MRS®-.087 and MR Series Reed Switches and Allen-Bradley Model SLC 500 PLC IA-1746 120 VAC Series Input Cards

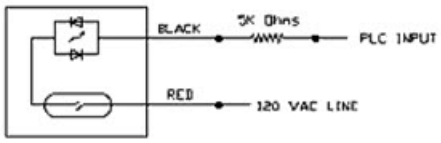
When using Bimba **MRS®-.087 (-B/-BQ), MRS®-.087-PBL (-PBLQ)**, or **MR** reed switches with an **Allen-Bradley Model SLC 500 PLC, IA-1746 AC Input Card**, a 5K Ohm input resistor is needed to limit the inrush current the switch may be subjected to. Allen-Bradley's specifications for the IA-1746 card (found in Allen-Bradley Publication 1746-2.35, page 13) follows:

Signal Delay: 35 ms
Off State Current: 2 mA max.
Nominal Input Current: 12 mA at 120V ac
Inrush Current: 0.8A max.
Inrush Current Time Duration: 500µsec

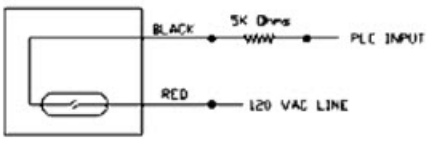
The **MRS®-.087 (-B/-BQ)**, **MRS®-.087-PBL (-PBLQ)**, and **MR** current ratings are 500mA, 20mA, and 25mA respectively. The 0.8A maximum inrush current exceeds the switch ratings and may cause the reed switch contacts to pit, stick, or weld shut over time. The 5K Ohm resistor will reduce the inrush to 35mA, low enough to protect the switches.
Note: The 5K Ohm resistor increases the signal delay from 35ms to 45ms, and increases On-state voltage from 85 to 105 V ac.

The following diagrams indicate where the resistor should be applied:

MRS-.087-PBL (PBLQ)
MR



MRS-.087 (-B/-BQ)



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