

08 Dec 2022

Lopolight Mimic-server MODBUS over TCP/IP section.

Modbus-service

Configuration

The section modbusd in the file modbus.json contains the configuration of the modbus service.

The default values are:

```
"modbusd": {
  "TcpPort": 502,
  "RestHost": "http://localhost:5000",
  "LmrqControlBase": 10000,
  "LmrqStatusBase": 10061,
  "GroupControlBase": 11000,
  "GroupStatusBase": 12000,
  "AlarmCoil": 9000
}
```

- **TcpPort**
The modbus service tcp port
- **RestHost**
The address of the NLC-G web service
- **LmrqControlBase**
The base coil address for lmrq control.
- **LmrqStatusBase**
The base address for lmrq status. Each lmrq uses 5 coils.
- **GroupControlBase**
The base address for group control
- **GroupStatusBase**
The base address for group status. Each group uses 1 coil.

LMRQ control

To control a single light (LMRQ), set the coil `LmrqControlBase + LMRQ` address to 1 or 0.

Example:

Write a 1 to coil address 10001 to switch a light on.

Write a 0 to coil address 10001 to switch a light off.

LMRQ status

Each light (LMRQ) uses five coils for its status. The first coil indicate whether the the light has been requested to be switched or not. The next four indicate the status in binary.

Example:

Coil	Value	Meaning
10061	0	Request on or off

08 Dec 2022

Lopolight Mimic-server MODBUS over TCP/IP section.

Coil	Value	Meaning
10062	1	Status bit 1
10063	1	Status bit 2
10064	0	Status bit 3
10065	0	Status bit 4

The 0 in 10061 indicate that the light is requested off. The next 4 coils indicate that the light has status 3, which is off.

Status	Binary	Meaning
0	0000	Current outside range
1	0001	Light on
2	0010	Lifetime exceed within 2000h
3	0011	Light offOff
4	0100	Lifetime exceeded
5	0101	Total failure
6	0110	Partial failure
7	0111	Hardware-on
8	1000	Overload"
9	1001	Teach in
10	1010	Flashing
11	1011	Light off Deicing active
12	1100	Light on Deicing active]

Group control

To control a group, set GroupControlBase + group external id to 1 or 0.

The group external id can be configured on the group manage page on the NLC-G. Groups with an external id with the value 0 can not be controlled via modbus.

Example:

Write a 1 to 11004 to activate the group with the external id 4. Write a 0 to 11001 to deactivate the group with the external id 1.

Group status

The group status indicate whether the group has a failure.

Example:

Read coil 12004. One indicate that the group with external id 4 is activated, but has a failure

Alarms

If the system has one or more active alarms, the alarm-coil (default coil 9000) will be set to "1".

08 Dec 2022

Lopolight Mimic-server MODBUS over TCP/IP section.

Writing a "0" to this coil will resolve all active alarms on the system and clear the alarm history.
Resolving an alarm for a light, means that the light will be switched off.

08 Dec 2022

Lopolight Mimic-server MODBUS over TCP/IP section.

EXAMPLES:

LMRQ Control (Individual Lights)

To switch a light on, write 1 to the LMRQ's corresponding coil.

To switch a light off, write 0 to the LMRQ's corresponding coil.

LMRQ Address	Coil
1	10001
2	10002
3	10003
4	10004
5	10005
6	10006
7	10007
8	10008
9	10009
10	10010
11	10011
12	10012
13	10013
14	10014
15	10015
16	10016
17	10017
18	10018
19	10019
20	10020
21	10021
22	10022
23	10023
24	10024
25	10025
26	10026
27	10027
28	10028
29	10029
30	10030
31	10031
32	10032
33	10033
34	10034
35	10035
36	10036
37	10037
38	10038

08 Dec 2022

Lopolight Mimic-server MODBUS over TCP/IP section.

39	10039
40	10040
41	10041
42	10042
43	10043
44	10044
45	10045
46	10046
47	10047
48	10048
49	10049
50	10050
51	10051
52	10052
53	10053
54	10054
55	10055
56	10056
57	10057
58	10058
59	10059
60	10060

08 Dec 2022

Lopolight Mimic-server MODBUS over TCP/IP section.

LMRQ status

Each light (LMRQ) uses five coils for its status. The first coil indicate whether the the light has been requested to be switched or not. The next four indicate the status in binary.

Status	Binary	Meaning
0	0000	Current outside range
1	0001	Light on
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6	0110	Partial failure
7	0111	Hardware-on
8	1000	Overload"
9	1001	Teach in
10	1010	Flashing
11	1011	Light off Deicing active
12	1100	Light on Deicing active]

Coil	Usage
10061	LMRQ 1 request
10062	LMRQ 1 status bit 1
10063	LMRQ 1 status bit 2
10064	LMRQ 1 status bit 3
10065	LMRQ 1 status bit 4
10066	LMRQ 2 request
10067	LMRQ 2 status bit 1
10068	LMRQ 2 status bit 2
10069	LMRQ 2 status bit 3
10070	LMRQ 2 status bit 4
10071	LMRQ 3 request
10072	LMRQ 3 status bit 1
10073	LMRQ 3 status bit 2
10074	LMRQ 3 status bit 3
10075	LMRQ 3 status bit 4
etc...	etc...

Example:

Coil	Value	Meaning
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08 Dec 2022

Lopolight Mimic-server MODBUS over TCP/IP section.

10062	1 Status bit 1
10063	1 Status bit 2
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The 0 in 10061 indicate that the light is requested off. The next 4 colis indicate that the light has status 3, which is off.