

# OMRON

## INDUSTRIAL AUTOMATION

### TRAINING 2022



## OMRON TRAINING

Omron’s proven hands-on training shortens the learning curve of those using industrial automation equipment for the first time, as well as for experienced engineers and technicians learning the advanced functionality of an upgraded system.

Our industry experienced instructors use a combination of proven teaching techniques and hands-on real-world application exercises to deliver focused information during the course. Proficiency tests are conducted at the end of each course and an Omron certificate of training completion stands for the satisfactory demonstration of learned skills.



MAC NJ Trainer



MAC Motion Trainer



MAC Safety Trainer



CJ2 Trainer

### BENEFITS OF OMRON TRAINING COURSES

- Gain understanding, familiarity, knowledge and practical skills in automation.
- Value for money - high quality training at affordable prices.
- Competency
- Ability to fast track projects and upgrades.
- Greater return on automation investment.

### CUSTOMISED AND ON-SITE COURSES

On-site, custom and interstate courses may be arranged.

Please don’t hesitate to call Omron’s customer service line: 1300 766 766 to discuss the details of possible dates and course content.

### COURSE FORMAT

**Start Time:** 8:30 am      **Lunch:** 12:30 pm      **Finish:** 4:30 pm

Lunch is provided – please let us know if you have any dietary requirements in the registration form.

**MAC** (Machine Automation Controller) courses use Sysmac Studio Software and either NJ or NX machine automation controllers.

**PLC** (Programmable Logic Controller) courses use Cx-Programmer software and CJ2 programmable logic controllers.

**HMI** (Human Machine Interface) refers to touchscreens which are used to monitor and control a process. Software will vary depending on the desired screen model – NA, NB, NS.

### WHO SHOULD ATTEND?

Engineers, electricians, technicians, maintenance staff, fitters and plant supervisors.

### PREREQUISITES

All attendees should be familiar with Windows operating systems and basic computer keyboard skills.

**INDUSTRIAL AUTOMATION TRAINING – AGENDA**

<p><b>MAC Programming</b></p> <p><b>Duration:</b> 2 days      <b>Cost:</b> \$990 exc. GST  <b>Suitability:</b> Those using or maintaining Omron’s MAC products – NJ/NX.  <i>Sysmac Studio software is used.</i>  <b>Agenda:</b> Introduction to NJ controller hardware, Introduction to EtherCAT, IEC 61131-3 style programming: POU (Programs, Functions and Function Blocks), Tasks and cycle time, Program simulation.</p>	<p><b>MAC Motion</b></p> <p><b>Duration:</b> 2 days      <b>Cost:</b> \$990 exc. GST  <b>Suitability:</b> Those who will be using or maintaining servo drives using the SYSMAC solution – NJ/NX hardware.  <i>Sysmac Studio software is used.</i>  <b>Agenda:</b> Introduction to Servo hardware, Introduction to Servo parameters, Setting up an Axis, Test run operations, Programming via PLCopen Function Blocks for Continuous moves, Discrete moves (with blending), Synchronous moves, Coordinated moves, Touch probe, Error handling.</p>
<p><b>MAC Safety</b></p> <p><b>Duration:</b> 2 days      <b>Cost:</b> \$990 exc. GST  <b>Suitability:</b> Those who will be using or maintaining safety systems using the SYSMAC solution – NJ/NX hardware.  <i>Sysmac Studio software is used.</i>  <b>Agenda:</b> Introduction to Machine Safety and the associated standards (AS4024:1-2014), What is a risk assessment, Outline of safety componentry, Safety programming using Functions Blocks and actual safety devices, Automatic program generation and reuse and Online functional test.</p>	<p><b>HMI Programming</b></p> <p><b>Duration:</b> 1-day      <b>Cost:</b> \$495 exc. GST  <b>Suitability:</b> Those configuring and maintaining HMI programs.  <b>Agenda:</b> Separate courses can be run for the NS, NA and NB Series HMIs. Please specify your requirements. Creating static screens objects such as text and shapes, creating dynamic screen objects such as lamps, touch switches, data display and data entry, Use of graphical objects, such as analogue meters, Alarming and table displays.</p>
<p><b>Introduction to PLCs</b></p> <p><b>Duration:</b> 2 days      <b>Cost:</b> \$990 exc. GST  <b>Suitability:</b> Those requiring elementary knowledge of PLC systems such as maintenance staff.  <i>Cx-Programmer software is used.</i>  <b>Agenda:</b> PLC system components, configuration &amp; wiring, Memory matrix and addressing, Ladder diagrams, Introduction to Cx-Programmer, Program development, Maintenance and troubleshooting, Timers and counters, General application instructions.</p>	<p><b>Advanced PLC Programming</b></p> <p><b>Duration:</b> 2 days      <b>Cost:</b> \$990 exc. GST  <b>Suitability:</b> PLC programmers, engineers or people making changes to existing machinery. Ideally attendees of the Introduction to PLCs course.  <i>Cx-Programmer software is used.</i>  <b>Agenda:</b> Numbering systems, Memory architecture and addressing, Timer/counter review, Instruction logic including general instructions, data instructions, arithmetic instructions, logic instructions, subroutines and sequencing. Introduction to networks, analog I/O and special instructions.</p>
<p><b>Function Block Programming</b></p> <p><b>Duration:</b> 1-day      <b>Cost:</b> \$495 exc. GST  <b>Suitability:</b> PLC programmers, engineers or people who have attended the Advanced Programmable Logic Controllers training.  <i>Cx-Programmer software is used.</i>  <b>Agenda:</b>            What are Function Blocks and why use them, Using Omron Functions Blocks and modifying them, Creating Functions Blocks using Ladder Diagram, Creating Function Blocks in Structured Text, Error Handling in Function Blocks.</p>	<p><b>Network Communications</b></p> <p><b>Duration:</b> 1-day      <b>Cost:</b> \$495 exc. GST  <b>Suitability:</b> Those who will be configuring and maintaining industrial networks.  <i>Cx-One/Cx-Programmer software is used.</i>  <b>Agenda:</b>            General networking theory, FINS protocol and routing tables, CX-Integrator and Network Configurator software, EtherNet, EtherNet/IP and EtherCAT, Communicating via SEND and RECV instructions, Controller Link and Data Links.</p>

### Introduction to Vision Systems

**Duration:** 1-day      **Cost:** \$495 exc. GST

**Suitability:** Those who will be maintaining a visual inspection system.

**Agenda:**

What is Vision, Selecting Lighting and Lens, Configuration of Controller, Measurement Tools, Setting up Scenes, Setting up Measurement Windows and Tolerance, Application Examples.

### Advanced Vision Systems

**Duration:** 1-day      **Cost:** \$495 exc. GST

**Suitability:** Those who will be programming or maintaining a visual inspection system.

**Agenda:**

Position Compensation, Output Selection, Wiring and I/O Setup, Communications, Use of Multiple Cameras, USB or SD card (Back up Data/Images) and Application Examples.



## TRAINING SCHEDULE – 2022

**NOTE:** Omron reserves the right to cancel scheduled courses if the need arises.

**REGISTRATION:** To register online, please visit [https://www.omron.com.au/service\\_support/training/](https://www.omron.com.au/service_support/training/)

OR complete the registration form and email to : [Training-AU@omron.com](mailto:Training-AU@omron.com)

For custom, non-scheduled and product specific training – please contact Omron Electronics at 1300 766 766.

Course/ Location	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
<b>MAC Programming – 2 days \$990 exc. GST</b>												
Brisbane			7-8		2-3		4-5		5-6		7-8	
Melbourne		7-8		4-5		6-7		1-2		3-4		5-6
Sydney		15-16		12-13		14-15		9-10		11-12		13-14
<b>MAC Motion - 2 Days \$990 exc. GST</b>												
Brisbane			9-10		4-5		6-7		7-8		9-10	
Melbourne		9-10		6-7		8-9		3-4		5-6		7-8
Sydney		17-18		14-15		16-17		11-12		13-14		15-16
<b>MAC Safety - 2 Days \$990 exc. GST</b>												
Brisbane			14-15		9-10		11-12		12-13		14-15	
Melbourne		14-15		11-12		13-14		8-9		10-11		12-13
Sydney		22-23		19-20		21-22		16-17		18-19		20-21
<b>HMI Programming - 1 Day \$495 exc. GST</b>												
Brisbane			16		11		13		14		16	
Melbourne		16		13		15		10		12		14
Sydney		24		21		23		18		20		22
<b>Introduction to PLCs - 2 Days \$990 exc. GST</b>												
Brisbane		7-8		4-5		6-7		1-2		3-4		5-6
Melbourne			7-8		2-3		4-5		5-6		7-8	
Sydney			22-23		17-18		19-20		20-21		22-23	
<b>Advanced PLC Programming - 2 Days \$990 exc. GST</b>												
Brisbane		9-10		6-7		8-9		3-4		5-6		7-8
Melbourne			9-10		4-5		6-7		7-8		9-10	
Sydney			24-25		19-20		21-22		22-23		24-25	
<b>Function Block Programming - 1 Day \$495 exc. GST</b>												
Brisbane		16		13		15		10		12		14
Melbourne			16		11		13		14		16	
Sydney			10		5		7		8		10	
<b>Network Communications - 1 Day \$495 exc. GST</b>												
Brisbane		17		14		16		11		13		15
Melbourne			17		12		14		15		17	
Sydney			11		6		8		9		11	
<b>Introduction to Vision Systems - 1 Day \$495 exc. GST</b>												
Brisbane		14		11		13		8		10		12
Melbourne			14		9		11		12		14	
Sydney			8		3		5		6		8	
<b>Advanced Vision Systems - 1 Day \$495 exc. GST</b>												
Brisbane		15		12		14		9		11		13
Melbourne			15		10		12		13		15	
Sydney												

### TRAINING REGISTRATION FORM

Company/Individual						
Address						
Suburb		Postcode				
Please Tick Company Size		Staff: <20 <input type="checkbox"/> 20-50 <input type="checkbox"/> 51-100 <input type="checkbox"/> 100+ <input type="checkbox"/> 500+ <input type="checkbox"/>				
<b>Approving Manager</b>	Name	Title	Phone			
			Email			
<b>Student/s</b>	Please enter training student details below					
<b>1- Mr Mrs Ms Miss</b>	Name	Title	Course Name	Course Date	* Course Location	** Dietary Requirements?
<b>2- Mr Mrs Ms Miss</b>	Name	Title	Course Name	Course Date	* Course Location	** Dietary Requirements?
<b>3- Mr Mrs Ms Miss</b>	Name	Title	Course Name	Course Date	* Course Location	** Dietary Requirements?
<b>4- Mr Mrs Ms Miss</b>	Name	Title	Course Name	Course Date	* Course Location	** Dietary Requirements?
<b>Comment/s</b>			<b>How did you hear about Omron's training courses?</b>			
			Internet <input type="checkbox"/> Distributor <input type="checkbox"/> Integrator Program <input type="checkbox"/> Other: _____			
Payment Details:						
<b>Order Number</b> Please accept as payment my order number: _____						
<b>Cheque</b> I wish to pay by cheque: *** <input type="checkbox"/> Fee enclosed: \$ _____						
<b>Credit Card</b> Please charge my Bankcard <input type="checkbox"/> Mastercard <input type="checkbox"/> Visa <input type="checkbox"/>						
Card Number <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>						
Cardholder Name _____						
Signature _____			Expiry Date		/ /	

**\* Training Course Locations**

**Sydney HO** Unit 6/108 Silverwater Road Silverwater NSW 2128

**Brisbane** Unit 1/8 Ives Street, Murarrie Qld 4172

**Melbourne** G3/Bld B/18-24 Ricketts Road Mt Waverley VIC 3149

**\*\* Dietary Requirements:** Please let us know of any special Dietary Requirements – eg. Vegetarian, gluten free, etc.

**\*\*\*** Cheques should be made payable to Omron Electronics Pty Ltd and posted to the office where training is to be conducted.

**Conditions**

- Pre-payment is required.
- Any booking cancelled within 5 days of course commencement will incur a 50% cancellation fee.

- If a booking is cancelled within 24 hours of course commencement or if the student fails to attend, no refund will be provided. Transfers will be allowed subject to vacancies.