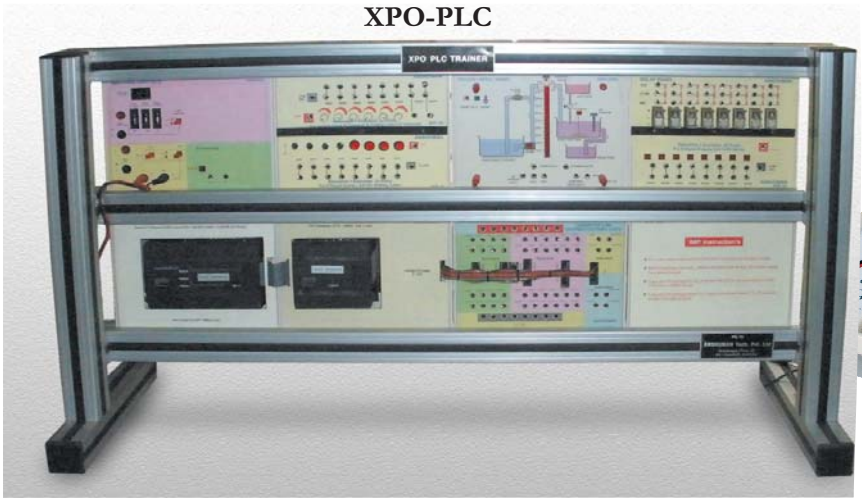
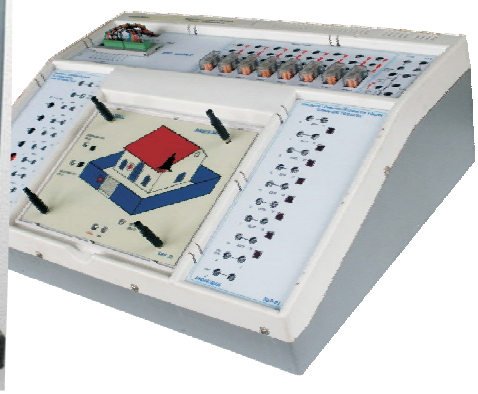
INDUSTRIAL PLC TRAINER / SCADA /DCS TRAINER
(Model - I : XPO-PLC, Model - II : XPO-EduPLC)

XPO-PLC



XPO-EduPLC



SALIENT FEATURES

- Can learn about different aspects of application trainers like Industrial PLC, SCADA, DCS etc. using simulated building blocks / replaceable static application panels (SAPs).
- Analog I/O channel (Optional) with potentiometer for AI simulation.
- Connection through sturdy 4mm Banana sockets & Patch cords.
- Students workbook & Instructor's Guide provided with each unit.

Technical Specifications

Model	XPO - PLC Trainer	XPO - Edu PLC Trainer
Make	LG master J120S series	Delta DVP-14SS
CPU (DIO)	• K7M DR 30UE (18DI + 12DO) - (Default) • K7M DR (T) 20U(12DI+4R+4T) - (required for stepper motor) • K7M-DR20UE(12DI+8R) - (for Electro Pneumatic) • K7M DR 40UE (24DI+16DO) - (for Higher DIO Capacity) • K7M DR 30U (18DI+12DO) - (required for DCS-RS485)	-- NA --
Memory	2K step (EEPROM) 0.4usec per instruction	3792 Step (EEPROM)
DIO modules (Optional)	DIO 10: G7E DR10A (6DI + 4R) (additional DIO module for expansion if needed)	DIO 14 : DI(8), DO (6) Transistorised or relay
AIO modules* (Optional)	a) AIO3 :G7F ADHA - (2AI+1A0) - (Default) b) AIO4 : G7F ADHB (2AI+2A0) AIO : 0 - 5 V / 10 V setteble range, 12 Bit resolution.	-- NA --
RTC (Optional)	G7E - RTCA Real Time Clock Module to display the clock using SCADA Software.	-- NA --
Software	KGLWIN supports ladder programming & monitoring / troubleshooting & instruction set.	WPL Soft 2.12 supports ladder programming & monitoring troubleshooting & instruction set, Simulation Software.
Communication Ports	RS232C for Ladder Programming, RS485 with LG protocol for Multidrop Networking.	RS232C for Ladder Programming, USB Cable
Operating voltage	110/220Vac ± 20% 50/60 Hz, PLC (55 VA), 24VPS (75VA)	110/220Vac ± 20% 50/60 Hz.
Mechanical Specification	Table top Aluminum profile rack of 4 x 2 matrix consisting of (5+2) panels inclusive of converter cum distribution panel (CDP) and simulation cum extension panel (SEPs) to provide necessary switches, lamps, pots and application panels. **Dimensions :** 960 (L) x 300 (W) x 545 (H) mm. **Net Wt.** 23 Kg	Electronic desk with ergonically designed ABS Moulded encloser with slick looking replacable experimental panel. Inclusive of CDP on Topboard & SEP onside panels provide input switches, push buttons, O/P LED or SAPS. **Dimensions :** 460 (H) x 160 (L) x 350 (D) mm. **Net Wt.** : 7.5 Kg

Converter cum Distribution Panel / CDP	• Total 64 No. of 4 mm Banana Sockets, 24 for Digital Inputs, 16 for Digital Outputs, 4 for Analog I/O & 16 for +24V Supply & GND. Facilitates easy replacement / maintenance / wiring.	• Located on Topboard, Total 16 No. of 4 mm Banana Sockets, 8 for Digital inputs 8 for Digital Outputs, 24V Supply & GND. Facilitates easy wiring.
Simulation cum Extension Panel / SEP	**a) For Digital Outputs :** • 8 No. of LED Indicator, 8 No. of Relay Panel with coil rating 24V and contact rating of 220V AC / 1 Amp. (Resistive). **b) For Digital Inputs :** • 8 No. of Digital Input. (4 toggle switches + 4 push buttons) **c) For AIO : (Supplied only if AIO modules ordered)** • 6 No. of Potentiometer to simulate inputs to AI Channels. • 2 No. of Analog Output Channels.	**a) For Digital Outputs :** Located on right side panel. • 8 No. of Output LED Indicator, 8 No. of Relay Panel with coil rating 24V and contact rating of 220V AC / 1 Amp. (Resistive). **b) For Digital Inputs :** Located on left side panel. • 8 No. of Digital Input. (4 toggle switches + 4 push buttons) -- NA --
Power Supply Panel	• 24V / 2 Amp. SMPS type Supply, Power ON indicator / 3 Nos. 230V O/P with switch & fuse protection for other use.	• 24V / 2 Amp. SMPS type Supply, 12 No. of 4mm Banana Sockets for extension, Power ON indicator /On PLC Front Panel
Application Panel & SAPS (Select 1 or more	a) Common Base Board for Static Application Panel : consisting of 38 LEDs, with 10 LED Bar Graph for AO & 32 sockets, RTD signal conditioning circuit for temperature sensor. b) Replaceable 19 Nos. of Static Application Panel which may be inserted into common baseboard panel :- 1) Door Bell Operation, 2) Switching Of lights, 3) Silo Control, 4) 7-Segment Display, 5) Starter Control, 6) Sequential Control of Motors, 7) Star Delta Control, 8) Resistance Welding, 9) Tank Level Control*, 10) Traffic Light Control, 11) Bottling Plant*, 12) Drink Dispenses, 13) Reaction Vessel*, 14) Oven*, 15) Parking Garage, 16) Combination Lock, 17) Elevator Simulator, 18) Process Control Trainer *, 19) Washing Machine (*Needs analog AIO module) c) Stepper motor panel P25 : (Optional) *. ❖12V - 7.5^{0}C step stepper motor ❖Dir. & speed control. (Needs CPU with transisterised digital outputs.	a) Common Base Board for Static Application Panel : consisting of 38 LEDs, with 10 LED Bar Graph for AO & 32 sockets, RTD signal conditioning circuit for temperature sensor. b) Replaceable 10 Nos. of Static Application Panel which may be inserted into common baseboard panel :- 1) Door Bell Operation, 2) Switching Of lights, 3) Silo Control, 4) Starter Control, 5) Sequential Control of Motors, 6) Star Delta Control, 7) Drink Dispenses, 8) Parking Garage, 9) Combination Lock, 10) Elevator Simulator,
Mechatorics Applications Working Models (For Model : XPO-PLC)	1) **Rotary transfer unit** [Appplicable for Model XPO-PLC only] Table Top Unit of size (365 mm [L]x320mm [W] x 200mm [H]) Need DI = 12, DO= 8. Consists of two geared bi-directional DC motor (3V) namely, a) Turn table with 8 pegs driven by seared motor with numbers **(Optional) o**f IR emitter detector pairs to signal turn table position to controller & need 2 O/P from controller to select FWD/REV rotation. **b**) Dispensing motor to drop onto 8 pegs on turn table rings loaded in two holding tubes holders, needs 2 O/Ps @24VDC from controller to dispense ring from either of the holding tube. 8 fault switches, connects to controller using 4 mm sockets x 11 nos., Auto / Manual operation, Supply 220VAC/230VAC, 50Hz. 2) **Conveyor belt :** Table Top Unit of size (560mm x 680mm x 170mm) using 30X30 aluminium profile stand with level adjustment need DI=2, DO=4. Light weight table mounted conveyor with of PVC belt of 1.2m length, Rollers, 230VAC geared motor,3 no.of spring return single acting cylinders, 1 no. of defused reflective sensors & one No. of inductive proximity sensor to detect presence,& height of transported metal objects (cylinders), 3 beans to segregate these cylinders, as per their physical property. **OPTIONAL :** Need Air Compressor 3 cfm, Working pressure : 7 bar with Motor 1 0.5 HP 1440 rpm. 3) **Lift Elevator :** Table top model of 3 floor, Size : 700(H) x 150(W) x 250(D) mm. Elevator has a sliding door with a limit switch, motor 230VAC/90W with speed reduction gear box, need DI = 7, DO = 3.	
SCADA Trainer (Optional) (For XPO-PLC)	• **SCADA software development suite supplied on installable CD. Supports 25 tags, with USB hardware lock provided, 19 projects for 19 SAPs P4/XP needed but PC not in scope of supply. Interfaces with PLC through through RS232C comport. Needs one above PLC Trainer.**	
DCS Trainer (Optional)	• DCS Trainer consists of 2 Nos of above XPO-PLC Trainer networked over RS485 with Multi Drop SCADA software (supplied on installable CD) with Modbus capability (150 tags), USB hardware Lock, 19 projects for 19 SAPs supplied and connected to PC through comport using RS232C to RS485 converter. User can control from PC as well as from PLC. P4/XP needed but it is not in scope of supply.	