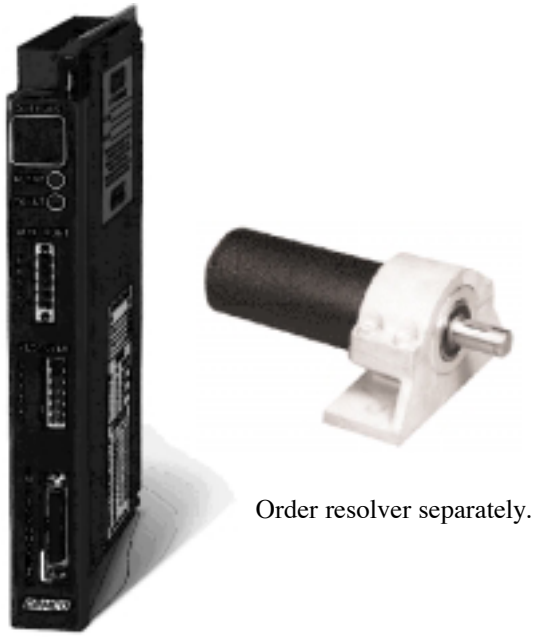
AMETEK®
PATRIOT SENSORS

Series 1771
Gemco™
Programmable Limit Switch

High Resolution, High Speed Programmable Limit Switch Module for A-B PLC5 1771 I/O

The Series 1771 Programmable Limit Switch, (PLS), is a resolver-based unit that incorporates Allen-Bradley technology and is completely compatible with the A-B Series 1771 I/O chassis. The Gemco 1771-PLS Series cards are internally powered from the PLC backplane, eliminating the need for an external power supply. The resolvers input provides 14 bit (16,384 count) resolution and field programmable scale factor. Two models are available. The **1771 PLS-B1** is an ultra-high speed PLS with 16 direct outputs from the front panel that update every 5 microseconds. This product is ideal for high speed gluing, assembly, and labeling applications. **The 1771 PLS-C1** incorporates the same basic functionality as the 1771 PLS-B1 without the external outputs. Limit switch output status is transferred directly to the PLC-5 I/O image table. This unit provides users with a cost-effective resolver input card with added PLS capabilities.

1771 PLS-B1



Order resolver separately.

1771 PLS-B1 Ultra-High Speed PLS

16 outputs, 5 microsecond scan time accessed through front panel connector
16 outputs, internally updated every 500 microseconds, presented to the PLC-5 I/O image table every 5 milliseconds
Eight field configurable inputs for product presence, registration mark synchronization or remote setpoint Advance/Retard inputs
Resolver input with 14 bit (16,384 count) resolution and field programmable scale factor
Speed Compensation/Run-Up control software advances/ retards outputs over machine speed changes
Minimum Speed Disable for safety and quality control
Reset to Preset Inputs for synchronizing output circuits to leading edge of product
Output Enable Inputs signal critical events, improving quality and reducing downtime
Event Capture Inputs allow confirmation that critical events have occurred at the right time and place in the process
Remote Setpoint Tuning compensates for process drift
Automatic Stitching Output Pattern programs significantly save programming time

1771 PLS-C1 Ultra-High Speed PLS

16 outputs, internally updated every 500 microseconds, presented to the PLC-5 I/O image table every 5 milliseconds
Resolver input with 14 bit (16,384 count) resolution and field programmable scale factor
Speed Compensation/Run-Up control software advances/retards outputs over machine speed changes
Minimum Speed Disable for safety and quality control
2 inputs from I/O image table for:
- Reset to Preset Inputs for synchronizing output circuits to leading edge of product
- Output Enable Inputs signal critical events, improving quality and reducing downtime
- Event Capture Inputs allow confirmation that critical events have occurred at the right time and place in the process
- Remote Setpoint Tuning compensates for process drift

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Series 1771 Ultra-High Speed Programmable Limit Switch (PLS)

Reference Specifications

PLS Module Specifications	
Power Requirements	5VDC 1771 backplane power 10 watts maximum
Temperature Rating	Operating: 32 F to 131 F (0 C to 55 C) Storage: 0 F to 150 F (-17 C to 65 C)
Scan Time	5 microseconds for 16 outputs accessed through front panel connector 250 microseconds for 16 outputs accessed from A-B Series 1771 I/O image table
Resolution	14 bit (16,384 count) with field programmable scale factor
Total Setpoints	1024 (stitching patterns count as one setpoint)
Limit Switch Outputs*	Optically isolated driver, Current sinking 5VDC 30 ma (Typically used to drive high power relays on I/O Module rack)
Auxiliary Inputs*	Sinking input (Current source, sink to actuate 5VDC 15 ma (Typically actuated by input relays on I/O Module rack)
Auxiliary Communications Port	RS232 interface (Consult factory for availablility)
I/O Module Rack Specifications*	
Power Requirements	5VDC power provided by PLS module through cable assembly to energize relays. No external power required. 1 watt maximum when all relays are energized. A separate power supply is required for the loads driven by the output relays listed below.
Temperature Rating	Operating: -40 F to 212 F (-40 C to 100 C) Storage: -40 F to 258 F (-40 C to 125 C)
Output Relays	- D.C. output relay type 70M-ODC5; 3-60VDC, 3 amp max. load 1.5 ma leakage at 60VDC; 20 millisec turn-on, 50 millisec turn-off time. - A.C. output relay type 70M-OAC5; 24-140VAC, 3 amp max. load 2 ma leakage max.; 8.3 millisec turn-on and turn-off time.
Input Relays	- D.C. input relay type 70M-IDC5; 3-32VDC input range, 18 ma max.; 20 millisec max. turn-on time; .4 millisec turn-off time. - A.C. input relay type 70M-IAC5; 90-140VAC input range, 8 ma max.; 20 millisec max. turn-on and turn-off time.
Mounting	- Panel Mount (standard) - DIN Rail mount (optional)

*1771-B1 only

Specifications may change without notice.

We built the Series 1771 PLS as a resolver based system because it survives.

We can provide a variety of rugged Gemco™ resolver packages tailored to the application. They contain no electronic components which helps them withstand severe mechanical abuse even in the harshest environments.

A resolver provides two, noise immune, ratiometric analog signals that are converted to absolute digital position in the Series 1771 PLS. The distance from the resolver to the PLS can be up to 3000 feet offering you great application flexibility.

Field Programming Scale Factor allows customizing the Series 1771 PLS to your application.

Resolver position is converted to absolute digital position with 14 bit resolution. The scale factor (counts per revolution) of the resolver is field programmable to whatever engineering units you want between 2 and 65,535, or are appropriate for the application.

Reset to Preset Inputs allows synchronizing output circuits to the leading edge of the product, even when the leading edge is variable.

Any or all eight inputs can be programmed to reset field selected output channels to zero or some other value upon actuation of the input. All reset to preset inputs can be used simultaneously and will work independently to reset different groups of output channels.

Speed Compensation allows compensating for mechanical lag inherent in some machine operations.

Speed Compensation or Run-Up Control allows output channels to be selected and programmed to automatically advance or retard as machine speeds vary. This feature also allows for different rates of advance on the leading and trailing edge of the setpoint dwell to compensate for differences in the actuator's turn-on and turn-off times.

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