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EXAMPLE

***Two-Door
Programmable Logic Controller
Serial Number PLC-1015***

EXAMPLE

“Serving the Mining Industry Since 1906”

Wiring of System:

Wire rated at 30 amps or more should be used coming into top of disconnect switch. System operates on a 120 VAC.

Install hot side of 120 VAC to L1 of top side of disconnect switch.

Neutral side of 120 VAC goes to #4 located on terminal strip, on left side of panel.

Install adequate ground to top right of panel above disconnect or to bottom side of terminal strip.

All grounds are marked with ground symbols

System Operation:

When power is first applied to the system, it will automatically be in the two door by-pass mode. None of the two doors' open or close solenoids will be energized, because there are no limit switches being used. The PLC system will have no idea which position each door is in. In order to enable the system into "normal" operation, one of the "open" solenoids must be energized (it doesn't matter which door you choose), AND then both doors' "closed" solenoids must be energized.

Follow these steps: Push on the "open" pushbutton of one of the two doors, and then push on both doors's "closed" pushbutton. At this time, the red strobes will be functioning on both doors: indicating the system is in normal operation.

Normal Operation:

Under normal operation only one door at a time can be operated. When a door push button is pressed, it immediately disables the other door.

Each door has a green light and a flashing red strobe from both approaches. When a door is in the open position, its green light stays on. The other door's red strobes come on as soon as the open door's "open solenoid" is engaged. The door in the open position can be open and closed repeatedly during mid cycle or any position. Once a door close button is pressed, there is a time delay of 10, 15, or 20 seconds, depending on the position of the jumper wire. When the timer "times out", the strobe for the disabled door will shut off and both doors will have green lights. This signifies that either of the doors can be opened now.

Two Door By-Pass System:

The two door by-pass button located on the front door of the PLC control box allows both doors to be opened at the same time for one cycle only.

In order to use the by-pass button, both doors must be in closed position, all door closed solenoid valves must be energized and both green lights must be on to the approaches to each door. If all these conditions are met, press and hold the door by-pass button for a minimum of two seconds to engage. Once the by-pass is engaged 1 or both doors can be opened at the same time. Either of the two doors can be closed and re-opened in this mode. Once both doors are back in the closed position the system will return to normal operation, allowing only one door to open at a time.

Limit Switches:

The system can be used with limit switches if desired, provided at inputs

I5, wire #13 for door 1
I6, wire #15 for door 2

Two switches in a series for each set of doors can be used for sensing the door closed position. Jumper J1 must be removed on the left side of terminal strip if limit switches are used. (J1 is connected to input, I7, wire #16) If limit switches are not used jumper J1 must be installed.

Jumper wires:

Jumper J1 is installed if door closed limit switches are not used. Refer to previous paragraph.

Jumper J2 is for door close time delay when limit switches are not used. When a door is closed there is an automatic time delay of 10, 15, or 20 seconds before another door can be opened. For a 10 second delay jumper J2 is installed in input I8, wire #17. For a 15 second delay, jumper J2 is installed in input I9, wire #18. For a 20 second delay, jumper J2 is installed in input I10. Refer to wiring diagrams for all wiring connections. The system was shipped with jumper J1 installed and jumper J2 installed in I18, for a 10 second delay.

On the two door system wire #5 must be jumped to input #9. This by passes the door #3 limit switches. THIS IS ONLY IN THE TWO DOOR PLC SYSTEMS.

For any additional information regarding your PLC control system, please call us directly so we can assist you with any other operation, installation or programming questions.

Thanks you for your purchase of our control system, we are confident you will enjoy years of trouble free service from our products.

Regards,

The American Mine Door Co.