Explanation of the operation for the current position monitor

[Operation outline]

The travel distance as a current position is displayed on the monitor based on the cumulative pulse monitor value.

[How to use the sample program]

<Sample program overview>

| File name | Description | Model | Programming tool |
|---|---|---|---|
| Vol4_position_monitor_eng_a.fgw | Ladder program | FR-A800 | FR Configurator2 (Developer) |

<Startup procedure>

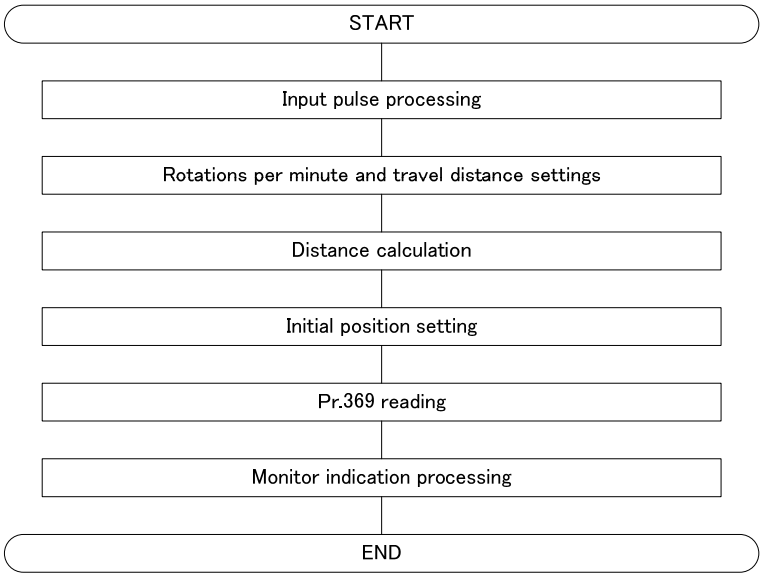
① Decompress the downloaded file to a folder.
② Double click the file and start up each programming tool.
③ The language setting of the ladder programs is initially set to Japanese.
To change the language setting, select [Tool] -> [Language Selection] and set the language to the desired language.
④ Write the program to the FR-A800.
⑤ After the writing completes, reset the FR-A800.

<Operation method>

① Set Pr.1151 (Rotations per minute) and Pr.1152 (Travel distance).
When the travel distance is 1 m per rotation, set Pr.1151 (Rotations per minute) = "1" and Pr.1152 (Travel distance) = "100 (1.00 m)".
When the travel distance is 0.5 m per two rotations, set Pr.1151 (Rotations per minute) = "2" and Pr.1152 (Travel distance) = "50 (0.50 m)".
② Set Pr.1153 (Forward/backward) according to the forward or backward movement during forward rotation.
③ Set Pr.1150 (Initial position) and clear the cumulative pulse monitor.
④ Turn ON the SQ signal to set the PLC function in the RUN state.
⑤ The ladder program can be executed by turning ON the X3 signal (terminal RM).
⑥ The display increment can be switched between 1 m and 0.1 m with the Pr.1154 setting.

[Circuit structure of the sample ladders]

<MAIN: scan execution>



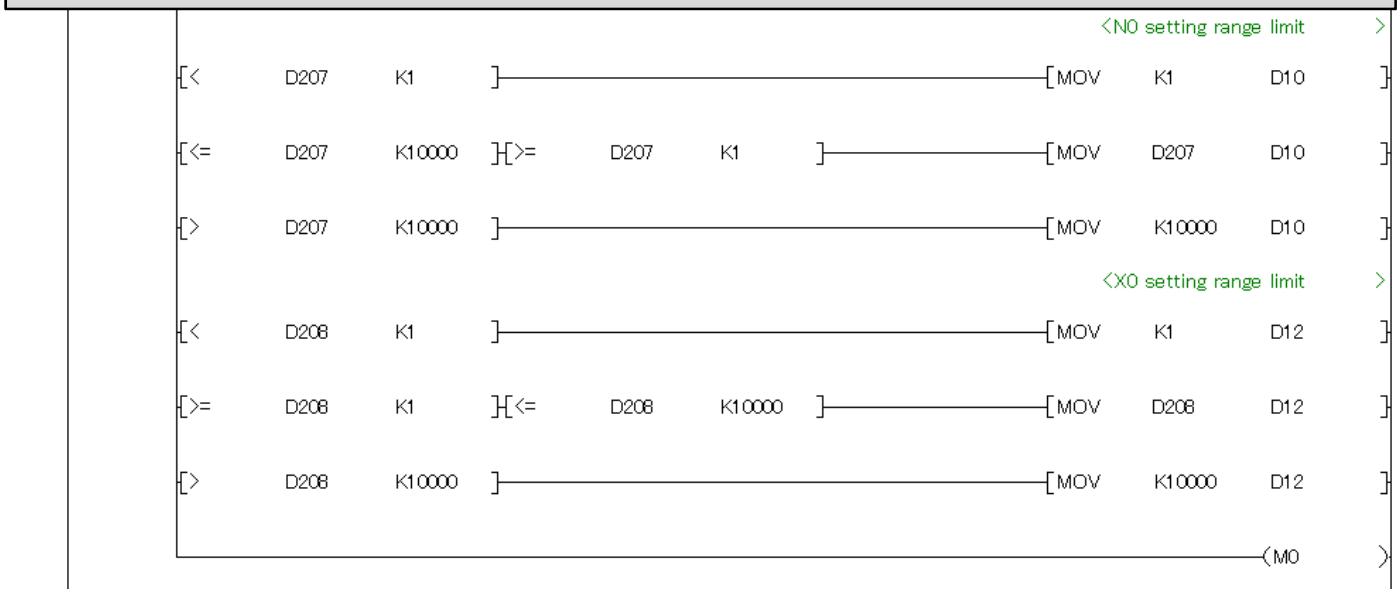

[Devices]

| Device No. | Description | Device No. | Description | Type |
|---|---|---|---|---|
| M0 | Cumulative pulse, rotations per minute setting, travel distance setting, and reading completion | D0 | Cumulative pulse | 32 bits |
| M2 | Pr.369 reading start | D2 | Cumulative pulse upper | 16 bits |
| M3 | Pr.369 reading completion | D4 | Cumulative pulse lower | 16 bits |
| M4 | Current position calculation completion | D10 | Rotations per minute setting (N0) | 16 bits |
| | | D12 | Travel distance setting (X0) | 16 bits |
| | | D14 | Number of encoder pulses | 16 bits |
| | | D16 | During travel distance calculation | 32 bits |
| | | D18 | Four-fold PPR | 32 bits |
| | | D20 | Rounded value | 32 bits |
| | | D22 | Rounding | 32 bits |
| | | D24 | Travel distance | 32 bits |
| | | D26 | Initial position (S0) | 16 bits |
| | | D28 | Current position | 32 bits |
| | | D30 | Current position (increment 1) | 32 bits |
| | | D32 | Current position (increment 0.1) | 32 bits |
| | | D206 (Pr.1150) | Initial position | 16 bits |
| | | D207 (Pr.1151) | Set rotations per minute | 16 bits |
| | | D208 (Pr.1152) | Travel distance for the set rotations per minute | 16 bits |
| | | D209 (Pr.1153) | Forward / backward | 16 bits |
| | | D210 (Pr.1154) | Increment of the current position monitor display | 16 bits |

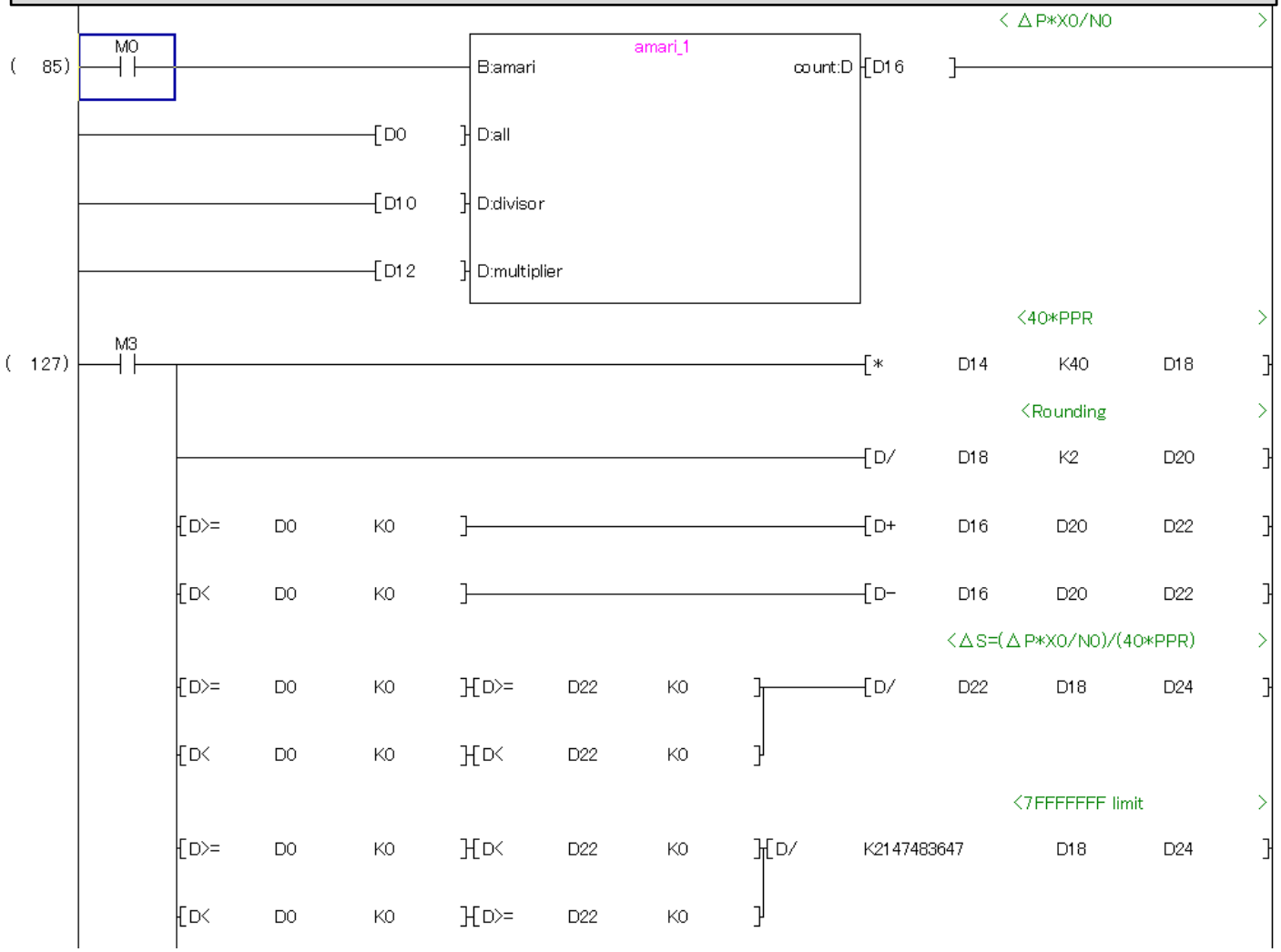
[Sample ladder diagrams]

Input pulse processing

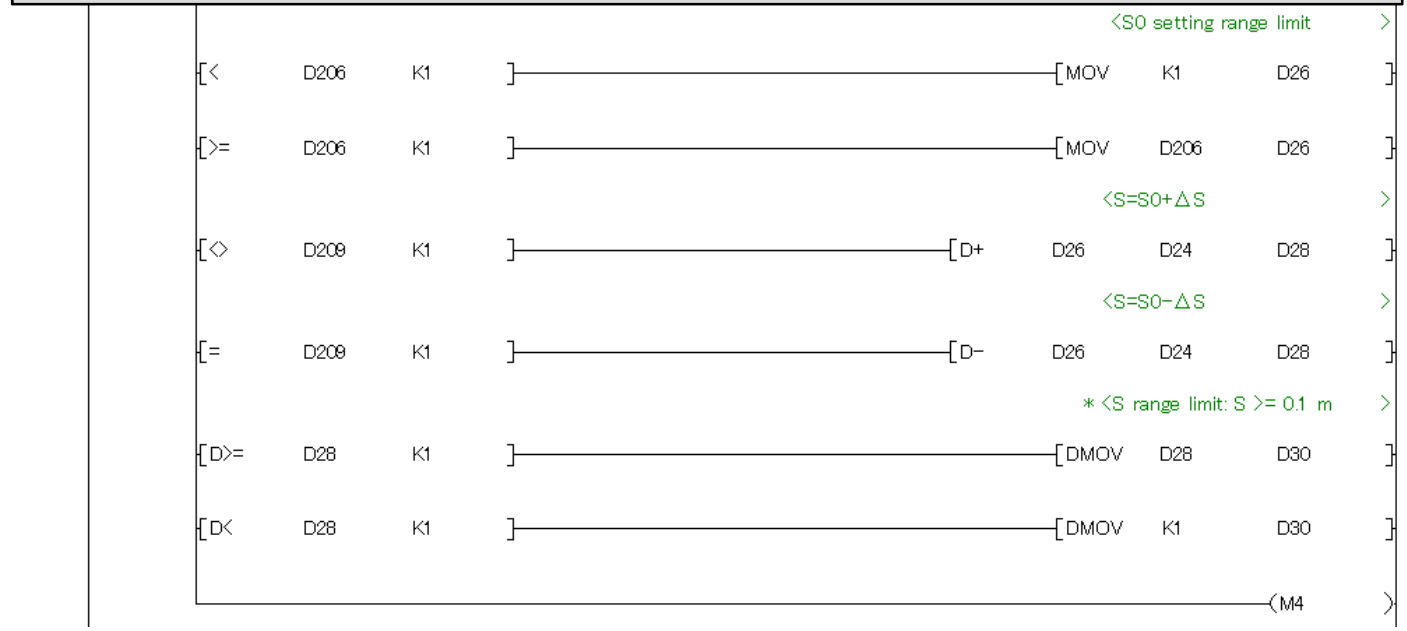
Rotations per minute and travel distance settings



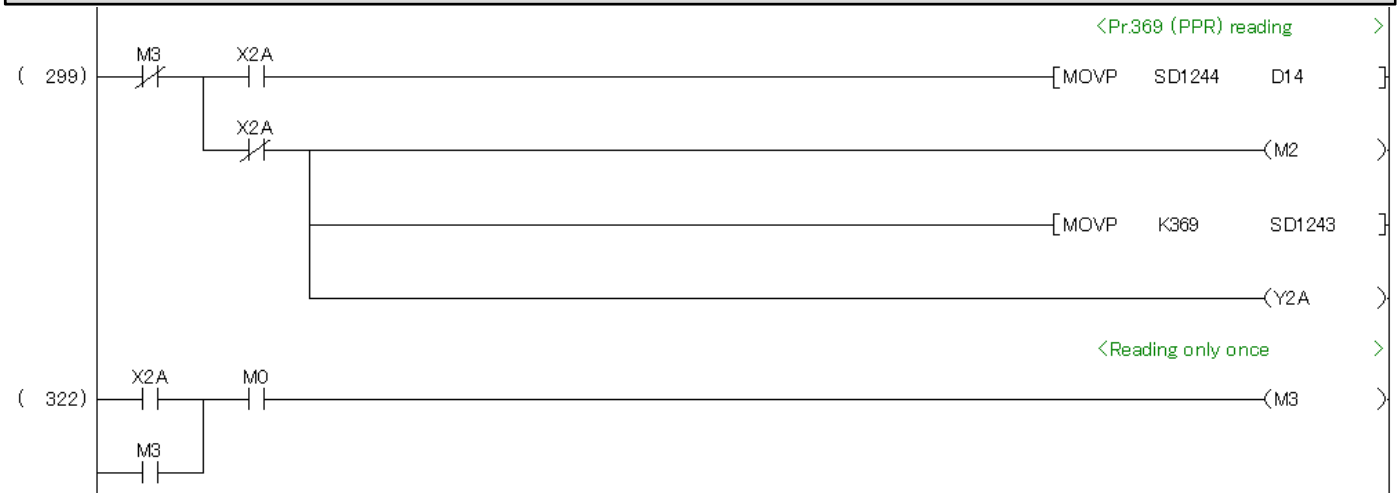
## Distance calculation



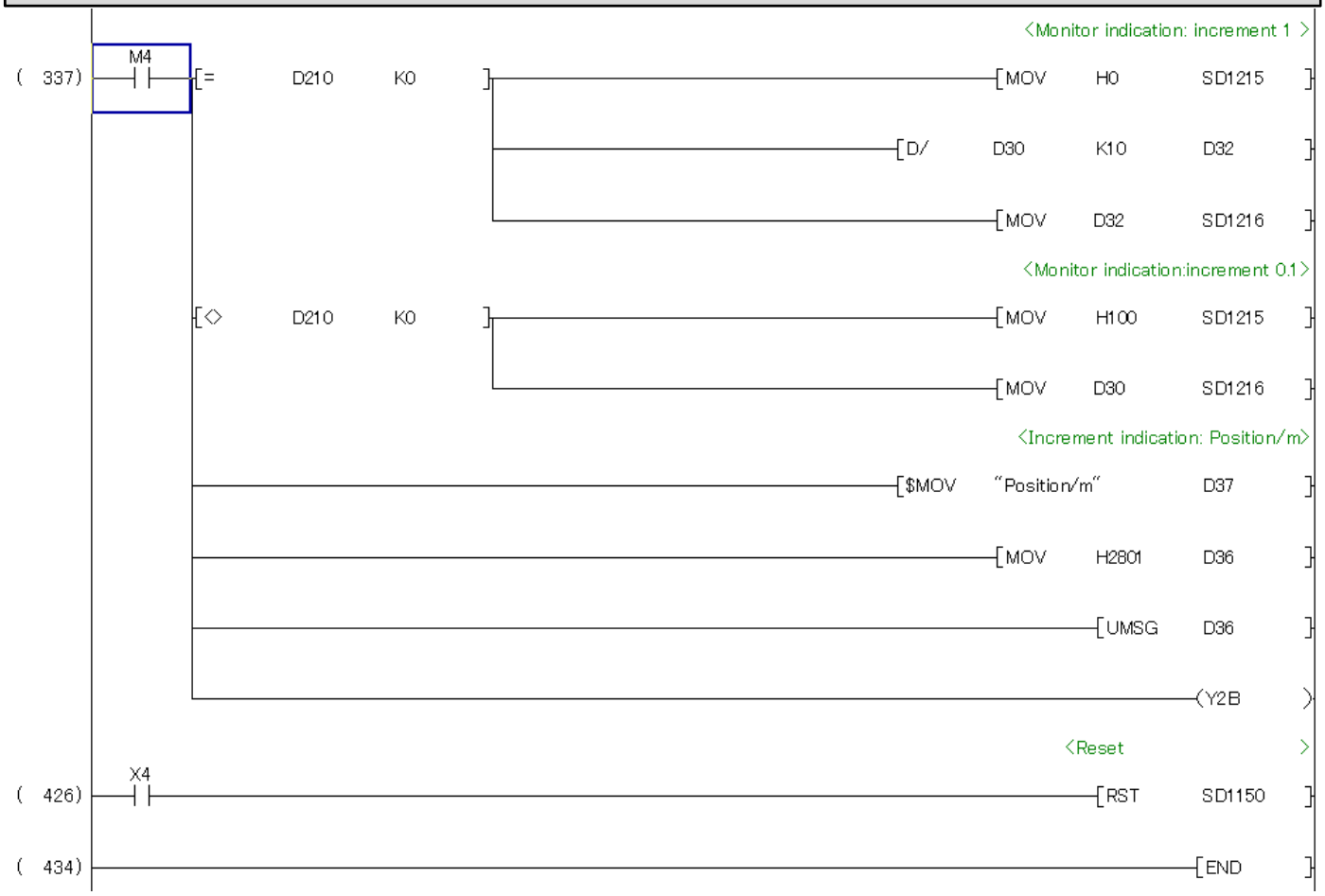

## Initial position setting



## Pr.369 reading




## Monitor indication processing




*For using the sample program in the actual system, verify sufficiently that the system can be controlled properly.