w/White
B17	White w/Brown
A17	Brown w/White
B16	White w/Green
A16	Green w/White
B12	Red w/Blue
A12	Blue w/Red
B11	White w/Gray
A11	Gray w/White
B7	Red w/Green
A7	Green w/Red
B6	Red w/Amber
A6	Amber w/Red
B2	Red w/Gray
A2	Gray w/Red
B1	Red w/Brown
A1	Brown w/Red

PLC-5 to X80 High Power and Analog I/O Adapter Pinout Mapping

990ADPC5X80100/101

	990ADPC5X80100/101		
	Adapts: 1771-OB to BMXDDO1602		
1771-OB Pin Description	1771-OB	BMXDDO1602	BMXDDO1602 Pin Description
+dc	A	18, 20	+24 VDC
Output 0	0	1	Q0
Output 1	1	2	Q1
Output 2	2	3	Q2
Output 3	3	4	Q3
Output 4	4	5	Q4
Output 5	5	6	Q5
Output 6	6	7	Q6
Output 7	7	8	Q7
dc Common	B	17, 19	0 VDC

90ADPC5X80102/103

	90ADPC5X80102/103		
	Adapts: 1771-IM to BMXDAI0805		
1771-IM Pin Description	1771-IM	BMXDAI0805	BMXDAI0805 Pin Description
Not Used	A	18, 20	220 VAC - L
Input 0	0	1	CH0
Input 1	1	3	CH1
Input 2	2	5	CH2
Input 3	3	7	CH3
Input 4	4	9	CH4
Input 5	5	11	CH5
Input 6	6	13	CH6
Input 7	7	15	CH7
L2	B	17, 19	220 VAC - N
NOTE: Connect power to terminal A on the Rockwell field wiring arm.			

990ADPC5X80104/105

	990ADPC5X80104/105		
	Adapts: 1771-IAD to BMXDAI1604		
1771-IAD Pin Description	1771-IAD	BMXDAI1604	BMXDAI1604 Pin Description
L1	A	18, 20	120 VAC - L
Not Used	B	–	N/A
Not Used	C	–	N/A
Not Used	D	–	N/A
Input 00	00	1	I0
Input 01	01	2	I1
Input 02	02	3	I2
Input 03	03	4	I3
Input 04	04	5	I4
Input 05	05	6	I5
Input 06	06	7	I6
Input 07	07	8	I7
Input 10	10	9	I8
Input 11	11	10	I9
Input 12	12	11	I10
Input 13	13	12	I11
Input 14	14	13	I12
Input 15	15	14	I13
Input 16	16	15	I14
Input 17	17	16	I15
L2	E	17, 19	0 VAC - N

1771-IBD Pin Description	990ADPC5X80104/105		
	Adapts: 1771-IBD to BMXDDI1602		
1771-IBD Pin Description	1771-IBD	BMXDDI1602	BMXDDI1602 Pin Description
Not used	A (note)	18, 20	+24 VDC
Not used	B	–	N/A
Not used	C	–	N/A
Not used	D	–	N/A
Input 00	00	1	I0
Input 01	01	2	I1
Input 02	02	3	I2
Input 03	03	4	I3
Input 04	04	5	I4
Input 05	05	6	I5
Input 06	06	7	I6
Input 07	07	8	I7
Input 10	10	9	I8
Input 11	11	10	I9
Input 12	12	11	I10
Input 13	13	12	I11
Input 14	14	13	I12
Input 15	15	14	I13
Input 16	16	15	I14
Input 17	17	16	I15
dc Common	E	17,19	0 VDC
NOTE: Connect 24 VDC to pin A.			

990ADPC5X80106/107

	990ADPC5X80106/107		
	Adapts: 1771-OW16 to BMXDRA1605		
1771-OW16 Pin Description	1771-OW16	BMXDRA1605	BMXDRA1605 Pin Description
Output 00	1	1	Q0
Common 00	2	9, 10	C 0-7
Output 01	3	2	Q1
Common 01	4	9, 10	C 0-7
Output 02	5	3	Q2
Common 02	6	9, 10	C 0-7
Output 03	7	4	Q3
Common 03	8	9, 10	C 0-7
Output 04	9	5	Q4
Common 04	10	9, 10	C 0-7
Output 05	11	6	Q5
Common 05	12	9, 10	C 0-7
Output 06	13	7	Q6
Common 06	14	9, 10	C 0-7
Output 07	15	8	Q7
Common 07	16	9, 10	C 0-7
Output 10 - NC	17	–	N/A
Output 10 - NO	18	11	Q8
Common 10	19	19, 20	C 8-15
Output 11 - NC	20	–	N/A
Output 11 - NO	21	12	Q9
Common 11	22	19, 20	C 8-15
Output 12 - NC	23	–	N/A
Output 12 - NO	24	13	Q10
Common 12	25	19, 20	C 8-15
Output 13 - NC	26	–	N/A
Output 13 - NO	27	14	Q11
Common 13	28	19, 20	C 8-15
Output 14 - NC	29	–	N/A
Output 14 - NO	30	15	Q12
Common 14	31	19, 20	C 8-15

	990ADPC5X80106/107		
	Adapts: 1771-OW16 to BMXDRA1605		
1771-OW16 Pin Description	1771-OW16	BMXDRA1605	BMXDRA1605 Pin Description
Output 15 - NC	32	–	N/A
Output 15 - NO	33	16	Q13
Common 15	34	19, 20	C 8-15
Output 16 - NC	35	–	N/A
Output 16 - NO	36	17	Q14
Common 16	37	19, 20	C 8-15
Output 17 - NC	38	–	N/A
Output 17 - NO	39	18	Q15
Common 17	40	19, 20	C 8-15

90ADPC5X80108/109

	990ADPC5X80108/109		
	Adapts: 1771-OFE1/2 to BMXAMO0410		
1771-OFE1/2 Description	1771-OFE1/2	BMXAMO0410	BMXAMO0410 Pin Description
Channel 1 (+)	A	1	U/I 0
Channel 1 (-)	0	2	Com 0
Channel 2 (+)	1	7	U/I 1
Channel 2 (-)	2	8	Com 1
Channel 3 (+)	3	11	U/I 2
Channel 3 (-)	4	12	Com 2
Channel 4 (+)	5	17	U/I 3
Channel 4 (-)	6	18	Com 3
Not Used	7	–	–
Not Used	B	–	–

90ADPC5X80110/111

	990ADPC5X80110/111		
	Adapts: 1771-ID (AC) to BMXDAI0814		
1771-ID (AC) Description	1771-ID (AC)	BMXDAI0814	BMXDAI0814 Description
Input 0A	1	1	CH1 - L
Input 0B	2	2	CH1 - N
Input 1A	3	3	CH2 - L
Input 1B	4	4	CH2 - N
Input 2A	5	5	CH3 - L
Input 2B	6	6	CH3 - N
Input 3A	7	7	CH4 - L
Input 3B	8	8	CH4 - N
Input 4A	9	9	CH5 - L
Input 4B	10	10	CH5 - N
Input 5A	11	11	CH6 - L
Input 5B	12	12	CH6 - N

990ADPC5X80112/113

	990ADPC5X80112/113		
	Adapts: 1771-OAD to BMXDAO1605		
1771-OAD Pin Description	1771-OAD	BMXDAO1605	BMXDAO1605 Pin Description
L1	A	5, 10, 15, 20	120 VAC
L1	B	5, 10, 15, 20	120 VAC
L1	C	5, 10, 15, 20	120 VAC
L1	D	5, 10, 15, 20	120 VAC
Output 00	00	1	Q0
Output 01	01	2	Q1
Output 02	02	3	Q2
Output 03	03	4	Q3
Output 04	04	6	Q4
Output 05	05	7	Q5
Output 06	06	8	Q6
Output 07	07	9	Q7
Output 10	10	11	Q8
Output 11	11	12	Q9
Output 12	12	13	Q10
Output 13	13	14	Q11
Output 14	14	16	Q12
Output 15	15	17	Q13
Output 16	16	18	Q14
Output 17	17	19	Q15
L2	E	–	N/A

990ADPC5X80114/115

	990ADPC5X80114/115		
	Adapts: 1771-OBD to BMXDDO1602		
1771-OBD Pin Description	1771-OBD	BMXDDO1602	BMXDDO1602 Pin Description
+dc	A	18, 20	24 VDC
+dc	B	18, 20	24 VDC
+dc	C	18, 20	24 VDC
+dc	D	18, 20	24 VDC
Output 00	00	1	Q0
Output 01	01	2	Q1
Output 02	02	3	Q2
Output 03	03	4	Q3
Output 04	04	5	Q4
Output 05	05	6	Q5
Output 06	06	7	Q6
Output 07	07	8	Q7
Output 10	10	9	Q8
Output 11	11	10	Q9
Output 12	12	11	Q10
Output 13	13	12	Q11
Output 14	14	13	Q12
Output 15	15	14	Q13
Output 16	16	15	Q14
Output 17	17	16	Q15
-dc	E	17, 19	0 VDC

990ADPC5X80116/117

1771-OA/ON/OM Pin Description	990ADPC5X80116/117		
	Adapts: 1771-OA/ON/OM to BMXDAO1615		
1771-OA/ON/OM Pin Description	1771-OA/ON/OM	BMXDAO1615	BMXDAO1615 Pin Description
L1	A	2, 4, 6, 8, 12, 14, 16, 18	24/120/220 VAC - L
Output 0	0	1	Q0
Output 1	1	3	Q1
Output 2	2	5	Q2
Output 3	3	7	Q3
Output 4	4	11	Q4
Output 5	5	13	Q5
Output 6	6	15	Q6
Output 7	7	17	Q7
L2	B	N/A	N/A

990ADPC5X80118/119

1771-OD16/ODD Pin Description	990ADPC5X80118/119		
	Adapts: 1771-OD16/ODD to BMXDAO1615		
1771-OD16/ODD Pin Description	1771-OD16/ODD	BMXDAO1615	BMXDAO1615 Pin Description
Output 0	1	1	Q0
L1 - 0	2	2	120 VAC - L
Output 1	3	3	Q1
L1 - 1	4	4	120 VAC - L
Output 2	5	5	Q2
L1 - 2	6	6	120 VAC - L
Output 3	7	7	Q3
L1 - 3	8	8	120 VAC - L
Not Used	9	N/A	N/A
Not Used	10	N/A	N/A
Output 4	11	11	Q4
L1 - 4	12	12	120 VAC - L
Output 5	13	13	Q5
L1 - 5	14	14	120 VAC - L

	990ADPC5X80118/119		
	Adapts: 1771-OD16/ODD to BMXDAO1615		
1771-OD16/ODD Pin Description	1771-OD16/ODD	BMXDAO1615	BMXDAO1615 Pin Description
Output 6	15	15	Q6
L1 - 6	16	16	120 VAC - L
Output 7	17	17	Q7
L1 - 7	18	18	120 VAC - L
Not Used	19	N/A	N/A
Not Used	20	N/A	N/A
Output 10	21	21	Q8
L1 - 10	22	22	120 VAC - L
Output 11	23	23	Q9
L1 - 11	24	24	120 VAC - L
Output 12	25	25	Q10
L1 - 12	26	26	120 VAC - L
Output 13	27	27	Q11
L1 - 13	28	28	120 VAC - L
Not Used	29	N/A	N/A
Not Used	30	N/A	N/A
Output 14	31	31	Q12
L1 - 14	32	32	120 VAC - L
Output 15	33	33	Q13
L1 - 15	34	34	120 VAC - L
Output 16	35	35	Q14
L1 - 16	36	36	120 VAC - L
Output 17	37	37	Q15
L1 - 17	38	38	120 VAC - L
Not Used	39	N/A	N/A
Not Used	40	N/A	N/A

990ADPC5X80120/121

	990ADPC5X80120/121		
	Adapts: 1771-OD/ODC to BMXDAO1615		
1771-OD/ODC Pin Description	**1771-OD/ODC**	**BMXDAO1615**	**BMXDAO1615 Pin Description**
Output 0A - L1 120 VAC	1	1	Q0
Output 0B - L2	2	2	120 VAC - L
Output 1A	3	3	Q1
Output 1B	4	4	120 VAC - L
Output 2A	5	5	Q2
Output 2B	6	6	120 VAC - L
Output 3A	7	7	Q3
Output 3B	8	8	120 VAC - L
Output 4A	9	11	Q4
Output 4B	10	12	120 VAC - L
Output 5A	11	13	Q5
Output 5B	12	14	120 VAC - L

990ADPC5X80122/123

	990ADPC5X80122/123		
	Adapts: 1771-ID (DC) to BMXDDI1604T		
1771-ID (DC) Description	**1771-ID (DC)**	**BMXDDI1604T**	**BMXDDI1604T Description**
Input 0A	1	1	CH0
Input 0B	2	17, 19	0 VDC
Input 1A	3	2	CH1
Input 1B	4	17, 19	0 VDC
Input 2A	5	3	CH2
Input 2B	6	17, 19	0 VDC
Input 3A	7	4	CH3
Input 3B	8	17, 19	0 VDC
Input 4A	9	5	CH4
Input 4B	10	17, 19	0 VDC
Input 5A	11	6	CH5
Input 5B	12	17, 19	0 VDC
NOTE: Connect power to terminal 18, 20 on the X80 connector.			

990ADPC5X80124/125

	990ADPC5X80124/125		
	Adapts: 1771-OQ to BMXDDO1602		
1171-OQ Description	1771-OQ	BMXDDI1602	BMXDDI1602 Description
Not Used	18	–	–
+24 VDC	17	18, 20	+24 VDC
Output 0	16	1	Q0
Output 1	15	2	Q1
DC Common	14	17, 19	0 VDC
DC Common	13	17, 19	0 VDC
Output 2	12	3	Q2
Output 3	11	4	Q3
+24 VDC	10	18, 20	+24 VDC
+24 VDC	9	18, 20	+24 VDC
Output 4	8	5	Q4
Output 5	7	6	Q5
DC Common	6	17, 19	0 VDC
DC Common	5	17, 19	0 VDC
Output 6	4	7	Q6
Output 7	3	8	Q7
+24 VDC	2	18, 20	+24 VDC
Not Used	1	–	–

990ADPC5X80126/127

	990ADPC5X80126/127		
	Adapts: 1771-IL to BMXAMI0810		
1771-IL Description	**1771-IL**	**BMXAMI0810**	**BMXAMI0810 Description**
Channel 1 (+)	18	3	VI0
Channel 1 (-)	17	2	Com0
Channel 2 (+)	16	4	VI1
Channel 2 (-)	15	5	Com1
Channel 3 (+)	14	9	VI2
Channel 3 (-)	13	8	Com2
Channel 4 (+)	12	10	VI3
Channel 4 (-)	11	11	Com3
Not Used	10	–	–
Not Used	9	–	–
Channel 5 (+)	8	17	VI4
Channel 5 (-)	7	16	Com4
Channel 6 (+)	6	18	VI5
Channel 6 (-)	5	19	Com5
Channel 7 (+)	4	23	VI6
Channel 7 (-)	3	22	Com6
Channel 8 (+)	2	24	VI7
Channel 8 (-)	1	25	Com7

NOTE: Jumpers are needed from VIx to IIx for current sensing:
- Ch 0 - pins 1 to 3
- Ch 1 - pins 4 to 6
- Ch 2 - pins 7 to 9
- Ch 3 - pins 10 to 12
- Ch 4 - pins 15 to 17
- Ch 5 - pins 18 to 20
- Ch 6 - pins 21 to 23
- Ch 7 - pins 24 to 26

990ADPC5X80128/129

1771-I*D Description	990ADPC5X80128/129		
	Adapts: 1771-I*D to BMXD*I160*		
1771-I*D Description	**1771-I*D**	**BMXD*I160***	**BMXD*I160* Description**
Not Used	A	18, 20	+24 VDC
Not Used	B	18, 20	+24 VDC
Not Used	C	18, 20	+24 VDC
Not Used	D	18, 20	+24 VDC
Input 00	00	1	I0
Input 01	01	2	I1
Input 02	02	3	I2
Input 03	03	4	I3
Input 04	04	5	I4
Input 05	05	6	I5
Input 06	06	7	I6
Input 07	07	8	I7
Input 10	10	9	I8
Input 11	11	10	I9
Input 12	12	11	I10
Input 13	13	12	I11
Input 14	14	13	I12
Input 15	15	14	I13
Input 16	16	15	I14
Input 17	17	16	I15
Common/L2	E	17, 19	I16
NOTE: Connect power to terminal A, B, C, or D on Rockwell field wiring arm.			

990ADPC5X80130/131

1771-IMD Description	1771-IMD	BMXDAI1615	BMXDAI1615 Description
	990ADPC5X80130/131		
	Adapts: 1771-IMD to BMXDAI1615		
Not Used	A	39	AC+
Not Used	B	39	AC+
Not Used	C	39	AC+
Not Used	D	39	AC+
Input 00	00	1	I0
Input 01	01	3	I1
Input 02	02	5	I2
Input 03	03	7	I3
Input 04	04	11	I4
Input 05	05	13	I5
Input 06	06	15	I6
Input 07	07	17	I7
Input 10	10	21	I8
Input 11	11	23	I9
Input 12	12	25	I10
Input 13	13	27	I11
Input 14	14	31	I12
Input 15	15	33	I13
Input 16	16	35	I14
Input 17	17	37	I15
L2	E	2, 4, 6, 8, 12, 14, 16, 18, 22, 24, 26, 28, 32, 34, 36, 38, 40	Neutral
NOTE: Connect power to terminal A, B, C, D on the Rockwell field wiring arm.			

990ADPC5X80132/133

1771-IF* Description	990ADPC5X80132/133		
	Adapts: 1771-IF* to BMXAMI0810		
1771-IF* Description	1771-IF*	BMXAMI0810	BMXAMI0810 Description
Channel 1+	1	3	VI0
Channel 1-	2	2	COM0
Channel 2+	3	4	VI1
Channel 2-	4	5	Com1
Common	5	–	–
Channel 3+	6	9	VI2
Channel 3-	7	8	Com2
Channel 4+	8	10	VI3
Channel 4-	9	11	Com3
Common	10	–	–
Channel 5+	11	3	VI4
Channel 5-	12	17	Com4
Channel 6+	13	16	Vi5
Channel 6-	14	18	Com5
Common	15	–	–
Channel 7+	16	23	Vi6
Channel 7-	17	22	Com6
Channel 8+	18	24	VI7
channel 8-	19	25	Com7
Module Common	20	–	–
Module Common	21	–	–

NOTE: Jumpers are needed from VIx to IIx for current sensing:
- Ch 0 - pins 1 to 3
- Ch 1 - pins 4 to 6
- Ch 2 - pins 7 to 9
- Ch 3 - pins 10 to 12
- Ch 4 - pins 15 to 17
- Ch 5 - pins 18 to 20
- Ch 6 - pins 21 to 23
- Ch 7 - pins 24 to 26

990ADPC5X80134/135

1771-I*16 Description	990ADPC5X80134/135		
	Adapts: 1771-I*16 to BMXDDI160*(T)		
1771-I*16 Description	1771-I*16	BMXDDI160*(T)	BMXDDI160*(T) Description
Input 0	1	1	I0
Gnd - 0	2	17, 19	0 VDC
Input 1	3	2	I1
Gnd - 1	4	17, 19	0 VDC
Input 2	5	3	I2
Gnd - 2	6	17, 19	0 VDC
Input 3	7	4	I3
Gnd - 3	8	17, 19	0 VDC
Not Used	9	–	–
Not Used	10	–	–
Input 4	11	5	I4
Gnd - 4	12	17, 19	0 VDC
Input 5	13	6	I5
Gnd - 5	14	17, 19	0 VDC
Input 6	15	7	I6
Gnd - 6	16	17, 19	0 VDC
Input 7	17	8	I7
Gnd - 7	18	17, 19	0 VDC
Not Used	19	–	–
Not Used	20	–	–
Input 10	21	9	I8
Gnd - 10	22	17, 19	0 VDC
Input 11	23	10	I9
Gnd - 11	24	17, 19	0 VDC
Input 12	25	11	I10
Gnd - 12	26	17, 19	0 VDC
Input 13	27	12	I11
Gnd - 13	28	17, 19	0 VDC
Not Used	29	–	–
Not Used	30	–	–
Input 14	31	13	I12
Gnd - 14	32	17, 19	0 VDC
Input 15	33	14	I13
Gnd - 15	34	17, 19	0 VDC
Input 16	35	15	I14
Gnd - 16	36	17, 19	0 VDC
Input 17	37	16	I15
Gnd - 17	38	17, 19	0 VDC
Not Used	39	–	–
Not Used	40	18, 20	+24VDC, 125 VDC
NOTE: Connect power to terminal 40 on the Rockwell field wiring arm.			

990ADPC5X80136/137

NOTICE
RISK OF UNINTENDED OPERATION
Disconnect the external loop supply from the Rockwell field wiring arm before applying power to the system. Generic translator units 90ADPC5X80136/137 do not require an external loop power supply for the output channels to operate. These X80 modules' output channels are self powered.
Failure to follow these instructions can result in equipment damage.

		990ADPC5X80136/137	
		Adapts: 1771-IE to BMXAMI0800	
1771-IE Description	**171-IE**	**BMXAMI0800**	**BMXAMI0800 Description**
Channel 1	1	3	VI0
Channel 2	2	4	VI1
Channel 3	3	9	VI2
Channel 4	4	10	VI3
Channel 5	5	17	VI4
Channel 6	6	18	VI5
Channel 7	7	23	VI6
Channel 8	8	24	VI7
Supply Comm/ Sig Rtn	9	2, 5, 8, 11, 16, 19, 22, 25	Com0, Com1, Com2, Com3, Com4, Com5, Com6, Com7
+15 VDC	10	–	–
-15 VDC	11	–	–
+5 VDC	12	–	–

NOTE: Jumpers are needed from VIx to IIx for current sensing:
- Ch 0 - pins 1 to 3
- Ch 1 - pins 4 to 6
- Ch 2 - pins 7 to 9
- Ch 3 - pins 10 to 12
- Ch 4 - pins 15 to 17
- Ch 5 - pins 18 to 20
- Ch 6 - pins 21 to 23
- Ch 7 - pins 24 to 26

990ADPC5X80140/141

	990ADPC5X80140/141		
	Adapts: 1771-I* to BMXD*I160*		
1771-I* Description	1771-I*	BMXD*I160*	BMXD*I160* Pin Description
Not Used	A	18, 20	+24 VDC - L1 - Line
Input 0	0	1	I0
Input 1	1	3	I1
Input 2	2	5	I2
Input 3	3	7	I3
Input 4	4	9	I4
Input 5	5	11	I5
Input 6	6	13	I6
Input 7	7	15	I7
Common	B	17, 19	0 VDC - L2 - Common
NOTE: Connect power to terminal A on the Rockwell field wiring arm.			

990ADPC5X80200/201

1771-I*N Description	990ADPC5X80200/201		
	Adapts: 1771-I*N to (2) BMXD*I160*		
1771-I*N Description	1771-I*N	BMXD*I160*	BMXD*I160* Description
Input 0	1	A1	I0
Input 1	2	2	I1
Input 2	3	3	I2
Input 3	4	4	I3
Input 4	5	5	I4
Input 5	6	6	I5
Input 6	7	7	I6
Input 7	8	8	I7
DC Common (-)	9	17, 19	0 VDC, Neutral
DC Common (-)	10	17, 19	0 VDC, Neutral
Input 10	11	9	I8
Input 11	12	10	I9
Input 12	13	11	I10
Input 13	14	12	I11
Input 14	15	13	I12
Input 15	16	14	I13
Input 16	17	15	I14
Input 17	18	16	I15
DC Common (-)	19	17, 19	0 VDC, Neutral
DC Common (-)	20	17, 19	0 VDC, Neutral

1771-I*N Description	990ADPC5X80200/201		
	Adapts: 1771-I*N to (2) BMXD*I160*		
1771-I*N Description	1771-I*N	BMXD*I160*	BMXD*I160* Description
Input 0	21	B1	I0
Input 1	22	2	I1
Input 2	23	3	I2
Input 3	24	4	I3
Input 4	25	5	I4
Input 5	26	6	I5
Input 6	27	7	I6
Input 7	28	8	I7
DC Common (-)	29	17, 19	0 VDC, Neutral
DC Common (-)	30	17, 19	0 VDC, Neutral
Input 10	31	9	I8
Input 11	32	10	I9
Input 12	33	11	I10
Input 13	34	12	I11
Input 14	35	13	I12
Input 15	36	14	I13
Input 16	37	15	I14
Input 17	38	16	I15
DC Common (-)	39	17, 19	0 VDC, Neutral
DC Common (-)	40	17, 19	0 VDC, Neutral
NOTE: Connect power to terminal 18, 20 on each X80 connector.			

990ADPC5X80202/203

1771-IVN Description	1771-IVN	BMXDAI1602	BMXDAI1602 Description
	990ADPC5X80202/203		
	Adapts: 1771-IVN to (2) BMXDAI1602		
+ DC	1	A17, A19	+24 VDC
+ DC	2	17, 19	+24 VDC
Input 00	3	1	I0
Input 01	4	2	i1
Input 02	5	3	I2
Input 03	6	4	I3
Input 04	7	5	I4
Input 05	8	6	I5
Input 06	9	7	I6
Input 07	10	8	I7
+ DC	11	17, 19	+24 VDC
+ DC	12	17, 19	+24 VDC
Input 10	13	9	I8
input 11	14	10	I9
Input 12	15	11	i10
Input 13	16	12	I11
Input 14	17	13	I12
Input 15	18	14	I13
Input 16	19	15	i14
Input 17	20	16	I15
+ DC	21	B17, B19	+24 VDC
+ DC	22	17, 19	+24 VDC

1771-IVN Description	1771-IVN	BMXDAI1602	BMXDAI1602 Description
	990ADPC5X80202/203		
	Adapts: 1771-IVN to (2) BMXDAI1602		
Input 00	23	1	I0
Input 01	24	2	i1
Input 02	25	3	I2
Input 03	26	4	I3
Input 04	27	5	I4
Input 05	28	6	I5
Input 06	29	7	I6
Input 07	30	8	I7
+ DC	31	17, 19	+24 VDC
+ DC	32	17, 19	+24 VDC
Input 10	33	9	I8
input 11	34	10	I9
Input 12	35	11	i10
Input 13	36	12	I11
Input 14	37	13	I12
Input 15	38	14	I13
Input 16	39	15	i14
Input 17	40	16	I15
NOTE: Connect GND (0VDC) to terminal 18, 20 on each X80 connector.			

990ADPC5X80208/209

1771-OW16 Pin Description	990ADPC5X80208/209		BMXDRA0805 Pin Description
	Adapts: 1771-OW16 to (2) BMXDRA0805		
1771-OW16 Pin Description	1771-OW16	BMXDRA0805	BMXDRA0805 Pin Description
Output 00	1	A1	Q0
Common 00	2	2	C0
Output 01	3	3	Q1
Common 01	4	4	C1
Output 02	5	5	Q2
Common 02	6	6	C3
Output 03	7	7	Q4
Common 03	8	8	C4
Output 04	9	9	Q5
Common 04	10	10	C5
Output 05	11	11	Q6
Common 05	12	12	C6
Output 06	13	13	Q7
Common 06	14	14	C7
Output 07	15	15	Q8
Common 07	16	16	C8
Output 10 - NC	17	–	N/A
Output 10 - NO	18	B1	Q0
Common 10	19	2	C0
Output 11 - NC	20	–	N/A
Output 11 - NO	21	3	Q1
Common 11	22	4	C1
Output 12 - NC	23	–	N/A
Output 12 - NO	24	5	Q2
Common 12	25	6	C3
Output 13 - NC	26	–	N/A
Output 13 - NO	27	7	Q4
Common 13	28	8	C4
Output 14 - NC	29	–	N/A
Output 14 - NO	30	9	Q5
Common 14	31	10	C5
Output 15 - NC	32	–	N/A
Output 15 - NO	33	11	Q6

1771-OW16 Pin Description	990ADPC5X80208/209		
	Adapts: 1771-OW16 to (2) BMXDRA0805		
	1771-OW16	BMXDRA0805	BMXDRA0805 Pin Description
Common 15	34	12	C6
Output 16 - NC	35	–	N/A
Output 16 - NO	36	13	Q7
Common 16	37	14	C7
Output 17 - NC	38	–	N/A
Output 17 - NO	39	15	Q8
Common 17	40	16	C8

990ADPC5X80210/111

1771-IFEA/B/C Pin Description	990ADPC5X80210/211		
	Adapts: 1771-IFEA/B/C to (2) BMXAMI0800		
	1771-IFE/x	(2) BMXAMI0800	BMXAMI0800 Pin Description
Channel 1	1	A3	VI0 *Jumper to 1
Channel 2	2	4	VI1 *Jumper to 6
Channel 3	3	9	VI2 *Jumper to 7
Channel 4	4	10	VI3 *Jumper to 12
Module Common	5	2, 5, 8, 11	Com0-3
Channel 5	6	17	VI4 *Jumper to 15
Channel 6	7	18	VI5 *Jumper to 20
Channel 7	8	23	VI6 *Jumper to 21
Channel 8	9	24	VI7 *Jumper to 26
Module Common	10	16, 19, 22, 25	Com4-7
Channel 9	11	B3	VI0 *Jumper to 1
Channel 10	12	4	VI1 *Jumper to 6
Channel 11	13	9	VI2 *Jumper to 7
Channel 12	14	10	VI3 *Jumper to 12
Module Common	15	2, 5, 8, 11	Com0-3
Channel 13	16	17	VI4 *Jumper to 15
Channel 14	17	18	VI5 *Jumper to 20
Channel 15	18	23	VI6 *Jumper to 21
Channel 16	19	24	VI7 *Jumper to 26
Module Common	20	16, 19, 22, 25	Com4-7
Module Common	21	16, 19, 22, 25	Com4-7
* : Indicates a jumper is used for current (not voltage).			

990ADPC5X80216/217

1771-OA/ON/OM Pin Description	990ADPC5X80216/217		
	Adapts: 1771-OA/ON/OM to BMXDAO1615		
1771-OA/ON/OM Pin Description	1771-OA/ON/OM	BMXDAO1615	BMXDAO1615 Pin Description
A - L1	A	2, 4, 6, 8, 12, 14, 16, 18	24/120/220 VAC - L
A - Output 0	0	1	Q0
A - Output 1	1	3	Q1
A - Output 2	2	5	Q2
A - Output 3	3	7	Q3
A - Output 4	4	11	Q4
A - Output 5	5	13	Q5
A - Output 6	6	15	Q6
A - Output 7	7	17	Q7
A - L2	B	N/A	N/A
B - L1	A	22, 24, 26, 28, 32, 34, 36, 38	24/120/220 VAC - L
B - Output 0	0	21	Q8
B - Output 1	1	23	Q9
B - Output 2	2	25	Q10
B - Output 3	3	27	Q11
B - Output 4	4	31	Q12
B - Output 5	5	33	Q13
B - Output 6	6	35	Q14
B - Output 7	7	37	Q15
B - L2	B	N/A	N/A

990ADPC5X80220/221

1771-OD/ODC Pin Description	990ADPC5X80220/221		
	Adapts: (2) 1771-OD/ODC to BMXDAO1615		
1771-OD/ODC Pin Description	1771-OD/ODC	BMXDAO1615	BMXDAO1615 Pin Description
Output 0A - L1 120 VAC	A1	1	Q0
Output 0B - L2	A2	2	120 VAC - L
Output 1A	A3	3	Q1
Output 1B	A4	4	120 VAC - L
Output 2A	A5	5	Q2
Output 2B	A6	6	120 VAC - L
Output 3A	A7	7	Q3
Output 3B	A8	8	120 VAC - L
Output 4A	A9	11	Q4
Output 4B	A10	12	120 VAC - L
Output 5A	A11	13	Q5
Output 5B	A12	14	120 VAC - L
Output 0A - L1 120 VAC	B1	21	Q8
Output 0B - L2	B2	22	120 VAC - L
Output 1A	B3	23	Q9
Output 1B	B4	24	120 VAC - L
Output 2A	B5	25	Q10
Output 2B	B6	26	120 VAC - L
Output 3A	B7	27	Q11
Output 3B	B8	28	120 VAC - L
Output 4A	B9	31	Q12
Output 4B	B10	32	120 VAC - L
Output 5A	B11	33	Q13
Output 5B	B12	34	120 VAC - L

990ADPC5X80302/303

	990ADPC5X80302/303		
	Adapts: (2) 1771-OB to BMXDDO1602		
1771-OB Pin Description	1771-OB	BMXDDO1602	BMXDDO1602 Pin Description
+dc	A	18, 20	+24 VDC
Output 0	0	1	Q0
Output 1	1	2	Q1
Output 2	2	3	Q2
Output 3	3	4	Q3
Output 4	4	5	Q4
Output 5	5	6	Q5
Output 6	6	7	Q6
Output 7	7	8	Q7
dc Common	B	17, 19	0 VDC
+dc	A	18, 20	+24 VDC
Output 0	0	9	Q8
Output 1	1	10	Q9
Output 2	2	11	Q10
Output 3	3	12	Q11
Output 4	4	13	Q12
Output 5	5	14	Q13
Output 6	6	15	Q14
Output 7	7	16	Q15
dc Common	B	17,19	0 VDC

Generic Wiring Guides

Using the Wiring Guides

The following wiring guides provide information for initial wiring of the terminal, and for maintenance. The diagram below shows you how to read and use the following wiring guides:

Use the two left columns when constructing the cables. They provide details on how to build the cable, by identifying the wire number and color that is connected to each X80 terminal number.	Use the four right columns for system maintenance and troubleshooting. They provide the X80 terminal number & description and its association to the PLC-5 terminal pin number.

2 Left Columns

How to wire	
Wire # / Color	**X80 Terminal #**
1 Black	18, 20
2 Brown	1
3 Red	2
4 Orange	3
5 Yellow	4
6 Green	5
7 Blue	6
8 Purple	7
9 Gray	8
10 White	9
11 Pink	10
12 Light Green	11
13 Black w/Wht	12
14 Brown w/Wht	13
15 Red w/Wht	14
16 Orange w/Wht	15
17 Green w/Wht	16
18 Blue w/Wht	17, 19
19 Yellow w/Wht	N/A
20 Purple w/Wht	N/A

4 Right Columns

Maintenance			
PLC-5 Description	**PLC-5 Terminal #**	**X80 Terminal #**	**X80 Description**
+24 VDC	A	18. 20	+24 VDC
+24 VDC	B	18. 20	+24 VDC
+24 VDC	C	18, 20	+24 VDC
+24 VDC	D	18, 20	+24 VDC
Output 00	1	1	Q1
Output 01	2	2	Q2
Output 02	3	3	Q3
Output 03	4	4	Q4
Output 04	5	5	Q5
Output 05	6	6	Q6
Output 06	7	7	Q7
Output 07	8	8	Q8
Output 10	9	8	Q9
Output 11	10	10	Q10
Output 12	11	11	Q11
Output 13	12	12	Q12
Output 14	13	13	Q13
Output 15	14	14	Q14
Output 16	15	15	Q15
Output 17	16	16	Q16
DC Common	E	17, 19	0 VDC

Generic Adapter Usage: Generic Assemblies 1 - 5 (Sorted by PLC-5 Module)

⚠ CAUTION
LOSS OF INPUT/OUTPUT FUNCTION
Generic translator units do not contain fuses or other measures to help protect against external events, such as circuit overload, short circuit, or sensor/pre-actuator voltage errors. Confirm that sufficient module protection measures are in place. Refer to the *Modicon M340 Using Unity Pro Discrete Input/Output Modules User Manual* (35012474) for details regarding X80 module external protection recommendations.
Failure to follow these instructions can result in injury or equipment damage.

Generic 1: 990ADPC5X80300/301			
10 Pin 1771-WA/WC Rockwell field wiring arm		**20 pin X80 connector**	**Wiring Guide #**
From	**=>**	**To**	
1771-IV	=>	BMXDAI1602	10-01
1771-OP	=>	BMXDAO1605	10-02
1771-OX	=>	BMXDRC0805	10-03

Generic 2: 990ADPC5X80304/305			
12 Pin 1771-WD Rockwell field wiring arm		**20 pin X80 connector**	**Wiring Guide #**
From	**=>**	**To**	
1771-ID01 (AC)	=>	BMXDAI0805	12-01
1771-ODZ	=>	BMXDAO1605	12-02
1771-OW	=>	BMXDRA0805	12-03
1771-OYL	=>	BMXDRC0805	12-04
1771-OZ	=>	BMXDRA0805	12-03
1771-OZC	=>	BMXDRA0805	12-03
1771-OZL	=>	BMXDRA0805	12-03

Generic 3: 990ADPC5X80306/307			
18 Pin 1771-WF/WI Rockwell field wiring arm		40 pin FCN X80 connector	Wiring Guide #
From	=>	To	
1771-IR	=>	BMXART0814	18-02
1771-IXE	=>	BMXART0814	18-01
1771-IXHR	=>	BMXART0814	18-01

Generic 4: 990ADPC5X80308/309			
21 Pin 1771-WH/WG Rockwell field wiring arm		20 pin X80 connector	Wiring Guide #
From	=>	To	
1771-OAD (24 VAC)	=>	BMXDAO1615	21-01
1771-OND	=>	BMXDAO1615	21-01

Generic 5: 990ADPC5X80310/311			
40 Pin 1771-WN Rockwell field wiring arm		20 pin X80 connector	Wiring Guide #
From	=>	To	
1771-IQ16 (SOURCING)	=>	BMXDAI1602	40-01
1771-OAN	=>	(2) BMXDAO1605	40-05
1771-OBN	=>	(2) BMXDDO1602	40-02
1771-OVN	=>	(2) BMXDDO1612	40-03
1771-OQ16	=>	BMXDDO1612	40-04
1771-OWN	=>	(2) BMXDRA1605	40-06
1771-OWNA	=>	(2) BMXDRA1605	40-06

Generic Wiring Guide #1: 10 Pin PLC-5 Field Wiring Arms to 990ADPC5X80300/301

Wiring Guide 10-01

Wiring Guide 10-01 [RA-DI-10C => SE-DI-20B]					
How to wire*			Maintenance		
			RA-DI-10C		SE-DI-20B	
Wire # / Color	X80 Terminal #		PLC-5 Description	PLC-5 Terminal #	X80 Terminal #	X80 Description
1 - Black	17 or 19		+ DC	A	17, 19	+ 24 VDC
2 - Brown	1		Input 0	0	1	I0
3 - Red	2		Input 1	1	2	I1
4 - Orange	3		Input 2	2	3	I2
5 - Yellow	4		Input 3	3	4	i3
6 - Green	5		Input 4	4	5	I4
7 - Blue	6		Input 5	5	6	i5
8 - Purple	7		Input 6	6	7	I6
9 - Gray	8		Input 7	7	8	I7
10 - White	18 or 20		Not Used	B	18, 20	0 VDC
* Connect 0 VDC to terminal B on Rockwell field wiring arm.			–	–	–	–

Wiring Guide 10-02

Wiring Guide 10-02 [RA-DO-10B to SE-DO-20E]					
How to wire			Maintenance		
			RA-DO-10B		SE-DO-20E	
Wire # / Color	X80 Terminal #		PLC-5 Description	PLC-5 Terminal #	X80 Terminal #	X80 Description
1 - Black	5		L1	A	5	120 VAC
2 - Brown	N/A		Not Used	0	N/A	N/A
3 - Red	N/A		Not Used	1	N/A	N/A
4 - Orange	1		Output 0	2	1	Q0
5 - Yellow	2		Output 1	3	2	Q1
6 - Green	3		Output 3	4	3	Q2
7 - Blue	4		Output 4	5	4	Q3
8 - Purple	N/A		Not Used	6	N/A	N/A
9 - Gray	N/A		Not Used	7	N/A	N/A
10 - White	N/A		L 2	B	N/A	N/A

Wiring Guide 10-03

Wiring Guide 10-03 [RA-DO-10C to SE-DO-40A]					
How to wire			Maintenance		
			RA-DO-10C		SE-DO-40A	
Wire # / Color	X80 Terminal #		PLC-5 Description	PLC-5 Terminal #	X80 Terminal #	X80 Description
1 - Black	2		Common 0 +	A	2, 4	COM0
2 - Brown	1 (NO) / 3 (NC)		NO/NC 0 -	0	1 or 3	NO0 or NC0
3 - Red	6		Common 1 +	1	6, 8	COM1
4 - Orange	5 (NO) / 7 (NC)		NO/NC 1 -	2	5 or 7	NO1 or NC1
5 - Yellow	N/A		Not Used	3	N/A	N/A
6 - Green	N/A		Not Used	4	N/A	N/A
7 - Blue	12		Common 2 +	5	12, 14	COM2
8 - Purple	11 (NO) / 13 (NC)		NC/NO 2 -	6	11 or 13	NO2 or NC2
9 - Gray	16		Common 3 +	7	16, 18	COM3
10 - White	15 (NO) / 17 (NC)		NC/NO 0 -	B	15 or 17	NO3 or NC3

Generic #2: 12 Pin Rockwell Field Wiring Arms to 990ADPC5X80304/305

Wiring Guide 12-01

Wiring Guide 12-01 [RA-DI-12A to SE-DI-20C]					
How to wire		Maintenance			
		RA-DI-12A		SE-DI-20C	
Wire # / Color	X80 Terminal #	PLC-5 Description	PLC-5 Terminal #	X80 Terminal #	X80 Description
1 - Black	1	Input 0A	1	1	I0
2 - Brown	17 or 19	Input 0B	2	17, 19	220 VAC-N
3 - Red	3	Input 1A	3	3	I1
4 - Orange	17 or 19	Input 1B	4	17, 19	220 VAC-N
5 - Yellow	5	Input 2A	5	5	I2
6 - Green	17 or 19	Input 2B	6	17, 19	220 VAC-N
7 - Blue	7	Input 3A	7	7	I3
8 - Purple	17 or 19	Input 3B	8	17, 19	220 VAC-N
9 - Gray	9	Input 4A	9	9	I4
10 - White	17 or 19	Input 4B	10	17, 19	220 VAC-N
11 - Pink	11	Input 5A	11	11	I5
12 - Light Green	17 or 19	Input 5B	12	17, 19	220 VAC-N

Wiring Guide 12-02

Wiring Guide 12-02 [RA-DO-12B to SE-DO-20E]					
How to wire		Maintenance			
		RA-DO-12B		SE-DI-20E	
Wire # / Color	X80 Terminal #	PLC-5 Description	PLC-5 Terminal #	X80 Terminal #	X80 Description
1 - Black	1	Output 0	1	1	Q0
2 - Brown	5	L1, 0-1	2	5	120 VAC - L1
3 - Red	2	Output 1	3	2	Q1
4 - Orange	3	Output 2	4	3	Q2
5 - Yellow	5	L1, 2-3	5	5	120 VAC - L1
6 - Green	4	Output 3	6	4	Q3
7 - Blue	6	Output 4	7	6	Q4
8 - Purple	10	L1, 4-5	8	10	120 VAC - L1
9 - Gray	7	Output 5	9	7	Q5
10 - White	8	Output 6	10	8	Q6
11 - Pink	10	L1, 6-7	11	10	120 VAC - L1
12 - Light Green	9	Ouptut 7	12	9	Q7

Wiring Guide 12-03

Wiring Guide 12-03 [RA-DO-12B to SE-DO-20C]					
How to wire			**Maintenance**		
			RA-DO-12B		**SE-DO-20C**	
Wire # / Color	**X80 Terminal #**		**PLC-5 Description**	**PLC-5 Terminal #**	**X80 Terminal #**	**X80 Description**
1 - Black	1		Output 0	1	1	Q0
2 - Brown	2 and 4		L1, 0-1	2	2, 4	C0, C1
3 - Red	3		Output 1	3	3	Q1
4 - Orange	5		Output 2	4	5	Q2
5 - Yellow	6 and 8		L1, 2-3	5	5, 8	C2, C3
6 - Green	7		Output 3	6	7	Q3
7 - Blue	9		Output 4	7	9	Q4
8 - Purple	10 and 12		L1, 4-5	8	10, 12	C4, C5
9 - Gray	11		Output 5	9	11	Q5
10 - White	13		Output 6	10	13	Q6
11 - Pink	14 and 16		L1, 6-7	11	14, 16	C6, C7
12 - Light Green	15		Output 7	12	15	Q7

Wiring Guide 12-04

Wiring Guide 12-04 [RA-DO-12B to SE-DO-40A]					
How to wire		Maintenance			
		RA-DO-12B		SE-DO-40A	
Wire # / Color	X80 Terminal #	PLC-5 Description	PLC-5 Terminal #	X80 Terminal #	X80 Description
1 - Black	1	Output 0, (NO)	1	1	NO0
2 - Brown	4 and 6	L1, 0-1	2	2, 4, 6, 8	COM0, COM1
3 - Red	7	Output 1, (NC)	3	7	NC1
4 - Orange	11	Output 2, (NO)	4	11	NO2
5 - Yellow	14 and 16	L1, 2-3	5	12, 14, 16, 18	COM2, COM3
6 - Green	17	Output 3, (NC)	6	17	NC3
7 - Blue	21	Output 4, (NO)	7	21	NO4
8 - Purple	24 and 26	L1, 4-5	8	22, 24, 26, 28	COM4, COM5
9 - Gray	27	Output 5, (NC)	9	27	NC5
10 - White	31	Output 6, (NO)	10	31	NO6
11 - Pink	34 and 36	L1, 6-7	11	32, 34, 36, 38	COM6, COM7
12 - Light Green	37	Output 7, (NC)	12	37	NC7

Generic #3: 18 Pin Rockwell Field Wiring Arms to 990ADPC5X80306/307

Generic cabling procedure for Wiring Guides #18-01 and #18-02:

Step	Action
1	Cut cable for the desired length by measuring from the top of the 40 pin cable connector: ● For the short 0.4 m (1 ft) cable, mark and cut the cable at ≈0.7 m (≈2 ft). ● For the long 1.5 m (5 ft) cable, mark and cut the cable at ≈1.8 m (≈6 ft).
2	Slide the supplied heat-shrink tubing over the cable ≈ 0.3 m (≈ 1 ft).
3	Cut the cable jacket back from the cable end ≈ 75 mm (≈ 3 in) and remove.
4	Trim the braided shield from the cable without cutting the shield drain wire. When all of the braid shielding is removed, remove the foil wrapping to expose the cable wires.
5	Separate the unused wires from the wires identified in the Wiring Guide.
6	Strip the insulation back ≈ 10 mm (≈ 0.375 in) from the wires to be connected. Twist the exposed wires so the wires remain bundled, o4 install 24 AWG ferrules.
7	Connect the wires to the X80 connector pins per the Wiring Guide.
8	Verify that the cable is constructed properly by performing a continuity check of each connection.
9	Connect the shield drain wire to the shield grounding screw on the PCB with a #4 stud ring terminal.
10	Cut the unused wires at the cable jacket edge.
11	Position the heat-shrink tubing so it covers both the cable jacket and the cable wires.
12	Heat the heat-shrink tubing to create a tight joint at the cable jacket edge and cable wire junction.
13	Connect the cable to the tie-wrap saddle on the adapter PCB using the supplied tie-wrap.
14	Write the from / to module information, Rockwell backplane position, and so forth on the supplied cable tag, then tie the cable tag close to the X80 field connector.

Wiring Guide 18-01

Wiring Guide 18-01 [RA-AI-18A to SE-AI-40A]					
How to wire		Maintenance			
		RA-AI-18A		SE-AI-40A	
Wire # / Color	X80 Terminal #	PLC-5 Description	PLC-5 Terminal #	X80 Terminal #	X80 Description
R-A17 Brown w/White	18	Channel 1 +	18	R-A17	Channel 0 - MS+
R-B17 - White w/Brown	17	Channel 1 -	17	R-B17	Channel 0 - MS-
R-A12 - Blue w/Red	16	Channel 2 +	16	R-A12	Channel 1 - MS+
R-B12 - Red w/Blue	15	Channel 2 -	15	R-B12	Channel 1 - MS-
R-A6 - Amber w/Red	14	Channel 3 +	14	R-A7	Channel 2 - MS+
R-B6 - Red w/Amber	13	Channel 3 -	13	R-B7	Channel 2 - MS-
R-A2 - Gray w/Red	12	Channel 4 +	12	R-A2	Channel 3 - MS+
R-B2- Red w/Gray	11	Channel 4 -	11	R-B2	Channel 4 - MS-
N/A	10	Do not use	10	N/A	N/A
N/A	9	Do not use	9	N/A	N/A
L-A17 Brown w/White	8	Channel 5 +	8	L-A17	Channel 4 - MS+
L-B17 - White w/Brown	7	Channel 5 -	7	L-B17	Channel 4 - MS-
L-A12 - Blue w/Red	6	Channel 6 +	6	L-A12	Channel 5 - MS+
L-B12 - Red w/Blue	5	Channel 6 -	5	L-B12	Channel 5 - MS-
L-A6 - Amber w/Red	4	Channel 7 +	4	L-A7	Channel 6 - MS+
L-B6 - Red w/Amber	3	Channel 7 -	3	L-B7	Channel 6 - MS-
L-A2 - Gray w/Red	2	Channel 8 +	2	L-A2	Channel 7 - MS+
L-B2- Red w/Gray	1	Channel 8 -	1	L-B2	Channel 7 - MS-

Wiring Guide 18-02

Wiring Guide 18-02 [RA-AI-18B to SE-AI-40A]					
How to wire		Maintenance			
		RA-AI-18B		SE-AI-40A	
Wire # / Color	X80 Terminal #	PLC-5 Description	PLC-5 Terminal #	X80 Terminal #	X80 Description
R-B16 - White w/Green	18	Channel 1 C	18	R-B16	Channel 0 - EX-
R-B17 - White w/Brown	17	Channel 1 B	17	R-B17	Channel 0 - MS-
R-A16 - Green w/White	16	Channel 1 A	16	R-A16	Channel 0 - EX+
R-B11 - White w/Gray	15	Channel 2 C	15	R-B11	Channel 1 - EX-
R-B12 - Red w/Blue	14	Channel 2 B	14	R-B12	Channel 1 - MS-
R-A11 - Gray w/White	13	Channel 2 A	13	R-A11	Channel 1 - EX+
R-B6 - Red w/Orange	12	Channel 3 C	12	R-B6	Channel 2 - EX-
R-B7 - Red w/Green	11	Channel 3 B	11	R-B7	Channel 2 - MS-
R-A6 - Amber w/Red	10	Channel 3 A	10	R-A6	Channel 2 - EX+
R-B1 - Red w/Brown	9	Channel 4 C	9	R-B1	Channel 3 - EX-
R-B2 - Red w/Gray	8	Channel 4 B	8	R-B2	Channel 3 - MS-
R-A1 - Brown w/Red	7	Channel 4 A	7	R-A1	Channel 3 - EX+
L-B16 - White w/Green	6	Channel 5 C	6	L-B16	Channel 4 - EX-
L-B17 - White w/Brown	5	Channel 5 B	5	L-B17	Channel 4 - MS-
L-A16 - Green w/White	4	Channel 5 A	4	L-A16	Channel 4 - EX+
L-B11 - White w/Gray	3	Channel 6 C	3	L-B11	Channel 5 - EX-
L-B12 - Red w/Blue	2	Channel 6 B	2	L-B12	Channel 5 - MS-
L-A11 - Gray w/White	1	Channel 6 A	1	L-A11	Channel 5 - EX+

Generic #4: 21 pin Rockwell Field Wiring Arms to 990ADPC5X80308/309

Wiring Guide 21-01

Wiring Guide 21-01 [RA-DO-21A to SE-DO-40B]					
How to wire*		**Maintenance**			
		RA-DO-21A		**SE-DO-40B**	
Wire # / Color	**X80 Terminal #**	**PLC-5 Description**	**PLC-5 Terminal #**	**X80 Terminal #**	**X80 Description**
18 - Blue w/White	40	L1	A	2, 4, 6, 8, 12, 14, 16, 18, 22, 24, 26, 28, 32, 34, 36, 38	+24 VAC
N/A	N/A	Not Used	B	N/A	N/A
N/A	N/A	Not Used	C	N/A	N/A
N/A	N/A	Not Used	D	N/A	N/A
1 - Black	1	Input 00	00	1	Q0
2 - Brown	3	Input 01	01	3	Q1
3 - Red	5	Input 02	02	5	Q2
4 - Orange	7	Input 03	03	7	Q3
5 - Yellow	11	Input 04	04	11	Q4
6 - Green	13	Input 05	05	13	Q5
7 - Blue	15	Input 06	06	15	Q6
8 - Purple	17	Input 07	07	17	Q7
9 - Gray	21	Input 10	10	21	Q8
10 - White	23	Inout 11	11	23	Q9
11 - Pink	25	Input 12	12	25	Q10
12 - Light Green	27	Input 13	13	27	Q11
13 - Black w/White	31	input 14	14	31	Q12
14 - Brown w/White	33	Input 15	15	33	Q13
15 - Red w/White	35	Input 16	16	35	Q14
16 - Orange w/White	37	Input 17	17	37	Q15
–	–	L2	E	N/A	N/A
* Install 20 pole jumper included with 40 pin X80 connector to pins 2 thru 40 on left side of connector.		–	–	–	–

Generic #5: 40 Pin Rockwell Field Wiring Arms to 990ADPC5X80310/311

Wiring Guide 40-01

Wiring Guide 40-01 [RA-DI-40C to SE-DI-20B]					
How to wire		Maintenance			
		RA-DI-40C		(2) SE-DI-20B	
Wire # / Color	X80 Terminal #	PLC-5 Description	PLC-5 Terminal #	X80 Terminal #	X80 Description
A1 - Black	1	Input 0	1	1	Q0
A2 - Brown	17 or 19	Gnd - 0	2	5	24 VAC
A3 - Red	2	Input 1	3	2	Q1
A4 - Orange	17 or 19	Gnd - 1	4	5	24 VAC
A5 - Yellow	3	Input 2	5	3	Q2
A6 - Green	17 or 19	Gnd - 2	6	5	24 VAC
A7 - Blue	4	Input 3	7	4	Q3
A8 - Purple	17 or 19	Gnd - 3	8	5	24 VAC
A9 - Gray	N/A	Not Used	9	N/A	N/A
A10 - White	N/A	Not Used	10	N/A	N/A
A11 - Pink	5	Input 4	11	6	Q4
A12 - Light Green	17 or 19	Gnd - 4	12	10	24 VAC
A13 - Black w/White	6	Input 5	13	7	Q5
A14 - Brown w/White	17 or 19	Gnd - 5	14	10	24 VAC
A15 - Red w/White	7	Input 6	15	8	Q6
A16 - Orange w/White	17 or 19	Gnd - 6	16	10	24 VAC
A17 - Green w/White	8	Input 7	17	9	Q7
A18 - Blue w/White	17 or 19	Gnd - 7	18	10	24 VAC
A19 - Yellow w/White	N/A	Not Used	19	N/A	N/A
A20 - Purple w/White	N/A	Not Used	20	N/A	N/A

Wiring Guide 40-01 [RA-DI-40C to SE-DI-20B]					
How to wire		**Maintenance**			
		RA-DI-40C		**(2) SE-DI-20B**	
Wire # / Color	**X80 Terminal #**	**PLC-5 Description**	**PLC-5 Terminal #**	**X80 Terminal #**	**X80 Description**
B1 - Black	9	Input 10	21	11	Q8
B2 - Brown	17 or 19	Gnd - 10	22	15	24 VAC
B3 - Red	10	Input 11	23	12	Q9
B4 - Orange	17 or 19	Gnd - 11	24	15	24 VAC
B5 - Yellow	11	Input 12	25	13	Q10
B6 - Green	17 or 19	Gnd - 12	26	15	24 VAC
B7 - Blue	12	Input 13	27	14	Q11
B8 - Purple	17 or 19	Gnd - 13	28	15	24 VAC
B9 - Gray	N/A	Not Used	29	N/A	N/A
B10 - White	N/A	Not Used	30	N/A	N/A
B11 - Pink	13	Input 14	31	16	Q12
B12 - Light Green	17 or 19	Gnd - 14	32	20	24 VAC
B13 - Black w/White	14	Input 15	33	17	Q13
B14 - Brown w/White	17 or 19	Gnd - 15	34	20	24 VAC
B15 - Red w/White	15	Input 16	35	18	Q14
B16 - Orange w/White	17 or 19	Gnd - 16	36	20	24 VAC
B17 - Green w/White	16	Input 17	37	19	Q15
B18 - Blue w/White	17 or 19	Gnd - 17	38	20	24 VAC
B19 - Yellow w/White	N/A	Not Used	39	N/A	N/A
B20 - Purple w/White	N/A	Not Used	40	N/A	N/A

Wiring Guide 40-02

Wiring Guide 40-02 [RA-DO-40A to (2) SE-DO-20A]					
How to wire		Maintenance			
		RA-DO-40A		(2) SE-DO-20A	
Wire # / Color	X80 Terminal #	PLC-5 Description	PLC-5 Terminal #	X80 Terminal #	X80 Description
A1 - Black	A18	+ DC	1	A18	+24 VDC
A2 - Brown	A1	Output 0	2	A1	Q0
A3 - Red	A2	Output 1	3	A2	Q1
A4 - Orange	A3	Output 2	4	A3	Q2
A5 - Yellow	A4	Output 3	5	A4	Q3
A6 - Green	A5	Output 4	6	A5	Q4
A7 - Blue	A6	Output 5	7	A6	Q5
A8 - Purple	A7	Output 6	8	A7	Q6
A9 - Gray	A8	Output 7	9	A8	Q7
A10 - White	A17	Common 0	10	A17	0 VDC
A11 - Pink	A20	+ DC	11	A20	+24 VDC
A12 - Light Green	A9	Output 10	12	A9	Q8
A13 - Black w/White	A10	Output 11	13	A10	Q9
A14 - Brown w/White	A11	Output 12	14	A11	Q10
A15 - Red w/White	A12	Output 13	15	A12	Q11
A16 - Orange w/White	A13	Output 14	16	A13	Q12
A17 - Green w/White	A14	Output 15	17	A14	Q13
A18 - Blue w/White	A15	Output 16	18	A15	Q14
A19 - Yellow w/White	A16	Output 17	19	A16	Q15
A20 - Purple w/White	A19	Common 1	20	A19	0 VDC

Wiring Guide 40-02 [RA-DO-40A to (2) SE-DO-20A]					
How to wire		Maintenance			
		RA-DO-40A		(2) SE-DO-20A	
Wire # / Color	X80 Terminal #	PLC-5 Description	PLC-5 Terminal #	X80 Terminal #	X80 Description
B1 - Black	B18	+ DC	21	B18	+24 VDC
B2 - Brown	B1	Output 0	22	B1	Q0
B3 - Red	B2	Output 1	23	B2	Q1
B4 - Orange	B3	Output 2	24	B3	Q2
B5 - Yellow	B4	Output 3	25	B4	Q3
B6 - Green	B5	Output 4	26	B5	Q4
B7 - Blue	B6	Output 5	27	B6	Q5
B8 - Purple	B7	Output 6	28	B7	Q6
B9 - Gray	B8	Output 7	29	B8	Q7
B10 - White	B17	Common 3	30	B17	0 VDC
B11 - Pink	B20	+ DC	31	B20	+24 VDC
B12 - Light Green	B9	Output 10	32	B9	Q8
B13 - Black w/White	B10	Output 11	33	B10	Q9
B14 - Brown w/White	B11	Output 12	34	B11	Q10
B15 - Red w/White	B12	Output 13	35	B12	Q11
B16 - Orange w/White	B13	Output 14	36	B13	Q12
B17 - Green w/White	B14	Output 15	37	B14	Q13
B18 - Blue w/White	B15	Output 16	38	B15	Q14
B19 - Yellow w/White	B16	Output 17	39	B16	Q15
B20 - Purple w/White	B19	Common 4	40	B19	0 VDC

Wiring Guide 40-03

Wiring Guide 40-03 [RA-D0-40A to (2) SE-DO-20B]					
How to wire		Maintenance			
		RA-DO-40A		(2) SE-DO-20B	
Wire # / Color	X80 Terminal #	PLC-5 Description	PLC-5 Terminal #	X80 Terminal #	X80 Description
A1 - Black	A18	+ DC	1	A18	+24 VDC
A2 - Brown	A1	Output 0	2	A1	Q0
A3 - Red	A2	Output 1	3	A2	Q1
A4 - Orange	A3	Output 2	4	A3	Q2
A5 - Yellow	A4	Output 3	5	A4	Q3
A6 - Green	A5	Output 4	6	A5	Q4
A7 - Blue	A6	Output 5	7	A6	Q5
A8 - Purple	A7	Output 6	8	A7	Q6
A9 - Gray	A8	Output 7	9	A8	Q7
A10 - White	A17	Common 0	10	A17	0 VDC
A11 - Pink	A20	+ DC	11	A20	+24 VDC
A12 - Light Green	A9	Output 10	12	A9	Q8
A13 - Black w/White	A10	Output 11	13	A10	Q9
A14 - Brown w/White	A11	Output 12	14	A11	Q10
A15 - Red w/White	A12	Output 13	15	A12	Q11
A16 - Orange w/White	A13	Output 14	16	A13	Q12
A17 - Green w/White	A14	Output 15	17	A14	Q13
A18 - Blue w/White	A15	Output 16	18	A15	Q14
A19 - Yellow w/White	A16	Output 17	19	A16	Q15
A20 - Purple w/White	A19	Common 1	20	A19	0 VDC

Wiring Guide 40-03 [RA-D0-40A to (2) SE-DO-20B]					
How to wire		**Maintenance**			
		RA-DO-40A		**(2) SE-DO-20B**	
Wire # / Color	**X80 Terminal #**	**PLC-5 Description**	**PLC-5 Terminal #**	**X80 Terminal #**	**X80 Description**
B1 - Black	B18	+ DC	21	B18	+24 VDC
B2 - Brown	B1	Output 0	22	B1	Q0
B3 - Red	B2	Output 1	23	B2	Q1
B4 - Orange	B3	Output 2	24	B3	Q2
B5 - Yellow	B4	Output 3	25	B4	Q3
B6 - Green	B5	Output 4	26	B5	Q4
B7 - Blue	B6	Output 5	27	B6	Q5
B8 - Purple	B7	Output 6	28	B7	Q6
B9 - Gray	B8	Output 7	29	B8	Q7
B10 - White	B17	Common 3	30	B17	0 VDC
B11 - Pink	B20	+ DC	31	B20	+24 VDC
B12 - Light Green	B9	Output 10	32	B9	Q8
B13 - Black w/White	B10	Output 11	33	B10	Q9
B14 - Brown w/White	B11	Output 12	34	B11	Q10
B15 - Red w/White	B12	Output 13	35	B12	Q11
B16 - Orange w/White	B13	Output 14	36	B13	Q12
B17 - Green w/White	B14	Output 15	37	B14	Q13
B18 - Blue w/White	B15	Output 16	38	B15	Q14
B19 - Yellow w/White	B16	Output 17	39	B16	Q15
B20 - Purple w/White	B19	Common 4	40	B19	0 VDC

Wiring Guide 40-04

Wiring Guide 40-04 [RA-D0-40B to SE-DO-20B]					
How to wire*		Maintenance			
		RA-DO-40B		SE-DO-20B	
Wire # / Color	X80 Terminal #	PLC-5 Description	PLC-5 Terminal #	X80 Terminal #	X80 Description
A1 - Black	1	Output 0	1	1	Q0
A2 - Brown	18, 20	+ DC - 0	2	18, 20	+24 VDC
A3 - Red	2	Output 1	3	2	Q1
A4 - Orange	18, 20	+ DC - 1	4	18, 20	+24 VDC
A5 - Yellow	3	Output 2	5	3	Q2
A6 - Green	18, 20	+ DC - 2	6	18, 20	+24 VDC
A7 - Blue	4	Output 3	7	4	Q3
A8 - Purple	18, 20	+ DC - 3	8	18, 20	+24 VDC
A9 - Gray	N/A	Not Used	9	N/A	N/A
A10 - White	N/A	Not Used	10	N/A	N/A
A11 - Pink	5	Output 4	11	5	Q4
A12 - Light Green	18, 20	+ DC - 4	12	18, 20	+24 VDC
A13 - Black w/White	6	Output 5	13	6	Q5
A14 - Brown w/White	18, 20	+ DC - 5	14	18, 20	+24 VDC
A15 - Red w/White	7	Output 6	15	7	Q6
A16 - Orange w/White	18, 20	+ DC - 6	16	18, 20	+24 VDC
A17 - Green w/White	8	Output 7	17	8	Q7
A18 - Blue w/White	18, 20	+ DC - 7	18	18, 20	+24 VDC
A19 - Yellow w/White	N/A	Not Used	19	N/A	N/A
A20 - Purple w/White	N/A	Not Used	20	N/A	N/A
* Connect 0 VDC to terminal 17 or 19 on Schneider X80 connector.					

Wiring Guide 40-04 [RA-D0-40B to SE-DO-20B]					
How to wire*		**Maintenance**			
		RA-DO-40B		**SE-DO-20B**	
Wire # / Color	**X80 Terminal #**	**PLC-5 Description**	**PLC-5 Terminal #**	**X80 Terminal #**	**X80 Description**
B1 - Black	9	Output 10	21	9	Q8
B2 - Brown	18, 20	+ DC - 10	22	18, 20	+24 VDC
B3 - Red	10	Output 11	23	10	Q9
B4 - Orange	18, 20	+ DC - 11	24	18, 20	+24 VDC
B5 - Yellow	11	Output 12	25	11	Q10
B6 - Green	18, 20	+ DC - 12	26	18, 20	+24 VDC
B7 - Blue	12	Output 13	27	12	Q11
B8 - Purple	18, 20	+ DC - 13	28	18, 20	+24 VDC
B9 - Gray	N/A	Not Used	29	N/A	N/A
B10 - White	N/A	Not Used	30	N/A	N/A
B11 - Pink	13	Output 14	31	13	Q12
B12 - Light Green	18, 20	+ DC - 14	32	18, 20	+24 VDC
B13 - Black w/White	14	Output 15	33	14	Q13
B14 - Brown w/White	18, 20	+ DC - 15	34	18, 20	+24 VDC
B15 - Red w/White	15	Output 16	35	15	Q14
B16 - Orange w/White	18, 20	+ DC - 16	36	18, 20	+24 VDC
B17 - Green w/White	16	Output 17	37	16	Q15
B18 - Blue w/White	18, 20	+ DC - 17	38	18, 20	+24 VDC
B19 - Yellow w/White	N/A	Not Used	39	N/A	N/A
B20 - Purple w/White	N/A	Not Used	40	N/A	N/A
* Connect 0 VDC to terminal 17 or 19 on Schneider X80 connector.					

Wiring Guide 40-05

Wiring Guide 40-05 [RA-D0-40C to (2) SE-DO-20E]					
How to wire			Maintenance		
			RA-DO-40C		(2) SE-DO-20E
Wire # / Color	X80 Terminal #		PLC-5 Description	PLC-5 Terminal #	X80 Terminal #	X80 Description
A1 - Black	A5, A10		L1	1	A5, A10	120/240 VAC
A2 - Brown	A1		Output 0	2	A1	Q0
A3 - Red	A2		Output 1	3	A2	Q1
A4 - Orange	A3		Output 2	4	A3	Q2
A5 - Yellow	A4		Output 3	5	A4	Q3
A6 - Green	A5		Output 4	6	A5	Q4
A7 - Blue	A6		Output 5	7	A6	Q5
A8 - Purple	A7		Output 6	8	A7	Q6
A9 - Gray	A8		Output 7	9	A8	Q7
A10 - White	N/A		Not Used	10	N/A	N/A
A11 - Pink	A15, A20		L1	11	A15, A20	120/240 VAC
A12 - Light Green	A9		Output 10	12	A9	Q8
A13 - Black w/White	A10		Output 11	13	A10	Q9
A14 - Brown w/White	A11		Output 12	14	A11	Q10
A15 - Red w/White	A12		Output 13	15	A12	Q11
A16 - Orange w/White	A13		Output 14	16	A13	Q12
A17 - Green w/White	A14		Output 15	17	A14	Q13
A18 - Blue w/White	A15		Output 16	18	A15	Q14
A19 - Yellow w/White	A16		Output 17	19	A16	Q15
A20 - Purple w/White	N/A		Not Used	20	N/A	N/A

Wiring Guide 40-05 [RA-D0-40C to (2) SE-DO-20E]					
How to wire			**Maintenance**		
			RA-DO-40C		**(2) SE-DO-20E**	
Wire # / Color	**X80 Terminal #**		**PLC-5 Description**	**PLC-5 Terminal #**	**X80 Terminal #**	**X80 Description**
B1 - Black	B5, B10		L1	21	B5, B10	120/240 VAC
B2 - Brown	B1		Output 0	22	B1	Q0
B3 - Red	B2		Output 1	23	B2	Q1
B4 - Orange	B3		Output 2	24	B3	Q2
B5 - Yellow	B4		Output 3	25	B4	Q3
B6 - Green	B5		Output 4	26	B5	Q4
B7 - Blue	B6		Output 5	27	B6	Q5
B8 - Purple	B7		Output 6	28	B7	Q6
B9 - Gray	B8		Output 7	29	B8	Q7
B10 - White	N/A		Not Used	30	N/A	N/A
B11 - Pink	B15, B20		L1	31	B15, B20	120/240 VAC
B12 - Light Green	B9		Output 10	32	B9	Q8
B13 - Black w/White	B10		Output 11	33	B10	Q9
B14 - Brown w/White	B11		Output 12	34	B11	Q10
B15 - Red w/White	B12		Output 13	35	B12	Q11
B16 - Orange w/White	B13		Output 14	36	B13	Q12
B17 - Green w/White	B14		Output 15	37	B14	Q13
B18 - Blue w/White	B15		Output 16	38	B15	Q14
B19 - Yellow w/White	B16		Output 17	39	B16	Q15
B20 - Purple w/White	N/A		Not Used	40	N/A	N/A

Wiring Guide 40-06

Wiring Guide 40-06 [RA-D0-40C to (2) SE-DO-20D]					
How to wire		Maintenance			
		RA-DO-40C		(2) SE-DO-20D	
Wire # / Color	X80 Terminal #	PLC-5 Description	PLC-5 Terminal #	X80 Terminal #	X80 Description
A1 - Black	A9 or A10	Common 0	1	A9, A10	C 0-7
A2 - Brown	A1	Output 0	2	A1	Q0
A3 - Red	A2	Output 1	3	A2	Q1
A4 - Orange	A3	Output 2	4	A3	Q2
A5 - Yellow	A4	Output 3	5	A4	Q3
A6 - Green	A5	Output 4	6	A5	Q4
A7 - Blue	A6	Output 5	7	A6	Q5
A8 - Purple	A7	Output 6	8	A7	Q6
A9 - Gray	A8	Output 7	9	A8	Q7
A10 - White	N/A	Not Used	10	N/A	N/A
A11 - Pink	A19 or A20	Common 1	11	A19, A20	C 8-15
A12 - Light Green	A11	Output 10	12	A11	Q8
A13 - Black w/White	A12	Output 11	13	A12	Q9
A14 - Brown w/White	A13	Output 12	14	A13	Q10
A15 - Red w/White	A14	Output 13	15	A14	Q11
A16 - Orange w/White	A15	Output 14	16	A15	Q12
A17 - Green w/White	A16	Output 15	17	A16	Q13
A18 - Blue w/White	A17	Output 16	18	A17	Q14
A19 - Yellow w/White	A18	Output 17	19	A18	Q15
A20 - Purple w/White	N/A	Not Used	20	N/A	N/A

Wiring Guide 40-06 [RA-D0-40C to (2) SE-DO-20D]					
How to wire		Maintenance			
		RA-DO-40C		(2) SE-DO-20D	
Wire # / Color	X80 Terminal #	PLC-5 Description	PLC-5 Terminal #	X80 Terminal #	X80 Description
B1 - Black	B9 or B10	Common 2	21	B9, B10	C 0-7
B2 - Brown	B1	Output 0	22	B1	Q0
B3 - Red	B2	Output 1	23	B2	Q1
B4 - Orange	B3	Output 2	24	B3	Q2
B5 - Yellow	B4	Output 3	25	B4	Q3
B6 - Green	B5	Output 4	26	B5	Q4
B7 - Blue	B6	Output 5	27	B6	Q5
B8 - Purple	B7	Output 6	28	B7	Q6
B9 - Gray	B8	Output 7	29	B8	Q7
B10 - White	N/A	Not Used	30	N/A	N/A
B11 - Pink	B19 or B20	Common 3	31	B19, B20	C 8-15
B12 - Light Green	B11	Output 10	32	B11	Q8
B13 - Black w/White	B12	Output 11	33	B12	Q9
B14 - Brown w/White	B13	Output 12	34	B13	Q10
B15 - Red w/White	B14	Output 13	35	B14	Q11
B16 - Orange w/White	B15	Output 14	36	B15	Q12
B17 - Green w/White	B16	Output 15	37	B16	Q13
B18 - Blue w/White	B17	Output 16	38	B17	Q14
B19 - Yellow w/White	B18	Output 17	39	B18	Q15
B20 - Purple w/White	N/A	Not Used	40	N/A	N/A