Main [OB1]

Main Properties					
General					
Name	Main	**Number**	1	**Type**	OB
Language	LAD	**Numbering**	Automatic		
Information					
Title	"Main Program Sweep (Cycle)"	**Author**		**Comment**	Exercise 3 - Gate Control
Family		**Version**	0.1	**User-defined ID**	

Name	Data type	Default value	Comment
▼ Input			
Initial_Call	Bool		Initial call of this OB
Remanence	Bool		=True, if remanent data are available
Temp			
Constant			

Network 1: System ON

When ES0 OR S1 OR F4 is False, onSystem is False.

Network 2: Gate is SHUT

When LS5 is False AND LS6 True, gateShut is True.

Network 3: Gate at MIDDLE

When LS5 is True AND LS6 True, gateMid is True.
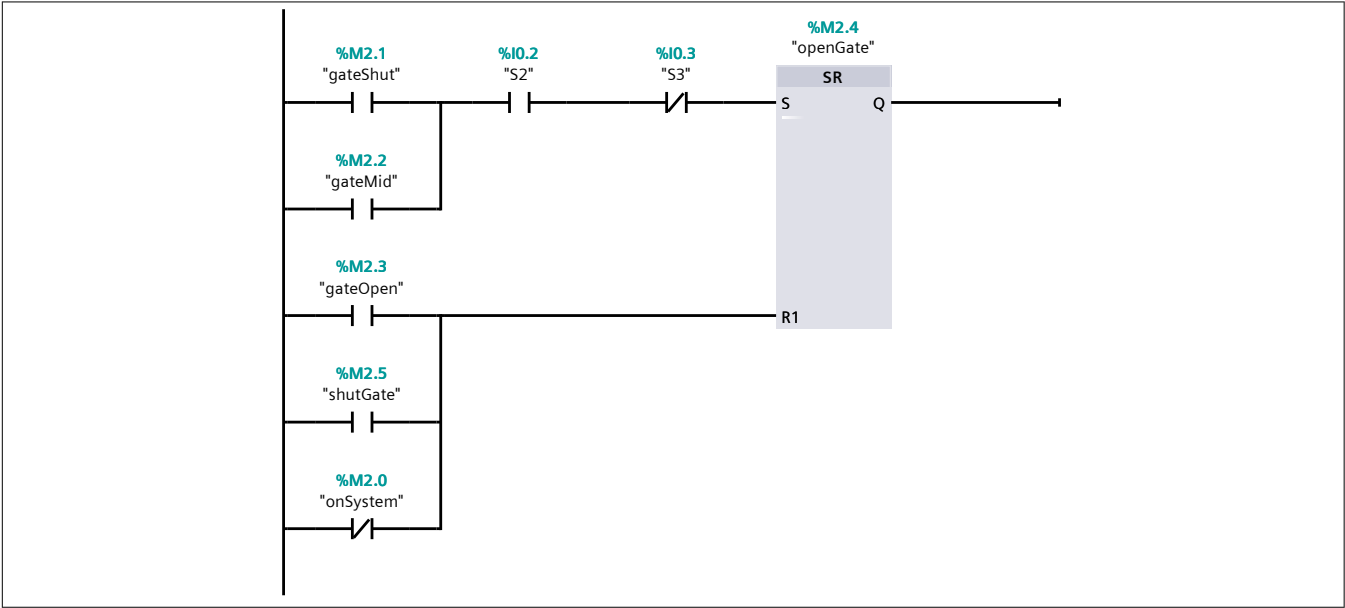

Network 4: Gate is OPEN

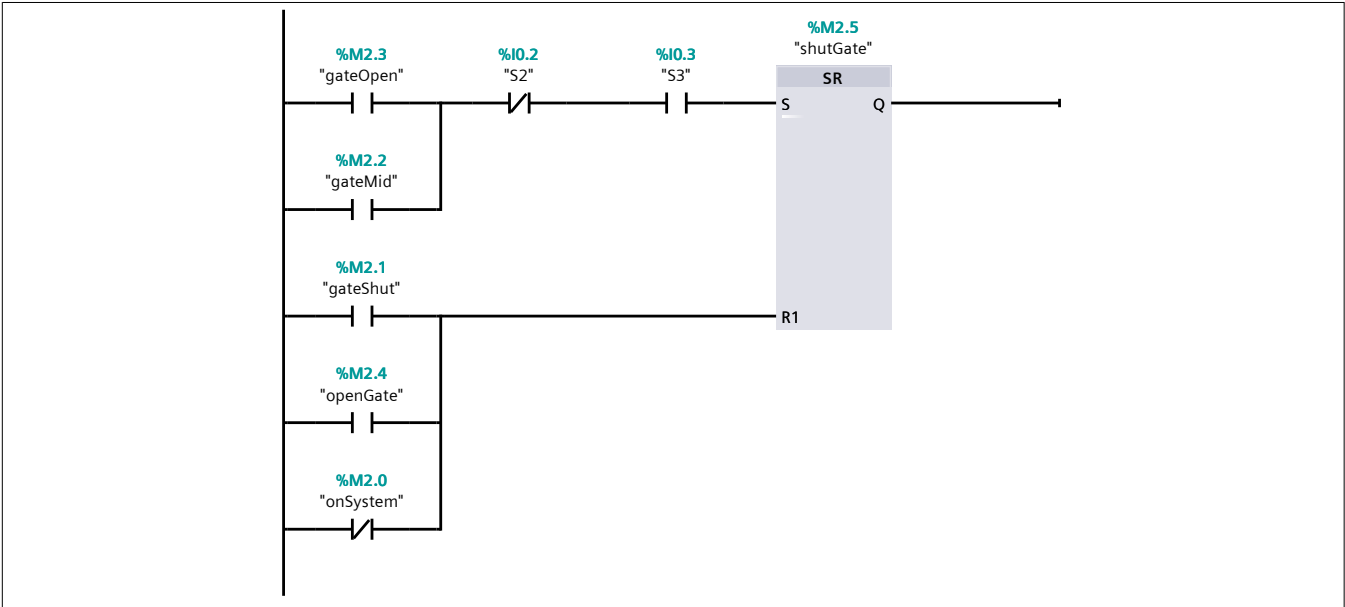When LS5 is True AND LS6 False, gateOpen is True.

Network 5: Open gate instruction

When (gateShut OR gateMid is True) AND (S2 is True AND S3 is False), openGate is True.
When gateOpen is True OR shutGate is True OR onSystem is False, openGate is False.

```
        %M2.1         %I0.2         %I0.3              %M2.4
      "gateShut"       "S2"          "S3"            "openGate"
                                                        SR
        ┤ ├          ┤ ├          ┤/├          S            Q

        %M2.2
      "gateMid"
        ┤ ├

        %M2.3
      "gateOpen"
        ┤ ├                                      R1

        %M2.5
      "shutGate"
        ┤ ├

        %M2.0
      "onSystem"
        ┤/├
```
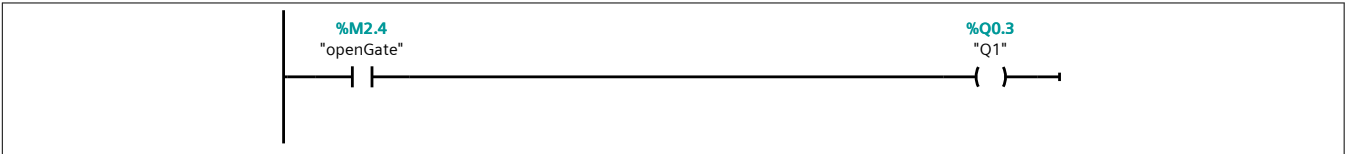
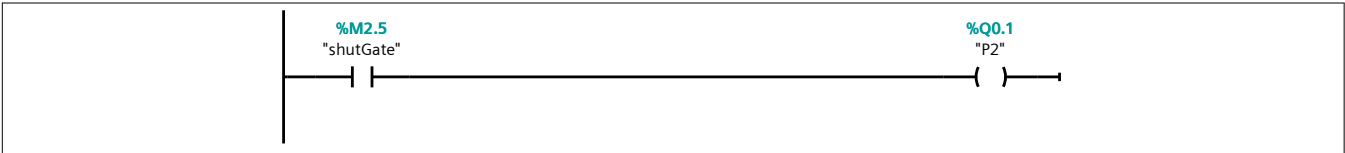## Network 6: Shut gate instruction
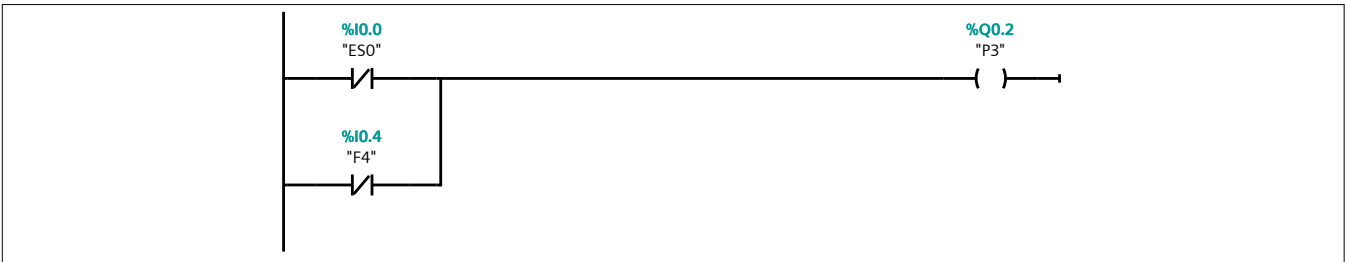
When (gateOpen OR gateMid is True) AND (S2 is False AND S3 is True), shutGate is True.
When gateShut is True OR openGate is True OR onSystem is False, shutGate is False.

```
        %M2.3         %I0.2         %I0.3              %M2.5
      "gateOpen"       "S2"          "S3"            "shutGate"
                                                        SR
        ┤ ├          ┤/├          ┤ ├          S            Q

        %M2.2
      "gateMid"
        ┤ ├

        %M2.1
      "gateShut"
        ┤ ├                                      R1

        %M2.4
      "openGate"
        ┤ ├

        %M2.0
      "onSystem"
        ┤/├
```

Network 7: Open contactor

When openGate is True, Q1 is True.

```
        %M2.4                                          %Q0.3
      "openGate"                                        "Q1"
        ┤ ├                                            ( )
```

Network 8: Shut contactor

When shutGate is True, Q2 is True.

```
    %M2.5                                          %Q0.4
   "shutGate"                                       "Q2"
    ┤ ├                                            ( )
```

Network 9: Opening gate lamp (Green)

When openGate is True, P1 is True.

```
    %M2.4                                          %Q0.0
   "openGate"                                       "P1"
    ┤ ├                                            ( )
```

Network 10: Shutting gate lamp (Yellow)

When shutGate is True, P2 is True.

```
    %M2.5                                          %Q0.1
   "shutGate"                                       "P2"
    ┤ ├                                            ( )
```

Network 11: Error lamp (Red)

When ES0 is False or F4 is False, P3 is True.

```
    %I0.0                                          %Q0.2
    "ES0"                                           "P3"
    ┤/├───────┬─────────────────────────────────── ( )
              │
    %I0.4     │
    "F4"      │
    ┤/├───────┘
```