Project Name: New project

CONTENTS

BILL OF MATERIAL

Controller

Reference	TM221C16R
Description	TM221C16R (screw) 9 digital inputs, 7 relay outputs (2 A), 2 analog inputs, 1 serial line port, 100-240 Vac power supply with removable terminal blocks.
Power supplied to the IO bus	5V: 325 mA / 24V: 120 mA

HARDWARE CONFIGURATION

MyController - TM221C16R

Digital Inputs

Used	Address	Filtering	Latch	Run/Stop	Events	Priority	Subroutine
	%I0.0	3 ms			Not Used		
	%I0.1	3 ms			Not Used		
	%I0.2	3 ms			Not Used		
	%I0.3	3 ms			Not Used		
	%I0.4	3 ms			Not Used		
	%I0.5	3 ms			Not Used		
	%I0.6	3 ms			Not Used		
	%I0.7	3 ms			Not Used		
	%I0.8	3 ms			Not Used		

Digital Outputs

Used	Address	Status Alarm	Fallback value	Used by
	%Q0.0		0	
	%Q0.1		0	
	%Q0.2		0	
	%Q0.3		0	
	%Q0.4		0	
	%Q0.5		0	
	%Q0.6		0	

Analog Inputs

Used	Address	Type	Scope	Range	Filter	Sampling
	%IW0.0	0 - 10 V	Normal	0-1000	0	
	%IW0.1	0 - 10 V	Normal	0-1000	0	

Fast Counters

Used	Address	Input	Configured	Preset	Double Word
	%FC0	%I0.2	NotUsed	0	
	%FC1	%I0.3	NotUsed	0	
	%FC2	%I0.4	NotUsed	0	
	%FC3	%I0.5	NotUsed	0	

High Speed Counters

Used	Address	Type
	%HSC0	Not Configured
	%HSC1	Not Configured
	%HSC2	Not Configured
	%HSC3	Not Configured

SL1 (Serial line)

Physical Settings

Device:	None
Baud rate:	19200
Parity:	Even
Data bits:	8
Stop bits:	1
Physical medium:	RS-485
Polarization:	No

Protocol Settings

Protocol:	Modbus
Response timeout (× 100 ms):	10
Time between frames (ms):	10
Transmission mode:	RTU
Addressing:	Slave
Address:	1

SOFTWARE CONFIGURATION

Constant Words

KW

Allocation: Automatic

Allocated: 0

Used	Equ Used	Address	Symbol	Value	Comment

KD

Allocation: Automatic

Allocated: 0

Used	Equ Used	Address	Symbol	Value	Comment

KF

Allocation: Automatic

Allocated: 0

Used	Equ Used	Address	Symbol	Value	Comment

Network Objects

Input Assembly (Ethernet/Ip)

Used	Address	Symbol	Fallback value	Comment

Output Assembly (Ethernet/Ip)

Used	Address	Symbol	Comment

Input Registers (Modbus Tcp)

Used	Address	Symbol	Fallback value	Comment

Output Registers (Modbus Tcp)

Used	Address	Symbol	Comment

Digital inputs (IOScanner)

Used	Address	Channel	Symbol	Comment

Digital outputs (IOScanner)

Used	Address	Channel	Fallback value	Symbol	Comment

Input registers (IOScanner)

Used	Address	Channel	Symbol	Comment

Output registers (IOScanner)

Used	Address	Channel	Fallback value	Symbol	Comment

Software Objects

Timers

Allocation: Automatic

Allocated: 50

Used	Address	Symbol	Type	Retentive	Dynamic Preset	Time Base	Preset	Comment
X	%TM0	TIMER_1	TON			1 s	3	
X	%TM1	TIMER_2	TON			1 s	3	
X	%TM2	TIMER_3	TON			1 s	3	
X	%TM3	TIMER_4	TON			1 s	3	
X	%TM4	TIMER_5	TON			1 s	3	
X	%TM5	TIMER_6	TON			1 s	3	
X	%TM6	TIMER_7	TON			1 s	10	
X	%TM7	TIMER_8	TON			1 s	10	
X	%TM8		TON			100 ms	1	
X	%TM9		TON			100 ms	1	
X	%TM10		TON			1 s	1	
X	%TM11		TON			1 s	1	
X	%TM12		TON			1 s	1	
X	%TM13		TON			1 s	1	
X	%TM14		TON			1 s	1	
X	%TM15		TON			1 s	1	
X	%TM16		TON			1 s	1	
X	%TM17		TON			1 s	1	
X	%TM18		TON			1 s	1	
X	%TM19		TON			1 s	1	
X	%TM20		TON			1 s	1	
X	%TM21		TON			1 s	1	
X	%TM22		TON			1 s	1	
X	%TM23		TON			100 ms	1	
X	%TM24		TON			1 s	10	
X	%TM25		TON			1 s	1	
X	%TM26		TON			1 s	1	
X	%TM27		TON			1 s	1	
X	%TM28		TON			1 s	1	

Used	Address	Symbol	Type	Retentive	Dynamic Preset	Time Base	Preset	Comment
X	%TM29		TON			1 s	1	
X	%TM30		TON			1 s	1	
X	%TM31		TON			1 s	1	
X	%TM32		TON			1 s	1	
X	%TM33		TON			100 ms	1	
X	%TM34		TON			1 s	10	
X	%TM35		TON			100 ms	1	
X	%TM36		TON			1 s	10	
X	%TM37		TON			1 s	1	
X	%TM38		TON			1 s	1	
X	%TM39		TON			1 s	1	
X	%TM40		TON			1 s	1	
X	%TM41		TON			1 s	1	
X	%TM42		TON			1 s	1	
X	%TM43		TON			1 s	1	
X	%TM44		TON			1 s	1	
X	%TM45		TON			100 ms	1	
X	%TM46		TON			1 s	10	
X	%TM47		TON			100 ms	20	
X	%TM48		TON			1 s	1	
X	%TM49		TON			1 s	2	

Counters

Allocation: Automatic

Allocated: 0

LIFO/FIFO Registers

Allocation: Automatic

Allocated: 0

Drums

Allocation: Automatic

Allocated: 0

Shift Bit Registers

Allocation: Automatic

Allocated: 0

Step Counters

Allocation: Automatic

Allocated: 0

Schedule Blocks

Allocation: Automatic

Allocated: 0

RTC

PID

Used	PID	Symbol	Type	Comment

Grafcet Steps

Allocation: Automatic

Allocated: 0

PROGRAM

Behavior

Functional level:	Level 12.0
Starting mode:	Start In Previous State
Watchdog:	250 ms
Fallback behavior:	Fallback value
String end character:	CR (Carriage Return)

Memory consumption

A successful compilation is required to obtain memory information.

Application Architecture

Master Task

Scan mode:	Normal
POU list:	1 - Production
	2 - Assembler
	3 - Sorting

Periodic Task

Period:	255 ms

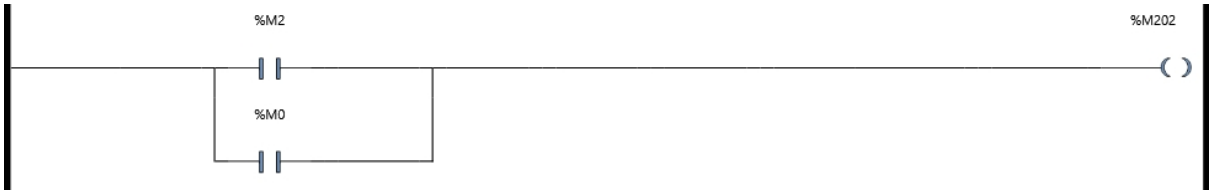
POU

Master Task

1 - Production

Master Task

Rung0



Variables used:

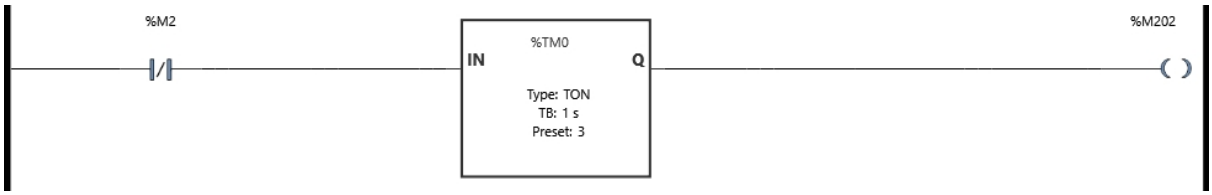
%M0	RUNNING
%M2	RETRO_1
%M202	CONV_2_13

Rung1

Variables used:

%M0	RUNNING
%M200	CONV_2_14
%M201	MC_START_1
%M202	CONV_2_13

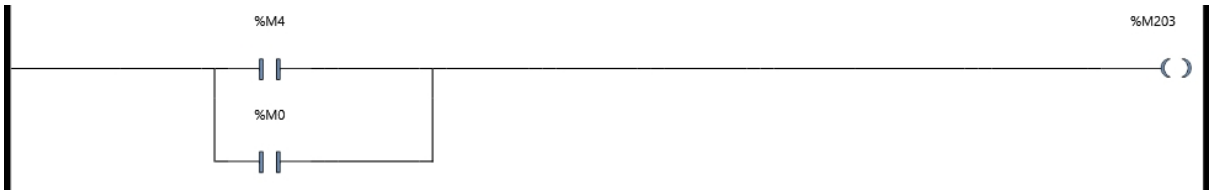
Rung2



Variables used:

%M2	RETRO_1
%M202	CONV_2_13
%TM0	TIMER_1

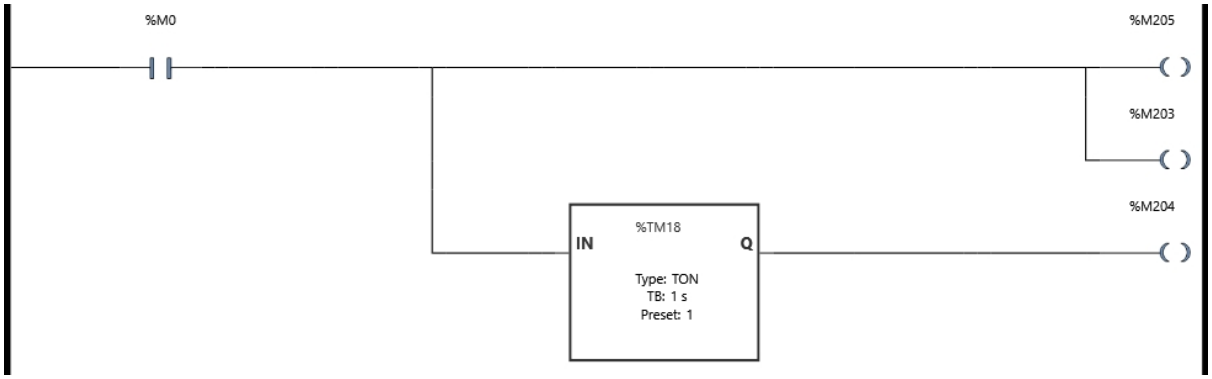
Rung3



Variables used:

%M0	RUNNING
%M4	RETRO_2
%M203	CONV_2_16

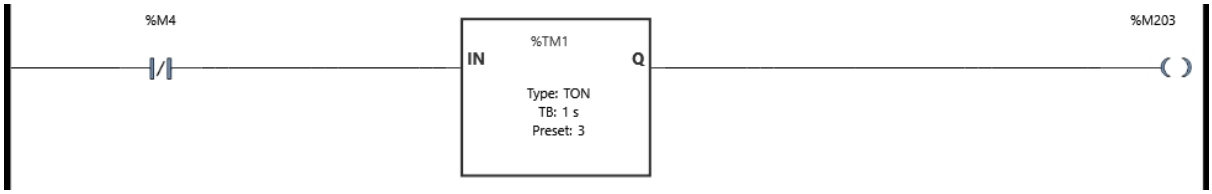
Rung4



Variables used:

%M0	RUNNING
%M203	CONV_2_16
%M204	MC_START_2
%M205	CONV_2_15
%TM18	

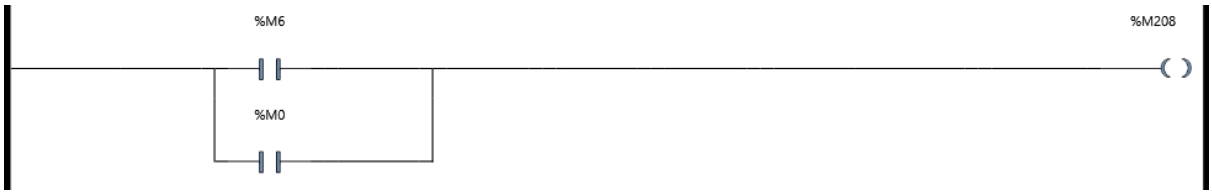
Rung5



Variables used:

%M4	RETRO_2
%M203	CONV_2_16
%TM1	TIMER_2

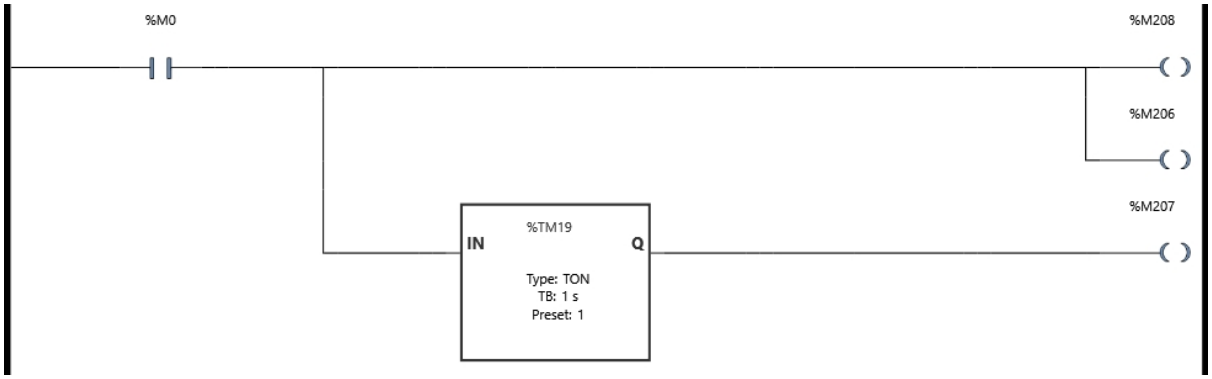
Rung6



Variables used:

%M0	RUNNING
%M6	RETRO_5
%M208	CONV_2_5

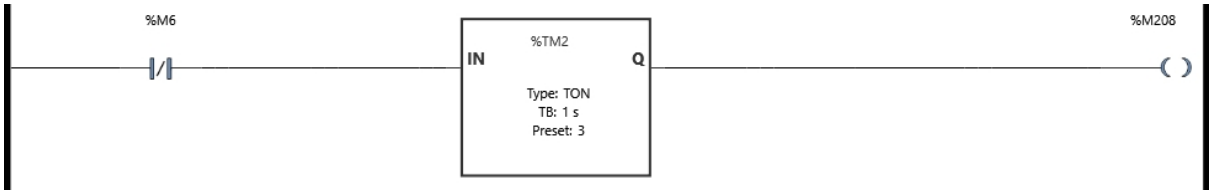
Rung7



Variables used:

%M0	RUNNING
%M206	CONV_2_6
%M207	MC_START_3
%M208	CONV_2_5
%TM19	

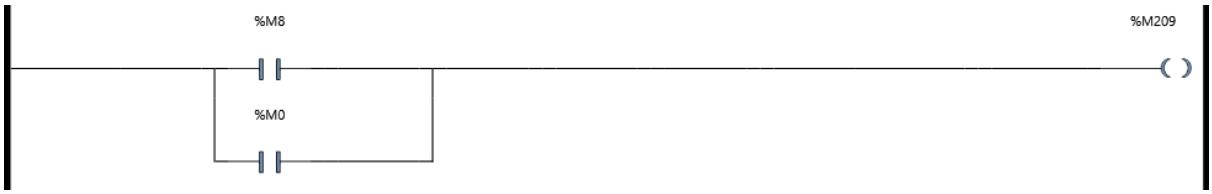
Rung8



Variables used:

%M6	RETRO_5
%M208	CONV_2_5
%TM2	TIMER_3

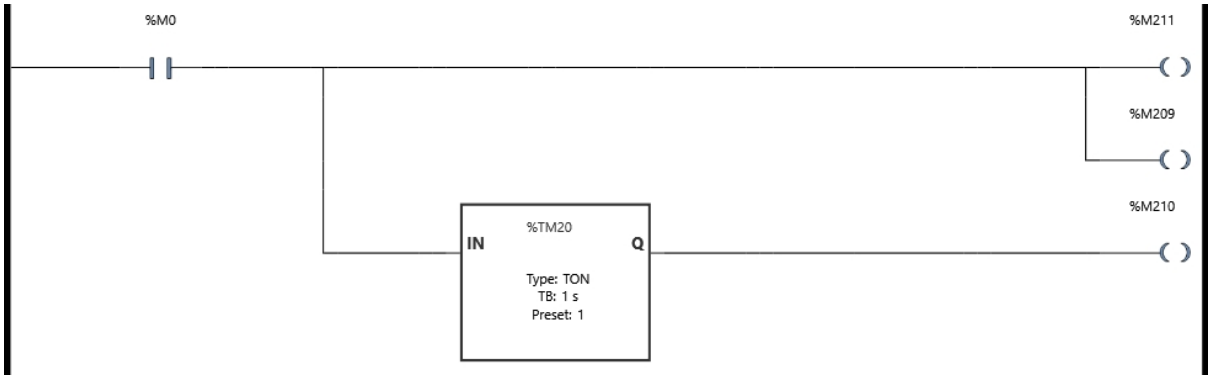
Rung9



Variables used:

%M0	RUNNING
%M8	RETRO_6
%M209	CONV_2_8

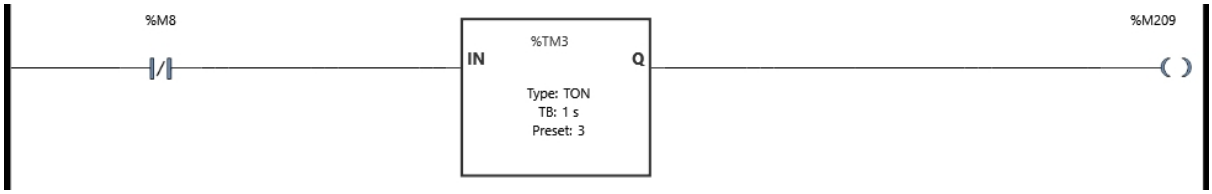
Rung10



Variables used:

%M0	RUNNING
%M209	CONV_2_8
%M210	MC_START_4
%M211	CONV_2_7
%TM20	

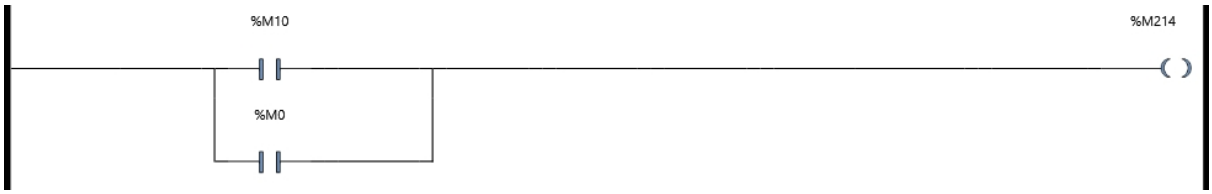
Rung11



Variables used:

%M8	RETRO_6
%M209	CONV_2_8
%TM3	TIMER_4

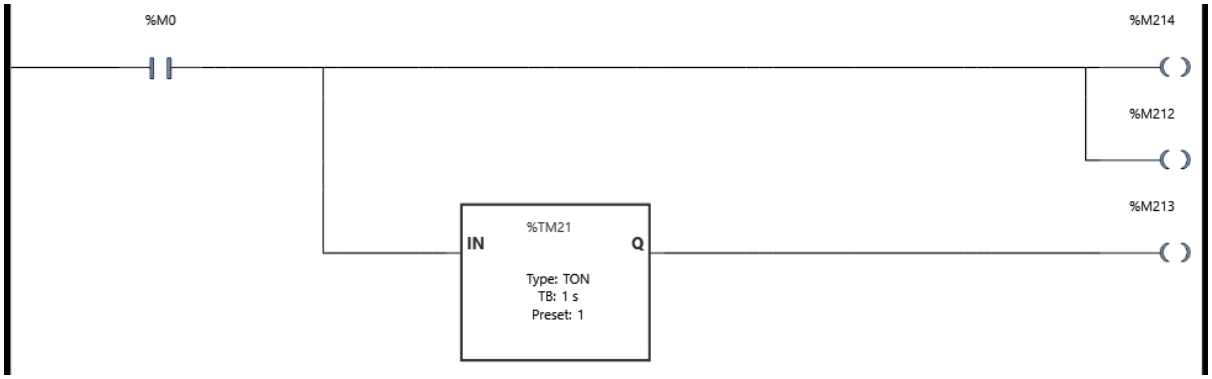
Rung12



Variables used:

%M0	RUNNING
%M10	RETRO_9
%M214	CONV_2_23

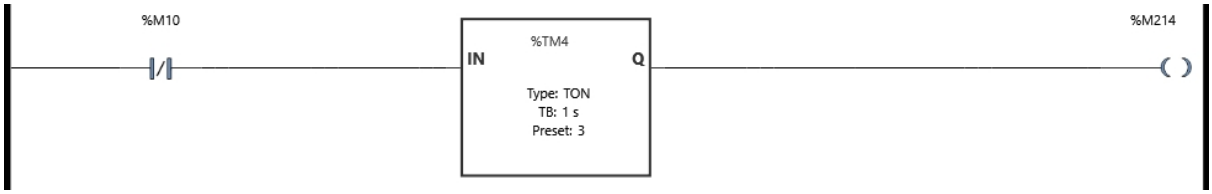
Rung13



Variables used:

%M0	RUNNING
%M212	CONV_2_24
%M213	MC_START_5
%M214	CONV_2_23
%TM21	

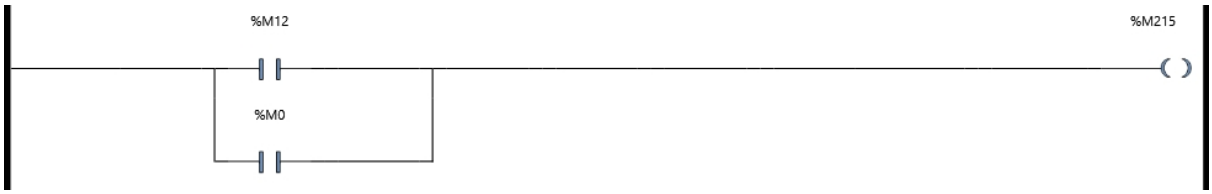
Rung14



Variables used:

%M10	RETRO_9
%M214	CONV_2_23
%TM4	TIMER_5

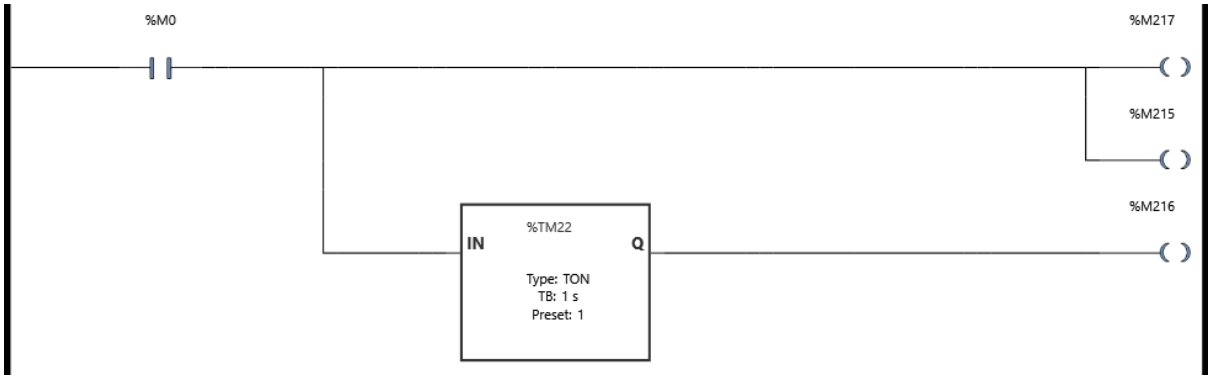
Rung15



Variables used:

%M0	RUNNING
%M12	RETRO_10
%M215	CONV_2_26

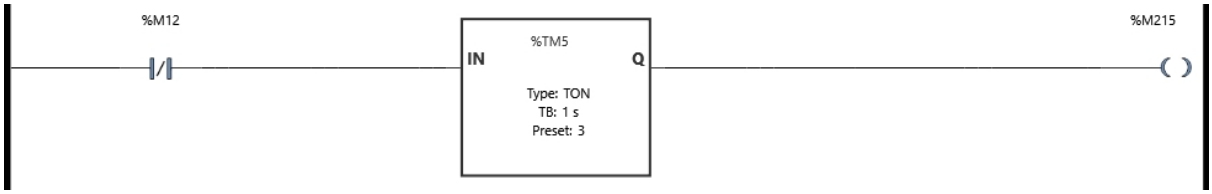
Rung16



Variables used:

%M0	RUNNING
%M215	CONV_2_26
%M216	MC_START_6
%M217	CONV_2_25
%TM22	

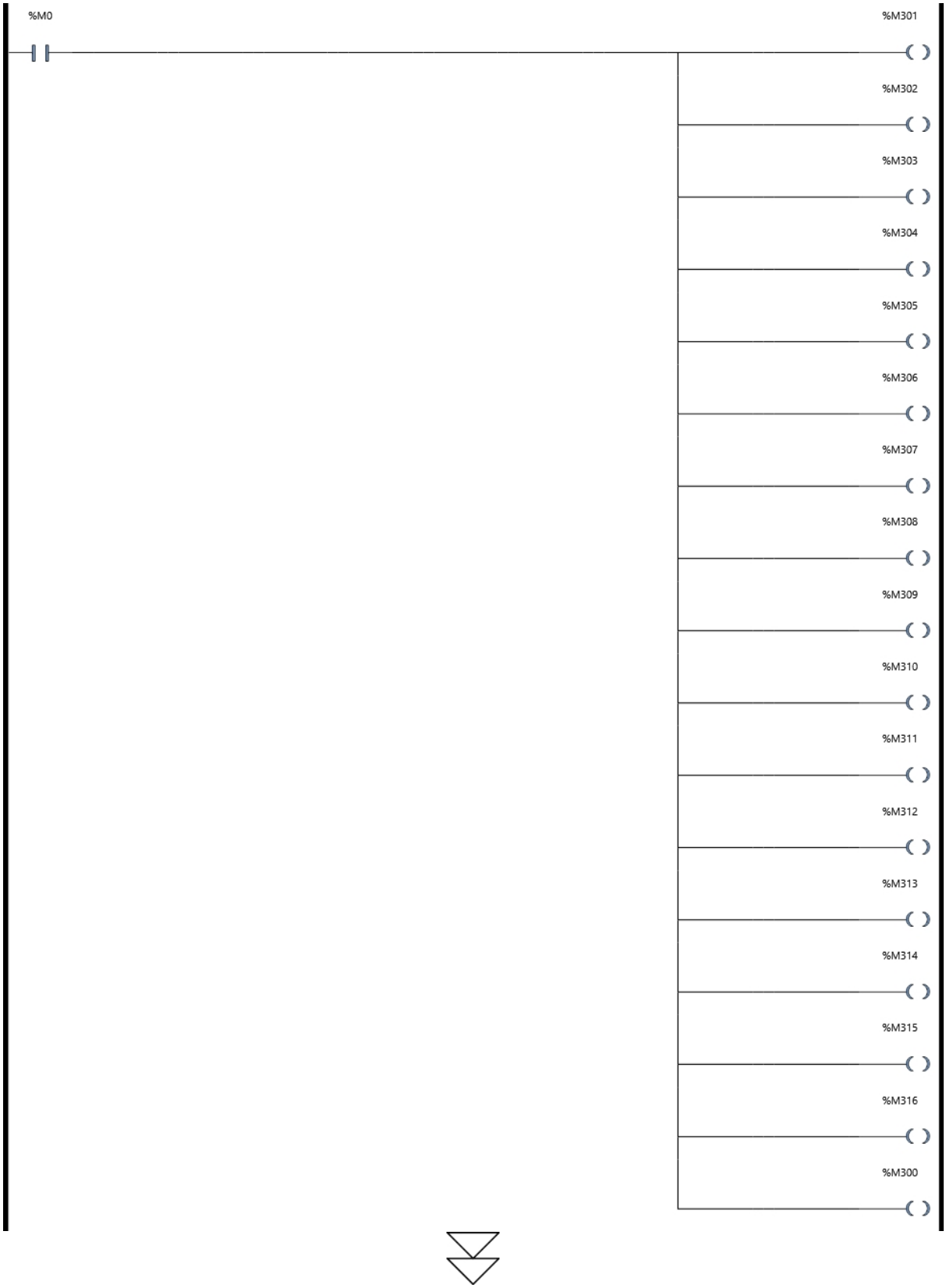
Rung17



Variables used:

%M12	RETRO_10
%M215	CONV_2_26
%TM5	TIMER_6

Rung18


%M0
%M301
%M302
%M303
%M304
%M305
%M306
%M307
%M308
%M309
%M310
%M311
%M312
%M313
%M314
%M315
%M316
%M300

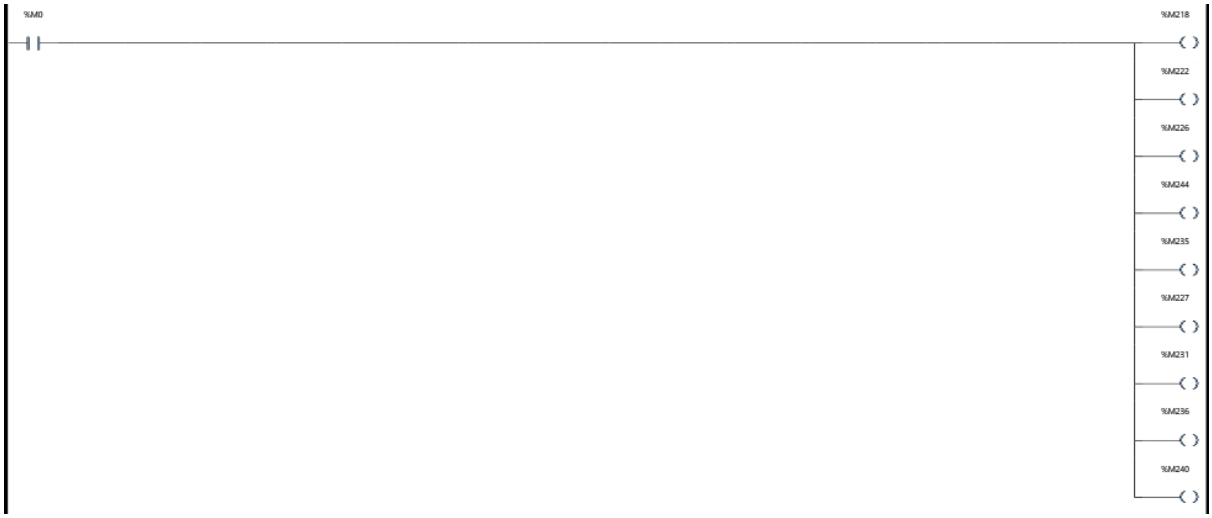
Variables used:

%M0	RUNNING
%M300	CONV_4_1
%M301	CONV_4_2
%M302	CONV_4_3
%M303	CONV_4_4
%M304	CONV_4_5
%M305	CONV_4_6
%M306	CONV_4_7
%M307	CONV_4_8
%M308	CONV_4_9
%M309	CONV_6_1
%M310	CONV_6_2
%M311	CONV_6_3
%M312	CONV_6_4
%M313	CONV_6_5
%M314	CONV_2_17
%M315	CONV_2_18
%M316	CONV_2_27

2 - Assembler

Master Task

Rung0



Variables used:

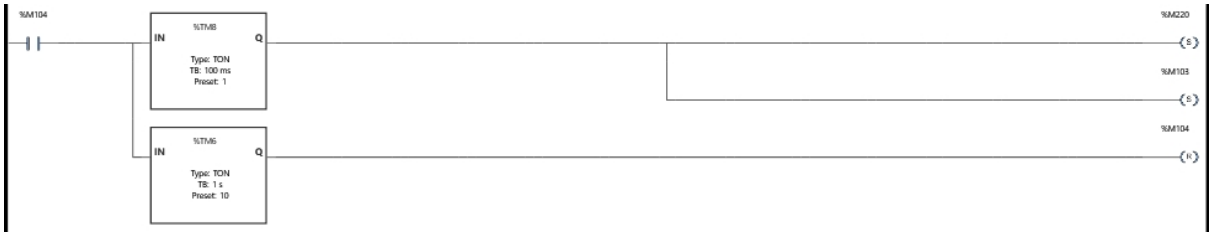
%M0	RUNNING
%M218	CONV_2_9
%M222	CONV_2_11
%M226	CONV_2_10
%M227	CONV_2_1
%M231	CONV_2_3
%M235	CONV_2_2
%M236	CONV_2_19
%M240	CONV_2_21
%M244	CONV_2_20

Rung1

Variables used:

%M13	DIFFUSE_1
%M104	MEMORI_3

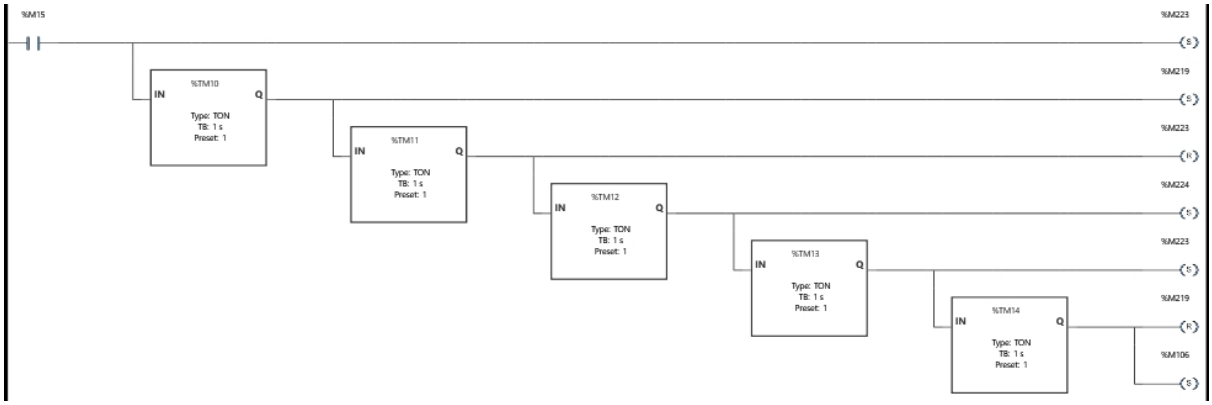
Rung2



Variables used:

%M103	MEMORI_2
%M104	MEMORI_3
%M220	RIGHT_POS_1
%TM6	TIMER_7
%TM8	

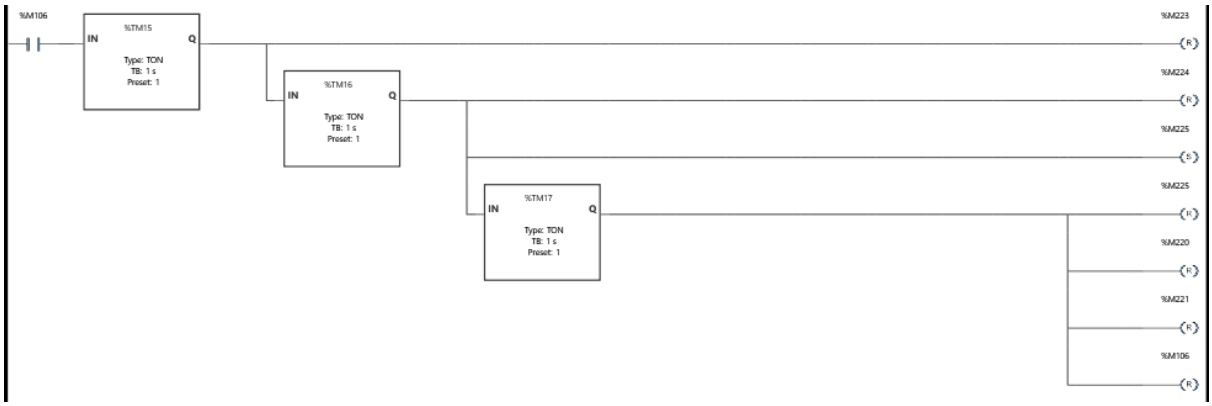
Rung3



Variables used:

%M15	CLAMPED_1
%M106	MEMORI_5
%M219	GRAB_3
%M223	MOVE_Z_3
%M224	MOVE_X_3
%TM10	
%TM11	
%TM12	
%TM13	
%TM14	

Rung4



Variables used:

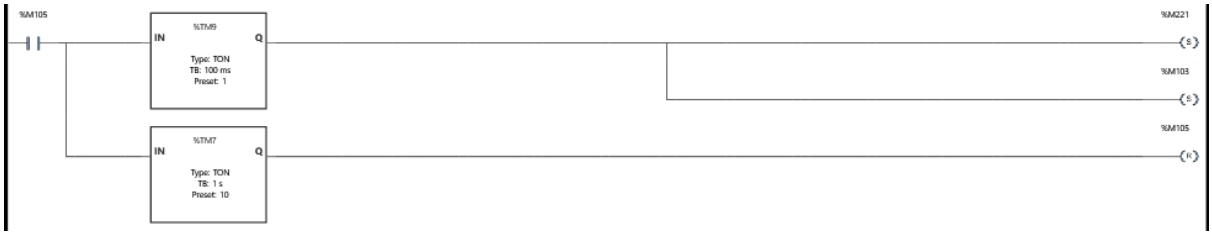
%M106	MEMORI_5
%M220	RIGHT_POS_1
%M221	RIGHT_POS_2
%M223	MOVE_Z_3
%M224	MOVE_X_3
%M225	RAISE_2
%TM15	
%TM16	
%TM17	

Rung5

Variables used:

%M14	DIFFUSE_3
%M105	MEMORI_4

Rung6



Variables used:

%M103	MEMORI_2
%M105	MEMORI_4
%M221	RIGHT_POS_2
%TM7	TIMER_8
%TM9	

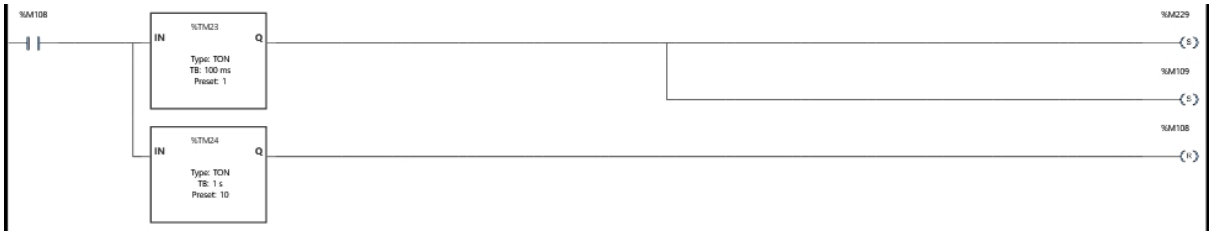
Rung7

Variables used:

%M16 DIFFUSE_2

%M108 MEMORI_7

Rung8



Variables used:

%M108 MEMORI_7

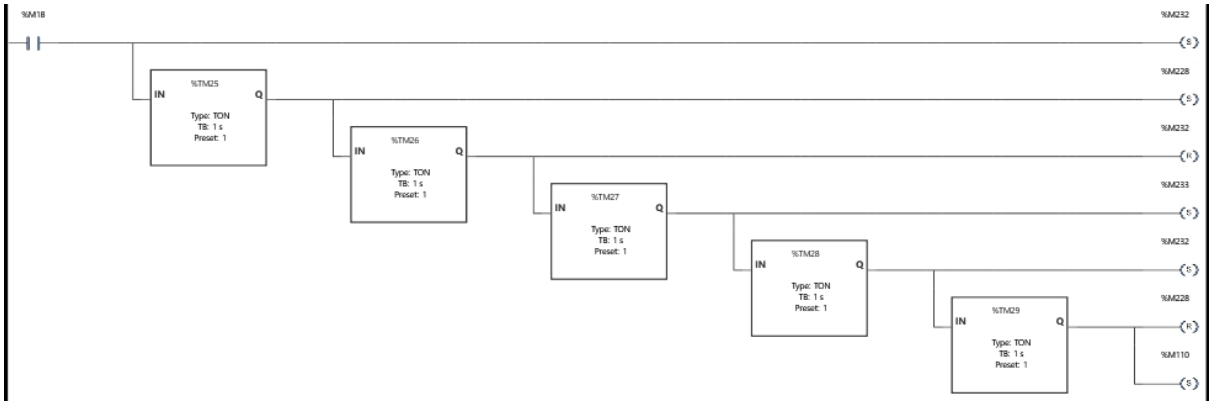
%M109 MEMORI_8

%M229 RIGHT_POS_3

%TM23

%TM24

Rung9



Variables used:

%M18 CLAMPED_3

%M110 MEMORI_9

%M228 GRAB_1

%M232 MOVE_Z_1

%M233 MOVE_X_1

%TM25

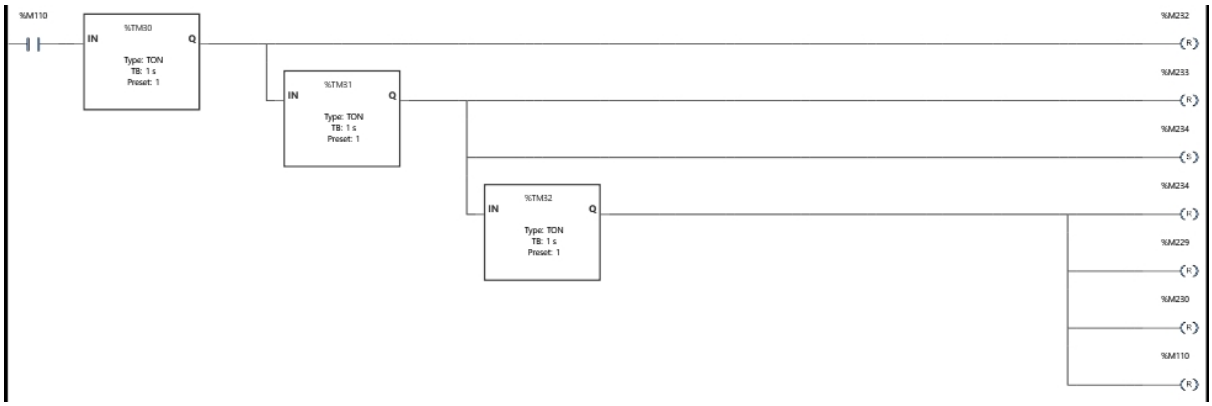
%TM26

%TM27

%TM28

%TM29

Rung10



Variables used:

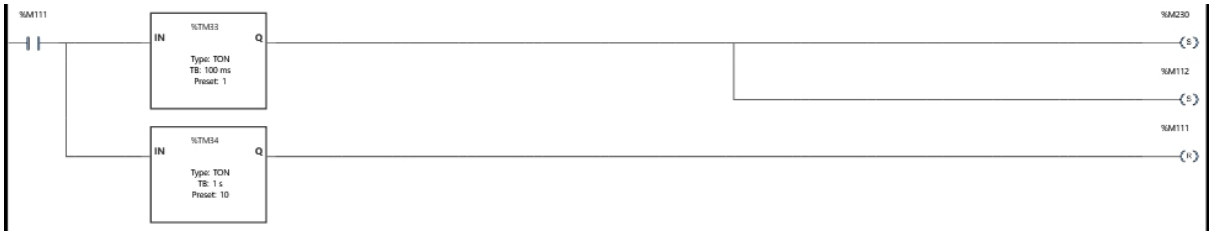
%M110	MEMORI_9
%M229	RIGHT_POS_3
%M230	RIGHT_POS_4
%M232	MOVE_Z_1
%M233	MOVE_X_1
%M234	RAISE_4
%TM30	
%TM31	
%TM32	

Rung11

Variables used:

%M17	DIFFUSE_4
%M111	MEMORI_10

Rung12



Variables used:

%M111	MEMORI_10
%M112	MEMORI_11
%M230	RIGHT_POS_4
%TM33	
%TM34	

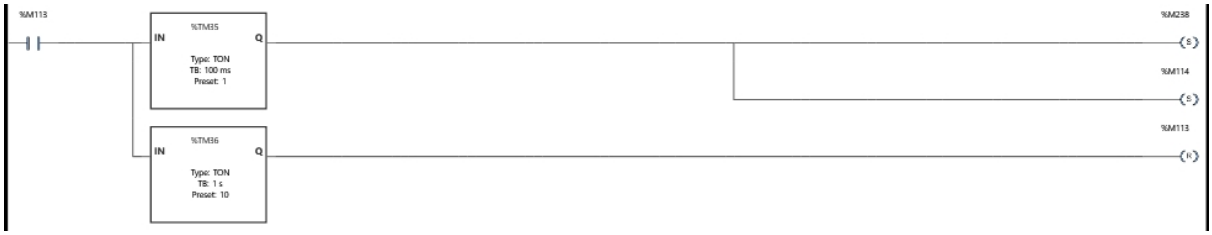
Rung13

Variables used:

%M19 DIFFUSE_5

%M113 MEMORI_12

Rung14



Variables used:

%M113 MEMORI_12

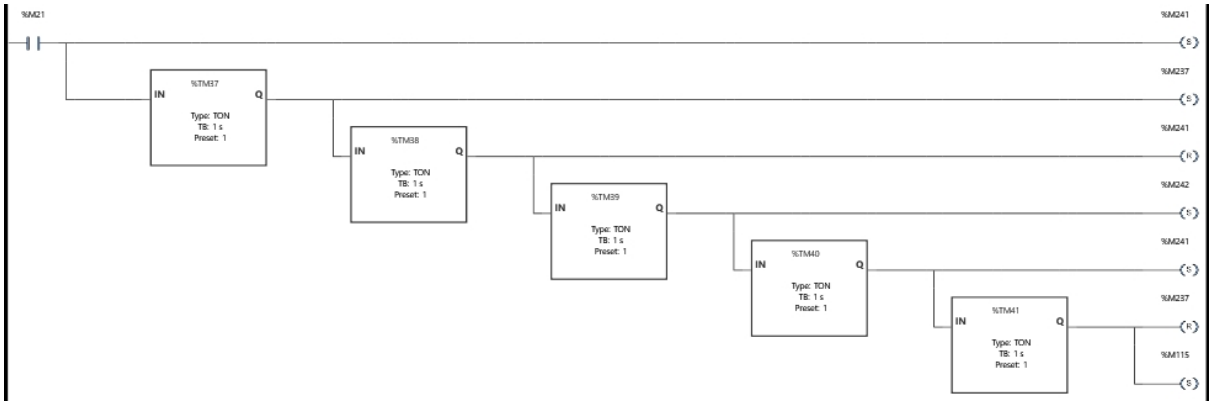
%M114 MEMORI_13

%M238 RIGHT_POS_5

%TM35

%TM36

Rung15



Variables used:

%M21 CLAMPED_5

%M115 MEMORI_14

%M237 GRAB_2

%M241 MOVE_Z_2

%M242 MOVE_X_2

%TM37

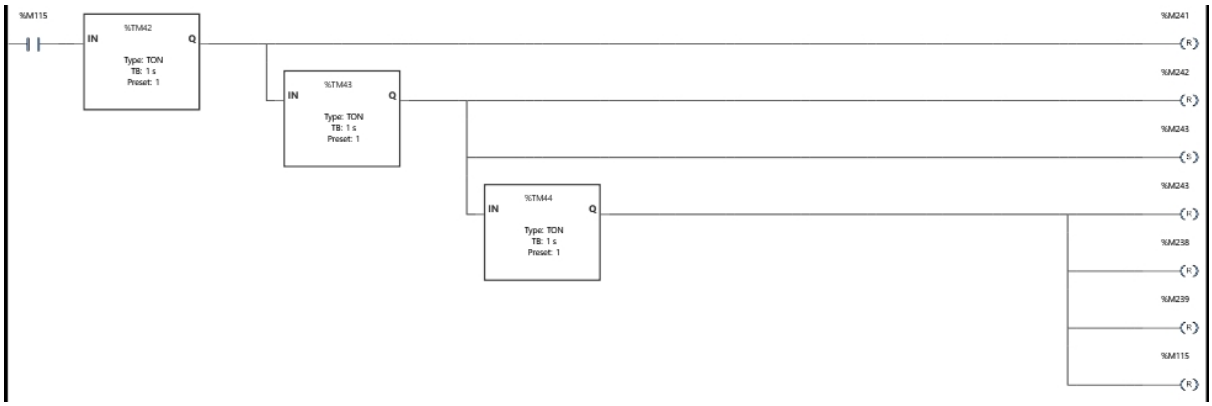
%TM38

%TM39

%TM40

%TM41

Rung16



Variables used:

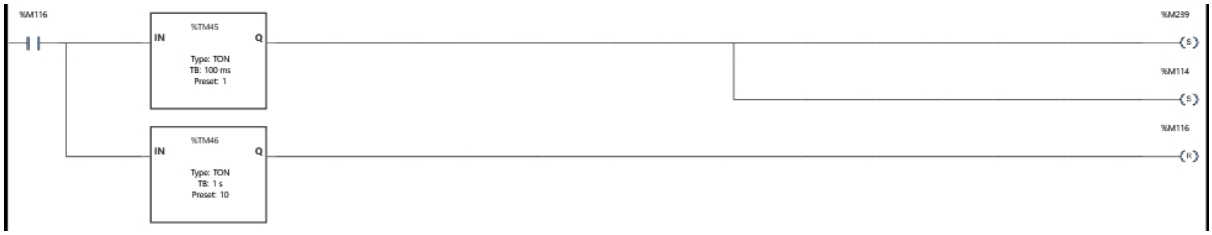
%M115	MEMORI_14
%M238	RIGHT_POS_5
%M239	RIGHT_POS_6
%M241	MOVE_Z_2
%M242	MOVE_X_2
%M243	RAISE_6
%TM42	
%TM43	
%TM44	

Rung17

Variables used:

%M20	DIFFUSE_6
%M116	MEMORI_15

Rung18



Variables used:

%M114	MEMORI_13
%M116	MEMORI_15
%M239	RIGHT_POS_6
%TM45	
%TM46	

3 - Sorting

Master Task

Rung0

Variables used:

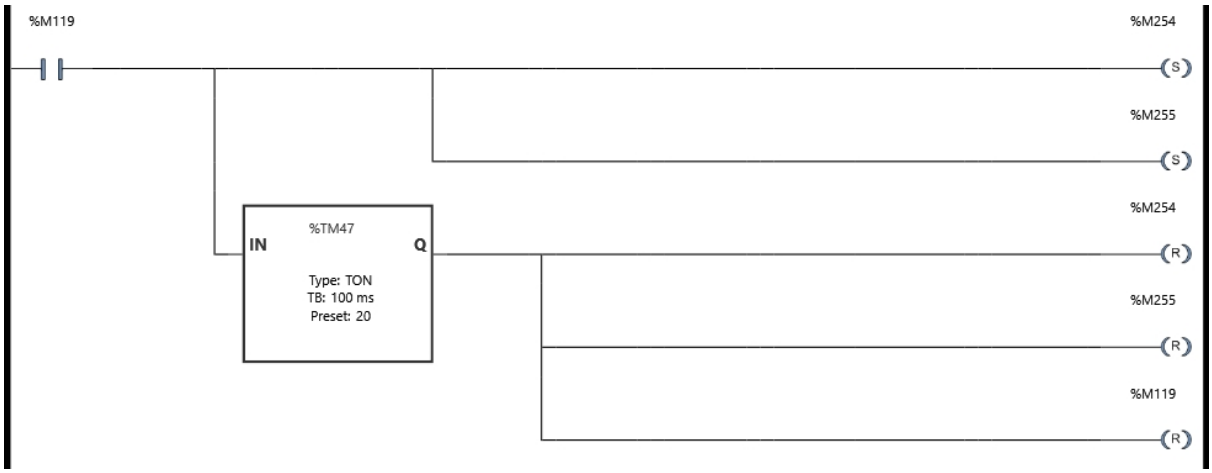
%M0	RUNNING
%M251	CONV_4_10
%M252	CONV_4_11
%M253	CONV_4_12

Rung1

Variables used:

%M22	VISION_BLUE
%M119	MEMORI_BLUE

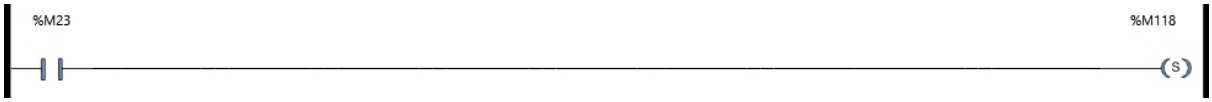
Rung2



Variables used:

%M119	MEMORI_BLUE
%M254	PIVOT_TURN_1
%M255	PIVOT_BELT_1
%TM47	

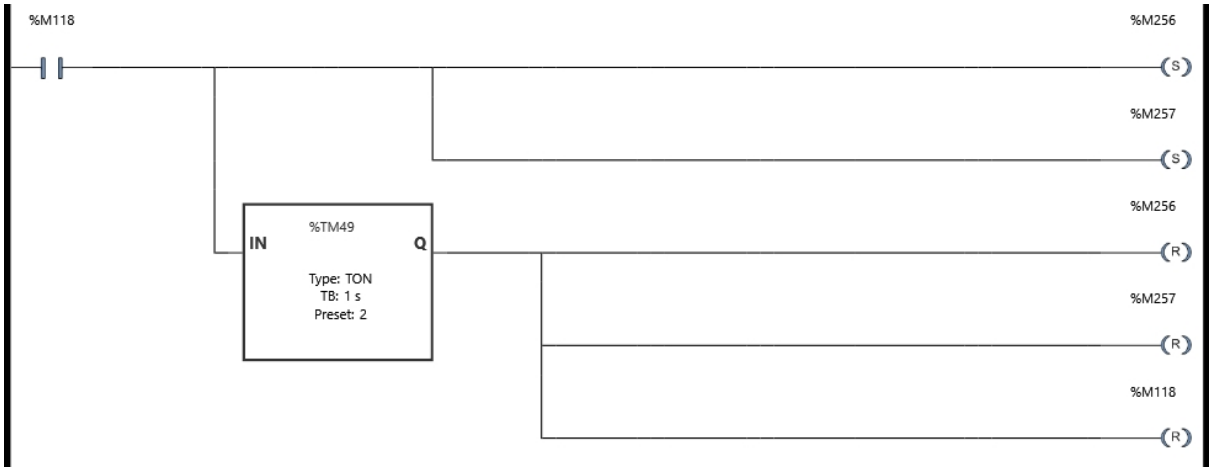
Rung3



Variables used:

%M23	VISION_GREEN
%M118	MEMORI_GREEN

Rung4



Variables used:

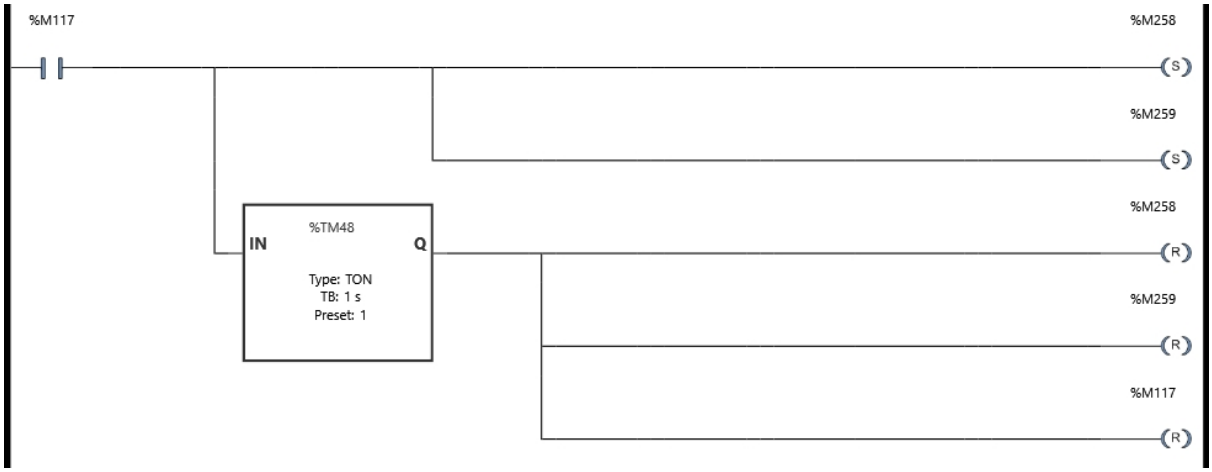
%M118	MEMORI_GREEN
%M256	PIVOT_TURN_2
%M257	PIVOT_BELT_2
%TM49	

Rung5

Variables used:

%M24	VISION_METAL
%M117	MEMORI_METAL

Rung6



Variables used:

%M117	MEMORI_METAL
%M258	PIVOT_TURN_3
%M259	PIVOT_BELT_3
%TM48	

SYMBOLS

Used	Address	Symbol	Comment
X	%M0	RUNNING	
X	%M2	RETRO_1	
X	%M4	RETRO_2	
X	%M6	RETRO_5	
X	%M8	RETRO_6	
X	%M10	RETRO_9	
X	%M12	RETRO_10	
X	%M13	DIFFUSE_1	
X	%M14	DIFFUSE_3	
X	%M15	CLAMPED_1	
X	%M16	DIFFUSE_2	
X	%M17	DIFFUSE_4	
X	%M18	CLAMPED_3	
X	%M19	DIFFUSE_5	
X	%M20	DIFFUSE_6	
X	%M21	CLAMPED_5	
X	%M22	VISION_BLUE	
X	%M23	VISION_GREEN	
X	%M24	VISION_METAL	
X	%M103	MEMORI_2	
X	%M104	MEMORI_3	
X	%M105	MEMORI_4	
X	%M106	MEMORI_5	
X	%M108	MEMORI_7	
X	%M109	MEMORI_8	
X	%M110	MEMORI_9	
X	%M111	MEMORI_10	
X	%M112	MEMORI_11	
X	%M113	MEMORI_12	
X	%M114	MEMORI_13	
X	%M115	MEMORI_14	

Used	Address	Symbol	Comment
X	%M116	MEMORI_15	
X	%M117	MEMORI_METAL	
X	%M118	MEMORI_GREEN	
X	%M119	MEMORI_BLUE	
X	%M200	CONV_2_14	
X	%M201	MC_START_1	
X	%M202	CONV_2_13	
X	%M203	CONV_2_16	
X	%M204	MC_START_2	
X	%M205	CONV_2_15	
X	%M206	CONV_2_6	
X	%M207	MC_START_3	
X	%M208	CONV_2_5	
X	%M209	CONV_2_8	
X	%M210	MC_START_4	
X	%M211	CONV_2_7	
X	%M212	CONV_2_24	
X	%M213	MC_START_5	
X	%M214	CONV_2_23	
X	%M215	CONV_2_26	
X	%M216	MC_START_6	
X	%M217	CONV_2_25	
X	%M218	CONV_2_9	
X	%M219	GRAB_3	
X	%M220	RIGHT_POS_1	
X	%M221	RIGHT_POS_2	
X	%M222	CONV_2_11	
X	%M223	MOVE_Z_3	
X	%M224	MOVE_X_3	
X	%M225	RAISE_2	
X	%M226	CONV_2_10	
X	%M227	CONV_2_1	
X	%M228	GRAB_1	
X	%M229	RIGHT_POS_3	

Used	Address	Symbol	Comment
X	%M230	RIGHT_POS_4	
X	%M231	CONV_2_3	
X	%M232	MOVE_Z_1	
X	%M233	MOVE_X_1	
X	%M234	RAISE_4	
X	%M235	CONV_2_2	
X	%M236	CONV_2_19	
X	%M237	GRAB_2	
X	%M238	RIGHT_POS_5	
X	%M239	RIGHT_POS_6	
X	%M240	CONV_2_21	
X	%M241	MOVE_Z_2	
X	%M242	MOVE_X_2	
X	%M243	RAISE_6	
X	%M244	CONV_2_20	
X	%M251	CONV_4_10	
X	%M252	CONV_4_11	
X	%M253	CONV_4_12	
X	%M254	PIVOT_TURN_1	
X	%M255	PIVOT_BELT_1	
X	%M256	PIVOT_TURN_2	
X	%M257	PIVOT_BELT_2	
X	%M258	PIVOT_TURN_3	
X	%M259	PIVOT_BELT_3	
X	%M300	CONV_4_1	
X	%M301	CONV_4_2	
X	%M302	CONV_4_3	
X	%M303	CONV_4_4	
X	%M304	CONV_4_5	
X	%M305	CONV_4_6	
X	%M306	CONV_4_7	
X	%M307	CONV_4_8	
X	%M308	CONV_4_9	
X	%M309	CONV_6_1	

Used	Address	Symbol	Comment
X	%M310	CONV_6_2	
X	%M311	CONV_6_3	
X	%M312	CONV_6_4	
X	%M313	CONV_6_5	
X	%M314	CONV_2_17	
X	%M315	CONV_2_18	
X	%M316	CONV_2_27	
X	%TM0	TIMER_1	
X	%TM1	TIMER_2	
X	%TM2	TIMER_3	
X	%TM3	TIMER_4	
X	%TM4	TIMER_5	
X	%TM5	TIMER_6	
X	%TM6	TIMER_7	
X	%TM7	TIMER_8	

CROSS-REFERENCE TABLE

Address	Object	Rung	Code
%M0.....	1 - Production	Rung0	--| |--
		Rung1	--| |--
		Rung3	--| |--
		Rung4	--| |--
		Rung6	--| |--
		Rung7	--| |--
		Rung9	--| |--
		Rung10	--| |--
		Rung12	--| |--
		Rung13	--| |--
		Rung15	--| |--
		Rung16	--| |--
		Rung18	--| |--
	2 - Assembler	Rung0	--| |--
	3 - Sorting	Rung0	--| |--
%M2.....	1 - Production	Rung0	--| |--
		Rung2	--|/|--
%M4.....	1 - Production	Rung3	--| |--
		Rung5	--|/|--
%M6.....	1 - Production	Rung6	--| |--
		Rung8	--|/|--
%M8.....	1 - Production	Rung9	--| |--
		Rung11	--|/|--
%M10.....	1 - Production	Rung12	--| |--
		Rung14	--|/|--
%M12.....	1 - Production	Rung15	--| |--
		Rung17	--|/|--
%M13.....	2 - Assembler	Rung1	--| |--
%M14.....	2 - Assembler	Rung5	--| |--
%M15.....	2 - Assembler	Rung3	--| |--
%M16.....	2 - Assembler	Rung7	--| |--

Address	Object	Rung	Code
%M17.....	2 - Assembler	Rung11	--| |--
%M18.....	2 - Assembler	Rung9	--| |--
%M19.....	2 - Assembler	Rung13	--| |--
%M20.....	2 - Assembler	Rung17	--| |--
%M21.....	2 - Assembler	Rung15	--| |--
%M22.....	3 - Sorting	Rung1	--| |--
%M23.....	3 - Sorting	Rung3	--| |--
%M24.....	3 - Sorting	Rung5	--| |--
%M103....	2 - Assembler	Rung2	--(S)--
		Rung6	--(S)--
%M104....	2 - Assembler	Rung1	--(S)--
		Rung2	--| |--
			--(R)--
%M105....	2 - Assembler	Rung5	--(S)--
		Rung6	--| |--
			--(R)--
%M106....	2 - Assembler	Rung3	--(S)--
		Rung4	--| |--
			--(R)--
%M108....	2 - Assembler	Rung7	--(S)--
		Rung8	--| |--
			--(R)--
%M109....	2 - Assembler	Rung8	--(S)--
%M110....	2 - Assembler	Rung9	--(S)--
		Rung10	--| |--
			--(R)--
%M111....	2 - Assembler	Rung11	--(S)--
		Rung12	--| |--
			--(R)--
%M112....	2 - Assembler	Rung12	--(S)--
%M113....	2 - Assembler	Rung13	--(S)--
		Rung14	--| |--
			--(R)--
%M114....	2 - Assembler	Rung14	--(S)--

Address	Object	Rung	Code
		Rung18	--(S)--
%M115....	2 - Assembler	Rung15	--(S)--
		Rung16	--| |--
			--(R)--
%M116....	2 - Assembler	Rung17	--(S)--
		Rung18	--| |--
			--(R)--
%M117....	3 - Sorting	Rung5	--(S)--
		Rung6	--| |--
			--(R)--
%M118....	3 - Sorting	Rung3	--(S)--
		Rung4	--| |--
			--(R)--
%M119....	3 - Sorting	Rung1	--(S)--
		Rung2	--| |--
			--(R)--
%M200....	1 - Production	Rung1	--( )--
%M201....	1 - Production	Rung1	--( )--
%M202....	1 - Production	Rung0	--( )--
		Rung1	--( )--
		Rung2	--( )--
%M203....	1 - Production	Rung3	--( )--
		Rung4	--( )--
		Rung5	--( )--
%M204....	1 - Production	Rung4	--( )--
%M205....	1 - Production	Rung4	--( )--
%M206....	1 - Production	Rung7	--( )--
%M207....	1 - Production	Rung7	--( )--
%M208....	1 - Production	Rung6	--( )--
		Rung7	--( )--
		Rung8	--( )--
%M209....	1 - Production	Rung9	--( )--
		Rung10	--( )--
		Rung11	--( )--

Address	Object	Rung	Code
%M210....	1 - Production	Rung10	--( )--
%M211....	1 - Production	Rung10	--( )--
%M212....	1 - Production	Rung13	--( )--
%M213....	1 - Production	Rung13	--( )--
%M214....	1 - Production	Rung12	--( )--
		Rung13	--( )--
		Rung14	--( )--
%M215....	1 - Production	Rung15	--( )--
		Rung16	--( )--
		Rung17	--( )--
%M216....	1 - Production	Rung16	--( )--
%M217....	1 - Production	Rung16	--( )--
%M218....	2 - Assembler	Rung0	--( )--
%M219....	2 - Assembler	Rung3	--(S)--
			--(R)--
%M220....	2 - Assembler	Rung2	--(S)--
		Rung4	--(R)--
%M221....	2 - Assembler	Rung4	--(R)--
		Rung6	--(S)--
%M222....	2 - Assembler	Rung0	--( )--
%M223....	2 - Assembler	Rung3	--(S)--
			--(R)--
			--(S)--
		Rung4	--(R)--
%M224....	2 - Assembler	Rung3	--(S)--
		Rung4	--(R)--
%M225....	2 - Assembler	Rung4	--(S)--
			--(R)--
%M226....	2 - Assembler	Rung0	--( )--
%M227....	2 - Assembler	Rung0	--( )--
%M228....	2 - Assembler	Rung9	--(S)--
			--(R)--
%M229....	2 - Assembler	Rung8	--(S)--
		Rung10	--(R)--

Address	Object	Rung	Code
%M230....	2 - Assembler	Rung10	--(R)--
		Rung12	--(S)--
%M231....	2 - Assembler	Rung0	--( )--
%M232....	2 - Assembler	Rung9	--(S)--
			--(R)--
			--(S)--
		Rung10	--(R)--
%M233....	2 - Assembler	Rung9	--(S)--
		Rung10	--(R)--
%M234....	2 - Assembler	Rung10	--(S)--
			--(R)--
%M235....	2 - Assembler	Rung0	--( )--
%M236....	2 - Assembler	Rung0	--( )--
%M237....	2 - Assembler	Rung15	--(S)--
			--(R)--
%M238....	2 - Assembler	Rung14	--(S)--
		Rung16	--(R)--
%M239....	2 - Assembler	Rung16	--(R)--
		Rung18	--(S)--
%M240....	2 - Assembler	Rung0	--( )--
%M241....	2 - Assembler	Rung15	--(S)--
			--(R)--
			--(S)--
		Rung16	--(R)--
%M242....	2 - Assembler	Rung15	--(S)--
		Rung16	--(R)--
%M243....	2 - Assembler	Rung16	--(S)--
			--(R)--
%M244....	2 - Assembler	Rung0	--( )--
%M251....	3 - Sorting	Rung0	--( )--
%M252....	3 - Sorting	Rung0	--( )--
%M253....	3 - Sorting	Rung0	--( )--
%M254....	3 - Sorting	Rung2	--(S)--
			--(R)--

Address	Object	Rung	Code
%M255....	3 - Sorting	Rung2	--(S)--
			--(R)--
%M256....	3 - Sorting	Rung4	--(S)--
			--(R)--
%M257....	3 - Sorting	Rung4	--(S)--
			--(R)--
%M258....	3 - Sorting	Rung6	--(S)--
			--(R)--
%M259....	3 - Sorting	Rung6	--(S)--
			--(R)--
%M300....	1 - Production	Rung18	--( )--
%M301....	1 - Production	Rung18	--( )--
%M302....	1 - Production	Rung18	--( )--
%M303....	1 - Production	Rung18	--( )--
%M304....	1 - Production	Rung18	--( )--
%M305....	1 - Production	Rung18	--( )--
%M306....	1 - Production	Rung18	--( )--
%M307....	1 - Production	Rung18	--( )--
%M308....	1 - Production	Rung18	--( )--
%M309....	1 - Production	Rung18	--( )--
%M310....	1 - Production	Rung18	--( )--
%M311....	1 - Production	Rung18	--( )--
%M312....	1 - Production	Rung18	--( )--
%M313....	1 - Production	Rung18	--( )--
%M314....	1 - Production	Rung18	--( )--
%M315....	1 - Production	Rung18	--( )--
%M316....	1 - Production	Rung18	--( )--
%TM0.....	1 - Production	Rung2	%TM0
%TM1.....	1 - Production	Rung5	%TM1
%TM2.....	1 - Production	Rung8	%TM2
%TM3.....	1 - Production	Rung11	%TM3
%TM4.....	1 - Production	Rung14	%TM4
%TM5.....	1 - Production	Rung17	%TM5
%TM6.....	2 - Assembler	Rung2	%TM6

Address	Object	Rung	Code
%TM7.....	2 - Assembler	Rung6	%TM7
%TM8.....	2 - Assembler	Rung2	%TM8
%TM9.....	2 - Assembler	Rung6	%TM9
%TM10....	2 - Assembler	Rung3	%TM10
%TM11....	2 - Assembler	Rung3	%TM11
%TM12....	2 - Assembler	Rung3	%TM12
%TM13....	2 - Assembler	Rung3	%TM13
%TM14....	2 - Assembler	Rung3	%TM14
%TM15....	2 - Assembler	Rung4	%TM15
%TM16....	2 - Assembler	Rung4	%TM16
%TM17....	2 - Assembler	Rung4	%TM17
%TM18....	1 - Production	Rung4	%TM18
%TM19....	1 - Production	Rung7	%TM19
%TM20....	1 - Production	Rung10	%TM20
%TM21....	1 - Production	Rung13	%TM21
%TM22....	1 - Production	Rung16	%TM22
%TM23....	2 - Assembler	Rung8	%TM23
%TM24....	2 - Assembler	Rung8	%TM24
%TM25....	2 - Assembler	Rung9	%TM25
%TM26....	2 - Assembler	Rung9	%TM26
%TM27....	2 - Assembler	Rung9	%TM27
%TM28....	2 - Assembler	Rung9	%TM28
%TM29....	2 - Assembler	Rung9	%TM29
%TM30....	2 - Assembler	Rung10	%TM30
%TM31....	2 - Assembler	Rung10	%TM31
%TM32....	2 - Assembler	Rung10	%TM32
%TM33....	2 - Assembler	Rung12	%TM33
%TM34....	2 - Assembler	Rung12	%TM34
%TM35....	2 - Assembler	Rung14	%TM35
%TM36....	2 - Assembler	Rung14	%TM36
%TM37....	2 - Assembler	Rung15	%TM37
%TM38....	2 - Assembler	Rung15	%TM38
%TM39....	2 - Assembler	Rung15	%TM39
%TM40....	2 - Assembler	Rung15	%TM40

Address	Object	Rung	Code
%TM41....	2 - Assembler	Rung15	%TM41
%TM42....	2 - Assembler	Rung16	%TM42
%TM43....	2 - Assembler	Rung16	%TM43
%TM44....	2 - Assembler	Rung16	%TM44
%TM45....	2 - Assembler	Rung18	%TM45
%TM46....	2 - Assembler	Rung18	%TM46
%TM47....	3 - Sorting	Rung2	%TM47
%TM48....	3 - Sorting	Rung6	%TM48
%TM49....	3 - Sorting	Rung4	%TM49