

# MELSEC-F FX3 Series Character String Operation Sample Ladder Reference Manual

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## Reference Manual Revision History

Reference Manual No.	Date of Revision	Details of Revision
JY997D70901A	October, 2016	Newly Prepared

## 1. Outline

### Outline of sample ladder

This program is sample ladder for a system that uses the FX3 Series main unit character string operation function.

### Applicable devices

The applicable devices for this sample ladder are indicated below.

Model	Description		
Main unit			
	Series	Model	
	MELSEC-F Series	FX3S, FX3G, FX3GC, FX3U, FX3UC	
Engineering tool	GX Works2		
	Series	Language	Supported software version
	MELSEC-F Series	English	Version 1.545T and later
	GX Developer		
	Series	Language	Supported software version
	MELSEC-F Series	English	Version 8.119Z and later

### System configuration

The configuration of a system using this sample ladder is shown below.

- FX3U(C)

Main unit FX3U(C)
----------------------

- FX3G(C)

Main unit FX3G(C)
----------------------

- FX3S

Main unit FX3S
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### Description of sample ladder function

The following functions are realized with this program.

No.	Project name	Description	Version
1	01_LD-FX3U_CPU_String_V100A_E	A 4-digit value is converted into ASCII code for each digit.	Ver. 1.00A


## Prerequisites for using sample ladder

### ■ Changing the PLC type

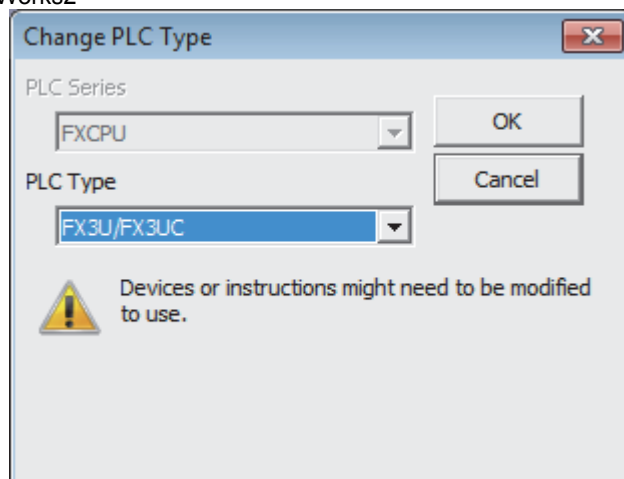
The sample ladder is provided with the model listed in the project name as shown below. When using with a model other than the provided project, change the PLC type using the engineering tool.

Example: With the following project name, the model is FX3U/FX3UC.

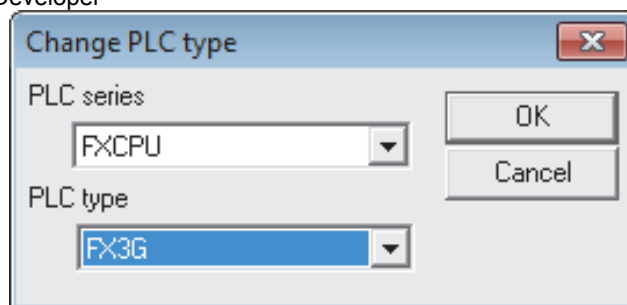
01\_LD-FX3U\_□□□\_□□□\_V100A\_E

 [Project] ⇒ [Change PLC Type]

- For GX Works2



- For GX Developer



When using a GX Developer project with FX3S, refer to the TECHNICAL BULLETIN "HIME-T-P-0118 Limitations and precautions when using FX3S Series with GX Developer".

The provided project is not guaranteed to run with the user's system. Check the device assignments and parameters, etc., and adjust them to the user's system specifications before starting use.

## Related manuals

FX3S/FX3G/FX3GC/FX3U/FX3UC Series Programming Manual - Basic & Applied Instruction Edition

## Notice

This manual explains the functions of the sample ladder. The restrictions for using and the restrictions for combining the programmable controller, various expansion boards, special adapters, and extension devices are not covered. Always read the User's Manual for the target product before starting use.

## 2. Sample ladder

### 2. 1. ASCII conversion (01\_LD-FX3U\_CPU\_String\_V100A\_E)

#### Outline of System

A 4-digit value is converted into ASCII code for each digit.

#### ■ Description of functions

- (1) When the execution command (M0) turns ON, executes the 4-digit value into ASCII code for each digit.
- (2) If the input value is incorrect, abnormal end (Y000) turns ON, and the process is halted. The error code is stored in error code (D100). For the error codes, refer to error code in devices used (D100).
- (3) To obtain the operation results again, turn OFF and ON the execution command (M0).

#### Programs Used

This program is targeted for FX3S, FX3G, FX3GC, FX3U and FX3UC.

The projects used in this program are indicated below.

No.	Project name	Function name	Remark
1	01_LD-FX3U_CPU_String_V100A_E	ASCII conversion	This product is created with FX3U/FX3UC. When using with a model other than the provided project, change the PLC type using the engineering tool.

#### Devices used

The devices used in this program are indicated below.

##### Input device

No.	Device name	Data type	Kind	Device comment	Remark
1	M0	Bit	Input	Execution command	ON: The program starts. OFF: The program does not start.
2	D0	Word	Input	Conversion target data	Sets the conversion target data. [Valid range (decimal)] 0 --- 9999

##### Output device

No.	Device name	Data type	Kind	Device comment	Remark
1	Y000	Bit	Output	Abnormal end	When ON, it means an error has occurred in the program.
2	M100	Bit	Output	Execution status	ON: The execution command is ON. OFF: The execution command is OFF.
3	M101	Bit	Output	Normal end	When ON, it means that the process has ended.
4	D100	Word	Output	Error code	Stores the error code that occurred in the program. [Error code (decimal)] 10: Conversion target data is out-of-range.
5	D101 --- D102	Double Word	Output	Resulting conversion data	Stores the ASCII converted data.

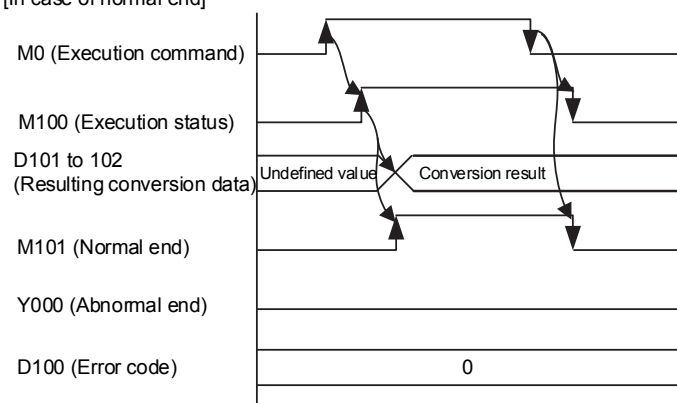
## Internal device

No.	Device name	Data type	Kind	Device comment	Remark
1	M200	Bit	Internal	Setting data check command	Holds the check command flag for the set data.
2	M201	Bit	Internal	Main process execution command	Holds the execution command flag for the main process.
3	M203	Bit	Internal	Program completed	Holds the program completed flag.
4	M204	Bit	Internal	Main process execution completed	Holds the execution completed flag for the main process.
5	M205	Bit	Internal	Program error	Holds the program error flag.
6	M206	Bit	Internal	Pulsed execution command	Holds the pulse conversion flag for the execution command.
7	D50	Word	Internal	BCD converted data	Stores the BCD converted data.

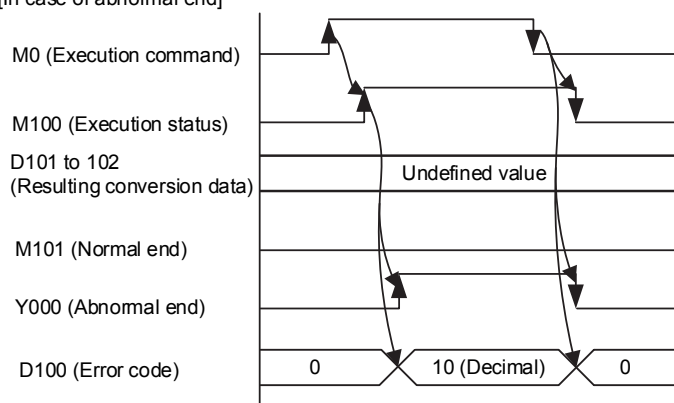
## Operation of I/O signals

- The timing chart for this program is shown below.

[In case of normal end]



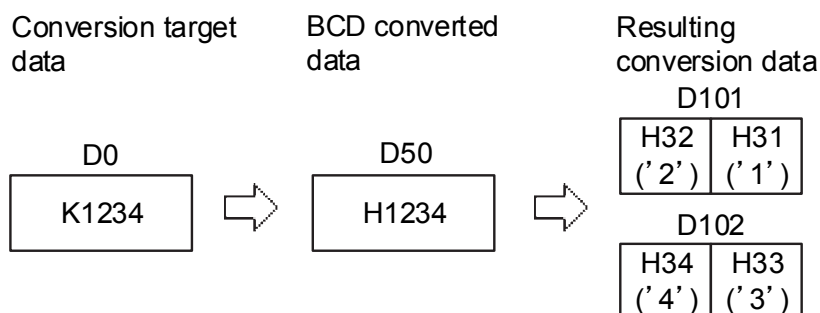
[In case of abnormal end]



- The processes of this program are given below.

- (1) Checks the input conversion target data.
- (2) Converts the conversion target data into BCD data.
- (3) ASCII-converts the data from step (2).
- (4) Stores the step (3) data as the resulting conversion data.

The operation when the conversion target data is set to 1234 is shown below.

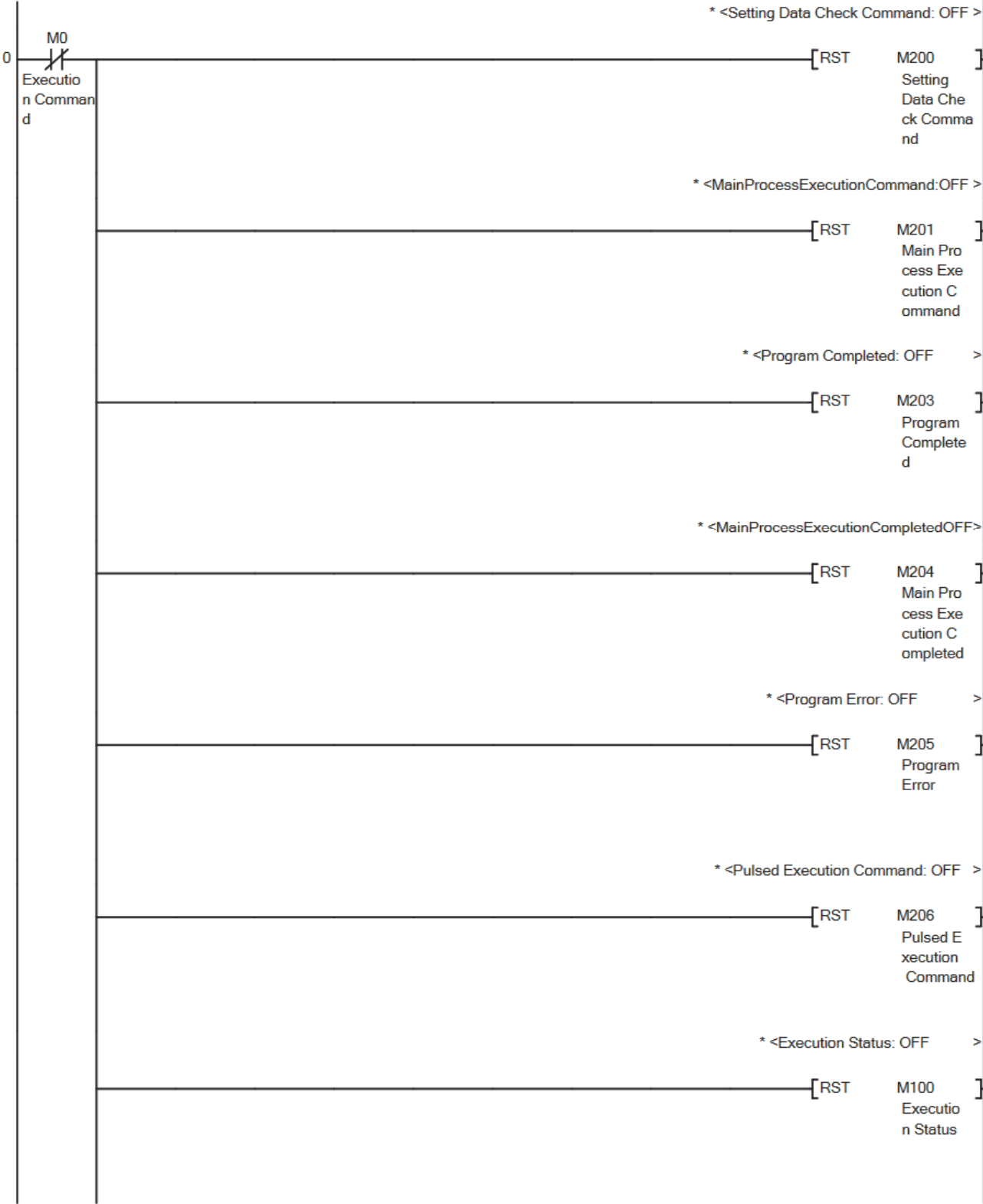


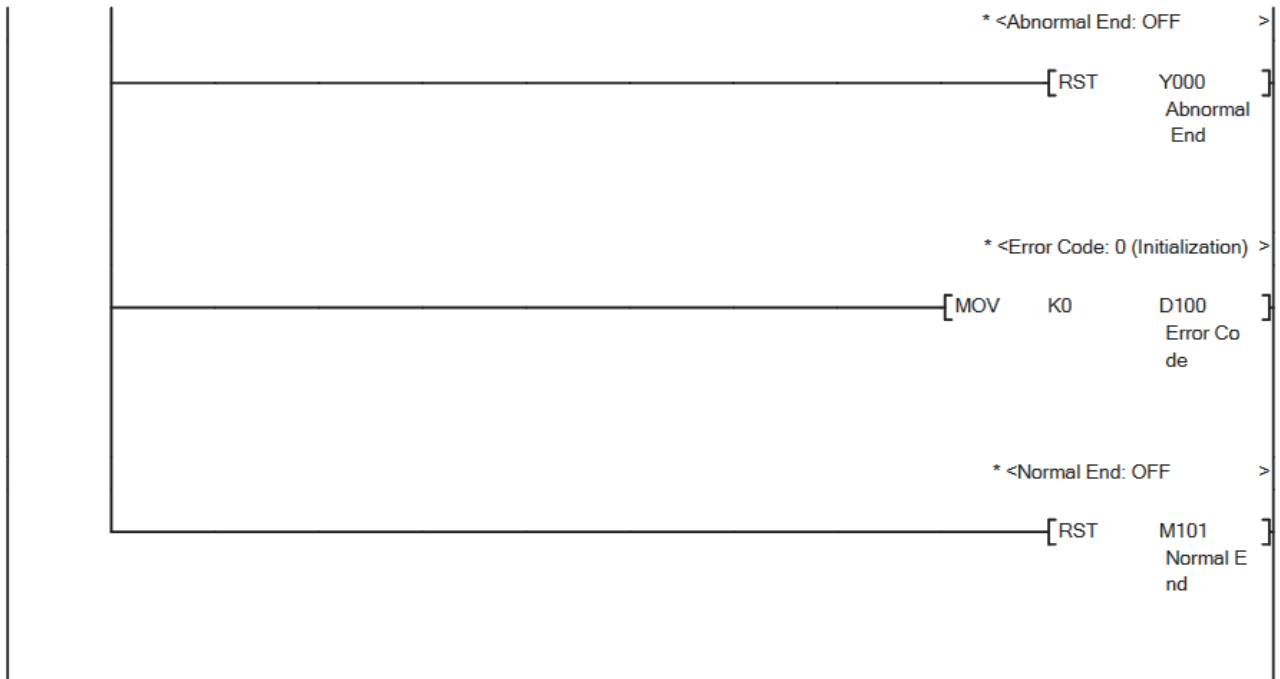
## Version upgrade history

Version	Date	Description
Ver. 1.00A	October, 2016	First Edition

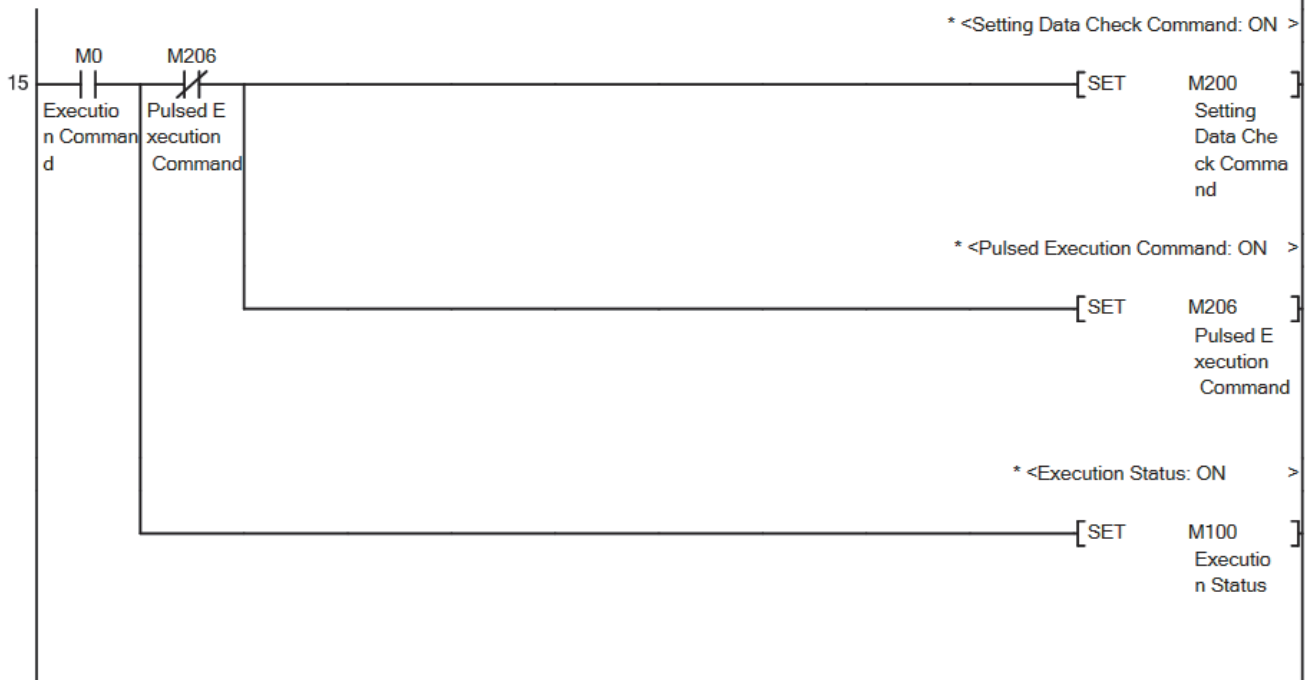
Program

\* Sample Ladder Name: 01\_LD-FX3U\_CPU\_String\_V100A\_E  
\* Function: ASCII Conversion  
\* Version: Ver.1.00A  
\*  
\* Process of Initializing Program  
\*



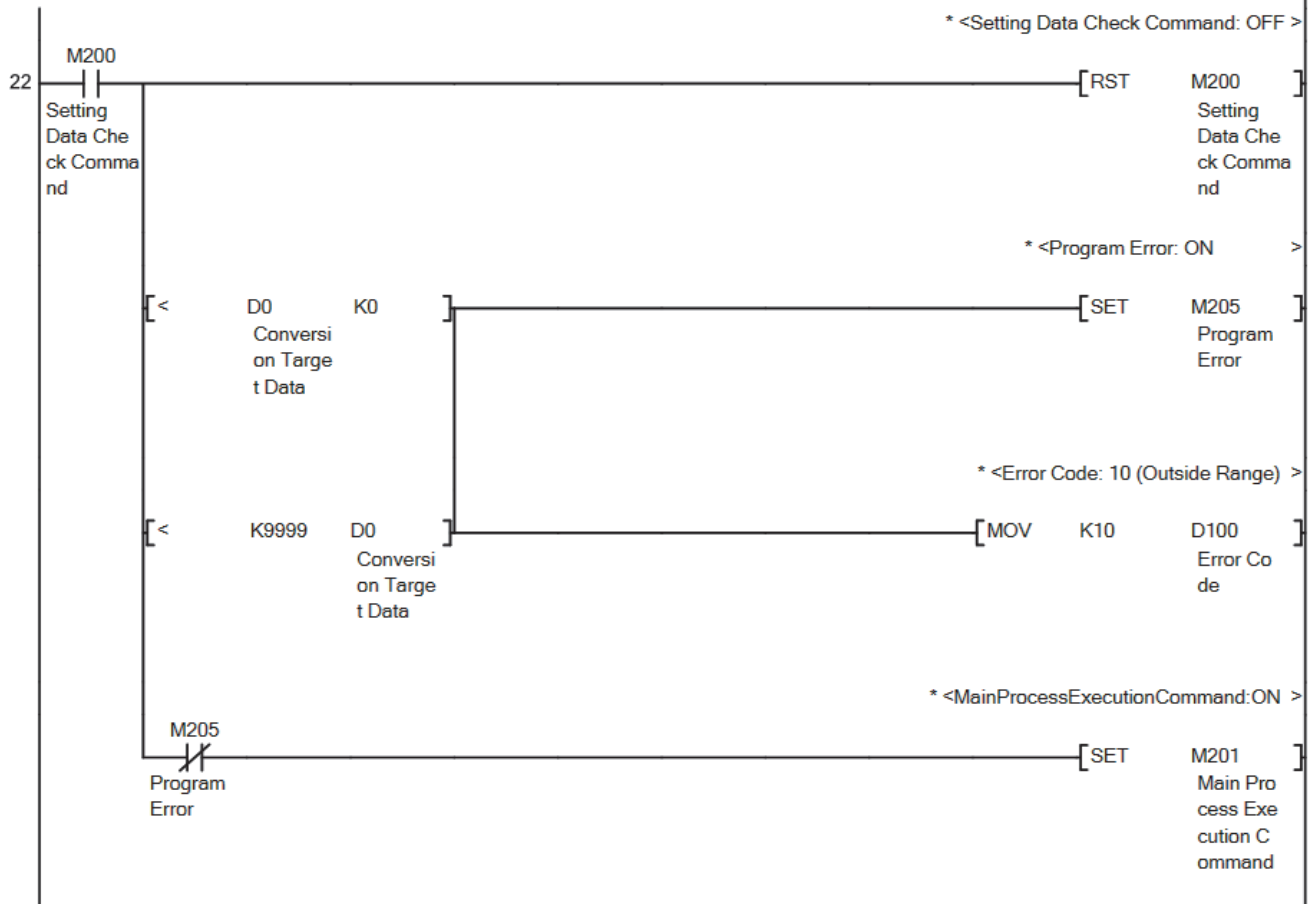


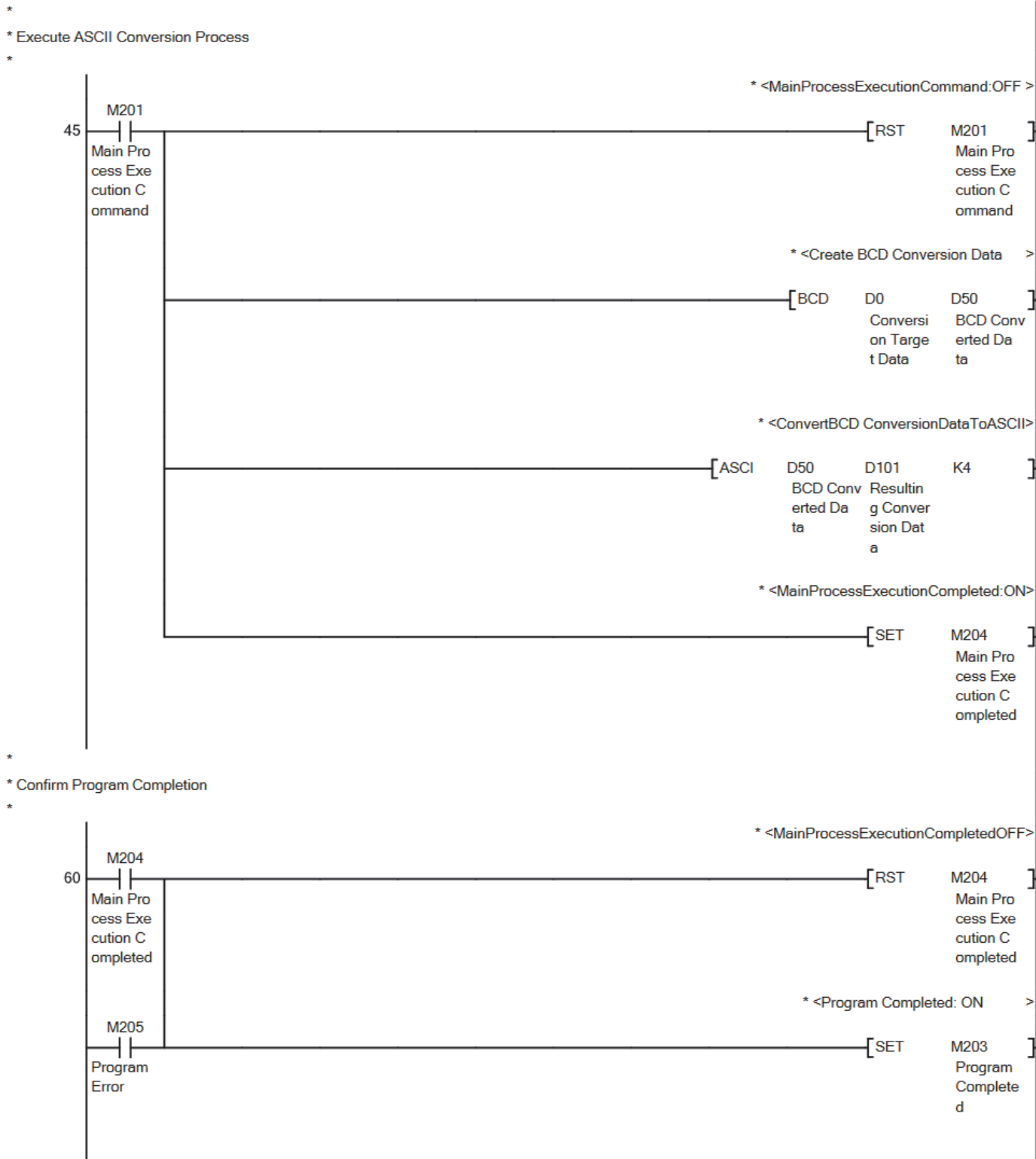
\*  
 \* Process of Executing Program  
 \*





\*  
 \* Process of Checking Preset Data  
 \*  
 \* Confirm Data Range for Conversion  
 \*





\*

\* Process of Program Completion

\*

