OPTION BK1
STOP TIME MONITOR and SCALE FACTOR - OFFSET PROGRAM DISABLE

DESCRIPTION OF OPTION:

This option provides two different functions. The first function measures and displays the stopping time of the transducer on every Stop cycle. A warning and a fault output are available that signals when the stopping time of the transducer exceeds pre-programmed values. The programmable values for the Stop warning and Stop fault outputs can have any value between 0.000 and 0.999 seconds.

The second function is a remote input that, when active, disables the programming of scale factor and offset parameters.

OUTPUT CONFIGURATIONS:

This option is available with 16 outputs. The Stop Monitor function dedicates 3 outputs for its operation. These outputs are Limit Switches 14 through 16. LS14 is the Stop Warning output, LS15 the Stop Fault output, and LS16 is reconfigured as an input to accept the "Stop Applied" signal. This leaves 13 outputs available for normal Limit Switches.

With this unit, a separate input, Input 3, is available for the Program Disable of scale factor and offset parameters.

The Stop Warning and Stop Fault outputs are Normally Active and switch off when there is a fault condition. If power is cut-off to the unit, all outputs switch off, therefore, loosing power to the controller will look like a Stop fault.

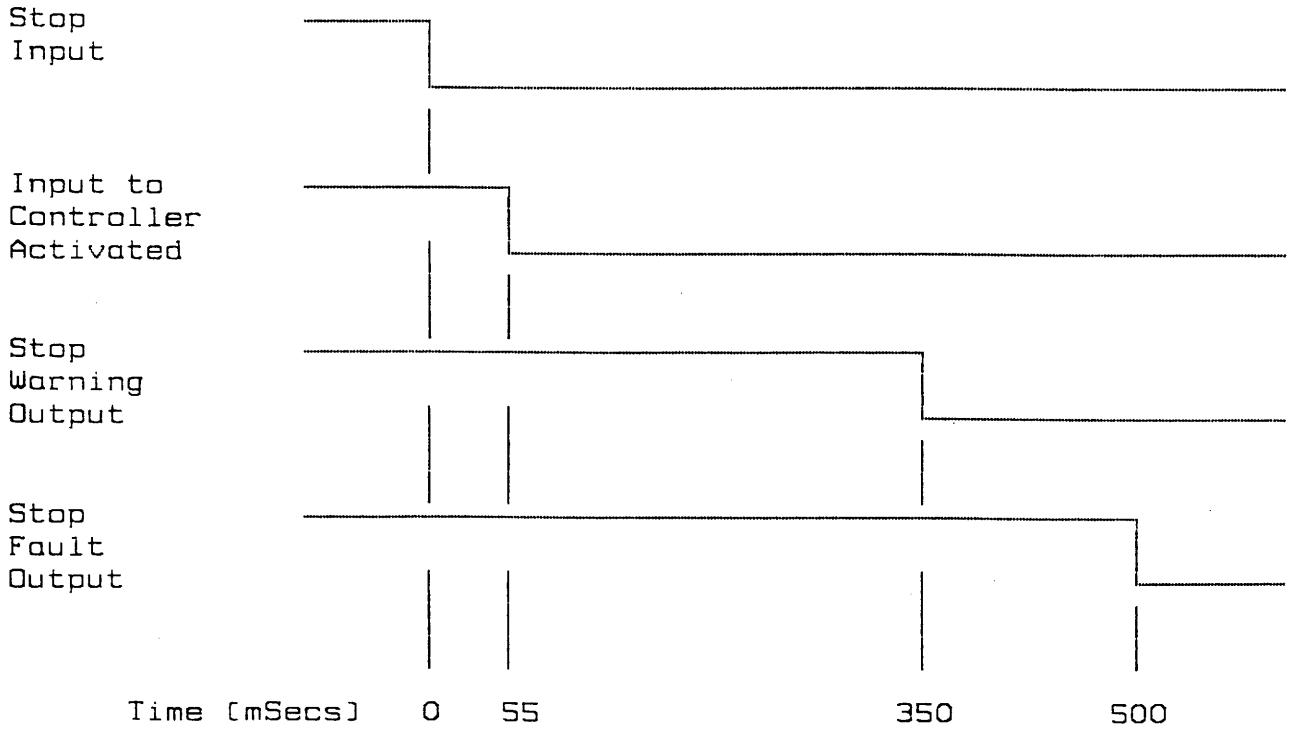
TIMING DIAGRAM:

The timing diagram below shows the relationships between the "Stop Applied" input and the warning and fault outputs.

In this example, the Stop Warning output will become inactive 350 mSecs after the controller senses that the Stop input has been activated. Stop Fault output will become inactive 500 mSecs after the controller senses that the Stop input has been activated.

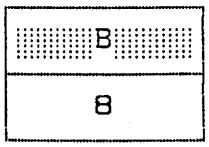
Because of time delay associated with any AC Input Relay that can be used on the Stop Applied input, the controller automatically add 55 mSecs to the stop time of the transducer. This will yield a more accurate reading of the stop time of the transducer. If the input relay that is used by the installer has a time delay of less than 55 mSecs, the stop time display will not be as accurate, but will be in error on the side of safety, tripping the fault outputs before the programmed time is actually reached.

The controller determines the Stop Time by sensing the lack of change in the position of the transducer shaft.

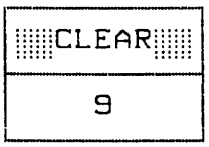


PROGRAMMING CHANGES AND ADDITIONS:

The following Keys are used to program and access the Stop Monitor Function.



[B] Key: This key is used to display the stopping time of the transducer from 0.055 to 9.999 Seconds. When in Program Mode, the key is used to program the time setpoints for the Stop Warning and Fault Outputs.



[CLEAR] Key: When in Program Mode, this key is used to reset the Stop Warning and Stop Fault outputs [LS14 & LS15] after they are tripped by a fault condition. In the case of a Stop Fault, this key also clears the error message on the controllers display.

PROGRAMMING EXAMPLE:

You want to program a Stop Warning limit to 350 mSecs and a Stop Fault limit to 500 mSecs.

PRESS	DISPLAY	COMMENTS
*		Must be in Program Mode. See Section 12.1 of the Users Manual.
[FUNCTION]		Function LED "on".
[B]	"S.TIME x.xxx"	Stop time of transducer. If display is "STOP FAULT", refer to the next section.
[B]	"ST.WRN 0.xxx"	Stop Warning setpoint.
[3,5,0], [ENTER]	"ST.WRN 0.350"	LS14 will de-activate when the stop time exceeds 350 mSecs.
[B]	"ST.LIM 0.xxx"	Stop Fault setpoint.
[5,0,0], [ENTER]	"ST.LIM 0.500"	LS15 will de-activate when the stoptime exceeds 500 mSecs.

FAULT CLEARING:

If the stopping time of the transducer exceeds the Stop Warning setpoint, LS14 will de-activate. The unit will not display a fault message and the unit will continue to operate.

If the stopping time of the transducer exceeds the Stop Fault setpoint, LS15 will also de-activate. If the unit's display is showing the stopping time of the transducer, the display will change to "**STOP FAULT**". If the unit is showing any other function, such as POS/TACH, the unit will not display the fault message until the operator changes the display to the transducer Stopping Time by using the [B] Key.

The following Keystrokes will clear a Stop Warning - Stop Fault error:

PRESS	DISPLAY	COMMENTS
*		Must be in Program Mode. See Section 12.1 of the Users Manual.
[FUNCTION]		Function LED "on".
[B]	"S.TIME x.xxx" or " STOP FAULT "	Stoptime Warning Error. or Stoptime Fault Error.
[CLEAR]	"S.TIME x.xxx"	Stopping error Cleared. Both outputs re-activated. Unit displays correct Stop time if Stop Time < 9.999 Seconds.

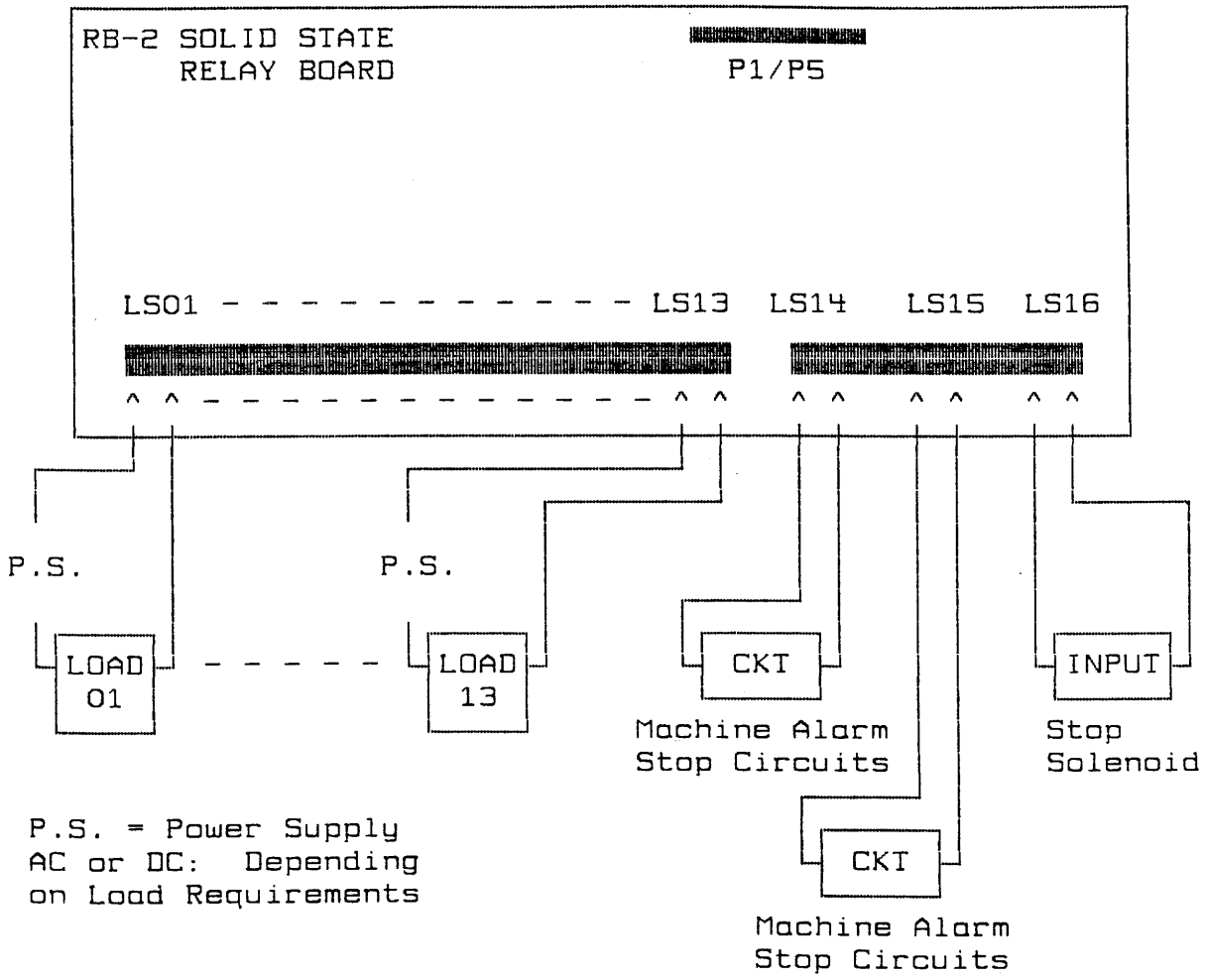
MODEL NUMBER AND CHECKSUM:

The following keystrokes will display the Model Number and Checksum of an IPLC1 unit with an Option BK1.

PRESS	DISPLAY	COMMENTS
[PROGRAM]	"PROGRAM x"	x = Number of running program.
[NEXT]	"IPLC1-BK-3"	Model and Rev. #
[NEXT]	"EPROM E180"	Software Checksum

TYPICAL RB-2 SOLID STATE RELAY BOARD CONNECTIONS:

NOTE: A RB-2 Relay Board has LS16 re-configured as an input.

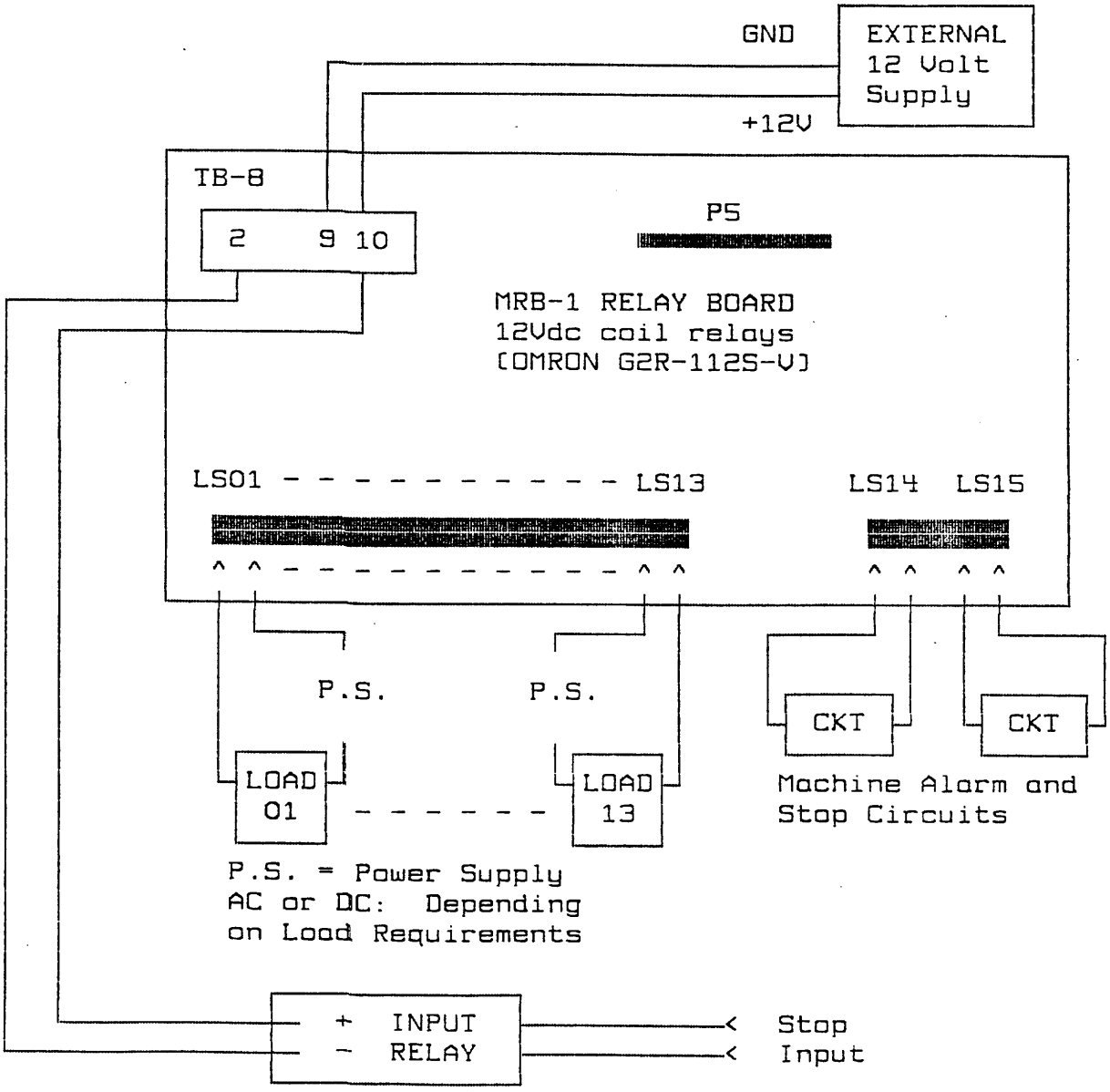


Output Relays	
KA-1	12-140 Vac @ 3A
KA-2	24-280 Vac @ 3A
KD-1	4 - 60 Vdc @ 3A
KD-2	4 -200 Vdc @ 1A

Input Relays	
KIA-1	90-140 Vac/dc
KID-1	5 - 60 Vdc

TYPICAL MRB-1 MECHANICAL RELAY BOARD CONNECTIONS:

NOTE: LS16 is not available as an input on a MRB-1 Relay Board. A separate input relay must be used and connected to the MRB-1 Board.



NOTE: The external power supply **must** be connected to **Pins 9 and 10 of TB8** to insure the proper operation of the relays. **Pin 9 of TB8 is Ground and Pin 10 of TB8 is +12 Vdc. These connections must not be reversed.** The Power Supply should have an earth ground lead in its power cord that is connected to the Ground Bus.