

SYLLABUS · REVIEWED 14 OCTOBER 2026

PGDIA

Post Graduate Diploma in Industrial Automation

Four weeks on **real Siemens and Delta PLCs** in our Bangalore lab, 4 hours a day, with guided self-study every evening. Then **placement support until you hold an offer letter**.



24 classroom days	75 self-study modules	22 PLC brands	154_h guided self-study
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UK REGISTERED LEARNING PROVIDER

Wartens Ltd, UK · UKPRN 10096641



ISO 9001:2015
certified

AWARD-WINNING

7 awards, 2025-2026



Karnataka Excellence Award
Winner 2026

Job-assured, conditions apply: the conditions are in the course overview brochure and at edwartens.co.in/pgdia-terms.

🌐 **GLOBAL PRESENCE** India · United Kingdom · Germany · UAE · United States

HOW IT IS ORGANISED

Four weeks, three layers

Each week is six classroom days of 4 hours, the self-study set for each evening, and a weekly test. The fourth week ends with the final exam and the placement handover.



Classroom days: 24

Taught at the Electronic City centre on Siemens and Delta hardware. 96 hours in all.



Self-study: 75 modules

Video lessons, booklets and quizzes in the portal, with 126 full lessons from our free courses built in.



Tests: 3 weekly + final

Weekly tests of 20 questions (70%), then a 50-question final (75%), practicals and a viva.

THE SELF-STUDY, IN FOUR PARTS

26

Part A · Basic engineering

modules, about 36 h of study

22

Part B · PLC brands

modules, about 22 h of study

8

Part C · HMI, SCADA and DCS

modules, about 8 h of study

19

Part D · On-site skills

modules, about 29 h of study

HOW EACH TEST WORKS

After each class day	10 questions, 60% to pass, 15 minutes
After each self-study module	5 questions, 60% to pass, 10 minutes
Weekly tests, weeks 1-3	20 questions, 70% to pass, 40 minutes, 2 attempts
Final theory paper	50 questions, 75% to pass, 75 minutes, one attempt; with a Siemens practical, a Delta practical and a viva



Job-assured, conditions apply. PGDIA is a job-assured programme. The assurance is placement support with no end date: it continues until an employer gives you an offer letter. Full terms: edwartens.co.in/pgdia-terms.

22 PLC BRANDS: SIEMENS AND DELTA IN CLASS, THE REST IN SELF-STUDY

SIEMENS



Allen-Bradley
by ROCKWELL AUTOMATION

MITSUBISHI
ELECTRIC

Schneider
Electric

OMRON

ABB

CODESYS

EMERSON

KEYENCE

LS ELECTRIC

FATEK

Messung

INOVANCE

Panasonic

BECKHOFF

Siemens PLC foundations

Classroom days

6 days · 24 h

PG1	Siemens PLC 1: hardware, wiring and your first TIA Portal project Automation pyramid; PLC parts and the scan cycle; S7-1200, S7-1200 G2, S7-1500, ET 200SP Lab: Wire push-buttons, a selector and lamps to a PLC; first download	4 h
PG2	Siemens PLC 2: bit logic and the DOL starter NO and NC contacts, coils; Wire NC, program NO; Seal-in and interlocks Lab: DOL motor starter with stop, overload and interlock	4 h
PG3	Siemens PLC 3: timers, counters and the star-delta starter TON, TOF, TP, TONR; Time literals and instance DBs; CTU, CTD, CTUD Lab: Star-delta starter, traffic light, car-park counter	4 h
PG4	Siemens PLC 4: data types, addressing and maths Bool, Byte, Word, Int, Dint, Real, Time, String; Memory areas %I %Q %M and DBs; Optimized vs standard DBs Lab: Bottle counting with batch total and reject count	4 h
PG5	Siemens PLC 5: program structure with OBs, FCs, FBs and DBs OB1 and the cycle time; OB100 startup; OB30 cyclic interrupt Lab: One motor function block reused for three conveyors	4 h
PG6	Siemens PLC 6: analog signals, scaling and PID_Compact 4 to 20 mA and 0 to 10 V; 2-wire and 4-wire transmitters; Raw 0 to 27,648, over-range and 32,767 Lab: Tank level with alarms; a level PID loop	4 h

Evening self-study

17 modules · about 22 h

PGE1	Units, conversions and the physics of machines	75 min	PGE2	DC and AC circuits	90 min
PGE3	Three-phase power and power factor	90 min	PGE4	Motors: induction, DC, servo and stepper	90 min
PGE5	Motor starters: DOL, star-delta, reversing and soft starters	120 min	PGE6	Contactors, relays, interlocks and 24 V DC control power	75 min
PGE7	Electronics for PLC I/O: diodes, transistors, sinking and sourcing	90 min	PGE8	Digital logic, number systems and PLC data types	90 min
PGE9	Industrial sensors	75 min	PGE10	Automation overview: the pyramid, PLC, DCS, SCADA and HMI	90 min
PGE11	Electrical safety, LOTO and conduct on site	60 min	PGP1	Siemens beyond TIA: S7-300/400 in STEP 7 Classic, LOGO! 8 and S7-200 SMART	60 min
PGP2	Allen-Bradley ControlLogix and CompactLogix with Studio 5000 Logix Designer	60 min	PGP3	Allen-Bradley Micro800 with CCW, and MicroLogix/SLC 500 with RSLogix 500	60 min
PGP4	Mitsubishi FX, iQ-F and iQ-R with GX Works2 and GX Works3	60 min	PGP5	Schneider Modicon M221 and M340/M580 with Machine Expert Basic and Control Expert	60 min
PGP6	Omron CP and CJ with CX-Programmer, NX and NJ with Sysmac Studio	60 min			

PGT1 · Weekly test 1: Siemens PLC foundations and week-1 self-study

Siemens advanced PLC and HMI

Classroom days

6 days · 24 h

PG7	Siemens PLC 7: SCL and sequences as state machines SCL syntax: := and =, # and quotes; IF, ELSIF, ELSE; CASE with ELSE Lab: Three-ingredient mixing sequence in SCL	4 h
PG8	Siemens PLC 8: PROFINET, drives and diagnostics IO controller and IO devices; PROFINET device names; Remote I/O, and a second S7-1200 as an I-device with transfer areas Lab: Drive a motor at set speeds from the PLC; find planted faults	4 h
PG9	Siemens HMI 1: panels, HMI connection, tags, buttons, I/O fields and navigation Basic, Comfort, Unified Basic and Unified Comfort panels; WinCC Basic, Comfort, Advanced, Professional and Unified; HMI connection and IP addressing in one subnet Lab: Motor control screen	4 h
PG10	Siemens HMI 2: alarms, alarm classes, trends, recipes and user management Discrete alarms: trigger tag and bit number; Word byte order: MW10 bit 0 is M11.0; Slice access (.%X) for alarm bits Lab: Alarm and trend page for the tank	4 h
PG11	Siemens HMI 3: templates, faceplates, scripts, WinCC Unified and a full PLC + HMI project Templates and a consistent screen frame; Faceplate types, UDTs, versions and instances; PLC-HMI interface DB: commands, status, parameters Lab: Mixing tank with PLC and HMI together	4 h
PG12	Siemens SCADA 1: SCADA vs HMI, the WinCC family, architecture, tags and process screens SCADA, HMI and PLC: who controls, who supervises; WinCC V7/V8, Professional, Unified PC, Advanced; Server, operator clients, web clients Lab: Plant overview SCADA screen	4 h

Evening self-study

20 modules · about 24 h

PGE12	Analog signals and scaling: 4 to 20 mA, 0 to 10 V and the S7 raw range	60 min	PGE13	Instrumentation basics and pressure measurement	75 min
PGE14	Temperature measurement: RTDs and thermocouples	75 min	PGE15	Level and flow measurement	90 min
PGE16	Transmitters, loop power and HART	75 min	PGE17	Control loops and PID tuning	120 min
PGE18	Transformers, CTs, PTs and control transformers	75 min	PGE19	Protection devices and coordination	90 min
PGE20	Earthing and cable sizing	75 min	PGE21	Encoders and high-speed counting	60 min
PGE22	Networking basics for automation	75 min	PGE23	Test instruments: multimeter, clamp, megger, earth tester and calibrator	60 min
PGP7	ABB AC500 V3 and AC500-eCo with Automation Builder	60 min	PGP8	CODESYS and the PLCs built on it: WAGO, Inovance AM600, Delta AX	60 min
PGP9	Emerson (formerly GE) PACSystems RX3i with PAC Machine Edition	60 min	PGP10	KEYENCE KV-8000 and KV Nano with KV STUDIO	60 min
PGP11	LS Electric XGB with XG5000: XGK device addressing and XGI IEC style	60 min	PGH1	HMI primer: Weintek EasyBuilder Pro	60 min
PGH2	HMI primer: Rockwell FactoryTalk View ME and FactoryTalk Optix	60 min	PGH3	HMI primer: Mitsubishi GT Designer3 (GOT2000) and Pro-face GP-Pro EX	60 min

PGT2 · Weekly test 2: Siemens advanced PLC and HMI, and week-2 self-study

Siemens SCADA and Delta PLC

Classroom days

6 days · 24 h

PG13	Siemens SCADA 2: alarm logging, tag logging, trends and shift reports Alarm Logging: came in, went out, acknowledged; ISA-18.2 rates: floods, chattering, stale alarms; The hit list and bad actors Lab: Shift report and historical trend	4 h
PG14	Siemens SCADA 3: user rights, OPC UA, redundancy and the three-area plant project Users, groups and authorisations; Automatic logoff and a secured runtime; OPC UA: endpoint, port 4840, security mode and policy Lab: Three-area plant SCADA over OPC UA	4 h
PG15	Delta PLC 1: families, ISPSOft, wiring and a star-delta starter Delta PLC families: DVP-ES2/ES3/SS2/SE, AS, AH, AX; ISPSOft vs WPLSoft vs DIADesigner, and DIASudio; COMMGR drivers and the simulator Lab: DOL and star-delta on a Delta PLC	4 h
PG16	Delta PLC 2: timers, counters, compare, move and special relays Timer time base by number: 100 ms, 10 ms, 1 ms; Accumulative timers, M1028 and M1038; CNT and DCNT; 16-bit and 32-bit counters Lab: Traffic light and conveyor sorting	4 h
PG17	Delta PLC 3: analog, high-speed counting, Modbus and drive control DVP04AD control registers, FROM and TO; AS-series hardware configuration; Analog output: TO into an output channel, 0 to 10 V; 4-20 mA scaling and broken-loop detection Lab: Run the G120 drive from the Delta PLC; Modbus RTU between two Delta PLCs	4 h
PG18	Delta PLC 4: subroutines, step ladder, troubleshooting and Siemens to Delta CALL, SRET, FEND and P pointers; Timers allowed in subroutines: T184-T199; Step ladder: STL, SET Sn, RET; SFC in ISPSOft Lab: Filling-station mini project	4 h

Evening self-study

21 modules · about 26 h

PGX1	Industrial protocols: Modbus, PROFIBUS, PROFINET, EtherNet/IP, EtherCAT and more	90 min	PGX2	OPC UA, MQTT, IIoT and OT security basics	60 min
PGX3	VFDs 1: how a drive works and how to select one	90 min	PGX4	VFDs 2: commissioning, braking, vector control and safe torque off	90 min
PGE24	Calibration, control valves, P&ID tags and hazardous areas	90 min	PGE25	Advanced control strategies: cascade, ratio, feedforward and split range	45 min
PGX5	Pneumatics: air supply, valves, cylinders and a PLC-controlled sequence	120 min	PGX6	Hydraulics: power unit, valves, cylinder force and speed, and safety	60 min
PGC1	DCS architecture and DCS versus PLC	60 min	PGC2	DCS platforms in India, batch control and alarm management	75 min
PGX7	Process plant and utilities: pumps, compressors, boilers, AHUs and water treatment	120 min	PGE26	Mechanical basics: gears, belts, bearings, ball screws, conveyors and drawings	120 min
PGP12	FATEK FBs and B1 with WinProLadder: the low-cost compact PLC	60 min	PGP13	Messung, India's own PLC: XMPRO-10, NX-ERA and NX-ERA Xpress	60 min
PGP14	Inovance Easy, H3U, H5U and AM600: PLC, servo and drive from one maker	60 min	PGP15	Panasonic FP0H, FP-XH and FP7 with FPWIN GR7 and FPWIN Pro7	60 min
PGP16	Beckhoff TwinCAT 3: PC-based control, EtherCAT and linked variables	60 min	PGP17	B&R X20 with Automation Studio: mapp, POWERLINK and imported machines	60 min
PGS1	SCADA primer: AVEVA InTouch HMI (Wonderware) 2023 R2	60 min	PGS2	SCADA primer: Ignition by Inductive Automation	60 min
PGS3	SCADA primer: FactoryTalk View SE and the wider SCADA landscape	60 min			

PGT3 · Weekly test 3: Siemens SCADA and Delta PLC, and week-3 self-study

Delta HMI, career preparation and final exam

Classroom days

6 days · 24 h

PG19	Delta HMI 1: DIAScreen, PLC link, screens and alarms DOP-100 family: sizes and type letters; DIAScreen, DIAStudio and the Lua editor; DOP-B to DOP-100: DOPSoft 4.00 conversion Lab: Operator screen for the filling station	4 h
PG20	Delta HMI 2: trends, recipes, navigation, user levels and the full project History sampling, trends and data files; Recipes: groups, data types, CSV, USB/SD/FTP; Staging registers and loading in S0 only Lab: Recipes, trends and the full Delta project	4 h
PG21	Resume and LinkedIn: the CV, the profiles and the application workflow How a CV is read: six seconds, keywords first; ATS parsing: single column, no tables or text boxes; Competency mapping against a real job advert Lab: Your CV, LinkedIn and job-portal profiles, reviewed live	4 h
PG22	Technical interview preparation: power, starters, signals, PLC and fault-finding Protection: MCB curves, MCCB, HRC fuse, RCCB, Type 2 coordination; Cables, transformers and CT safety; DOL and star-delta power and control drawings Lab: Live fault-finding on Siemens and Delta programs	4 h
PG23	HR preparation and mock interviews: introduction, HR round, recorded panels Self-introduction: present, past, proof, future; Body language and spoken English; STAR answers Lab: Recorded mock HR and technical panels	4 h
PG24	Final exam and placement handover PGT4 theory: 50 questions, 75 minutes, pass mark 75 %; Siemens practical: wire, program and an HMI screen from a written spec; Delta practical from a written spec Lab: Final theory paper, two practicals and a viva	4 h

Evening self-study

17 modules · about 24 h

PGX19	Interview self-test: the most-asked questions, with model answers	120 min	PGX8	Machine safety: risk assessment, PL and SIL, safety relays, E-stops and STO	120 min
PGX9	Robotics 1: robot types, frames and the teach pendant	75 min	PGX10	Robotics 2: PLC-robot handshake and cell safety	60 min
PGX11	Electrical design 1: drawing sets, feeder sizing and the BOM	120 min	PGX12	Electrical design 2: building the panel	120 min
PGX13	Industrial documentation 1: from URS to as-built	120 min	PGX14	Industrial documentation 2: FAT, SAT, loop checks and commissioning	90 min
PGX15	AI for automation engineers 1: AI assistants for PLC code and documents	60 min	PGX16	AI for automation engineers 2: plant data, predictive maintenance and vision	90 min
PGX17	Troubleshooting method: half-split, diagnostics, RCA and maintenance	90 min	PGX18	Reading datasheets and manuals	45 min
PGP18	Honeywell ControlEdge PLC and HC900: process PLCs for boilers and distilleries	60 min	PGP19	Phoenix Contact PLCnext: an open Linux PLC with IEC, C++ and C#	60 min
PGP20	Fuji Electric MICREX-SX SPH with SX-Programmer Expert (D300win)	60 min	PGP21	WECON LX3V and LX5V: the low-cost FX-compatible PLC	60 min
PGP22	Unitronics Vision, Samba and UniStream: PLC and HMI in one unit	60 min			

PGT4 · Final theory paper: all four weeks



Ready to start PGDIA?

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