Wiring Systems for PLC
Modernization and Competitive Migration
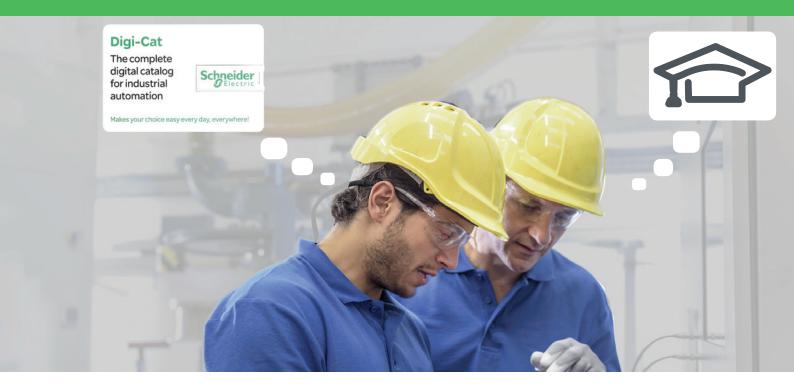
Catalog

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Schneider Electric

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Life Is On | Schneider Electric

General contents

A dedicated services offer for your installed base

Schneider Electric, with its experts, products and dedicated tools, provides services such as system design, consultancy, maintenance contracts, modernization of facilities or delivering projects.

The Schneider Electric services offer is structured around several key areas:
■ Maintenance and support services:
□ A set of services to help maintain reliability and availability of automated control systems. These services may be the subject of a bespoke maintenance contract to meet your requirements more closely.

■ Consultancy services:
□ Diagnostics of the installed base

■ Modernization solutions:
□ Migration solutions including consultancy, expertise, tools and technical support to help ensure a smooth transition to newer technology while keeping the wiring and the encoding in most cases.

Customization services are also available to accommodate specific requirements. For more information, please consult the specific pages on our website
www.schneider-electric.com/automationservices

Maintenance and support services	
Spare parts, exchanges and repairs	*Everything you need to get equipment working again as quickly as possible*
	Solutions to respond very quickly to requests for spare parts, exchanges and repairs to your installed automation equipment (automation platforms, Human Machine Interfaces, drives, distributed I/O): ■ Spare parts management: □ Identification of critical parts □ Stock of spare parts: a Schneider Electric owned stock of spare parts, on your site or in one of our warehouses, with immediate availability on site or a contractually agreed delivery time if stored off site □ Testing of spare parts stored on site □ Automatic stock filling ■ Repairs: □ Broken down products are repaired in a network of worldwide repair centres. For each repaired product, our experts provide a detailed report. ■ On-site repair: □ Our experts' knowledge and expertise □ Monitoring of specific repair procedures □ Availability of our teams to respond 24/7 ■ Exchanges: □ With standard replacements, receive a new or reconditioned product before the broken down product has even been sent back □ Fast exchanges offer the option to receive the replacement product within 24 hours (in Europe)
Preventive maintenance	*Improving and guaranteeing the long-term reliability and performance of your installations*
	Schneider Electric's preventive maintenance expert assesses your site, the equipment to be managed and sets up a maintenance program to accommodate specific requirements. A list is provided of the tasks to be performed and their frequency, including site-specific tasks, describing how preventive maintenance is to be managed.
Extended warranty	*An additional manufacturer warranty covering replacement or repair of the equipment*
	The extended warranty offers the option to take out a 3-year warranty. The warranty period can vary according to the geographical area, consult your Customer Care Centre.
Online support	*Access to dedicated experts*
	Priority access to experts who can answer technical questions promptly concerning equipment and software both on sale and no longer commercially available.
Software subscription	*Access to software upgrades and new features*
	By subscribing to software updates, users are able to: ■ Purchase licences ■ Receive updates, upgrades, software migrations and transitions ■ Download software from Schneider Electric's software library

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A dedicated services offer for your installed base

Consultancy services

M2C (Maintenance and Modernization Consultancy)

Professional tools and methods, proven experience of managing obsolescence and updating installed bases, to reduce downtimes and improve performance

With our maintenance and modernization consultancy offer, Schneider Electric will help you check the state of your installed base by:
- Defining the scope and depth of the analysis in collaboration with you
- Collecting the technical data without shutting down production
- Analyzing and identifying avenues for improvement
- Producing a recommendation plan

Customer benefits:
- Learning about the components that make up the installed base and how up-to-date they are
- Better downtime anticipation
- Expert advice designed to improve performance

Modernization solutions

Migration to EcoStruxure

Proven expertise, tools and methods to give you a clear vision of the improvement opportunities and guide you toward a successful modernization project

Schneider Electric offers gradual solutions of modernization through a set of products, tools and services that allow you to upgrade your installations with our last technologies. Our solutions offer you the choice to plan your modernization:
- Partial modernization: replacement of an old set of components with a new one
- Step by Step modernization: gradual incorporation of new Solutions or Offers in the system
- Complete modernization: total renovation of the system

EcoStruxure™

To find out more about EcoStruxure architectures, please visit our website www.schneider-electric.com/EcoStruxure

The table below lists our various migration offers:

Wide range of migration offers		Moving to M580/M340/X80 platform						
Solution		Solution Type			Tools	Solution Services		
		Change the CPU and retain the I/O racks & wiring	Change the CPU & the I/O racks & retain I/O field wiring with wiring system	Change the CPU & the I/O racks & the I/O wiring	SoftWare application conversion tool	Modernization / migration service	Manage your project	Execute your project
Platform	Premium	☑	☑	☑	☑	☑	☑	☑
	TSX47 to TSX107		☑	☑	☑	☑	☑	☑
	Quantum	☑	☑	☑	☑	☑	☑	☑
	Modicon 984 & 800 Series I/O	☑	☑	☑	☑	☑	☑	☑
	Modicon Compact		☑	☑	☑	☑	☑	☑
	Symax	☑	(1)	☑	☑	☑	☑	☑
	April series 1000		(2)	☑	☑	☑	☑	☑
	April SMC			☑	☑	☑	☑	☑
	Merlin Gerin PB			☑		☑	☑	☑
	AEG		(1)	☑		☑	☑	☑
	Rockwell SLC500		☑	☑	☑	☑	☑	☑
	Rockwell PLC 5	☑	☑	☑	☑	☑	☑	☑

☑	Service available

(1) Consult Schneider services - project specific solution is possible
(2) For April series 1000 (April 5000-7000 also the April 2000-3000)
*   Consult Schneider services - project specific solution is possible*

Customization services

Schneider Electric is able to meet your specific requirements and provide you with adapted products:
- Protective coating for Human Machine Interfaces, automation platforms and distributed I/O modules for use in harsh environments
- Customized cable lengths to match your specific needs
- Customized front panels for Human Machine Interfaces
- The preparation before use of The Multi-Use Flying Lead I/O adapter can be made in the factory on request.

Note: To check availability of services required, please contact our Customer Care Centre.

Contents

1 - Application conversion

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Unity M580 Application Converter

Offer Description

Introduction

Unity M580 Application Converter V3 (UMAC V3) is a software tool. Its purpose is to convert Unity Quantum and Unity Premium applications to Unity M580 applications.

UMAC is part of the service offer for PLC modernization.
The PLC modernization offer is comprised of service tools, service products, and service methods to support retrofit and upgrade projects that modernize older Schneider PLCs with new M580 systems.

The main elements of a PLC modernization service offer are as follows:
■ PLC application conversion
■ PLC hardware renewal
■ Quick Wiring offer for the hardware migration
■ Methods and procedures for typical configurations

UMAC Lite version is available to all.

UMAC Standard version is available to:
■ End users with services contracts
■ System integrators who are members of the Schneider SI Alliance program
■ Schneider support teams

Value proposition and benefits

Estimation phase:
■ The tool provides the means for a rapid assessment and accurate estimation of the application to be converted

Engineering phase:
■ The tool makes a fast and reliable conversion
■ Reduced time to perform the application conversion
■ An accurate conversion – code translation templates and delivered DFB types have been tested in Unity
■ A simple to understand adaptation of the Unity application, preserving its readability
■ A conversion report to keep track of the modifications done on the application

Installation and commissioning phase:
■ Less time required due to a high level of consistency

Benefits in short

In general, the tools help to provide low risk, low cost, efficient, and high quality PLC modernization for our customers.

With the converter, you get:
■ Minimized engineering time on application conversions to Unity M580
■ Less risk of human mistakes: all targeted changes done
■ Better quality, less testing and less commissioning time

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Unity M580 Application Converter tool

Overview of the tool

Role of the tool

The tool is helping and automating the upgrade of Unity applications from Premium and Quantum to Unity M580 with the following benefits:
■ Shorter programming and testing time
■ Reduced cost of application conversion
■ Better quality of converted applications
■ Faster availability of a fully functional application inside M580.

Premium PL7 and Quantum LL984 or IEC (Modsoft, ProWORX, Concept) applications may also be managed.
The conversion is in 2 steps:
■ Use the Unity embedded converters to move Premium PL7 to Premium Unity or Quantum LL984/IEC (Modsoft, ProWORX, Concept) to Quantum Unity
■ Use the UMAC tool to move from Premium or Quantum Unity to M580 Unity

Environment

Unity M580 Application Converter is a standalone software tool that can be installed on a Windows PC. The complete conversion process relies on the use of Unity Pro.

Compatibility

Please note that UMAC V3 is requiring installation of Unity Pro V12 minimum on the same PC. It is compatible with Unity Pro v13.1 and EcoStruxureTM Control Expert v14.

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Overview of the tool (continued)

Versions of Unity M580 Application Converter

Version	Main capabilities	Registration *(1)*	Activation *(2)*
LITE	Retain existing application	Required The Lite tool is available right after Registration of its user	No activation
STANDARD	Retain existing application and adapt the logic to M580	Required The Lite features are available after Registration of the use	Required The Standard tool will be available after Registration of the user and entry of an Activation ID. The Activation is valid for a duration of one year and it is renewable

Features	LITE	STANDARD
Retain application program logic	Yes	Yes
Retain Premium I/O configuration	Yes	Yes
Retain Quantum Local I/O and S908 RIO configuration	Yes	Yes
Retain Quantum Redundant S908 RIO configuration	Yes	Yes
Retain Quantum Local I/O and Ethernet I/O HW configuration	Yes	Yes
Move Quantum S908 RIO to Ethernet I/O configuration	Yes	Yes
Choice of M580 CPU selection	Yes	Yes
Choice of Mast task	Yes	Yes
System Bits and Words identification	Yes	Yes
Summary report	Yes	Yes
Benefit estimation	Yes	Yes
Premium	–	Yes
Replace missing functions	–	Yes
Correct invalid Variable Descriptors	–	Yes
Replace ADDR with ADDM functions	–	Yes
Premium and Quantum	–	Yes
Correct 32 bits address alignment	–	Yes
Correct alignment for variables and 2-dimension arrays	–	Yes
Correct animation tables	–	Yes
Correct Operator Screens	–	Yes
Replace Ethernet I/O scanner (CPU) with M580 CPU	–	Yes
Replace Ethernet I/O scanner (ETY/NOE) with M580 NOC	–	Yes
Retain and replace Ethernet I/O Scanner – maintain located addresses	–	Yes
Retain and replace Ethernet I/O Scanner health and control	–	Yes
Choice of M580 NOC selection	–	Yes
Library for IEC missing functionality enhanced in v3	–	Yes
Compatibility with legacy Modbus addressing	–	Yes
Retain Initial Values	–	Yes
Adjust memory buffer	–	Yes
Quantum	–	–
Replace Quantum I/O with X80 I/O in v3	–	Yes
Replace 800 Series I/O with X80 I/O in v3	–	Yes

(1) The word "Registration" is related to declaration of the user of the tool: A software End User License is granted to someone identified by an email address through the "Registration" process
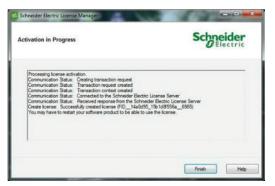*(2) The word "Activation" is related to unlocking / making the tool available under the conditions of its End User License Agreement (set of available features, duration, number of simultaneous users etc.)*

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License information dialog box

Registration process

Activation process

Overview of the tool (continued)

Tool access and Licensing model

There is only one installation file for both versions Lite and Standard.

Registration: Before using the Lite version, the tool will ask you to enter your email address.
Then the Lite tool will be available with no limitation in time.

Activation: An Activation ID is needed to use the Standard version of the tool.
This activation is time limited with a duration of one year. After one year from its activation the tool will fall back to its first "Lite" state until it receives a new Activation ID for a Standard version.
An Activation ID is valid for one "seat" (Software activated on one PC at a time)

Registration process

A user needs to install and register the software before he can use the Lite tool.
The Installation and Registration process is the following.

Step 1: Obtain the tool
■ An installation file may be downloaded by anyone from
http://www.schneider-electric.com/en/download (Search or browse for UMAC)

Step 2: Install and launch
■ Install the tool and launch it. On this first run, the user will be prompted to fulfil the Registration procedure.

Step 3: Register
■ Fulfil the Registration procedure required in Step 2 to unlock the tool. This procedure will ask the user for his references and an email address. The Lite version of the tool will be unlocked with no limit of duration.

Activation process

The Activation process is related only to the Standard tool. A user needs to activate the software before using the Standard tool. This activation will require to enter an Activation ID.

Go to the "About" window and click on the "Upgrade Product" button.
Proceeding through this step is requesting to have an Activation ID to activate the tool. The tool will be unlocked for a duration of 1 year.

For Alliance System integrators:
The Activation ID is part of the SI Alliance pack

For End users:
The Activation ID can be obtained from the CCC (customer care center) that provides a support contract.

References

Description	Reference	Weight kg/*lb*
LITE Unity M580 Application Converter	**1MMCNVXZZSPAZZ** *(1)*	–
STANDARD Unity M580 Application Converter	**1MMCSVCZMSXMZZ** *(2)*	–
STANDARD email Unity M580 Application Converter	**1MMCSVCZMSXAZZ** *(3)*	–

(1) The Lite tool is free and downloadable from our website www.schneider-electric.com
(2) This STANDARD tool reference is only available for sales within the Software Alliance Pack.
(3) This STANDARD tool reference is only available for sales within a Service Contract.

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Contents

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Presentation

The TSX Premium to Modicon X80 modernization solution consists of various I/O adapters, of dedicated chassis and mounting plates. It is used to simplify the replacement of TSX Premium PLCs, with Modicon M580/M340 PLCs and X80 I/O; existing TSX Premium field wiring will be retained.

Three types of wiring adapters are, Dedicated, Multi-Use Flying-Lead adapters and Front-Mount:
■ Dedicated wiring adapters are designed to mate specific TSX Premium I/O modules to specific X80 I/O modules. Fully pre-wired cables are included to make installation quick and easy.
■ Multi-Use Flying-Lead adapters (four types available) are designed to be used with fixed sets of I/O module pairs. The cables shipped with the Multi-Use adapters (Flying-Lead cables) are not fully pre-wired; the X80 connectors will be wired in the field based on the selected module pairs. The Premium to X80 I/O Modernization Instruction Sheet contains wiring guides for each of the Multi-Use Flying-Lead adapters.
■ Front-Mount wiring adapters are used for high density I/O modules (32 and 64 I/O points). They allow field wiring terminal blocks to be removed from the TSX Premium PLC and plugged directly into the X80 I/O module (no need for a dedicated chassis).

Two types of mechanical assemblies for backplanes, chassis and mounting plates:
■ A chassis will accept both M580 or M340 backplanes (purchased separately) and new X80 I/O. A chassis can receive one X80 backplane. Different sizes are available depending on the size of the existing Premium backplane.
■ A mounting plate, very low compared to a chassis, is designed for the Front-Mount I/O adapters (High Density 32 or 64 I/O point modules). When only these high-density modules are used then there is no need to have a chassis to replace a TSX Premium I/O rack (the chassis is only required when Dedicated or Multi-Use I/O adapters are used).

The offer provides three chassis and three mounting plates together with two Front-Mount I/O adapters and ten wiring adapters (including four Multi-Use) that cover most modernization needs between TSX Premium I/O modules and X80 I/O modules. All cables are available in either 1-Foot (40 cm) or 5-Foot lengths (except one Multi-Use BMXFCW301S of three meters).

Description of the solution

A chassis allows the replacement of a TSX Premium I/O rack with an X80 I/O rack (M340 or M580) in the same physical location and with the same footprint as the current system:

■ The TSX Premium I/O Rack is removed and replaced by a metal chassis that contains an X80 backplane and selected I/O wiring adapters.
■ The backplane (purchased separately) is mounted on the chassis door, and accommodates the new PLC and X80 I/O modules.
■ The appropriate wiring adapters will be installed in the lower section of the chassis. These quick wiring adapters allow connecting the TSX Premium wiring of the existing installation to the X80 I/O modules of the new PLC configuration, thus eliminating the need for on site machine re-wiring. The original TSX Premium connectors are retained. The chassis door can be opened to allow access to the wiring adapters during commissioning and maintenance.
A mounting plate has the same functionality as a chassis when there is only High Density TSX Premium I/Os on the backplane. The benefit of this solution is a much smaller depth compared to the use of a dedicated chassis.

1-Foot (40cm) cables are the most commonly used length, but 5-Foot are also available for specific needs; for example, to merge two TSX Premium I/O racks into one X80 rack, or vice versa. Cables and connectors are included with the I/O adapters. Replacement cables are also available as spare parts.

Notice that the Telefast ABE7 systems are compatible with the two ranges Premium I/O modules and X80 I/O platform.
In this case refer to our Premium to X80 Telefast Block Cross-Reference Table in the Premium to X80 I/O Modernization Instruction sheet.

Benefits of the solution

The customer's value propositions are reduced risk and cost of modernization from a TSX Premium PLC:
■ Minimal production downtime with setup time of about one hour per rack
■ Cost savings through the retention of all wiring to sensors/actuators inside the existing cabinets (savings in wiring, testing and commissioning, update of wiring diagrams); Typically, no electrician or wiring contractor is necessary
■ Unlike manual rewiring, ordinary production stops can be used for the changeover
■ The minimal changes on installations allows you to restart them within the allotted time with the ability to rollback in case of unexpected issue
■ Reliable solution designed by the manufacturer
■ Simple solution that makes the modernization easy and at the lowest risk

This modernization solution is part of a larger modernization and migration offer that includes methods, specific migration devices and dedicated tools for various legacy PLCs from Schneider Electric and the competition as well.
Modernizations and migrations can be implemented with help from our Schneider Electric services experts.

A cross reference table between TSX Premium I/O modules and X80 I/O modules is below. It shows all possible I/O modules equivalences. However, some differences in terminal strips, in modularity, in common or power connections may have to be addressed.
Therefore, it is recommended to verify compatibility with our Schneider Electric service representatives.

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NOTE 1: *Installers of Multi-Use Flying-Leads I/O Adapters are strongly advised to pre-wire each Multi-Use I/O Adapter before entering the site where the adapter is to be installed. This pre-wiring can be made on request in the factory. Failure to complete the wiring of each Multi-Use I/O Adapter in advance of entering the job site will result in unwanted delay in completing the task of mounting the X80 I/O modules.*

NOTE 2: *Installers are informed that Multi-Use Flying Lead Adapters 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.

NOTE 3: *the new system Migration Chassis or Mounting plate + I/O modules and CPU may be deeper than the original Premium:*
System depth with Migration Chassis and 990ADPREX80109 I/O adapter 295 mm/11.6 in. (including terminal block).
System depth with Mounting Plate and 990ADPREX80109 I/O adapter 205 mm/8.1 in. (including terminal block).

Equivalence table: Premium I/O module - X80 I/O module

Type of module	Premium I/O module		X80 I/O platform	I/O adapter - Chassis - Backplane mounting plate	
	Reference	Description	Reference	Description	Reference
Rack to Chassis	TSXRKY4EX	4 SLOT EXT. RACK	BMXXBP0600	TSXRKY6 to BM●XBP0600 CHASSIS - W/O BP	990CHPREX80060
	TSXRKY6	6 SLOT RACK			
	TSXRKY6EX	6 SLOT EXT. RACK			
	TSXRKY8	8 SLOT RACK	BME/XXBP0800	TSXRKY8 to BM●XBP0800 CHASSIS - W/O BP	990CHPREX80080
	TSXRKY8EX	8 SLOT EXT. RACK			
	TSXRKY12	12 SLOT RACK	BME/XXBP1200	TSXRKY12 to BM●XBP1200 CHASSIS - W/O BP	990CHPREX80120
	TSXRKY12EX	12 SLOT EXT. RACK			
Rack to Mtg. Plate	TSXRKY4EX	4 SLOT EXT. RACK	BMXXBP0600	TSXRKY6 to BM●XBP0600 MTG PLATE - W/O BP	990CHPREX80061
	TSXRKY6	6 SLOT RACK			
	TSXRKY6EX	6 SLOT EXT. RACK			
	TSXRKY8	8 SLOT RACK	BME/XXBP0800	TSXRKY8 to BM●XBP0800 MTG PLATE - W/O BP	990CHPREX80081
	TSXRKY8EX	8 SLOT EXT. RACK			
	TSXRKY12	12 SLOT RACK	BME/XXBP1200	TSXRKY12 to BM●XBP1200 MTG PLATE -W/O BP	990CHPREX80121
	TSXRKY12EX	12 SLOT EXT. RACK			
Digital Input	TSXDEY08D2	8I 24VDC SINK TR.BLK	BMXDDI1602	TSXD●Y08/16●● to BMXD●I/D●O160● 1FT TSXD●Y08/16●● to BMXD●I/D●O160● 5FT	990ADPREX80104 990ADPREX80105
	TSXDEY16A2	16I 24VAC TR.BLK	BMXDAI1602		
	TSXDEY16A3	16I 48VAC TR.BLK	BMXDAI1603		
	TSXDEY16A4	16I 110/120VAC TR.BLK	BMXDAI1604		
	TSXDEY16A5	16I 220/240VAC TR.BLK	2 BMXDAI0805	–	*(1)*
	TSXDEY16D2	16I 24VDC SINK TR.BLK	BMXDDI1602	TSXD●Y08/16●● to BMXD●I/D●O160● 1FT	990ADPREX80104
	TSXDEY16D3	16I 48VDC SINK TR.BLK	BMXDDI1603	TSXD●Y08/16●● to BMXD●I/D●O160● 5FT	990ADPREX80105
	TSXDEY16FK	16I FAST 24VDC SINK CONN	–	–	–
	TSXDEY32D2K	32I 24VDC SINK CONN	BMXDDI3202	TSXDEY/DSY32●2 to BMXDDI/DDO3202	990ADPREX80108
	TSXDEY32D3K	32I 48VDC SINK CONN	–	–	–
	TSXDEY64D2K	64I 24VDC SINK CONN	BMXDDI6402	TSXDEY/DSY64●2 to BMXDDI/DDO6402	990ADPREX80109

(1) Please contact Schneider Electric at ModiconMigrations@schneider-electric.com for information

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Type of module	Premium I/O module		X80 I/O platform	I/O adapter - Chassis - Backplane mounting plate	
	Reference	Description	Reference	Description	Reference
Digital Output	TSXDSY08R4D	8Q DC RELAY TR.BLK	–	–	–
	TSXDSY08R5	8Q RELAY 50VA TR.BLK	BMXDRA1605	TSXDSY16R5 to BMXDRA1605 1FT	990ADPREX80106
				TSXDSY16R5 to BMXDRA1605 5FT	990ADPREX80107
			BMXDRA0805	TSXD●Y08/16●● to BMXD●●08/160● PTAIL 1FT	990ADPREX80120[2]
				TSXD●Y08/16●● to BMXD●●08/160● PTAIL 5FT	990ADPREX80121[2]
	TSXDSY08R5A	8Q RELAY 100VA TR.BLK	–	–	–
	TSXDSY08S5	8Q TRIAC 48-240VAC 2A	BMXDAO1605	TSXD●Y08/16●● to BMXD●●08/160● PTAIL 1FT	990ADPREX80120[2]
			or BMXDRA0805	TSXD●Y08/16●● to BMXD●●08/160● PTAIL 5FT	990ADPREX80121[2]
	TSXDSY08T2	8Q 24VDC 0.5A SRC TR.BLK	BMXDDO1602	TSXD●Y08/16●● to BMXD●I/D●O160● 1FT	990ADPREX80104
				TSXD●Y08/16●● to BMXD●I/D●O160● 5FT	990ADPREX80105
	TSXDSY08T22	8Q 24VDC 2A SRC TR.BLK	–	–	–
	TSXDSY08T31	8Q 48VDC 1A SRC TR.BLK	–	–	–
	TSXDSY16R5	16Q RELAY 50VA TR. BLK	BMXDRA1605	TSXDSY16R5 to BMXDRA1605 1FT	990ADPREX80106
				TSXDSY16R5 to BMXDRA1605 5FT	990ADPREX80107
	TSXDSY16S4	16Q TRIAC 24/127VAC 1A	BMXDAO1605	TSXD●Y08/16●● to BMXD●I/D●O160● 1FT	990ADPREX80104
	TSXDSY16S5	16Q TRIAC 48-220VAC 1A	BMXDAO1605	TSXD●Y08/16●● to BMXD●I/D●O160● 5FT	990ADPREX80105
	TSXDSY16T2	16Q 24VDC 0.5A SRC.T.BLK	BMXDDO1602	TSXD●Y08/16●● to BMXD●I/D●O160● 1FT	990ADPREX80104
				TSXD●Y08/16●● to BMXD●I/D●O160● 5FT	990ADPREX80105
	TSXDSY16T3	16Q 48VDC 0.25A TR.BLK	–	–	–
	TSXDSY32T2K	32Q 24VDC 0,1A TR.BLK	BMXDDO3202K	TSXDEY/DSY32●2 to BMXDDI/DDO3202	990ADPREX80108
	TSXDSY64T2K	64Q 24VDC 0,1A TR.BLK	BMXDDO6402K	TSXDEY/DSY64●2 to BMXDDI/DDO6402	990ADPREX80109
Digital Mixed	TSXDMY28FK	16I/12Q 24VCC 0,5A S.CONN	–	–	–
	TSXDMY28RFK	REFLEX 16I/12Q SINK CONN	–	–	–

(1) Please contact Schneider Electric at ModiconMigrations@schneider-electric.com for information
(2) Multi-Use Flying-Lead I/O adapter; to be prepared before use

Equivalence table: Premium I/O module - X80 I/O module (continued)

Type of module	Premium I/O module		X80 I/O platform	I/O adapter - Chassis - Backplane mounting plate	
	Reference	Description	Reference	Description	Reference
Analog Input	TSXAEY1600	16I ANA. HIGH LEVEL	2 BMXAMI0800	TSXAEY1600 to (2) BMXAMI0800 1FT	990ADPREX80214
				TSXAEY1600 to (2) BMXAMI0800 5FT	990ADPREX80215
	TSXAEY1614	16I ANA. THERMOCOUPLE	–	–	–
	TSXAEY414	4I ANA. MULTIRANGE	BMXART0414	TSXAEY414 to BMXART0414 W/FCW PTAIL 3M	990ADPREX80110[2]
	TSXAEY420	4I FAST ANA. HIGH LEVEL	BMXAMI0410	TSXAEY420 to BMXAMI0410 PIGTAIL 1FT	990ADPREX80116[2]
				TSXAEY420 to BMXAMI0410 PIGTAIL 5FT	990ADPREX80117[2]
	TSXAEY800	8I ANA. HIGHT LEVEL	BMXAMI0800	TSXAEY800/810 to BMXAMI0800/0810 1FT	990ADPREX80100
	TSXAEY810	8I ANA. HIGH LEVEL	BMXAMI0810	TSXAEY800/810 to BMXAMI0800/0810 5FT	990ADPREX80101
Analog Output	TSXASY410	4Q ANA. HL ISO.	BMXAMO0410	TSXASY410 to BMXAMO0410 1FT	990ADPREX80102
				TSXASY410 to BMXAMO0410 5FT	990ADPREX80103
	TSXASY800	8Q ANA. HL NON INSULATED	BMXAMO0802	TSXASY800 to BMXAMO0802 1FT	990ADPREX80112
				TSXASY800 to BMXAMO0802 5FT	990ADPREX80113
			2 BMXAMO0410	TSXASY800 to (2) BMXAMO0410 PIGTAIL 1FT	990ADPREX80218[2]
				TSXASY800 to (2) BMXAMO0410 PIGTAIL 5FT	990ADPREX80219[2]
Replacement cables	–	–	–	REPLACEMENT X80 CABLE HI POWER 116 1FT	990X80CABLE116
				REPLACEMENT X80 CABLE HI DENSITY 117 1FT	990X80CABLE117
				REPLACEMENT X80 CABLE ANALOG 118 1FT	990X80CABLE118
				REPLACEMENT X80 CABLE HI POWER 516 5FT	990X80CABLE516
				REPLACEMENT X80 CABLE HI DENSITY 517 5FT	990X80CABLE517
				REPLACEMENT X80 CABLE ANALOG 518 5FT	990X80CABLE518
				REPLAC X80 CABLE HIPOWER PIGTAIL 116 1FT	990X80CABL116PT[2]
				REPLAC X80 CABLE HIDNSTY PIGTAIL 117 1FT	990X80CABL117PT[2]
				REPLAC X80 CABLE ANALOG PIGTAIL 118 1FT	990X80CABL118PT[2]
				REPLAC X80 CABLE HIPOWER PIGTAIL 516 5FT	990X80CABL516PT[2]
				REPLAC X80 CABLE HIDNSTY PIGTAIL 517 5FT	990X80CABL517PT[2]
				REPLAC X80 CABLE ANALOG PIGTAIL 518 5FT	990X80CABL518PT[2]
				REPLAC X80 CABLE 28-PIN ANALOG AN128 1FT	990X80CABL119
				REPLAC X80 CABLE 28-PIN ANALOG AN528 5FT	990X80CABL519
				Shielded cable, FCN conn. 40 pin Pigtail, 3 m	BMXFCW301S[2]

(1) Please contact Schneider Electric at ModiconMigrations@schneider-electric.com for information
(2) Multi-Use Flying-Lead I/O adapter; to be prepared before use

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Presentation

The I/O adapters comprise a set of connectors designed to simplify the replacement of legacy TSX7 PLCs by automation platforms integrating the Modicon X80 I/O platform, such as Modicon M340, M580, Ethernet I/O system, etc.
Replacement is carried out using the cabling of the existing installation. The adapters enable the I/O connectors of the TSX7 automation module in an existing installation to be matched to the equivalent I/O modules of the Modicon X80 I/O by using a corresponding pre-wired cable assembly.

32 references (four swing arm rack supports and 28 I/O adapters) cover the main modernization requirements between the TSX7 I/O modules and the Modicon X80 I/O platform and they conform to the specifications of the Modicon M340, M580 ranges.

Description of the solution

The electromechanical modernization solution comprises a modernization rack that includes a hinged door on which the Modicon X80 I/O backplane (eight or twelve slots), either for an M340 or either for an M580, is fixed, combined with a set of I/O adapters.
■ The rear of the chassis replaces the TSX7 rack. It is designed to accommodate the adapters according to the modules present in the original TSX7 rack.
■ The existing TSX7 wiring connector of the installation is mounted on the matching adapter attached to the rack support behind the hinged door. The other end of the adapter cable is connected to the corresponding I/O module of the Modicon X80 I/O platform.
■ The M340 PLC or the M580 PLC is mounted at the front on the hinged door.
■ The adapters transmit the same control signals to the installations without any changes to the wiring.

Benefits of the solution

The customer's value propositions are the mitigation of risk and reduced cost of modernization from a TSX7 PLC:
■ Minimal production downtime with setup time of about one hour per rack
■ Cost savings through the retention of all wiring to sensors/actuators inside the existing cabinets (savings in wiring, testing and commissioning, update of wiring diagrams); Typically, no electrician or wiring contractor is necessary
■ Unlike manual rewiring, ordinary production stops can be used for the changeover
■ The minimal changes on installations allows you to restart them within the allotted time with the ability to rollback in case of unexpected issue
■ Reliable solution designed by the manufacturer
■ Simple solution that makes the modernization easy and at the lowest risk

This modernization solution is part of a larger modernization and migration offer that includes methods, specific migration devices and dedicated tools for various legacy PLCs from Schneider Electric and the competition as well.
Modernizations and migrations can be implemented with help from our Schneider Electric services experts.

A cross reference table between TSX7 I/O modules and X80 I/O modules is below. It shows all possible I/O modules equivalences. However, some differences in terminal strips, in modularity, in common or power connections may have to be addressed.
Therefore, it is recommended to verify compatibility with our Schneider Electric service representatives.

TSX7 module - X80 I/O platform compatibility

Type of module	TSX7 modules		X80 I/O platform	Quick wiring adapters	
	Reference	Description	Reference	Description	Reference
Rack	TSXRKN8/RKS8	8-slot rack	BMEXBP0800	Support and 8-slot Ethernet rack	TSX7SWAEBP0800
	TSXRKN8/RKS8	8-slot rack	BMEXBP1200	Support and 12-slot Ethernet rack	TSX7SWAEBP1200
	TSXRKN8/RKS8	8-slot rack	BMXXBP0800	Support and 8-slot rack	TSX7SWAXBP0800
	TSXRKN8/RKS8	8-slot rack	BMXXBP1200	Support and 12-slot rack	TSX7SWAXBP1200
Discrete inputs	TSXDET802	8-point 24 VAC input	BMXDAI1602	Adapter, 40 cm/*1.312 ft.*, between modules - TSXDET8●● - and BMXDAI16●● or BMXDDI16●●	DET08XXDXI160X
	TSXDET803	8-point 48 VAC input	BMXDAI1603		
	TSXDET812	8-point 24 VDC input	BMXDDI1602		
	TSXDET813	8-point 48 VDC input	BMXDDI1603		
	TSXDET814	8-point 130 VDC input	BMXDDI1604T		
	TSXDET824	8-point 110 VDC/115 VAC input	BMXDAI1604		
	TSXDET1603	16-point 48 VAC input	BMXDAI1603	Adapter, 40 cm/*1.312 ft.*, between modules - TSXDET16●● - and BMXDAI16●● or BMXDDI16●●	DET16XXDXI160X
	TSXDET1604	16-point 110…120 VAC input	BMXDAI1604		
	TSXDET1612	16-point 24 VDC input	BMXDDI1602		
	TSXDET1613	16-point 48 VDC input	BMXDDI1603		
	TSXDET1633	16-point 48 VDC input	BMXDDI1603		
	TSXDET3232	32-point 24 VDC input	BMXDDI3202K	Adapter, 1 m/*3.281 ft.*, between modules - TSXDET32●2 - and BMXDDI3202K	DET32X2DDI3202K
	TSXDET3242	32-point 24 VDC input	BMXDDI3202K		
	TSXDET3252	32-point 24 VDC input	BMXDDI3202K		

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TSX7 module - X80 I/O platform compatibility

Type of module	TSX7 modules		X80 I/O platform	Quick wiring adapters	
	Reference	Description	Reference	Description	Reference
Discrete outputs	TSXDST835	8-point 24 VDC/24…240 VAC relay outputs	BMXDRA0805	Adapter, 40 cm/*1.312 ft.*, between modules TSXDST835 (24 VDC/24...240 VAC/relay) and BMXDRA0805	DST835DRA0805
	TSXDST1612	16-point 24 VDC outputs	BMXDDO1612	Adapter, 40 cm/*1.312 ft.*, between modules TSXDST1612 (24 VDC) and BMXDDO1612	DST1612DDO1612
	TSXDST1632	16-point 24 VDC outputs	BMXDDO1602	Adapter, 40 cm/*1.312 ft.*, between modules TSXDST1632 (24 VDC) and BMXDDO1602	DST1632DDO1602
	TSXDST1632	16-point 24 VDC outputs	BMXDRA1605	Adapter, 40 cm/*1.312 ft.*, between modules TSXDST1632 (24 VDC/relay) and BMXDRA1605	DST1632DRA1605
	TSXDST1633	16-point 24…240 VAC outputs	BMXDRA1605	Adapter, 40 cm/*1.312 ft.*, between modules TSXDST1633 (24...240 VAC/relay) and BMXDRA1605	DST1633DRA1605
	TSXDST1634	16-point 48…130 VDC outputs	2 BMXDRA0804T modules	Adapter, 40 cm/*1.312 ft.*, between 1 TSXDST1634 (125 VDC) module and 2 BMXDRA0804T modules	DST1634DRA0804T
	TSXDST1635	16-point 24…240 VAC outputs	BMXDAO1605	Adapter, 40 cm/*1.312ft.*, between modules TSXDST1635 (24...240 VAC/triac) and BMXDAO1605	DST1635DAO1605
	TSXDST1635	16-point 24…240 VAC outputs	BMXDRA1605	Adapter, 40 cm/*1.312 ft.*, between modules TSXDST1635 (48...240 VAC/relais) and BMXDRA1605	DST1635DRA1605
	TSXDST1682	16-point 24 VDC outputs	BMXDDO1602	Adapter, 40 cm/*1.312 ft.*, between modules TSXDST1682 (24 VDC) and BMXDDO1602	DST1682DDO1602
	TSXDST2472	24-point 24 VDC outputs	2 BMXDDO1602 modules	Adapter, 50 cm/*1.640 ft.*, between 1 TSXDST24●2 (24 VDC) module and 2 BMXDDO1602 modules	DST24X22DDO1602
	TSXDST2482	24-point 24 VDC outputs	2 BMXDDO1602 modules		
	TSXDST2472	24-point 24 VDC outputs	BMXDDO3202K	Adapter, 1 m/*3.281 ft*, between modules TSXDST24● 2 (24 VDC) and BMXDDO3202K	DST24X2DDO3202K
	TSXDST2482	24-point 24 VDC outputs	BMXDDO3202K		
	TSXDST3292	32-point 24 VDC outputs	BMXDDO3202K	Adapter, 1 m/*3.281 ft*, between modules TSXDST3292 (24 VDC) and BMXDDO3202K	DST3292DDO3202K
Analog Inputs	TSXAEM411	4-channel voltage/current inputs	BMXAMI0410	Adapter, 40 cm/*1.312 ft*, between modules TSXAEM411 and BMXAMI0410 (Current type)	AEM0411AMI0410C
	TSXAEM411	4-channel voltage/current inputs	BMXAMI0410	Adapter, 40 cm/*1.312 ft*, between modules TSXAEM411 and BMXAMI0410 (Voltage type)	AEM0411AMI0410V
	TSXAEM413	4-channel Pt100 inputs 3 or 4-wire	BMXART0414	Adapter, 40 cm/*1.312 ft*, between modules TSXAEM413 and BMXAMI0414 (RTD type)	AEM0413ART0414
	TSXAEM811	8-channel voltage/current inputs	BMXAMI0810	Adapter, 40 cm/*1.312 ft*, between modules TSXAEM811 and BMXAMI0810 (Current type)	AEM0811AMI0810C
	TSXAEM811	8-channel voltage/current inputs	BMXAMI0810	Adapter, 40 cm/*1.312 ft*, between modules TSXAEM811 and BMXAMI0810 (Voltage type)	AEM0811AMI0810V
	TSXAEM821	8-channel voltage/current inputs	BMXAMI0800	Adapter, 40 cm/*1.312 ft*, between modules TSXAEM821 and BMXAMI0800 (Current type)	AEM0821AMI0800C
	TSXAEM821	8-channel voltage/current inputs	BMXAMI0800	Adapter, 40 cm/*1.312 ft*, between modules TSXAEM821 and BMXAMI0800 (Voltage type)	AEM0821AMI0800V
	TSXAEM1601	16-channel inputs	2 BMXAMI0800 modules	Adapter, 50 cm/*1.640 ft*, between 1 TSXAEM1601 module and 2 BMXAMI0800 modules (Voltage type)	AEM1601AMI0800V
	TSXAEM1602	16-channel inputs	2 BMXAMI0800 modules	Adapter, 50 cm/*1.640 ft*, between 1 TSXAEM1602 module and 2 BMXAMI0800 (Current type) modules	AEM1602AMI0800C
	TSXASR200	2-channel voltage/current output	BMXAMO0210	Adapter, 50 cm/*1.640 ft*, between modules TSXASR200 and BMXAMO0210	ASR0200AMO0210
	2 TSXASR200 modules	2 x 2-channel voltage/current outputs	BMXAMO0410	Adapter, 50 cm/*1.640 ft*, between 2 TSXASR200 modules and 1 BMXAMO0410 module	2ASR0200AMO0410
Analog outputs	TSXASR0401	4-channel voltage output	BMXAMO0410	Adapter, 40 cm/*1.312 ft*, between modules TSXASR040● and BMXAMO0410	ASR040XAMO0410
	TSXASR0402	4-channel current output	BMXAMO0410		
	TSXASR0403	4-channel current output	BMXAMO0410		
	TSXAST200	2-channel voltage/current output	BMXAMO0210	Adapter, 40 cm/*1.312 ft*, between modules TSXAST200 and BMXAMO0210	AST0200AMO0210

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Presentation

Modicon 984-800 I/O to Modicon X80 I/O modernization solution consists of various wiring adapters and an evolution chassis. This is used to simplify the replacement of legacy 984 PLCs that use B800 I/O, with M580/M340 PLCs and X80 I/O; existing B800 field wiring will be retained.

The evolution chassis will accept both M580 or M340 backplanes (purchased separately) and new X80 I/O.
Two backplanes may be mounted on the same chassis depending on the number of I/Os required replacing the legacy I/O.

There are two types of wiring adapters, Pre-wired, and Multi-Use Flying Lead adapters:
■ Pre-wired adapters are designed to mate specific B800 I/O modules to specific X80 I/O modules. Fully pre-wired cables are included to make installation quick and easy. They do not require installer wiring.
■ Multi-Use Flying Lead adapters (seven types available) are designed to be used with fixed sets of I/O module pairs. The cables shipped with the Multi-Use adapters (Flying Lead cables) are not ready-to-use, the flying leads will have to be wired before the commisioning, on site, depending on the mating of the concerned 984-800 and X80 I/O modules. The B800 to X80 Instruction Sheet contains wiring guides for each of the seven types of Multi-Use Flying Lead adapters (42 wiring guides in total).

The offer provides two Evolution PLC-I/O chassis and 53 wiring adapters (46 Pre-wired + 7 Multi-Use) that cover most modernization needs between B800 I/O modules and X80 I/O modules. All cables are available in either 2-Foot or 5-Foot lengths, including our selection of seven replacement cables (giving 106 assemblies + 14 cables references in total).

Description of the solution

An Evolution PLC-I/O Chassis allows the replacement of a B800 I/O rack with an X80 I/O rack (M340 or M580) in the same physical location and with the same footprint as the current system:
■ The B800 I/O Rack is removed and replaced by a metal chassis that contains an X80 backplane and selected I/O wiring adapters.
■ The backplane (purchased separately) is mounted on the chassis door, and accommodates the new PLC and X80 I/O modules. The appropriate wiring adapters will be installed in the lower section of the chassis. These adapters allow connecting the existing B800 field wiring to the mated X80 I/O modules of the new PLC configuration, thus eliminating on site re-wiring. The original B800 connectors are retained.
The chassis door can be opened to allow access to the wiring adapters during commissioning and maintenance.

2-Foot cables are the most commonly used length, but 5-Foot are also available for specific customer applications; for example, to merge two B800 I/O racks into one X80 rack.
Cables and connectors are included with the I/O adapters. Replacement cables are also available as spare parts. Note that the replacement Flying Lead cables do not include the X80 I/O connectors.

Benefits of the solution

The customer's value propositions are the reduced risk and cost of modernization from a 984/800 I/O PLC:
■ Minimal production downtime with setup time of about one hour per rack
■ Cost savings through the retention of all wiring to sensors/actuators inside the existing cabinets (savings in wiring, testing and commissioning, update of wiring diagrams); Typically, no electrician or wiring contractor is necessary
■ Unlike manual rewiring, ordinary production stops can be used for the changeover
■ The minimal changes on installations allows you to restart them within the allotted time with the ability to rollback in case of unexpected issue
■ Reliable solution designed by the manufacturer
■ Simple solution that makes the modernization easy and at the lowest risk

This modernization solution is part of a larger modernization and migration offer that includes methods, specific migration devices and dedicated tools for various legacy PLCs from Schneider Electric and the competition as well.
Modernizations and migrations can be implemented with help from our Schneider Electric services experts.

A cross reference table between B800 I/O modules and X80 I/O modules is below. It shows all possible I/O modules equivalences. However, some differences in terminal strips, in modularity, in common or power connections may have to be addressed.
Therefore, it is recommended to verify compatibility with our Schneider Electric service representatives.

Equivalence table: Chassis

Equivalence table: B800 I/O module - X80 I/O module

Type of module	B800 I/O module		X80 I/O platform	Chassis	
	Reference	Description	Reference	Description	Reference
Racks	H819	7 slots, 19"	w/o X80 backplane	EVOL CHASSIS B800 H819/7 POS-W/O X80 BP	990CHB80X80819
	H827	11 slots, 27"	w/o X80 backplane	EVOL CHASSIS B800 H827/11 POS-W/O X80 BP	990CHB80X80827

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Modicon X80 I/O platform
Modernization solutions
984-800 I/O to Modicon X80 I/O platform

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NOTE 1: *Installers are informed that with exception of 990ADB80X80120/121, 990ADB80X80206/207 and 990ADB80X80212/213 Pre-wired Adapters 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 (they are created from Multi-Use Flying Lead Adapters). Confirm that sufficient module protection measures are in place.*

Equivalence table: Pre-wired adapters

Equivalence table: B800 I/O module - X80 I/O module

Type of module	B800 I/O module		X80 I/O platform	Pre-wired adapter	
	Reference	Description	Reference	Description	Reference
I/O modules	AS-B802-008	115 VAC 8 Point Output Module	BMXDAO1605	–	–
			BMXDRA0805	EVOL I/O ADP B802008-DRA0805 PRWIRED 2FT EVOL I/O ADP B802008-DRA0805 PRWIRED 5FT	990ADB80X80100 990ADB80X80101
	AS-B803-008	115 VAC 8 Point Input Module	BMXDAI0814	EVOL I/O ADP B803008-DAI0814 PRWIRED 2FT EVOL I/O ADP B803008-DAI0814 PRWIRED 5FT	990ADB80X80104 990ADB80X80105
	AS-B804-016	115 VAC 16 Point Output	BMXDAO1605	EVOL I/O ADP B804016-DAO1605 PRWIRED 2FT EVOL I/O ADP B804016-DAO1605 PRWIRED 5FT	990ADB80X80106 990ADB80X80107
	AS-B804-116		BMXDRA1605	EVOL I/O ADP B804016-DRA1605 PRWIRED 2FT EVOL I/O ADP B804016-DRA1605 PRWIRED 5FT	990ADB80X80108 990ADB80X80109
	AS-B804-148	48 VAC 2 A 16 Point Output	–	–	–
	AS-B805-016	115 VAC 16 Point Input	BMXDAI1604	EVOL I/O ADP B805016-DAI1604 PRWIRED 2FT EVOL I/O ADP B805016-DAI1604 PRWIRED 5FT	990ADB80X80112 990ADB80X80113
	AS-B806-032	115 VAC 32 Point Output	(2x) BMXDAO1605	EVOL I/O ADP B806032-(2)DAO1605 PRWI 2FT EVOL I/O ADP B806032-(2)DAO1605 PRWI 5FT	990ADB80X80214 990ADB80X80215
			(2x) BMXDRA1605	EVOL I/O ADP B806032-(2)DRA1605 PRWI 2FT EVOL I/O ADP B806032-(2)DRA1605 PRWI 5FT	990ADB80X80216 990ADB80X80217
	AS-B806-124	24 VAC 32 Point Output	–	–	–
	AS-B807-032	115 VAC 32 Point Input	–	–	–
	AS-B807-132	115 VAC 32 Point Input	(2x) BMXDAI1604/4T	EVOL I/O ADP B807132-(2)DAI1604 PRWI 2FT EVOL I/O ADP B807132-(2)DAI1604 PRWI 5FT	990ADB80X80222 990ADB80X80223
	AS-B808-016	230 VAC 16 Point Output	BMXDAO1605	EVOL I/O ADP B808016-DAO1605 PRWIRED 2FT EVOL I/O ADP B808016-DAO1605 PRWIRED 5FT	990ADB80X80124 990ADB80X80125
			BMXDRA1605	EVOL I/O ADP B808016-DRA1605 PRWIRED 2FT EVOL I/O ADP B808016-DRA1605 PRWIRED 5FT	990ADB80X80126 990ADB80X80127
	AS-B809-016	230 VAC 16 Point Input Module	(2x) BMXDAI0805	EVOL I/O ADP B809016-(2)DAI0805 PRWI 2FT EVOL I/O ADP B809016-(2)DAI0805 PRWI 5FT	990ADB80X80228 990ADB80X80229
	AS-B810-008	115 VAC 8 Isolated Output	BMXDRA0805	EVOL I/O ADP B810008-DRA0805 PRWIRED 2FT EVOL I/O ADP B810008-DRA0805 PRWIRED 5FT	990ADB80X80132 990ADB80X80133
	AS-B814-108	NO/NC Power Relay 8 Point Output	BMXDRA0805	EVOL I/O ADP B814108-DRA0805 PRWIRED 2FT EVOL I/O ADP B814108-DRA0805 PRWIRED 5FT	990ADB80X80134 990ADB80X80135
	AS-B817-116	115 VAC 16 Point Isolated Input	(2x) BMXDAI0814	EVOL I/O ADP B817116-(2)DAI0814 PRWI 2FT EVOL I/O ADP B817116-(2)DAI0814 PRWI 5FT	990ADB80X80236 990ADB80X80237
	AS-B817-216	230 VAC 16 Point Isolated Input	(2x) BMXDAI0805	EVOL I/O ADP B817216-(2)DAI0805 PRWI 2FT EVOL I/O ADP B817216-(2)DAI0805 PRWI 5FT	990ADB80X80238 990ADB80X80239
	AS-B820-008	10-60 VDC 8 Point Output (True High)	–	–	–
	AS-B821-108	10-60 VDC 8 Point Input (True High)	–	–	–
	AS-B824-016	24 VDC 16 Point Output (True High)	BMXDDO1602	EVOL I/O ADP B824016-DDO1602 PRWIRED 2FT EVOL I/O ADP B824016-DDO1602 PRWIRED 5FT	990ADB80X80144 990ADB80X80145
	AS-B825-016	24 VDC 16 Point Input (True High)	BMXDDI1602	EVOL I/O ADP B825016-DDI1602 PRWIRED 2FT EVOL I/O ADP B825016-DDI1602 PRWIRED 5FT	990ADB80X80146 990ADB80X80147
	AS-B826-032	24 VDC 32 Point Output (True High)	(2x) BMXDDO1602	EVOL I/O ADP B826032-(2)DDO1602 PRWI 2FT EVOL I/O ADP B826032-(2)DDO1602 PRWI 5FT	990ADB80X80248 990ADB80X80249
	AS-B827-032	24 VDC 32 Point Input (True High)	(2x) BMXDDI1602	EVOL I/O ADP B827032-(2)BMXDDI1602 2FT EVOL I/O ADP B827032-(2)BMXDDI1602 5FT	990ADB80X80206 990ADB80X80207
	AS-B828-016	5 V TTL 16 Output (sink)	–	–	–
	AS-B829-116	5V TTL 16 Input (Fast Response)	–	–	–
	AS-B832-016	24 VDC 16 Point Output (True Low)	BMXDDO1612	EVOL I/O ADP B832016-DDO1612 PRWIRED 2FT EVOL I/O ADP B832016-DDO1612 PRWIRED 5FT	990ADB80X80152 990ADB80X80153
	AS-B833-016	24 VDC 16 Point Input (True Low)	BMXDAI1602	EVOL I/O ADP B833016-DAI1602 PRWIRED 2FT EVOL I/O ADP B833016-DAI1602 PRWIRED 5FT	990ADB80X80154 990ADB80X80155
	AS-B836-016	2 - 250 VDC 16 Outputs Isolated	(2x) BMXDRA0804T	EVOL I/O ADP B836016-(2)DRA0804 PRWI 2FT EVOL I/O ADP B836016-(2)DRA0804 PRWI 5FT	990ADB80X80256 990ADB80X80257
	AS-B837-016	24 VAC/DC 16 Point Input (True High)	BMXDDI1602	EVOL I/O ADP B837016-DDI1602 PRWIRED 2FT EVOL I/O ADP B837016-DDI1602 PRWIRED 5FT	990ADB80X80158 990ADB80X80159
			BMXDAI1602	EVOL I/O ADP B837016-DAI1602 PRWIRED 2FT EVOL I/O ADP B837016-DAI1602 PRWIRED 5FT	990ADB80X80160 990ADB80X80161
	AS-B838-032	24 VDC 32 Point Output (True High)	(2x) BMXDDO1602	EVOL I/O ADP B838032-(2)BMXDDO1602 2FT EVOL I/O ADP B838032-(2)BMXDDO1602 5FT	990ADB80X80212 990ADB80X80213

Modicon X80 I/O platform
Modernization solutions
984-800 I/O to Modicon X80 I/O platform

Equivalence table: Pre-wired adapters (continued)

Equivalence table: B800 I/O module - X80 I/O module

Type of module	B800 I/O module		X80 I/O platform	Pre-wired adapter	
	Reference	Description	Reference	Description	Reference
I/O modules (continued)	AS-B840-108	NO/NC Reed Relay 8 Point Output	BMXDRA0805	EVOL I/O ADP B840108-DRA0805 PRWIRED 2FT EVOL I/O ADP B840108-DRA0805 PRWIRED 5FT	990ADB80X80162 990ADB80X80163
			BMXDRA0804T	EVOL I/O ADP B840108-DRA0804T PRWIRED2FT EVOL I/O ADP B840108-DRA0804T PRWIRED5FT	990ADB80X80164 990ADB80X80165
	AS-B846-001	Analog MUX (16 voltage to one output)	(2x) BMXAMI0810	EVOL I/O ADP B846001-(2)AMI0810 PRWI 2FT EVOL I/O ADP B846001-(2)AMI0810 PRWI 5FT EVOL I/O ADP B846002-(2)AMI0810 PRWI 2FT EVOL I/O ADP B846002-(2)AMI0810 PRWI 5FT	990ADB80X80166 990ADB80X80167 990ADB80X80168 990ADB80X80169
	AS-B846-002	Analog MUX (16 current to one output)	(2x) BMXAMI0810		
	AS-B849-016	48 VAC/DC 16 Point Input Module	BMXDDI1603	EVOL I/O ADP B849016-DDI1603 PRWIRED 2FT EVOL I/O ADP B849016-DDI1603 PRWIRED 5FT	990ADB80X80170 990ADB80X80171
			BMXDAI1603	EVOL I/O ADP B849016-DAI1603 PRWIRED 2FT EVOL I/O ADP B849016-DAI1603 PRWIRED 5FT	990ADB80X80172 990ADB80X80173
	AS-B872-002	4-20mA,1-5V 4 Channel Analog Output	BMXAMO0410	–	–
	AS-B872-011	Selectable 4 Channel Voltage Output	BMXAMO0410	–	–
	AS-B872-100	4-20mA 4 Channel Current Output	BMXAMO0410	EVOL I/O ADP B872100-AMO0410 PRWIRED 2FT EVOL I/O ADP B872100-AMO0410 PRWIRED 5FT	990ADB80X80178 990ADB80X80179
	AS-B872-200	Selectable 4 Channel Voltage Output	BMXAMO0410	EVOL I/O ADP B872200-AMO0410 PRWIRED 2FT EVOL I/O ADP B872200-AMO0410 PRWIRED 5FT	990ADB80X80180 990ADB80X80181
	AS-B873-001	4-20mA,1-5V 4 Channel Analog Input	BMXAMI0410 Voltage	EVOL I/O ADP B873001-AMI0410 PRWIRED 2FT EVOL I/O ADP B873001-AMI0410 PRWIRED 5FT	990ADB80X80182 990ADB80X80183
	AS-B873-002	–	BMXAMI0410 Current	EVOL I/O ADP B873002-AMI0410 PRWIRED 2FT EVOL I/O ADP B873002-AMI0410 PRWIRED 5FT	990ADB80X80184 990ADB80X80185
	AS-B873-011	-10 V to 10 V 4 Channel Analog Input	BMXAMI0410	EVOL I/O ADP B873011-AMI0410 PRWIRED 2FT EVOL I/O ADP B873011-AMI0410 PRWIRED 5FT	990ADB80X80186 990ADB80X80187
	AS-B873-012	–	BMXAMI0410	EVOL I/O ADP B873012-AMI0410 PRWIRED 2FT EVOL I/O ADP B873012-AMI0410 PRWIRED 5FT	990ADB80X80188 990ADB80X80189
	AS-B875-001	4-20mA, 1-5V 8 Channel Analog Input	BMXAMI0810	EVOL I/O ADP B875001-AMI0810 PRWIRED 2FT EVOL I/O ADP B875001-AMI0810 PRWIRED 5FT	990ADB80X80300 990ADB80X80301
	AS-B875-002	4-20mA, 1-5V 8 Channel Analog Input	BMXAMI0810	EVOL I/O ADP B875002-AMI0810 PRWIRED 2FT EVOL I/O ADP B875002-AMI0810 PRWIRED 5FT	990ADB80X80302 990ADB80X80303
	AS-B875-011	Select. 8 channel Differential Input	BMXAMI0810	EVOL I/O ADP B875011-AMI0810 PRWIRED 2FT EVOL I/O ADP B875011-AMI0810 PRWIRED 5FT	990ADB80X80304 990ADB80X80305
	AS-B875-012	Select. 8 channel Differential Input	BMXAMI0810	EVOL I/O ADP B875012-AMI0810 PRWIRED 2FT EVOL I/O ADP B875012-AMI0810 PRWIRED 5FT	990ADB80X80306 990ADB80X80307
	AS-B875-101	Fast selectable 8 Channel Analog Input	BMXAMI0810	EVOL I/O ADP B875101-AMI0810 PRWIRED 2FT EVOL I/O ADP B875101-AMI0810 PRWIRED 5FT	990ADB80X80308 990ADB80X80309
	AS-B875-102	Fast selectable 8 Channel Analog Input	BMXAMI0810	EVOL I/O ADP B875102-AMI0810 PRWIRED 2FT EVOL I/O ADP B875102-AMI0810 PRWIRED 5FT	990ADB80X80310 990ADB80X80311
	AS-B875-111	Select. 8 diff./16 single channel Input	BMXAMI0810	EVOL I/O ADP B875111-AMI0810 W/ AN28 2FT EVOL I/O ADP B875111-AMI0810 W/ AN28 5FT	990ADB80X80120 990ADB80X80121
	AS-B877-111	Select. 16 channel Single Ended Input	(2x) BMXAMI0810 Voltage	EVOL I/O ADP B877111-(2)AMI0810 PRWI 2FT EVOL I/O ADP B877111-(2)AMI0810 PRWI 5FT	990ADB80X80412 990ADB80X80413
	AS-B877-111	Select. 16 channel Single Ended Input	(2x) BMXAMI0810 Current	EVOL I/O ADP B877111-(2)AMI0810 PRWI 2FT EVOL I/O ADP B877111-(2)AMI0810 PRWI 5FT	990ADB80X80414 990ADB80X80415
	AS-B881-508	125 VDC 8 Point Output TH (source)	BMXDRA0804T	EVOL I/O ADP B881508-DRA0804T PRWIRED2FT EVOL I/O ADP B881508-DRA0804T PRWIRED5FT	990ADB80X80316 990ADB80X80317
	AS-B883-201	8 RTD Input Module	BMXART0814	–	–
Replacement cables	–	–	–	REPLACEMENT X80 CABLE HI POWER 016 2FT	990X80CABLE016
				REPLACEMENT X80 CABLE HI DENSITY 017 2FT	990X80CABLE017
				REPLACEMENT X80 CABLE ANALOG 018 2FT	990X80CABLE018
				REPLACEMENT X80 CABLE HI POWER 516 5FT	990X80CABLE516
				REPLACEMENT X80 CABLE HI DENSITY 517 5FT	990X80CABLE517
				REPLACEMENT X80 CABLE ANALOG 518 5FT	990X80CABLE518
				REPLAC X80 CABLE HIPOWER PIGTAIL 016 2FT	990X80CABL016PT
				REPLAC X80 CABLE HIDNSTY PIGTAIL 017 2FT	990X80CABL017PT
				REPLAC X80 CABLE ANALOG PIGTAIL 018 2FT	990X80CABL018PT
				REPLAC X80 CABLE HIPOWER PIGTAIL 516 5FT	990X80CABL516PT
				REPLAC X80 CABLE HIDNSTY PIGTAIL 517 5FT	990X80CABL517PT
				REPLAC X80 CABLE ANALOG PIGTAIL 518 5FT	990X80CABL518PT
				REPLAC X80 CABLE 28-PIN ANALOG AN028 2FT	990X80CABL019
				REPLAC X80 CABLE 28-PIN ANALOG AN528 5FT	990X80CABL519

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Modicon X80 I/O platform
Modernization solutions
984-800 I/O to Modicon X80 I/O platform

NOTE 1: *Installers of Multi-Use Flying-Leads I/O adapters are strongly advised to pre-wire each Multi-Use I/O adapter before entering the site where the adapter is to be installed. This pre-wiring can be made on request in the factory. Failure to complete the wiring of each Multi-Use I/O adapter in advance of entering the job site will result in unwanted delay in completing the task of mounting the X80 I/O modules.*

NOTE 2: *Installers are informed that Multi-Use Flying Lead adapters 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.*

Equivalence table: Multi-Use Flying-Leads adapters

Equivalence table: B800 I/O module - X80 I/O module

Type of module	B800 I/O module		X80 I/O platform	Multi-Use Flying-Lead adapter	
	Reference	Description	Reference	Description	Reference
I/O modules	AS-B802-008	115 VAC 8 Point Output Module	BMXDRA1605	EVOL I/O ADP GEN1 B800LD W/1X HP20PT 2FT EVOL I/O ADP GEN1 B800LD W/1X HP20PT 5FT	990ADB80X80198 990ADB80X80199
	AS-B803-008	115 VAC 8 Point Input Module	BMXDAI0814		
	AS-B804-016	115 VAC 16 Point Output	BMXDAO1605		
	AS-B804-116		BMXDRA1605		
	AS-B804-148	48 VAC 2 A 16 Point Output	–	No replacement	–
	AS-B805-016	115 VAC 16 Point Input	BMXDAI1604	EVOL I/O ADP GEN1 B800LD W/1X HP20PT 2FT EVOL I/O ADP GEN1 B800LD W/1X HP20PT 5FT	990ADB80X80198 990ADB80X80199
	AS-B806-032	115 VAC 32 Point Output	(2x) BMXDAO1605	EVOL I/O ADP GEN2 B800HD W/2x HP20PT 2FT EVOL I/O ADP GEN2 B800HD W/2x HP20PT 5FT	990ADB80X80296 990ADB80X80297
			(2x) BMXDRA1605		
	AS-B806-124	24 VAC 32 Point Output	–	No replacement	–
	AS-B807-x32	115 VAC 32 Point Input	(2x) BMXDAI1604/4T	EVOL I/O ADP GEN2 B800HD W/2x HP20PT 2FT EVOL I/O ADP GEN2 B800HD W/2x HP20PT 5FT	990ADB80X80296 990ADB80X80297
	AS-B808-016	230 VAC 16 Point Output	BMXDAO1605	EVOL I/O ADP GEN1 B800LD W/1X HP20PT 2FT EVOL I/O ADP GEN1 B800LD W/1X HP20PT 5FT	990ADB80X80198 990ADB80X80199
			BMXDRA1605		
	AS-B809-016	230 VAC 16 Point Input Module	(2x) BMXDAI0805	Contact Schneider Electric for information, at ModiconMigrations@schneider-electric.com	–
	AS-B810-008	115 VAC 8 Isolated Output	BMXDRA0805	EVOL I/O ADP GEN1 B800LD W/1X HP20PT 2FT EVOL I/O ADP GEN1 B800LD W/1X HP20PT 5FT	990ADB80X80198 990ADB80X80199
	AS-B814-108	NO/NC Power Relay 8 Point Output	BMXDRA0805	EVOL I/O ADP GEN1 B800LD W/1X HP20PT 2FT EVOL I/O ADP GEN1 B800LD W/1X HP20PT 5FT	990ADB80X80198 990ADB80X80199
	AS-B817-116	115 VAC 16 Point Isolated Input	(2x) BMXDAI0814	EVOL I/O ADP GEN2 B800HD W/2x HP20PT 2FT EVOL I/O ADP GEN2 B800HD W/2x HP20PT 5FT	990ADB80X80296 990ADB80X80297
	AS-B817-216	230 VAC 16 Point Isolated Input	(2x) BMXDAI0805		
	AS-B820-008	10-60 VDC 8 Point Output (True High)	–	No replacement	–
	AS-B821-108	10-60 VDC 8 Point Input (True High)	–	No replacement	–
	AS-B824-016	24 VDC 16 Point Output (True High)	BMXDDO1602	EVOL I/O ADP GEN1 B800LD W/1X HP20PT 2FT EVOL I/O ADP GEN1 B800LD W/1X HP20PT 5FT	990ADB80X80198 990ADB80X80199
	AS-B825-016	24 VDC 16 Point Input (True High)	BMXDDI1602		
	AS-B826-032	24 VDC 32 Point Output (True High)	BMXDDO3202K	No wiring adapter	–
			(2x) BMXDDO1602	EVOL I/O ADP GEN2 B800HD W/2x HP20PT 2FT EVOL I/O ADP GEN2 B800HD W/2x HP20PT 5FT	990ADB80X80296 990ADB80X80297
	AS-B827-032	24 VDC 32 Point Input (True High)	BMXDDI3202K	No wiring adapter	–
			(2x) BMXDDI1602	EVOL I/O ADP B827032-(2)BMXDDI1602 2FT EVOL I/O ADP B827032-(2)BMXDDI1602 5FT	990ADB80X80206 990ADB80X80207
	AS-B828-016	5 V TTL 16 Output (sink)	–	No replacement	–
	AS-B829-116	5V TTL 16 Input (Fast Response)	–	No replacement	–
	AS-B832-016	24 VDC 16 Point Output (True Low)	BMXDDO1612	EVOL I/O ADP GEN3 B800LD W/1X HD20PT 2FT EVOL I/O ADP GEN3 B800LD W/1X HD20PT 5FT	990ADB80X80194 990ADB80X80195
	AS-B833-016	24 VDC 16 Point Input (True Low)	BMXDAI1602		
	AS-B836-016	12 - 250 VDC 16 Outputs Isolated	(2x) BMXDRA0804T	EVOL I/O ADP GEN2 B800HD W/2x HP20PT 2FT EVOL I/O ADP GEN2 B800HD W/2x HP20PT 5FT	990ADB80X80296 990ADB80X80297
	AS-B837-016	24 VAC/DC 16 Point Input (True High)	BMXDDI1602	EVOL I/O ADP GEN3 B800LD W/1X HD20PT 2FT EVOL I/O ADP GEN3 B800LD W/1X HD20PT 5FT	990ADB80X80194 990ADB80X80195
			BMXDAI1602		

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Equivalence table: Multi-Use Flying-Leads adapters (continued)

Equivalence table: B800 I/O module - X80 I/O module

Type of module	B800 I/O module		X80 I/O platform	Multi-Use Flying-Lead adapter	
	Reference	Description	Reference	Description	Reference
I/O modules (continued)	AS-B838-032	24 VDC 32 Point Output (True High)	BMXDDO3202K	No wiring adapter	–
			(2x) BMXDDO1602	EVOL I/O ADP B838032-(2)BMXDDO1602 2FT EVOL I/O ADP B838032-(2)BMXDDO1602 5FT	990ADB80X80212 990ADB80X80213
	AS-B840-108	NO/NC Reed Relay 8 Point Output	BMXDRA0805	EVOL I/O ADP GEN1 B800LD W/1X HP20PT 2FT EVOL I/O ADP GEN1 B800LD W/1X HP20PT 5FT	990ADB80X80198 990ADB80X80199
			BMXDRA0804T		
	AS-B846-001	Analog MUX (16 voltage to one output)	(2x) BMXAMI0810	EVOL I/O ADP GEN4 B800HD W/2x AN28PT 2FT EVOL I/O ADP GEN4 B800HD W/2x AN28PT 5FT	990ADB80X80292 990ADB80X80293
	AS-B846-002	Analog MUX (16 current to one output)	(2x) BMXAMI0810		
	AS-B849-016	48 VAC/DC 16 Point Input Module	BMXDDI1603	EVOL I/O ADP GEN3 B800LD W/1X HD20PT 2FT EVOL I/O ADP GEN3 B800LD W/1X HD20PT 5FT	990ADB80X80194 990ADB80X80195
			BMXDAI1603		
	AS-B853-016	–	–	No replacement	–
	AS-B855-016				
	AS-B863-032				
	AS-B863-132				
	AS-B864-001				
	AS-B865-001				
	AS-B872-002	4-20mA,1-5V 4 Channel Analog Output	BMXAMO0410	No wiring adapter	–
	AS-B872-011	Selectable 4 Channel Voltage Output	BMXAMO0410	No wiring adapter	–
	AS-B872-100	4-20mA 4 Channel Current Output	BMXAMO0410	EVOL I/O ADP GEN6 B800HD W/1x AN20PT 2FT EVOL I/O ADP GEN6 B800HD W/1x AN20PT 5FT	990ADB80X80288 990ADB80X80289
	AS-B872-200	Selectable 4 Channel Voltage Output	BMXAMO0410		
	AS-B873-001	4-20mA,1-5V 4 Channel Analog Input	BMXAMI0410	EVOL I/O ADP GEN5 B800AN W/1X AN20PT 2FT EVOL I/O ADP GEN5 B800AN W/1X AN20PT 5FT	990ADB80X80190 990ADB80X80191
	AS-B873-002				
	AS-B873-011	-10 V to 10 V 4 Channel Analog Input	BMXAMI0410		
	AS-B873-012				
	AS-B875-001	4-20mA, 1-5V 8 Channel Analog Input	BMXAMI0810	EVOL I/O ADP GEN7 B800AN W/2x AN28PT 2FT EVOL I/O ADP GEN7 B800AN W/2x AN28PT 5FT	990ADB80X80286 990ADB80X80287
	AS-B875-002				
	AS-B875-011	Select. 8 channel Differential Input	BMXAMI0810		
	AS-B875-012				
	AS-B875-101	Fast selectable 8 Channel Analog Input	BMXAMI0810	EVOL I/O ADP GEN8 B800AN W/2x AN28PT 2FT EVOL I/O ADP GEN8 B800AN W/2x AN28PT 5FT	990ADB80X80284 990ADB80X80285
	AS-B875-102				
	AS-B875-111	Select. 8 diff./16 single channel Input	BMXAMI0810	EVOL I/O ADP B875111-AMI0810 W/ AN28 2FT EVOL I/O ADP B875111-AMI0810 W/ AN28 5FT	990ADB80X80120 990ADB80X80121
	AS-B875-200	8 Analog Channel Inputs, Selectable	–	No replacement	–
	AS-B877-111	Select. 16 channel Single Ended Input	(2x) BMXAMI0810	EVOL I/O ADP GEN4 B800HD W/2x AN28PT 2FT EVOL I/O ADP GEN4 B800HD W/2x AN28PT 5FT	990ADB80X80292 990ADB80X80293
	AS-B881-001	–	–	No replacement	–
	AS-B881-108				
	AS-B881-508	125 VDC 8 Point Output TH (source)	BMXDRA0804T	EVOL I/O ADP GEN2 B800HD W/2x HP20PT 2FT EVOL I/O ADP GEN2 B800HD W/2x HP20PT 5FT	990ADB80X80296 990ADB80X80297
	AS-B882-032	32 Discrete Inputs	–	No replacement	–
	AS-B882-116	16 Discrete Outputs			
	AS-B882-239	High Speed Counter - 2 Channel	BMXECH0200	No wiring adapter	–
	AS-B883-001				
	AS-B883-101	CAM Emulator	–	No replacement	–
	AS-B883-111				
	AS-B883-200	10 RTD Input Module	(2x) BMXART0414	No wiring adapter	–
			BMXART0814		
	AS-B883-201	8 RTD Input Module	BMXART0814	No wiring adapter	–

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Equivalence table: Multi-Use Flying-Leads adapters (continued)

Equivalence table: B800 I/O module - X80 I/O module

Type of module	B800 I/O module		X80 I/O platform	Multi-Use Flying-Lead adapter	
	Reference	Description	Reference	Description	Reference
I/O modules (continued)	AS-B884-002	PID Module - 2 Loops	–	No replacement	–
	AS-B885-002	ASCII Basic Module - 2 Serial Ports			
	AS-B885-101	Motion Module - Single Axis, Resolver			
	AS-B885-111	Motion Module - Single Axis, Encoder/ Resolver			
	AS-B984-100	High Speed Logic Solver, 16 Inputs - 8 Outputs			
	AS-B984-101	High Speed Logic Solver, 16 Inputs - 8 Outputs			
Multi Use Flying Leads Adapters	–	–	–	EVOL I/O ADP GEN1 B800LD W/1X HP20PT 2FT	990ADB80X80198
				EVOL I/O ADP GEN1 B800LD W/1X HP20PT 5FT	990ADB80X80199
				EVOL I/O ADP GEN2 B800HD W/2x HP20PT 2FT	990ADB80X80296
				EVOL I/O ADP GEN2 B800HD W/2x HP20PT 5FT	990ADB80X80297
				EVOL I/O ADP GEN3 B800LD W/1X HD20PT 2FT	990ADB80X80194
				EVOL I/O ADP GEN3 B800LD W/1X HD20PT 5FT	990ADB80X80195
				EVOL I/O ADP GEN4 B800HD W/2x AN28PT 2FT	990ADB80X80292
				EVOL I/O ADP GEN4 B800HD W/2x AN28PT 5FT	990ADB80X80293
				EVOL I/O ADP GEN5 B800AN W/1X AN20PT 2FT	990ADB80X80190
				EVOL I/O ADP GEN5 B800AN W/1X AN20PT 5FT	990ADB80X80191
				EVOL I/O ADP GEN6 B800HD W/1x AN20PT 2FT	990ADB80X80288
				EVOL I/O ADP GEN6 B800HD W/1x AN20PT 5FT	990ADB80X80289
				EVOL I/O ADP GEN7 B800AN W/2x AN28PT 2FT	990ADB80X80286
				EVOL I/O ADP GEN7 B800AN W/2x AN28PT 5FT	990ADB80X80287
				EVOL I/O ADP GEN8 B800AN W/2x AN28PT 2FT	990ADB80X80284
				EVOL I/O ADP GEN8 B800AN W/2x AN28PT 5FT	990ADB80X80285
Replace-ment cables	–	–	–	REPLACEMENT X80 CABLE HI POWER 016 2FT	990X80CABLE016
				REPLACEMENT X80 CABLE HI DENSITY 017 2FT	990X80CABLE017
				REPLACEMENT X80 CABLE ANALOG 018 2FT	990X80CABLE018
				REPLACEMENT X80 CABLE HI POWER 516 5FT	990X80CABLE516
				REPLACEMENT X80 CABLE HI DENSITY 517 5FT	990X80CABLE517
				REPLACEMENT X80 CABLE ANALOG 518 5FT	990X80CABLE518
				REPLAC X80 CABLE HIPOWER PIGTAIL 016 2FT	990X80CABL016PT
				REPLAC X80 CABLE HIDNSTY PIGTAIL 017 2FT	990X80CABL017PT
				REPLAC X80 CABLE ANALOG PIGTAIL 018 2FT	990X80CABL018PT
				REPLAC X80 CABLE HIPOWER PIGTAIL 516 5FT	990X80CABL516PT
				REPLAC X80 CABLE HIDNSTY PIGTAIL 517 5FT	990X80CABL517PT
				REPLAC X80 CABLE ANALOG PIGTAIL 518 5FT	990X80CABL518PT
				REPLAC X80 CABLE 28-PIN ANALOG AN028 2FT	990X80CABL019
				REPLAC X80 CABLE 28-PIN ANALOG AN528 5FT	990X80CABL519

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Presentation

The Modicon Quantum to Modicon X80 modernization solution consists of various I/O adapters, of dedicated chassis and mounting plates. It is used to simplify the replacement of Modicon Quantum PLCs, with Modicon M580/M340 PLCs and X80 I/O; existing Modicon Quantum field wiring will be retained.

There are two types of wiring adapters, Dedicated, Multi-Use Flying-Lead Adapters:
■ Dedicated wiring adapters are designed to mate specific Modicon Quantum I/O modules to specific X80 I/O modules. Fully pre-wired cables are included to make installation quick and easy.
■ Multi-Use Flying-Lead Adapters (11 types available) are designed to be used with fixed sets of I/O module pairs. The cables shipped with the Multi-Use adapters (Flying-Lead cables) are not fully pre-wired; the X80 connectors will be wired in the field based on the selected module pairs. The Modicon Quantum to X80 Instruction Sheet contains wiring guides for each of the Multi-Use Flying-Lead Adapters.

There are two types of mechanical assemblies for backplanes, chassis and mounting plates:
■ A chassis will accept both M580 or M340 backplanes (purchased separately) and new X80 I/O. A chassis can receive one or two X80 backplanes. Different sizes are available depending on the size of the existing Quantum backplane.
■ A mounting plate is designed for use with the CableFast cabling system. With CableFast there is no need to have a double plate assembly to replace a Modicon Quantum I/O rack (the chassis is only required when Modicon Quantum terminal blocks are directly connected to field wirings). The same solution may be used with Telefast wiring system.

The offer provides three chassis and three mounting plates together with 30 wiring adapters (including 11 Multi-Use) that cover most modernization needs between Modicon Quantum I/O modules and X80 I/O modules. All adapters are available in either 2-Foot or 5-Foot lengths (except one Multi-Use BMXFCW301S of three meters and two Multi-Use for CableFast of 15 Foot).

Definition of the solution

A chassis allows the replacement of a Modicon Quantum I/O rack with an X80 I/O rack (M340 or M580) in the same physical location and with the same footprint as the current system:

■ The Modicon Quantum I/O Rack is removed and replaced by a metal chassis that contains an X80 backplane and selected I/O wiring adapters.
■ The backplanes (max 2 backplanes, purchased separately) are mounted on the chassis door, and accommodate the new PLC and X80 I/O modules.
■ The appropriate wiring adapters will be installed in the lower section of the chassis. These quick wiring adapters allow connecting the existing Modicon Quantum wiring of the existing installation to the new X80 I/O modules of the new PLC configuration, thus eliminating the need for onsite re-wiring. The original Modicon Quantum connectors are retained. The chassis door can be opened to allow access to the wiring adapters during commissioning and maintenance.
A mounting plate has the same functionality as a chassis when using CableFast cabling system.

2-Foot cables are the most commonly used length, but 5-Foot are also available for specific needs; for example, to merge two Modicon Quantum I/O racks into one X80 rack. Cables and connectors are included with the I/O Adapters. Replacement cables are also available as spare parts.

Benefits of the solution

The customer's value propositions are the reduced risk and cost of modernization from a Quantum I/O PLC:
■ Minimal production downtime with setup time of about one hour per rack
■ Cost savings through the retention of all wiring to sensors/actuators inside the existing cabinets (savings in wiring, testing and commissioning, update of wiring diagrams); Typically, no electrician or wiring contractor is necessary
■ Unlike manual rewiring, ordinary production stops can be used for the changeover
■ The minimal changes on installations allows you to restart them within the allotted time with the ability to rollback in case of unexpected issue
■ Reliable solution designed by the manufacturer
■ Simple solution that makes the modernization easy and at the lowest risk

This modernization solution is part of a larger modernization and migration offer that includes methods, specific migration devices and dedicated tools for various legacy PLCs from Schneider Electric and the competition as well.
Modernizations and migrations can be implemented with help from our Schneider Electric services experts.

A cross reference table between Quantum I/O modules and X80 I/O modules is below. It shows all possible I/O modules equivalences. However, some differences in terminal strips, in modularity, in common or power connections may have to be addressed.
Therefore, it is recommended to verify compatibility with our Schneider Electric service representatives.

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Modicon X80 I/O platform
Modernization solutions
Quantum I/O to X80 I/O platform

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NOTE 1: *Installers of Multi-Use Flying-Leads I/O Adapters are strongly advised to pre-wire each Multi-Use I/O Adapter before entering the site where the adapter is to be installed. This pre-wiring can be made on request in the factory. Failure to complete the wiring of each Multi-Use I/O Adapter in advance of entering the job site will result in unwanted delay in completing the task of mounting the X80 I/O modules.*

NOTE 2: *Installers are informed that Multi-Use Flying Lead Adapters 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.*

NOTE 3: *The new system Migration Chassis or Mounting plate + I/O modules and CPU is deeper than the original Modicon Quantum:*
Original Modicon Quantum system depth 125 mm/4.92 in.
System depth with Migration Chassis and 990ADQUAX80●●● I/O adapter 275 mm/10.8 in. (including terminal block) +150 mm/+~6 in.
System depth with Mounting Plate and CableFast wiring offer 153 mm/6 in. (including terminal block).

NOTE 4: *In some cases X80 module BMXART0814 may be a suitable replacement for the 140ATI03000. The Cold Junction differences must be evaluated prior to the modernization. If the user determines that the BMXART0814 is an acceptable replacement for their installation, they can use Generic Adapter 990ADQUAX80102 for the modernization. The user will need to determine the appropiate wiring for their installation.*

Equivalence table: Quantum I/O module - X80 I/O module

Type of device	Quantum I/O		X80 I/O platform	I/O Adapter - PLC I/O Chassis - Backplane Mounting Plate	
	Reference	Description	Reference	Description	Reference
Rack to Chassis	140XBP00600	Backplane 6 slots 265 x 290 mm/*10.4 x 11.4 in.*	BME/X XBP0600	140XBP00600 TO BM●XBP CHASSIS - W/O BP	990CHQUAX80060
	140XBP01000	Backplane 10 slots 428 x 290 mm/*16.8 x 11.4 in.*	BME/X XBP1200	140XBP01000 TO BM●XBP CHASSIS - W/O BP	990CHQUAX80100
	140XBP01600	Backplane 16 slots 671 x 290 mm/*26.4 x 11.4 in.*	(2x) BME/X XBP●●00	140XBP01600 TO BM●XBP CHASSIS - W/O BP	990CHQUAX80160
Rack to Mtg. Plate	140XBP00600	Backplane 6 slots 265 x 290 mm/*10.4 x 11.4 in.*	BME/X XBP0600	140XBP00600 TO BM●XBP MTG PLATE - W/O BP	990CHQUAX80061
	140XBP01000	Backplane 10 slots 428 x 290 mm/*16.8 x 11.4 in.*	BME/X XBP1200	140XBP01000 TO BM●XBP MTG PLATE - W/O BP	990CHQUAX80101
	140XBP01600	Backplane 16 slots 671 x 290 mm/*26.4 x 11.4 in.*	(2x) BME/X XBP●●00	140XBP01600 TO BM●XBP MTG PLATE - W/O BP	990CHQUAX80161
Cable Mgt. Kits	–	–	BMX/BMEXBP1200	CABLE MANAGEMENT KIT FOR BMX/BMEXBP1200	990CMQUAX80120
			BMX/BMEXBP0800	CABLE MANAGEMENT KIT FOR BMX/BMEXBP0800	990CMQUAX80080
			BMX/BMEXBP0600	CABLE MANAGEMENT KIT FOR BMX/BMEXBP0600	990CMQUAX80060
			BMX/BMEXBP0400	CABLE MANAGEMENT KIT FOR BMX/BMEXBP0400	990CMQUAX80040
Digital Input	140DAI35300	Digital IN 24 VAC 32 pt 4 groups of 8 pt	(2x) BMXDAI1602	140DAI/DDI●5300 TO (2x) BMXDAI/DDI160● 2FT 140DAI/DDI●5300 TO (2x) BMXDAI/DDI160● 5FT	990ADQUAX80100 990ADQUAX80101
	140DAI45300	Digital IN 48 VAC 32 pt 4 groups of 8 pt	(2x) BMXDAI1603		
	140DDI35300	Digital IN 24 VDC 32 pt 4 gr x 8 pt Sink	(2x) BMXDDI1602		
	140DDI85300	Digital IN 10-60 VDC 32 pt 4 gr x 8 pt Sink	(2x) BMXDDI1602 (2x) BMXDDI1603		
	140ARI03010	RTD IN 8ch Type NI/PT 2/3/4 Wires	BMXART0814	140AR/TI030●0 TO BMXART0814 W/ (2x) FCW PT3M	990ADQUAX80102 *(1)*
	140ATI03000	Thermocouple IN 8ch J, K, E, T, S, R, B, mV			
	140DAI55300	Digital IN 115 VAC 32 pt 4 groups of 8 pt	(2x) BMXDAI1604	140DAI55300 TO (2x) BMXDAI1604 2FT 140DAI55300 TO (2x) BMXDAI1604 5FT	990ADQUAX80204 990ADQUAX80205
	140DAI54000	Digital IN 115 VAC 16 pt Isolated	BMXDAI1614	140DAI54/74000 TO BMXDAI1614/1615 2FT	990ADQUAX80110
	140DAI74000	Digital IN 230 VAC 16 pt Isolated	BMXDAI1615	140DAI54/74000 TO BMXDAI1614/1615 5FT	990ADQUAX80111
	140DDI35300	Digital IN 24 VDC 32 pt 4 gr x 8 pt Sink	BMXDDI3202K	140DDI35300 TO BMXDDI3202K W/ CDP102 1M 140DDI35300 TO BMXDDI3202K W/ CDP202 2M	990ADQUAX80120 990ADQUAX80121
	140DAI34000	Digital IN 24 VAC 16 pt Isolated	BMXDAI1602	140DAI34000/44000 TO BMXDAI1602/1603 2FT 140DAI34000/44000 TO BMXDAI1602/1603 5FT	990ADQUAX80130 990ADQUAX80131
	140DAI44000	Digital IN 48 VAC 16 pt	BMXDAI1603		
	140DDI84100	Digital IN 10-60 VDC 16 pt 8 gr x 2 pt Sink	BMXDDI1602 BMXDDI1603	140DDI84100 TO BMXDDI1602/1603 2FT 140DDI84100 TO BMXDDI1602/1603 5FT	990ADQUAX80132 990ADQUAX80133
	140DAI54300	Digital IN 115 VAC 16 pt 2 groups of 8 pt	BMXDAI1614	140DAI54300 TO BMXDAI1614 2FT 140DAI54300 TO BMXDAI1614 5FT	990ADQUAX80136 990ADQUAX80137
	140DAI75300	Digital IN 230 VAC 32 pt 4 groups of 8 pt	(2x) BMXDAI1615	140●●● TO BMX●●● HI POWER W/2x 40PT 2FT 140●●● TO BMX●●● HI POWER W/2x 40PT 5FT	990ADQUAX80218 990ADQUAX80219
	TBD	–	(1x) TBD HI DENSITY	140●●● TO BMX●●● HIDENS W/ 20PIGTAIL 2FT 140●●● TO BMX●●● HIDENS W/ 20PIGTAIL 5FT	990ADQUAX80124 *(1)* 990ADQUAX80125 *(1)*
	140DDI35310	Digital IN 24 VDC (True Low) 32 pt 4 group of 8 pt	(2x) BMXDAI1612	140●●● TO (2x) BMX●●● HIDENS W/2x 20PT 2FT 140●●● TO (2x) BMX●●● HIDENS W/2x 20PT 5FT	990ADQUAX80224 *(1)* 990ADQUAX80225 *(1)*
	140DDI67300	Digital IN 125 VDC (True High)	(2x) BMXDDI1604T	140●●● TO (2x) BMX●●● HI PWR W/2x 20PT 2FT 140●●● TO (2x) BMX●●● HI PWR W/2x 20PT 5FT	990ADQUAX80216 *(1)* 990ADQUAX80217 *(1)*
	TBD	–	(1x) TBD HI DENSITY	140●●● TO BMX●●● HIDENS W/ 40PIGTAIL 2FT 140●●● TO BMX●●● HIDENS W/ 40PIGTAIL 5FT	990ADQUAX80146 *(1)* 990ADQUAX80147 *(1)*
	140DDI36400	Telefast Digital IN 24 VDC 6x 16 pt (True High)	BMXDDI3202K and BMXDDI6402K	140DD●36400 TO BMXDD●3202K AND DD●6402K	990ADQUAX80246

(1) Generic adapter with pig-tail cable; to be prepared before use.

Note: *Please contact Schneider Electric at modiconmigrations@schneider-electric.com for information.*

Modicon X80 I/O platform
Modernization solutions
Quantum I/O to X80 I/O platform

2

Equivalence table: Quantum I/O module - X80 I/O module (continued)

Type of device	Quantum I/O		X80 I/O platform	I/O Adapter - PLC I/O Chassis - Backplane Mounting Plate	
	Reference	Description	Reference	Description	Reference
Digital Output	140DDO35301	Digital OUT 24 VDC 32 pt 4 gr x 8 pt Source	(2x) BMXDDO1602	140DDO3530●/35310 TO (2x) BMXDDO16●2 2FT 140DDO3530●/35310 TO (2x) BMXDDO16●2 5FT	990ADQUAX80206 990ADQUAX80207
	140DDO35300	Digital OUT 24 VDC 32 pt 4 gr x 8 pt Source			
	140DDO35310	Digital OUT 24 VDC 32 pt 4 gr x 8 pt Sink	(2x) BMXDDO1612		
	140DAO84000	Digital OUT 24-230 VAC 16 pt Isolated	BMXDAO1615	140DAO84000/84010 TO BMXDAO1615 2FT 140DAO84000/84010 TO BMXDAO1615 5FT	990ADQUAX80108 990ADQUAX80109
	140DAO84010	Digital OUT 24-115 VAC 16 pt Isolated			
	140DAO84210	Digital OUT 100-115 VAC 16 pt 4 groups 4 pt	BMXDAO1615	140DAO84210/84220 TO BMXDAO1615 2FT 140DAO84210/84220 TO BMXDAO1615 5FT	990ADQUAX80140 990ADQUAX80141
	140DAO84220	Digital OUT 24-48 VAC 16 pt 4 groups 4 pt			
	140DAO85300	Digital OUT 24-240 VAC 32 pt 4 groups 8 pt	(2x) BMXDAO1605	140DAO85300 TO (2x) BMXDAO1605 2FT 140DAO85300 TO (2x) BMXDAO1605 5FT	990ADQUAX80214 990ADQUAX80215
	140DRA84000	Relay OUT 16 pt NO 2A/pt	(2x) BMXDRA0815	140DRA84000 TO (2x) BMXDRA0815 2FT 140DRA84000 TO (2x) BMXDRA0815 5FT	990ADQUAX80228 990ADQUAX80229
	140DRC83000	Relay OUT 8 pt NO/NC 5A/pt	BMXDRC0805	140DRC83000 TO BMXDRC0805 2FT 140DRC83000 TO BMXDRC0805 5FT	990ADQUAX80134 990ADQUAX80135
	140DDO84300	Digital OUT 10...60 VDC 2x 8 pt Source Module	(1x) BMXDDO1602	140●●● TO BMX●●● HI POWER W/ 20PT 2FT 140●●● TO BMX●●● HI POWER W/ 20PT 5FT	990ADQUAX80116 *(1)* 990ADQUAX80117 *(1)*
			(2x) BMXDRA0815	140●●● TO (2x) BMX●●● HI PWR W/2x 20PT 2FT 140●●● TO (2x) BMX●●● HI PWR W/2x 20PT 5FT	990ADQUAX80216 *(1)* 990ADQUAX80217 *(1)*
	140DDO88500	Digital OUT 25…125 VDC 2x 6 pt (True High)	(2x) BMXDRA0815	140●●● TO (2x) BMX●●● HI PWR W/2x 20PT 2FT 140●●● TO (2x) BMX●●● HI PWR W/2x 20PT 5FT	990ADQUAX80216 *(1)* 990ADQUAX80217 *(1)*
	TBD	–	TBD HI PWR	140●●● TO BMX●●● HI POWER W/ 40PT 2FT 140●●● TO BMX●●● HI POWER W/ 40PT 5FT	990ADQUAX80118 *(1)* 990ADQUAX80119 *(1)*
	140DDO36400	Telefast Digital IN 24 VDC 6x 6 pt (True High)	BMXDDO3202K and BMXDDO6402K	140DD●36400 TO BMXDD●3202K AND DD●6402K	990ADQUAX80246
	TBD	–	(1x) TBD HI PWR	CABLEFAST HI POWER PT W/O X80 CONN 15FT	990ADQUAX80148 *(1)*
	TBD	–	(1x) TBD STD PWR	CABLEFAST STD POWER PT W/O X80 CONN 15FT	990ADQUAX80149 *(1)*
Mixed Digital Input Output	140DDM39000	Mixed (2x 8 Inputs, 2x 4 Output), 24 VDC	(2x) BMXDDM16022	140●●● TO (2x) BMX●●● HIDENS W/2x 20PT 2FT 140●●● TO (2x) BMX●●● HIDENS W/2x 20PT 5FT	990ADQUAX80224 *(1)* 990ADQUAX80225 *(1)*
Analog Input	140ACI03000	Analog IN 8ch Unipolar High-Speed C/V	BMXAMI0810 BMXAMI0800	140ACI/AVI03000 TO BMXAMI0800/0810 2FT 140ACI/AVI03000 TO BMXAMI0800/0810 5FT	990ADQUAX80112 990ADQUAX80113
	140AVI03000	Analog IN 8ch Bipolar Multirange	BMXAMI0810		
	140ACI04000	Analog IN 16ch Current	(2x) BMXAMI0800 (2x) BMXAMI0810	140ACI04000 TO BMXAMI0800/0810 2FT 140ACI04000 TO BMXAMI0800/0810 5FT	990ADQUAX80226 990ADQUAX80227
	140ARI03010	Analog IN 8 Ch RTD Input 2,3 or 4 wire	BMXART0814	140ARI03010/140ATI03000 TO BMXART0814 2FT	990ADQUAX80102
	140ATI03000	Analog IN 8 Ch Thermocouple, J,K,E,T,S,R,B	BMXART0814		
	TBD	–	(1x) TBD 20-PIN X80	140●●● TO BMX●●● ANALOG W/ 20PIGTAIL 2FT 140●●● TO BMX●●● ANALOG W/ 20PIGTAIL 5FT	990ADQUAX80142 *(1)* 990ADQUAX80143 *(1)*
	TBD	–	(2x) TBD 20-PIN X80	140●●● TO (2x) BMX●●● ANALOG W/2x 20PT 2FT 140●●● TO (2x) BMX●●● ANALOG W/2x 20PT 5FT	990ADQUAX80242 *(1)* 990ADQUAX80243 *(1)*
	TBD	–	(1x) TBD 28-PIN X80	140●●● TO BMX●●● ANALOG W/ 28PIGTAIL 2FT 140●●● TO BMX●●● ANALOG W/ 28PIGTAIL 5FT	990ADQUAX80144 *(1)* 990ADQUAX80145 *(1)*
	TBD	–	(2x) TBD 28-PIN X80	140●●● TO (2x) BMX●●● ANALOG W/2x 28PT 2FT 140●●● TO (2x) BMX●●● ANALOG W/2x 28PT 5FT	990ADQUAX80244 *(1)* 990ADQUAX80245 *(1)*

(1) Generic adapter with pig-tail cable; to be prepared before use.

Note: *Please contact Schneider Electric at modiconmigrations@schneider-electric.com for information.*

Schneider Electric

Equivalence table: Quantum I/O module - X80 I/O module (continued)

Type of device	Quantum I/O		X80 I/O platform	I/O Adapter - PLC I/O Chassis - Backplane Mounting Plate	
	Reference	Description	Reference	Description	Reference
Analog Output	140ACO02000	Analog OUT 4ch Current	BMXAMO0410	140ACO02000 TO BMXAMO0410 2FT 140ACO02000 TO BMXAMO0410 5FT	990ADQUAX80122 990ADQUAX80123
	140ACO13000	Analog OUT 8ch Current	BMXAMO0802	140ACO13000 TO BMXAMO0802 2FT 140ACO13000 TO BMXAMO0802 5FT	990ADQUAX80138 990ADQUAX80139
	140AVO02000	Analog OUT 4 Ch Bi-Polar, V only	BMXAMO0410	140●●● TO BMX●●● ANALOG W/ 20PIGTAIL 2FT 140●●● TO BMX●●● ANALOG W/ 20PIGTAIL 5FT	990ADQUAX80142 *(1)* 990ADQUAX80143 *(1)*
Mixed Analog Input Output	140AMM09000	Mixed Analog IN 4 Ch, OUT 2Ch Isolated Bi-Polar I & V	(See Note 4 on page 2/15)	–	(See Note 4 on page 2/15)
Repla-cement cables	–	–	–	REPLAC X80 CABLE 40-PIN HI POWER 2FT	990X80CABLE021
				REPLAC X80 CABLE 40-PIN HI POWER 5FT	990X80CABLE521
				REPLACEMENT X80 CABLE HI POWER 116 1FT	990X80CABLE116
				REPLACEMENT X80 CABLE HI DENSITY 117 1FT	990X80CABLE117
				REPLACEMENT X80 CABLE ANALOG 118 1FT	990X80CABLE118
				REPLACEMENT X80 CABLE HI POWER 516 5FT	990X80CABLE516
				REPLACEMENT X80 CABLE HI DENSITY 517 5FT	990X80CABLE517
				REPLACEMENT X80 CABLE ANALOG 518 5FT	990X80CABLE518
				REPLAC X80 CABLE HIPOWER PIGTAIL 116 1FT	990X80CABL116PT *(1)*
				REPLAC X80 CABLE HIDNSTY PIGTAIL 117 1FT	990X80CABL117PT *(1)*
				REPLAC X80 CABLE ANALOG PIGTAIL 118 1FT	990X80CABL118PT *(1)*
				REPLAC X80 CABLE HIPOWER PIGTAIL 516 5FT	990X80CABL516PT *(1)*
				REPLAC X80 CABLE HIDNSTY PIGTAIL 517 5FT	990X80CABL517PT *(1)*
				REPLAC X80 CABLE ANALOG PIGTAIL 518 5FT	990X80CABL518PT *(1)*
				REPLAC X80 CABLE 28-PIN ANALOG AN128 1FT	990X80CABL119
				REPLAC X80 CABLE 28-PIN ANALOG AN528 5FT	990X80CABL519
				Shielded cable, FCN conn. 40 pin Pigtail, 3 m/*9.84 ft*	BMXFCW301S *(1)*

(1) Generic adapter with pig-tail cable; to be prepared before use.

Note: *Please contact Schneider Electric at modiconmigrations@schneider-electric.com for information.*

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2

Presentation

The quick wiring adapters comprise a set of connectors designed to simplify the replacement of legacy Modicon Compact PLCs by automation platforms integrating the Modicon X80 I/O platform, such as Modicon M340, Ethernet I/O system, etc.

The adapters enable the I/O field connectors of the Compact PLC in an existing installation to be matched to the equivalent I/O modules of the X80 I/O platform. Thirteen references provide the wiring translations between the I/O modules of Compact PLCs and those of the Modicon X80 I/O platform and they fully meet the mechanical and environmental specifications of the X80 PLC system.

Description of the solution

The quick wiring adapters have the same look and feel as the standard I/O module connectors of the X80 I/O platform. The new connectors increase the depth and extend below the X80 I/O module.
■ The quick wiring adapters use the same mounting/retaining screws for attaching the adapter to the X80 I/O platform module.
■ The sockets of the adapters accepts the two field wiring connectors of the Compact I/O module.
■ A clear protective cover is sized to retain the wiring harness.
■ The cover also has a provision for attaching the wiring label that was used on the Compact module.

Benefits of the solution

The customer's value propositions are the mitigation of risk and reduced cost of modernization from a Modicon Compact PLC:
■ Minimal production downtime with setup time of about one hour per rack
■ Cost savings through the retention of all wiring to sensors/actuators inside the existing cabinets (savings in wiring, testing and commissioning, update of wiring diagrams); Typically, no electrician or wiring contractor is necessary
■ Unlike manual rewiring, ordinary production stops can be used for the changeover
■ The minimal changes on installations allows you to restart them within the allotted time with the ability to rollback in case of unexpected issue
■ Reliable solution designed by the manufacturer
■ Simple solution that makes the modernization easy and at the lowest risk

This modernization solution is part of a larger modernization and migration offer that includes methods, specific migration devices and dedicated tools for various legacy PLCs from Schneider Electric and the competition as well.
Modernizations and migrations can be implemented with help from our Schneider Electric services experts.

A cross reference table between Modicon Compact PLC and X80 I/O modules is below. It shows all possible I/O modules equivalences. However, some differences in terminal strips, in modularity, in common or power connections may have to be addressed.
Therefore, it is recommended to verify compatibility with our Schneider Electric service representatives.

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Compact module - X80 I/O platform compatibility

Type of module	Compact module		X80 I/O platform		Compact module - X80 I/O platform compatibility	Quick wiring adapter reference
	Reference	Description	Reference	Description		
Discrete input	AS-BDEO216	16-point 24 VDC input module	BMXDDI1602	16-point 24 VDC sink input	OK	990XSM00206
	AS-BDEP208	8-point 230 VAC input module	BMXDAI0805	8-point 200 to 240 VAC input	OK	990XSM00201
	AS-BDEP209	8-point 120 VAC input module	BMXDAI1604	16-point 110 VAC input	OK	990XSM00213
	AS-BDEP210	8-point 115 VAC input module	BMXDAI1604	16-point 110 VAC input	OK	990XSM00213
	AS-BDEP211	8-point 115 VAC input module	BMXDAI1604	16-point 110 VAC input	OK	None
	AS-BDEP214	16-point 12-60 VDC input module	BMXDDI1602 BMXDDI1603	16-point 24 VDC input 16-point 48 VDC input	For the 24 VDC module ensure that the input current threshold at switch on is compatible with the application. The input voltage threshold of BMXDDI1603 is 34 V compared with 12 V for AS-BDEP214. No replacement for 12 VDC and 60 VDC.	990XSM00206
	AS-BDEP215	16-point 5 VDC TTL input module	–	–	No exact replacement but can be replaced with HMI functionality.	None
	AS-BDEP216	16-point 24 VDC input module	BMXDDI1602	16-point 24 VDC sink input	OK	990XSM00206
	AS-BDEP217	16-point 24 VDC input module	BMXDAI1602	16-point 24 VDC sink input	OK but requires negative logic.	990XSM00201
	AS-BDEP218	16-point 115 VAC input module	BMXDAI1604	16-point 110 VAC input	OK	990XSM00201
	AS-BDEP220	16-point 24 VDC fast input module	–	–	The response time is a deciding factor when selecting replacement modules.	None
	AS-BDEP254	16-point 12-60 VDC input module	BMXDDI1602H BMXDDI1603H	16-point 24 VDC input 16-point 48 VDC input	For the 24 VDC module ensure that the input current threshold at switch on is compatible with the application. The input voltage threshold of BMXDDI1603 is 34 V compared with 12 V for AS-BDEP254. The temperature range for BMXDDI1603 is 0 to 60 °C compared with - 40 °C to + 70 °C for ASBDEP254. No replacement for 12 VDC and 60 VDC.	990XSM00206
	AS-BDEP254C	16-point 12-60 VDC input module, extended temp. + coating	BMXDDI1602H BMXDDI1603H	16-point 24 VDC input 16-point 48 VDC input	For the 24 VDC module ensure that the input current threshold at switch on is compatible with the application. The input voltage threshold of BMXDDI1603 is 34 V compared with 12 V for AS-BDEP254. The temperature range for BMXDDI1603 is 0 to 60 °C compared with - 40 °C to + 70 °C for ASBDEP254. No replacement for 12 VDC and 60 VDC.	990XSM00206
	AS-BDEP256	16-point 24 VDC input module	BMXDDI1602H	16-point 24 VDC sink input	The nominal temperature range of BMXDDI1602 is only 0 to + 60 °C compared with - 40 to + 70 °C for AS-BDEP256.	990XSM00206
	AS-BDEP256C	16-point 24 VDC input module, extended temp. + coating	BMXDDI1602H	16-point 24 VDC sink input	The nominal temperature range of BMXDDI1602 is only 0 to + 60 °C compared with - 40 to + 70 °C for AS-BDEP256C.	990XSM00206
	AS-BDEP257	16 x 110 VDC inputs, extended temp.	BMXDDI1604T	16-point 125 VDC input	Nominal input voltage for BMXDDI1604T is 100 to 150 VDC compared with 55 to 170 VDC for AS-BDEP257. Response time for BMXDDI1604T is 9 ms compared with 6 ms for AS-BDEP257. Temperature range for BMXDAI1604T from -25 to + 70 °C compared with - 40 to + 70 °C.	990XSM00206
	AS-BDEP257C	16-point 110 VDC input, extended temp. + coating	BMXDDI1604T	16-point 125 VDC input	Nominal input voltage for BMXDDI1604T is 100 to 150 VDC compared with 55 to 170 VDC for AS-BDEP257. Response time for BMXDDI1604T is 9 ms compared with 6 ms for AS-BDEP257. Temperature range for BMXDDI1604T from - 25 to + 70 °C compared with - 40 to + 70 °C. No conformal coating available.	990XSM00206
	AS-BDEP296	16 x 60 VDC inputs	–	–	No replacement	–
	AS-BDEP297	16 x 48 VDC inputs	BMXDDI1603	16-point 48 VDC input	OK	990XSM00206

Green background with no comments indicates full functional equivalent between the X80 I/O platform module and the Compact module.

Green background with comments indicates full functional equivalent with differences notes. Check with your application.

Orange background indicates that, in most cases, the inputs of the X80 I/O platform fully replace those of the Compact module but differences are noted. For example, maximum current per point. Check with your application.

Red background indicates that there are no direct replacements but other solutions exist. Please consult Schneider Electric.

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Compact module - X80 I/O platform compatibility

Type of module	Compact module		X80 I/O platform		Compact module - X80 I/O platform compatibility	Quick wiring adapter reference
	Reference	Description	Reference	Description		
Discrete output	AS-BDAO216	16-point 24 VDC output module	BMXDDO1602	16-point 24 VDC output	OK, but with slightly slower response time. BMXDDO1602 response time of 1.2 ms compared with < 1 ms for AS-BDAO216.	990XSM00206
	AS-BDAP204	4-point relay (NO) module	BMXDRA0805	8-point relay outputs	OK, 4 relays on Compact, 8 on X80 I/O.	990XSM00203
	AS-BDAP204	4-point relay (NO) module	BMXDRA0804T	8-point 125 VDC output relay	OK, 4 relays on Compact, 8 on X80 I/O.	990XSM00203
	AS-BDAP208	8-point relay (NO) module	BMXDRA0805	8-point relay outputs	OK	990XSM00206
	AS-BDAP258	8-point relay (NO) module	BMXDRA0805H	8-point relay outputs	OK, but different extended temperatures.	990XSM00206
	AS-BDAP258C	8-point 24 VDC relay (NO) module, extended temp. + coating	BMXDRA0805H	8-point relay outputs	OK. Temperature between 0 and + 60°C compared with - 40 to + 70°C for BMXDRA0805H.	990XSM00206
	AS-BDAP209	8-point, 1 A, 120 VAC output module	BMXDAO1605	16-point 110 VAC to 230 VAC output	Lower current availability. BMXDAO1605 is limited to 600 mA compared with 1 A for AS-BDAP210. For AS-BDAP210, the nominal voltage goes down to 85 V compared with 100 V for BMXDAO1605.	990XSM00204
	AS-BDAP210	8-point, 24-230 VAC output module	BMXDAO1605	16-point 110 VAC to 230 VAC output	Lower current availability. BMXDAO1605 is limited to 600 mA compared with 1 A for AS-BDAP210. For AS-BDAP210, the nominal voltage goes down to 85 V compared with 100 V for BMXDAO1605.	990XSM00204
	AS-BDAP212	8-point 24 VDC input/4-point 2 A output	BMXDDM16025	8-point 24 VDC input + 8-point relay output	Compact: 2 groups of 2 outputs; X80 I/O: 1 group of 8. Consequently, different input isolation.	990XSM00205
	AS-BDAP252	8-point 24 VDC input/4-point 2 A output	BMXDDM16025H	8-point 24 VDC input + 8-point relay output	Compact: 2 groups of 2 outputs; X80 I/O: 1 group of 8. Consequently, different input isolation. Different extended temperatures.	990XSM00205
	AS-BDAP216	16-point 24 VDC output module	BMXDDO1602	16-point 24 VDC output	Compact: 2 groups of 8; X80 I/O: 1 group of 16. Consequently, different input isolation.	990XSM00206
	AS-BDAP256	16-point 24 VDC output module	BMXDDO1602H	16-point 24 VDC output	Compact: 2 groups of 8; X80 I/O: 1 group of 16. Consequently, different input isolation. Different extended temperatures.	990XSM00206
	AS-BDAP217	16-point 5-24 VDC output module	BMXDDO1612	16-point 24 VDC sink output	Slightly slower response time. BMXDDO1612 response time of 1.2 ms compared with < 1 ms for AS-BDAP217. Also, Compact: 2 groups of 8; X80 I/O: 1 group of 16.	990XSM00206
	AS-BDAP218	16-point 24-240 VAC output module	BMXDAO1605	16-point 110 VAC to 230 VAC module	Lower current availability. BMXDAO1605 is limited to 600 mA compared with 1 A for AS-BDAP210. For AS-BDAP210, the nominal voltage goes down to 24 V compared with 100 V for BMXDAO1605. If 24 V is required, select a different module.	990XSM00202
	AS-BDAP211	Combined press and stamp module, 120 VAC, inputs controlling the outputs	–	–	None	None

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Compact module - X80 I/O platform compatibility

Type of module	Compact module		X80 I/O platform		Compact module - X80 I/O platform compatibility	Quick wiring adapter reference
	Reference	Description	Reference	Description		
Discrete input/output	AS-BDAP220	8-point 24 VDC, 2 A, input/output module	BMXDDM16022	8-point 24 VDC input + 8-point 24 VDC output	BMXDDM16022 is limited to 0.625 A per channel compared with 2 A for AS-BDAP220. Also, the response time is 1.2 ms compared with < 1 ms for AS-BDAP220.	990XSM00207
	AS-BDAP250	8-point, 24 VDC, input/output module	BMXDDM16022H	8-point 24 VDC input + 8-point 24 VDC output	BMXDDM16022 is limited to 0.625 A per channel compared with 2 A for AS-BDAP220 and is not conformally coated. Also, the response time is 1.2 ms compared with < 1 ms for AS-BDAP220. BMXDDM16022 temperature range of 0 to + 60 °C compared with - 40 to + 70 °C for AS-BDAP250C.	990XSM00207
	AS-BDAP250C	8-point, 24 VDC, input/output module, extended temp. + coating	BMXDDM16022H	8-point 24 VDC input + 8-point 24 VDC output	BMXDDM16022 is limited to per channel compared with 2 A for AS-BDAP250. Also, the response time is 1.2 ms compared with < 1 ms for AS-BDAP220. DDM16022 temperature range of 0 to + 60 °C compared with - 40 to + 70 °C for AS-BDAP250C.	990XSM00207
	AS-BDAP212	8 inputs, 4 outputs, 24 VDC	BMXDDM16025	8-point 24 VDC input + 8-point relay output	Compact: 2 groups of 2 outputs; X80 I/O: 1 group of 8. Consequently, different input isolation.	990XSM00205
	AS-BDAP252	8 inputs, 4 outputs, 24 VDC	BMXDDM16025H	8-point 24 VDC input + 8-point relay output	BMXDDM16025 temperature range of 0 to + 60 °C compared with - 40 to + 70 °C. Compact: 2 groups of 2 outputs; X80 I/O: 1 group of 8. Consequently, different input isolation.	990XSM00205
	AS-BDAP252C	8 inputs, 4 outputs, 24 VDC, extended temp. + coating	BMXDDM16025H	8-point 24 VDC input + 8-point relay output	BMXDDM16025 temperature range of 0 to + 60 °C compared with - 40 to + 70 °C. Compact: 2 groups of 2 outputs; X80 I/O: 1 group of 8. Consequently, different input isolation.	990XSM00205
	AS-BDAP253	8 inputs, 4 outputs, 110 VDC	BMXDDM16025H	8-point 24 VDC input + 8-point relay output	1) Compact inputs: 110 VDC; X80 I/O: 24 VDC. 2) Compact: 2 groups of 2 outputs; X80 I/O: 1 group of 8. a) Different isolation b) 4 unused references	None
	AS-BDAP253C	8 inputs, 4 outputs, 110 VDC, extended temp. + coating	BMXDDM16025H	8-point 24 VDC input + 8-point relay output	1) Compact inputs: 110 VDC; X80 I/O: 24 VDC. 2) Compact: 2 groups of 2 outputs; X80 I/O: 1 group of 8. a) Different isolation b) 4 unused references	None
	AS-BDAP292	8 inputs, 4 outputs, 60 VDC	–	–	No exact replacement. Please consult Schneider Electric for a solution.	None

2

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2

Type of module	Compact module		X80 I/O platform		Compact module - X80 I/O platform compatibility	Quick wiring adapter reference
	Reference	Description	Reference	Description		
Analog input	AS-BADU204	4-channel ± 0.5 V register, PT100, 11-bit	BMXART0414	4-channel TC/RTD, isolated, analog inputs	OK, but ± 0.5 V missing. Also, X80 I/O has channel-to-channel and channel-to-bus isolation.	None
	AS-BADU205	4-channel register input	BMXAMI0410	4-channel, isolated, analog current/voltage input	OK, scaling differences.	990XSM00208
	AS-BADU205	4-channel register input	BMXAMM0600	4-channel, non-isolated, analog current/voltage input and 2-channel, non-isolated, 2-channel current/voltage output	OK, scaling differences.	990XSM00209
	AS-BADU206	4-channel, isolated, register input	BMXAMI0410	4-channel, isolated, analog current/voltage input	OK, but X80 I/O does not have ± 1 V range.	990XSM00210
	AS-BADU206	4-channel, isolated, register input	BMXAMM0600	4-channel, non-isolated, analog current/voltage input and 2-channel, non-isolated, 2-channel current/voltage output	OK, but X80 I/O does not have ± 1 V range. No isolation.	990XSM00211
	AS-BADU210	4-channel, isolated, analog voltage/current input	BMXAMI0410	4-channel, isolated, analog current/voltage input	OK, scaling differences. X80 I/O does not have all the corresponding voltage ranges.	990XSM00210
	AS-BADU210	4-channel, isolated, analog voltage/current input	BMXAMM0600	4-channel, non-isolated, analog current/voltage input and 2-channel, non-isolated, 2-channel current/voltage output	OK, scaling differences. X80 I/O does not have all the corresponding voltage ranges. No isolation.	990XSM00211
	AS-BADU211	8-channel analog input thermal module	BMXART0814	8-channel TC/RTD, isolated, analog inputs	OK, X80 I/O does not have 2, 5 or 10 V inputs nor 4-20 mA, ± 20 mA, nor the 24 V external voltage,	None
	AS-BADU212	8-channel analog input thermal module	BMXART0814	8-channel TC/RTD, isolated, analog inputs	OK, X80 I/O does not have 2, 5 or 10 V inputs nor 4-20 mA, ± 20 mA, nor the 24 V external voltage.	None
	AS-BADU214	4/8-channel multi-range Analog/Discrete inputs	BMXART0414	4-channel TC/RTD, isolated, analog inputs	X80 I/O has no 0 - 10 V, 1 - 5 V, 2 - 10 V voltage ranges nor loop capability.	None
	AS-BADU216	4/8-channel, isolated, thermocouple	BMXART0814	8-channel TC/RTD, isolated, analog inputs	OK	None
	AS-BADU254	4-channel register input	BMXAMI0410H	4-channel, isolated, analog current/voltage input	OK and X80 I/O has CAN/CAN and CAN/bus isolation whereas Compact has none. Different extended temperatures.	None
	AS-BADU254	4-channel register input	BMXAMM0600H	4-channel analog current/voltage input and 2-channel current/voltage output	OK, X80 I/O has 4 inputs and 2 outputs. Different extended temperatures.	None
	AS-BADU254C	4-channel register input, extended temp. + coating	BMXAMI0410H	4-channel, isolated, analog current/voltage input	OK and X80 I/O has CAN/CAN and CAN/bus isolation whereas Compact has none. Different extended temperatures.	None
	AS-BADU254C	4-channel register input, extended temp. + coating	BMXAMM0600H	4-channel analog current/voltage input and 2-channel current/voltage output	OK, X80 I/O has 4 inputs and 2 outputs. No isolation. Different extended temperatures.	None
	AS-BADU256	4-channel, isolated, register input	BMXAMI0410H	4-channel, isolated, analog current/voltage input	OK, but different extended temperatures.	None
	AS-BADU256	4-channel, isolated, register input	BMXAMM0600H	4-channel analog current/voltage input and 2-channel current/voltage output	OK, X80 I/O has 4 inputs and 2 outputs. No isolation. Different extended temperatures.	None
	AS-BADU256C	4-channel, isolated, register input, extended temp. + coating	BMXAMI0410H	4-channel, isolated, analog current/voltage input	OK, but different extended temperatures.	990XSM00210
	AS-BADU256C	4-channel, isolated, register input, extended temp. + coating	BMXAMM0600H	4-channel analog current/voltage input and 2-channel current/voltage output	OK, X80 I/O has 4 inputs and 2 outputs without isolation.	990XSM00211
	AS-BADU257	8-channel thermocouple	BMXART0814H	8-channel TC/RTD, isolated, analog inputs	OK, but different extended temperatures.	None
	AS-BADU257C	8-channel thermocouple, extended temp. + coating	BMXART0814H	8-channel TC/RTD, isolated, analog inputs	OK, but different extended temperatures.	None

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Modicon X80 I/O platform
Modernization solutions
Modicon Compact PLCs to Modicon X80 I/O platform

Compact module - X80 I/O platform compatibility

Type of module	Compact module Reference	Compact module Description	X80 I/O platform Reference	X80 I/O platform Description	Compact module - X80 I/O platform compatibility	Quick wiring adapter reference
Analog output	AS-BDAU202	2-point analog outputs, ± 10 V, ± 20 mA	BMXAMO0210	2-channel, isolated, analog current/voltage output	X80 I/O has no negative 20 mA capability.	990XSM00212
	AS-BDAU204	4-channel, opto-isolated, analog output	BMXAMO0210	2-channel, isolated, analog current/voltage output	X80 I/O does not support 0 to 1 V, 0 to 5 V, ± 1 V ranges. +- 5 V.	None
	AS-BDAU204	4-channel, opto-isolated, analog output	BMXAMO0410	4-channel, isolated, analog current/voltage output	X80 I/O does not support 0 to 1 V, 0 to 5 V, ± 1 V ranges. +- 5 V.	990XSM00214
	AS-BDAU208	8-channel register output	–	–	No 8-point analog output. Two modules need to be used.	None
	AS-BDAU252	2-point analog outputs, ± 10 V, ± 20 mA. extended temp.	BMXAMO0210H	2-channel, isolated, analog current/voltage output	X80 I/O has no negative 20 mA capability. Different extended temperatures.	990XSM00212
	AS-BDAU252C	2-point analog outputs, ± 10 V, ± 20 mA, extended temp. + coating	BMXAMO0210H	2-channel, isolated, analog current/voltage output	X80 I/O has no negative 20 mA capability. Different extended temperatures.	990XSM00212
Communi-cation	AS-BBKF202	INTERBUS S slave	–	–	No replacement	None
	AS-BBKF201-16	16 word INTERBUS S Master	–	–	No replacement	None
	AS-BBKF201-64	64 word INTERBUS S Master	–	–	No replacement	None
	CM900	Auto interface	–	–	No replacement	None
Service communi-cation	AS-BKOS260-24	24 word universal communication	–	–	Please consult Schneider Electric for assistance in finding the optimum solution. READ_VAR functionality could be a replacement solution.	None
	AS-BKOS260-64	64 word universal communication	–	–	Please consult Schneider Electric for assistance in finding the optimum solution. READ_VAR functionality could be a replacement solution.	None
	M7251	Programmable limit switch	–	–	No replacement, no movement	None
	M7350	Resolver-decoder	–	–	No replacement, no movement	None
Motion	AS-BMOT201	Axis motion control encoder module	–	–	Please consult Schneider Electric for assistance in finding the optimum solution.	None
	AS-BMOT202	Axis motion control resolver encoder module	–	–	Please consult Schneider Electric for assistance in finding the optimum solution.	None
Counter	AS-BFRQ204	4-point frequency module	BMXEHC0200	2-channel high speed counter	No 5 V input. Please consult Schneider Electric for the exact replacement.	None
	AS-BFRQ254C	4-channel frequency module, extended temp. + coating	BMXEHC0200H	2-channel high speed counter	No 5 V input. Please consult Schneider Electric for the exact replacement.	None
	AS-BVIC200 VRC200	4 high speed pulse or 4 VRC inputs	–	–	Please consult Schneider Electric for assistance in finding the optimum solution.	None
	AS-BVIC205 CTR205	4 high speed pulse or 4 x 5 V TTL inputs	–	–	Please consult Schneider Electric for assistance in finding the optimum solution.	None
	AS-BVIC212 CTR212	4 high speed pulse or 12 VDC inputs	–	–	Please consult Schneider Electric for assistance in finding the optimum solution.	None
	AS-BVIC224 CTR224	4 high speed pulse or 24 VDC inputs	BMXEHC0800	8-channel high speed counter	Please consult Schneider Electric for assistance in finding the optimum solution.	None
	AS-BZAE201	High speed counter/positioner (2 relays)	BMXEHC0200	2-channel high speed counter	12 V counter OK, no relay outputs, no 5 V, no positioning.	None
	AS-BZAE204	4-channel high speed counter/positioner	BMXEHC0800	8-channel high speed counter	OK. No outputs.	None
CPU	AS-B984-A145 up to E984-285	–	BMXP342020 + BMXCPS3020	–	Only 1 Modbus port on CPU 2-port NOM serial module available.	None
	AS-P120000	105...240 VAC inputs, 24 VDC 1.0 A outputs	BMXCPS2000/ BMXCPS3500	–	–	None

Note:
■ *Extended temperature modules for the X80 I/O platform are distinguished by having the suffix H added to the reference.*
■ *The Modicon Compact range of PLCs had an extended temperature range of - 40 °C to + 70 °C. The extended temperature range of the X80 I/O platform is - 25 °C to + 70 °C. Derating the temperature may impose limits on some applications.*
■ *As with any PLC migration, even an exact module to module replacement might not provide identical results (due to scan time, etc.).*

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2

Presentation

The quick wiring adapters comprise a set of connectors design to simplify the replacement of legacy Rockwell SLC500 I/O by M340 or also M580 automation platforms integrating the Modicon X80 I/O.

The adapters enable the I/O field connectors of the Rockwell SLC500 in an existing installation to be mated to the equivalent I/O modules of the X80 I/O platform. Nine references of quick wiring adapters allow connecting Rockwell SLC500 wiring of the existing installation to the X80 I/O modules of the new PLC configuration.
They fully meet the mechanical and environmental specifications of the Modicon M340 or also M580 range.

Description of the solution

The quick wiring adapters have the same look and feel as the standard I/O module connectors of the X80 I/O platform. The new connectors increase the depth and extend below the I/O module.
■ The quick wiring adapters use the same mounting/retaining screws for attaching the adapter to the X80 I/O platform module.
■ A clear cover is sized to retain the wiring harness.
■ The cover also has enough room for attaching the wiring label that was used on the Rockwell SLC500 module.

Benefits of the solution

The customer's value propositions are the reduced risk and cost of migration from a Rockwell SLC500 I/O to the X80 I/O platform.
■ Minimal production downtime with setup time of about one hour per rack.
■ Cost savings through the retention of all wiring to sensors/actuators inside the existing cabinets (savings in wiring, testing and commissioning, update of wiring diagrams); Typically, no electrician or wiring contractor is necessary.
■ Unlike manual rewiring, ordinary production stops can be used for the changeover.
■ The minimal changes on installations allows you to restart them within the allotted time with the ability to rollback in case of unexpected issue.
■ Reliable solution designed by the manufacturer.
■ Simple solution that makes the migration easy and at lowest risk.

This migration solution is part of a larger modernization and migration offer that includes methods, specific migration devices and dedicated tools for various legacy PLCs from Schneider Electric and the competition as well.
Modernizations and migrations can be implemented with help from our Schneider Electric services experts.

A cross reference table between Rockwell SLC500 I/O modules and Quantum I/O modules is below. It shows all possible I/O modules equivalences. However, some differences in terminal strips, in modularity, in common or power connections may have to be addressed.

Therefore, it is recommended to check the conditions of compatibility with our Schneider Electric service representatives.

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2

Equivalence table: SLC500 I/O module - X80 I/O module

Type of module	SLC500 I/O Modules		X80 I/O platform		Quick Wiring Adapters	
	Reference	Description	Reference	Description	X80 Compatibility	Quick wiring adapter reference
AC Discrete Input Modules	1746-IA4	4 Channels 120 VAC discrete input module,	BMXDAI1604	120 VAC discrete input module, 16 Channels/1 group	OK, good module compatibility, but M340 is faster than the SLC500, ensure this is OK for application. .	None. Must be rewired.
	1746-IA8	8 Channels 120 VAC Discrete Input Module,	BMXDAI1604	120 VAC discrete input module, 16 Channels/1 group	OK, good module compatibility, but M340 is faster than the SLC500, ensure this is OK for application.	None. Must be rewired.
	1746-IA16	120 VAC discrete input module,16 Channels/1 group	BMXDAI1604	120 VAC discrete input module, 16 Channels/1 group	OK, good module compatibility, but M340 is faster than the SLC500, ensure this is OK for application. NOTE: If using QWA, if any field-wiring is present on the terminal block lower right pin, move it to the lower left pin, and then wire the input power to lower right pin.	990SLC00102
	1746-IM4	4 Channels 220/240 VAC Discrete Input Module,	BMXDAI0805	200…240 VAC 8-channels/1 group discrete input module	OK, good cross-reference. Check turn on/off voltage/current thresholds and signal delays	None. Must be rewired.
	1746-IM8	8 Channels 220/240 VAC Discrete Input Module	BMXDAI0805	200…240 VAC 8-channels/1 group discrete input module	OK, good cross-reference. Check turn on/off voltage/current thresholds and signal delays.	None. Must be rewired.
	1746-IM16	220/240 VAC Discrete Input 16 Channels/1 group	2x BMXDAI0805	200…240 VAC 8-channels/1 group discrete input module	As of JAN-2013, M340 does not have a 16-channel 220 VAC input module. Therefore, can manually wire to 2x DAI0805 (8-channel). Note: QWA does not exist for this.	None. Must be rewired.
	1746-IN16	Discrete input 24 VAC/VDC sinking, 16 Channels/1 group.	BMXDAI1602	Discrete input 24 VAC/VDC, 16 Channels/1 group sinking or sourcing.	OK, good module compatibility, but the Turn on and turn off thresholds should be evaluated versus application requirements for acceptability. NOTE: If any field-wiring is present on the lower right pin, move it to the lower left pin, and then wire input power to lower right pin.	990SLC00102

If there are questions on the applications, please review each of the technical documents.
Extended temperature modules for M340 have an H or T suffix at the end of the part number. The hardened modules have H suffix (conformal coating). The SLC500 line had a temperature range of 0 Degree C to +60 Degree C. The M340 line has temperature range 0 Degree C to +60 Degree C and an extended temperature of -25 Degree C to +70 Degree C (H or T suffix part number modules only). Derating of temperature might apply in certain applications (consult individual module user documentation for specifics).
As with any PLC migration even an exact module to module replacement might not yield the same results (due to scan time, etc.).

Refer to the following M340 manuals for specific module installation and protection requirements (fuses, snubbers, etc.):
Discrete I/O: 35012474
Analog I/O: 35011978

Green: Generally, a good module cross-reference SLC500 to M340, with minimal differences noted.
Orange: An acceptable module cross-reference with differences noted to be verified against application requirements for compatibility.
Red: Generally, not a good cross-reference, however there may be a possibility of compatibility if application verified. Consult factory for possible workarounds.

2

Equivalence table: SLC500 I/O module - X80 I/O module

Type of module	SLC500 I/O Modules		X80 I/O platform		Quick Wiring Adapters	
	Reference	Description	Reference	Description	X80 Compatibility	Quick wiring adapter reference
DC Discrete Input Modules	1746-IG16	16 Channels 5 VDC TTL Discrete Input Module,	–	–	As of JAN-2013 M340 does not have a 5 VDC TTL module.	None. Must be rewired.
	1746-IB8	8 Channels 24 VDC Discrete Input Module,	BMXDDI1602	Discrete 24 VDC input, 16 Channels/1 group	OK, good module compatibility.	None. Must be rewired.
	1746-IB16	16 Channels 24 VDC Discrete Input Module.	BMXDDI1602	Discrete 24 VDC input, 16 Channels/1 group	OK, good module compatibility. NOTE: If using QWA, if any field-wiring is present on the lower right pin, move it to the lower left pin, and then wire input power to lower right pin.	990SLC00102
	1746-IV8	8 Channel 24 VDC Discrete Input Module,	BMXDAI1602	Discrete input 24 VDC sourcing (True Low/Negative Logic/Sourcing), 16 Channels/1group.	Off-state voltage threshold difference.	None. Must be rewired.
	1746-IV16	Discrete input 24 VDC sourcing (True Low), 16 Channels/1group.	BMX AI1602	Discrete input 24 VDC sourcing (True Low/Negative Logic/Sourcing), 16Channels/1 group.	Off-state voltage threshold difference. NOTE: If any field-wiring is present on the lower right pin, move it to the lower left pin, and then wire dc return (common) to lower right pin.	990SLC00102
	1746-ITV16	Discrete input 24 VDC FAST sourcing (True Low), 16 Channels/1group.	BMXDAI1602	Discrete input 24 VDC sourcing (True Low), 16Channels/1group.	As of JAN-2013, M340 does not have equivalent 24 VDC Sourcing Fast input module. SLC500 has higher Off-state current. Can use QWA: 990SLC00102 if module is deemed acceptable for application. NOTE: If using QWA, if any field-wiring is present on the lower right pin, move it to the lower left pin, and then wire dc return (common) to lower right pin.	990SLC00102
	1746-ITB16	Fast 24 VDC discrete input, 16 Channels/1 group	BMXDDI1602	Discrete 24 VDC input, 16Channels/1 group	As of JAN-2013, M340 not equivalent 24 VDC Fast input module. SLC500 has higher Off-state current. Can use QWA: 990SLC00102 if module is acceptable for application. NOTE: If using QWA, if any field-wiring is present on the lower right pin, move it to the lower left pin, and then wire input power to lower right pin.	990SLC00102
	1746-IB32	32 Channels/4 groups 24 VDC Discrete Input Module,	BMXDDI3202K	32 channel/2 groups 24 VDC discrete input module	Generally, a good cross-reference. Must combine 4 groups into 2 groups. Ensure slower M340 max speed-of-response is acceptable for application.	None. Must be rewired.
	1746-IV32	32 Channels 24 VDC Discrete Input Module,	–	–	As of JAN-2013, M340 does not have an equivalent 32 channel negative logic module.	None. Must be rewired.
	1746-IC16	Discrete 48 VDC input, 16 Channel/1 group	BMXDDI1603	Discrete 48 VDC input, 16 Channel/1 group	Type 1 inputs (<0.5mA Off-state current) - verify acceptable for application. NOTE: If any field-wiring is present on the lower right pin, move it to the lower left pin, and then wire input power to lower right pin.	990SLC00102
	1746-IH16	Discrete input 125 VDC, 16Channels/1group.	BMXDDI1604T	Discrete input 125 VDC, 16Channel/1group.	OK, good module compatibility. Review module «Maximum points ON versus Temperature» for any de-rate effects for application in M340 manual 35012474. Ensure M340 lower OFF-state current is acceptable for application. NOTE: If any field-wiring is present on the lower right pin, move it to the lower left pin, and then wire input power to lower right pin.	990SLC00102
	1746-OA8	8 Channel 120/240 VAC Discrete Output Module,	BMXDAO1605	16Channels/4 groups 100...240 VAC	M340 module has lower maximum current rating. Please check against the application requirements.	None. Must be rewired.
	1746-OA16	16Channels/2 groups 120/240 VAC	BMXDAO1605	16Channels/4 groups 100...240 VAC	OK, good module compatibility.	990SLC00109
	1746-OAP12	12 Channels 120/240 VAC High Current Discrete Output Module,	BMXDAO1605 BMXDRA1605	16 Channels/4 groups 100...240 VAC	As of JAN-2013, M340 does not have an equivalent high output triac module. Choices are BMXDAO1605 (lower output current) or relay module BMXDRA1605. Note that the M340 modules do not have internal group protection fuses and external fusing methods must be done in accordance with the appropriate M340 module user documentation.	None. Must be rewired.

Green: Generally, a good module cross-reference SLC500 to M340, with minimal differences noted.

Orange: An acceptable module cross-reference with differences noted to be verified against application requirements for compatibility.

Red: Generally, not a good cross-reference, however there may be a possibility of compatibility if application verified. Consult factory for possible workarounds.

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Equivalence table: SLC500 I/O module - X80 I/O module

Type of module	SLC500 I/O Modules		X80 I/O platform		Quick Wiring Adapters	Quick wiring adapter reference
	Reference	Description	Reference	Description	X80 Compatibility	
DC Discrete & Relay Output Modules	1746-OB8	8 Channels 24 VDC Discrete Output Module,	BMX DDO 1602	24 VDC Discrete Output, 16Channels/1 group	M340 lower operating voltage range and lower output current capability. Verify module is acceptable for application.	None. Must be rewired
	1746-OB6EI	6 Channels 24 VDC Discrete Output Module, individually isolated electronically fused	BMXDRA0805	8-channels individual relay 24 VDC (24…240 VAC)	As of JAN-2013, there is not an individually point-isolated 24 VDC discrete output module. Check to see if relay module BMXDRA0805 can work in application. M340 needs external fusing added (see user documentation). Significantly slower speed-of-response.	None. Must be rewired
	1746-OV8	8 Channels 24 VDC Discrete Output Module, Operating Voltage 10…50 VDC sink,	BMXDDO1612	Discrete Output, 16Chanels/1 group Operating voltage range: 19…30 VDC Negative logic	M340 module less voltage operation range. M340 higher on/off signal delays. Verify acceptable for application. M340 max current 0.5A.	None. Must be rewired
	1746-OB16	Discrete Output, 6 Channels/1 group 10…50 VDC	BMXDDO1602	Discrete Output, 16Channels/1 group Operating voltage range: 19…30 VDC	M340 module less voltage operation range. M340 higher on/off signal delays. Verify acceptable for application.	990SLC00104
	1746-OB16E	Discrete Output, 16 Channels/1 group 10…30 VDC.	BMXDDO1602	Discrete Output, 16 Channel/1 group 19…30 VDC	SLC500 module lower voltage operation range. M340 higher on/off signal delays. Verify acceptable for application.	990SLC00104
	1746-OV16	Discrete output, Sinking (neg. logic), 16Channels/1 group Operating voltage: 10…50 VDC	BMXDDO1612	Discrete Output, Sinking (neg. logic) 16 Channels/1 group Operating voltage range: 19…30 VDC	SLC500 module lower voltage operation range. M340 higher on/off signal delays. Verify acceptable for application.	990SLC00104
	1746-OBP8	8 Channels 24 VDC High Current discrete output Module,	BMXDDO1602	Discrete Output, 16CH/1 group Operating voltage range: 19…30 VDC	SLC500 module lower voltage operation range. M340 higher on/off signal delays. SLC500 has higher point max current up to 30°C. Verify acceptable for application.	None. Must be rewired.
	1746-OBP16	Discrete Output, 16Channels/1 group 10…30 VDC	BMXDDO1602	Discrete Output, 16 Channels/1 group Operating voltage range: 19…30 VDC	M340 higher on/off signal delays. SLC500 has higher point max current up to 30°C. Verify acceptable for application.	990SLC00104
	1746-OVP16	Discrete output, 16 Channels/1 group Operating voltage: 20.4…25.4 VDC	BMXDDO1612	Discrete Output, Sinking (neg. logic) 16 Channels/1 group Operating voltage range: 19…30 VDC	M340 higher on/off signal delays. M340 lower max current rating. Verify acceptable for application.	None. Must be rewired.
	1746-OG16	16 Channels 5 VDC Sinking Discrete Output Module, Operating Voltage 5 VDC sink,	–	–	As of JAN-2013, M340 does not have an equivalent 5 VDC sinking discrete module.	None. Must be rewired.
	1746-OB32 (D and E)	32 Channels/2 groups 24 VDC Discrete Output Module,	BMXDDO3202K	32-channel/2groups 24 VDC discrete output module	M340 has significantly lower output current. Verify against application requirements.	None. Must be rewired.
	1746-OV32	32 Channels 24 VDC Sinking Discrete Output Module, Operating Voltage 5…50 VDC sink,	2x BMXDDO1612	Discrete Output, 16CH/1 group Operating voltage range: 19…30 VDC	As of JAN-2013, M340 does not have an equivalent 32 channel negative logic module. Possible workaround 2x BMXDDO1612	None. Must be rewired.
	1746-OX8	8 Channels, individually isolated high-current relay contact outputs. Operating Voltage 5…125 VDC,	BMXDRA0805 BMXDRA0804T	DRA0805: 8-channel individual relay 24 VDC (24…240 VAC) (consult user guide for higher currents versus reduced switching cycle curves) DRA0804T: 8-channel individual relay 125 VDC @ 0.3A max	Verify the M340 relay module has the required application load requirements (consult the module user documentation). If high voltage DC is required can substitute the BMXDRA0804T at reduced current levels. Compare against application needs.	990SLC00110
	1746-OW4	4 Channels, relay contact outputs. Operating Voltage 5…125 VDC, 5…265 VAC.	BMXDRA1605	Relay outputs, 16 Channels/2 groups. 24 VAC…240 VAC, 24 VDC (5...125 VDC)	OK, good module compatibility. M340 module BMXDRA1605 is capable of 12A/group.	None. Must be rewired.
	1746-OW8	8 Channel, relay contact outputs. Operating Voltage 5…125 VDC, 5…265 VAC. 2 groups of 4 outputs.	BMXDRA1605	Relay outputs, 16 Ch/2 groups. 24 VAC…240 VAC, 24 VDC (5...125 VDC)	OK, good module compatibility. M340 module BMXDRA1605 is capable of 12A/group.(1)	None. Must be rewired.
	1746-OW16	Relay outputs, 16 Channels/2 groups. 120/220 VAC, 125 VDC, 24 VDC,	BMXDRA1605	Relay outputs, 16 Channels/2 groups. 24 VAC…240 VAC, 24 VDC (5...125 VDC)	OK, good module compatibility. M340 module BMXDRA1605 is capable of 12A/group. The QWA is limited to 8A/group maximum, which is consistent w/SLC500 1746-OW16. If need to exceed 8A/group, do not use the QWA, and hand wire the BMXDRA1605. (1)	None. Must be rewired.
	1746-OW16	Relay outputs, 16 Channels/2 groups. 120/220 VAC, 125 VDC, 24 VDC,	BMXDRA1605	Relay outputs, 16 Channels/2 groups. 24 VAC…240 VAC, 24 VDC (5...125 VDC)	OK, good module compatibility. M340 module BMXDRA1605 is capable of 12A/group. The QWA is limited to 8A/group maximum, which is consistent w/SLC500 1746-OW16. If need to exceed 8A/group, do not use the QWA, and hand wire the BMXDRA1605. (1)	990SLC00101

(1) DC voltages above 30 VDC must reduce currents, or mechanical cycle life reduced (see M340 module manual)

Green: Generally, a good module cross-reference SLC500 to M340, with minimal differences noted.

Orange: An acceptable module cross-reference with differences noted to be verified against application requirements for compatibility.

Red: Generally, not a good cross-reference, however there may be a possibility of compatibility if application verified. Consult factory for possible workarounds.

2

Equivalence table: SLC500 I/O module - X80 I/O module

Type of module	SLC500 I/O Modules		X80 I/O platform		Quick Wiring Adapters	
	Reference	Description	Reference	Description	X80 Compatibility	Quick wiring adapter reference
Discrete Mixed I/O Modules	1746-IO4	Combination 120 VAC inputs (2) and relay contact outputs (2). Input Operating Voltage 85…132 VAC, Outputs operating Voltage 5…125 VDC, 5…265 VAC. Current per Output (Max.): 1.5 A at 120 VAC, 1.2 A at 24 VDC	–	–	As of JAN-2013, M340 does not have mixed AC input modules with relays. Workaround to utilize individual modules: 120 VAC input DAI1604 and relay module DRA0804T, DRA0805, or DRA1605 (choice depending on best fit to application requirements).	None. Must be rewired.
	1746-IO8	Combination 120 VAC inputs (4) and relay contact outputs (4). Input Operating Voltage 85…132 VAC, Outputs operating Voltage 5…125 VDC, 5…265 VAC. Current per Output (Max.): 1.5 A at 120 VAC, 1.2 A at 24 VDC	–	–	As of JAN-2013, M340 does not have mixed AC input modules with relays. Workaround to utilize individual modules: 120 VAC input DAI1604 and relay module DRA0804T, DRA0805, or DRA1605 (choice depending on best fit to application requirements).	None. Must be rewired.
	1746-IO12	Combination 120 VAC inputs (6) and relay contact outputs (6). Input Operating Voltage 85…132 VAC, Outputs operating Voltage 5…125 VDC, 5…265 VAC. Current per Output (Max.): 1.5 A at 120 VAC, 1.2 A at 24 VDC	–	–	As of JAN-2013, M340 does not have mixed AC input modules with relays. Workaround to utilize individual modules: 120 VAC input DAI1604 and relay module DRA0804T, DRA0805, or DRA1605 (choice depending on best fit to application requirements).	None. Must be rewired.
	11746-IO12DC	Combination 24 VDC inputs (6) and relay contact outputs (6). Input Operating Voltage 10…30 VDC, Outputs operating Voltage 5…125 VDC, 5…265 VAC. Current per Output (Max.): 1.5 A at 120 VAC, 1.2 A at 24 VDC	BMXDDM16025	Combination module: 8-channels 24 VDC discrete inputs/1group 8-channels relays/1 group Max switching load: 264 VAC/125 VDC 1.5A (see user guide for current versus cycle time)	OK	990SLC00103

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Orange: An acceptable module cross-reference with differences noted to be verified against application requirements for compatibility.

Red: Generally, not a good cross-reference, however there may be a possibility of compatibility if application verified. Consult factory for possible workarounds.

Schneider Electric

Modicon X80 I/O platform
Migration solutions
Rockwell SLC500 I/O to Modicon X80 I/O platform

2

Equivalence table: SLC500 I/O module - X80 I/O module

Type of module	SLC500 I/O Modules		X80 I/O platform		Quick Wiring Adapters	Quick wiring adapter reference
	Reference	Description	Reference	Description	X80 Compatibility	
Analog Input Modules	1746-NI4 (V)	4 Channels analog input module Per point selectable voltage/current -10 VDC…10 VDC; 0…10 VDC; 0…5 VDC; 1…5 VDC; -20…20mA; 0…20mA; 4…20mA	BMXAMI0410	4 Channels isolated analog input module -10 VDC…10 VDC; 0…10 VDC; 0…5 VDC; 1…5 VDC; -20…20mA; 0…20mA; 4…20mA	QWA is pre-wired for voltage mode. If need individual channel(s) current mode, install 250-ohm resistor at channel. If need current-mode for all four Channels use QWA: 990SLC00106. To run Channels single-ended the Rockwell channel-common shorting convention (ANL COM) is maintained.	990SLC00105
	1746-NI4 (C)	4 Channels analog input module Per point selectable voltage/current -10 VDC…10 VDC; 0…10 VDC; 0…5 VDC; 1…5 VDC; -20…20mA; 0…20mA; 4…20mA	BMXAMI0410	4 Channels isolated analog input module -10 VDC…10 VDC; 0…10 VDC; 0…5 VDC; 1…5 VDC; -20…20mA; 0…20mA; 4…20mA	QWA is pre-wired for current mode all Channels. If need mixed voltage/current mode at Channels (Rockwell was selectable), use the voltage-mode QWA: 990SLC00105 and install 250-ohm resistors at desired current-mode Channels. To run Channels single-ended the Rockwell channel-common shorting convention (ANL COM) is maintained.	990SLC00106
	1746-NI8	8 Channels analog input module Per point selectable voltage/current -10 VDC…10 VDC; 0…10 VDC; 0…5 VDC; 1…5 VDC; -20…20mA; 0…20mA; 4…20mA	BMXAMI0800	8 channel analog input module with no channel to channel isolation, +/-5V, +/-10V, 0…5V, 0…10V, 1…5V +/-20mA,0…20mA, 4…20mA	Must configure analog inputs as current or voltage mode to match the replacement module's function. Verify error budget and module resolutions are acceptable for the application.	None. Must be rewired.
	1746-NI16I	16 Channels analog current input module Per point selectable current (±20 mA, 4…20 mA, 0…1 mA, or 0…20 mA)	2x BMXAMI0800	8 channel analog input module with no channel to channel isolation, +/-5V, +/-10V, 0…5V, 0…10V, 1…5V +/-20mA,0…20mA, 4…20mA	As of JAN-2013 M340 does not have a 16-Channel analog in put module. Can utilize 2x BMXAMI0800 wired for current-mode. Verify error budget and module resolutions are acceptable for the application.	None. Must be rewired.
	1746-NI16V	16 CH analog voltage input module Per point selectable voltage (±10 VDC, 1…5 VDC, 0…5 VDC, or 0…10 VDC)	2x BMXAMI0800	8 channel analog input module with no channel to channel isolation, +/-5V, +/-10V, 0…5V, 0…10V, 1…5V +/-20mA,0…20mA, 4…20mA	As of JAN-2013 M340 does not have a 16-Channel analog in put module. Can utilize 2x BMXAMI0800 wired for voltage-mode. Verify error budget and module resolutions are acceptable for the application.	None. Must be rewired.
Analog Output Modules	1746-NO4I	4 Channels analog output module Current-mode 0…20mA,	BMXAMO0410	4 Channels analog output module -10…10V; 0…20mA, 4…20mA	Must configure analog outputs as current or voltage mode to match the replacement module's function. Verify error budget and module resolutions are acceptable for the application. Note that the QWA has a dummy connection point for the external power supply 2-wire terminal but has no function as M340 does not have external supply option.	990SLC00107
	1746-NO4V	4 Channels analog output module Voltage-mode ±10 VDC	BMXAMO0410	4 Channels analog output module -10…10V; 0…20mA, 4…20mA	Must configure analog outputs as current or voltage mode to match the replacement module's function. Verify error budget and module resolutions are acceptable for the application. Note that the QWA has a dummy connection point for the external power supply 2-wire terminal but has no function as M340 does not have external supply option.	990SLC00107
	1746-NO8I	8 Channels analog output module Current-mode	2x BMXAMO0410	4 Channels analog output module -10…10V; 0…20mA, 4…20mA	Must configure analog outputs as current or voltage mode to match the replacement module's function. Verify error budget and module resolutions are acceptable for the application.	None. Must be rewired.
	1746-NO8V	8 Channels analog output module Current-mode ±10 VDC	2x BMXAMO0410	4 Channels analog output module -10…10V; 0…20mA, 4…20mA	Must configure analog outputs as current or voltage mode to match the replacement module's function. Verify error budget and module resolutions are acceptable for the application.	None. Must be rewired.
Analog Mixed I/O Modules	1746-NIO4I	2 Channels differential voltage/current (selectable) inputs 2 Channels current outputs (non-isolated) 0…20mA; 4…20mA	BMXAMM0600	4 Channels non-isolated analog inputs -10…10V;0…10V;0…5V; 1.5V; 0…20mA; 4…20mA 2 non-isolated analog outputs -10…10V; 0…20mA; 4…20mA	M340 lower resolution 12-bit versus 14-bit. Verify error budget and module resolutions are acceptable for the application	990SLC00108 Note: For current-mode install jumpers: pins 0 to 6, and 3 to 9.
	1746-NIO4V	2 Channels differential voltage/current (selectable) inputs, 2 Channels voltage outputs (non-isolated)	BMXAMM0600	4 Channels non-isolated analog inputs -10…10V;0…10V;0…5V; 1.5V; 0…20mA; 4…20mA 2 non-isolated analog outputs -10…10V; 0…20mA; 4…20mA	Analog output does not have 0…10V (has +/-10V). M340 lower resolution 12-bit versus 14-bit. Verify error budget and module resolutions are acceptable for the application.	990SLC00108 Note: For current-mode install jumpers: pins 0 to 6, and 3 to 9.
	1746-FIO4I	2 Channels Fast differential voltage/current (selectable) inputs (differential, 0…10 VDC, 0…20 mA) 2 Channels current outputs (non-isolated) 2 outputs (0…20 mA)	BMXAMM0600	4 Channels non-isolated analog inputs -10…10V(14-bit);0… 10V;0…5V ;1…5V; 0…20mA; 4…20mA 2 non-isolated analog outputs -10…10V; 0…20mA; 4…20mA	Speed-of-response for M340 module slower. On AMM0600 can reduce the ON Channels from 4 to 2 for a faster input response of analog inputs (3ms). Check application requirements to see if AMM0600 is acceptable. M340 lower resolution 12-bit versus 14-bit.	990SLC00108 Note: For current-mode install jumpers: pins 0 to 6, and 3 to 9.
	1746-FIO4V	2 Channels Fast differential voltage/current (selectable) inputs (differential, 0…10 VDC, 0…20 mA), 2 Channels voltage outputs (non-isolated) (±10 VDC)	BMXAMM0600	4 Channels non-isolated analog inputs -10…10V;0…10V;0…5V;1…5V; 0…20mA; 4…20mA 2 non-isolated analog outputs -10…10V; 0…20mA; 4…20mA	Speed-of-response for M340 module slower. On AMM0600 can reduce the ON Channels from 4 to 2 for a faster input response of analog inputs (3ms). Check application requirements to see if AMM0600 is acceptable. M340 lower resolution 12-bit versus 14-bit.	990SLC00108 Note: For current-mode install jumpers: pins 0 to 6, and 3 to 9.

Modicon X80 I/O platform
Migration solutions
Rockwell SLC500 I/O to Modicon X80 I/O platform

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Equivalence table: SLC500 I/O module - X80 I/O module

Type of module	SLC500 I/O Modules		X80 I/O platform		Quick Wiring Adapters	
	Reference	Description	Reference	Description	X80 Compatibility	Quick wiring adapter reference
Analog RTD & Thermocouple Modules	1746-NR4	4 RTD/Resistance inputs 100 ohms, 200 ohms, 500 ohms Platinum 120 ohms Nickel 604 ohms Nickel/Iron 10 ohms Copper 150 ohms, 500 ohms, 1000 ohms, 3000 ohms direct resistance	BMXART0414	RTD, thermocouple, and voltage input, isolated 4 Channels RTD IEC Pt100/Pt1000, US/JIS Pt100/pt1000, Cu10, Ni100/Ni1000, in2,3, or 4-wires. Input ranges: +/-40 mV, +/-80 mV, +/-160 mV, +/-320 mV, +/-640 mV, 1.28V CJC: internal compensation use Telefast ABE-7CPA412, external: channel 0 2/3 wire Pt100 Thermocouple: B, E, J, K, L, N, R, S, T, U See the M340 module user documentation for further specifications.	Consult M340 use documentation and verify the M340 module specifications against the application requirements for compatibility.	None. Must be rewired.
	1746-NR8	8 RTD/Resistance inputs 100 ohms, 200 ohms, 500 ohms Platinum 120 ohms Nickel 604 ohms Nickel/Iron 10 ohms Copper 150 ohms, 500 ohms, 1000 ohms, 3000 ohms direct resistance	BMXART0814	RTD, thermocouple, and voltage input, isolated 8 Channels RTD IEC Pt100/Pt1000, US/JIS Pt100/pt1000, Cu10, Ni100/Ni1000, in2,3, or 4-wires. CJC: internal compensation use Telefast ABE-7CPA412, external: channel 0 2/3 wire Pt100 Thermocouple: B, E, J, K, L, N, R, S, T, U See the M340 module user documentation for further specifications.	Consult M340 use documentation and verify the M340 module specifications against the application requirements for compatibility.	None. Must be rewired.
	1746-NT4	4 Thermocouple/ mV inputs B, E, J, K, N, R, S, T Thermocouple and ±50 mV or ±100 mV	BMXART0414	RTD, thermocouple, and voltage input, isolated 4 Channels RTD IEC Pt100/Pt1000, US/JIS Pt100/pt1000, Cu10, Ni100/Ni1000, in2,3, or 4-wires. Input ranges: +/-40 mV, +/-80 mV, +/-160 mV, +/-320 mV, +/-640 mV,1.28V CJC: internal compensation use Telefast ABE-7CPA412, external: channel 0 2/3 wire Pt100 Thermocouple: B, E, J, K, L, N, R, S, T, U See the M340 module user documentation for further specifications.	Consult M340 use documentation and verify the M340 module specifications against the application requirements for compatibility.	None. Must be rewired.
	1746-NT8	8 Thermocouple inputs B, E, J, K, N, R, S, T Thermocouple and ±50 mV or ±100 mV	BMXART0814	RTD, thermocouple, and voltage input, isolated 8 Channels RTD IEC Pt100/Pt1000, US/JIS Pt100/pt1000, Cu10, Ni100/Ni1000, in2,3, or 4-wires. Input ranges: +/-40 mV, +/-+/-80 mV, +/-160 mV, +/-320 mV, +/-640 mV,1.28V CJC: internal compensation use Telefast ABE-7CPA412, external: channel 0 2/3 wire Pt100 Thermocouple: B, E, J, K, L, N, R, S, T, U See the M340 module user documentation for further specifications.	Consult M340 use documentation and verify the M340 module specifications against the application requirements for compatibility.	None. Must be rewired.
	1746-INT4	4 Isolated Thermocouple/ mV inputs B, C, D, E, J, K, N, R, S, T Thermocouple and ±50 mV or ±100 mV	BMXART0414	RTD, thermocouple, and voltage input, isolated 4 Channels RTD IEC Pt100/Pt1000, US/JIS Pt100/pt1000, Cu10, Ni100/Ni1000, in2,3, or 4-wires. CJC: internal compensation use Telefast ABE-7CPA412, external: channel 0 2/3 wire Pt100 Thermocouple: B, E, J, K, L, N, R, S, T, U See the M340 module user documentation for further specifications.	Consult M340 use documentation and verify the M340 module specifications against the application requirements for compatibility.	None. Must be rewired.

Green: Generally, a good module cross-reference SLC500 to M340, with minimal differences noted.

Orange: An acceptable module cross-reference with differences noted to be verified against application requirements for compatibility.

Red: Generally, not a good cross-reference, however there may be a possibility of compatibility if application verified. Consult factory for possible workarounds.

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Modicon X80 I/O platform
Migration solutions
Rockwell SLC500 I/O to Modicon X80 I/O platform

Equivalence table: SLC500 I/O module - X80 I/O module					
Type of module	**SLC500 I/O Modules**		**X80 I/O platform**		**Quick Wiring Adapters**
	Reference	**Description**	**Reference**	**Description**	**X80 Compatibility**	**Quick wiring adapter reference**
Special	1746-BTM	Barrel Temperature Control Module	None	–	No Direct Replacement. Contact for a possible workaround.	None. Must be rewired.
	1746-HSCE	High-Speed Counter Module	None	–	No Direct Replacement. Contact for a possible workaround.	None. Must be rewired.
	1746-HSCE2	High-Speed Counter Module	None	–	No Direct Replacement. Contact for a possible workaround.	None. Must be rewired.
	1746-HSTP1	SLC Stepper Controller Module	None	–	No Direct Replacement. Contact for a possible workaround.	None. Must be rewired.
	1746-QS	Synchronized Axis Control Module	None	–	No Direct Replacement. Contact for a possible workaround.	None. Must be rewired.
	1746-QV	Open-Loop Velocity Control Module	None	–	No Direct Replacement. Contact for a possible workaround.	None. Must be rewired.
Networking	1746-BAS	SLC BASIC Module,	None	–	No Direct Replacement. Contact for a possible workaround.	None. Must be rewired.
	1746-BAS-T	SLC BASIC-T Module	None	–	No Direct Replacement. Contact for a possible workaround.	None. Must be rewired.
	1747-KE	DH-485/DF1 Interface Module	None	–	No Direct Replacement. Contact for a possible workaround.	None. Must be rewired.
	1747-KFC15	ControlNet RS-232	None	–	No Direct Replacement. Contact for a possible workaround.	None. Must be rewired.
	1747-DCM	Direct Communication Module	None	–	No Direct Replacement. Contact for a possible workaround.	None. Must be rewired.
	1747-SCNR	ControlNet Scanner Module	None	–	No Direct Replacement. Contact for a possible workaround.	None. Must be rewired.
	1747-SDN	Device Net Scanner Module	None	–	No Direct Replacement. Contact for a possible workaround.	None. Must be rewired.
	1747-SN	Remote I/O Scanner Module	None	–	No Direct Replacement. Contact for a possible workaround.	None. Must be rewired.
	1747-BSN	Backup Scanner Module	None	–	No Direct Replacement. Contact for a possible workaround.	None. Must be rewired.
	1203-SM1	SCAN port Communication Module	None	–	No Direct Replacement. Contact for a possible workaround.	None. Must be rewired.

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Red: Generally, not a good cross-reference, however there may be a possibility of compatibility if application verified. Consult factory for possible workarounds.

2

Presentation

The Rockwell PLC5 to Modicon X80 migration solution consists of various I/O Adapters and dedicated chassis. It is used to simplify the replacement of Rockwell PLC5 PLCs, with Modicon M580/M340 PLCs and X80 I/O; existing Rockwell PLC5 field wiring will be retained.

Wiring adapters:
Dedicated wiring adapters are designed to mate specific Rockwell PLC5 1771 I/O modules to specific X80 I/O modules. Fully pre-wired cables are included to make installation quick and easy.
Mechanical assemblies for backplanes and chassis:
A chassis will accept both M580 or M340 backplanes (purchased separately) and new X80 I/O. A chassis can receive one or two X80 backplane. Different sizes are available depending on the size of the existing Rockwell PLC5 backplane.

The offer provides two chassis and 16 wiring adapters that cover most migration needs between Rockwell PLC5 1771 I/O modules and X80 I/O modules. All cables are available in either 2-Foot (50cm) or 5-Foot lengths.

Description of the solution

A Chassis allows the replacement of an Rockwell PLC5 1771 I/O to Modicon X80 I/O platform (M340 or M580) in the same physical location and with the same footprint as the current system:

■　The Rockwell PLC5 I/O Rack is removed and replaced by a metal chassis that contains one or two X80 backplane(s) and selected I/O wiring adapters.
■　The backplane(s), purchased separately, is(are) mounted on the chassis door, and accommodates the new PLC and X80 I/O modules.
■　The appropriate wiring adapters will be installed in the lower section of the chassis. These quick wiring adapters allow connecting the Rockwell PLC5 wiring of the existing installation to the X80 I/O module of the new PLC configuration, thus eliminating the need for onsite re-wiring. The original Rockwell PLC5 connectors are retained. The chassis door can be opened to allow access to the wiring adapters during commissioning and maintenance.
Note: the new system Migration Chassis + I/O modules and CPU is deeper than the original Rockwell PLC5:
■　depth with BMEP58●●●● processor 296 mm/*11.66 in.*
■　depth with 990ADPC5X80●●● I/O Adapter 291 mm/*11.45 in.* (including X80 terminal block)
■　width 483 mm/*19.01 in.* with a 12-position chassis and 610 mm/*24.01 in*. with a 16-position chassis
■　height 315.3 mm/*12.41 in.*

2-Foot (50cm) cables are the most commonly used length, but 5-Foot are also available for specific needs; for example, to merge two Rockwell PLC5 I/O racks into one X80 rack. Cables and connectors are included with the I/O Adapters. Replacement cables are also available as spare parts.

Benefits of the solution

The customer's value propositions are reduced risk and cost of migration from a Rockwell PLC5:
■　Minimal production downtime with setup time of about one hour per rack
■　Cost savings through the retention of all wiring to sensors/actuators inside the existing cabinets (savings in wiring, testing and commissioning, update of wiring diagrams). Typically, no electrician or wiring contractor is necessary
■　Unlike manual rewiring, ordinary production stops can be used for the changeover
■　The minimal changes on installations allows you to restart them within the allotted time with the ability to rollback in case of an unexpected issue
■　Reliable solution designed by the manufacturer
■　Simple solution that makes the modernization easy and at the lowest risk

This migration solution is part of a larger modernization and migration offer that includes methods, specific migration devices and dedicated tools for various legacy PLCs from Schneider Electric and the competition as well.
Modernizations and migrations can be implemented with help from our Schneider Electric services experts.

A cross reference table between Rockwell PLC5 1771 I/O modules and X80 I/O modules is below. It shows all possible I/O modules equivalences. However, some differences in terminal strips, in modularity, in common or power connections may have to be addressed. Therefore, it is recommended to verify compatibility with our Schneider Electric service representatives.

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Cross reference table: Rockwell PLC5 1771 I/O module - X80 I/O module

Type of device	1771 I/O Reference	Description	X80 I/O platform Reference	Evolution I/O Adaptor - PLC I/O Chassis Description	Reference
Racks	1771-AxB	I/O chassis 1, 2, 4, and 8 module slots	140XBP01200	PLC EVOL. CHASSIS W/O XBP 12 SLOT	990CHPC5X80120
	1771-AxB	I/O chassis 12, and 16 module slots	140XBP01600	PLC EVOL. CHASSIS W/O XBP 16 SLOT	990CHPC5X80160
Digital Input	1771-IAD 1771-IBD	16 points 120 V AC/DC Input 16 points 10-30 V DC Input	BMXD•I160•	EVOL IO ADP 1771-I•D to BMXD•I160• 2FT EVOL IO ADP 1771-I•D to BMXD•I160• 5FT	990ADPC5X80104 990ADPC5X80105
Digital Output	1771-OB	8 points DC10-27 V Output	BMXDDO1602	EVOL IO ADP 1771-OB to BMXDDO1602 2FT EVOL IO ADP 1771-OB to BMXDDO1602 5FT	990ADPC5X80100 990ADPC5X80101
	(2x) 1771-OB	(2x) 8 points DC10-27 V Output	BMXDDO1602	EVOL IO ADP (2x) 1771-OB to BMXDDO1602 2FT EVOL IO ADP (2x) 1771-OB to BMXDDO1602 5FT	990ADPC5X80302 990ADPC5X80303
	1771-OW16	16 points Output Contact w/ WN wiring arm	BMXDRA1605	EVOL IO ADP 1771-OW16 to BMXDRA1605 2FT EVOL IO ADP 1771-OW16 to BMXDRA1605 5FT	990ADPC5X80106 990ADPC5X80107
			(2x) BMXDRA0805	EVOL IO ADP 1771-OW16 to (2x) DRA0805 2FT EVOL IO ADP 1771-OW16 to (2x) DRA0805 5FT	990ADPC5X80208 990ADPC5X80209
	1771-OAD	16 points 120 VAC Output	BMXDAO1605	EVOL IO ADP 1771-OAD to BMXDAO1605 2FT EVOL IO ADP 1771-OAD to BMXDAO1605 5FT	990ADPC5X80112 990ADPC5X80113
	1771-OBD	16 Points 10-60 V DC Output	BMXDDO1602	EVOL IO ADP 1771-OBD to BMXDDO1602 2FT EVOL IO ADP 1771-OBD to BMXDDO1602 5FT	990ADPC5X80114 990ADPC5X80115
	1771-OA	8 points in 1 group 120 VAC 1.5 A Output	BMXDAO1615	1771-OA/-OM/-ON to BMXDAO1615 2FT 1771-OA/-OM/-ON to BMXDAO1615 5FT	990ADPC5X80116 990ADPC5X80117
	1771-OM	16 point in 1 group 240 VAC 2 A Output			
	1771-ON	8 points 24 VAC 1.5 A Ouptput			
	(2x) 1771-OA	8 points in 1 group 120 VAC 1.5 A Output	BMXDAO1615	(2x) 1771-OA/-OM/-ON to BMXDAO1615 2FT (2x) 1771-OA/-OM/-ON to BMXDAO1615 5FT	990ADPC5X80216 990ADPC5X80217
	(2x) 1771-OM	16 point in 1 group 240 VAC 2 A Output			
	(2x) 1771-ON	8 points 24 VAC 1.5 A Ouptput			
	1771-OD16	16 points 120 VAC 2 A Isolated Output	BMXDAO1615	1771-OD16/1771-ODD to BMXDAO1615 2FT 1771-OD16/1771-ODD to BMXDAO1615 5FT	990ADPC5X80118 990ADPC5X80119
	1771-ODD	16 points 120 VAC 2 A Output			
	1771-OD	6 points 120 VAC 2 A Output	BMXDAO1615	1771-OD/-ODC/-OR to BMXDAO1615 2FT 1771-OD/-ODC/-OR to BMXDAO1615 5FT	990ADPC5X80120 990ADPC5X80121
	1771-ODC	6 points 120 VAC 2 A isolated Outputs			
	1771-OR	6 points 220 VAC 2 A isolated Outputs			
	(2x) 1771-OD	6 points 120 VAC 2 A Output	BMXDAO1615	(2x) 1771-OD/-ODC/-OR to BMXDAO1615 2FT (2x) 1771-OD/-ODC/-OR to BMXDAO1615 5FT	990ADPC5X80220 990ADPC5X80221
	(2x) 1771-ODC	6 points 120 VAC 2 A isolated Outputs			
	(2x) 1771-OR	6 points 220 VAC 2 A isolated Outputs			
Analog Input	1771-IFE/A/B/C	Analog 8 Differential Inputs 12 Bit Analog 16 Single Ended Inputs 12 Bit	(2x) BMXAMI0800	EVOL IO ADP 1771-IFE to (2x) AMI0800 2FT EVOL IO ADP 1771-IFE to (2x) AMI0800 5FT	990ADPC5X80210 990ADPC5X80211

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Presentation

Modicon 984-800 I/O to Modicon Quantum I/O modernization solution consists of various wiring adapters and a chassis. This is used to simplify the replacement of legacy 984 PLCs, that use B800 I/O modules, with Quantum I/O; existing field wiring will be retained.

The chassis will receive the new Quantum I/O modules while retaining connectors from existing B800 I/O modules.
Specific wiring adaptors will allow connectors from existing B800 I/O modules to be easily rewired to their mating Quantum I/O modules.

Two chassis and various wiring adaptors are covering the main modernization needs between B800 I/O modules and Modicon Quantum I/Os.
There are also six replacement cables. All cables are available in two lengths: two Foot and five Foot.

Description of the solution

A chassis allows the replacement of a B800 I/O rack with a Quantum I/O rack in the same physical location and with the same footprints as the current system.
It is an articulated mechanical assembly made of two plates:
■ A back plate installed in replacement of the removed B800 I/O rack. It allows the mounting and is used as a mounting bracket for the quick wiring adapters.
■ A front plate that supports a pre-mounted Quantum backplane. The new Quantum I/O rack will be installed on this front plate. The adequate wiring adapters will be connected from the back plate onto their mating Quantum I/O modules on the front plate.

The front plate is articulated so, for maintenance purposes, the assembly can be tilted to access the connections mounted on the back plate.

The quick wiring adapters allow retaining the existing installation wiring. They allow connecting and mating B800 I/O field wiring of the existing installation to the Quantum I/O modules of the new PLC configuration.

2-Foot cables are the most common. 5-Foot are used in case of merging 2x B800 I/O racks into only one Quantum rack.
A quick wiring I/O adapter is passing on the same control signals as before to the PLC, without the need of re-wiring the existing installation.

Replacement cables without end connectors are also available as spare parts in case they need to be replaced in possible unusual situations.

Benefits of the solution

The customer's value propositions are reduced risk and cost of modernization from a 984/800 I/O PLC:
■ Minimal production downtime with setup time of about one hour per rack
■ Cost savings through the retention of all wiring to sensors/actuators inside the existing cabinets (savings in wiring, testing and commissioning, update of wiring diagrams); Typically, no electrician or wiring contractor is necessary
■ Unlike manual rewiring, ordinary production stops can be used for the changeover
■ The minimal changes on installations allows you to restart them within the allotted time with the ability to rollback in case of unexpected issue
■ Reliable solution designed by the manufacturer
■ Simple solution that makes the modernization easy and at the lowest risk

This modernization solution is part of a larger modernization and migration offer that includes methods, specific migration devices and dedicated tools for various legacy PLCs from Schneider Electric and the competition as well.
Modernizations and migrations can be implemented with help from our Schneider Electric services experts.

A cross reference table between B800 I/O modules and Quantum I/O modules is below. It shows all possible I/O modules equivalences. However, some differences in terminal strips, in modularity, in common or power connections may have to be addressed.
Therefore, it is recommended to verify compatibility with our Schneider Electric service representatives.

Equivalence table: Chassis

Equivalence table: B800 I/O module - Quantum I/O module

Type of module	B800 I/O module		Quantum I/O platform	Chassis	
	Reference	Description	Reference	Description	Reference
Racks	H819	7 slots, 19"	140XBP01000	EVOL. PLC CHASSIS W/ QUANTUM XBP 10 SLOT	990CHB80QUA100
			140XBP01000C	EVOL. PLC CHASSIS W/QUANTUM XBP10 COATED	990CHB80QUA100C
	H827	11 slots, 27"	140XBP01600	EVOL. PLC CHASSIS W/ QUANTUM XBP 16 SLOT	990CHB80QUA160
			140XBP01600C	EVOL. PLC CHASSIS W/QUANTUM XBP16 COATED	990CHB80QUA160C

Equivalence table: Pre-wired adapters

Equivalence table: B800 I/O module - Quantum I/O module

Type of module	B800 I/O module		Quantum I/O platform	Pre-wired adapter	
	Reference	Description	Reference	Description	Reference
I/O modules	AS-B802-008	115 VAC 8 Point Output Module	140DAO84010	B802008-DAO84010 Quick Fit Cable 2FT	802008AO84012
				B802008-DAO84010 Quick Fit Cable 5FT	802008AO84015
	2x			2x B802008-DAO84010 Quick Fit Cable 2FT	2802008AO84012
				2x B802008-DAO84010 Quick Fit Cable 5FT	2802008AO84015
				B802008-DAO84010 Quick Fit 2FT Fused	802008AO84012F
				B802008-DAO84010 Quick Fit 5FT Fused	802008AO84015F
	2x			2x B802008-DAO84010 Quick Fit 2FT Fused	2802008AO84012F
				2x B802008-DAO84010 Quick Fit 5FT Fused	2802008AO84015F
	AS-B803-008	115 VAC 8 Point Input Module	140DAI54000	B803008-DAI54000 Quick Fit Cable 2FT	803008AI54002
				B803008-DAI54000 Quick Fit Cable 5FT	803008AI54005
	2x			2x B803008-DAI54000 Quick Fit Cable 2FT	2803008AI54002
				2x B803008-DAI54000 Quick Fit Cable 5FT	2803008AI54005
	AS-B804-016	115 VAC 16 Point Output	140DAO84210	EVOL IO ADP B804x16-DAO84210 2FT	990ADB80QUA100
	AS-B804-116			EVOL IO ADP B804x16-DAO84210 5FT	990ADB80QUA101
	AS-B804-148		140DAO84220	B804148-DAO84220 Quick Fit Cable 2FT	804148AO84222
				B804148-DAO84220 Quick Fit Cable 5FT	804148AO84225
	AS-B805-016	115 VAC 16 Point Input	140DAI54300	EVOL IO ADP B805016-DAI54300 2FT	990ADB80QUA100
				EVOL IO ADP B805016-DAI54300 5FT	990ADB80QUA101
	2x		140DAI55300	2x B805016-DAI55300 Quick Fit Cable 2FT	2805016AI55302
				2x B805016-DAI55300 Quick Fit Cable 5FT	2805016AI55305
	AS-B806-032	115 VAC 32 Point Output	140DAO85300	EVOL IO ADP B806032-DAO85300 2FT	990ADB80QUA122
				EVOL IO ADP B806032-DAO85300 5FT	990ADB80QUA123
	AS-B806-124	24 VAC 32 Point Output	140DAO85300	EVOL IO ADP B806124-DAO85300 2FT	990ADB80QUA122
				EVOL IO ADP B806124-DAO85300 5FT	990ADB80QUA123
	AS-B807-132	115 VAC 32 Point Input	140DAI55300	EVOL IO ADP B807132-DAI55300 2FT	990ADB80QUA124
				EVOL IO ADP B807132-DAI55300 5FT	990ADB80QUA125
	AS-B808-016	230 VAC 16 Point Output	140DAO84000	EVOL IO ADP B808016-DAO84000 2FT FUSE	990ADB80QUA128
				EVOL IO ADP B808016-DAO84000 5FT FUSE	990ADB80QUA129
	AS-B809-016	230 VAC 16 Point Input Module	140DAI74000	B809016-DAI74000 Quick Fit Cable 2FT	809016AI74002
				B809016-DAI74000 Quick Fit Cable 5FT	809016AI74005
	AS-B810-008	115 VAC 8 Isolated Output	140DAO84000	EVOL IO ADP B810008-DAO84000 2FT FUSE	990ADB80QUA130
				EVOL IO ADP B810008-DAO84000 5FT FUSE	990ADB80QUA131
	2x			2x B810008-DAO84000 Quick Fit Cable 2FT	2810008AO84002
				2x B810008-DAO84000 Quick Fit Cable 5FT	2810008AO84005
	2x			2x B810008-DAO84000 Quick Fit 2FT FUSE	2810008AO84002F
				2x B810008-DAO84000 Quick Fit 5FT FUSE	2810008AO84005F
	AS-B814-108	NO/NC Power Relay 8 Point Output	140DRC83000	EVOL IO ADP B814108-DRC830 2FT FUSE	990ADB80QUA112
				EVOL IO ADP B814108-DRC830 5FT FUSE	990ADB80QUA113
	AS-B817-116	115 VAC 16 Point Isolated Input	140DAI54000	EVOL IO ADP B817116-DAI54000 2FT	990ADB80QUA114
				EVOL IO ADP B817116-DAI54000 5FT	990ADB80QUA115
	AS-B817-216	230 VAC 16 Point Isolated Input	140DAI74000	EVOL IO ADP B817216-DAI74000 2FT	990ADB80QUA114
				EVOL IO ADP B817216-DAI74000 5FT	990ADB80QUA115
	AS-B820-008	10-60 VDC 8 Point Output (True High)	140DDO84300	B820008-DDO84300 Quick Fit Cable 2FT	820008DO84302
				B820008-DDO84300 Quick Fit Cable 5FT	820008DO84305
	2x			2x B820008-DDO84300 Quick Fit Cable 2FT	2820008DO84302
				2x B820008-DDO84300 Quick Fit Cable 5FT	2820008DO84305
	AS-B821-108	10-60 VDC 8 Point Input (True High)	140DDI84100	B821108-DDI84100 Quick Fit Cable 2FT	821108DI84102
				B821108-DDI84100 Quick Fit Cable 5FT	821108DI84105
	2x			2x B821108-DDI84100 Quick Fit Cable 2FT	2821108DI84102
				2x B821108-DDI84100 Quick Fit Cable 5FT	2821108DI84105
	AS-B824-016	24 VDC 16 Point Output (True High)	140DDO84300	B824016-DDO84300 Quick Fit Cable 2FT	824016DO84302
				B824016-DDO84300 Quick Fit Cable 5FT	824016DO84305
	AS-B825-016	24 VDC 16 Point Input (True High)	140DDI84100	EVOL IO ADP B825016-DDI84100 2FT	990ADB80QUA116
				EVOL IO ADP B825016-DDI84100 5FT	990ADB80QUA117
	AS-B826-032	24 VDC 32 Point Output (True High)	140DDO35300	B826032-DDO35300 Quick Fit Cable 2FT	826032DO35302
				B826032-DDO35300 Quick Fit Cable 5FT	826032DO35305
	AS-B827-032	24 VDC 32 Point Input (True High)	140DDI35300	EVOL IO ADP B827032-DDI35300 2FT	990ADB80QUA106
				EVOL IO ADP B827032-DDI35300 5FT	990ADB80QUA107
	AS-B829-116	5V TTL 16 Input (Fast Response)	140DDI15310	B829116-DDI15310 Quick Fit Cable 2FT	829116DI15312
				B829116-DDI15310 Quick Fit Cable 5FT	829116DI15315

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Equivalence table: Pre-wired adapters (continued)
Equivalence table: B800 I/O module - Quantum I/O module

Type of module	B800 I/O module		Quantum I/O platform	Pre-wired adapter	
	Reference	Description	Reference	Description	Reference
I/O modules	AS-B832-016	24 VDC 16 Point Output (True Low)	140DDO35310	B832016-DDO35310 Quick Fit Cable 2FT	832016DO35312
				B832016-DDO35310 Quick Fit Cable 5FT	832016DO35315
	2x			2x B832016-DDO35310 Quick Fit Cable 2FT	2832016DO35312
				2x B832016-DDO35310 Quick Fit Cable 5FT	2832016DO35315
	AS-B833-016	24 VDC 16 Point Input (True Low)	140DDI35310	B833016-DDI3531 Quick Fit Cable 2FT	833016DI35312
				B833016-DDI3531 Quick Fit Cable 5FT	833016DI35315
	2x			2x B833016-DDI3531 Quick Fit Cable 2FT	2833016DI35312
				2x B833016-DDI3531 Quick Fit Cable 5FT	2833016DI35315
	AS-B837-016	24 VAC/DC 16 Point Input (True High)	140DDI35300	B837016-DDI3530 Quick Fit Cable 2FT	837016DI35302
				B837016-DDI3530 Quick Fit Cable 5FT	837016DI35305
	2x			2x B837016-DDI3530 Quick Fit Cable 2FT	2837016DI35302
				2x B837016-DDI3530 Quick Fit Cable 5FT	2837016DI35305
	AS-B838-032	24 VDC 32 Point Output (True High)	140DDO35300	EVOL IO ADP B838032-DDO35300 2FT	990ADB80QUA108
				EVOL IO ADP B838032-DDO35300 5FT	990ADB80QUA109
	AS-B840-108	NO/NC Reed Relay 8 Point Output	140DRC83000	EVOL IO ADP B840108-DRC830 2FT FUSE	990ADB80QUA112
				EVOL IO ADP B840108-DRC830 5FT FUSE	990ADB80QUA113
	AS-B846-001	Analog MUX (16 voltage to one output)	2x140AVI03000	B846001 -2x AVI03000 Quick Fit Cable 2FT	28460012VI03002
				B846001 -2x AVI03000 Quick Fit Cable 5FT	28460012VI03005
	AS-B846-002	Analog MUX (16 current to one output)	140ACI04000	B846002-ACI04000 Quick Fit Cable 2FT	846002CI040002
				B846002-ACI04000 Quick Fit Cable 5FT	846002CI040005
			2x140AVI03000	B846002 -2x AVI03000 Quick Fit Cable 2FT	28460022VI03002
				B846002 -2x AVI03000 Quick Fit Cable 5FT	28460022VI03005
	AS-B849-016	48 VAC/DC 16 Point Input Module	140DDI84100	B849016-DDI8410 Quick Fit Cable 2FT	849016DI84102
				B849016-DDI8410 Quick Fit Cable 5FT	849016DI84105
	AS-B872-002	4-20mA,1-5V 4 Channel Analog Output	140ACO02000	EVOL IO ADP B872002-ACO0200 2FT	990ADB80QUA126
				EVOL IO ADP B872002-ACO0200 5FT	990ADB80QUA127
	AS-B872-011	Selectable 4 Channel Voltage Output	140AVO02000	EVOL IO ADP B872011-AVO0200 2FT	990ADB80QUA110
				EVOL IO ADP B872011-AVO0200 5FT	990ADB80QUA111
	AS-B872-100	4-20mA 4 Channel Current Output	140ACO02000	EVOL IO ADP B872100-ACO0200 2FT	990ADB80QUA120
				EVOL IO ADP B872100-ACO0200 5FT	990ADB80QUA121
	AS-B872-200	Selectable 4 Channel Voltage Output	140AVO02000	B872200-AVO0200 Quick Fit Cable 2FT	872200VO02002
				B872200-AVO0200 Quick Fit Cable 5FT	872200VO02005
	AS-B873-001 AS-B873-002	4-20mA,1-5V 4 Channel Analog Input	140AVI03000	EVOL IO ADP B87300x-AxI03000 2FT	990ADB80QUA102
				EVOL IO ADP B87300x-AxI03000 5FT	990ADB80QUA103
			140ACI03000	EVOL IO ADP B87300x-AxI03000 2FT	990ADB80QUA102
				EVOL IO ADP B87300x-AxI03000 5FT	990ADB80QUA103
	2x		140ACI03000	EVOL IO ADP 2x B87300x-ACI03000 2FT	990ADB80QUA104
				EVOL IO ADP 2x B87300x-ACI03000 5FT	990ADB80QUA105
	AS-B873-011 AS-B873-012	-10 V to 10 V 4 Channel Analog Input	140AVI03000	EVOL IO ADP B87301x-AVI03000 2FT	990ADB80QUA102
				EVOL IO ADP B87301x-AVI03000 5FT	990ADB80QUA103
	AS-B875-001 AS-B875-002	4-20mA, 1-5V 8 Channel Analog Input	140AVI03000	EVOL IO ADP B87500x-AxI03000 2FT	990ADB80QUA102
				EVOL IO ADP B87500x-AxI03000 5FT	990ADB80QUA103
			140ACI03000	EVOL IO ADP B87500x-AxI03000 2FT	990ADB80QUA102
				EVOL IO ADP B87500x-AxI03000 5FT	990ADB80QUA103
	AS-B875-011 AS-B875-012	Select. 8 channel Differential Input	140AVI03000	B875-011 or -012-AVI03000 Quick Fit Cable 2FT	87501XVI030002
				B875-011 or -012-AVI03000 Quick Fit Cable 5FT	87501XVI030005
	AS-B875-101 AS-B875-102	Fast selectable 8 Channel Analog Input	140AVI03000	B875-101 or -102-AVI03000 Quick Fit Cable 2FT	87510XVI030002
				B875-101 or -102-AVI03000 Quick Fit Cable 5FT	87510XVI030005
			140ACI03000	B875-101 or -102-ACI03000 Quick Fit Cable 2FT	87510XCI030002
				B875-101 or -102-ACI03000 Quick Fit Cable 5FT	87510XCI030005
	AS-B875-111	Select. 16 channel Single Ended Input	140ACI03000	EVOL IO ADP B875111-ACI03000 2FT	990ADB80QUA118
				EVOL IO ADP B875111-ACI03000 5FT	990ADB80QUA119
			140AVI03000	EVOL IO ADP B875111-AVI03000 2FT	990ADB80QUA118
				EVOL IO ADP B875111-AVI03000 5FT	990ADB80QUA119
			140ACI04000	B875111-ACI04000 Quick Fit Cable 2FT	875111CI040002
				B875111-ACI04000 Quick Fit Cable 5FT	875111CI040005
	AS-B877-111	Select. 16 channel Single Ended Input	140ACI04000	B877111-140ACI0400 Quick Fit Cable 2FT	877111CI040002
				B877111-140ACI0400 Quick Fit Cable 5FT	877111CI040005
	AS-B883-201	8 RTD Input Module	140ARI03010	B883201-ARI03010 Quick Fit Cable 2FT	883201RI030102
				B883201-ARI03010 Quick Fit Cable 5FT	883201RI030105

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Equivalence table: Replacement cables

Equivalence table: B800 I/O module - Quantum I/O module					3/5
Type of module	B800 I/O module		Quantum I/O platform	Pre-wired adapter	
	Reference	Description	Reference	Description	Reference
Replacement cables	–	–	–	REPLAC QUANTUM CABLE HI POWER 013 2FT	990QUANCABL013
				REPLAC QUANTUM CABLE HI DENSITY 014 2FT	990QUANCABL014
				REPLACEMENT QUANTUM CABLE ANALOG 015 2FT	990QUANCABL015
				REPLAC QUANTUM CABLE HI POWER 513 5FT	990QUANCABL513
				REPLAC . QUANTUM CABLE HI DENSITY 514 5FT	990QUANCABL514
				REPLACEMENT QUANTUM CABLE ANALOG 515 5FT	990QUANCABL515

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Presentation

The Rockwell PLC5 1771 I/O to Modicon Quantum I/O migration solution consists of a set of quick wiring adaptors and a chassis. It is used to simplify the replacement of Rockwell PLC5 1771 I/O with Modicon Quantum I/O platform; existing field wirings will be retained.

The chassis will receive the new Quantum I/O while retaining connectors from the existing 1771 I/O modules.
Specific wiring adaptors will allow connectors from the existing 1771 I/O modules to be easily connected to their mating Quantum I/O modules.

Two chassis and 22 quick wiring adaptors are covering the main migration needs between PLC5 1771 I/O modules and equivalent Modicon Quantum I/O modules. All cables are available in two lengths: two Foot and five Foot.

Description of the solution

A chassis allows the replacement of a PLC5 I/O rack with a Quantum I/O rack in the same physical location and with the same footprint as the current system.
It is an articulated mechanical assembly made of two plates:
■ A back plate installed in replacement of the removed PLC5 1771 I/O rack. It allows the mounting and is used as a mounting bracket for the quick wiring adapters.
■ A front plate that supports a pre-mounted Quantum backplane. The new Quantum I/O rack will be installed on this front plate. The adequate wiring adapters will be connected from the back plate onto their mating Quantum I/O modules on the front plate.

The front plate is articulated so, for maintenance purposes, the assembly can be tilted to access the connections mounted on the back plate.

The quick wiring adapters allow retaining the existing installation wiring. They allow connecting and mating 1771 I/O field wiring of the existing installation to the Quantum I/O modules of the new PLC configuration.

A quick wiring I/O adapter is passing on the same control signals as before to/from the PLC, without the need of re-wiring the existing installation.

Benefits of the solution

The customer's value propositions are the reduced risk and cost of migration from a Rockwell PLC5 1771 I/O:
■ Minimal production downtime with setup time of about one hour per rack.
■ Cost savings through the retention of all wiring to sensors/actuators inside the existing cabinets (savings in wiring, testing and commissioning, update of wiring diagrams); Typically, no electrician or wiring contractor is necessary.
■ Unlike manual rewiring, ordinary production stops can be used for the changeover.
■ The minimal changes on installations allows you to restart them within the allotted time with the ability to rollback in case of unexpected issue.
■ Reliable solution designed by the manufacturer.
■ Simple solution that makes the migration easy and at lowest risk.

This migration solution is part of a larger modernization and migration offer that includes methods, specific migration devices and dedicated tools for various legacy PLCs from Schneider Electric and the competition as well.
Modernizations and migrations can be implemented with help from our Schneider Electric services experts.

A cross reference table between PLC5 1771 I/O modules and Quantum I/O modules is below. It shows all possible I/O modules equivalences. However, some differences in terminal strips, in modularity, in common or power connections may have to be addressed. Therefore, it is recommended to verify compatibility with our Schneider Electric service representatives.

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Equivalence table: Rockwell 1771 I/O module - Quantum I/O module

Type of module	PLC5 1771 I/O module			Quantum I/O	Pre-wired adapter and chassis	
	Reference	Description		Reference	Description	Reference
Racks	1771-AxB	I/O chassis 1, 2, 4, and 8 module slots		140XBP01000	PLC EVOL. CHASSIS W/ QUANTUM XBP 10 SLOT	990CHPC5QUA100
	1771-AxB	I/O chassis 12, and 16 module slots		140XBP01600	PLC EVOL. CHASSIS W/ QUANTUM XBP 16 SLOT	990CHPC5QUA160
I/O modules 1 to 1	1771-IBD	10-30V DC 16 Points Input Sink		140DDI35300	EVOL IO ADP 1771-IBD > DDI35300 2FT	990ADPC5QUA100
					EVOL IO ADP 1771-IBD > DDI35300 5FT	990ADPC5QUA101
	1771-OD/x	120V AC 6 Points Output Isolated		140DAO84010	EVOL IO ADP 1771-OD/x > DAO84010 2FT	990ADPC5QUA102
					EVOL IO ADP 1771-OD/x > DAO84010 5FT	990ADPC5QUA103
	1771-OBD/x	10-60V DC 16 Points Output		140DDO84300	EVOL IO ADP 1771-OBD/x > DDO84300 2FT	990ADPC5QUA104
					EVOL IO ADP 1771-OBD/x > DDO84300 5FT	990ADPC5QUA105
	1771-OZC	NO Relay 8 Points Output		140DRA84000	EVOL IO ADP 1771-OZC > DRA84000 2FT	990ADPC5QUA106
					EVOL IO ADP 1771-OZC > DRA84000 5FT	990ADPC5QUA107
	1771-IFE/x	Analog 8 Differential Inputs 12 Bit		140AVI03000	EVOL IO ADP 8CH 1771-IFE/x > AVI030 2FT	990ADPC5QUA108
					EVOL IO ADP 8CH 1771-IFE/x > AVI030 5FT	990ADPC5QUA109
	1771-IFE/x	Analog 16 Single Ended Inputs 12 Bit		140AVI03000	EVOL IO ADP 16CH 1771-IFE/x > AVI030 2FT	990ADPC5QUA110
					EVOL IO ADP 16CH 1771-IFE/x > AVI030 5FT	990ADPC5QUA111
	1771-IR	Analog 6 RTD Inputs for 3-Wire RTDs Inputs 16 Bit		140ARI03010	EVOL IO ADP 1771-IR > ARI03010 2FT	990ADPC5QUA112
					EVOL IO ADP 1771-IR > ARI03010 5FT	990ADPC5QUA113
	1771-OFE2	Analog 4 isolated (1000V) Differential Outputs		140ACO02000	EVOL IO ADP 1771-OFE2 > ACO02000 2FT	990ADPC5QUA114
					EVOL IO ADP 1771-OFE2 > ACO02000 5FT	990ADPC5QUA115
I/O modules 2 to 1	2x 1771-IBD	10-30V DC 16 Points Input Sink		140DDI35300	EVOL IO ADP 2x 1771-IBD > DDI35300 2FT	990ADPC5QUA200
					EVOL IO ADP 2x 1771-IBD > DDI35300 5FT	990ADPC5QUA201
	2x 1771-OD/x	120V AC 6 Points Output Isolated		140DAO84010	EVOL IO ADP 2x 1771-OD/x > DAO84010 2FT	990ADPC5QUA202
					EVOL IO ADP 2x 1771-OD/x > DAO84010 5FT	990ADPC5QUA203
	2x 1771-OZC	NO Relay 8 Points Output		140DRA84000	EVOL IO ADP 2x 1771-OZC > DRA84000 2FT	990ADPC5QUA206
					EVOL IO ADP 2x 1771-OZC > DRA84000 5FT	990ADPC5QUA207

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