# Introduction/Description

The **1995A Micro-Set** is a fully self-contained, single-turn resolver-based programmable limit switch. It includes a three-digit LED display, six output relays, and one fault check relay, and it is fully programmable for the following features:

## 1.1: Programmable Features

| | |
|---|---|
| **Scale Factor** | Two scale factors to choose from either 360 or 1,000. On units with "P" option software, the scale factor is permanently set to 360. |
| **Electronic Offset** | Fully programmable offset to any number with the scale factor. |
| **Reset-to-Preset** | Reset value is programmable to any number within the scale factor. |
| **Motion Detector** | LS6 can be programmed for either limit switch or motion detect output. |
| **Expansion Outputs** | Programmable to accommodate up to 30 circuits. |

**See Section 1.2: General Information - Software Option "P" for more options.**

## 1.2: General Information

The **1995A Micro-Set** is a fully self-contained, microcomputer-based Programmable Limit Switch (PLS) with a convenient keypad for programming each independent output circuit to open or close at the desired settings. This system allows precise position control of rotary motion.

A **1995A** consists of a resolver-based transducer, resolver-to-programmer cable assembly, and the programmer, which provides six limit switch outputs and one fault check output. The optional output expansion modules will add six additional limit switch outputs per module, and up to four expansion modules can be driven by the programmer, for a total of thirty limit switch outputs.

The single-turn resolver transducer generates a ratiometric analog signal representing an absolute rotary position. This ratiometric signal is converted to a digital signal at the Micro-Set. A microprocessor calculates and/or converts these signals based on user-programmed data.

As the transducer passes through the preprogrammed dwell settings, the programmer outputs can energize solenoids, relays, or solid-state circuitry to control external circuits.

The **1995A PLS** was designed for use in rotary and/or rotary-to-linear applications. It incorporates many features for safe, efficient operation.

The completely self-contained unit can operate up to 30 independent outputs (six standard) based on the rotary position of the resolver.

It offers an on line fault check which provides an automatic, in-process mechanism to verify that all major programmable limit switch functions are operating properly. The fault check output can be energized by activating the fault check enable input. The output is a mechanical relay with 1 N.O. and 1 N.C. contact, which remains energized during normal operation.

A programmable motion detect output will energize a relay when the transducer speed meets or exceeds the customer-preprogrammed RPM value.

***SOFTWARE OPTION "P" ENHANCES THE SYSTEM BY OFFERING:***

- **Multiple Programs** - Allow storage of job setups for future use. This saves time spent reprogramming and lessens the chance of programming errors when tooling is changed.

- **Speed-Induced Offsets** - On many variable speed machines, the limit switch outputs have to be adjusted when the speed increases or decreases. This option automatically adjusts specified circuits based on speed.

- **Time-Based Outputs** - Specified outputs can be programmed to turn on based on position and turn off based on time (0.01 - 9.99 seconds).

# 1.3: Controller Features and Functions

The controller is housed in an all metal case that can be panel mounted. The controller consists of a keypad, a CPU Board, and a Power Supply I/O Board.

The following features are found on the **1995A Micro-Set**.

- **Display** — A (3) three-digit LED readout and a 10-place bar graph are provided. The LED readout displays current angular position and/or RPM and programming details, while the bar graph shows fault check, program status, and limit status.

**NOTE:** The Bar graph will not display expansion board relay status.

- **I/O** — Mechanical relays, AC solid-state, and DC solid-state relays are available, and any combination can be specified. The example in the catalog shows three AC and three DC solid-state relays being specified. There is a fixed price adder for any combination of relays other than all mechanical (6M). The fault check relay will always be a mechanical relay regardless of the type of output relays specified. See Chapter 9: Specifications.