Main_1 [OB123]

Main_1 Properties							
General							
Name	Main_1	**Number**	123	**Type**	OB	**Language**	LAD
Numbering	Automatic						
Information							
Title	"Main Program Sweep (Cycle)"	**Author**		**Comment**		**Family**	
Version	0.1	**User-defined ID**					

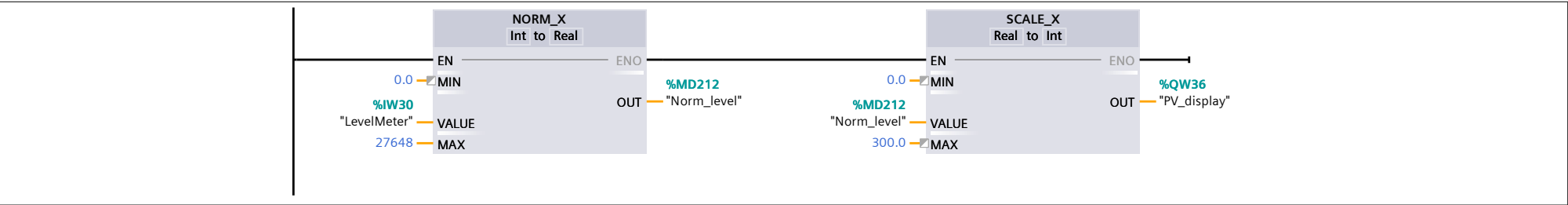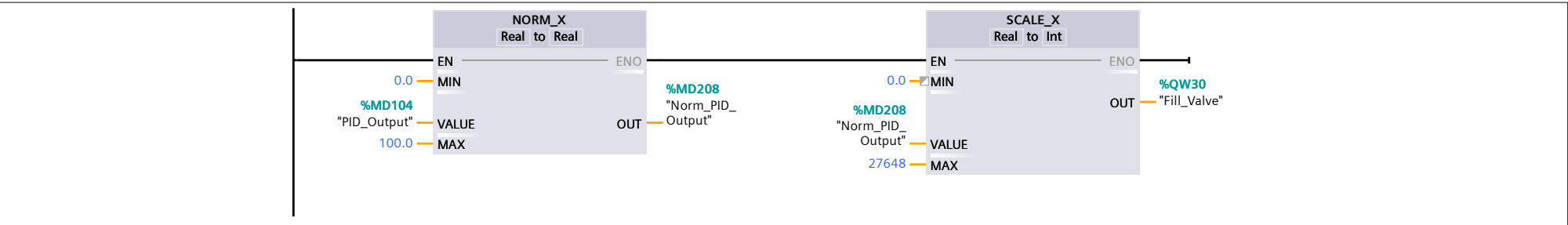| Name	Data type	Default value	Comment
▼ Input			
Initial_Call	Bool		Initial call of this OB
Remanence	Bool		=True, if remanent data are available
Temp			
Constant			

Network 1: Set point scale & display
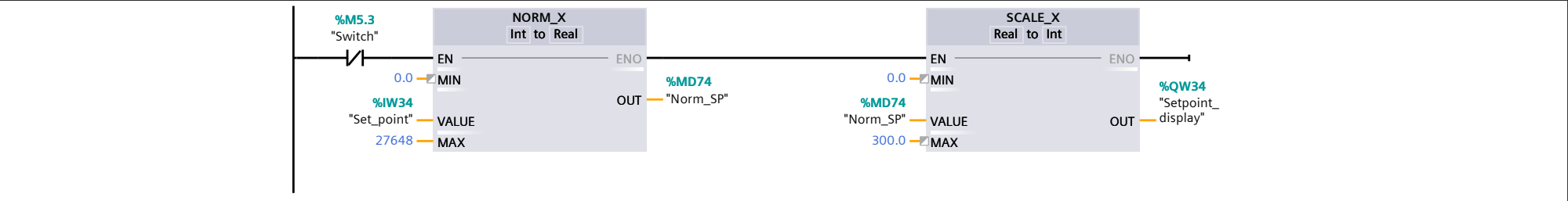
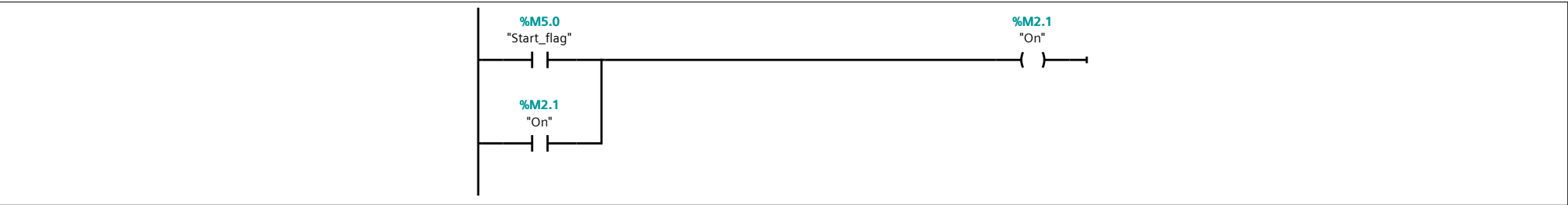### Network 2: Show HMI Setpoint on factory IO
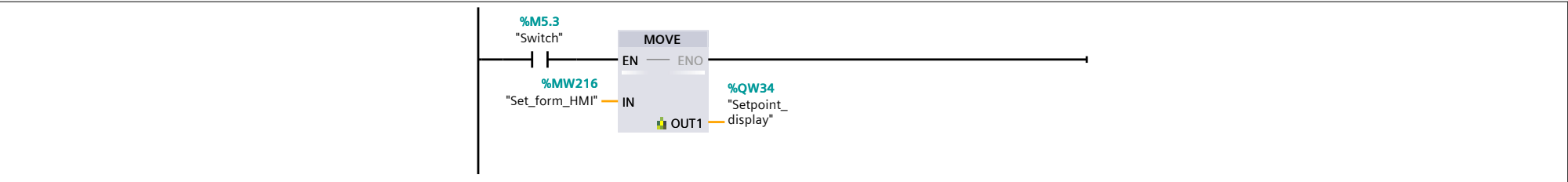
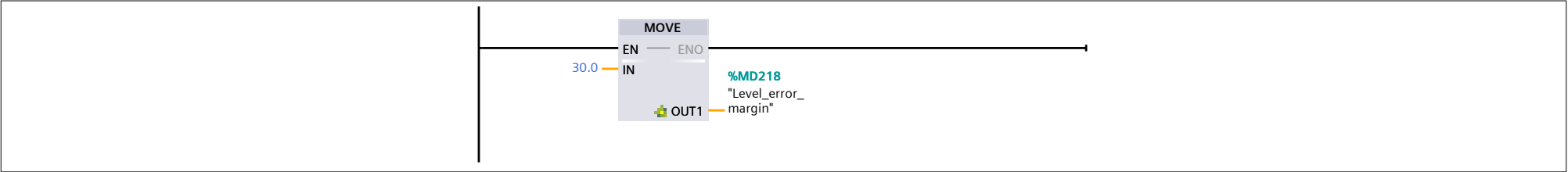### Network 3: Process value scale & display

Network 4: Fill Valve output
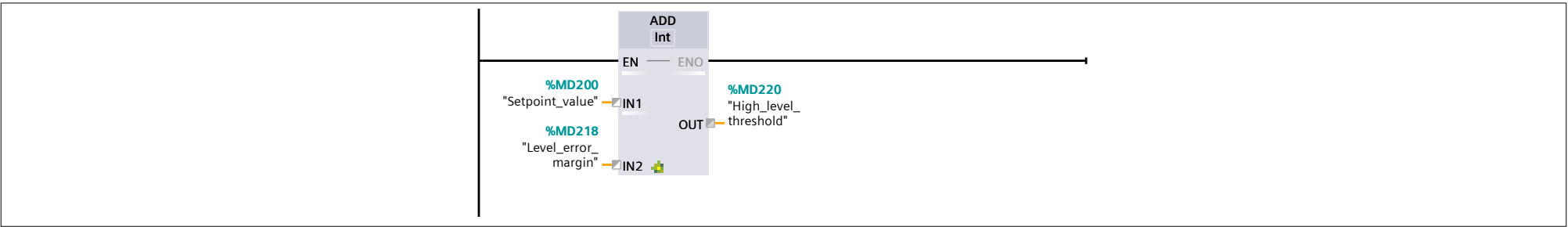

Network 5: PID Continuous

Network 6: Start Flag

```
      %Q10.0          %I10.1          %M4.2                              %M5.0
    "Start_Light"     "Reset"      "Reset_from_HMI"                    "Start_flag"
    ─────┤ ├──────────┤ ├────────────┤/├──────────────┬─────────────────( )──────
                                                       │
      %M5.0           %I10.2          %M4.1            │
    "Start_flag"      "Stop"       "Stop_from_HMI"     │
    ─────┤ ├──────────┤ ├────────────┤/├──────────────┘
```
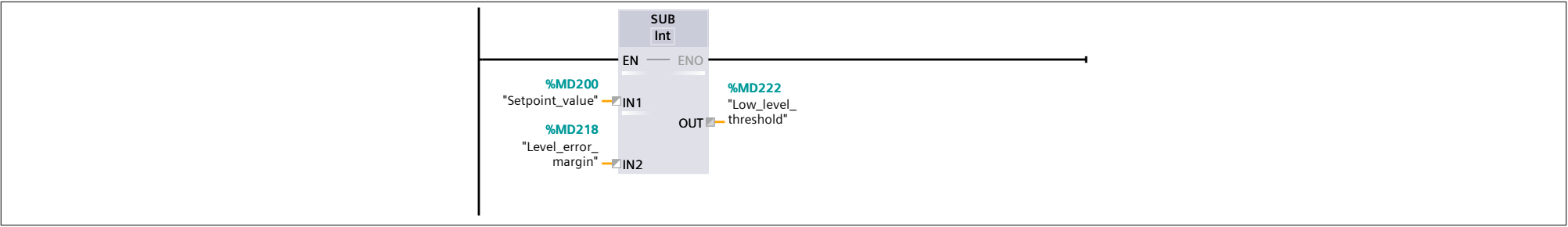
Network 7: Stop Light

```
      %Q10.0          %Q10.1          %M5.0                              %Q10.2
    "Start_Light"   "Reset_Light"   "Start_flag"                       "Stop_Light"
    ─────┤/├──────────┤/├────────────┤/├───────────────────────────────( )──────
```

Network 8: Start Light

```
      %I10.0          %Q10.1          %I10.2          %M4.1           %Q10.0
     "Start"        "Reset_Light"    "Stop"       "Stop_from_HMI"   "Start_Light"
    ──┬──┤ ├──────────┤/├────────────┤ ├────────────┤/├──────────────( )──────
      │
      │ %Q10.0
      │ "Start_Light"
      ├──┤ ├──
      │
      │ %M5.0
      │ "Start_flag"
      ├──┤ ├──
      │
      │ %M4.0
      │ "Start_from_HMI"
      └──┤ ├──
```

Network 9: Reset Light

```
      %I10.1                                              %Q10.1
     "Reset"                                           "Reset_Light"
    ──┬──┤ ├───────────────────────────────────────────( )──────
      │
      │ %M4.2
      │ "Reset_from_HMI"
      └──┤ ├──
```

Network 10: Fill Valve Stop

```
      %Q10.1                        ┌─────MOVE─────┐
    "Reset_Light"                   │ EN      ENO  │
    ──┬──┤ ├──────────────────────┤ │              │
      │                         0 ─┤ IN           │        %QW30
      │ %Q10.2                     │        OUT1 ─ │     "Fill_Valve"
      │ "Stop_Light"               └──────────────┘
      └──┤ ├──
```

Network 11: Convert Setpoint to Real for PID

```
                          ┌──────CONV──────┐
                          │   Int  to  Real │
    ──────────────────────┤ EN         ENO  ├──────────
       %QW34              │                 │      %MD200
     "Setpoint_          │            OUT ─ │  "Setpoint_value"
       display" ─────────┤ IN             │
                          └────────────────┘
```

Network 12: Convert PV to Real for PID

```
                          ┌──────CONV──────┐
                          │   Int  to  Real │
    ──────────────────────┤ EN         ENO  ├──────────
       %QW36              │                 │      %MD204
     "PV_display" ────────┤ IN         OUT ─ │  "Process_value"
                          └────────────────┘
```

Network 13: Store error margin value

```
              MOVE
           EN    ENO
    30.0 — IN
                        %MD218
                        "Level_error_
                OUT1 —  margin"
```

Network 14: High Level Alarm Network

```
              ADD
              Int
           EN    ENO
    %MD200
    "Setpoint_value" — IN1         %MD220
    %MD218                         "High_level_
    "Level_error_          OUT —   threshold"
    margin" — IN2
```

Network 15: Low Level Alarm Network

```
              SUB
              Int
           EN    ENO
    %MD200
    "Setpoint_value" — IN1         %MD222
    %MD218                         "Low_level_
    "Level_error_          OUT —   threshold"
    margin" — IN2
```

Network 16: Discharge Valve error

```
  %M5.0        %IW32              OR
  "Start_flag" "FlowMeter"        Word
   —| |—        ==             EN    ENO
               Word
                0        %MW6
                         "Digital alarms" — IN1   OUT — %MW6
                                  1 — IN2          "Digital alarms"

               %IW32              AND
               "FlowMeter"        Word
                <>             EN    ENO
               Word
                0        %MW6
                         "Digital alarms" — IN1   OUT — %MW6
                          16#FFFE — IN2           "Digital alarms"
```
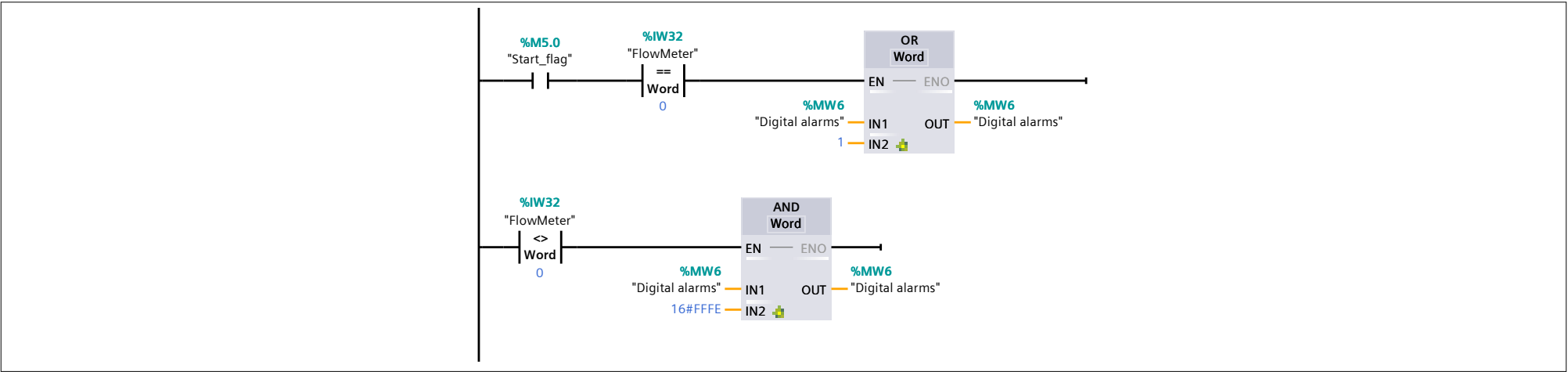
Network 17: Reset Abuse error

```
                       %DB4
                       "IEC_Timer_0_DB"
  %I10.1               TON                     OR
  "Reset"              Time                    Word
   —| |—            IN      Q               EN    ENO
                T#5S — PT     ET — T#0ms     %MW6
  %M4.2                                      "Digital alarms" — IN1   OUT — %MW6
  "Reset_from_HMI"                             2 — IN2               "Digital alarms"
   —| |—
```
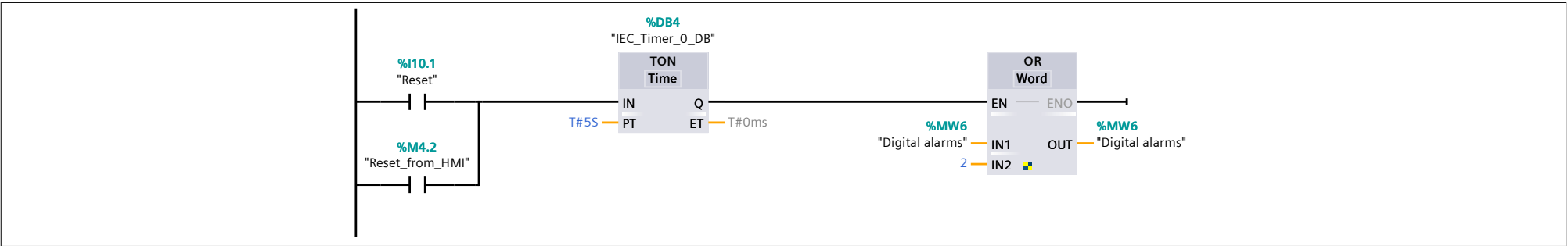
Network 18: Reset Abuse error reset

```
  %I10.1        %M4.2              AND
  "Reset"       "Reset_from_HMI"   Word
   —|/|—         —|/|—          EN    ENO
                         %MW6
                         "Digital alarms" — IN1   OUT — %MW6
                          16#FFFD — IN2           "Digital alarms"
```