

## GENERAL DESCRIPTION

The Bytronic PLCS7F is a mounting frame and PLC combination based around a Siemens S7-200 fitted with an analogue expansion module.

The Simatic S7-200 family of programmable controllers are a compact and powerful micro PLC solution for automation tasks. They are also easily expandable with various digital and analogue modules available.

The S7-200 communication port connects to a PC allowing the CPU to be programmed using Siemens STEP7 Micro/WIN32 software.

The mounting frame gives easy access to the PLCs I/O capabilities providing an effective means for the student to test and debug their program prior to connecting to the application.

All inputs and outputs are accessed via 'D' type connectors, and there are connections provided for 12 digital inputs, 8 digital outputs, 2 analogue outputs and 4 analogue inputs. The 'D' type connectors also allow easy connection to other Bytronic products.

The mounting frame also includes a control panel which provides switched inputs and LED status indicators. These allow the PLC control programs to be developed 'stand alone' i.e. the process can be simulated using the switched inputs.

The PLCS7F also provides two analogue potentiometers to simulate analogue inputs. The two potentiometers situated near the bottom of the control panel are connected to the last two analogue inputs of the PLC and provide 0V to +5V input signals.

## FEATURES:

- 24V dc digital I/O
- Enables students to test and debug control programs
- Easy connection to application via 'D' connectors
- Built-in EEPROM memory
- Switched inputs
- LED status indicators
- 4 x differential analogue input channels.
- 2 x analogue input potentiometers

| <b>Technical Specification</b>                                |   |
|---|---|
| <b>Siemens Simatic S7-200 CPU224</b>                          |   |
| I/O Capabilities  | 14 x 24V dc inputs<br>10 x relay outputs  |
| Power Supply Voltage  | 100 to 230V ac  |
| Input Current   | Max including load: 20A at 264 Vac  |
| Max Power Consumption   | 30 to 100mA @ 240V<br>60 to 200mA @ 120V  |
| Operating Temperature   | 0°C to 45°C   |
| Operating Humidity  | 5 to 95%  |
| Input Specifications  | Input Type: 24V DC<br>Minimum On Voltage: 15V dc<br>Nominal On Voltage: 24V dc<br>Off Voltage 5V dc<br>Nominal On Current: 4.0mA @ 24V dc<br>Isolation: Optocoupler in groups of 6 and 8.   |
| Output Specifications   | Output Type: Relay<br>Output Range: 5 to 30 V dc / 5 to 250V ac<br>Minimum Output Voltage for '1' signal: 20V dc<br>Isolation: Relay in groups of 3, 3 & 4.<br>Maximum Output Current for '1' signal: 2A<br>Minimum Output Current for '0' signal: 0mA<br>Maximum On Delay: 10ms<br>Maximum Off Delay: 10ms<br>Switching Capacity for Resistive load: 2A<br>Switching Capacity for Lamp: 30W dc / 200W ac |
| Memory Size and Type  | 8KB program memory and 5KB data memory.   |
| Programming Language  | LAD, FBD, STL   |
| Counter   | 256<br>of these retentive: 256 with battery<br>Counting Range: 0 to 32767   |
| Timers  | 256<br>of these retentive: 64 with battery<br>Range: 4 @ 1ms to 30 s<br>16 @ 10ms to 5 minutes<br>236 @ 100ms to 54 minutes   |
| Communications Port   | RS485   |
| Dimensions  | 120.5 x 80 x 62mm   |
| <b>Siemens Simatic S7-200 Analogue Expansion Module EM231</b> |   |
| Analogue Configuration  | Input Channels: 4 differential, voltage or current selectable<br>Input Ranges: 0 to 5V, 0 to 10V, 2.5V, 4V, 0 to 20mA<br>Maximum Input Voltage: 30V<br>Maximum Input Current: 32mA<br>Conversion Time: 250µs<br>Input A/D converter: 12-bit<br>Unipolar Range: 0 to 32,000<br>Bipolar Range: -32,000 to +32,000   |
| Dimension   | 71.2 x 80 x 62mm  |
| <b>Mounting Frame (MF4)</b>                                   |   |
| Mounting Frame Type   | Metal Mounting Frame  |
| Connectors  | 15 pin 'D' socket for outputs, 15 pin 'D' plug for inputs, 9 pin 'D' socket for analogue I/O  |
| PLC I/O Access  | 12 x digital inputs<br>10 x digital outputs<br>6 x analogue inputs/outputs  |
| Power Supply  | 24V DC  |
| Control Panel   | 13 x Switched Inputs<br>8 x LED Status Indicators   |
| <b>Ordering Information</b>                                   |   |
| <b>Model Number:</b>  | <b>PLCS7F</b>   |
| <i>Consisting of:</i>   | 1 x Siemens S7-200 CPU224 and EM231 expansion module mounted on<br>1 x Pre-wired Mounting Frame<br>1 x Development Plug<br>1 x User Manual  |
| <i>Weights &amp; Dimensions:</i>                              | L465 x W145 x H225<br>5.5Kg   |

**Notes.**

1. Specification is subject to change without notice.
2. All dimensions are in mm unless specified otherwise.
3. Warranty 1 year.

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