

การควบคุมเครื่องจักรอัจฉริยะโดยใช้การสื่อสารระหว่างเครื่องจักรกับเครื่องจักร

M2M - Intelligence Machine Control

ชื่อ-สกุล : นายปราชญา ธนพิบูลผล

รหัสนักศึกษา : B6323059

Schneider M221CE16R PLC

Quiz_1 – OR 2 Switch

Device information

Messages

Device description
TM221CE16R (screw)
9 digital inputs, 7 relay outputs (2 A), 2 analog inputs, 1 serial line port, 1 Ethernet port, 100-240 Vac power supply controller with

M221 Logic Controllers

Reference	Power supply	Comm.
TM221C24R	100...240 Vac	1 !
TM221C24T	24 Vdc	1 !
TM221C24U	24 Vdc	1 !
TM221C40R	100...240 Vac	1 !
TM221C40T	24 Vdc	1 !
TM221C40U	24 Vdc	1 !
TM221CE16R	100...240 Vac	1 !
TM221CE16T	24 Vdc	1 !
TM221CE16U	24 Vdc	1 !

Local Devices

Ethernet Devices

192.168.1.2

Unit ID 1

Remote Lookup

Enter a URL or an IP address

Add

Found: New project

Reference	Firmware
Controller TM221CE16R	1.5.0.0

PC and controller applications are identical
Connection is established

Login

Logout

PC to Controller (download)

Controller to PC (upload)

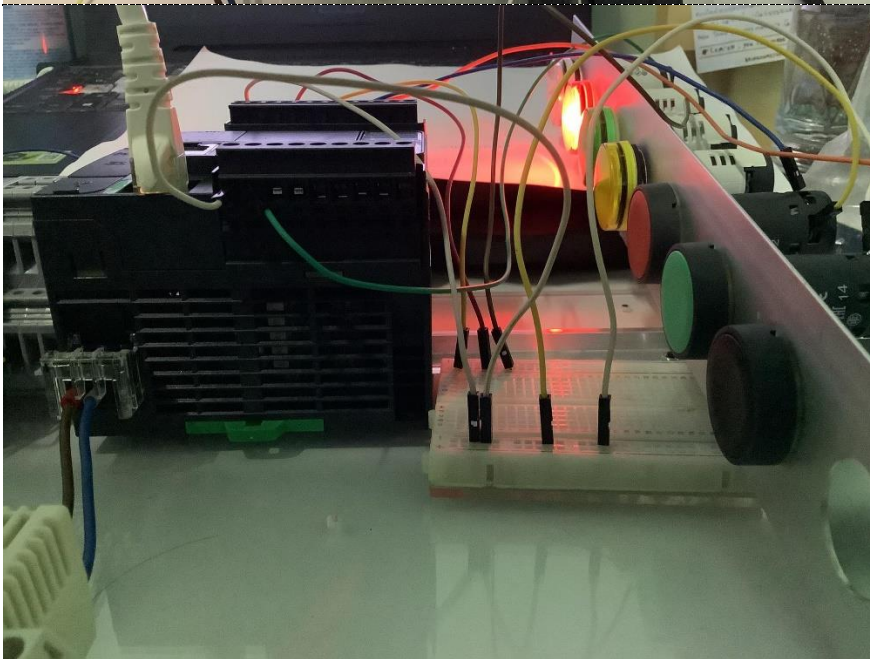
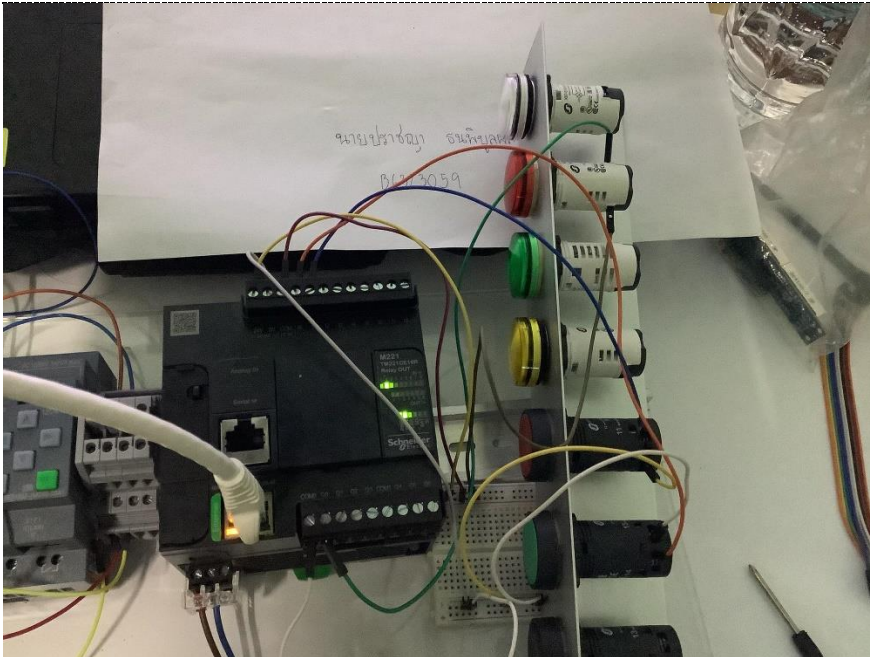
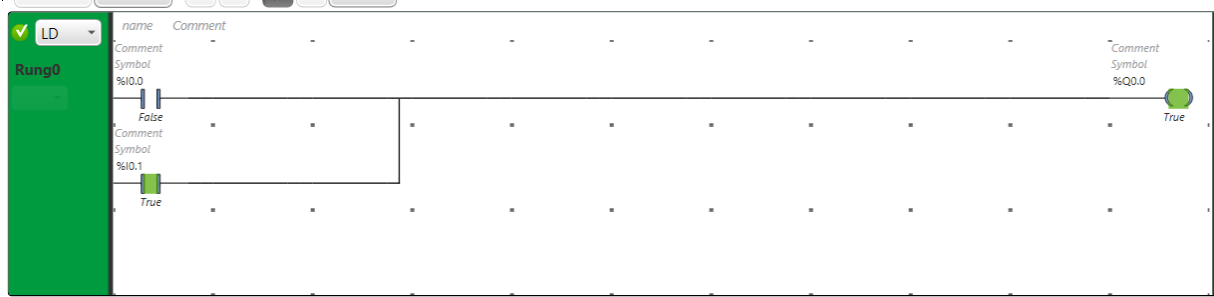
Stop controller

Start Controller

Launch simulator

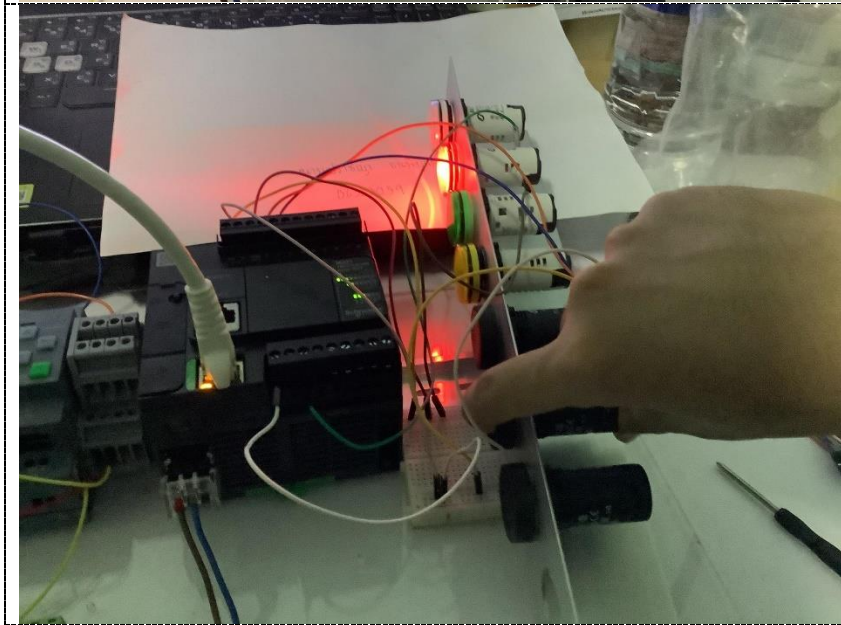
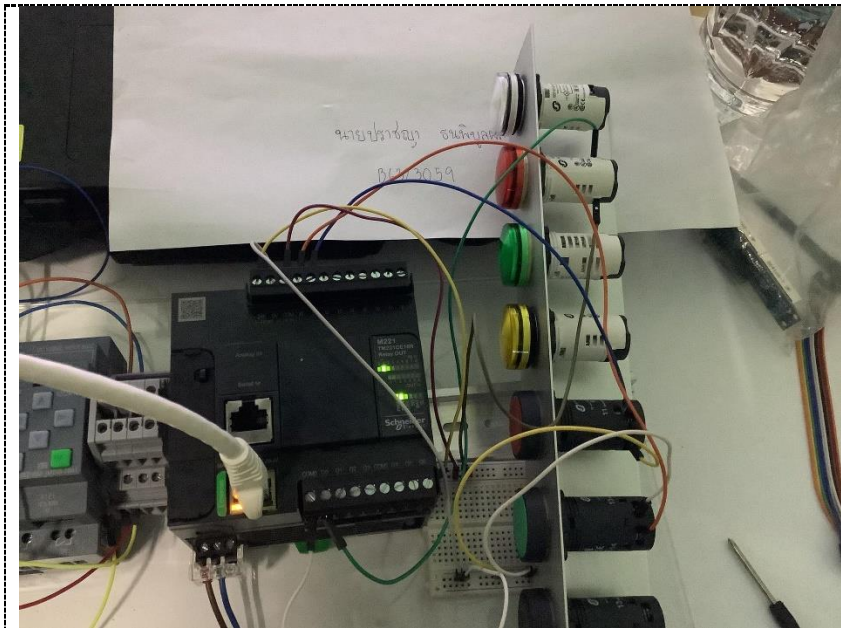
Stop simulator

กดติด กดดับ



The screenshot displays the Siemens SIMATIC Manager interface for configuring a TM221CE16R controller. The top panel shows the device information and a list of modules. The middle panel shows the 'Local Devices' and 'Ethernet Devices' sections, with the IP address 192.168.1.2 entered. The bottom panel shows the 'Found: New project' section with the controller TM221CE16R and firmware 1.5.0.0. A green box highlights the message 'PC and controller applications are identical Connection is established'. The bottom right panel shows the 'Rung0' ladder logic diagram.

กดสวิตซ์หนึ่ง ไฟจะไม่ติด



Quiz_3 – Toggle 1 Sw/ 1LED

Device information

Messages

Device description
TM221CE16R (screw)
9 digital inputs, 7 relay outputs (2 A), 2 analog inputs, 1 serial line port, 1 Ethernet port, 100-240 Vac power supply controller with

Local Devices

Ethernet Devices

192.168.1.2

Login

Logout

Keep Modbus driver parameters

Unit ID 1

Remote Lookup

Enter a URL or an IP address

Add

Found: New project

	Reference	Firmware
Controller	TM221CE16R	1.5.0.0

PC and controller applications are identical
Connection is established

PC to Controller (download)

Controller to PC (upload)

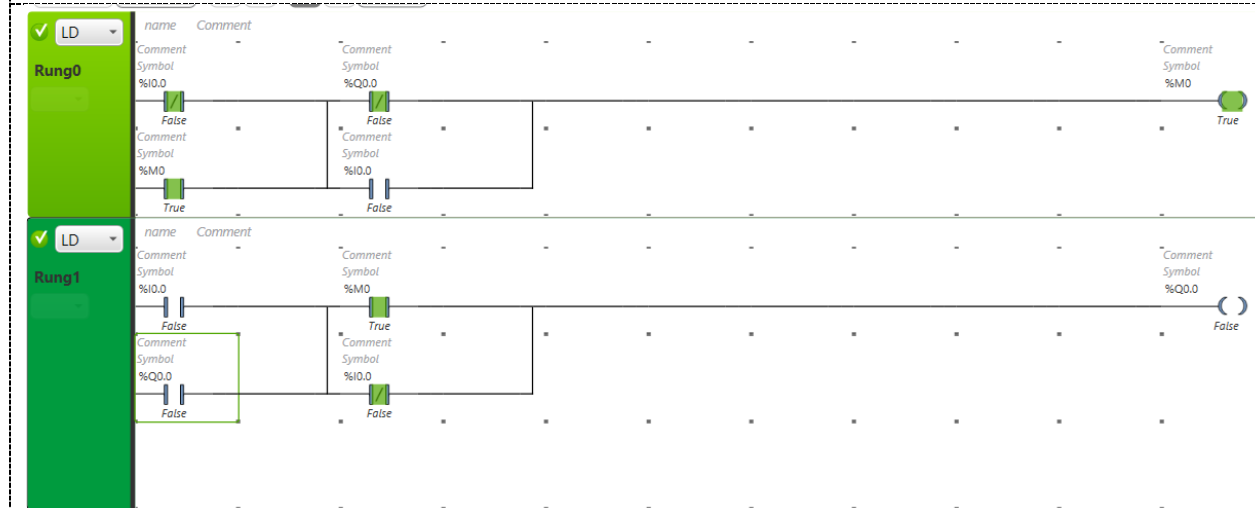
Stop controller

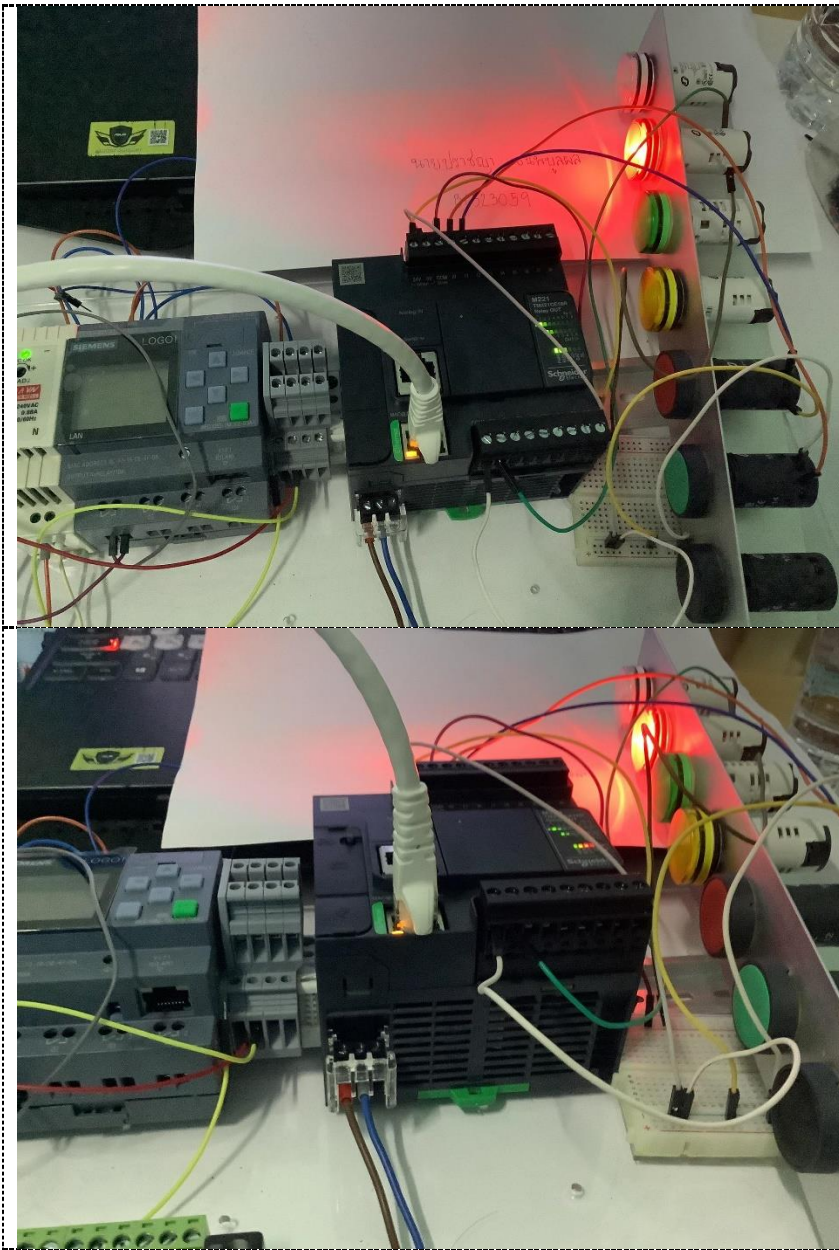
Start Controller

Launch simulator

Stop simulator

กดติด (ติดค้าง) กดอีกครั้งดับ = กดติด กดดับ 1สวิตซ์





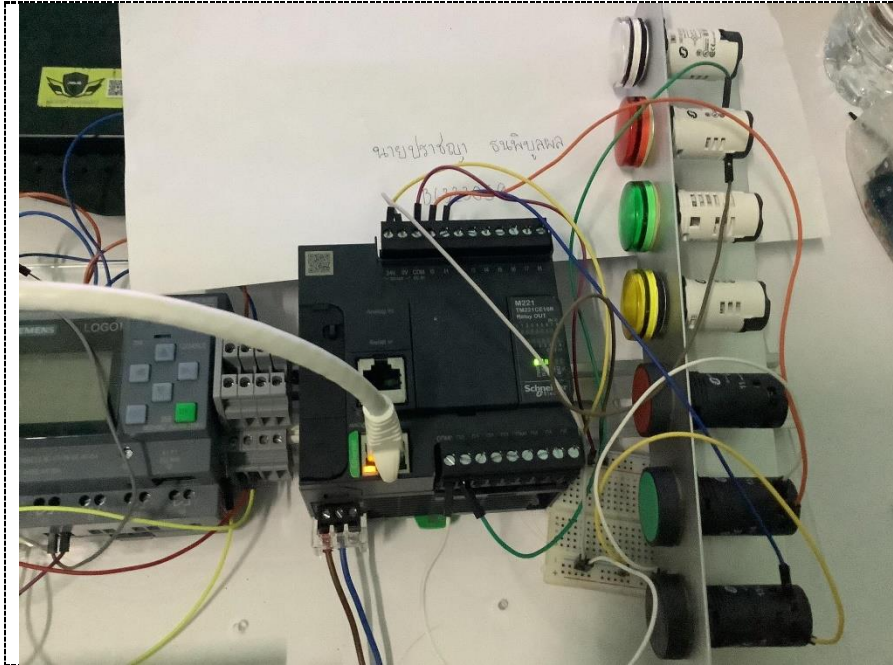
Quiz_4 – Toggle 2 Switch

The screenshot displays the M2M Intelligence Machine Control software interface. The interface is divided into several sections:

- Device Selection Panel (Right):** A list of M221 Logic Controllers. The selected device is **TM221CE16R** with a power supply of 100...240 Vac and communication speed 1.
- Device Information (Left):** Shows the device description: **TM221CE16R (screw)** with 9 digital inputs, 7 relay outputs (2 A), 2 analog inputs, 1 serial line port, 1 Ethernet port, and 100-240 Vac power supply controller.
- Main Control Area (Bottom):**
 - Local Devices:** A section for local device management.
 - Ethernet Devices:** A section for remote device management, showing the IP address **192.168.1.2**.
 - Remote Lookup:** A section for entering a URL or IP address.
 - Found: New project:** A table showing the project details:

	Reference	Firmware
Controller	TM221CE16R	1.5.0.0
 - Message Box:** A green box with a checkmark indicating **PC and controller applications are identical** and **Connection is established**.
 - Buttons:** Login, Logout, PC to Controller (download), Controller to PC (upload), Stop controller, Start Controller, Launch simulator, and Stop simulator.

SW สี่ดำ และ สีเขียว กดติด กดดับ ไฟสีแดงได้



Quiz_5 – Green=on, Black=Off

Device information

Device description
 TM221CE16R (screw)
 9 digital inputs, 7 relay outputs (2 A), 2 analog inputs, 1 serial line port, 1 Ethernet port, 100-240 Vac power supply controller with

M221 Logic Controllers

Reference	Power supply	Comm.
TM221C24R	100...240 Vac	1 !
TM221C24T	24 Vdc	1 !
TM221C24U	24 Vdc	1 !
TM221C40R	100...240 Vac	1 !
TM221C40T	24 Vdc	1 !
TM221C40U	24 Vdc	1 !
TM221CE16R	100...240 Vac	1 !
TM221CE16T	24 Vdc	1 !
TM221CE16U	24 Vdc	1 !

- > TM3 Digital I/O Modules
- > TM3 Analog I/O Modules
- > TM2 Digital I/O Modules
- > TM2 Analog I/O Modules
- > TM3 Expert I/O Modules
- > M221 Cartridges

[Device description](#)

Local Devices

Ethernet Devices

192.168.1.2

Login

Logout

☐ Keep Modbus driver parameters

Unit ID

1

Remote Lookup

Enter a URL or an IP address

Add

Found: New project

	Reference	Firmware
Controller	TM221CE16R	1.5.0.0

✓ PC and controller applications are identical

Connection is established

PC to Controller (download)

Controller to PC (upload)

Stop controller

Start Controller

Launch simulator

Stop simulator

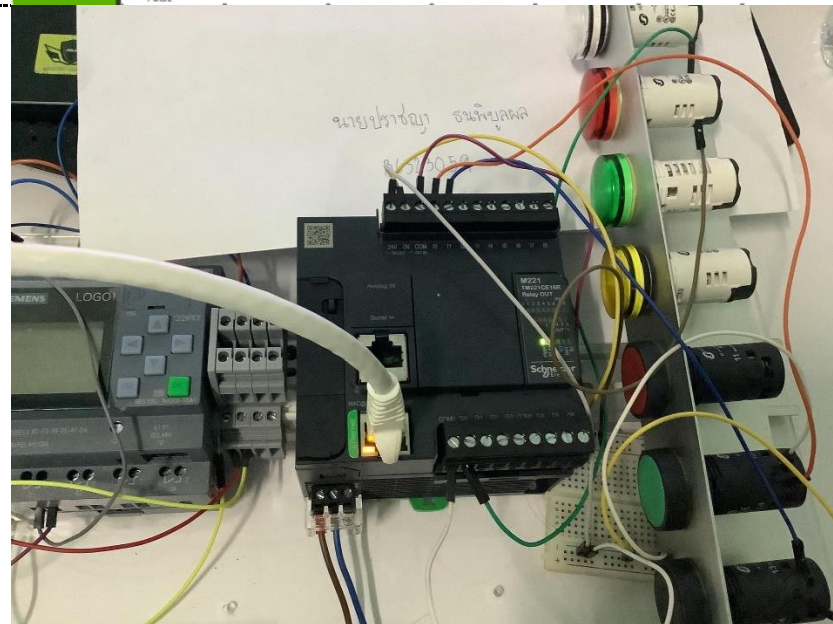
กดสวิตช์สีเขียว = ON , กดสวิตช์สีดำ = OFF

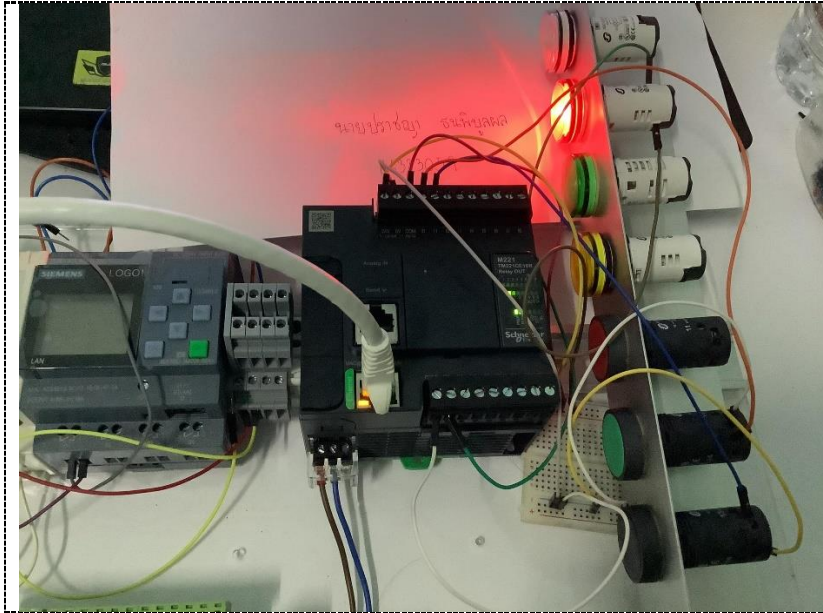
LD

name	Comment
Rung0	
Comment	
Symbol	%I0.0
False	

LD

name	Comment
Rung1	
Comment	
Symbol	%I0.1
False	





Quiz_6 – 3 Switch, 2 Lamp-->

Device information

Messages

Device description
 TM221CE16R (screw)
 9 digital inputs, 7 relay outputs (2 A), 2 analog inputs, 1 serial line port, 1 Ethernet port, 100-240 Vac power supply controller with

Reference	Power supply	Comm.
TM221C24R	100...240 Vac	1
TM221C24T	24 Vdc	1
TM221C24U	24 Vdc	1
TM221C40R	100...240 Vac	1
TM221C40T	24 Vdc	1
TM221C40U	24 Vdc	1
TM221CE16R	100...240 Vac	1
TM221CE16T	24 Vdc	1
TM221CE16U	24 Vdc	1

> TM3 Digital I/O Modules
 > TM3 Analog I/O Modules
 > TM2 Digital I/O Modules
 > TM2 Analog I/O Modules
 > TM3 Expert I/O Modules
 > M221 Cartridges

Device description

The screenshot displays the Ladder Logic Editor with three rungs:

- Rung0:** Contains a normally open contact labeled `%I0.2` with a comment `True`. It is connected to a set coil (S) for `%Q0.1` with a comment `True`. A timer `T1` is also present with a comment `True`.
- Rung1:** Contains a normally open contact labeled `%I0.1` with a comment `F True`. It is connected to a set coil (S) for `%Q0.0` with a comment `True`. A timer `T1` is also present with a comment `True`.
- Rung2:** Contains a normally open contact labeled `%I0.0` with a comment `True`. It is connected to a reset coil (R) for `%Q0.0` with a comment `True`. A timer `T1` is also present with a comment `True`.

