NEW GENERATION PROGRAMMABLE AUTOMATION CONTROLLER
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Understanding what a PAC is starts from the understanding of PLC. A PLC is a Programmable Logic Controller while a PAC is a Programmable Automation Controller. Compared to traditional IPC + PLC solutions, a PAC reduces overall system cost, space and gives you all the best features of IPC and PLC. Wikipedia describes PAC as a compact controller that combines the features and capabilities of a PC-based control system with that of a typical programmable logic controller (PLC). In industrial applications, a reliable device capable of multiple tasks, flexibility in operation and strong computing power is required to carry out complex electromechanical processes such as in industrial automation. Real time motion with multiple input/output arrangements must be performed by a programmable automation controller.

Areas of Deployment

Endless technology improvement leads to the migration of typical plant floor management to modern industrial application which requires the ability to encompass multiple tasks requiring I/O point monitoring, control, data exchange via OPC, and integration of factory data with enterprise systems. Areas of PAC deployment can be unlimited. The most common applications are in manufacturing & process automation such as the control of machinery on factory assembly lines, or in building automation such as controlling lighting fixtures and more. In any type of application, the control system must interface with signals from simple sensors and actuators, network devices to manage interoperability and seamless data integration.

PLC Vs. PAC

A PLC is designed for tough conditions such as dust, moisture and extreme temperatures plus the facility for extensive input/output arrangements. PLC reads limit switches, process variables and the positions of complex positioning systems. A PLC operates electric motors, pneumatic or hydraulic cylinders, magnetic relays, or analog outputs.

A PAC is often used in industrial applications for process control, data acquisition, remote equipment monitoring, machine vision, and motion control. A PAC functions and communicates over popular network interface protocols like TCP/IP, OLE for process control (OPC) and SMTP. PACs are able to transfer data from the machines they control to other machines and components in a networked control system or to application software and databases. A PAC at the core of an automation system can integrate multiple field bus networks like RS-485, RS-232, RS-422, CAN, Ethernet, Ethernet/IP, and others.

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<tr>
<th>PAC</th>
<th>PLC</th>
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<tbody>
<tr>
<td>Standard open architecture device</td>
<td>Proprietary network and needs programming</td>
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<td>Diverse protocols – CAN, Serial, Ethernet etc.</td>
<td>Programming &amp; function modeled after relay circuits</td>
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<td>Distributed processing</td>
<td>Continuous scanning</td>
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<td>Common tag database</td>
<td>Needs duplication of data tags for interoperability</td>
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Characteristic of a Programmable Automation Controller

- Operates using a single platform in multiple domains
- Integrates controller hardware and software
- Programmable using software tools that can design control programs
- Open standards
- Provides efficient processing
To serve expanding machine and industrial control system development needs, Ethernet Direct launches a new generation Programmable Automation Controller. The SME system combines the ruggedness of a programmable logic controller, a graphic display, keypad in one unit and open, flexible software architecture. As the industrial landscape moves toward a fully automated environment, SME series makes process control, data acquisition, remote equipment monitoring, factory automation, building management system and industrial machine control applications flexible and easy.

With SME systems, users can build advanced systems incorporating software capabilities such as advanced control, communication, data logging, and signal processing with rugged hardware performing logic, motion, process control, and vision.

**Features of PAC**
- Capable of real time communication
- Fast boot speed
- Achievable deterministic control
- Multi-function
- Open communication standards
- Integrated development environment
- Ability to run PC-based control software such as Visual Basic.NET, Visual C#, Embedded Visual C++, SCADA software
- Rich I/O Expansion Ability
  - Ethernet
  - RS-232/422/485
  - CAN Bus

PACs are industrially hardened to withstand use in industrial applications involving extreme temperatures, dust, vibration, electrical noise and other conditions. An IP-44 rated enclosure is suitable to meet these requirements.

**Ethernet Direct offers new generation mini PAC solutions housed in IP-44 enclosure that comes with multiple network interfaces to reduce hardware costs and man machine interface with embedded LCD, keypad and audio features.**

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<tr>
<td><strong>SME-353</strong></td>
<td><strong>Industrial IP-44 3.5” Mini PAC Solution</strong></td>
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<tr>
<td><strong>SME-573</strong></td>
<td><strong>Industrial IP-44 5.7” Mini PAC Solution</strong></td>
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About Ethernet Direct Corporation

Ethernet Direct brings a control system engineering perspective to networking technology. The principals of Ethernet Direct come from process-control and PLC system backgrounds.

The Global Ethernet Direct team covers operations from Product know-how, design implementation, quality assurance, manufacturing, logistics, sales, marketing & technical support. We are well-positioned to fulfill customers' needs and markets' demands by providing a great variety of tailor-made products and services. When you work with us, you will experience confidence and dependability. By choosing Ethernet Direct, you have chosen excellence & long-term commitment.

Our corporate headquarters is located in Taiwan with Ethernet Direct Partners across United States, Canada, Asia Pacific, Latin America, Europe, and Middle East.