

# MOLEX CONNECTED ENTERPRISE SOLUTIONS

DATA TRANSPORT SOLUTIONS TRAINING CATALOG 2022-2023

**molex**  
Connected Enterprise  
Solutions  
Certified Installer



**molex**  
Connected Enterprise  
Solutions  
System Integrator



**molex**  
Connected Enterprise  
Solutions  
Certified Consultant





**We appreciate your interest in Molex Connected Enterprise Solutions training. This document contains Molex Connected Enterprise Solutions' training offers in support of its solutions. There are courses that familiarize you with the solution and its unique aspects, as well as how to design, estimate, install, and support it.**

## **Solving Tomorrow's Toughest Challenges**

When you are developing products that meet tomorrow's demands, you need a partner with the expertise to solve your challenges. Molex (a subsidiary of Koch Industries) is a globally recognized provider of electronic solutions in a wide range of industries, including data communications, consumer electronics, industrial, automotive, commercial vehicle and medical.

Through our collaborative process, we take a multi-dimensional approach that brings together engineers, product designers and manufacturing to ensure the design cycle is smooth and seamless.

We have design and manufacturing facilities around the world, with an expert team of problem-solvers who work across borders to help bring your vision to life. With more than 75 years of experience, we lead the industry in R&D investment, striving to develop and deliver innovative, high-quality, reliable solutions that can be customized to meet your needs.

Together, we can turn your vision into reality...





## **Corporate Quick Overview**

Molex Connected Enterprise Solutions is a premier provider of revolutionary new and comprehensive Structured Cabling Systems, focused on the development of IP-based solutions that support organizations choosing an Internet of Things strategy.

For more than 30 years, we have supplied high-quality Copper, Fiber and wireless data transport solutions for the transmission of voice, data and video imaging signals to enterprises globally and our Molex Connected Enterprise Solutions brand has become synonymous with high-quality, innovation and durability. The breadth of our product portfolio coupled with our consultative approach have been instrumental in our global success and are why so many leading enterprises around the world deploy our solutions.

Our structured cabling heritage and technical expertise enables us to raise the bar for global businesses by offering productivity enhancements, visibility and control... We are uniquely positioned to help businesses do more with less.

**« MOLEX IS CREATING THE  
ELECTRONIC SOLUTIONS THAT  
SUPPORT TOMORROW'S  
INNOVATIONS »**

	Course	Pre-Requisites	Format	Status
BP095	Structured Cabling Design and Installation <i>(ONLINE or ONLINE + ONSITE)</i>	Cabling experience 	1 day online <b>OR</b> 1 day online + 1-day hands-on workshop	Certified Installer
BP120	Advanced Structured Cabling Design and Installation <i>(ONLINE only)</i>	Cabling experience	2 days online	Certified Installer
BP130	Advanced Structured Cabling Design and Installation <i>(ONLINE + ONSITE)</i>	None 	2 days online + 1-day hands-on workshop	Certified Installer
BP135	Advanced Structured Cabling Design and Installation <i>(ONLINE only)</i>	<b>Only for recertification</b> <b>Only existing valid Business Associates that are renewing their current CI Status are eligible to take one of these two courses</b>	<b>Conventional module based</b> 1 day online	Certified Installer
BP136	Advanced Structured Cabling Design and Installation <i>(ONLINE only)</i>		<b>Self-paced version</b> 40 days to study the training manual and take the exam	Certified Installer
BP138	Field Technician training <i>(ONLINE only)</i>	Valid Business Associate Agreement in place	3 hours and 30 minutes online	None
BP140	Advanced Structured Cabling Design and Installation <i>For Consultants and End-Users</i>	For Consultants and End-Users	2 days online	Certified Consultant
BP150	Fiber Optic Data Transmission & Solutions	None	1 day online	None
BP153	Fiber Optic Data Transmission & Solutions – ADVANCED <i>(ONLINE + ONSITE)</i>	None 	1 day online + 1-day hands-on workshop	None
BP155	Copper Data Transmission & Solutions	None	1 day online	None
BP160	BoM Estimator	None	1 hour online	None
BP170	Cable Fill Rates Estimator	None	30 minutes online	None
BP180	Consultant Proposal Generator	None	2 hours online	None
BP300	MIIM Design and Hardware Installation	BP130 or BP120	3 hours online	None
BP310	MIIM Certification Workshop <i>(ONLINE + ONSITE)</i>	BP130 or BP120 / Cabling and Networking Experience 	9.5 hours online / Best taken over 2 or 3 days + 1-day hands-on workshop	MIIM System Integrator
BP305	MIIM End-User training	None	8 hours online / Best taken over 2 or 3 days	None
BP400	Molex Jetted Fiber Solution - Introduction - <i>(ONLINE only)</i>	None	2 hours online	None

**BICSI** also recognizes Molex Connected Enterprise Solutions training, providing CECs to BICSI credential holders.



COURSE ID	EVENT ID	CECs
BP120	OV-MOLEX-IL-0822-1	9
BP130	OV-MOLEX-IL-0822-2	14
BP135	OV-MOLEX-IL-0822-7	11
BP140	OV-MOLEX-IL-0822-3	9
BP150	OV-MOLEX-IL-0822-4	4
BP155	OV-MOLEX-IL-0822-5	5
BP400	OV-MOLEX-IL-0822-6	1

The Professional Development Consortium is home to the **CPD Standards Office**, the CPD Research Project and the Provider of Training Excellence. Their wealth of knowledge and research within the Learning and Development Industry and their team of industry professionals on the Expert Advisory Board are a few of the reasons that contribute to the detailed and rigorous assessment processes they have in place.

This is the reason why we are really proud to announce to your Customers that we have achieved accredited CPD Status with the CPD Standards Office.

To achieve the accreditation, we have undergone a rigorous assessment process that focuses on the development and delivery of our trainings, including our educational authority, how we collect and utilize our delegate feedback and ensure our content is kept up to date.

Now that we have achieved this accreditation and status as an accredited CPD Provider, we are committed, more than ever, to working hard to maintain, and exceed, the excellent standard we have already set.



COURSE ID	ACTIVITY ID	POINTS
BP095	22087\1	7
BP120	22087\2	14
BP130	22087\3	14
BP135	22087\9	7
BP140	22087\4	14

## Course Fee and venues

A customized Training Proposal is created itemizing the expected venue and its expenses; however, some courses are taught by 3rd-party training partners of Molex Connected Enterprise Solutions who set their own rates. Training packages combining multiple courses or with multiple companies in attendance may be considered upon request.

Confirmation details are sent automatically upon on-line registration. A 50% charge applies to cancellations made within 5 working days of the first day of the schedule session(s). Students not attending without canceling will not be reimbursed. Molex Connected Enterprise Solutions reserves the right to cancel any course within 1 week of its starting date.

Molex Connected Enterprise Solutions delivers its training both on-line with quizzes and a combination of on-line and on-site for certification workshops and hands-on demonstrations and practical exercises.

## COURSE DESCRIPTIONS

**BP095**

**STRUCTURED CABLING DESIGN AND INSTALLATION ONLINE or ONLINE + ONSITE**  
*7 hours ONLINE + 7 hours ONSITE*

**7**  
POINTS



An on-line, or on-line + on-site course that enables Molex Connected Enterprise Solutions Design and Installation professionals to specify, position, design, estimate, install, and support Molex Connected Enterprise Solutions' Data Transport Solutions, including its Copper, Fiber, and plug & play solutions. Participants will see demonstrations using installation tools readily available in the industry. A comprehensive overview of international standards such as ANSI/TIA, ISO/IEC, CENELEC, and AS/NZS is provided.

**BP120**
**ADVANCED STRUCTURED CABLING DESIGN AND INSTALLATION / ONLINE**  
*14 hours ONLINE*

**9**  
CREDITS



**14**  
POINTS



An ADVANCED on-line course that enables Molex Connected Enterprise Solutions Design and Installation professionals to specify, position, design, estimate, install, and support Molex Connected Enterprise Solutions' Data Transport Solutions, including its Copper, Fiber, and plug & play solutions. Participants will see demonstrations using installation tools readily available in the industry. A comprehensive overview of international standards such as ANSI/TIA, ISO/IEC, CENELEC, and AS/NZS is provided.

**BP130**

**ADVANCED STRUCTURED CABLING DESIGN AND INSTALLATION / ONSITE**  
*14 hours ONLINE + 7 hours ONSITE*

**14**  
CREDITS



**14**  
POINTS



An ADVANCED on-site course that enables Molex Connected Enterprise Solutions Design and Installation professionals to specify, position, design, estimate, install, and support Molex Connected Enterprise Solutions' Data Transport Solutions, including its Copper, Fiber, and plug & play solutions. Participants see demonstrations using installation tools readily available in the industry. A comprehensive overview of international standards such as ANSI/TIA, ISO/IEC, CENELEC, and AS/NZS is provided.

**BP135 & BP136**
**ADVANCED STRUCTURED CABLING DESIGN AND INSTALLATION / ONLINE - ONLY FOR RECERTIFICATION**  
*BP135: 1 day ONLINE – Conventional module based*  
*BP136: Self-paced version – 40 days to study the training manual and take the exam*  
*Note: BP136 is NOT eligible to BICSI CECs or CPD points*

**11**  
CREDITS



**7**  
POINTS



*Only existing valid Business Associates who are renewing their CI Status are eligible to take one of these two courses. All individuals wishing to take one of these two courses must have already completed Molex training within the past two years.*

**BP138**
**FIELD TECHNICIAN TRAINING / ONLINE**  
*3 hours and 30 minutes ONLINE*

An on-line course that enables Field Technicians to install, test and support Molex Connected Enterprise Solutions' Data Transport Solutions, including its Copper, Fiber, and plug & play solutions. Participants see demonstrations using installation tools readily available in the industry. Taken on its own, this course is free, online, and does not count towards Molex Connected Enterprise Solutions CI (Certified Installer) Certification. A certificate of attendance is provided.

## COURSE DESCRIPTIONS

**BP140**      **ADVANCED STRUCTURED CABLING DESIGN AND INSTALLATION / ONLINE**  
*14 hours ONLINE*

An on-line course that enables Consultants and End-Users to specify, position, design, estimate and support Molex Connected Enterprise Solutions' Data Transport Solutions, including its Copper, Fiber, and plug & play solutions. Participants see demonstrations using installation tools readily available in the industry. A comprehensive overview of international standards such as ANSI/TIA, ISO/IEC, CENELEC, and AS/NZS is provided. Taken on its own, this course is free, online, and does not count towards Molex Connected Enterprise Solutions CI (Certified Installer) Certification. A certificate of attendance is provided and BICSI CECs are available for this course.



**BP150**      **MOLEX CONNECTED ENTERPRISE SOLUTIONS FIBER OPTIC DATA TRANSMISSION & SOLUTIONS**  
*7 hours ONLINE*



An on-line course that enables Molex Connected Enterprise Solutions Design and Installation professionals to specify, position, design, estimate, install, test and support Molex Connected Enterprise Solutions' Fiber Optic Solutions, including its plug & play solutions. Participants see demonstrations using installation tools readily available in the industry. Taken on its own, this course does not count towards Molex Connected Enterprise Solutions CI (Certified Installer) Certification. A certificate of attendance is provided and BICSI CECs are available for this course.

**BP153**       **MOLEX CONNECTED ENTERPRISE SOLUTIONS FIBER OPTIC DATA TRANSMISSION & SOLUTIONS - ADVANCED**  
*5 hours ONLINE + 7 hours ONSITE*

An ADVANCED on-line + on-site course that enables Molex Connected Enterprise Solutions Design and Installation professionals to specify, position, design, estimate, install, and support Molex Connected Enterprise Solutions' Fiber Optic Solutions. Taken on its own, this course does not count towards Molex Connected Enterprise Solutions CI (Certified Installer) Certification. A certificate of attendance is provided.

**BP155**      **MOLEX CONNECTED ENTERPRISE SOLUTIONS COPPER DATA TRANSMISSION & SOLUTIONS**  
*7 hours ONLINE*



An on-line course that enables Molex Connected Enterprise Solutions Design and Installation professionals to specify, position, design, estimate, install, test and support Molex Connected Enterprise Solutions' Copper Solutions. Participants see demonstrations using installation tools readily available in the industry. Taken on its own, this course does not count towards Molex Connected Enterprise Solutions CI (Certified Installer) Certification. A certificate of attendance is provided and BICSI CECs are available for this course.

**BP160**      **MOLEX CONNECTED ENTERPRISE SOLUTIONS BOM ESTIMATOR**  
*1 hour ONLINE*

An on-line course that enables Molex Connected Enterprise Solutions Design and Installation professionals to use and make the most of the Molex Connected Enterprise Solutions BoM Estimator Tool.



# COURSE DESCRIPTIONS

## BP170 MOLEX CONNECTED ENTERPRISE SOLUTIONS CABLE FILL RATES ESTIMATOR

30 minutes ONLINE

An on-line course that enables Molex Connected Enterprise Solutions Design and Installation professionals to use and make the most of the Molex Connected Enterprise Solutions Cable Fill Rates Estimator Tool.

## BP180 MOLEX CONNECTED ENTERPRISE SOLUTIONS CONSULTANT PROPOSAL GENERATOR

2 hours ONLINE

An on-line course that enables Molex Connected Enterprise Solutions Design and Installation professionals to use and make the most of the Molex Connected Enterprise Solutions Consultant Proposal Generator. As an example, this training will guide participants on how to register online and get access to the tool.

## BP300 MIIM G3 DESIGN AND HARDWARE INSTALLATION

3 hours ONLINE

An on-line course that enables Molex Connected Enterprise Solutions Design and Installation Hardware professionals to specify, position, design, estimate, install, and support the hardware components of Molex Connected Enterprise Solutions' MIIM G3 System. Hardware familiarization is supplemented by exercises in which participants complete designs and see demonstrations.

## BP305 MIIM G3 END-USER TRAINING

8 hours ONLINE

An on-line course that enables Network Managers and Technicians to use and support Molex Connected Enterprise Solutions' MIIM System. The course provides detailed instruction on how to initialize and configure the system software and make moves/adds/changes to that configuration after the initial deployment is complete.

## BP310 MIIM G3 CERTIFICATION WORKSHOP

9 hours and 30 minutes ONLINE + 7 hours ONSITE

A combination of on-line and instructor-led, hands-on workshop that enables Molex Connected Enterprise Solutions Design and Installation Hardware and Network professionals to specify, position, design, estimate, install, and support Molex Connected Enterprise Solutions' MIIM G3 System. System familiarization is supplemented by exercises in which participants complete designs, see demonstrations, and handle products. The course provides detailed, hands-on instruction on how to initialize and configure the system software and make moves/adds/changes to that configuration after the initial deployment is complete.

## BP400 MOLEX JETTED FIBER SOLUTION - INTRODUCTION - ONLINE

2 hours ONLINE



This course is an introduction and a pre-requisite to the ONSITE Molex Jetted Fiber Solution workshop.

## BP095



### Course Descriptions – Highlights

- An on-line, **or** on-line + on-site course that enables Molex Connected Enterprise Solutions Design and Installation professionals to specify, position, design, estimate, install, and support Molex Connected Enterprise Solutions' Data Transport Solutions, including its Copper, Fiber, and plug & play solutions
- On-site participants see demonstrations using installation tools readily available in the industry
- A comprehensive overview of international standards such as ANSI/TIA, ISO/IEC, CENELEC, and AS/NZS is provided
- Upon completion of the course, participants will demonstrate competency to:
  - Position the solutions confidently with customers
  - Select correct solution, media type and performance level for the customer's application, install, test, and support the solutions, including how to (a) properly lay and interconnect the medium, and (b) test installed channels with industry-standard equipment
- 2-year Molex Connected Enterprise Solutions certification upon attendance of complete course and a passing grade on exam
- Participants with partial attendance may not be certified

### Training Objectives

- Understand Molex Connected Enterprise Solutions and its vision, its Copper and Fiber Optic solutions, its MIIM™ G3 solution
- Understand Molex Connected Enterprise Solutions' Data Transport Solutions and the unique techniques and procedures required to design, install, and test them
  - Advantages of Molex Connected Enterprise Solutions' shielded Cat-6A solution for 10Gigabit performance
  - Properly demonstrated termination for Molex Connected Enterprise Solutions' Cat 6/6A jacks and SC Fiber connector
- Understand Molex Connected Enterprise Solutions' plug & play solutions
  - Fiber Optic ModLink and its application in a data center
- Understand the ANSI/TIA and ISO/IEC or regional equivalent technical standards applicable to structured cabling
- Understand the architecture and design of industry-standard structured cabling systems
- Understand the evolution of the physical network and its interface and influence on the structured cabling system, including the OSI Model and LAN topologies, especially Ethernet
- Understand theory, electrical characteristics, construction, termination of Copper systems including Category 6 / Class E and Category 6 Augmented / Class EA
- Understand theory, optical characteristics, construction, and termination of Fiber systems
- Train proper design, installation, documentation, and testing procedures including bend radii of various media, wiremap, patching field, separation from power or hazardous sources, cable pull limits and other pull guidelines, working with fire stops, and proper labeling per the industry standard(s)

### Course Prerequisites and Pre-activities

- Basic knowledge in structure cabling
- Basic knowledge and use of a Molex Connected Enterprise Solutions-approved structured cabling tester and termination tools
- Required pre-reading: Molex Connected Enterprise Solutions Business Associate Program Overview

The course has separate modules to allow for easier flow. Breaks would be added as appropriate. The following outline is representative but not all inclusive of the subject matter.

Some of the training modules are followed by a quiz, which attendees are required to pass before they can move on to the next module. Each quiz allows 5 attempts, and the pass rate is 75%.

Please go to pages 17 to 20 to see full details for each module:

**MODULE 00 – INTRODUCTION**  
**MODULE 01 – SCS DESIGN CONSIDERATIONS / STANDARDS OVERVIEW**  
**MODULE 02 – SCS TERMINATION & INSTALLATION – COPPER**  
**MODULE 03 – SCS TESTING & EQUIPMENT – COPPER**  
**MODULE 04 – SCS SYSTEMS FOR POE APPLICATIONS**  
**MODULE 05 – SCS TERMINATION & INSTALLATION – FIBER OPTIC**  
**MODULE 06 – SCS TESTING & EQUIPMENT – FIBER OPTIC**  
**MODULE 07 – HIGH-SPEED APPLICATIONS AND MPO POLARITY CHALLENGES**  
**MODULE 18 – MOLEX WARRANTY PROGRAM**

### COURSE EVALUATION



## BP120

### Course Descriptions – Highlights

- An on-line course that enables Molex Connected Enterprise Solutions Design and Installation professionals to specify, position, design, estimate, install, and support Molex Connected Enterprise Solutions' Data Transport Solutions, including its Copper, Fiber, and plug & play solutions
- Participants see demonstrations using installation tools readily available in the industry
- A comprehensive overview of international standards such as ANSI/TIA, ISO/IEC, CENELEC, and AS/NZS is provided
- Upon completion of the course, participants will demonstrate competency to:
  - Position the solutions confidently with customers
  - Select correct solution, media type and performance level for the customer's application, install, test, and support the solutions, including how to (a) properly lay and interconnect the medium, and (b) test installed channels with industry-standard equipment
- 2-year Molex Connected Enterprise Solutions certification upon attendance of complete course and a passing grade on exam
- Participants with partial attendance may not be certified
- BICSI CECs are available for this course. Please visit <https://www.bicsi.org> for more information or see table on Page 4 of this Catalogue. (Note: BICSI only issues CECs to BICSI credential holders)

### Training Objectives

- Understand Molex Connected Enterprise Solutions and its vision, its Copper and Fiber Optic solutions, its MIIM™ G3 solution
- Understand Molex Connected Enterprise Solutions' Data Transport Solutions and the unique techniques and procedures required to design, install, and test them
  - Advantages of Molex Connected Enterprise Solutions' shielded Cat-6A solution for 10Gigabit performance
  - Properly demonstrated termination for Molex Connected Enterprise Solutions' Cat 6/6A jacks and SC Fiber connector
- Understand Molex Connected Enterprise Solutions' plug & play solutions
  - Fiber Optic ModLink and its application in a data center
- Understand the ANSI/TIA and ISO/IEC or regional equivalent technical standards applicable to structured cabling
- Understand the architecture and design of industry-standard structured cabling systems
- Understand the evolution of the physical network and its interface and influence on the structured cabling system, including the OSI Model and LAN topologies, especially Ethernet
- Understand theory, electrical characteristics, construction, termination of Copper systems including Category 6 / Class E and Category 6 Augmented / Class EA
- Understand theory, optical characteristics, construction, and termination of Fiber systems
- Train proper design, installation, documentation, and testing procedures including bend radii of various media, wiremap, patching field, separation from power or hazardous sources, cable pull limits and other pull guidelines, working with fire stops, and proper labeling per the industry standard(s)

### Course Prerequisites and Pre-activities

- Basic knowledge in structure cabling
- Basic knowledge and use of a Molex Connected Enterprise Solutions-approved structured cabling tester and termination tools
- Required pre-reading: Molex Connected Enterprise Solutions Business Associate Program Overview
- Must pass a quiz to qualify

The course has separate modules to allow for easier flow. Breaks would be added as appropriate. The following outline is representative but not all inclusive of the subject matter. Some of the training modules are followed by a quiz, which attendees are required to pass before they can move on to the next module. Each quiz allows 5 attempts, and the pass rate is 75%.

Please go to pages 17 to 20 to see full details for each module:

**MODULE 00 – INTRODUCTION**  
**MODULE 01 – SCS DESIGN CONSIDERATIONS / STANDARDS OVERVIEW**  
**MODULE 02 – SCS TERMINATION & INSTALLATION – COPPER**  
**MODULE 03 – SCS TESTING & EQUIPMENT – COPPER**  
**MODULE 04 – SCS SYSTEMS FOR POE APPLICATIONS**  
**MODULE 05 – SCS TERMINATION & INSTALLATION – FIBER OPTIC**  
**MODULE 06 – SCS TESTING & EQUIPMENT – FIBER OPTIC**  
**MODULE 07 – HIGH-SPEED APPLICATIONS AND MPO POLARITY CHALLENGES**  
**MODULE 08 – SCS SYSTEMS FOR COMMERCIAL BUILDINGS APPLICATIONS**  
**MODULE 09 – SCS SYSTEMS FOR OUTSIDE PLANT APPLICATIONS**  
**MODULE 10 – SCS SYSTEMS FOR DATACENTER APPLICATIONS**

**MODULE 11 – SCS SYSTEMS FOR EDUCATION**  
**MODULE 12 – SCS SYSTEMS FOR HEALTHCARE FACILITIES**  
**MODULE 13 – SCS SYSTEMS FOR ZONE CABLING AND IOT APPLICATIONS**  
**MODULE 14 – SCS SYSTEMS FOR WIRELESS LAN APPLICATIONS (WLAN)**  
**MODULE 15 – PON LAN APPLICATIONS AND TESTING REQUIREMENTS**  
**MODULE 16 – SCS SYSTEMS FOR HD BASE-T AND SDVOE APPLICATIONS**  
**MODULE 17 – SCS SYSTEMS FOR NBASE-T APPLICATIONS**  
**MODULE 18 – MOLEX WARRANTY PROGRAM**

**COURSE EVALUATION**

## BP130



### Course Descriptions – Highlights

- A combination of on-line and instructor-led, hands-on workshop that enables Molex Connected Enterprise Solutions Design and Installation professionals to specify, position, design, estimate, install, and support Molex Connected Enterprise Solutions' Data Transport Solutions, including its Copper, Fiber, and plug & play solutions
- Theory is supplemented by exercises in which participants complete designs, see demonstrations using installation tools readily available in the industry, handle required products, and test installed channels
- A comprehensive overview of international standards such as ANSI/TIA, ISO/IEC, CENELEC, and AS/NZS is provided
- Upon completion of the course, participants will demonstrate competency to:
  - Position the solutions confidently with customers
  - Select correct solution, media type and performance level for the customer's application
  - Install, test, and support the solutions, including how to (a) properly lay and interconnect the medium, (b) test installed channels with industry-standard equipment, and (c) methodically detect and isolate faults in installations
- Requires attendance of complete course and a passing grade on exam
- 2-year Molex Connected Enterprise Solutions certification upon attendance of complete course and a passing grade on exam
- Participants with partial attendance may not be certified
- Maximum of 12 participants per course
- Each attending company must have purchased a Data Transport Student Kit per participant prior to the course with consideration given to the required lead times
- Participants taking this course are not required to take BP120
- BICSI CECs are available for this course. Please visit <https://www.bicsi.org> for more information or see table on Page 4 of this Catalogue. (Note: BICSI only issues CECs to BICSI credential holders)

### Training Objectives

- Understand Molex Connected Enterprise Solutions and its vision, its Copper and Fiber Optic solutions, its MIIM™ G3 solution
- Understand Molex Connected Enterprise Solutions' Data Transport Solutions and the unique techniques and procedures required to design, install, and test them
  - Advantages of Molex Connected Enterprise Solutions' shielded Cat-6A solution for 10Gigabit performance
  - Properly demonstrated termination for Molex Connected Enterprise Solutions' Cat 6/6A jacks and SC Fiber connector
- Understand Molex Connected Enterprise Solutions' plug & play solutions
  - Fiber Optic ModLink and its application in a data center
- Understand the architecture and design of industry-standard structured cabling systems
- Understand the evolution of the physical network and its interface and influence on the structured cabling system, including the OSI Model and LAN topologies, especially Ethernet
- Understand theory, electrical characteristics, construction, termination of Copper systems including Category 6 / Class E and Category 6 Augmented / Class EA
- Understand theory, optical characteristics, construction, and termination of Fiber systems
- Train proper design, installation, documentation, and testing procedures including bend radii of various media, wiremap, patching field, separation from power or hazardous sources, cable pull limits and other pull guidelines, working with fire stops, and proper labeling per the industry standard(s)

### Course Prerequisites and Pre-activities

- Basic knowledge in structure cabling
- Basic knowledge and use of a Molex Connected Enterprise Solutions-approved structured cabling tester and termination tools
- Required pre-reading: Molex Connected Enterprise Solutions Business Associate Program Overview

The course has separate modules to allow for easier flow. Breaks would be added as appropriate. The following outline is representative but not all inclusive of the subject matter.

Some of the training modules are followed by a quiz, which attendees are required to pass before they can move on to the next module. Each quiz allows 5 attempts, and the pass rate is 75%.

Please go to pages 17 to 20 to see full details for each module:

#### MODULE 00 – INTRODUCTION

#### MODULE 01 – SCS DESIGN CONSIDERATIONS / STANDARDS OVERVIEW

#### MODULE 02 – SCS TERMINATION & INSTALLATION – COPPER

#### MODULE 03 – SCS TESTING & EQUIPMENT – COPPER

#### MODULE 04 – SCS SYSTEMS FOR POE APPLICATIONS

#### MODULE 05 – SCS TERMINATION & INSTALLATION – FIBER OPTIC

#### MODULE 06 – SCS TESTING & EQUIPMENT – FIBER OPTIC

#### MODULE 07 – HIGH-SPEED APPLICATIONS AND MPO POLARITY CHALLENGES

#### MODULE 08 – SCS SYSTEMS FOR COMMERCIAL BUILDINGS APPLICATIONS

#### MODULE 09 – SCS SYSTEMS FOR OUTSIDE PLANT APPLICATIONS

#### MODULE 10 – SCS SYSTEMS FOR DATACENTER APPLICATIONS

#### MODULE 11 – SCS SYSTEMS FOR EDUCATION

#### MODULE 12 – SCS SYSTEMS FOR HEALTHCARE FACILITIES

#### MODULE 13 – SCS SYSTEMS FOR ZONE CABLING AND IOT APPLICATIONS

#### MODULE 14 – SCS SYSTEMS FOR WIRELESS LAN APPLICATIONS (WLAN)

#### MODULE 15 – PON LAN APPLICATIONS AND TESTING REQUIREMENTS

#### MODULE 16 – SCS SYSTEMS FOR HD BASE-T AND SDVOE APPLICATIONS

#### MODULE 17 – SCS SYSTEMS FOR NBASE-T APPLICATIONS

#### MODULE 18 – MOLEX WARRANTY PROGRAM

#### COURSE EVALUATION



## BP135

# RECERTIFICATION ONLY

- Only existing valid Business Associates that are renewing their current CI Status are eligible to take this course
- All individuals wishing to take this course must have already completed Molex training within the past two years
- An on-line course that enables Molex Connected Enterprise Solutions Certified Installers to renew their CI Status
- Participants see demonstrations using installation tools readily available in the industry
- A comprehensive overview of international standards (latest updates) such as ANSI/TIA, ISO/IEC, CENELEC, and AS/NZS is provided
- 2-year Molex Connected Enterprise Solutions certification upon attendance of complete course and a passing grade on exam
- Participants with partial attendance may not be certified

### Course Prerequisites and Pre-activities

- Valid Business Agreement in place
- Valid Certified Installer status

The course has separate modules to allow for easier flow. Breaks would be added as appropriate. The following outline is representative but not all inclusive of the subject matter. Some of the training modules are followed by a quiz, which attendees are required to pass before they can move on to the next module. Each quiz allows 5 attempts, and the pass rate is 75%.

Please go to pages 17 to 20 to see full details for each module:

MODULE 00 – INTRODUCTION  
 MODULE 01 – SCS DESIGN CONSIDERATIONS / STANDARDS OVERVIEW  
 MODULE 02 – SCS TERMINATION & INSTALLATION – COPPER  
 MODULE 03 – SCS TESTING & EQUIPMENT – COPPER  
 MODULE 04 – SCS SYSTEMS FOR POE APPLICATIONS  
 MODULE 05 – SCS TERMINATION & INSTALLATION – FIBER OPTIC  
 MODULE 06 – SCS TESTING & EQUIPMENT – FIBER OPTIC  
 MODULE 07 – HIGH-SPEED APPLICATIONS AND MPO POLARITY CHALLENGES  
 MODULE 13 – SCS SYSTEMS FOR ZONE CABLING AND IOT APPLICATIONS  
 MODULE 18 – MOLEX WARRANTY PROGRAM

### COURSE EVALUATION

## BP136

# RECERTIFICATION ONLY



- Only existing valid Business Associates that are renewing their current CI Status are eligible to take this course
- All individuals wishing to take this course must have already completed Molex training within the past two years
- An on-line course that enables Molex Connected Enterprise Solutions Certified Installers to renew their CI Status
- Study time: Once you have completed the introduction module (Module 00), you will need to download your MOLEX INSTALLATION AND TESTING REFERENCE GUIDE
- You will then be able to take Module 18 (Molex Warranty Program & Warranty Requirements) before or after your final exam
- Final Exam (Online):
  - You will have 3 hours to answer 100 questions
  - The pass rate is 95%
  - There is no limit to the number of times you can attempt the exam
  - The questions will be randomly selected each time
- 2-year Molex Connected Enterprise Solutions certification upon attendance of complete course and a passing grade on exam
- Participants with partial attendance may not be certified
- As per the Business Associate Agreement, you have 40 days from the time that was agreed by both parties to complete your training. This means you must study the guide and pass the final exam before those 40 days pass

### Course Prerequisites and Pre-activities

- Valid Business Agreement in place
- Valid Certified Installer status

Please go to pages 17 to 20 to see full details for each module:

MODULE 00 – INTRODUCTION  
 MODULE 18 – MOLEX WARRANTY PROGRAM

### COURSE EVALUATION

# BP138

## Course Descriptions – Highlights

- An on-line course that enables Field Technicians to install, test and support Molex Connected Enterprise Solutions' Data Transport Solutions, including its Copper, Fiber, and plug & play solutions
- Participants see demonstrations using installation tools readily available in the industry

## Training Objectives

- Understand theory, electrical characteristics, construction of Copper systems including Category 6 / Class E and Category 6A / class Ea
- Understand theory, optical characteristics, construction of Fiber systems
- Train proper design, installation, documentation, and testing procedures including bend radii of various media, wiremap, patching field, separation from power or hazardous sources, cable pull limits and other pull guidelines, working with fire stops, and proper labeling per the industry standard(s)

## Course recommended Pre-activities

- Basic knowledge in structured cabling, along with experience in using a Molex-approved structured cabling tester and associated termination tools, are some of the prerequisites to attend BP138

The course has separate modules to allow for easier flow. Breaks would be added as appropriate. The following outline is representative but not all inclusive of the subject matter.

Please go to pages 17 to 20 to see full details for each module:

**MODULE 00 – INTRODUCTION**  
**MODULE 01 – SCS DESIGN CONSIDERATIONS / STANDARDS OVERVIEW**  
**MODULE 02 – SCS TERMINATION & INSTALLATION – COPPER**  
**MODULE 03 – SCS TESTING & EQUIPMENT – COPPER**  
**MODULE 05 – SCS TERMINATION & INSTALLATION – FIBER OPTIC**  
**MODULE 06 – SCS TESTING & EQUIPMENT – FIBER OPTIC**

## COURSE EVALUATION

## BP140

### Course Descriptions – Highlights

- An on-line course that enables Consultants and End-Users to specify, position, design, estimate and support Molex Connected Enterprise Solutions' Data Transport Solutions, including its Copper, Fiber, and plug & play solutions
- Participants see demonstrations using installation tools readily available in the industry
- A comprehensive overview of international standards such as ANSI/TIA, ISO/IEC, CENELEC, and AS/NZS is provided
- Upon completion of the course, participants will demonstrate competency to:
  - Position the solutions confidently with customers
  - Select correct solution, media type and performance level for the customer's application
- BICSI CECs are available for this course. Please visit <https://www.bicsi.org> for more information or see table on Page 4 of this Catalogue. (Note: BICSI only issues CECs to BICSI credential holders)

### Training Objectives

- Consultant and end user knowledge and understanding of:
  - Current standards
  - Installation practices
  - Molex Connected Enterprise Solutions
- Understand Molex Connected Enterprise Solutions and its vision, its Copper and Fiber Optic solutions
- Understand Molex Connected Enterprise Solutions' data transport solutions and the unique techniques and procedures required to design, install, and test them
- Advantages of Molex Connected Enterprise Solutions' shielded Cat-6A solution for 10 gigabit performance
- Understand Molex Connected Enterprise Solutions' Plug & Play solutions
- Fiber Optic ModLink and its application in a data center
- Understand the ANSI/TIA and ISO/IEC or regional equivalent technical standards applicable to structured cabling
- Understand the architecture and design of industry-standard structured cabling systems
- Understand the evolution of the physical network and its interface and influence on the structured cabling system, including the OSI model and LAN topologies, especially ethernet
- Understand theory, electrical characteristics, construction of Copper systems including Category 6 / Class E and Category 6A / class Ea
- Understand theory, optical characteristics, construction of Fiber systems
- Train proper design, installation, documentation, and testing procedures including bend radii of various media, wiremap, patching field, separation from power or hazardous sources, cable pull limits and other pull guidelines, working with fire stops, and proper labeling per the industry standard(s)

### Course recommended Pre-activities

- Knowledge in structure cabling
- Knowledge and use of a Molex Connected Enterprise Solutions-approved structured cabling tester and termination tools

The course has separate modules to allow for easier flow. Breaks would be added as appropriate. The following outline is representative but not all inclusive of the subject matter.

Some of the training modules are followed by a quiz, which attendees are required to pass before they can move on to the next module. Each quiz allows 5 attempts, and the pass rate is 75%.

Please go to pages 17 to 20 to see full details for each module:

**MODULE 00 – INTRODUCTION**  
**MODULE 01 – SCS DESIGN CONSIDERATIONS / STANDARDS OVERVIEW**  
**MODULE 02 – SCS TERMINATION & INSTALLATION – COPPER**  
**MODULE 03 – SCS TESTING & EQUIPMENT – COPPER**  
**MODULE 04 – SCS SYSTEMS FOR POE APPLICATIONS**  
**MODULE 05 – SCS TERMINATION & INSTALLATION – FIBER OPTIC**  
**MODULE 06 – SCS TESTING & EQUIPMENT – FIBER OPTIC**  
**MODULE 07 – HIGH-SPEED APPLICATIONS AND MPO POLARITY CHALLENGES**  
**MODULE 08 – SCS SYSTEMS FOR COMMERCIAL BUILDINGS APPLICATIONS**  
**MODULE 09 – SCS SYSTEMS FOR OUTSIDE PLANT APPLICATIONS**  
**MODULE 10 – SCS SYSTEMS FOR DATACENTER APPLICATIONS**

**MODULE 11 – SCS SYSTEMS FOR EDUCATION**  
**MODULE 12 – SCS SYSTEMS FOR HEALTHCARE FACILITIES**  
**MODULE 13 – SCS SYSTEMS FOR ZONE CABLING AND IOT APPLICATIONS**  
**MODULE 14 – SCS SYSTEMS FOR WIRELESS LAN APPLICATIONS (WLAN)**  
**MODULE 15 – PON LAN APPLICATIONS AND TESTING REQUIREMENTS**  
**MODULE 16 – SCS SYSTEMS FOR HD BASE-T AND SDVOE APPLICATIONS**  
**MODULE 17 – SCS SYSTEMS FOR NBASE-T APPLICATIONS**  
**MODULE 18 – MOLEX WARRANTY PROGRAM**

**COURSE EVALUATION**



## BP150

### Course Descriptions – Highlights

- An on-line course that enables Molex Connected Enterprise Solutions Design and Installation professionals to specify, position, design, estimate, install, and support Molex Connected Enterprise Solutions' Data Transport Solutions, including its Fiber and plug & play solutions
- Theory is supplemented by exercises in which participants complete designs, see demonstrations using installation tools readily available in the industry, handle required products, and test installed channels
- A comprehensive overview of international standards such as ANSI/TIA, ISO/IEC, CENELEC, and AS/NZS is provided
- Upon completion of the course, participants will demonstrate competency to:
  - Position the solutions confidently with customers
  - Select correct solution, media type and performance level for the customer's application
  - Install, test, and support the solutions, including how to (a) properly lay and interconnect the medium, (b) test installed channels with industry-standard equipment, and (c) methodically detect and isolate faults in installations
- This course does not provide Molex Connected Enterprise Solutions certification or credit toward to certification.
- BICSI CECs are available for this course. Please visit <https://www.bicsi.org> for more information or see table on Page 4 of this Catalogue. (Note: BICSI only issues CECs to BICSI credential holders)

### Training Objectives

- Consultant and end user knowledge and understanding of:
  - Current standards
  - Installation practices
  - Molex Connected Enterprise Solutions
- Understand Molex Connected Enterprise Solutions and its vision, along with its Fiber Optic solutions
- Understand Molex Connected Enterprise Solutions' data transport solutions and the unique techniques and procedures required to design, install, and test them
- Understand Molex Connected Enterprise Solutions' Plug & Play solutions
- Fiber Optic ModLink and its application in a data center
- Understand the ANSI/TIA and ISO/IEC or regional equivalent technical standards applicable to structured cabling
- Understand the architecture and design of industry-standard structured cabling systems
- Understand the evolution of the physical network and its interface and influence on the structured cabling system, including the OSI model and LAN topologies, especially ethernet
- Understand theory, optical characteristics, construction of Fiber systems
- Train proper design, installation, documentation, and testing procedures including bend radii of various media, wiremap, patching field, separation from power or hazardous sources, cable pull limits and other pull guidelines, working with fire stops, and proper labeling per the industry standard(s)

### Course recommended Pre-activities

- Basic knowledge in structure cabling
- Basic knowledge and use of a Molex Connected Enterprise Solutions-approved structured cabling tester and termination tools

The course has separate modules to allow for easier flow. Breaks would be added as appropriate. The following outline is representative but not all inclusive of the subject matter. Some of the training modules are followed by a quiz, which attendees are required to pass before they can move on to the next module. Each quiz allows 5 attempts, and the pass rate is 75%.

Please go to pages 17 to 20 to see full details for each module:

**MODULE 00 – INTRODUCTION**  
**MODULE 01 – SCS DESIGN CONSIDERATIONS / STANDARDS OVERVIEW**  
**MODULE 05 – SCS TERMINATION & INSTALLATION – FIBER OPTIC**  
**MODULE 06 – SCS TESTING & EQUIPMENT – FIBER OPTIC**  
**MODULE 07 – HIGH-SPEED APPLICATIONS AND MPO POLARITY CHALLENGES**  
**MODULE 09 – SCS SYSTEMS FOR OUTSIDE PLANT APPLICATIONS**  
**MODULE 10 – SCS SYSTEMS FOR DATACENTER APPLICATIONS**  
**MODULE 15 – PON LAN APPLICATIONS AND TESTING REQUIREMENTS**

### COURSE EVALUATION



## BP153

### Course Descriptions – Highlights

- An ADVANCED on-line + on-site course that enables Molex Connected Enterprise Solutions Design and Installation professionals to specify, position, design, estimate, install, and support Molex Connected Enterprise Solutions' Data Transport Solutions, including its Fiber and plug & play solutions
- Theory is supplemented by exercises in which participants complete designs, see demonstrations using installation tools readily available in the industry, handle required products, and test installed channels
- A comprehensive overview of international standards such as ANSI/TIA, ISO/IEC, CENELEC, and AS/NZS is provided
- Upon completion of the course, participants will demonstrate competency to:
  - Position the solutions confidently with customers
  - Select correct solution, media type and performance level for the customer's application
  - Install (fusion splicing included), test, and support the solutions, including how to (a) properly lay and interconnect the medium, (b) test installed channels with industry-standard equipment, and (c) methodically detect and isolate faults in installations
- This course does not provide Molex Connected Enterprise Solutions certification or credit toward to certification

### Training Objectives

- Consultant and end user knowledge and understanding of:
  - Current standards
  - Installation practices
  - Molex Connected Enterprise Solutions
- Understand Molex Connected Enterprise Solutions and its vision, along with its Fiber Optic solutions
- Understand Molex Connected Enterprise Solutions' data transport solutions and the unique techniques and procedures required to design, install, and test them (fusion splicing included)
- Understand Molex Connected Enterprise Solutions' Plug & Play solutions
- Understand the ANSI/TIA and ISO/IEC or regional equivalent technical standards applicable to structured cabling
- Understand the architecture and design of industry-standard structured cabling systems
- Understand the evolution of the physical network and its interface and influence on the structured cabling system, including the OSI model and LAN topologies, especially ethernet
- Understand theory, optical characteristics, construction of Fiber systems
- Train proper design, installation, documentation, and testing procedures including bend radii of various media, wiremap, patching field, separation from power or hazardous sources, cable pull limits and other pull guidelines, working with fire stops, and proper labeling per the industry standard(s)

### Course recommended Pre-activities

- Basic knowledge in structure cabling
- Basic knowledge and use of a Molex Connected Enterprise Solutions-approved structured cabling tester and termination tools

The course has separate modules to allow for easier flow. Breaks would be added as appropriate. The following outline is representative but not all inclusive of the subject matter.

Some of the training modules are followed by a quiz, which attendees are required to pass before they can move on to the next module. Each quiz allows 5 attempts, and the pass rate is 75%.

Please go to pages 17 to 20 to see full details for each module:

#### MODULE 00 – INTRODUCTION

#### MODULE 01 – SCS DESIGN CONSIDERATIONS / STANDARDS OVERVIEW

#### MODULE 05 – SCS TERMINATION & INSTALLATION – FIBER OPTIC

#### MODULE 06 – SCS TESTING & EQUIPMENT – FIBER OPTIC

#### MODULE 07 – HIGH-SPEED APPLICATIONS AND MPO POLARITY CHALLENGES

#### MODULE 15 – PON LAN APPLICATIONS AND TESTING REQUIREMENTS

#### MODULE 19 - ON-SITE PRACTICAL WORKSHOP TRAINING

SET UP THE RFR-00311-BK FIBER TRAY FOR TERMINATION

SET UP AND REVIEW SPLICER OPERATION

SPLICE PIGTAILS TO ONE END OF THE FIBER LINK

REVIEW THE PROCESS TO INSTALL THE G2 XPRESS CONNECTOR

INSTALL THE G2 EXPRESS CONNECTOR ONE END OF THE LINK

INSPECT AND CLEAN FIBER CONNECTORS FOR ASSEMBLY

INSTALL THE LINKS INTO THE FIBER TRAYS AND DRESS THE FIBER

SET UP THE TESTER TO FOR OM3 FIBER TESTING ON LC CONNECTORS

SET THE TESTER REFERENCE USING THE ONE JUMPER METHOD

TEST THE LINKS CREATED DURING THE TERMINATION EXERCISES

#### COURSE EVALUATION

## BP155

### Course Descriptions – Highlights

- An on-line course that enables Molex Connected Enterprise Solutions Design and Installation professionals to specify, position, design, estimate, install, and support Molex Connected Enterprise Solutions' Data Transport Solutions, including its Copper solutions
- Theory is supplemented by exercises in which participants complete designs, see demonstrations using installation tools readily available in the industry, handle required products, and test installed channels
- A comprehensive overview of international standards such as ANSI/TIA, ISO/IEC, CENELEC, and AS/NZS is provided
- Upon completion of the course, participants will demonstrate competency to:
  - Position the solutions confidently with customers
  - Select correct solution, media type and performance level for the customer's application
  - Install, test, and support the solutions, including how to (a) properly lay and interconnect the medium, (b) test installed channels with industry-standard equipment, and (c) methodically detect and isolate faults in installations
- This course does not provide Molex Connected Enterprise Solutions certification or credit toward to certification
- BICSI CECs are available for this course. Please visit <https://www.bicsi.org> for more information or see table on Page 4 of this Catalogue. (Note: BICSI only issues CECs to BICSI credential holders)

### Training Objectives

- Consultant and end user knowledge and understanding of:
  - Current standards
  - Installation practices
  - Molex Connected Enterprise Solutions
- Understand Molex Connected Enterprise Solutions and its vision, along with its Copper solutions
- Understand Molex Connected Enterprise Solutions' data transport solutions and the unique techniques and procedures required to design, install, and test them
- Understand the ANSI/TIA and ISO/IEC or regional equivalent technical standards applicable to structured cabling
- Understand the architecture and design of industry-standard structured cabling systems
- Understand the evolution of the physical network and its interface and influence on the structured cabling system, including the OSI model and LAN topologies, especially ethernet
- Understand theory, electrical characteristics, construction of Copper systems
- Train proper design, installation, documentation, and testing procedures including bend radii of various media, wiremap, patching field, separation from power or hazardous sources, cable pull limits and other pull guidelines, working with fire stops, and proper labeling per the industry standard(s)

### Course recommended Pre-activities

- Basic knowledge in structure cabling
- Basic knowledge and use of a Molex Connected Enterprise Solutions-approved structured cabling tester and termination tools

The course has separate modules to allow for easier flow. Breaks would be added as appropriate. The following outline is representative but not all inclusive of the subject matter. Some of the training modules are followed by a quiz, which attendees are required to pass before they can move on to the next module. Each quiz allows 5 attempts, and the pass rate is 75%.

Please go to pages 17 to 20 to see full details for each module:

MODULE 00 – INTRODUCTION  
 MODULE 01 – SCS DESIGN CONSIDERATIONS / STANDARDS OVERVIEW  
 MODULE 02 – SCS TERMINATION & INSTALLATION – COPPER  
 MODULE 03 – SCS TESTING & EQUIPMENT – COPPER  
 MODULE 04 – SCS SYSTEMS FOR POE APPLICATIONS  
 MODULE 08 – SCS SYSTEMS FOR COMMERCIAL BUILDINGS APPLICATIONS  
 MODULE 09 – SCS SYSTEMS FOR OUTSIDE PLANT APPLICATIONS  
 MODULE 10 – SCS SYSTEMS FOR DATACENTER APPLICATIONS

MODULE 11 – SCS SYSTEMS FOR EDUCATION  
 MODULE 12 – SCS SYSTEMS FOR HEALTHCARE FACILITIES  
 MODULE 13 – SCS SYSTEMS FOR ZONE CABLING AND IOT APPLICATIONS  
 MODULE 14 – SCS SYSTEMS FOR WIRELESS LAN APPLICATIONS (WLAN)  
 MODULE 16 – SCS SYSTEMS FOR HD BASE-T AND SDVOE APPLICATIONS  
 MODULE 17 – SCS SYSTEMS FOR NBASE-T APPLICATIONS

COURSE EVALUATION

# MODULES' DETAILS

## MODULE 00 – INTRODUCTION

- Course Ground Rules, Objectives, and Agenda
- Participant Introductions and Expectations

## MODULE 01 – SCS DESIGN CONSIDERATIONS / STANDARDS OVERVIEW

- History of networking and networks
- IEEE definition of a LAN
- IEEE Standards
- Structured Cabling Systems architectures and design considerations
- Conductor selection in cords and cables
- Work Area / MUTO's and CP's / EMI
- Application – Medium – Distance
- Multimode & Singlemode fiber types
- New categories of field testers
- Construction Products Regulation (CPR)

## MODULE 02 – SCS TERMINATION & INSTALLATION – COPPER / QUIZ

- ANSI/TIA, ISO/IEC, AS/NZ and EN (CENELEC) copper performance categories
- ISO/IEC, AS/NZ and EN (CENELEC) copper channel performance
- Permanent Link - Cable lengths due to de-rating factors as per ANSI/TIA 568-C.2
- IEC definitions of cable construction / 4-Pair color Standards / Termination sequence
- Installation practices for copper cabling / Cabling in ceiling voids & in suspended ceiling areas
- Basket or tray above suspended ceilings
- Cabling in floor void / Surface trunking / Containment types / Cabling supports
- Fill amount of containment / Protection from damage / Separation from power services
- Shielded channels / Grounding and bonding / Labelling / Cabinet and rack layout
- U/UTP – U/FTP – F/UTP – Termination procedures

## MODULE 03 – SCS TESTING & EQUIPMENT – COPPER / QUIZ

- Field testers and testing
- Tester and lead care
- Tester and lead maintenance
- Channel electrical measurements
- Acceptable tolerances on link length in test results
- Propagation Delay and Delay Skew
- Copper testing – Permanent Link and MPLT
- Test setup

## MODULE 04 – SCS SYSTEMS FOR POE APPLICATIONS

- What is power over Ethernet ?
- PoE fundamentals
- Why use PoE ?
- PoE myths and misconceptions
- PoE today and tomorrow – Standards overview
- Addressing PoE+ and PoE++ challenges
- Testing PoE – Molex Connected Enterprise Solutions recommendations
- Molex Connected Enterprise Solutions SCS Systems for PoE, High Power PoE, HD BASE-T... applications
- Molex Connected Enterprise Solutions installation requirements

## MODULE 05 – SCS TERMINATION & INSTALLATION – FIBER OPTIC / QUIZ

- Optical Fiber evolution / What is optical Fiber cable and how does it work?
- Light propagation technique / Optical Fiber power loss or attenuation
- Multimode and Singlemode Fiber types / Installation practices for Fiber cabling
- Cable handling – Bend radius and pulling tension / Fiber Optic
- Cable types & Interbuilding to intrabuilding transitions
- Working with Fiber Optic / General DO's and DON'Ts - Word of warning
- Pigtail splicing / Pre-connectorized cables / ModLink Plug & Play
- Direct Field termination / Molex Connected Enterprise Solutions G2 Xpress connector
- Molex Connected Enterprise Solutions MFE / Multi-Function Fiber Enclosure
- Locking kit and cable management extensions / Fiber tooling / Cleaning a Fiber Optic solution

# MODULES' DETAILS

## MODULE 06 – SCS TESTING & EQUIPMENT – FIBER OPTIC / QUIZ

- Field testers and testing / Tester and lead care / Tester and lead maintenance
- Fiber tooling
- TSB-4979 / Encircled flux (EF) conditions for Multimode Fiber testing
- OLTS testing of OM3, OM4 and OM5 links / OTDR testing additional requirements
- Link loss budget / Cable attenuation – Multimode & Singlemode Fiber cable
- Connector and splice attenuation
- Loss budget for the MPO/MTP® solution under the standards
- Fiber testing and settings / Cleaning a Fiber Optic solution
- Optical test report check-list

## MODULE 07 – HIGH SPEED APPLICATIONS AND MPO POLARITY CHALLENGES

- Decoding the IEEE language
- Standards – Singlemode & Multimode Fiber for IEEE
- Standards – In More Details
- What is the difference between an MPO and an MTP® connector?
- Managing the MPO/MTP® polarity challenge
- Molex Connected Enterprise Solutions offers a wide range of products to support all of these applications
- Some Application Examples

## MODULE 08 – SCS SYSTEMS FOR COMMERCIAL BUILDINGS APPLICATIONS

- Overview of the Molex Connected Enterprise Solutions concept for commercial buildings
- Horizontal cabling
- Floor Distributor (FD) or Intermediate Distribution Frame (IDF)
- Backbone cabling
- Building distributor (BD) or Main Distribution Frame (MDF)
- Optical Fiber
- Channel
- Permanent Link
- Frame layout in logical sections
- Distribution frame installation and cable management

## MODULE 09 – SCS SYSTEMS FOR OUTSIDE PLANT APPLICATIONS

- Outdoor Cabling definitions
- Typical Customer-Owned OSP link
- Example of Campus star topology
- Example of Campus/Building Cabling topology
- Outdoor Cabling types
- Use of lubricants
- More OSP risks, cautions, and restrictions
- Pulling outdoor cable
- Outdoor Cabling testing & troubleshooting

## MODULE 10 – SCS SYSTEMS FOR DATACENTER APPLICATIONS

- Data Center Standards
- What are the different types of Data Centers?
- Data Center metrics
- Key challenges with Data Centers
- Typical design
- “Leaf-Spine” architecture
- Different types of interconnections
- Data Center topologies / Hot & Cold Aisles
- Molex Connected Enterprise Solutions innovative solutions for Data Centers
- Top 10 FAQs on Data Centers

# MODULES' DETAILS

## MODULE 11 – SCS SYSTEMS FOR EDUCATION

- Structured Cabling Systems in Schools – What Cabling do I need? / Do I need Fiber?
- How big does my cabling system need to be?
- Key trends to consider before deploying a structured cabling system in an educational facility
- Educational Facilities / Cabling Standards overview

## MODULE 12 – SCS SYSTEMS FOR HEALTHCARE FACILITIES

- Structured Cabling Systems for Healthcare facilities
- Healthcare facilities / Cabling standards overview

## MODULE 13 – SCS SYSTEMS FOR ZONE CABLING AND IOT APPLICATIONS

- Smart Building or Digital Building? / IP Convergence
- A little bit about the Standards
- Why use a Zone Cabling infrastructure?
- What is a Zone Cabling infrastructure?
- Zone Cabling naming conventions
- Intermediate connection point naming / Outlets naming
- Is an outlet always required for a device?
- Coverage area / Cell size / Zone area
- Zone enclosure location / Zone enclosure capacity
- Designing a Zone Enclosure architecture

## MODULE 14 – SCS SYSTEMS FOR WIRELESS LAN APPLICATIONS (WLAN)

- Wireless applications / cabling standards overview
- Some key definitions as per ANSI/TSB-162-A
- The square cell grid strategy
- Key trends that are impacting the deployment of structured cablings systems for wireless applications
  - Link aggregation
  - MU-MIMO
  - IEEE 802.11ac Wave 2
  - IEEE 802.11ax / Wi-Fi 6 & 6E
- What cabling do I need?
- Wireless LAN Technologies - Table

## MODULE 15 – PON LAN APPLICATIONS AND TESTING REQUIREMENTS

- New times, new changes ahead...
- Why Passive Optical LANs? What is the difference between EPON and GPON?
- Traditional LAN VS PON LAN – Overview and in details / PON LAN main benefits
- PON LAN cabling and topologies
- Considerations for testing a PON LAN system / Quick overview of Molex requirements
- Detailed Molex Connected Enterprise Solutions requirements
- Test procedure
- Troubleshooting – tip # 1
- Troubleshooting – tip # 2

## MODULE 16 – SCS SYSTEMS FOR HD BASE-T AND SDVOE APPLICATIONS

- Broadcasting market trends
- Which parameters may influence the transmission of A/V over cabling systems?
- Which A/V parameters may be affected?
- Speaking the A/V dialect
- HD Base-T main principles
- SDVoE main principles
- Main Molex Connected Enterprise requirements/recommendations

# MODULES' DETAILS

## **MODULE 17 – SCS SYSTEMS FOR NBASE-T APPLICATIONS**

- NBASE-T - 2.5G/5G Base-T – The theory
- Molex Connected Enterprise Solutions Guidelines and Recommendations

## **MODULE 18 – MOLEX WARRANTY PROGRAM & WARRANTY REQUIREMENTS**


- Quick overview of warranty types available
- Becoming a Molex Connected Enterprise Solutions Business Associate
- Tester requirements
- Testing procedure requirements
- As-built documentation requirements
- Moves, Adds, and Changes (MACs)
- How to apply for a Molex Connected Enterprise Solutions 25-Year Warranty






## BP160

### Course Descriptions – Highlights

- An on-line course that enables Molex Connected Enterprise Solutions Design and Installation professionals to use and make the most of the Molex Connected Enterprise Solutions BoM Estimator Tool



Connected Enterprise Solutions







### MOLEX CONNECTED ENTERPRISE SOLUTIONS BoM ESTIMATOR - v9.5


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材料清单生成器 - v9.5  
Generator zestawień materiałowych - v9.5  
Генератор спецификаций - v9.5














### PLEASE MAKE SURE YOU TAKE OUR BP160 TRAINING COURSE BEFORE USING THIS TOOL...


### INSTRUCTIONS


This tool is intuitive enough to be used without extensive training. Follow each step in the right order, and fill in the cells as appropriate. Finally, see the results in the "BUILD1" tab - You may print your Molex Connected Enterprise Solutions Bill of Materials if needed.


This tool covers Cat 5E / Cat 6 / Cat 6A / Fiber Optic. Multistory Buildings and Campus styles - Combination of both.


This tool is designed to be typically used by Consultants, Architects, Certified Installers and End-Users. The BoM and Installation Time estimations may change subject to an on-site survey, confirmation of Requirements, change in design, physical site conditions and readiness.

#### IN THE BoM ITSELF:

**THIS ICON INDICATES THE AVAILABILITY OF A DATASHEET** 

**THIS ICON INDICATES THAT A PRODUCT IS SOLD IN A PACK OF xx UNITS** 

**THIS ICON INDICATES THAT A PRODUCT IS SOLD IN INDIVIDUAL UNITS** 



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**These are estimated numbers only.**

**Molex Connected Enterprise Solutions does not imply a commitment on the numbers as calculated and shown within this spreadsheet or document.**

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## BP170

### Course Descriptions – Highlights

- An on-line course that enables Molex Connected Enterprise Solutions Design and Installation professionals to use and make the most of the Molex Connected Enterprise Solutions Cable Fill Rates Estimator Tool


Connected Enterprise Solutions





### MOLEX CONNECTED ENTERPRISE SOLUTIONS CABLE FILL RATES ESTIMATOR

EXPIRY DATE: 30 JUN 2022 / v8.3  
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#### INSTRUCTIONS













### PLEASE MAKE SURE YOU TAKE OUR BP170 TRAINING COURSE BEFORE USING THIS TOOL...

**Change the inputs in BLUE CELLS to see cable count**  
**You may also change Cable Diameters in LIGHT-BLUE CELLS**

All dimensions are in millimeters or inches

40% Fill Rate is the max recommended by National and International Standards  
90 mm (3.5 in) is max height of cables in MESH TRAY. Flat or slotted tray is 120 mm (4.7 in)  
For other heights, multiply 'Number of Cables' by (actual height/90)

Copper bend radius is based on 8 x D during installation (under tension) and 4 x D after installation (not under tension)  
Fiber bend radius is based on 20 x D during installation (under tension) and 10 x D after installation (not under tension)  
As conduit bends cannot be changed after installation, bends should reflect the installation bend radius  
Maximum conduit run between access point is 30 meters  
No more than 2 x 90°, or a combination up to 180° is allowed between access points



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BP180➤

Course Descriptions – Highlights

- An on-line course that enables Molex Connected Enterprise Solutions Design and Installation professionals to use and make the most of the Molex Connected Enterprise Solutions Consultant Proposal Generator
- As an example, this training will guide participants on how to register online and get access to the tool

molex®

Connected Enterprise Solutions

Molex Proposal Generator

SEARCH 🔍

SPECIFICATION 📄

LOGOUT ➡

START CHOOSING

SYSTEM ELEMENT ?

All

Backbone / Vertical Cabling

Horizontal Cabling

Fiber Optic Patch Panel

Active Equipment

Tel. Enclosure

Fiber Optic Patch Panel

Active Equipment

Tel. Enclosure

Copper Patch Panel

Work Area

⏮ FIRST

⏪ PREVIOUS

1




2

3

4

NEXT ⏩

⏭ LAST

IMAGE	DESCRIPTION	MPN	SAP	ACTIONS	DOWNLOAD
	19" Patch Panel, 24xRJ45, DG+, 568B, UTP, PowerCat 6, 1U, Graphite	PID-00141	0182040009	<div><div>+</div><div>📄</div></div>	<div><div>📄</div><div>📄</div><div>📄</div><div>⚙️</div></div>
	PowerCat 6A 24 Port Patch Panel 568A/B Shielded with Cable Management - 1U, Black	PID-00217	0182960000	<div><div>+</div><div>📄</div></div>	<div><div>📄</div><div>📄</div><div>📄</div><div>⚙️</div></div>
	FO Patch Cord, duplex MM 50/125 OM3, Duplex LC - Duplex LC, LSZH, 2.0m	91.LL.372.00200	0180590947	<div><div>+</div><div>📄</div></div>	<div><div>📄</div></div>

## BP300

### Course Descriptions – Highlights

- An on-line course that enables Molex Connected Enterprise Solutions Design and Installation Hardware professionals to specify, position, design, estimate, install, and support the hardware components of Molex Connected Enterprise Solutions' MIIM System
- Hardware familiarization is supplemented by exercises in which participants complete designs and see demonstrations
- Upon completion of the course, participants will demonstrate competency to:
  - Position the solution confidently with customers
  - Select correct solution and performance level for the customer's application Install, test, manage, and support an installed MIIM hardware
- BICSI CECs will soon be available for this course. Please visit <https://www.bicsi.org> for more information or see table on Page 4 of this Catalogue. (Note: BICSI only issues CECs to BICSI credential holders)

### Training Objectives

- Understand Molex Connected Enterprise Solutions and its vision, its Copper and Fiber Optic solutions, its MIIM™ G3 solution
- Understand the MIIM value proposition, competitive advantages and differentiators
- Train proper design, installation, and testing procedures on MIIM hardware
  - Design Crossconnect and Interconnect MIIM solutions
  - Install and configure MIIM hardware (scanners, patch panels)
- Perform MIIM troubleshooting and fault isolation
- Understand the competitive advantages and differentiators of MIIM

### Course Prerequisites and Pre-activities

- Required previous attendance in BP130 (or equivalent upon Molex Connected Enterprise Solutions' prior approval) that provides fundamental knowledge of structure cabling or BP120**
- Knowledge and use of a Molex Connected Enterprise Solutions-approved structured cabling tester and termination tools
- Required pre-reading: Molex Connected Enterprise Solutions Business Associate Program Overview

Some of the training modules are followed by a quiz, which attendees are required to pass before they can move on to the next module. Each quiz allows 5 attempts, and the pass rate is 75%.

The course has separate modules to allow for easier flow. Breaks would be added as appropriate. The following outline is representative but not all inclusive of the subject matter.

Note: BP300 covers MIIM hardware overview, design, and installation, and is targeted for the MIIM Hardware Installer who should have familiarity in and around a Telecom Room, or a Data Center. BP305 covers MIIM User Training and is targeted for the IT Administrator that will manage the MIIM Application, and the IT Technician that will use the MIIM Application in their daily operations to maintain the network. The Observer is targeted for personnel that typically view the network status and account for its IT devices, but who do not make changes to the network.

MODULE		BP310 MIIM G3 CERTIFICATION WORKSHOP				
		BP300	BP305 MIIM G3 USER TRAINING			
		MIIM HARDWARE	DESIGN & SOFTWARE	IT ADMIN	TECHNICIAN	OBSERVER
		Installs hardware components of MIIM and should have familiarity around a TR or Data Centre	Installs MIIM server and configures MIIM for site architecture	Establishes user accounts and permissions, performs backup and import/export of data into MIIM	Performs daily functions of MIIM, including work order management, patching and troubleshooting	Views information about the IT physical network and its attached device as reported by MIIM
1	Course Introduction	Yes	Yes	Yes	Yes	Yes
2	Molex Connected Enterprise Solutions Overview	Yes				
3	MIIM system overview	Yes	Yes	Yes	Yes	Yes
4	MIIM design	Yes				
5	MIIM hardware installation	Yes				
6	Recognizing the MIIM scanner in the LAN		Yes	Yes		
7	MIIM application installation		Yes			
8	MIIM application overview			Yes	Yes	Yes
9	Utilizing the MIIM user interface			Yes	Yes	Yes
10	MIIM work orders			Yes	Yes	Yes
11	MIIM event logs and alarms			Yes	Yes	Yes
12	Event-driven discovery and auto-discovery		Yes	Yes		
13	MIIM reports		Yes	Yes		
14	MIIM import and export			Yes		
15	Support and troubleshooting			Yes		
16	3rd party integration via SNMP		Yes	Yes		
17	MIIM value proposition summary	Yes	Yes	Yes	Yes	Yes
18	BP300 course review					

### MODULE 01 – INTRODUCTION

### MODULE 02 – MOLEX CONNECTED ENTERPRISE SOLUTIONS OVERVIEW / OPTIONAL

### MODULE 03 – MIIM SYSTEM OVERVIEW

### MODULE 04 – MIIM SYSTEM DESIGN

### MODULE 05 – MIIM HARDWARE INSTALLATION AND EXERCISE

### MODULE 17 – MIIM VALUE PROPOSITION SUMMARY

### QUIZ AND COURSE EVALUATION

## BP305

### Course Descriptions – Highlights

- An on-line course that enables Network Managers and Technicians to use and support Molex Connected Enterprise Solutions' MIIM System
- The course provides detailed instruction on how to initialize and configure the system software and make moves/adds/changes to that configuration after the initial deployment is complete
- Upon completion of the course, participants will competently operate, manage, and support an installed MIIM software
- Participants taking this course are not required to take BP300
- BICSI CECs will soon be available for this course. Please visit <https://www.bicsi.org> for more information or see table on Page 4 of this Catalogue. (Note: BICSI only issues CECs to BICSI credential holders)

### Training Objectives

- Understand networking required to integrate MIIM into LANs
- Train proper design, installation, and testing procedures using a live MIIM
  - Install and configure MIIM hardware (scanners, patch panels and outlet terminators)
  - Install and configure MIIM software and software environment (MS Win Server, SQL-Server Express 64-Bit, Web Services, and MS.Net)
  - Create and populate a MIIM database
  - Use MIIM work-orders, reports, statistics, back-up & restore
  - Perform MIIM troubleshooting and fault isolation

### Course Prerequisites and Pre-activities

- Minimum of 5 years of solid practical experience in networking or structured cabling
- Working knowledge of networks, including TCP/IP, Microsoft server setup and configuration; IIS; network commands such as ping, tracert, arp, and ipconfig; and network applications such as AngryIPScanner, Wireshark
- We recommend previous attendance & completion of BP120 or BP130 (or equivalent upon Molex Connected Enterprise Solutions' prior approval) that provides fundamental knowledge of structure cabling Knowledge and use of a Molex Connected Enterprise Solutions-approved structured cabling tester and termination tools

The course has separate modules to allow for easier flow. Breaks would be added as appropriate. The following outline is representative but not all inclusive of the subject matter.

Please go to pages 27 to 30 to see full details for each module:

**MODULE 01 – INTRODUCTION**  
**MODULE 03 – MIIM SYSTEM OVERVIEW**  
**MODULE 06 – RECOGNIZING THE MIIM SCANNER**  
**MODULE 07 – MIIM APPLICATION SOFTWARE INSTALLATION**  
**MODULE 08 – MIIM APPLICATION SOFTWARE OVERVIEW**  
**MODULE 09 – UTILIZING THE MIIM USER INTERFACE**  
**MODULE 10 – MIIM WORK ORDERS**  
**MODULE 11 – MIIM EVENT LOGS & ALARMS**  
**MODULE 12 – MIIM EVENT-DRIVEN DISCOVERY & AUTO-DISCOVERY**  
**MODULE 13 – MIIM REPORTS**  
**MODULE 14 – MIIM DATA IMPORT & EXPORT**  
**MODULE 15 – 3<sup>RD</sup> PARTY INTEGRATION**  
**MODULE 16 – SUPPORT & TROUBLESHOOTING**

**QUIZ AND COURSE EVALUATION**

## BP310



### Course Descriptions – Highlights

- A combination of on-line and instructor-led, hands-on workshop that enables Molex Connected Enterprise Solutions Design and Installation Hardware and Network professionals to specify, position, design, estimate, install, and support Molex Connected Enterprise Solutions' MIIM System
- System familiarization is supplemented by exercises in which participants complete designs, see demonstrations, and handle products
- The course provides detailed, hands-on instruction on how to initialize and configure the system software and make moves/adds/changes to that configuration after the initial deployment is complete
- Upon completion of the course, participants will demonstrate competency to:
  - Position the solution confidently with customers
  - Select correct solution and performance level for the customer's application
- 2-year Molex Connected Enterprise Solutions certification upon attendance of complete course and a passing grade on quizzes
- Participants with partial attendance may not be certified
- BICSI CECs will be soon available for this course. Please visit <https://www.bicsi.org> for more information or see table on Page 4 of this Catalogue. (Note: BICSI only issues CECs to BICSI credential holders)
- Maximum of 5 participants per course
- Each attending company must have purchased and a MIIM-in-a-Rack Kit prior to the course with consideration given to the required lead times
- One participant from each company must bring their MIIM-in-a-Rack Kit to the workshop
- Participants taking this course are not required to attend BP300 nor BP305

### Training Objectives

- Understand the MIIM value proposition, competitive advantages and differentiators
- Understand networking required to integrate MIIM into LANs
- Train proper design, installation, and testing procedures using a live MIIM system
  - Design Crossconnect and Interconnect MIIM solutions
  - Install and configure MIIM hardware (scanners, patch panels)
  - Install and configure MIIM software and software environment (MS Win Server 2008R2, SQL-Server Express 2008R2 64-Bit, Web Services, and MS.Net)
  - Create and populate a MIIM database
  - Use MIIM work-orders, reports, statistics, back-up & restore
- Perform MIIM troubleshooting and fault isolation

### Course Prerequisites and Pre-activities

- Minimum of 5 years of solid practical experience in networking or structured cabling
- Working knowledge of networks, including TCP/IP, Microsoft server setup and configuration; IIS; network commands such as ping, tracer, arp, and ipconfig; and network applications such as AngryIPScanner, Wireshark
- Requires previous completion of BP120 or BP130 (or equivalent upon Molex Connected Enterprise Solutions' prior approval) that provides fundamental knowledge of structure cabling
- Knowledge and use of a Molex Connected Enterprise Solutions-approved structured cabling tester and termination tools

The course has separate modules to allow for easier flow. Breaks would be added as appropriate. The following outline is representative but not all inclusive of the subject matter.

Some of the training modules are followed by a quiz, which attendees are required to pass before they can move on to the next module. Each quiz allows 5 attempts, and the pass rate is 75%.

Please go to pages 27 to 30 to see full details for each module:

**MODULE 01 – INTRODUCTION**  
**MODULE 02 – MOLEX CONNECTED ENTERPRISE SOLUTIONS OVERVIEW / OPTIONAL**  
**MODULE 03 – MIIM SYSTEM OVERVIEW**  
**MODULE 04 – MIIM SYSTEM DESIGN**  
**MODULE 05 – MIIM HARDWARE INSTALLATION AND EXERCISE**  
**MODULE 06 – RECOGNIZING THE MIIM SCANNER**  
**MODULE 07 – MIIM APPLICATION SOFTWARE INSTALLATION**  
**MODULE 08 – MIIM APPLICATION SOFTWARE OVERVIEW**  
**MODULE 09 – UTILIZING THE MIIM USER INTERFACE**  
**MODULE 10 – MIIM WORK ORDERS**  
**MODULE 11 – MIIM EVENT LOGS & ALARMS**  
**MODULE 12 – MIIM EVENT-DRIVEN DISCOVERY & AUTO-DISCOVERY**  
**MODULE 13 – MIIM REPORTS**  
**MODULE 14 – MIIM DATA IMPORT & EXPORT**  
**MODULE 15 – 3<sup>RD</sup> PARTY INTEGRATION**  
**MODULE 16 – SUPPORT & TROUBLESHOOTING**  
**MODULE 17 – MIIM VALUE PROPOSITION SUMMARY**

### QUIZ AND COURSE EVALUATION



# MODULES' DETAILS

## MODULE 01 – INTRODUCTION

- Course Ground rules, Objectives, and Agenda
- Participant Introductions and Expectations

## MODULE 02 – MOLEX CONNECTED ENTERPRISE SOLUTIONS OVERVIEW

- Koch Corporate overview
- MBM® Guiding Principles
- Molex Corporate overview
- Molex Connected Enterprise Solutions Corporate overview
- Molex Connected Enterprise Solutions Business Associates
- Molex Connected Enterprise Solutions Customer Support
- Molex Connected Enterprise Solutions Warranty overview

## MODULE 03 – MIIM SYSTEM OVERVIEW

- Objective No 1 of this overview is to demonstrate how MIIM can address today's challenges in IT environments
  - Managing MACs – Moves, Adds & Changes
  - Complexity is increasing - Increasing Visibility and reliability on Layer 1
  - Protecting the IT Investment and Increasing Security on Layer 1
  - Real End-to-End Channel Monitoring
  - Confirming Channel States
  - Enforcing a Proactive Approach
  - Efficient Reporting
- Objective No 2 is to bring an overview of the MIIM Solution MIIM System Overview
  - Scanners (Higher and Smaller capacities)
  - MIIM System Copper
  - MIIM System Fiber Optic
  - MIIM Application
  - MIIM Architectures (Cross-Connect and Inter-Connect)
  - MIIM ICS
  - MIIM Compatibility with Analog Devices

## MODULE 04 – MIIM SYSTEM DESIGN

- MIIM – Architecture
- MIIM – Design principles
- Ethernet Standards apply
- MIIM equipment panel – Crossconnect only
- MIIM scanners – Interconnect & Crossconnect
- Connecting panels to scanners / 576-channel scanner
- Connecting panels to scanners / 96-channel scanner
- MIIM Application Server
- MIIM – Interconnect architecture
- MIIM – Crossconnect architecture
- MIIM considerations and design guidelines
- Design exercise

## MODULE 05 – MIIM HARDWARE INSTALLATION

- MIIM System Installation Process (SIP)
- MIIM 576-Channel scanner
- MIIM 96-Channel scanner
- Scanner installation steps
- MIIM Patch Panel – COPPER
- MIIM Patch Panel – FIBER OPTIC
- Install your MIIM now! Hands on...

# MODULES' DETAILS

## MODULE 06 – RECOGNIZING THE MIIM SCANNER

- MIIM Scanners – Introduction
- 576 Channel Scanner – Introduction
- 96 Channel Scanner – Introduction
- Logging into the MIIM Scanner console
- MIIM Scanners – Home Page
- MIIM Scanners – Configuration
- MIIM Scanners – Network Configuration
- MIIM Scanners – User Information
- MIIM Scanners – Application
- MIIM Scanners – Firmware
- MIIM Scanners – Upgrading Application
- 96-Channel Scanner (only) – LCD Firmware

## MODULE 07 – MIIM APPLICATION SOFTWARE INSTALLTION

- Introduction
- MIIM environment & background components
- System requirements
- Pre-required downloads
- MIIM Server configuration
- Basic functions and commands

## MODULE 08 – APPLICATION SOFTWARE OVERVIEW

- Getting started
- Main activities
- Work Area
- Administration
- Reports
- Discovery
- Basic Options
- Edit Mode
- Language
- Help & About
- Managing servers – Server configuration
- SNMP agent configuration
- AD/LDAP
- Permissions management
- Database management
- Managing Dashboards

## MODULE 09 – UTILIZING THE MIIM USER INTERFACE

- Introduction
- Display buttons
- Building a MIIM database
- Assets
- Work area
- Rack area
- Navigation options
- Properties
- Scanner
- Switch
- Panel
- Outlet
- Device
- Channel display
- Getting prepared for connections
- Infrastructure management

# MODULES' DETAILS

## MODULE 10 – MIIM WORK ORDERS

- Introduction
- Initiating a physical change
- Creating a new connect infrastructure action
  - Panel to Scanner/Mini Scanner (Copper & Fiber Optic)
  - Device to Outlet
  - Outlet to Panel
  - Panel to Switch (CC architecture)
  - Panel to Panel (CC architecture)
  - Panel to Switch (IC architecture)
  - Panel to Passive Panel
  - Passive Panel to Server
- Creating a new Detach work order
- Managing work orders
- Filtering work orders
- Advanced work order search
- Editing a work order
- Generating report on work order list
- Go to work order asset in work area
- Saving work orders to file
- Deleting work orders
- Making connections

## MODULE 11 – MIIM EVENT LOGS & ALARMS

- Event alarms
- Filtering the alarms list
- Editing an alarm
- Generating reports on alarms list
- Go to alarmed asset in work area
- Archiving alarms
- Deleting alarms from the MIIM Application
- Deleting alarms in MS SQL Server Express
- Saving alarms to file
- Event logs
- Filtering the log
- Generating a log report
- Clearing the log
- Saving the log to file
- Setting the SMTP Server Configuration
- Users Administration / E-mail Options

## MODULE 12 – EVENT-DRIVEN DISCOVERY & AUTO-DISCOVERY

- Introduction
- Auto-Discovery
- Discovery window
- Managing subnets
- Editing a subnet
- Deleting a subnet
- Switches Configuration – To be considered
- Managing clusters
- Adding a new cluster
- Editing a configured cluster
- Removing a configured cluster
- Cluster configuration – Keys to success
- Operating MIIM Discovery
- Running and individual switch discovery
- Running a global discovery

# MODULES' DETAILS

## MODULE 13 – MIIM REPORTS

- Working with report templates
- Template types
- Work Orders reports – Examples
- Alarms reports – Examples
- Rack Equipment reports – Examples
- Device reports – Examples
- Report scheduling
- Viewing a report

## MODULE 14 – MIIM IMPORT & EXPORT

- Database management – Getting started
- Backing up the Database Immediately
- Creating a New Database
- Upgrading Database to Latest Version
- Deleting a database
- Map management
- Schedule database backups
- Restoring the MIIM database

## MODULE 15 – 3<sup>RD</sup> PARTY INTEGRATION VIA SNMP

- 3rd Party integration
- SNMP integration

## MODULE 16 – SUPPORT & TROUBLESHOOTING

- The support you need
- How to create a ticket on the CSP
- Common MIIM Questions and Answers – FAQs
- Requesting and receiving licenses
- Software End-of-Life Announcements
- Performance considerations
- Troubleshooting – General
- Troubleshooting – Licensing
- Troubleshooting – Scanner
- Troubleshooting – Discovery
- Troubleshooting – SNMP
- Troubleshooting – SMTP
- Troubleshooting – Active Directory

## MODULE 17 – VALUE PROPOSITION SUMMARY

- MIIM G3 Value Proposition
  - Improved productivity / Visibility & Control
  - Enhanced network management
  - Complete network integration
  - Simple implementation and management
  - Complete management of the Physical Layer (Layer 1)

## MODULE 18 – COURSE REVIEW

- Training objectives
- Did you take away these key points?

# BP400

## Course Descriptions – Highlights

- This course is an introduction and a **pre-requisite** to the ONSITE Molex Jetted Fiber Solution workshop
- This course does not provide Molex Connected Enterprise Solutions certification or credit toward to certification

## Training Objectives

- Understand Molex Connected Enterprise Solutions and its vision
- Understand Molex Connected Enterprise Solutions' Jetted Fiber solution and the unique techniques and procedures required to design, install, and test them

## Course recommended Pre-activities

- Basic knowledge in structure cabling
- Basic knowledge and use of a Molex Connected Enterprise Solutions-approved structured cabling tester and termination tools

The course has separate modules to allow for easier flow. Breaks would be added as appropriate. The following outline is representative but not all inclusive of the subject matter. Some of the training modules are followed by a quiz, which attendees are required to pass before they can move on to the next module. Each quiz allows 5 attempts, and the pass rate is 75%.

**MODULE 00 – INTRODUCTION**  
**MODULE 01 – MOLEX CONNECTED ENTERPRISE SOLUTIONS OVERVIEW**  
**MODULE 02 – MOLEX JETTED FIBER SOLUTION VALUE PROPOSITION**  
**Module 03 – MOLEX JETTED FIBER SOLUTION OVERVIEW**  
**Module 04 – MOLEX JETTED FIBER INSTALLATION PRACTICES**

# MODULES' DETAILS

## MODULE 00 – INTRODUCTION

- Course Ground Rules, Objectives, and Agenda
- Participant Introductions and Expectations

## MODULE 01 – MOLEX CONNECTED ENTERPRISE SOLUTIONS OVERVIEW

- Koch Corporate overview
- MBM® Guiding Principles
- Molex Corporate overview
- Molex Connected Enterprise Solutions Corporate overview
- Molex Connected Enterprise Solutions Business Associates
- Molex Connected Enterprise Solutions Customer Support
- Molex Connected Enterprise Solutions Warranty overview

## MODULE 02 – MOLEX JETTED FIBER SOLUTION VALUE PROPOSITION

- A wind of change
- Jetted fiber fundamentals
- How does it work?
- Molex Jetted Fiber solution components
- What makes Molex Jetted fiber different?

## MODULE 03 – MOLEX JETTED FIBER SOLUTION OVERVIEW

- Molex Jetted Fiber Microducts
- Molex Jetted Fiber Cables
- Jetting Equipment
- Accessories

## MODULE 04 – MOLEX JETTED FIBER INSTALLATION PRACTICES

- Disclaimer
- Fundamentals – Quick Overview
- What is air blown fiber technology?
- Delivery methods
- Pathway key considerations
- Pathway handling and acceptance
- Installation
- Hazardous areas guidelines
- Key installation steps
- Common jetting set up scenarios
- Jetting performance



# BA PROGRAM – QUICK OVERVIEW

## HOW TO BECOME A MOLEX CONNECTED ENTERPRISE SOLUTIONS BUSINESS ASSOCIATE?

- Molex Connected Enterprise Solutions Sales emails an invitation with instructions to prospective BA (Business Associate)
- To register for the BAP (Business Associate Program), have a Principle at your company request a user account to Molex Connected Enterprise Solutions' Customer Support Portal (CSP) at <https://csp.molex.com>, then complete a Business Associate Application. Allow 5 days for Molex Connected Enterprise Solutions to review your Business Associate application
- Molex Connected Enterprise Solutions will review your application and notify you if clarifications are required. Molex Connected Enterprise Solutions will also notify of any required training courses in accordance with its Global Training Program
- Upon acceptance, BA logs onto their CSP account and selects the BA Registration button and shall:
  - Describe their business
  - **SIGN THE MOLEX CONNECTED ENTERPRISE SOLUTIONS BUSINESS ASSOCIATE AGREEMENT (ELECTRONICALLY)**

**Note that Molex Connected Enterprise Solutions Business Associates must operate to the requirements and spirit of the Molex Connected Enterprise Solutions Business Associate Agreement.**

**Please, also note that attendance at a course does not guarantee either training certification or Business Associate certification (Certified Installer or MIIM System Integrator).**

- Requires fulfillment with the Course Prerequisites, completion of the entire course in the order specified, passage of module quizzes, and other requirements outlined by the Molex Connected Enterprise Solutions Global Training Program
- Training required every 2 years to retain your certification

## MOLEX CONNECTED ENTERPRISE SOLUTIONS BUSINESS ASSOCIATE TYPES - OVERVIEW

### CERTIFIED INSTALLER (CI)

- Eligible for Molex Connected Enterprise Solutions' 25-year System Performance and Application Assurance Warranty covering replacement product and labor
- 2 field supervisors OR field technicians must be certified in Molex Connected Enterprise Solutions' Data Transport Solutions every 2 years
- Recommend certifying a designer in MIIM

### MIIM SYSTEM INTEGRATOR (SI)

- Certified in Molex Connected Enterprise Solutions' Data Transport Solutions (same level as a Certified Installer)
- Specifically trained to:
  - Design MIIM G3 systems
  - Install MIIM G3 Hardware
  - Specify, position, design, estimate, install, and support Molex Connected Enterprise Solutions' MIIM G3 System
  - May do installation and test, and warrant a project directly, or use a Molex Connected Enterprise Solutions Certified Installer to do the same
  - 2 field supervisors must be certified in Molex Connected Enterprise Solutions' Data Transport Solutions every 2 years
  - Recommend certifying 2 designers in MIIM
- Must purchase a 2-day BP310 training course and have a MIIM-in-a-Rack Kit for their continued education and troubleshooting

**COMPANIES WITH FEWER THAN 2 EMPLOYEES WILL BE CONSIDERED ON A CASE-BY-CASE BASIS.**

## WHY BECOME A MOLEX CONNECTED ENTERPRISE SOLUTIONS BUSINESS ASSOCIATE?

- Join an elite network of certified experts supported by our Technical and Services teams of RCDDs, Engineers, Network Managers that ensure the success of your most demanding projects
- Become eligible to apply for our 25-year extended System Performance and Application Assurance warranty on your installations
- Become eligible to participate in Molex Connected Enterprise Solutions' rollout initiatives of multi-national clients
- Gain access to innovative and unique end-to-end solutions that maximize network performance and security, and ultimately differentiate your business
- Benefit from price protection on select strategic projects to gain control over your margins
- Gain visibility and receive leads from Molex Connected Enterprise Solutions' global network to maximize your business opportunities
- Become eligible to be highlighted in a Molex Connected Enterprise Solutions Case Study to broaden awareness of your capabilities
- Gain access to Molex Connected Enterprise Solutions' Customer Support Portal to stay current on industry best practices, techniques, content
- Have your company listed on [www.molexces.com](http://www.molexces.com) with your website link, contact details, and special "Installer" logo to use in your communications

**FOR MORE INFORMATION, PLEASE REFER TO OUR BUSINESS ASSOCIATE PROGRAM OVERVIEW, AVAILABLE FROM THE CSP.**

**- LEGAL DISCLAIMER -**

The author has made every attempt to ensure the accuracy and reliability of the information provided in this document. However, the information is provided "as is" without warranty of any kind. Molex does not accept any responsibility or liability for the accuracy, content, completeness, legality, or reliability of the information contained in this document.

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 **Molex Connected Enterprise Solutions**

**molex**

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