

**Project Name: New project**


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# BILL OF MATERIAL

## Controller

	<b>Reference</b>	TM221CE40T
	<b>Description</b>	TM221CE40T (screw) 24 digital inputs, 16 source transistor outputs (0,5 A), 2 analog inputs, 1 serial line port, 1 Ethernet port, 24 Vdc power supply controller with removable terminal blocks.
	<b>Power supplied to the IO bus</b>	5V: 520 mA / 24V: 304 mA

# HARDWARE CONFIGURATION

## MyController - TM221CE40T

### Digital Inputs

Used	Address	Filtering	Latch	Run/Stop	Events	Priority	Subroutine
X	%I0.0	3 ms			Not Used		
X	%I0.1	3 ms			Not Used		
X	%I0.2	3 ms			Not Used		
X	%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		
	%I0.9	3 ms			Not Used		
	%I0.10	3 ms			Not Used		
	%I0.11	3 ms			Not Used		
	%I0.12	3 ms			Not Used		
	%I0.13	3 ms			Not Used		
	%I0.14	3 ms			Not Used		
	%I0.15	3 ms			Not Used		
	%I0.16	3 ms			Not Used		
	%I0.17	3 ms			Not Used		
	%I0.18	3 ms			Not Used		
	%I0.19	3 ms			Not Used		
	%I0.20	3 ms			Not Used		
	%I0.21	3 ms			Not Used		
	%I0.22	3 ms			Not Used		
	%I0.23	3 ms			Not Used		

Digital Outputs

Used	Address	Status Alarm	Fallback value	Used by
X	%Q0.0		0	User logic
X	%Q0.1		0	User logic
X	%Q0.2		0	User logic
X	%Q0.3		0	User logic
	%Q0.4		0	
	%Q0.5		0	
	%Q0.6		0	
	%Q0.7		0	
	%Q0.8		0	
	%Q0.9		0	
	%Q0.10		0	
	%Q0.11		0	
	%Q0.12		0	
	%Q0.13		0	
	%Q0.14		0	
	%Q0.15		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

## Pulse Generators

Configured	Address	Type
	%PLS0/%PWM0/%PTO0/%FREQGEN0	Not Configured
	%PLS1/%PWM1/%PTO1/%FREQGEN1	Not Configured

## ETH1

Device name:	M221
IP Mode:	Fixed
IP address:	0.0.0.0
Subnet mask:	0.0.0.0
Gateway address:	0.0.0.0
Transfer Rate:	Auto
Security Parameters:	Programming protocol disabled
	Auto discovery protocol disabled
	Modbus server disabled
	EtherNet/IP protocol disabled

## 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: 1

Used	Address	Symbol	Type	Retentive	Dynamic Preset	Time Base	Preset	Comment
X	%TMO		TON			1 s	5	

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
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Grafcet Steps

Allocation: Automatic  
Allocated: 0

# PROGRAM

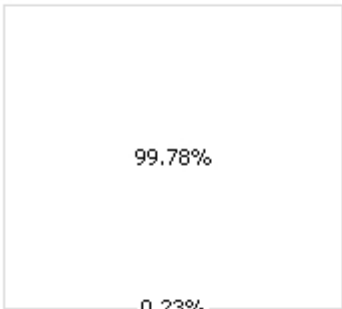
## Behavior

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

# Memory consumption

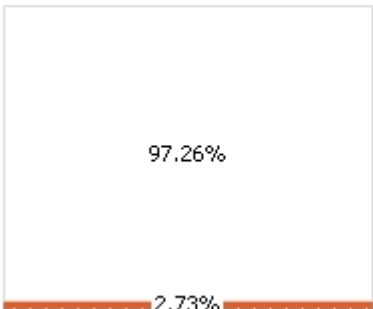
Last compilation: 17/09/2024 10:09:27

Program lines



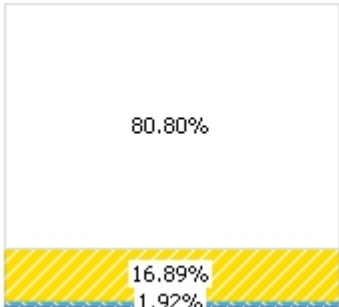
- Program lines used 27 Lines
- Program lines remaining 11973 Lines

Cache memory



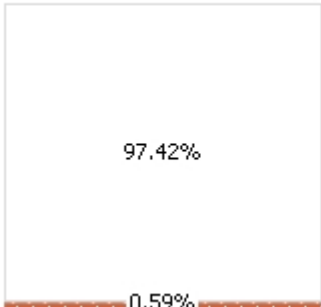
- Periodic and Event tasks 3 bytes
- Reserved for System 880 bytes
- Memory remaining 31373 bytes

RAM memory



- Master task and subroutines 143 bytes
- Configuration 708 bytes
- Memory objects 4256 bytes
- Display 37456 bytes
- Memory remaining 179149 bytes

Non-program data



- Reserved for System 898 bytes
- Non-program data used 264 bytes
- Non-program data remaining 43894 bytes

# Application Architecture

## Master Task

Scan mode: Normal  
POU list: 1 - New POU

## Periodic Task

Period: 255 ms

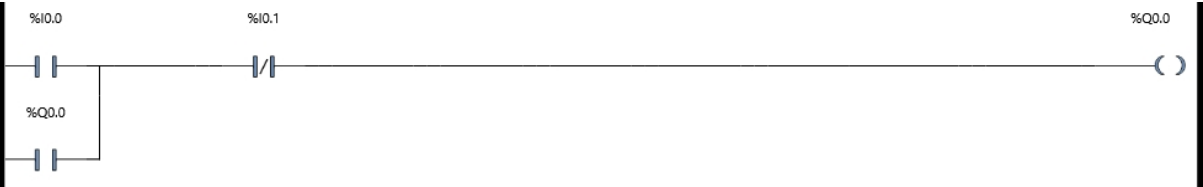
# POU

## Master Task

### 1 - New POU

#### Master Task

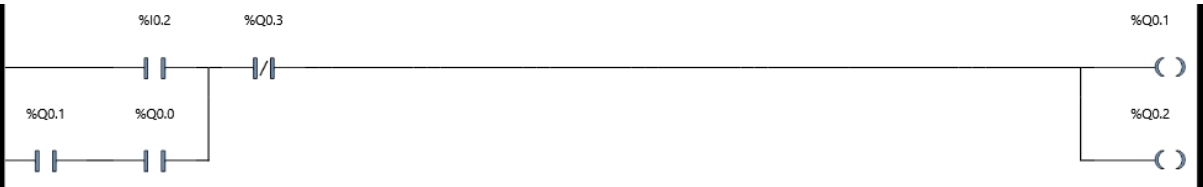
#### Rung0 - START & EMERGENCY



#### Variables used:

%I0.0	START_BUTTON
%I0.1	EMERGENCY
%Q0.0	POWER

#### Rung1 - SENSOR & MOTOR



#### Variables used:

%I0.2	SENSORSTART
%Q0.0	POWER
%Q0.1	LAMPU
%Q0.2	MOTOR
%Q0.3	TIMERSENSOR

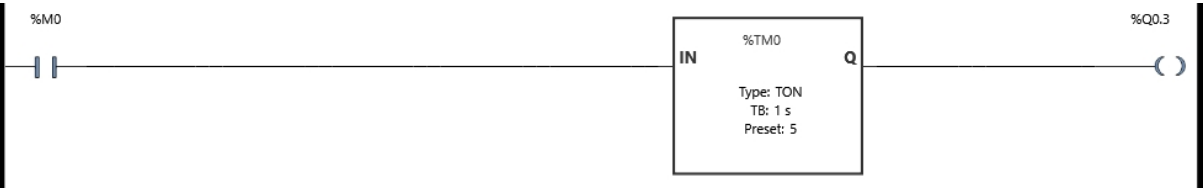
#### Rung2



#### Variables used:

%I0.3	SENSORSTOP
%M0	MEMORYS2
%Q0.3	TIMERSENSOR

*Rung3*



Variables used:

%M0	MEMORYS2
%Q0.3	TIMERSENSOR
%TMO	

# SYMBOLS

Used	Address	Symbol	Comment
X	%I0.0	START_BUTTON	
X	%I0.1	EMERGENCY	
X	%I0.2	SENSORSTART	
X	%I0.3	SENSORSTOP	
X	%M0	MEMORYS2	
X	%Q0.0	POWER	
X	%Q0.1	LAMPU	
X	%Q0.2	MOTOR	
X	%Q0.3	TIMERSENSOR	



## CROSS-REFERENCE TABLE

Address	Object	Rung	Code
%I0.0.....	1 - New POU	Rung0 - START & EMERGENCY	--   --
%I0.1.....	1 - New POU	Rung0 - START & EMERGENCY	-- / --
%I0.2.....	1 - New POU	Rung1 - SENSOR & MOTOR	--   --
%I0.3.....	1 - New POU	Rung2	--   --
%M0.....	1 - New POU	Rung2	--( )--
			--   --
		Rung3	--   --
%Q0.0.....	1 - New POU	Rung0 - START & EMERGENCY	--   --
			--( )--
		Rung1 - SENSOR & MOTOR	--   --
%Q0.1.....	1 - New POU	Rung1 - SENSOR & MOTOR	--   --
			--( )--
%Q0.2.....	1 - New POU	Rung1 - SENSOR & MOTOR	--( )--
%Q0.3.....	1 - New POU	Rung1 - SENSOR & MOTOR	-- / --
		Rung2	-- / --
		Rung3	--( )--
%TM0.....	1 - New POU	Rung3	%TM0