Project Name: New project

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BILL OF MATERIAL

Controller

Reference	TM221CE40T
Description	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.
Power supplied to the IO bus	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
	%Q0.0		0	
	%Q0.1		0	
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	%TM0		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

Grafcet Steps

Allocation: Automatic

Allocated: 0

PROGRAM

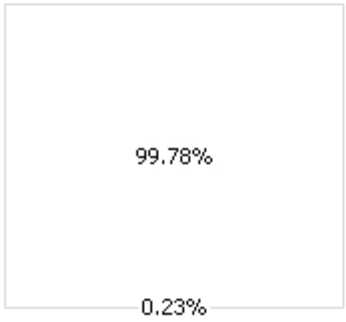
Behavior

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

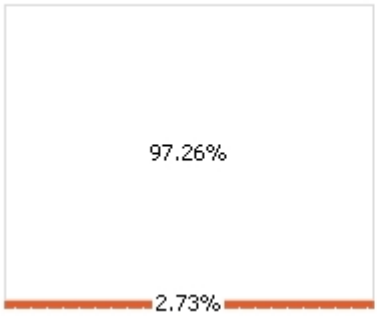
Memory consumption

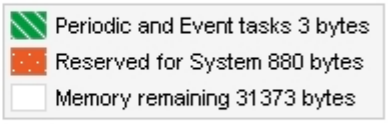
Last compilation: 17/09/2024 10:20:57

Program lines

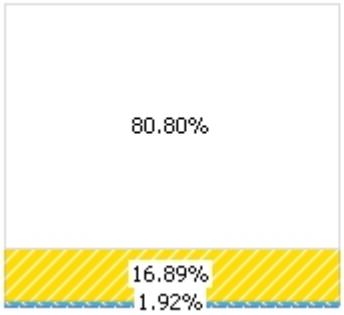


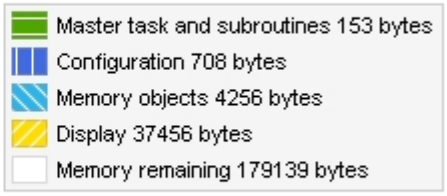
Cache memory



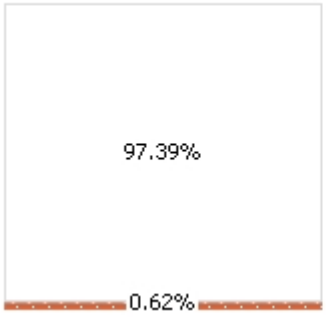


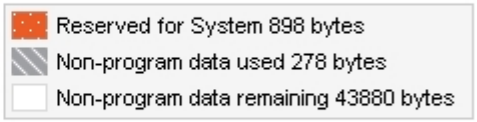
RAM memory





Non-program data





Application Architecture

Master Task

Scan mode:	Normal
POU list:	1 - New POU

Periodic Task

Period:	255 ms

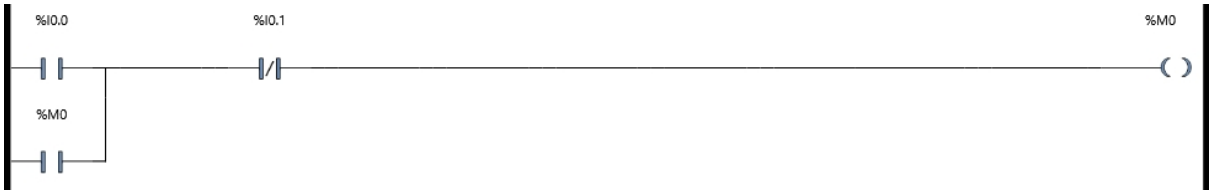
POU

Master Task

1 - New POU

Master Task

Rung0 - START & EMERGENCY



Variables used:

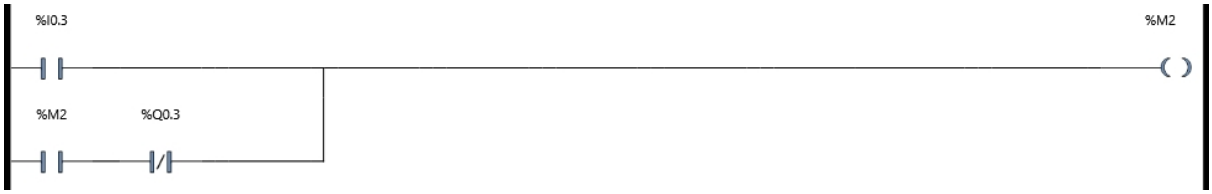
%I0.0	START_BUTTON
%I0.1	EMERGENCY
%M0	POWERMEMORY

Rung1 - SENSOR & MOTOR

Variables used:

%I0.2	SENSORSTART
%M0	POWERMEMORY
%M1	SENSOR1MEMORY
%Q0.2	MOTOR
%Q0.3	TIMERSENSOR

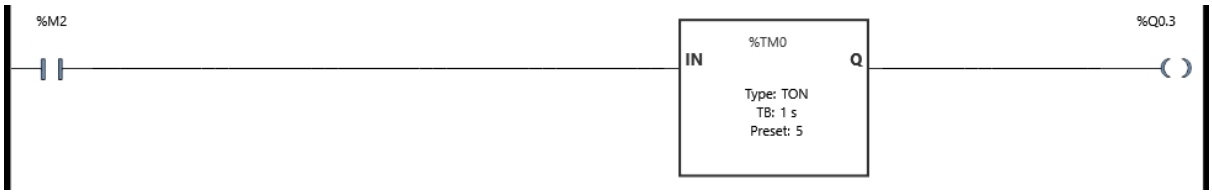
Rung2



Variables used:

%I0.3	SENSORSTOP
%M2	MEMORi1
%Q0.3	TIMERSENSOR

Rung3



Variables used:

%M2	SENSOR2MEMORY
%Q0.3	TIMERSENSOR
%TM0	

SYMBOLS

Used	Address	Symbol	Comment
X	%I0.0	START_BUTTON	
X	%I0.1	EMERGENCY	
X	%I0.2	SENSORSTART	
X	%I0.3	SENSORSTOP	
X	%M0	POWERMEMORY	
X	%M1	SENSOR1MEMORY	
X	%M2	SENSOR2MEMORY	
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	Rung0 - START & EMERGENCY	--| |--
			--( )--
		Rung1 - SENSOR & MOTOR	--| |--
%M1.....	1 - New POU	Rung1 - SENSOR & MOTOR	--| |--
			--( )--
%M2.....	1 - New POU	Rung2	--( )--
			--| |--
		Rung3	--| |--
%Q0.2.....	1 - New POU	Rung1 - SENSOR & MOTOR	--( )--
%Q0.3.....	1 - New POU	Rung1 - SENSOR & MOTOR	--|/|--
		Rung2	--|/|--
		Rung3	--( )--
%TM0.....	1 - New POU	Rung3	%TM0