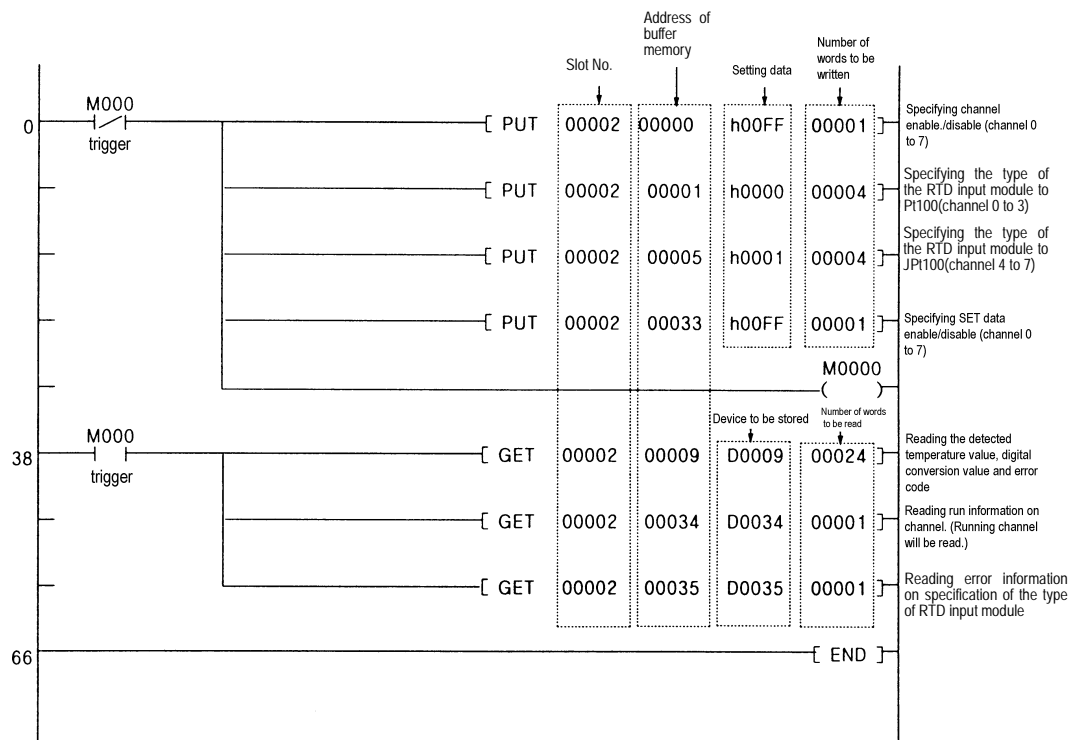


Chapter 5. PROGRAMMING

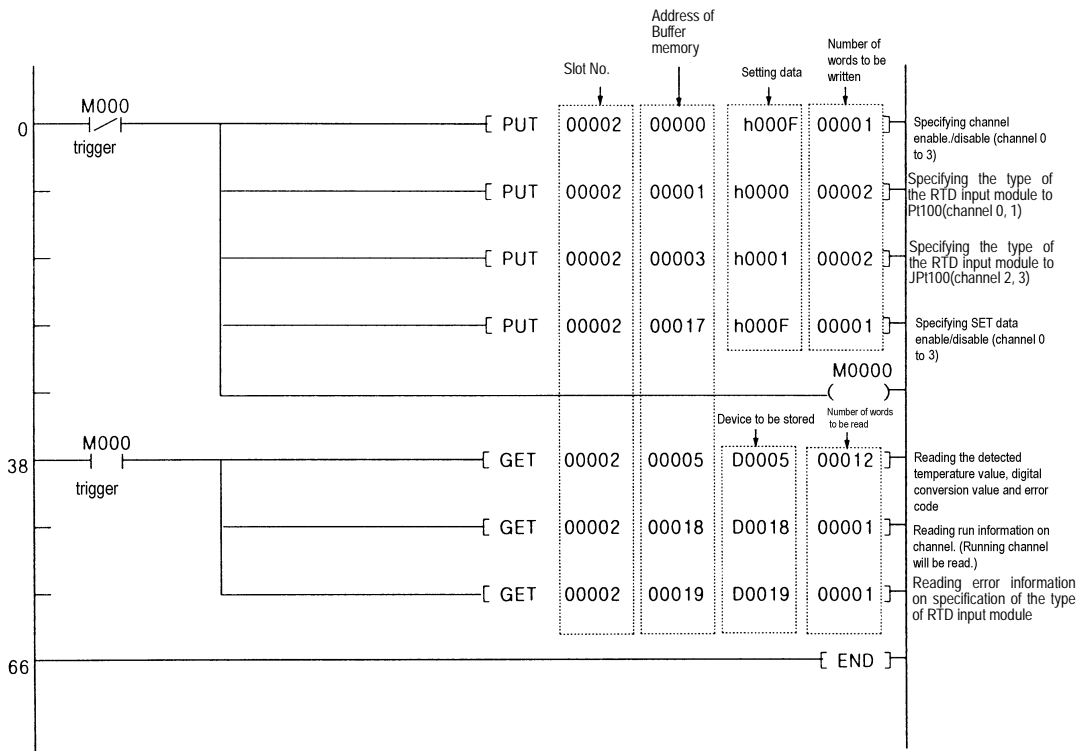
5.1 Basic Programming

- ▶ The following describes the method to set the running conditions in the buffer memories of the RTD input module.
- ▶ The RTD input module is already mounted on the slot 2.
- ▶ The I/O point of the RTD input module are 16.

5.1.1 K7F-RD3A



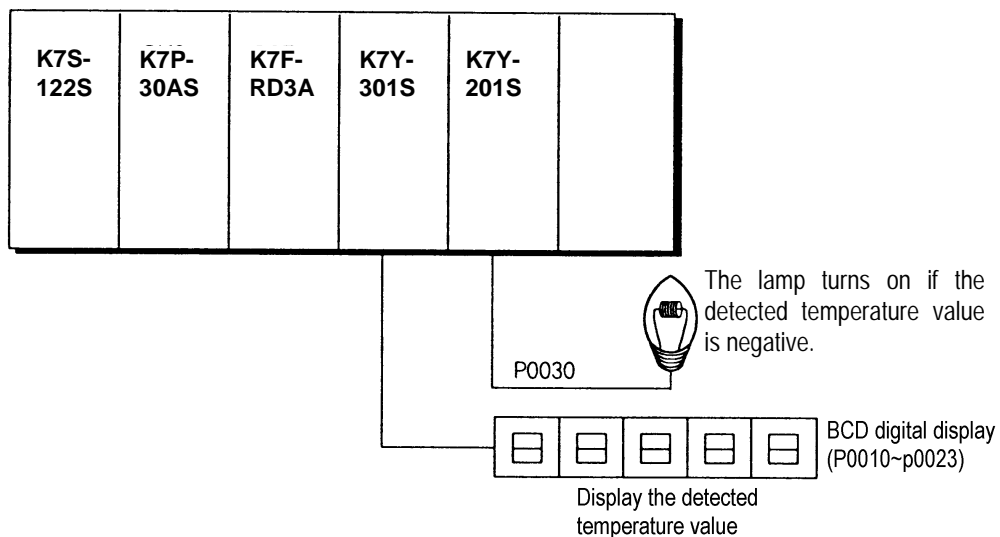
5.1.2 K4F-RD2A



5.2 Application Programming

5.2.1 A Program for Output of the Detected Temperature Value as a BCD Value

1) System Configuration



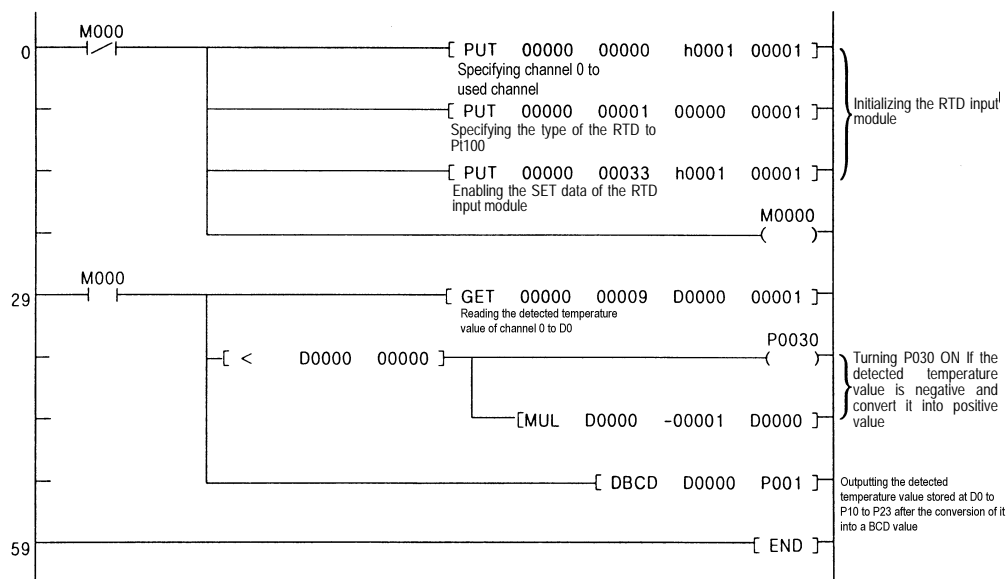
2) Initial Settings

- (1) Specifying used channel : channel 0
- (2) Specifying the type of the RTD : Pt 100

3) Descriptions of the Program

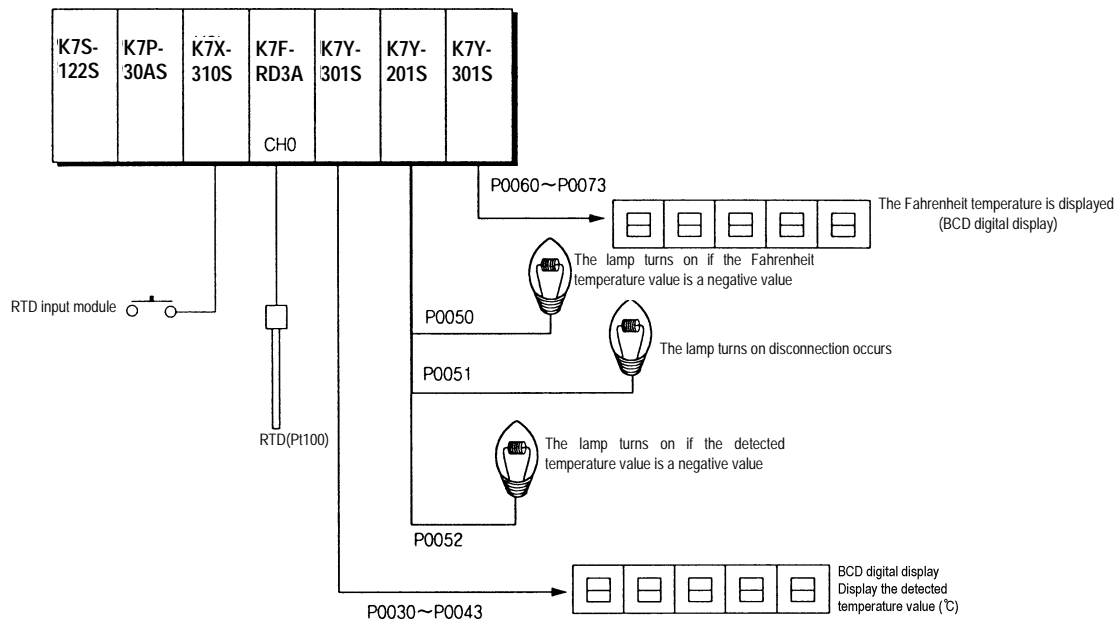
The present A/D conversion value of the detected temperature value, which is detected from the RTD Pt 100 by use of channel 0 of the RTD input module, is displayed on the BCD digital display. If the detected temperature value is negative then the ramp turns on and If positive the ramp turns off.

4) Program



5.2.2 A Program for Converting the Detected Temperature Value(°C) into Fahrenheit(°F) and Outputting a BCD Value

1) System Configuration



2) Initial Settings

- (1) Specifying used channel : channel 0
- (2) Specifying the type of the RTD : Pt 100

3) Expression for Converting the Detected Temperature Value into a Fahrenheit Temperature Value(°F)

Detected temperature value = real temperature × 10

Fahrenheit temperature value (°F) = real temperature × 1.8 + 32

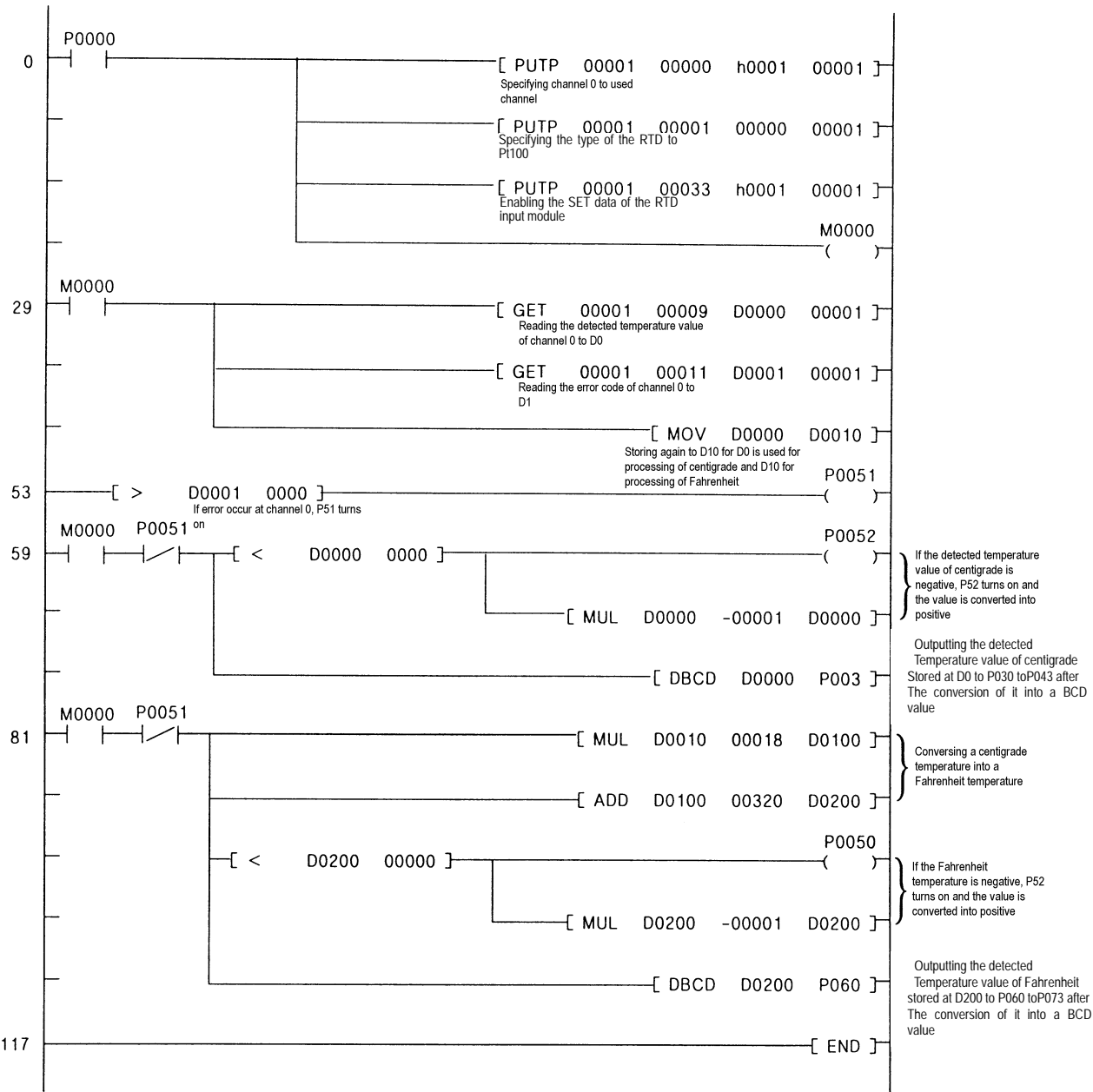
$$\begin{aligned}
 &= \frac{\text{detected temperature value} \times 1.8}{10} + 32 \\
 &= \frac{\text{detected temperature value} \times 18 \times 320}{10}
 \end{aligned}$$

∴ If the BCD digital display displays the value of (real Fahrenheit (°F) temperature × 10) then program has to process the calculation of "detected temperature value × 18 + 320".

4) Descriptions of the Program

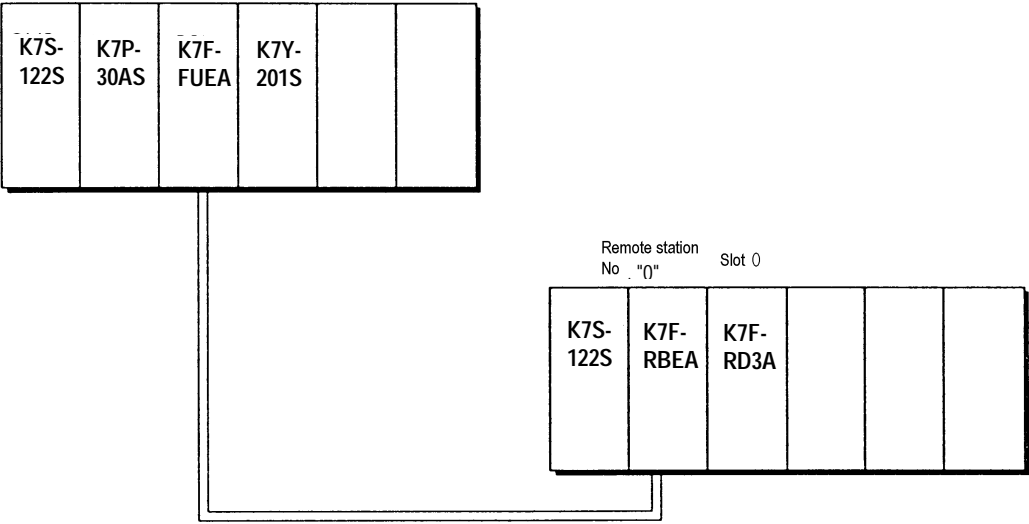
- (1) If P0000 turns on, the RTD input module is initialized.
- (2) The detected temperature value is displayed to P0030 to P0043 of the BCD digital display. If the value is negative value the ramp P0052 turns on.
- (3) The detected temperature value is converted to a Fahrenheit temperature value (°F) and displayed to P0060 to P0073 of the BCD digital display. If the value is negative the ramp P0050 turns on.
- (4) If disconnection is detected during temperature conversion of channel 0, the ramp P0051 turns on.

5) Program



5.2.3 A Program when Loading the RTD Input Module onto the Remote I/O Station

1) System Configuration



2) Initial Settings

- (1) Specifying used channel : channel 0
- (2) Specifying the type of the RTD : Pt 100

3) Descriptions of the Program

- (1) P0010 turns on if the temperature value detected at channel 0 is more than or equal to -10°C .
- (2) P0011 turns on if the temperature value detected at channel 0 is less than -10°C and more than or equal to -20°C .
- (3) P0012 turns on if the temperature value detected at channel 0 is less than -20°C .

4) Program

