



INTACS training

Training Course Guide

Industrial Controls & Automation Training



Year 2018

Version 2.3

**PLCs, Drives, Motion Control, HMI & SCADA,
Electrical Multi-skilling, Electrical Health & Safety,
17th 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.

2018 is our 29th 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 – was a major focus for 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 & 17th Edition courses to industry.

All fees quoted are exclusive of VAT.



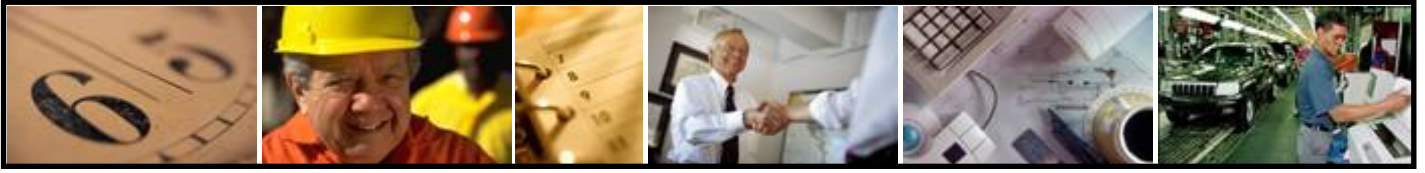
INTACS training courses

CONTENTS

	<u>Page</u>
PLC training (PLCs, HMIs, Drives, Networking)	
• Allen Bradley/Rockwell	6
• Siemens	8
• Mitsubishi	10
• Omron	11
• Logical Approach to Problem Solving	11
• GE Fanuc, Beckhoff & Moeller Electric	12
• Schneider Electric	13
• DirectLogic & Texas Instruments PLCs	14
• Honeywell, IDEC, Eberle, Alspa, GEM 80 & Toshiba PLCs	15
SCADA training	
• SCADA InTouch, ICONICS, RSView, Cimplicity	15
Variable Speed Drives / Inverters	
• Allen Bradley B160 & PowerFlex 40/400 & 70/700	16
• Siemens MicroMaster & G110 /G120 Drives	16
• Danfoss VLT Drives	17
• Lenze Drives	17
• ELAU PacDrive Basic & Advanced Service	17
Motion Control / Servo Drives	
• Bosch Rexroth Indramat	18
• IndraDrive, EcoDrive, IndraLogic	18
• Allen Bradley Ultra 3000 & Kinetix	18
Electrical Skills	
• Industrial Electrics & Control Fundamentals (Electrical Multiskilling) including <i>Training WORKS</i>	20
• C&G 17 th / 18 th Edition Wiring Regulations	21
• C&G Periodic Inspection, Test & Certification	21
• Portable Appliance Testing (Industrial)	21
• Electrical H&S, Safe Electrical Isolation, Resetting Trips & Overloads	22
• Fundamental Industrial Electrical Inspection & Testing	22
• Troubleshooting Electrical Control Systems (TECS)	20/22
• Duty Holder's Safety of Electrical Systems	22
• Portable Appliance Testing (PAT)	22
• Machinery Safety training	22
Mechanical Skills	
• Pneumatics & Hydraulics	23
• Industrial Mechanical Maintenance	23
• Mandatory Abrasive Wheels	23
• Working at Height & Ladders	23
• Introduction to PLCs	23
• PLC Troubleshooting for Mechanical personnel	23
Process Control – the basics	
• Instrumentation & Process Control	24



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

For 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 2018 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

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. 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 2018

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**”.

ControlLogix (inc. CompactLogix) w RSLogix5000 / Studio5000 software

Course type	Duration	Fee	J	F	M	A	M	J	J	A	S	O	N	D
NEW ControlLogix PLC Level 1 First-line Practical Skills (FLPS)	4 days	£1095		26		30		25			10		5	
ControlLogix PLC Level 2 M&T	4 days	£975		5		16		18		13		15		
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	£995		7		25		27			5		14	

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	£1195		19			21		23				1	
--------------------------	--------	-------	--	----	--	--	----	--	----	--	--	--	---	--

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	£1080		6		24		12		7	25			4
ControlLogix Motion Control with ULTRA or Kinetix Servos (for experienced servo users)	2 days	£740		8		26		14		9	27			6

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
NEW SLC500 Level 1 First-line Practical Skills (FLPS)	4 days	£1095	29		26		21		16		3		12	
SLC500 Level 2	4 days	£975	<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	£995		7		25		27			5		14	
---	--------	------	--	---	--	----	--	----	--	--	---	--	----	--

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	15			9		19		20		22		10
PLC-5 Practical Fault-finding	5 days	£1285	<i>Dates as needed</i>											
PLC-5 Level 2 Troubleshooting Programs	4 days	£985	<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

New 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		19		30			2		10		12	
ControlLogix/PLC-5 Basics	5 days	£1385	<i>Dates as needed</i>											
ControlLogix/SLC500 Basics	5 days	£1385	15		19		21		23	20		1		10

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	17			4	30		9		17		26	

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	31		14		30		23			1		12

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	£330	22		12		21		9		24		19	
Working with ControlNet Networking	1 day	£330	23		13		22		10		25		20	
Working with DH+ & DH485 Networking	1 day	£330	25		15		24		12		27		22	
Working with AB Remote I/O (RIO)	1 day	£330	26		16		25		13		28		23	
Working with Allen Bradley Ethernet	1 day	£330	24		14		23		11		26		21	
Allen Bradley PLCs with Profibus	1 day	£330	<i>Dates as needed</i>											
Allen Bradley PLCs with ASi	1 day	£330	<i>Dates as needed</i>											
Allen Bradley PLCs with ASi Safe	2 days	£690	<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	£330	29			9		18			3		12	
PowerFlex 525 VSD	2 days	£610	30			10		19			4		13	
AB PowerFlex 40/400 VSD	2 days	£590		1		12		21			6		15	
AB PowerFlex 70/700/753 VSD	2 days	£590		5		16		25			10		19	
AB PowerFlex 40/400 & 70/700/753 VSD	3 days	£810		5		16		25			10		19	
AB PowerFlex on DeviceNet	3 days	£810		8		19		28			13		22	
AB B160 Drives on DeviceNet	2 days	£590	<i>Dates as needed</i>											
Allen Bradley 1305 AC Drive	1 day	£330	<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 2018

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
NEW Siemens S7-300/400 Level 1 First-line Practical Skills (FLPS)	5 days	£1195		5		23		11	23		10		5	10
S7-300/400 Level 2 M&T (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	£995	29	12		30		18		13		15		3
S7-300/400 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	£995		14			2		4		12		19	
S7-300/400 Programming Skills	5 days	£1275		12		16			9			8		

Siemens own 5 day Level 1 course fee is £2170+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
STEP7 v.5.5 to TIA-Portal v13/14 Update	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
NEW S7-1200/1500 Level 1 First-line Practical Skills (FLPS)	5 days	£1195	15	26		9		4	30		10	29		10
S7-1200/1500 Level 2 M&T	5 days	£995		19		23		11		13		8	26	
S7-1200/1500 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	£995		19			9		11		19		26	
S7-1200/1500 Programming Skills	5 days	£1275		12		23			16			15		

Siemens own 5 day Level 1 course fee is £2170+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		26		23		18			17		12	

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		19			7		23			1		
Working with Ethernet / Profinet & S7	1 day	£330		21			9		25			3		
Working with ASi Networking & S7	2 days	£640		22			10		26			4		
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		26			21			6			12	
Siemens S7-300 Distributed Safety	2 days	£710		28			23			8			14	
Working with Modular Safety System MSS	2 days	£730		28			23			8			14	



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	£810		7			2		25			15		

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	£995	22			9		25			24			3
Siemens S5 Practical Fault-finding	5 days	£1355	<i>Dates as needed</i>											
S5 Level 2 M&T	5 days	£995			5			11					1	

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	£330	29			9		18			3		12	
Siemens Micromaster 420 / 440 VSD M&T	1 day	£330	30			10		19			4		13	
Siemens Sinamics G110/120 VSD M&T	2 days	£590	31			11		20			5		14	
Getting Started with Servo Control (generic)	1 day	£330		2		13		22			7		16	

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 2018

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
NEW Mitsubishi FX, Q & A Series Level 1 First-line Practical Skills (FLPS)	5 days	£910			19		14		9		24		12	
Mitsubishi PLC 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	£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
Mitsubishi Level 2 M&T, HMIs & Networking	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
Intro to Mitsubishi PLC Programming using GXWorks 2 / 3 (simple project)	2 days	£530												
Intro to Mitsubishi PLC Programming using GXWorks 2/3 (structured project)	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
MAC/ E Series / GOT Series HMIs M&T	2 days	£610												

Mitsubishi Communications & Networking courses

Course type	Duration	Fee	J	F	M	A	M	J	J	A	S	O	N	D
Working with & Troubleshooting Mitsubishi PLCs using CCLink	1 day	£360												

Mitsubishi Variable Speed Drives & Motion Control courses

Course type	Duration	Fee	J	F	M	A	M	J	J	A	S	O	N	D
Getting Started with Inverters	1 day	£330	29			9		18			3		12	
Mitsubishi AC Inverters Maintenance	1 day	£330	30			10		19			4		13	
Getting Started with Servo Control	1 day	£330	31			11		20			5		14	



INTACS training courses

OMRON training courses for 2018

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	£730		12			14	16				1		3
C / CJM Series PLC Further Troubleshooting	2 days	£540		15			17	19				4		6

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	£330												
Working with & Troubleshooting Omron PLCs using DeviceNet	1 day	£330												
Working with & Troubleshooting Omron PLCs using Ethernet	1 day	£330												
Working with & Troubleshooting Omron PLCs using Profibus DP	1 day	£330												

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	£330	29			9	18			3			12	
Omron SysDrive Inverter	1 day	£330	30			10	19			4			13	
Getting Started with Servo Control	1 day	£330	31			11	20			5			14	
Omron MC 402 Motion Control	3 days	£750	<i>Dates as needed</i>											

M&T = Maintenance & Troubleshooting

Logical Approach to Problem Solving

We have recently re-vamped this full-day course for maintenance personnel to highlight the most effective strategies for troubleshooting machine or process faults. Delegates can attend scheduled course dates or with a minimum of 4 attendees, the course can run on-site.

Course type	Duration	Fee	J	F	M	A	M	J	J	A	S	O	N	D
Logical Approach to Problem Solving	1 day	£295	<i>Dates as needed</i>											

Group discounts apply on scheduled course dates for this course (4 delegates £950 + VAT, 6 delegates £1380 + VAT, 8 delegates £1680 + VAT).

For on-site training, a minimum group size of 6 delegates is needed to get maximum benefit from the course.



INTACS training courses

GE training courses for 2018

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
Proficiency iFIX Fundamentals	4 days	£1365												
Proficiency iFIX Advanced	4 days	£1365												
<i>Earlier FIX/FIXDMACS versions can be accommodated</i>														
Proficiency CIMPLICITY Basic	4 days	£1365												
Proficiency CIMPLICITY Advanced	4 days	£1365												

Dates as needed
M&T = Maintenance & Troubleshooting

Beckhoff training courses for 2018

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	5 days	£995												
Beckhoff Programming	5 days	£995												

Dates as needed
M&T = Maintenance & Troubleshooting

Moeller Electric training courses for 2018

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												

Dates as needed

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	£330												
Moeller OPTIDRIVE	2 days	£610												

Dates as needed



INTACS training courses

Schneider Electric training courses for 2018

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		26			14			13		8		10
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	<i>Dates as needed</i>											
PL7-2 for TSX 17-10/20	2 days	£660	<i>Dates as needed</i>											
PL7-3 for TSX 47-30/40, TSX 67/87/107	3 days	£780	<i>Dates as needed</i>											

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	29			9			9		24		26	
Modicon 984 Level 1 M&T with MODSOFT	4 days	£890	29			9			9		24		26	
Modicon 984 Level 1 M&T with PRO-WORX	4 days	£890	29			9			9		24		26	
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	<i>Dates as needed</i>											

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	29			9		18			3		12	
Altivar or Lexium VSD	1 day	£330												
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>											

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 2018

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											
--------------------------------------	--------	------	-----------------	--	--	--	--	--	--	--	--	--	--	--

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 2018

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	£925												
Texas 545/555 Series PLC M&T (Part 2)	4 days	£925												
Texas 405 PLC Basic M&T	4 days	£925	Dates as needed											
Texas 305 Series PLC Basic M&T	3 days	£810												
Texas 560/565 Series PLC M&T	10 days	£1650	Dates as needed											
Texas 5 TI PLC Basic M&T	2 days	£510	Dates as needed											
Texas PM 500 PLC M&T	5 days	£990	Dates as needed											

M&T = Maintenance & Troubleshooting



INTACS training courses

MORE PLC training courses for 2018

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	<i>Dates as needed</i>											

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	<i>Dates as needed</i>											
<i>M&T = Maintenance & Troubleshooting</i>														

SCADA training courses for 2018

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		12		23			9		24			3

ICONICS courses

Course type	Duration	Fee	J	F	M	A	M	J	J	A	S	O	N	D
Genesis 32 Basic	3 days		<i>Dates as needed</i>											

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	31		14		30		25			3		12

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	<i>Dates as needed</i>											



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	£330	29			9		18			3		12	

Allen Bradley Inverters

Course type	Duration	Fee	J	F	M	A	M	J	J	A	S	O	N	D
PowerFlex 525 VSD	2 days	£610	30			10		19			4		13	
PowerFlex 40/400 VSD	2 days	£590		1		12		21			6		15	
PowerFlex 70/700/753 VSD	2 days	£590		5		16		25			10		19	
PowerFlex 40/400 & 70/700/753 VSD	3 days	£810		5		16		25			10		19	
PowerFlex on DeviceNet	3 days	£810		8		19		28			13		22	
B160 Drives on DeviceNet	2 days	£590	<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	£330	30			10		19			4		13	
Siemens Sinamics G110/120 VSD M&T	2 days	£590	31			11		20			5		14	

Mitsubishi Inverters

Course type	Duration	Fee	J	F	M	A	M	J	J	A	S	O	N	D
Mitsubishi AC Inverters Maintenance	1 day	£330	30			10		19			4		13	

Omron Inverters

Course type	Duration	Fee	J	F	M	A	M	J	J	A	S	O	N	D
Omron SysDrive Inverter	1 day	£330	30			10		19			4		13	

Schneider Electric Inverters

Course type	Duration	Fee	J	F	M	A	M	J	J	A	S	O	N	D
Altivar VSD	1 day	£330	30			10		19			4		13	
Lexium VSD	1 day	£330	30			10		19			4		13	

Control Techniques Inverter

Course type	Duration	Fee	J	F	M	A	M	J	J	A	S	O	N	D
Commander SE	1 day	£330	30			10		19			4		13	

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 2018

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	£330		5		16		25			10		19	

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	£330		6		17		26			11		20	

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	£360	Dates as needed											
Working with & Troubleshooting Danfoss VLT / FC Drives on DeviceNet	1 day	£360	Dates as needed											

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 2018

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	£610		6		17		26			11		20	

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	£610		8		19		28			13		22	

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	Dates as needed											
ELAU PacDrive Advanced Service	2 days	£755	Dates as needed											

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	31			11		20			5		14	

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	£960												
ControlLogix Motion Control with ULTRA or Kinetix Servos (for experienced servo users)	2 days	£660												

Mitsubishi Variable Speed Drives & Motion Control courses

Mitsubishi FX3U PLC Motion Control	2 days	£660	<i>Dates as needed</i>											
---	--------	------	------------------------	--	--	--	--	--	--	--	--	--	--	--



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 2018

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
Industrial Electrics & Control Fundamentals Part 1	5 days	£980	22	19	19	16	21	25		6	17	22	26	
Industrial Electrics & Control Fundamentals Part 2	5 days	£980	29		5	9	14	18		13	24	29		3
Troubleshooting Electrical Control Systems (TECS)	5 days	£980		5	12	30		11	30			1	12	

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**?

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

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.**

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
Mechatronics Level 1 (C&G)	3 days	£875												
Mechatronics Level 2 (C&G)	3 days	£875												

Risk Assessment Training

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



INTACS training courses

City & Guilds 17th/18th Edition & NEW 2391

YELLOW BOOK 17th Edition Wiring Regulations, BS7671:2008 (2015)

Course also available on-site

Special Offer

Book onto the 17th Edition 3 day course & benefit from a £125+VAT RE-TAKE should you fail your first exam

Course type	Duration	Fee	J	F	M	A	M	J	J	A	S	O	N	D
Latest 17 th Edition Wiring Regulations Full Course: C&G 2382-15	3 days	£495 + £75 exam	17		26		30		11		12		21	

The 18th Edition Wiring Regulations

The IET are currently discussing & formulating an update to the current 17th Edition Wiring Regs; this will be called the 18th Edition Wiring Regulations. The plan is to publish the 18th Edition Wiring Regs in July 2018 & examining boards such as C&G are planning to have courses & exams available for early 2019.

The problem

Familiarity with the current Wiring Regulations is similar to the requirement for drivers & road users to be familiar with the Highway Code. Already some companies are considering deferring this training until the 18th Edition becomes available. The problem is, if an understanding of the current Wiring Regulations is lacking & is therefore needed from a safety perspective, the training is needed now rather than in 12 months time.

Special Offer

To help solve this issue, for all 17th Edition Wiring Regs training undertaken with INTACS during 2018/2019, where users may want to complete the latest course, when it becomes available, users can register with us (at the time of booking) for a discounted training rate for the 18th Edition when it becomes available in early 2019.

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												

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 2392-50 (EAL 4337) qualifies people to work on new installations only.

C&G 2392-51 (EAL 4338) qualifies people to work on old (existing) installations only.

C&G 2392-52 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		26		9								



INTACS training courses

Electrical Safety training courses for 2018

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	12	13		6	29		10		11		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
New Fundamental Industrial Electrical Inspection & Testing	2 days	£660	<i>On-site only, dates as needed</i>											

Troubleshooting Electrical Control Systems

Course type	Duration	Fee	J	F	M	A	M	J	J	A	S	O	N	D
New Troubleshooting Electrical Control Systems (TECS)	5 days	£980		5		30		11	30			1	12	

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	12		5	29		9		10		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	11		26		10		26		6		29	

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			19	23	21	18	16	20	10	15	12	3



INTACS training courses

Mechanical training courses for 2018

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	£825	8	19		9								
Introduction to Electro-Pneumatics (F)	3 days	£825	22			16								
Introduction to Hydraulics (F) (on-site, max. 8 delegates)	1 day	£2250	Dates as needed											
Modern Industrial Hydraulics (F) (C&G accredited)	3 days	£925	15	5	12									
Basic Hydraulics (B)	3 days	£896	16	6	20	10		5	10	7		2	27	
Proportional Hydraulics (B)	3 days	£896		27								16		

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												
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 & 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
-------------	----------	-----	---	---	---	---	---	---	---	---	---	---	---	---

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	22			30			23				15	
Basic PLC Fault-finding Principles	1 day	£310	23				1		24				16	
Siemens S5 Hardware Fault-finding	2 days	£630	24				2		25				17	
Siemens S7 Hardware Fault-finding	2 days	£630	24				2		25				17	
Allen Bradley ControlLogix Hardware Fault-finding	2 days	£630	24				2		25				17	
Allen Bradley SLC500 Hardware Fault-finding	2 days	£630	24				2		25				17	
Mitsubishi PLC Hardware Fault-finding	2 days	£630	24				2		25				17	



INTACS training courses

Instrumentation training courses for 2018

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
Instrumentation & Process Control	3 days	£780		12			15		31			30		

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	Festo	Rockwell
Siemens	Mitsubishi	Bosch
Indramat	Danfoss VLT	Eberle
GE Fanuc	Rexroth	Hitachi
Lenze	Square D	Fluke
Moeller Electric	Alstom	DirectLogic
Toshiba	GEM 80	Fanuc
Honeywell	Telemecanique	ABB
Texas	Schneider	Alspa
IDEC	Omron	NAIS
Modicon	Beckhoff	PanelView
PowerFlex	MicroMaster	B160
EcoDrive	Ultra 3000/5000	Kinetix
Altivar	Lexium	E1000
Control Techniques	SEW	Commander
DeviceNet	Ethernet	ControlNet
Profibus	InterBus	ASi
Siemens 820	Siemens 840D	Fanuc CNC

INTACS, Industrial Training Centre

Harbo Works, Harrowden Road, Wellingborough, Northants, NN8 5BJ

Tel: 01933 440 679 Fax: 01933 229 744

E-mail: enquiries@intacs.co.uk Website: www.intacs.co.uk