



# **MPROGICON 5000**

## **POWER Series**

### **Programmable Logic Controllers (PLC)**



for  
**Secure Automation**

**Electronics Corporation of India Limited**

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#### *For Secure Automation*

Programmable Logic Controllers (PLC) form the central component of automations in every industry- e.g. Energy, Transportation, Manufacturing, Building automation. PLC provides a rugged generic platform for economic and reliable implementation of control logics and loops. Their ease of use, modularity and proven reliability has resulted in their use in applications where safety and security are of vital concern.

ECIL brings together four decades of experience in building high reliability automation systems in applications as diverse as nuclear power plants, steel mills and oil & gas pipelines. The portfolio encompasses redundant/ fault-tolerant PLCs, RTU, SCADA MMI and distributed control systems spanning wide ranges in size and geographical extent. Our in-depth experience in integrating systems around third-party products has been brought to bear in designing a state-of-the-art PLC that is economical, scalable, modular, reliable, safe and secure to use.

### **Modular MPROGICON PLC System**

ECIL is offering a range of Power Series PLC models under the brand name of MPROGICON 5000 Power Series PLC System. These highly flexible PLC systems are available in modular form factor with varied capacity and performance ranges and can be tailored to suit both open loop and closed loop control requirements in Industrial Automation.

To fulfil the need to have a programming system for Programming the MPROGICON 5000 Power Series PLC system, ECIL is providing a Graphical User Interface (GUI) based Programming Software (PS). The PS enables the MPROGICON 5000 Power Series PLC system user to configure, design, develop, compile, load, debug and document the control application logic and view PLC diagnostics. The PS also provides means to monitor control application logic variables, force the variables to any given state and maintain the MPROGICON 5000 Power Series PLC system.

MPROGICON PLC System is available in the following variants.

### **MPROGICON 5100**

MPROGICON 5100 is an IEC61131 compliant Modular Power Series Standalone PLC System with I/O modules and CPU connected over the same backplane.

### **MPROGICON 5200**

MPROGICON 5200 is a Fault Tolerant, Modular Dual CPU Redundant IEC61131 compliant Power Series PLC System with I/O modules placed at remote locations and connected to CPU through dual Ethernet links.

### **MPROGICON PLC System Hardware Platform**

MPROGICON PLC Systems hardware construction enables System Integrators to build the PLC system to meet varied system requirements. All the hardware modules are manufactured with low power industrial grade components and are qualified for operating in severe environment conditions. All the I/O modules are hot pluggable. The PLC system has been designed to comply with the IEC61131-2, Third Edition, 2007-07, a standard for PLCs which include the specifications for EMI/EMC, Shock & Vibration, storage, operating temperature and humidity etc.

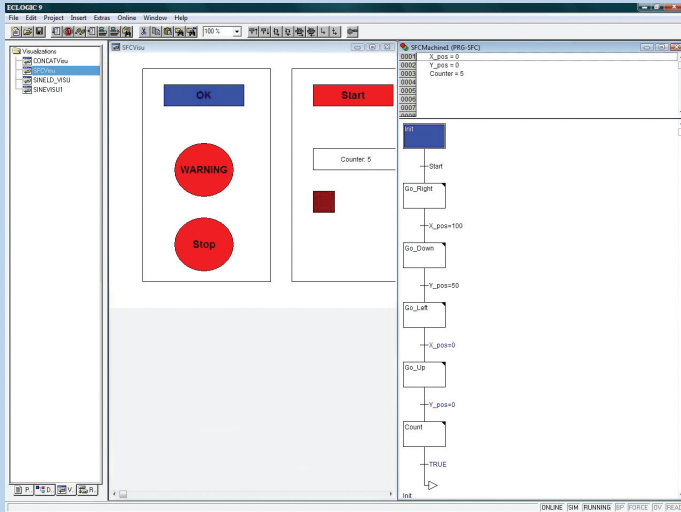
### **ECLOGIC9 - Programming Software (PS)/ Programming Terminal (PT) for MPROGICON 5000 series PLC System**

ECLOGIC9 is a GUI based Programming Software that provide the familiar IDE environment for developing user application logic. ECLOGIC9 is fully compliant to IEC61131-3 and supports all the language elements and programming constructs mandated by the standard. Ladder Diagram (LD), Function Block Diagram (FBD), Structured Text (ST), Instruction List (IL) and Sequential Function Chart (SFC) are the languages supported for application program development. ECLOGIC9 is available for MS-Windows operating system only.

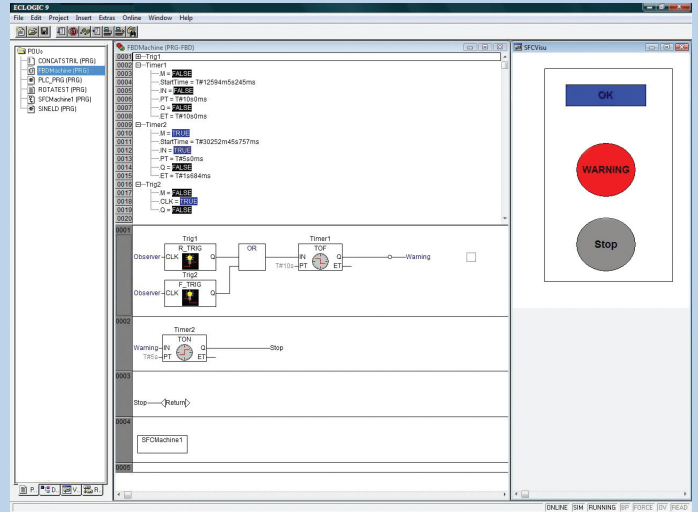
ECLOGIC9 also supports Project Management, Debugging and Offline Simulation, Project backup and Restore, Print, User Authentication and Authorization, Online editing, forcing and Integrated visualization.



## SFC (Sequential Function Chart)



## FBD (Function Block Diagram)



## HMI Interface to MPROGICON 5000 PLC System

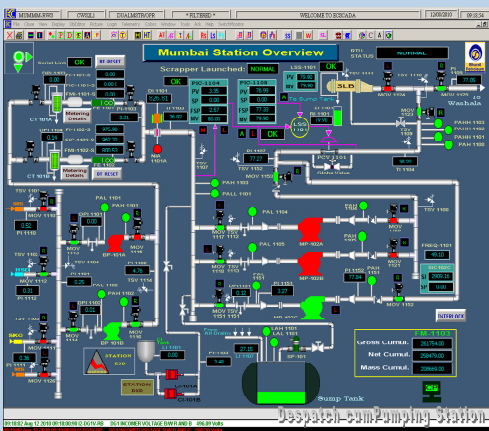
MPROGICON 5000 PLC Systems provide necessary interfaces to connect to the third-party HMI packages. Modbus/TCP, Modbus/Serial and OPC server interfaces are supported. ECIL offers an indigenously developed HMI package with a brand name "ECSCADA" which makes the connectivity to the MPROGICON 5000 PLC System a simple affair.

## ECSCADA Man Machine Interface

ECSCADA is an in-house designed HMI package to provide Operator Control Interface for the MPROGICON PLC Systems. ECSCADA supports mimic generation, logging, trending, reporting and other HMI facilities and is interfaced to MPROGICON PLC System through Modbus/TCP protocol. ECSCADA is available on a wide variety of platforms ranging from MS-Windows, UNIX and Linux.

## Applications

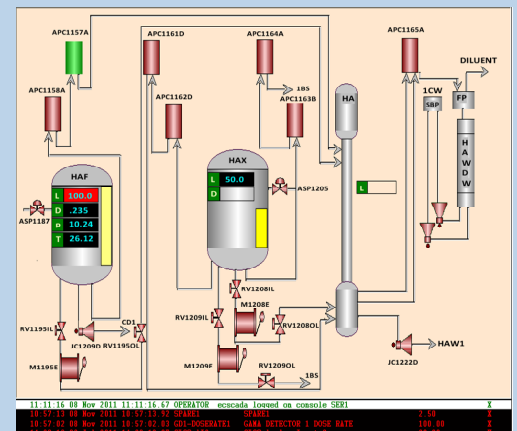
- Industrial Automation for Process Control
- Building Automation
- Data Acquisition System
- RTU for SCADA
- Event Sequence Recorder
- I/O Controllers
- Recording Annunciator



Plant Mimic



History Trend



Plant Mimic

## Specifications

Features	MPROGICON 5100 Model	MPROGICON 5200 Model
Controller Bus	ECIL Proprietary	ECIL Proprietary
CPU Redundancy	NO	YES
Remote I/O Protocol		UDP/IP over Ethernet
<b>User Configurable I/O Capacity</b>		
• Maximum number of Remote I/O nodes	-	30
• IO Modules per IO Backplane	8 /14	8 /14
• No of Digital Input Channels per Module	32	32
• No of Digital Output Channels per Module	32	32
• No of Analog Input Channels per Module (Voltage/Current)	14	14
• No of Analog Output Channels per Module (Voltage/Current)	16	16
• No. of Thermocouple input channels per module	8	8
• No. of RTD input channels per module	8	8
• No. of counter input channels per module	5	5
Field Termination on I/O Module	Yes	Yes
Power supply input voltage 230V AC/DC, 18-64V DC	Yes	Yes
Scan time (Typical)	50ms	80ms
Engineering Software	ECLOGIC 9	ECLOGIC 9
Max. Size of user Application Program	4 MB	4 MB

## Programming Software

Features	ECLOGIC9
IEC 61131-3 Languages	All supported
GUI for Programming PLC	MS-Windows
Data types Supported	All
Operators Supported	All
Functions Supported	All
<b>HMI Protocol Support</b>	
• Modbus/TCP	Yes
• OPC Server	Yes
• Modbus/RTU Serial *	Yes

**\*Currently available in MPROGICON 5100 only**

**Environmental specifications of MPROGICON 5000 PLC as per IEC61131-2, Third Edition, 2007-07**

### PROGICON 4000 PLC

ECIL also manufactures CPU Redundant fault tolerant PLC system named as PROGICON 4000 (Double Euro Form factor), which supports Ladder Diagram and Function Blocks. The Programming Software ECLogic8 is available in Windows and Linux.

**Specifications are subject to change without notice**

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