Micro850

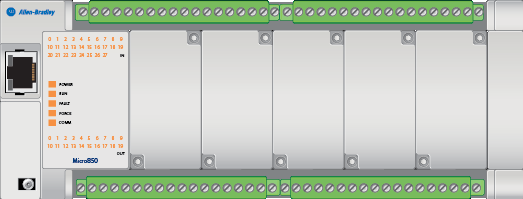
Table of Contents

# Micro850

## Device Configuration

### Controller

#### Overview



#### General

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Name | Description | Vendor Name | Catalog ID | Controller Project Version | Download Source Code |
| Micro850 |  | Allen-Bradley | 2080-LC50-48QWB-SIM | 12 | Yes |

#### Memory

Memory usage is only updated after a build

#### Startup/Faults

|  |  |
| --- | --- |
| Mode Behavior | Fault Override |
| Retain previous power-down mode | Do not clear fault |

#### Embedded I/O

**Input Filter**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Inputs** | 0-1 | 2-3 | 4-5 | 6-7 | 8-9 | 10-11 | 12-13 | 14-15 | 16-23 | 24-27 |
| **Input Filter** | Default | Default | Default | Default | Default | Default | Default | Default | Default | Default |

**Input Latch and EII Edge**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Input** | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
| **Enable Latch** | Disabled | Disabled | Disabled | Disabled | Disabled | Disabled | Disabled | Disabled | Disabled | Disabled | Disabled | Disabled | Disabled | Disabled | Disabled | Disabled |
| **Latch Edge** | Falling | Falling | Falling | Falling | Falling | Falling | Falling | Falling | Falling | Falling | Falling | Falling | Falling | Falling | Falling | Falling |
| **EII Edge** | Falling | Falling | Falling | Falling | Falling | Falling | Falling | Falling | Falling | Falling | Falling | Falling | Falling | Falling | Falling | Falling |

## Global Variables

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Name | Alias | Data Type | Dimension | Initial Value | Project Value | Comment | Direction | String Size |
| \_IO\_EM\_DO\_00 | Dispense\_Butter | BOOL |  |  |  |  | VarDirectlyRepresented |  |
| \_IO\_EM\_DO\_01 | Dispense\_Sugar | BOOL |  |  |  |  | VarDirectlyRepresented |  |
| \_IO\_EM\_DO\_02 | Dispense\_Vanilla | BOOL |  |  |  |  | VarDirectlyRepresented |  |
| \_IO\_EM\_DO\_03 | Dispense\_Eggs | BOOL |  |  |  |  | VarDirectlyRepresented |  |
| \_IO\_EM\_DO\_04 | Mixer | BOOL |  |  |  |  | VarDirectlyRepresented |  |
| \_IO\_EM\_DO\_05 | Bake | BOOL |  |  |  |  | VarDirectlyRepresented |  |
| \_IO\_EM\_DO\_06 | Conveyor | BOOL |  |  |  |  | VarDirectlyRepresented |  |
| \_IO\_EM\_DO\_07 | Dispense\_Flour | BOOL |  |  |  |  | VarDirectlyRepresented |  |
| \_IO\_EM\_DO\_08 | Egg\_Dispenser | BOOL |  |  |  |  | VarDirectlyRepresented |  |
| \_IO\_EM\_DO\_09 |  | BOOL |  |  |  |  | VarDirectlyRepresented |  |
| \_IO\_EM\_DO\_10 |  | BOOL |  |  |  |  | VarDirectlyRepresented |  |
| \_IO\_EM\_DO\_11 |  | BOOL |  |  |  |  | VarDirectlyRepresented |  |
| \_IO\_EM\_DO\_12 |  | BOOL |  |  |  |  | VarDirectlyRepresented |  |
| \_IO\_EM\_DO\_13 |  | BOOL |  |  |  |  | VarDirectlyRepresented |  |
| \_IO\_EM\_DO\_14 |  | BOOL |  |  |  |  | VarDirectlyRepresented |  |
| \_IO\_EM\_DO\_15 |  | BOOL |  |  |  |  | VarDirectlyRepresented |  |
| \_IO\_EM\_DO\_16 |  | BOOL |  |  |  |  | VarDirectlyRepresented |  |
| \_IO\_EM\_DO\_17 |  | BOOL |  |  |  |  | VarDirectlyRepresented |  |
| \_IO\_EM\_DO\_18 |  | BOOL |  |  |  |  | VarDirectlyRepresented |  |
| \_IO\_EM\_DO\_19 |  | BOOL |  |  |  |  | VarDirectlyRepresented |  |
| \_IO\_EM\_DI\_00 | Start\_Process | BOOL |  |  |  |  | VarDirectlyRepresented |  |
| \_IO\_EM\_DI\_01 |  | BOOL |  |  |  |  | VarDirectlyRepresented |  |
| \_IO\_EM\_DI\_02 |  | BOOL |  |  |  |  | VarDirectlyRepresented |  |
| \_IO\_EM\_DI\_03 |  | BOOL |  |  |  |  | VarDirectlyRepresented |  |
| \_IO\_EM\_DI\_04 |  | BOOL |  |  |  |  | VarDirectlyRepresented |  |
| \_IO\_EM\_DI\_05 |  | BOOL |  |  |  |  | VarDirectlyRepresented |  |
| \_IO\_EM\_DI\_06 |  | BOOL |  |  |  |  | VarDirectlyRepresented |  |
| \_IO\_EM\_DI\_07 |  | BOOL |  |  |  |  | VarDirectlyRepresented |  |
| \_IO\_EM\_DI\_08 |  | BOOL |  |  |  |  | VarDirectlyRepresented |  |
| \_IO\_EM\_DI\_09 |  | BOOL |  |  |  |  | VarDirectlyRepresented |  |
| \_IO\_EM\_DI\_10 |  | BOOL |  |  |  |  | VarDirectlyRepresented |  |
| \_IO\_EM\_DI\_11 |  | BOOL |  |  |  |  | VarDirectlyRepresented |  |
| \_IO\_EM\_DI\_12 |  | BOOL |  |  |  |  | VarDirectlyRepresented |  |
| \_IO\_EM\_DI\_13 |  | BOOL |  |  |  |  | VarDirectlyRepresented |  |
| \_IO\_EM\_DI\_14 |  | BOOL |  |  |  |  | VarDirectlyRepresented |  |
| \_IO\_EM\_DI\_15 |  | BOOL |  |  |  |  | VarDirectlyRepresented |  |
| \_IO\_EM\_DI\_16 |  | BOOL |  |  |  |  | VarDirectlyRepresented |  |
| \_IO\_EM\_DI\_17 |  | BOOL |  |  |  |  | VarDirectlyRepresented |  |
| \_IO\_EM\_DI\_18 |  | BOOL |  |  |  |  | VarDirectlyRepresented |  |
| \_IO\_EM\_DI\_19 |  | BOOL |  |  |  |  | VarDirectlyRepresented |  |
| \_IO\_EM\_DI\_20 |  | BOOL |  |  |  |  | VarDirectlyRepresented |  |
| \_IO\_EM\_DI\_21 |  | BOOL |  |  |  |  | VarDirectlyRepresented |  |
| \_IO\_EM\_DI\_22 |  | BOOL |  |  |  |  | VarDirectlyRepresented |  |
| \_IO\_EM\_DI\_23 |  | BOOL |  |  |  |  | VarDirectlyRepresented |  |
| \_IO\_EM\_DI\_24 |  | BOOL |  |  |  |  | VarDirectlyRepresented |  |
| \_IO\_EM\_DI\_25 |  | BOOL |  |  |  |  | VarDirectlyRepresented |  |
| \_IO\_EM\_DI\_26 |  | BOOL |  |  |  |  | VarDirectlyRepresented |  |
| \_IO\_EM\_DI\_27 |  | BOOL |  |  |  |  | VarDirectlyRepresented |  |
| Flour\_Tank\_Capacity |  | REAL |  | 0.0 |  |  | Var |  |
| Flour\_Tank\_Full |  | BOOL |  |  |  |  | Var |  |
| Flour\_Tank\_Minimum |  | REAL |  |  |  |  | Var |  |
| Flour\_Tank\_Low |  | BOOL |  |  |  |  | Var |  |
| Process\_Running |  | BOOL |  |  |  |  | Var |  |
| Flour\_Needed |  | REAL |  |  |  |  | Var |  |
| Flour\_Weight |  | REAL |  |  |  |  | Var |  |
| Process\_Index |  | INT |  |  |  |  | Var |  |
| Next\_Step |  | BOOL |  |  |  |  | Var |  |
| Initialize |  | BOOL |  |  |  |  | Var |  |
| Bowl\_Weight |  | REAL |  |  |  | Weight [kg] | Var |  |
| Recipe\_Flour |  | REAL |  | 4.0 |  | Weight [kg] | Var |  |
| Recipe\_Eggs |  | INT |  | 2 |  | Number of eggs | Var |  |
| Tare\_Weight |  | REAL |  |  |  | Weight [kg] | Var |  |
| Relative\_Weight |  | REAL |  |  |  |  | Var |  |
| Tare |  | BOOL |  |  |  |  | Var |  |
| Sugar\_Timer |  | TIME |  |  |  |  | Var |  |
| Recipe\_Sugar |  | REAL |  | 2.0 |  | Weight [kg] | Var |  |
| Butter\_Weight |  | REAL |  |  |  |  | Var |  |
| Mix |  | BOOL |  |  |  |  | Var |  |
| \_\_SYSVA\_CYCLECNT |  | DINT |  |  |  | Cycle counter | VarGlobal |  |
| \_\_SYSVA\_CYCLEDATE |  | TIME |  |  |  | Timestamp of the beginning of the cycle in milliseconds (ms) | VarGlobal |  |
| \_\_SYSVA\_KVBPERR |  | BOOL |  |  |  | Kernel variable binding producing error (production error) | VarGlobal |  |
| \_\_SYSVA\_KVBCERR |  | BOOL |  |  |  | Kernel variable binding consuming error (consumption error) | VarGlobal |  |
| \_\_SYSVA\_RESNAME |  | STRING |  |  |  | Resource name (max length=255) | VarGlobal |  |
| \_\_SYSVA\_SCANCNT |  | DINT |  |  |  | Input scan counter | VarGlobal |  |
| \_\_SYSVA\_TCYCYCTIME |  | TIME |  |  |  | Programmed cycle time | VarGlobal |  |
| \_\_SYSVA\_TCYCURRENT |  | TIME |  |  |  | Current cycle time | VarGlobal |  |
| \_\_SYSVA\_TCYMAXIMUM |  | TIME |  |  |  | Maximum cycle time since last start | VarGlobal |  |
| \_\_SYSVA\_TCYOVERFLOW |  | DINT |  |  |  | Number of cycle overflows | VarGlobal |  |
| \_\_SYSVA\_RESMODE |  | SINT |  |  |  | Resource execution mode | VarGlobal |  |
| \_\_SYSVA\_CCEXEC |  | BOOL |  |  |  | Execute one cycle when application is in cycle to cycle mode | VarGlobal |  |
| \_\_SYSVA\_REMOTE |  | BOOL |  | FALSE |  | Remote status | VarGlobal |  |
| \_\_SYSVA\_SUSPEND\_ID |  | UINT |  | 0 |  | Last Suspend ID | VarGlobal |  |
| \_\_SYSVA\_TCYWDG |  | UDINT |  | 2000 |  | Software Watchdog | VarGlobal |  |
| \_\_SYSVA\_MAJ\_ERR\_HALT |  | BOOL |  | FALSE |  | Major Error Halted status | VarGlobal |  |
| \_\_SYSVA\_ABORT\_CYCLE |  | BOOL |  | FALSE |  | Aborting Cycle | VarGlobal |  |
| \_\_SYSVA\_FIRST\_SCAN |  | BOOL |  | TRUE |  | First scan bit | VarGlobal |  |
| \_\_SYSVA\_USER\_DATA\_LOST |  | BOOL |  | FALSE |  | User data lost | VarGlobal |  |
| \_\_SYSVA\_POWERUP\_BIT |  | BOOL |  | TRUE |  | Power-up bit | VarGlobal |  |
| \_\_SYSVA\_PROJ\_INCOMPLETE |  | UDINT |  | 0 |  | Project Incomplete | VarGlobal |  |

## Programs

### Equations

**Programs**

### Process\_Control

**Rung1 Diagram**

**Detect new start**



**Rung2 Diagram**

**Initialize, set step to 0, next step**



**Rung3 Diagram**

**Increment step**



**Rung4 Diagram**

**Dispense sugar, vanilla, egg**





**Rung5 Diagram**

**Mix**



### Step\_Controls

**Local Variables**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Name | Alias | Data Type | Dimension | Initial Value | Project Value | Comment | Direction | String Size |
| TON\_1 |  | TON |  | ... | ... |  | Var |  |
| TON\_3 |  | TON |  | ... | ... |  | Var |  |
| TON\_4 |  | TON |  | ... | ... |  | Var |  |
| TON\_5 |  | TON |  | ... | ... |  | Var |  |
| TON\_2 |  | TON |  | ... | ... |  | Var |  |

**Rung1 Diagram**

**Testing**



**Rung2 Diagram**

**Testing**



**Rung3 Diagram**

**Tare**



**Rung4 Diagram**

**Dispense butter**





**Rung5 Diagram**

**Dispense vanilla**





**Rung6 Diagram**

**Mix for 10s**



**Rung7 Diagram**

**Dispense sugar until weight matches needed**



**Rung8 Diagram**

**Simulate dispensing sugar**





**Rung9 Diagram**

**Dispense flour until weight reached**



**Rung10 Diagram**

**Simulate dispensing flour**



