

| Program List             | Label    | Comment  |
|--------------------------|----------|--|
| Read Var00               | Int 1    | Var00 is = float 0 when power first applied and set to integer 1 in the power in branch.   |
| If=0 Goto <b>PowerOn</b> |          | If   |
| Del S                    |          | If program reaches this point the power on branch had previously been run.   |
| Read Ch1                 | Deg C    | Read input   |
| Gosub <b>RgeCheck</b>    |          | Subroutine 'RgeCheck' tests that the value in Var01 is between 'Con_a' and Con_b' if not returns integer 1 for fail and integer 0 for pass in the program stack. |
| Save Var03               | Rge_CH1  | Save channel 1 range check result  |
| -----                    | -----    | -----  |
| ItoF                     |          | <b>Start Add some lines</b><br>Extra lines may be added here to aid in debugging   |
| Save Mem6                | CH1 Fail |  |
| Send M6                  |          | <b>End Add some lines</b>  |
| -----                    | -----    | -----  |
| Read Ch2                 | Deg C    |  |
| Gosub <b>RgeCheck</b>    |          |  |
| Save Var04               | Rge_CH2  | Save channel 2 range check result  |
| -----                    | -----    | -----  |
| ItoF                     |          | <b>Start Add some lines</b><br>Extra lines may be added here to aid in debugging   |
| Save Mem7                | CH2 Fail |  |
| Send M7                  |          | <b>End Add some lines</b>  |
| -----                    | -----    | -----  |
| Del S                    |          |  |
| Read Var03               | Rge_CH1  | Read CH1 pass fail flag  |
| If >Int0 Goto            |          | Branch if channel 1 has failed   |
| <b>CH1_Fail</b>          |          |  |
| Del S                    |          |  |
| Read Var04               | Rge_CH2  | Read CH2 pass fail flag  |
| If >Int0 Goto            |          | Branch if channel 2 has failed   |
| <b>CH2_Fail</b>          |          |  |
| Read Ch1                 | Deg C    | If program reaches this point the CH1 and CH2 are within range.  |
| Read Ch2                 | Deg C    |  |
| MAX                      |          | Get maximum of last two items on the stack   |
| Save Mem4                | MxCH1CH2 | Save highest out of CH1 and CH2 in Mem4 to drive mA output.  |
| Send M4                  |          |  |
| Read Var06               | Float 0  |  |
| Save Mem5                | Alarm    | Save float 0 in memory 5, this is use to drive the relay (Pass condition)  |
| Send M5                  |          |  |
| Exit                     |          | -----  |
| <b>LAB: CH1_Fail</b>     |          | Channel 1 is failed  |
| Read Var05               | Float 1  | Read float 1 into the stack  |
| Save Mem5                |          | Save float 1 in memory 5, this is use to drive the relay (Fail condition)  |
| Send M5                  |          |  |
| Del S                    |          |  |
| Read Var04               | Rge_CH2  | Read CH2 pass fail flag  |
| If >Int0 Goto            |          | Branch if channel 2 has failed   |
| <b>1CH2Fail</b>          |          |  |
| Read Ch2                 | Deg C    | If program reaches this point CH1 is failed and CH2 is within range.   |
| Save Mem4                | MxCH1CH2 | Save channel 2 value in Mem4 to drive mA output.   |
| Send M4                  |          |  |
| Exit                     |          | -----  |
| <b>LAB: CH2_Fail</b>     |          | If program reaches this point CH1 is good CH2 has failed.  |

| Program List              | Label    | Comment  |
|---------------------------|----------|--|
| Read Var05                | Float 1  | Read float 1 into the stack  |
| Save Mem5                 | Alarm    | Save float 1 in memory 5, this is use to drive the relay (Fail condition)                              |
| Send M5                   |          |  |
| Del S                     |          |  |
| Read Ch1                  | Deg C    |  |
| Save Mem4                 | MxCH1CH2 | Save channel 1 value in Mem4 to drive mA output.   |
| Send M4                   |          |  |
| Exit                      |          | -----  |
| <b>LAB: 1CH2Fail</b>      |          | If program reaches this point both CH1 and CH2 have failed and the alarm relay is already switched on. |
| Con_b                     | RgeHigh  | Read the value of the range upper limit (1200.0) into memory   |
| Save Mem4                 | MxCH1CH2 | Save value in Mem4 to drive mA output to same value as high limit.                                     |
| Send M4                   |          |  |
| Exit                      |          | -----  |
| <b>LAB: RgeCheck</b>      |          | Check the range of value in stack and Var01  |
| Save Var01                | RgeCheck | Save input into Var01  |
| Con_a                     | Rge_Low  |  |
| Subtract                  |          |  |
| If<0 Goto <b>RgeError</b> |          |  |
| Del S                     |          |  |
| Con_b                     | RgeHigh  |  |
| Read Var01                |          |  |
| Subtract                  |          |  |
| If<0 Goto <b>RgeError</b> |          |  |
| Del S                     |          |  |
| Read Var00                | Int 1    |  |
| Int-1                     |          |  |
| Return                    |          | Within range return integer 0  |
| Exit                      |          | -----  |
| <b>LAB: RgeError</b>      |          | This branch reads integer 1 into the stack   |
| Del S                     |          |  |
| Read Var00                | Int 1    |  |
| Return                    |          | Return to calling point.   |
| Exit                      |          | -----  |
| <b>LAB: PowerOn</b>       |          | Program reaches this point when power is first applied.  |
| Save Var06                | Float 0  | Program can only reach this point if float zero is in the stack.                                       |
| FtoI                      |          | Convert to integer 0   |
| Int+1                     |          | Increment by 1   |
| Save Var00                | Int 1    | Save integer 1 in Var00 to prevent power on branch from running again.                                 |
| ItoF                      |          |  |
| Save Var05                | Float 1  | Save float 1 in Var05  |
| Exit                      |          | -----  |
| <End>                     |          |  |