



# INTACS training

## Training Course Guide

*Industrial Controls & Automation Training*



### Year 2019

***Version 1.0***

PLCs, Drives, Motion Control, HMI & SCADA,  
Electrical Multi-skilling, Electrical Health & Safety,  
17<sup>th</sup> Edition, Mechanical, Process Instrumentation

**Please check availability of course places before making any site arrangements**



# INTACS training courses

## Working really closely with leading equipment manufacturers

**INTACS continues to work with brand leaders  
Bosch Rexroth, Festo & Pilz.**

**2019 is our 30<sup>th</sup> year** as a specialist industrial controls training provider. INTACS continues to work with & support leading brand names in industry for the benefit of our clients.

For some PLC & Drives manufacturers, we conduct a significant amount of training on their behalf with open courses & bespoke training programmes, both of which can run cost-effectively on client sites if required with groups as small as only 3 or 4 delegates.

**Making it WORK** – has been a major focus since 2016. We help you & your people understand the key knowledge & skills needed “to get the job done” & we give you the tools to help keep the knowledge & skills sharp.

Many of you know about our **Money Back Guarantee of Satisfaction**. This is our commitment to demonstrate to clients that they can rely on us to deliver the results they need.

**Pilz now feature INTACS’ courses in their  
Training Guide & Harting** are also backing INTACS’ courses

**Bosch, Rexroth & Indramat** are brands famous world-wide for excellence in Motion Control & Hydraulics. Not only is INTACS pleased to be awarded this prestigious title but established Bosch Rexroth clients will be able to benefit from the wide range of INTACS’ courses through their regular Bosch Rexroth contact.

A recommendation from **FESTO** – a top brand name you can trust.

As you will also know, **FESTO** is the leading supplier of Pneumatic solutions world-wide - another brand name in the industry that you can trust. FESTO have demonstrated their confidence in INTACS & for the third year running continue to recommend our PLC, Electrical Multi-skilling, Electrical Safety & 18<sup>th</sup> Edition courses to industry.

All fees quoted are exclusive of VAT.



# INTACS training courses

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# INTACS training courses



## The real Customer **BENEFITS**

*Our training programmes are designed to look after you & your people & to give you confidence at every stage.*

### Before the training

#### Many manufacturer-approved courses

Because we work so closely with a number of leading PLC & Drives companies, many of our courses are manufacturer-approved.

#### PLC Program Analysis

To make the training even more valuable for your people, we'll even build into the course coverage of your own site PLC software.

#### On-site courses

Choose between courses scheduled regularly in our Training Centre or, with a minimum of 3-4 delegates who can attend together, have the course on-site.

#### Accommodation & Training package

For your convenience, we are able to book B&B accommodation for you & add the cost to the training fees; a choice of hotel is available to suit most needs.

#### Training Needs Analysis (TNA)

Where you have people with differing backgrounds & abilities, we are able to help you identify individual strengths & weaknesses & to plan the most cost-effective training solution.

#### Training Vouchers

To ensure that you get maximum value for your money, we offer discounted Training Vouchers, which can be used for either scheduled or on-site training.

#### Customised courses

To get maximum value from the training, if you can release a minimum of 3-4 delegates who can attend at the same time, we can customise a course to match the needs of your people with the equipment you have on-site.

### During the training

#### Training Record Log

Our Training Record Log highlights the essential knowledge & key practical skills covered on the course & both delegates & the instructor sign-off topics to confirm understanding.

#### Key Competencies

The majority of INTACS' mainstream courses are now designed around core Key Competencies. These are the milestones or absolute essentials i.e. key knowledge that must be understood & skills to be mastered. This structure makes it much easier for people to retain knowledge & skill over extended periods when the opportunity for practice is limited.

#### Small class sizes

Until you've been on a manufacturer's course in a group of up to 12 - 16, you probably won't appreciate the benefits of our small groups of 4 - 8 delegates.

#### Pocket Reference Guides

Many of our courses include an invaluable Pocket Guide packed full of useful tips & techniques, important memory joggers & key sequences.



#### Practical hands-on

Our courses focus on the real needs that shop-floor maintenance people have & as such are predominantly practical concentrating on basic maintenance & troubleshooting skills.

### After the training

#### Guarantee of Satisfaction

We are so confident we can deliver the right training for your people that we're even prepared to offer a money-back guarantee of satisfaction.

#### Refresher Training days

Refresher Training days are arranged on demand to provide that short 1 day "shot in the arm" treatment to bring your people back up to speed to refresh skills. There is a small charge & dates are provided as needed.

#### Practical Fault-finding Conveyor

Following training, it is important that people have the opportunity to practice basic skills & maintain the edge when troubleshooting. Check out our Fault-finding rig with 6, 12 or 18 faults to challenge all abilities.

#### Problems with retaining staff?

If the person we train for you leaves within 2 years & you hire a replacement, use our Training PLUS scheme to save you having to pay again for the full cost of the training.

#### Managed Competency Scheme

We all know that "if you don't use it you'll lose it". Because PLCs are pretty reliable, many people lose familiarity through lack of practice. Extend the benefit of the training course from the classroom out into the workplace to consolidate the learning, relating to site systems & procedures with external monitoring & feedback.

#### Training WORKS

Another tool to ensure that you & your company benefit from the training investment being made. Training WORKS provides the key to help people understand & implement the new knowledge & skills gained on our Electrical Multiskilling course & record the evidence for future reference & certification.



# INTACS training courses

## Training for Industry

As in 2018, INTACS plans to continue offering the highest level of training support that many clients have come to know us for “*as standard*”.

### **Focus for 2019 continues – COMPETENCY is what companies want**

Whilst achieving competency with the key practical skills needed in the workplace has always been a principle feature of our PLC, Automation & Electrical courses, we’ve been working hard at providing companies with the essential documentation to record the evidence of the training completed & specific competencies proven.

It’s important for all to fully understand the capabilities of maintenance personnel in the workplace so that they, their colleagues & production are not exposed to unnecessary & avoidable risk.

Having the right training is important, having the right documentation to back it up & flag any necessary re-assessment dates is key to keeping knowledge & skills up to date & keeping people & the workplace safe.

### **Spreading the cost of your company’s Training**

It seems to be the case that more & more companies are now having to look for alternative ways to fund their training plans. Some companies are having to fund training from the monthly maintenance budget. INTACS can help by spreading the cost of a number of courses over a 12 or 24 month plan to avoid “the big hit” of having to pay for a course or series of courses out of just one month’s budget.

### **Skills Assessments**

One of the many problems facing Managers in industry today, when considering training, is COMPETENCE. Competence is about having the knowledge & skills to do the job. The problem is, outside of a very “subjective opinion” about whether a person can or can’t, whether the person does or doesn’t, is or isn’t, it can be very difficult to be sure about whether there is a training requirement or not &, if so, exactly what it is.

### **End of Year (EOY) & Discounted Training Vouchers**

Training Vouchers are available & can be used in TWO WAYS.

**EOY Training Vouchers.** If you have training budget left that you do not want to lose, buy our Training Vouchers (in multiples of £100) which can then be used towards the cost of any of our PLC or Electrical courses for a further 12 months.

**Discounted Training Vouchers.** If you have a large training requirement that we can help with or if you want to allocate your funding to protect against losing your training budget, purchase our Discounted Training Vouchers & (for example) save up to 24% against our normal fees. These Vouchers can also be used towards the cost of customised or onsite training.

### **Follow-On Work**

Most of INTACS’ mainstream courses are now backed up with Follow-On work which is completed back at the workplace. The Follow-On is intended to help consolidate the work done in class & provide additional practical experience but also helps relate the learning to the specifics of the delegate’s own site.



# INTACS training courses

## PLC First-line Practical Skills (FLPS) courses

### Focus on KEY PRACTICAL SKILLS: Level 1 First-line Practical Skills (FLPS)

Our Level 1 FLPS courses have been further enhanced to provide a “less technical, more practical” learning environment which more closely matches the requirements of the shop floor. These courses are about building rock-solid competence, working on a range of practical models & tackling the bulk of common, everyday maintenance & troubleshooting tasks.

The learning is presented in a way which much more closely resembles the requirements of the shop floor where delegates themselves **know what needs to be done & can anticipate the next step** i.e. what they need to be able to do, **the course just shows them HOW & gives loads of practice.**

The learning is structured around the use of practical training rigs & focuses on The TOP20 Key Skills.

With these new-style courses, our mission is to “**Build Competence through Confidence**”.

### The TOP 20 Key Practical Skills

#### **Typical topics include (the Top 20):**

1. Understand common PLC Hardware for the particular PLC
2. Understand key physical diagnostic indicators
3. Know how to connect a laptop – cables, connections & comm ports
4. Know how to run the PLC monitoring software
5. Know how to prove PC – PLC comms.
6. Know how to identify the correct backup program on the laptop
7. Know how to Retrieve a Project if required
8. Know how to get on-line
9. Know how to Compare a program with a backup copy
10. Know how to recognise & understand first-level PLC Instruction Set
11. Know how to monitor live Ladder status & compare with actual field I/O
12. Know how to search & get around the program
13. Know how to back-up the program
14. Know how to re-load the program
15. Know how to start to troubleshoot machine faults through the PLC
16. Know how to use the Cross Reference function
17. Know how to set up & view status tables as a monitoring tool
18. Know how to start to use the diagnostic toolkit
19. Know how to use available reset or restart functions
20. Know how to identify suspect or faulty modules & safely replace





# INTACS training courses

## **Building Confidence**

Because the FLPS courses are about building confidence & then growing the understanding & skills from a solid base, it is always surprising how many people rise to the challenge when given the opportunity. Over the last 18 months we've been trialling the FLPS courses & we've seen it many times.

For a great many maintenance people, the previous generation Level 1 M&T courses just pushed on & wheeled out some of the more abstract & obscure material too soon rather than first of all building that "rock-solid" confidence with the key skills that people thought they were coming to learn about in the first place. Quite often, this is the very thing that "spoils the party" & too many maintenance people get bogged down & struggle to understand things which are not necessarily key.

## **Benefits of knowing a bit more, do I need the Level 2?**

Not always is the honest answer. However, pretty well always, there's a lot more to know. It depends on the complexity of your hardware installation, the complexity of the machine or process & the complexity of the PLC software.

Where systems have got networked I/O or devices which are key to the machine or process operating properly (e.g. Inverter or Servo Drives to control movement, HMIs which are used to enter operational parameters or to provide a Start signal), there is a training requirement.

However, companies ought to have people who can tackle less-obvious problems & know a bit more about the particular PLC system as not every task or problem will work out to be straight forward. Knowing a bit more about those "techy bits" can get users out of trouble & save companies from a lot of downtime, lost production, wasted product & expensive service call-out costs. However, the "techy bits" can only be mastered by building on solid foundation knowledge.

## **Some PLCs are a lot less user-friendly (or more powerful) or both!**

Don't forget, some PLCs are notoriously more difficult to work with & this means that progress on a course can be slower. Combine this with the fact that some PLCs are very powerful devices with loads more functionality "under the bonnet" & this can may mean site PLC programs much more difficult to understand & follow.

Also, PLC software engineers are often expected to get "a quart into a pint pot" regarding developing control systems & software to keep hardware costs down & often have to write "clever" PLC program code to achieve a desired outcome. Of course, this can mean that the program code is more difficult to understand & follow & this can lead to the need for a higher level of training.

Our Level 2 courses are only offered where we believe there is a real need. Level 2 courses not only cover the majority of the higher level functionality that is often used when writing PLC code for an application but we also cover the common Networking options that are commonly used with the particular PLC system (may include MPI, Profibus, Profinet, Interbus, Industrial Ethernet, DeviceNet, ControlNet, DH+, DH485, RIO, ASi & ASi Safe).



# INTACS training courses

## PLC Training Models

### Making it Work back on-site

We all know that the key to successfully mastering what we learn on a course is to put the skills into practice as soon as possible & have a plan to keep them live.

Most often people attend PLC & Electrical courses in preparation for the day on-site when that knowledge & skill will be required, often in a breakdown situation. The problem is, if the knowledge & skills have not been kept live, people “go rusty”, confidence slips & people are unsure.

### PLC Training Models

To help companies & their people build on the knowledge & skills gained through training, we offer a range of Practical Training Models. People can practice the majority of the Key Practical Skills, in a safe environment away from any dangers of working on live plant & so build confidence & skill.

### Learning Support Packs (LSPs)

It is possible to just purchase just the Training Model hardware & get your own people to write the PLC software or, if your people are not expected to write PLC software as part of their job (as is usually the case for maintenance people), it is possible to add one or more of the LSPs, which best suit the needs of your people, & get them underway without delay.

### Workbooks to record progress

Each LSP is supported by an electronic Workbook allowing people to structure their thinking when tackling the work & to record the evidence of what they achieve. The Workbooks assume the user will have had at least basic level training on the particular PLC.

### **THREE different LSPs are available**

Getting Started – for less confident or experienced users

Fault-finding Skills – to practice PLC Fault-finding

Programming Skills – where people are required to undertake small program modifications to improve machine performance or as a temporary workaround





# INTACS training courses

## Allen Bradley/Rockwell training courses for 2019

### Popular Level 1 First-line Practical Skills (FLPS)

Our new Level 1 FLPS courses have been further enhanced to provide a “less technical, more practical” learning environment which more closely matches the requirements of the shop floor. The course is about building rock-solid competence, working on a range of practical models & tackling the bulk of common, everyday maintenance & troubleshooting tasks. The learning is structured around the use of practical training rigs & focuses on The TOP20 Key Skills. With these new-style courses, our mission is to “**Build Competence through Confidence**”.

### ControlLogix (inc. CompactLogix) w RSLogix5000 / Studio5000 software

Course type	Duration	Fee	J	F	M	A	M	J	J	A	S	O	N	D
<b>NEW</b> ControlLogix PLC Level 1 First-line Practical Skills (FLPS)	4 days	£1095		18		8		3	15		9		4	
ControlLogix PLC Level 2 M&T	4 days	£1095	14		25			17		19		21		9
ControlLogix Practical Fault-finding (A course for people who did Level 1 some time ago & through lack of use have lost confidence & “gone rusty”)	3 days	£1095												

For the Level 1 or Level 2 courses, add the Friday to cover First-line Networking, an Introduction to ControlLogix Motion M&T or to study your own programs – extra day £290 (£1385 in total).

ControlLogix Programming	5 days	£1295		25			20			5			25	
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### ControlLogix Motion Control – ULTRA 3000 or Kinetix with SERCOS or Ethernet

Course type	Duration	Fee	J	F	M	A	M	J	J	A	S	O	N	D
ControlLogix Motion Control with ULTRA 3000 or Kinetix (for servo novices)	4 days	£1280												
ControlLogix Motion Control with ULTRA or Kinetix Servos (for experienced servo users)	2 days	£820												

ControlLogix Motion Control training is available using either SERCOS or Ethernet networking

### SLC500 (including MicroLogix) with RSLogix500 software

Course type	Duration	Fee	J	F	M	A	M	J	J	A	S	O	N	D
<b>NEW</b> SLC500 Level 1 First-line Practical Skills (FLPS)	4 days	£1095		4		15		3			30			2
SLC500 Level 2	4 days	£1095	<i>Dates as needed</i>											

For the Level 1 or Level 2 courses, add the Friday to cover First-line Networking, additional practical fault-finding or to study your own programs – extra day £290 (£1385 in total).

SLC500 Practical Fault-finding (A course for people who did Level 1 some time ago & through lack of use have lost confidence & “gone rusty”)	3 days	£1095												
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### PLC-5 with RSLogix5 software

Course type	Duration	Fee	J	F	M	A	M	J	J	A	S	O	N	D
PLC-5 Level 1 M&T	4 days	£1095												
PLC-5 Practical Fault-finding	5 days	£1285	<i>Dates as needed</i>											
PLC-5 Level 2 Troubleshooting Programs	4 days	£1095	<i>Dates as needed</i>											

### ***New shorter*** Practical Fault-finding (PFF) courses

In response to customer demand, we have reduced the duration of the PFF courses down to only 3 days so it is easier for companies to release people for the “Practical Refresher”. For people who have attended at least a Level 1 Basic M&T course for a particular PLC system (e.g. Siemens S7-300/400, Mitsubishi FX or an Allen Bradley SLC500 or ControlLogix, or indeed any other), sometimes through no fault of their own they do not get the opportunity to work on the PLC system in anger for many months or years after the training.

Where this happens, confidence slips & people become unsure. Working under pressure on fast-moving, high-volume machinery when there is a problem is not the place to “experiment” to see how much you can remember. Our new series of “Practical Fault-finding” courses are designed to put people under some pressure but in a learning environment, working with their own training rigs & tackling a range of practical fault scenarios. People will quickly start to recall an amount of the original learning & this course is about putting it into practice to sharpen-up key knowledge & skills.

Many companies are also using PFF as a Practical Intermediate Level course before perhaps attending the Level 2 where they are seriously challenged to consolidate & put into practice what they learned on the Level 1 course.



# INTACS training courses

## Allen Bradley/Rockwell training continued ....

### Combined Allen Bradley PLC courses

#### Combined Allen Bradley PLC courses

You know we've been able to combine first-level PLC-5/SLC 500 courses together into a single 5 day programme for a number of years, well we've now done the same with blending **ANY TWO** out of PLC-5, SLC 500 & ControlLogix. This means that you can now cover any two of these popular Allen Bradley PLC systems in the same 5 day programme, not only reducing the amount of time your people are away from the workplace but cutting training costs too. It's true we can't cover as much ground as we could by attending the separate 4 day Level 1 Basic M&T courses for each PLC & time spent on practicals has to be cut but you can make up for some of this if you carefully plan how to continue your people's development back on-site making this a real winner for you.

Course type	Duration	Fee	J	F	M	A	M	J	J	A	S	O	N	D
SLC500/PLC-5 Basics	5 days	£1295												
ControlLogix/PLC-5 Basics	5 days	£1385	<i>Dates as needed</i>											
	5 days	£1385		18		8		3	15		9		4	

### Allen Bradley PanelView / PanelView PLUS HMI courses

Course type	Duration	Fee	J	F	M	A	M	J	J	A	S	O	N	D
PanelView PLUS HMI M&T (Maintenance, Troubleshooting & Basic Programming)	3 days	£925												

### Allen Bradley RSView 32 SCADA courses

Course type	Duration	Fee	J	F	M	A	M	J	J	A	S	O	N	D
RSView 32 Maintenance & Implementation	3 days	£925												

### Allen Bradley Networking & Communications courses

Course type	Duration	Fee	J	F	M	A	M	J	J	A	S	O	N	D
Working with DeviceNet Networking	1 day	£340												
Working with ControlNet Networking	1 day	£340												
Working with DH+ & DH485 Networking	1 day	£340												
Working with AB Remote I/O (RIO)	1 day	£340												
Working with Allen Bradley Ethernet	1 day	£340												
Allen Bradley PLCs with Profibus	1 day	£340	<i>Dates as needed</i>											
Allen Bradley PLCs with ASi	1 day	£340	<i>Dates as needed</i>											
Allen Bradley PLCs with ASi Safe	2 days	£710	<i>Dates as needed</i>											

### Allen Bradley Variable Speed Drives

Course type	Duration	Fee	J	F	M	A	M	J	J	A	S	O	N	D
Getting Started with Inverters (generic)	1 day	£340												
PowerFlex 525 VSD	2 days	£630												
AB PowerFlex 40/400 VSD	2 days	£630												
AB PowerFlex 70/700/753 VSD	2 days	£630												
AB PowerFlex 40/400 & 70/700/753 VSD	3 days	£840												
AB PowerFlex on DeviceNet	3 days	£840												
AB B160 Drives on DeviceNet	2 days	£630	<i>Dates as needed</i>											
Allen Bradley 1305 AC Drive	1 day	£340	<i>Dates as needed</i>											

### ON-SITE PLC Coaching & Assessment Workshops

#### Allen Bradley PLC on-site Coaching & Assessment Workshops:

Very often the demands on plant maintenance personnel are regularly pushing the boundaries of what they know & what they can safely remember. Our on-site Coaching Workshops provide the environment & the opportunity for 1-1 tuition or Skills Assessments for people to gain help & focus on the priorities of their own sites, applications & particular problems. Flexible workshop sessions can be arranged with duration to suit your needs from as little as just 1 day. Fees for 1-1 Coaching or Skills Assessments are £820+VAT per day plus Instructor expenses.



# INTACS training courses

## Siemens training courses for 2019

### NEW Level 1 First-line Practical Skills (FLPS)

Our new Level 1 FLPS courses have been further enhanced to provide a “less technical, more practical” learning environment which more closely matches the requirements of the shop floor. The course is about building rock-solid competence, working on a range of practical models & tackling the bulk of common, everyday maintenance & troubleshooting tasks. The learning is structured around the use of practical training rigs & focuses on The TOP20 Key Skills. With these new-style courses, our mission is to “**Build Competence through Confidence**”.

### Siemens S7-300/400 PLC courses with STEP7 Classic (v 5.3, 5.4, 5.5, 5.6)

Course type	Duration	Fee	J	F	M	A	M	J	J	A	S	O	N	D
<b>NEW</b> Siemens S7-300/400 Level 1 First-line Practical Skills (FLPS)	5 days	£1195	21		11			13		1		16		11 9
<b>S7-300/400 Level 2 M&amp;T</b> (A more in-depth & higher level Fault-finding course which covers understanding typical but more complex program code & data structures & an Intro to S7-based Networking)	5 days	£1195	28		25			20		22		30		2
<b>S7-300/400 Practical Fault-finding</b> (A course for people who did Level 1 some time ago & through lack of use have lost confidence & “gone rusty”)	3 days	£1195												
<b>S7-300/400 Programming Skills</b>	5 days	£1275												

Siemens own 5 day Level 1 course fee is £2230+VAT per person

### Siemens STEP7 Classic to TIA-Portal STEP7 Update (300/400 PLCs)

Course type	Duration	Fee	J	F	M	A	M	J	J	A	S	O	N	D
Siemens TIA-Portal Conversion for S7-300/400 PLC Users	2 days	£710	Dates as needed											

IMPORTANT, THIS IS NOT AN S7-1200/1500 PLC COURSE.

This 2 day Update course is for people **who are competent** with S7-300/400 & STEP7 Classic & who need to work with S7-300/400 PLCs using the latest TIA-Portal STEP7 software. WARNING, TIA-Portal STEP7 software is not compatible with ALL S7-300/400 PLC hardware. Check the INTACS website for the S7 Compatibility Readiness Tool. Siemens equivalent course fee £1250+VAT per delegate.

### Siemens S7-1200/ 1500 PLC courses with TIA Portal STEP7 v 12/13/14/15

Course type	Duration	Fee	J	F	M	A	M	J	J	A	S	O	N	D
<b>NEW</b> S7-1200/1500 Level 1 First-line Practical Skills (FLPS)	5 days	£1195		11		29		24		12	23		18	
<b>S7-1200/1500 Level 2 M&amp;T</b>	5 days	£1195		4		1		17			30			2
<b>S7-1200/1500 Practical Fault-finding</b> (A course for people who did Level 1 some time ago & through lack of use have lost confidence & “gone rusty”)	3 days	£1195												
<b>S7-1200/1500 Programming Skills</b>	5 days	£1275			4		20			5		14		16

Siemens own 5 day Level 1 course fee is £2230+VAT per person

### Siemens S7 or S5 based HMI Operator Panels

Course type	Duration	Fee	J	F	M	A	M	J	J	A	S	O	N	D
Siemens HMIs with ProTool & WinCC Flex M&T (Maintenance, Troubleshooting) & Basic Programming	5 days	£1360												

### Siemens S7 based Networking & Communications

Course type	Duration	Fee	J	F	M	A	M	J	J	A	S	O	N	D
Working with Profibus DP & S7	2 days	£640												
Working with Ethernet / Profinet & S7	1 day	£330												
Working with ASi Networking & S7	2 days	£640												
Working with Phoenix Interbus & S7	1 day	£330	Dates as needed											

### Siemens S7 based Safety - NEW

Course type	Duration	Fee	J	F	M	A	M	J	J	A	S	O	N	D
Working with S7 based ASi Safe	2 days	£670												
Siemens S7-300 Distributed Safety	2 days	£710												
Working with Modular Safety System MSS	2 days	£730												



# INTACS training courses

## Siemens training continued ....

### Siemens S7-200 PLC Basic M&T course with MicroWin software

Course type	Duration	Fee	J	F	M	A	M	J	J	A	S	O	N	D
S7-200 Basic M&T	3 days	£840												

### Siemens S5 PLC M&T (using Windows software – STEP5 on request)

Course type	Duration	Fee	J	F	M	A	M	J	J	A	S	O	N	D
S5 Level 1 M&T	5 days	£1195												
Siemens S5 Practical Fault-finding	5 days	£1355	<i>Dates as needed</i>											
S5 Level 2 M&T	5 days	£1195												

### Siemens MicroMaster 420/440 & SINAMICS G110 / G120 Inverters

Course type	Duration	Fee	J	F	M	A	M	J	J	A	S	O	N	D
Getting Started with Inverters (generic)	1 day	£340												
Siemens Micromaster 420 / 440 VSD M&T	1 day	£340												
Siemens Sinamics G110/120 VSD M&T	2 days	£610												
Getting Started with Servo Control (generic)	1 day	£340												

*M&T = Maintenance & Troubleshooting*

### ON-SITE PLC Coaching & Assessment Workshops

#### Siemens PLC on-site Coaching & Assessment Workshops:

Very often the demands on plant maintenance personnel are regularly pushing the boundaries of what they know & what they can safely remember. Our on-site Coaching Workshops provide the environment & the opportunity for 1–1 tuition or Skills Assessments for people to gain help & focus on the priorities of their own sites, applications & particular problems. Flexible workshop sessions can be arranged with duration to suit your needs from as little as just 1 day. Fees for 1–1 Coaching or Skills Assessments are £820+VAT per day plus Instructor expenses.

### ***New shorter*** Practical Fault-finding (PFF) courses

In response to customer demand, we have reduced the duration of the PFF courses down to only 3 days so it is easier for companies to release people for the “Practical Refresher”. For people who have attended at least a Level 1 Basic M&T course for a particular PLC system (e.g. Siemens S7-300/400, Mitsubishi FX or an Allen Bradley SLC500 or ControlLogix, or indeed any other), sometimes through no fault of their own they do not get the opportunity to work on the PLC system in anger for many months or years after the training.

Where this happens, confidence slips & people become unsure. Working under pressure on fast-moving, high-volume machinery when there is a problem is not the place to “experiment” to see how much you can remember. Our new series of “Practical Fault-finding” courses are designed to put people under some pressure but in a learning environment, working with their own training rigs & tackling a range of practical fault scenarios. People will quickly start to recall an amount of the original learning & this course is about putting it into practice to sharpen-up key knowledge & skills.

Many companies are also using PFF as a Practical Intermediate Level course before perhaps attending the Level 2 where they are seriously challenged to consolidate & put into practice what they learned on the Level 1 course.



# INTACS training courses

## Mitsubishi training courses for 2019

### Mitsubishi PLC courses with GXDeveloper, GXWorks2 or GXWorks3

#### NEW Level 1 First-line Practical Skills (FLPS)

Our new Level 1 FLPS courses have been further enhanced to provide a “less technical, more practical” learning environment which more closely matches the requirements of the shop floor. The course is about building rock-solid competence, working on a range of practical models & tackling the bulk of common, everyday maintenance & troubleshooting tasks. The learning is structured around the use of practical training rigs & focuses on The TOP20 Key Skills. With these new-style courses, our mission is to “**Build Competence through Confidence**”.

Course type	Duration	Fee	J	F	M	A	M	J	J	A	S	O	N	D
<b>NEW Mitsubishi FX, Q &amp; A Series Level 1 First-line Practical Skills (FLPS)</b>	5 days	£960		18		29		17			2		25	
<b>Mitsubishi PLC Practical Fault-finding</b> (A course for people who did Level 1 some time ago & through lack of use have lost confidence & “gone rusty”)	3 days	£995	<i>Dates as needed</i>											

#### Mitsubishi PLCs Level 2 M&T

Level 2 Mitsubishi PLC M&T training is for maintenance personnel who are familiar with the basics but who need a more in-depth understanding, be able to read & understand typical PLC program code & be able to relate this to the operation & performance of the machine or process. A 2 day module is also available to cover Mitsubishi HMIs & Networking for service or maintenance personnel.

Course type	Duration	Fee	J	F	M	A	M	J	J	A	S	O	N	D
<b>Mitsubishi Level 2 M&amp;T, HMIs &amp; Networking</b>	5 days	£980												

For all Mitsubishi PLC training, GX Developer &/or GX Works 2/3 software is standard but we will still accommodate MEDOC users

### Mitsubishi PLC Programming courses

Course type	Duration	Fee	J	F	M	A	M	J	J	A	S	O	N	D
<b>Intro to Mitsubishi PLC Programming using GXWorks 2 / 3 (simple project)</b>	2 days	£530												
<b>Intro to Mitsubishi PLC Programming using GXWorks 2/3 (structured project)</b>	3 days	£780												

To get the most out of our Mitsubishi PLC Programming courses, attendees must have either attended our Mitsubishi PLC Level 1 course or already have a reasonable working knowledge & experience of Mitsubishi PLCs.

### Mitsubishi HMI Panel courses

Course type	Duration	Fee	J	F	M	A	M	J	J	A	S	O	N	D
<b>MAC/ E Series / GOT Series HMIs M&amp;T</b>	2 days	£610												

### Mitsubishi Communications & Networking courses

Course type	Duration	Fee	J	F	M	A	M	J	J	A	S	O	N	D
<b>Working with &amp; Troubleshooting Mitsubishi PLCs using CCLink</b>	1 day	£380												

### Mitsubishi Variable Speed Drives & Motion Control courses

Course type	Duration	Fee	J	F	M	A	M	J	J	A	S	O	N	D
<b>Getting Started with Inverters</b>	1 day	£340												
<b>Mitsubishi AC Inverters Maintenance</b>	1 day	£340												
<b>Getting Started with Servo Control</b>	1 day	£340												



# INTACS training courses

## OMRON training courses for 2019

### Omron PLC courses using CX ONE software

Course type	Duration	Fee	J	F	M	A	M	J	J	A	S	O	N	D
Omron C / CJM Series PLC First-line M&T	3 days	£780		25			8		29			7		16
C / CJM Series PLC Further Troubleshooting	2 days	£560		28			30			1		10		19

### Omron Communications & Networking courses

Course type	Duration	Fee	J	F	M	A	M	J	J	A	S	O	N	D
Working with & Troubleshooting Omron PLCs using Controller Link	1 day	£340												
Working with & Troubleshooting Omron PLCs using DeviceNet	1 day	£340												
Working with & Troubleshooting Omron PLCs using Ethernet	1 day	£340												
Working with & Troubleshooting Omron PLCs using Profibus DP	1 day	£340												

### Omron NS & NT HMI courses

Course type	Duration	Fee	J	F	M	A	M	J	J	A	S	O	N	D
OC3 NS Designer	3 days	£720												
OC4 NT Designer	2 days	£540												

### Omron Drives & Motion courses

Course type	Duration	Fee	J	F	M	A	M	J	J	A	S	O	N	D
Getting Started with Inverters	1 day	£340												
Omron SysDrive Inverter	1 day	£340												
Getting Started with Servo Control	1 day	£340												
Omron MC 402 Motion Control	3 days	£820												

*Dates as needed*  
*M&T = Maintenance & Troubleshooting*





# INTACS training courses

## GE training courses for 2019

### GE PLC courses

Course type	Duration	Fee	J	F	M	A	M	J	J	A	S	O	N	D
GE Fanuc 90-30 M&T with LogicMaster or VersaPro	4 days	£910												
GE PLC M&T with Machine Edition	4 days	£910												
GE PLC ME Logic Developer	4 days	£910												
GE PAC Systems M&T	4 days	£1240												

### GE SCADA courses

Course type	Duration	Fee	J	F	M	A	M	J	J	A	S	O	N	D
Proficy iFIX Fundamentals	4 days	£1365												
Proficy iFIX Advanced	4 days	£1365												
<i>Earlier FIX/FIXDMACS versions can be accommodated</i>														
Proficy CIMPLICITY Basic	4 days	£1365												
Proficy CIMPLICITY Advanced	4 days	£1365												

*Dates as needed*  
M&T = Maintenance & Troubleshooting

## Beckhoff training courses for 2019

Of the courses generally available to support end users, many target the needs of OEMs & system builders who are using Beckhoff PLCs to control the machines they build. The needs of maintenance personnel are quite different & focus on Maintenance & Troubleshooting knowledge & skills.

Course type	Duration	Fee	J	F	M	A	M	J	J	A	S	O	N	D
Beckhoff PLC Basic M&T With TwinCat software	4 days	£1095												
Beckhoff Programming	4 days	£1095												

*Dates as needed*  
M&T = Maintenance & Troubleshooting

## Moeller Electric training courses for 2019

### Moeller PLC courses

Course type	Duration	Fee	J	F	M	A	M	J	J	A	S	O	N	D
Fundamentals of Moeller PS4 PLCs	1 day	£310												
PS4-150/200/300 & PS416 PLC Level 1 (S40)	2 days	£550												
PS4-150/200/300 & PS416 PLC Level 2 (S40)	2 days	£550												
SUCOnet K Networking	2 days	£550												
PS3/PS4-100 PLC Basics	3 days	£710												
PS3/PS4-100 PLC M&T (Full Course)	4 days	£890												
PS306 PLC Basic	3 days	£710												
PS306 PLC M&T (Full Course)	4 days	£890												
PS316 PLC Basic	3 days	£710												
PS316 PLC M&T (Full Course)	5 days	£995												

*Dates as needed*  
M&T = Maintenance & Troubleshooting

### Moeller HMI courses

Course type	Duration	Fee	J	F	M	A	M	J	J	A	S	O	N	D
MV4 Operator Interface Panel	2 days	£580												
MI 4 Operator Interface Panel	2 days	£580												
A4/A5 Msg. Display & Op. Int. Panels	1 day	£310												
VTP Touch Panels	2 days	£660												

*Dates as needed*

### Moeller Drives courses

Course type	Duration	Fee	J	F	M	A	M	J	J	A	S	O	N	D
DF4 Frequency Inverter	1 day	£340												
Moeller OPTIDRIVE	2 days	£660												

*Dates as needed*



# INTACS training courses

## Schneider Electric training courses for 2019

### Schneider Electric PLC courses

#### Modicon TSX courses

Course type	Duration	Fee	J	F	M	A	M	J	J	A	S	O	N	D
TSX 37/57 PLC Level 1 M&T	4 days	£870												
TSX 07 NANO with PL707	2 days	£510												
TSX Modicon MAGELIS HMI	2 days	£540												

#### Telemecanique courses

Course type	Duration	Fee	J	F	M	A	M	J	J	A	S	O	N	D
PL7-2 for TSX 27, TSX 47-10/20	2 days	£660												
PL7-2 for TSX 17-10/20	2 days	£660												
PL7-3 for TSX 47-30/40, TSX 67/87/107	3 days	£780												

#### Modicon courses

Course type	Duration	Fee	J	F	M	A	M	J	J	A	S	O	N	D
Modicon QUANTUM with MODSOFT	4 days	£890												
Modicon 984 Level 1 M&T with MODSOFT	4 days	£890												
Modicon 984 Level 1 M&T with PRO-WORX	4 days	£890												
Modicon Momentum PLC & Remote I/O	1 day	£330												
Modicon MICRO with MODSOFT	3 days	£720												
MODBUS & MODBUS PLUS	1 day	£330												

#### Square D course

Course type	Duration	Fee	J	F	M	A	M	J	J	A	S	O	N	D
SYMAX 400/600 PLC	3 days	£720												

#### Schneider Drives courses

Course type	Duration	Fee	J	F	M	A	M	J	J	A	S	O	N	D
Getting Started with Inverters	1 day	£330												
Altivar or Lexium VSD	1 day	£330												
ELAU PacDrive Basic Service	1.5 days	£690												
ELAU PacDrive Advanced Service	2 days	£755												

### Do you know if your people have the skills to do the job?

Whether you've provided training for your people in the last 12-18 months or just want to know what level they're at, we offer a **Skills Assessment** programme.

The Skills we can assess include:

- Industrial Electrics
- Mechanical
- Communications & Networks
- Pneumatics
- Drives
- PLCs
- Hydraulics
- Instrumentation

Regular Skills Testing dates are scheduled in our Training Centre but the Skills Assessments can also be done on-site. In addition, we are also able to customise the assessments to cover the particular PLC systems or Drives used on your site.

Typically for a group of 4, Skills Assessments take around a half-day to complete (PLCs) and the results compiled into a Report.



# INTACS training courses

## DirectLogic training courses for 2019

### Automation Direct courses

#### DirectLogic (KOYO) PLC courses

Course type	Duration	Fee	J	F	M	A	M	J	J	A	S	O	N	D
DirectLogic PLC & Directsoft Basics	2 days	£510												
DirectLogic PLC Troubleshooting	1 day	£310												
Understanding DirectLogic Programs	2 days	£510												

Attend full week for £980 + VAT & save £350

LAM HMI Configuration Implementation	2 days	£510	Dates as needed											
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#### KepWare SCADA

Course type	Duration	Fee	J	F	M	A	M	J	J	A	S	O	N	D
KepWare Maintenance	1 day	£310	Dates as needed											
KepWare Implementation	3 days	£810	Dates as needed											

## TEXAS Instruments training courses for 2019

### PLC courses

Course type	Duration	Fee	J	F	M	A	M	J	J	A	S	O	N	D
Texas 500/505 Series PLC M&T (Part 1)	4 days	£995												
Texas 545/555 Series PLC M&T (Part 2)	4 days	£995												
Texas 405 PLC Basic M&T	4 days	£995	Dates as needed											
Texas 305 Series PLC Basic M&T	3 days	£840												
Texas 560/565 Series PLC M&T	10 days	£1850	Dates as needed											
Texas 5 TI PLC Basic M&T	2 days	£560	Dates as needed											
Texas PM 500 PLC M&T	5 days	£1190	Dates as needed											

M&T = Maintenance & Troubleshooting



# INTACS training courses

## MORE PLC training courses for 2019

### PLC courses

#### Honeywell courses

Course type	Duration	Fee	J	F	M	A	M	J	J	A	S	O	N	D
Honeywell IPC 620-35/36 M&T	5 days	£995												

#### IDEC courses

Course type	Duration	Fee	J	F	M	A	M	J	J	A	S	O	N	D
MicroSmart PLC Basic M&T	2 days	£580												
FA Series PLC Basic M&T	3 days	£680												

#### Eberle courses

Course type	Duration	Fee	J	F	M	A	M	J	J	A	S	O	N	D
Eberle PLS 508/509 PLC & M&T	3 days	£810												
Eberle PLS 514 PLC M&T	4 days	£960												

#### Alspa course

Course type	Duration	Fee	J	F	M	A	M	J	J	A	S	O	N	D
Alspa PLC M&T	4 days	£930												

#### GEM 80 course

Course type	Duration	Fee	J	F	M	A	M	J	J	A	S	O	N	D
GEM 80 Series PLC M&T	4 days	£940												

*Dates as needed*

#### Toshiba course

Course type	Duration	Fee	J	F	M	A	M	J	J	A	S	O	N	D
Toshiba PLC M&T	3 days	£710												

*Dates as needed*  
M&T = Maintenance & Troubleshooting

## SCADA training courses for 2019

### Wonderware InTouch courses

Course type	Duration	Fee	J	F	M	A	M	J	J	A	S	O	N	D
InTouch SCADA Essentials	3 days	£875												

### ICONICS courses

Course type	Duration	Fee	J	F	M	A	M	J	J	A	S	O	N	D
Genesis 32 Basic	3 days													

*Dates as needed*

### RSView SE / RSView 32 courses

Course type	Duration	Fee	J	F	M	A	M	J	J	A	S	O	N	D
RSView 32 Maintenance & Implementation	3 days	£895												

### GE Fanuc SCADA courses

Course type	Duration	Fee	J	F	M	A	M	J	J	A	S	O	N	D
Proficy iFIX Fundamentals	4 days	£1360												
Proficy iFIX Advanced	4 days	£1360												
<i>Earlier FIX/FIXDMACS versions can be accommodated</i>														
Proficy CIMPLICITY Basic	4 days	£1360												
Proficy CIMPLICITY Advanced	4 days	£1360												

*Dates as needed*



# INTACS training courses

## Variable Speed Drives / Inverters

### Variable Speed Drives (VSDs) / Inverters training

VSDs or Inverters are widely used in industry to control motor speed. Courses are available covering both AC & DC Drives.

The demand for training centres around maintenance people who need to have an understanding of the hardware involved, safe working, how the VSD controls the motor, the range of parameters that affect motor performance, an understanding of typical faults & likely symptoms with coverage of error codes & their interpretation. The courses deal with methods for localising problems & VSD replace & reload procedures.

A generic course is available which covers the fundamental principles that can be applied to a range of commonly used Drives. Attendance on this course (or equivalent practical experience), is a prerequisite for any of our manufacturer-specific Drives courses.

### **Generic VSD Fundamentals**

Course type	Duration	Fee	J	F	M	A	M	J	J	A	S	O	N	D
Getting Started with Inverters	1 day	£340												

### **Allen Bradley Inverters**

Course type	Duration	Fee	J	F	M	A	M	J	J	A	S	O	N	D
PowerFlex 525 VSD	2 days	£630												
PowerFlex 40/400 VSD	2 days	£630												
PowerFlex 70/700/753 VSD	2 days	£630												
PowerFlex 40/400 & 70/700/753 VSD	3 days	£840												
PowerFlex on DeviceNet	3 days	£840												
B160 Drives on DeviceNet	2 days	£630	<i>Dates as needed</i>											

### **Siemens MicroMaster 420/440 & SINAMICS G110 / G120 Inverters**

Course type	Duration	Fee	J	F	M	A	M	J	J	A	S	O	N	D
MicroMaster 420 / 440 VSD M&T	1 day	£340												
Siemens Sinamics G110/120 VSD M&T	2 days	£630												

### **Mitsubishi Inverters**

Course type	Duration	Fee	J	F	M	A	M	J	J	A	S	O	N	D
Mitsubishi AC Inverters Maintenance	1 day	£340												

### **Omron Inverters**

Course type	Duration	Fee	J	F	M	A	M	J	J	A	S	O	N	D
Omron SysDrive Inverter	1 day	£340												

### **Schneider Electric Inverters**

Course type	Duration	Fee	J	F	M	A	M	J	J	A	S	O	N	D
Altivar VSD	1 day	£340												
Lexium VSD	1 day	£340												

### **Control Techniques Inverter**

Course type	Duration	Fee	J	F	M	A	M	J	J	A	S	O	N	D
Commander SE	1 day	£340												

### **Other Variable Speed Drives / Inverters**

In addition to the above, we are also able to provide training on a range of other popular Drives. If you use a different manufacturer's Drive, ask how we can help.



# INTACS training courses



## VLT training courses for 2019

### VLT Variable Speed Drives courses

Course type	Duration	Fee	J	F	M	A	M	J	J	A	S	O	N	D
Danfoss VLT Basic Familiarity	1 day	£340												

#### Description

This course is intended for novices who have little or no previous knowledge of Variable Speed Drives. Attendance on this course (or an equivalent level of knowledge & skill) is an essential pre-requisite for the "VLT Maintenance & Troubleshooting" course.

Course type	Duration	Fee	J	F	M	A	M	J	J	A	S	O	N	D
Danfoss VLT / FC Maintenance & Troubleshooting	1 day	£340												

#### Description

This course is aimed at the Service or Maintenance Engineer who needs a good level of understanding of the VLT Series Drives. To get maximum benefit from the course, delegates will be expected to have a reasonable working knowledge of Variable Speed Drive technology. The course will cover installation & set-up procedures, use of the Dialog or MCT software & will explain the purpose & function of a range of key parameters & their effect on the operation & performance of the Drive. Delegates will gain practical experience of fault-finding tools & techniques. The course will typically be based around the Danfoss VLT 2800/5000/6000 Drives.

Course type	Duration	Fee	J	F	M	A	M	J	J	A	S	O	N	D
Working with & Troubleshooting Danfoss VLT / FC Drives on Profibus	1 day	£380	<i>Dates as needed</i>											
Working with & Troubleshooting Danfoss VLT / FC Drives on DeviceNet	1 day	£380	<i>Dates as needed</i>											

#### Description

Knowledge of the specific PLC system used & attendance on the Danfoss VLT / FC Maintenance & Troubleshooting course are prerequisites for this course.

## Lenze training courses for 2019

INTACS can now offer the full range of Lenze Inverter & Servo systems training courses. "Getting Started" courses are available for novices who have no previous knowledge or experience of Inverters or Servo Control. Specific product systems courses are available on scheduled dates or can be conducted on customer's own site.

### Lenze 8200 Vector

Course type	Duration	Fee	J	F	M	A	M	J	J	A	S	O	N	D
Lenze 8200 Vector with Software & Keypads	2 days	£640												

### Lenze 9300 Servo & Positioner

Course type	Duration	Fee	J	F	M	A	M	J	J	A	S	O	N	D
Lenze 9300 Servo & Positioner	2 days	£640												

### ELAU PacDrive

Course type	Duration	Fee	J	F	M	A	M	J	J	A	S	O	N	D
ELAU PacDrive Basic Service	1.5 days	£690	<i>Dates as needed</i>											
ELAU PacDrive Advanced Service	2 days	£755	<i>Dates as needed</i>											



## Motion Control (Servo)

### **Motion Control (Servo) training**

The range of applications for servo control in modern industry is enormous. There are different methodologies used by the various manufacturers but there are fundamental principles of operation which are dealt with in our generic Motion Control Basic Maintenance course. An understanding of these fundamental principles is essential to effective system or machine troubleshooting.

### **Generic Servo Control Fundamentals**

Course type	Duration	Fee	J	F	M	A	M	J	J	A	S	O	N	D
Getting Started with Servo Control	1 day	£330												

## **Bosch Rexroth (Indramat Drives)**

The Indramat Motion Control products are established world leaders in manufacturing & automation. Working with Bosch Rexroth, INTACS can provide training support for service & maintenance personnel covering the entire Indramat Drives range.

Training for service & maintenance personnel is available for each of the following product groups.

1. Analog Servo Drives (TDM/KDS & DSC)
2. Digital Servo Drives
3. Spindle Drives (DIAX01, DIAX03)
4. Analog Motion Controls (CLM)
5. Digital Motion Controls (DLC, CLC, PPC, MT)
6. Welding Controls
7. Tightening & Press-fit Controls

### **Bosch Rexroth Digital Servo Drives**

*(training dates arranged to suit your requirements, fees on request)*

DDS2.1/DKS1.1 (DIAX02) Servo Drives	1 day
DDS2.2 (DIAX03) Servo Drives	1 day
HDS/HDD (DIAX04) Servo Drives	1 day
DIAX04 Servo Drives with DriveTop	2 days
DKC*.1, EcoDrive Servo Drives with DriveTop	2 days
DKC2.1, EcoDrive Servo Drives with Sercos	1 day
DKC*.3, EcoDrive Servo Drives with DriveTop	2 days
DKC2.3, EcoDrive Servo Drives with Sercos	1 day
DDR*, DuraDrive Servo Drives with DriveTop	2 days
DDR*, DuraDrive Servo Drives with Sercos	1 day
DKC21.3, EcoDrive Servo Drives with Optifeed	2 days
DKC21.3, EcoDrive Servo Drives with ELC	2 days



### **ControlLogix Motion Control – ULTRA & Kinetix with Sercos &/or Ethernet**

Course type	Duration	Fee	J	F	M	A	M	J	J	A	S	O	N	D
ControlLogix Motion Control with Ultra &/or Kinetix & SERCOS / Ethernet (for servo novices)	4 days	£1280												
ControlLogix Motion Control with ULTRA or Kinetix Servos (for experienced servo users)	2 days	£820												

### **Mitsubishi Variable Speed Drives & Motion Control courses**

Mitsubishi FX3U PLC Motion Control	2 days	£810	<i>Dates as needed</i>											
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# INTACS training courses

## Enhancements to our Electrical Courses

### **INTACS Electrical training**

We continually review & improve our Electrical Training to ensure it meets the needs of modern industry. Many companies are contacting us & informing us that they have been advised by representatives of the HSE that our Electrical courses are among the very best that are available.

We believe we achieve this through:

- We cover the right topics
- We provide the right blend of underpinning knowledge & practical skills
- We provide good quality notes & exercises
- We provide Proof of Competency documentation to support key high risk activities &
- We provide companies the help & guidance to make it work when their people get back to site.

### **Electrical Safety training**

Ask to see our Proof of Competency Logs for the following High Risk Electrical activities:

- Safe Electrical Isolation (LOTO)
- Resetting Trips & Overloads

In addition to the actual Competency Logs, we also provide convenient Assessor / Trainee Guidance/ Refresher documents to ensure that people stay safe & know exactly what to do. Additional Competency Log documentation based on the same template can be provided for sites where they have other additional & specific requirements.

### **Electrical Skilling training**

Unlike the majority of providers of Electrical training, INTACS' Electrical Skilling courses target the needs of **Industrial Maintenance** personnel **rather than Installation Electrics** or Electrical courses with a heavy Electronics bias.

Not only have we built our courses around the needs of the maintenance team in a modern manufacturing environment (rather than perhaps what colleges did some 15 – 20 years ago) but we also provide a post-course on-going Skills Development programme (called Training WORKS) to guide continued on-site skills development over the months that follow.

### **Training WORKS**

Companies can **add to the Training WORKS programme** to cover specific site-based skills they need their people to have & the documentation-set provided becomes a portfolio of evidence (much like the Apprentice Log Book) which not only serves as a Technical Reference or record of the range & quality of work being undertaken but also provides the Proof of Competency for specific Electrical work activities being undertaken.



# INTACS training courses

## Industrial Electrical training courses for 2019

### Industrial Electrical Control courses

#### Industrial Electrical Multiskilling training

#### ***This is THE COURSE***

for companies wanting to up-skill their non-electrical maintenance personnel or for production people & operators who need to improve their knowledge & understanding of the fundamentals of industrial electrics including working safely on & around electrically powered machinery & systems, we believe this is **THE COURSE**. The full course has for years been a 10 day programme, however, for some companies just the first 5 days may be sufficient.

More recently companies have wanted to further strengthen safe troubleshooting skills & to equip people with a wider range of experience. To achieve this we have added a week 3 to our Industrial Electrics programme. Days 1 – 2 are practical & reinforce the safe & correct use of the tools & test equipment & relating electrical drawings to control panel layout & components. Days 3 - 5 concentrate on tackling fault scenarios & progress reports are produced per fault detailing safe working, accuracy, speed of working & records any electrical components swapped unnecessarily.

Course type	Duration	Fee	J	F	M	A	M	J	J	A	S	O	N	D
<b>Industrial Electrics &amp; Control Fundamentals Part 1</b>	5 days	£980	14	25	25	29		3	22		9	14	18	9
<b>Industrial Electrics &amp; Control Fundamentals Part 2</b>	5 days	£980	28		4	8	20		15	12	16	21	25	
<b>Troubleshooting Electrical Control Systems (TECS)</b>	5 days	£980		11		1	13		8	5	23		4	2

#### Available ON-SITE

The Industrial Electrics & Control Fundamentals course can be tailored to suit the needs of your own people & the requirements of your site. Please ask for further details.

#### And why is this **THE COURSE** to attend?

There are a number of reasons why we believe this is **THE COURSE** to attend.

1. It is tailored to the needs of modern industry & is miles away from the old college-style study of diodes, transistors & resistors. Some training companies still do this!
2. The training focuses on industrial & includes all the key fundamentals. C&G courses tend to be biased towards the needs of commercial & domestic electrics.
3. It is backed by our Training WORKS programme with continued workplace-based exercises & support for you & your people for up to 12 months after the training.
4. We provide you the tools to monitor & manage the development of your people & demonstrate competence as required by H&S law.
5. **In 2014 we added & refined the Part 3 which focused specifically on Boosting Electrical Troubleshooting Skills where people not only develop a safe & logical strategy to troubleshoot but where they have ample opportunity to put those skills into practice & are challenged with a wide range of fault scenarios. This is our Troubleshooting Electrical Control Systems (TECS) course.**

#### Training WORKS

Training WORKS is the concept we have pioneered to support our **Industrial Electrics & Control Fundamentals** course to ensure that the benefit of the training is not lost over a period of time. Companies can now count on their people retaining the knowledge & skills learned on the course.

In fact the concept is even more ambitious.

The aim is that the level of competence is enhanced over a period of time, not just maintained.

### Mechatronics courses

Course type	Duration	Fee	J	F	M	A	M	J	J	A	S	O	N	D
<b>Mechatronics Level 1 (C&amp;G)</b>	3 days	£875		19				3					4	
<b>Mechatronics Level 2 (C&amp;G)</b>	3 days	£875				1			1					2

### Risk Assessment Training

Course type	Duration	Fee	J	F	M	A	M	J	J	A	S	O	N	D
<b>NEW Risk Assessment</b>	1 day	Group rate	<i>Dates as needed</i>											



# INTACS training courses

## City & Guilds 18th Edition & NEW 2391 courses

### NEW BLUE BOOK 18<sup>th</sup> Edition Wiring Regulations, BS7671:2018 (2018)

Course also available on-site

**New 18<sup>th</sup> Edition Wiring Regulations are EFFECTIVE FROM JANUARY 1st 2019**

Course type	Duration	Fee	J	F	M	A	M	J	J	A	S	O	N	D
New 18 <sup>th</sup> Edition Wiring Regulations Full Course: C&G 2382-18	3 days	£480 + £75 exam	16	20	20	16	29	19	31		4	9	13	16
Latest 18 <sup>th</sup> Edition Wiring Regulations Update Course: C&G 2382-18	1 day	£135 + £75 exam	14	19										

#### The 18th Edition Wiring Regulations

The new 18<sup>th</sup> Edition Wiring Regulations came into effect on 1<sup>st</sup> January 2019. Companies have around 6 months to make the change & to ensure their people are aware of the new Regulations & are able to complete work to the required standard.

#### 1 day Update course

C&G are not offering a 1 day Update course. We are. There are some people who have completed their 17<sup>th</sup> Edition Wiring Regulations within the last 9 - 12 months & particularly those whose work requires them to be referencing the Regulations on a regular basis i.e. people who are really up to speed with the 17<sup>th</sup> Edition. C&G do not want people trying to take the easy option & gaining the qualification when their background & experience is inadequate.

#### Alternative 18<sup>th</sup> Edition Wiring Regulations courses

Some companies tell us that they do not require their Electrical or Multiskilled maintenance personnel to undertake "Installation" work. They say that any Installation work will be done by external contractors. Where this is the case, we do offer alternative options which do satisfy the legal requirement for companies to make sure their people have had training appropriate for their job role, especially where the requirement for Safe Working. We know that in the industrial environment, the 18<sup>th</sup> Edition Wiring Regulations only apply up to a certain point. Inside control panels there is a different set of Regulations. However, the other Regulations are still based on the 18<sup>th</sup> Edition & it would be difficult to argue that knowledge of the Current Wiring Regulations was not important for both Electrical & Multiskilled maintenance personnel in industry.

### Fundamental Inspection, Testing & Initial Verification C&G 2392-10

Course type	Duration	Fee	J	F	M	A	M	J	J	A	S	O	N	D
C&G 2392-10 Fundamental Inspection, Testing & Initial Verification of Electrical Installations	3 days	£455	28											

Note, C&G 2392-10 is a lighter version of the full C&G 2391 -50/51/52 qualification & allows holders to sign-off their own electrical work in respect of typical on-going minor works.

The C&G 2391 – 50/51/52 qualification is the higher standard which also covers signing-off the work of others.

### Periodic Inspection, Test & Certification of Electrical Installations

C&G are again changing the Periodic Inspection, Test & Certification of Electrical Installations courses & bringing them into line with the EAL alternatives (4337 & 4338).

C&G 2391-50 (EAL 4337) qualifies people to work on new installations only.

C&G 2391-51 (EAL 4338) qualifies people to work on old (existing) installations only.

C&G 2391-52 is the combined C&G qualification (covers both -50 & -51 qualifications).

Importantly, C&G have now dropped the requirement to attend & sit a Tuesday evening written exam. This was the exam paper which was the most difficult component for candidates to pass.

Course type	Duration	Fee	J	F	M	A	M	J	J	A	S	O	N	D
Inspect, Test & Certification of Electrical Installations C&G 2391-52 (fee covers -50 & -51 exams)	4 + 1 days	£825+VAT		4	18	22		10						



# INTACS training courses

## Electrical Safety training courses for 2019

### Electrical H&S, Safe Electrical Isolation, Resetting Trips & Overloads

Course type	Duration	Fee	J	F	M	A	M	J	J	A	S	O	N	D
Electrical H&S, Safe Electrical Isolation, Resetting Trips & Overloads	1 day	£290		18		26		11	29		3	8	12	20

Group discounts available

### IMPORTANT

How important are these to you, your company & your maintenance team?

- Safe Isolation
- Checking for DEAD – safely
- Resetting RCDs, MCBs & Motor Overloads – safely

As you'll already know, the law requires that people working on or around machinery & systems powered by electricity, **must be given appropriate training** and to **have adequate systems, procedures & documentation**.

Do you have procedures for safe working? And, most importantly, they sound?

Do your people have the essential under-pinning Electrical Health & Safety knowledge, have they been taken through your procedures & demonstrated competence? Do you have the supporting documentary evidence? **Have you done enough?**

Our 1 day course has been developed to suit the needs of **non-electrical maintenance personnel, production people & machine or line operators** but is regularly adapted to suit the needs of **practicing electricians**. The course covers a range of important statutory Electrical H&S issues with a special focus on Safe Electrical Isolation (crucial even if the job to be done is essentially mechanical) & Resetting Trips & Overloads safely.

### Fundamental Industrial Electrical Inspection & Testing (not C&G)

Course type	Duration	Fee	J	F	M	A	M	J	J	A	S	O	N	D
<b>New</b> Fundamental Industrial Electrical Inspection & Testing	2 days	£660	On-site only, dates as needed											

### Troubleshooting Electrical Control Systems

Course type	Duration	Fee	J	F	M	A	M	J	J	A	S	O	N	D
<b>New</b> Troubleshooting Electrical Control Systems (TECS)	5 days	£980		11		1	13	24		5	23		4	2

This course aims to meet the needs of electricians & practicing multi-skilled maintenance personnel who need to review their approach to SAFE WORKING & improve their electrical TROUBLESHOOTING SKILLS. The course provides a range of fault-finding scenarios from basic level through to very challenging & which must be tackled safely & efficiently with the minimum of unnecessary & expensive hardware & component swaps.

The re-vamped course now contains considerably more "training" in the art of Safe Electrical Troubleshooting developing safe strategies on how to get started as well as the appropriate use of tools & test equipment. Where delegates have previously struggled to correctly interpret meter readings & understand the implications, we are now providing an increased level of coverage.

Individual certificates of performance will be issued & will score on safety, accuracy, cost & speed of working.

### Duty Holder's Safety of Electrical Systems

Course type	Duration	Fee	J	F	M	A	M	J	J	A	S	O	N	D
Duty Holder's Safety of Electrical Systems	1 day	£290		8	1	15	7	17	29		2	7	11	19

Course type	Duration	Fee	J	F	M	A	M	J	J	A	S	O	N	D
Portable Appliance Inspection & Testing (Industrial course)	2 days	£480	7			25		17			2		11	

### Machinery Safety Training

Course type	Duration	Fee	J	F	M	A	M	J	J	A	S	O	N	D
Machinery Safety (C&G)	4 days	£1375	7	4	18	8	20	10	15	5	9	14	11	2



# INTACS training courses

## Mechanical training courses for 2019

### Pneumatics & Hydraulics courses

Course type	Duration	Fee	J	F	M	A	M	J	J	A	S	O	N	D
Introduction to Pneumatics (F) (on-site, max. 8 delegates)	1 day	£2250	Dates as needed											
Modern Industrial Pneumatics (F) (C&G accredited)	3 days	£890		25	25	9	20	17	15	19	16	28	18	16
Introduction to Electro-Pneumatics (F)	3 days	£890			11		13				9			
Introduction to Hydraulics (F) (on-site, max. 8 delegates)	1 day	£2250	Dates as needed											
Modern Industrial Hydraulics (F) (C&G accredited)	3 days	£970			4		13		15					4
Basic Hydraulics (B)	3 days	£896	14	5	19	9		3	16	6		1	4	
Proportional Hydraulics (B)	3 days	£896			26							15		

### Mechanical Maintenance & MIG Welding

Course type	Duration	Fee	J	F	M	A	M	J	J	A	S	O	N	D
Industrial Mechanical Maintenance	4 days	£1000		25								7		
Basic Industrial Maintenance Welding (MIG, TIG, ARC) – 2 disciplines	5 days	£840	Dates as needed											
Skills Assessment for Coded Welding	½ day	£115	Dates as needed											
<i>Coded Welding training is available to suit specific needs, duration &amp; cost dependent on individual requirements</i>														
Mandatory Abrasive Wheels	½ day	Group rate	Dates as needed											
Practical Handling & Safe Use of Abrasive Wheels	½ day													
Working Safely with Ladders, Working at Heights & Safe Use of Harnesses	1 day	Group rate	Dates as needed											

### Mechanical Skills for Electricians

Course type	Duration	Fee	J	F	M	A	M	J	J	A	S	O	N	D
Mechanical Skills for Electricians	4 days	£1000												

### Introduction to PLC courses

Course type	Duration	Fee	J	F	M	A	M	J	J	A	S	O	N	D
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The following Introductory courses are intended for those relatively new to PLCs. The training is Instructor led & it is not intended that delegates will be expected to gain any specific proficiency with the particular PLC monitoring software tool. It is the objective of the following courses that delegates will gain a firm understanding of the principles of PLC control & that knowledge can be related to specific PLC hardware as used on-site.

Introduction to PLCs	1 day	£280												
Basic PLC Fault-finding Principles	1 day	£310												
PLC Programming Skills	2 days	£610	Dates as needed											
Siemens S5 Hardware Fault-finding	2 days	£630												
Siemens S7 Hardware Fault-finding	2 days	£630												
Allen Bradley ControlLogix Hardware Fault-finding	2 days	£630												
Allen Bradley SLC500 Hardware Fault-finding	2 days	£630												
Mitsubishi PLC Hardware Fault-finding	2 days	£630												





# INTACS training courses

## Instrumentation training courses for 2019

### Instrumentation & Process Control – the basics

The combined effect of the withdrawal of the leading process control manufacturers & suppliers from the provision of training & the need for end-users to broaden the skill base of their engineering & maintenance support people so that they can understand more complex control systems & be able to identify & troubleshoot abnormal system operation safely & more effectively has created the demand for a solid Fundamentals course which covers key understanding & skills for both electrical & non-electrical personnel.

### **Instrumentation & Process Control – the basics course**

Course type	Duration	Fee	J	F	M	A	M	J	J	A	S	O	N	D
<b>Instrumentation &amp; Process Control</b>	3 days	£780												

This course will cover the basic concepts of measurement & control & include the following key topics:

- Temperature
- Pressure
- Level
- Flow
- Humidity, Density, Viscosity & pH

The course will also cover:

- Weighing equipment
- Valve Limit Switches
- Proximity & Optical Sensors
- Interface to PLC systems
- Fundamentals of PID control

This course is for maintenance personnel who need to be able to work more closely with their process colleagues with the common goal of reducing downtime & wasted product. It is intended to provide a thorough grounding for non-instrument techs such that they can understand more about the world of instrumentation & process control & be able to contribute more when things go wrong, communicate clearly & be able to work more safely.

### UNLIMITED FREE REFRESHER

There are a lot of people who just don't believe it's true!

They've heard of our **LO-COST REFRESHER TRAINING** (specific 1 day modules targeting key skills) but **FREE & UNLIMITED?**

**Pay for the training ONCE** & benefit from **FREE REFRESHER TRAINING** for as long as you need it?

**Sound too good to be true?**

It's only available to companies who have a significant training requirement & who use INTACS as their preferred training partner for industrial controls training.

- It is real.
- It is available.

Talk to your Sales Advisor to check out the Terms & Conditions & to see if you qualify.

# PLC & Drives Manufacturers

**INTACS strives to work alongside leading manufacturers to offer a real alternative to manufacturer's own courses**

**We offer training in support of the following leading manufacturers' systems**

**Allen Bradley**

**Siemens**

**Indramat**

**GE Fanuc**

**Lenze**

**Moeller Electric**

**Toshiba**

**Honeywell**

**Texas**

**IDEC**

**Modicon**

**PowerFlex**

**EcoDrive**

**Altivar**

**Control Techniques**

**DeviceNet**

**Profibus**

**Siemens 820**

**Festo**

**Mitsubishi**

**Danfoss VLT**

**Rexroth**

**Square D**

**Alstom**

**GEM 80**

**Telemecanique**

**Schneider**

**Omron**

**Beckhoff**

**MicroMaster**

**Ultra 3000/5000**

**Lexium**

**SEW**

**Ethernet**

**InterBus**

**Siemens 840D**

**Rockwell**

**Bosch**

**Eberle**

**Hitachi**

**Fluke**

**DirectLogic**

**Fanuc**

**ABB**

**Alspa**

**NAIS**

**PanelView**

**B160**

**Kinetix**

**E1000**

**Commander**

**ControlNet**

**ASi**

**Fanuc CNC**

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