

SCHNEIDER SMART LINK SI B (A9XMZA08)

Node-red integration and sending data to the cloud

Circuit Breaker

Connect your Smartlink to your router and also connect the Edge Box to your router with Ethernet Patchcords

Factory settings on Smartlink SI B (Push reset button for more than 10 seconds)

This factory setting uses DHCP

Locate the address of your smartlink from your router network map, or with an advanced IP scanner software.

In our case the IP address is 192.168.1.95

Connect one circuit breaker with uxiliary contact to the Channel 1 of Smart Link

Let's look at the manual to find the Channel 1 address:

Description of terminals for each channel (Ti24 interface):

Terminal	Description
24 V	24 V of the 24 Vdc power supply
Q	Control output
I2	Input number 2
I1	Input number 1
0 V	0 V of the 24 Vdc power supply

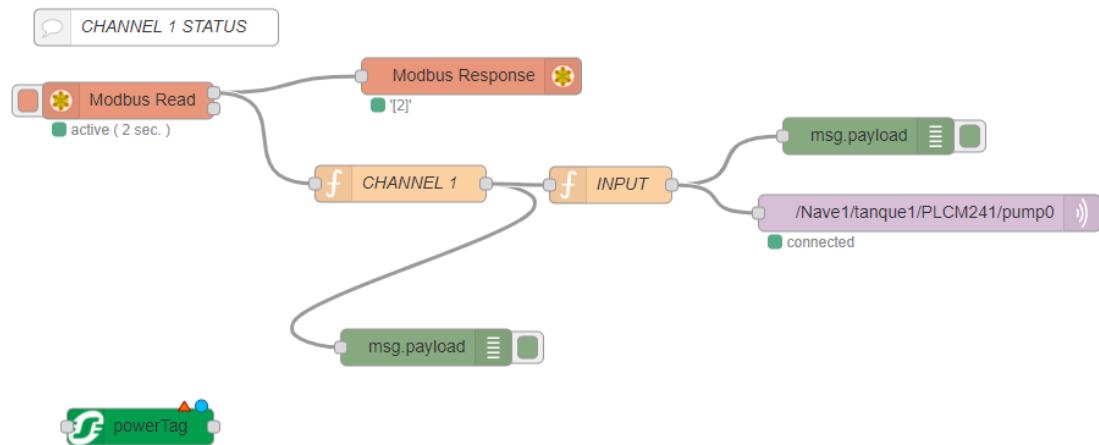
Status

	Channels						
	1	2	3	4	5	6	7
Input I1 (bit 0)	14200	14240	14280	14320	14360	14400	14440
Input I2 (bit 1)	14200	14240	14280	14320	14360	14400	14440

For Channel 1

Address	No.	RW	X	Unit	Type	Range	Default Value	Svd	Function Code	Description
14200	1	R	-	-	BITMAP	-	0x0000	N	03, 100-4	Electrical status of inputs 1 and 2 of all connected devices ⁽¹⁾ .

Let's build this Node-red Flow



Edit Modbus-Read node

Delete Cancel Done

Properties

Settings

Name

Topic

Unit-Id

FC

Address

Quantity

Poll Rate

☐ Delay on start

Server

Optionals

[Delete](#)[Cancel](#)[Update](#)**⚙ Properties**

Name

Type

TCP



Host

Port

TCP Type

DEFAULT



Unit-Id

Timeout (ms)

Reconnect
timeout (ms)

Log states changes

☐

Queue commands

☒

Queue delay (ms)

Edit function node

Delete

Cancel

Done

⚙️ Properties

⚙️

📄

🖼️

🔑 Name

CHANNEL 1

📄

▼

🔧 Function

↗️

1

var variable0={payload: msg.payload[0]}

2

return variable0;

Edit function node

Delete

Cancel

Done

⚙️ Properties

⚙️

📄

🖼️

🔑 Name

INPUT

📄

▼

🔧 Function

↗️

1

var a=msg.payload;

2

if (a==3)

3

msg.payload=1;

4

else

5

if (a==2)

6

msg.payload=0;

7

return msg;

Edit mqtt out node

Delete

Cancel

Done

⚙ Properties

⚙

📄

🖨

🌐 Server

broker.hivemq.com:1883

✎

📄 Topic

/Nave1/tanque1/PLCM241/pump0

🌐 QoS

▼

🔄 Retain

▼

🏷 Name

Name

Tip: Leave topic, qos or retain blank if you want to set them via msg properties.

Edit mqtt out node > Edit mqtt-broker node

Delete

Cancel

Update

⚙ Properties

⚙

📄

🏷 Name

Name

Connection

Security

Messages

🌐 Server

broker.hivemq.com

Port

1883

☐ Enable secure (SSL/TLS) connection

🏷 Client ID

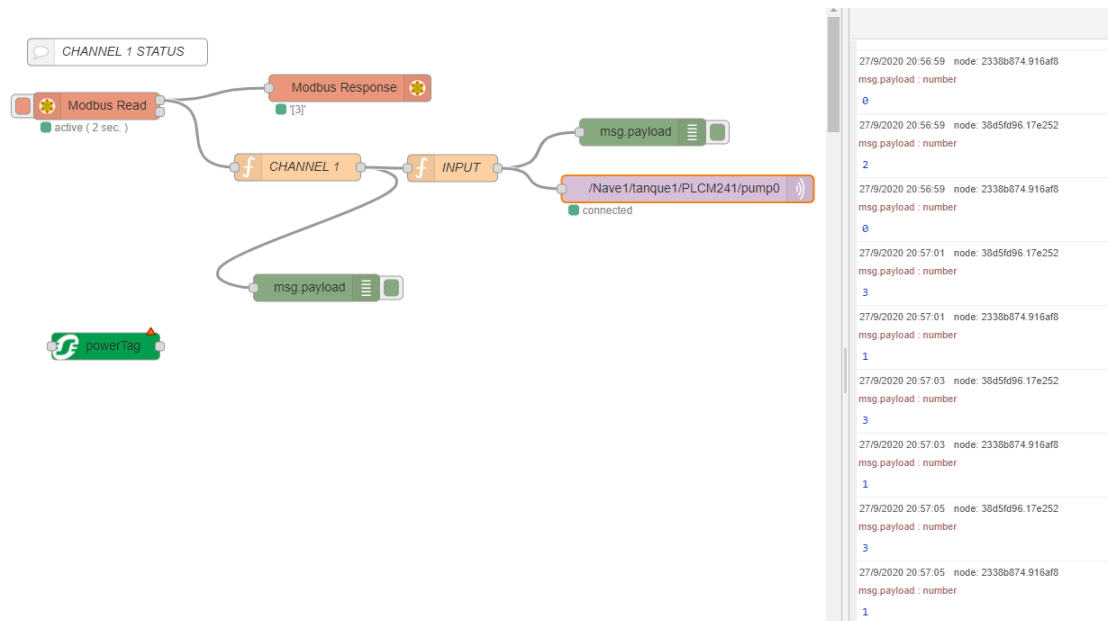
Leave blank for auto generated

☒ Keep alive time (s)

60

☒ Use clean session

☐ Use legacy MQTT 3.1 support



You can find the code here

<https://github.com/xavierflorensa/Schneider-SmartLink-SI-B-Channel1-status>

Now we want to activate a relay

Acti9 Impulse Relay IATL24 (Trip Coil) + ITL (Impulse relay)

This is an impulse relay, if you give the ON impulse, the relay latches on ON state, then if you give an impulse on the OFF pin, then the relay latches to OFF state.

Orders

	Channels						
	1	2	3	4	5	6	7
Output Q (bit 0 and bit 1): Acti9 product	14201	14241	14281	14321	14361	14401	14441

For Channel 1

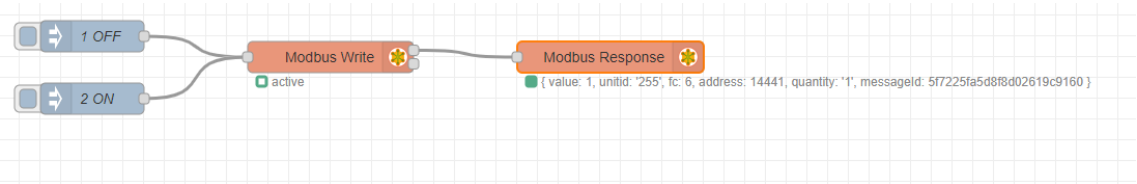
Address	No.	RW	X	Unit	Type	Range	Default Value	Svd	Function Code	Description
14201	1	RW	-	-	BITMAP	-	0x0000	N	03, 06, 16, 100-4	Close and open order for products in the Acti9 range ⁽¹⁾ .

(1)

- Bit 0 = open order
- Bit 1 = close order
- Bits 2 to 15 = no meaning

So to give an impulse on bit 0 this means writing 1 (binary 01) on register 14441 (channel 7)

And to give an impulse on bit 1 this means writing 2 (binary 10) on register 14441 (channel 7)



Edit inject node

Delete

Cancel

Done

⚙ Properties

🔖 Name

1 OFF

≡

msg. payload

=

▼ 0₉

1

✕

≡

msg. topic

=

▼ a_z

✕

Edit inject node

Delete

Cancel

Done

⚙ Properties

🔖 Name

2 ON

≡

msg. payload

=

▼ 0₉

2

✕

≡

msg. topic

=

▼ a_z

✕

Edit Modbus-Write node

Delete
Cancel
Done

⚙ Properties
⚙
📄
🔍

Name
Name

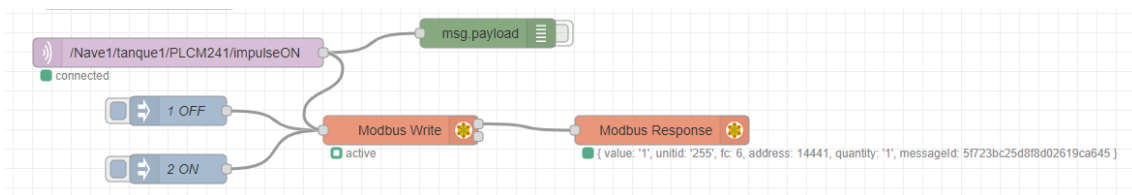
Unit-Id
255

FC
FC 6: Preset Single Register ▼

Address
14441

Server
modbus-tcp@192.168.1.230:502 ▼
✎

And using the mobile Phone

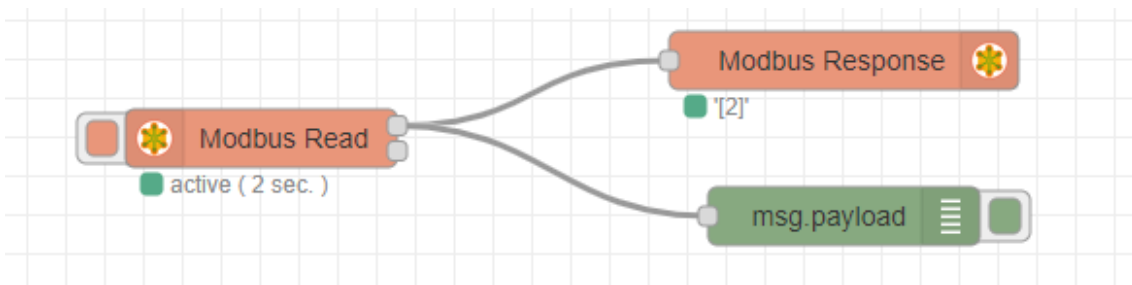


This is typical for lightning

If you want to know the status of the light, just read on input value on register 14440

If you see 2, then this means OFF

If you see 3, then this means ON



Edit Modbus-Read node

Delete

Cancel

Done

⚙️ Properties

⚙️ 📄 🖨️

Settings

Optionals

Name

Name

Topic

Topic

Unit-Id

255

FC

FC 3: Read Holding Registers ▾

Address

14440

Quantity

1

Poll Rate

2

second(s) ▾

⏻ Delay on start

☐

Server

modbus-tcp@192.168.1.230:502 ▾

✎

Now we want to activate a contactor on Channel 3

Acti 9 Contactor: IACT24 (trip coil) + ICT (contactor)

Orders

	Channels						
	1	2	3	4	5	6	7
Output Q (bit 0 and bit 1): Acti9 product	14201	14241	14281	14321	14361	14401	14441

For Channel 1

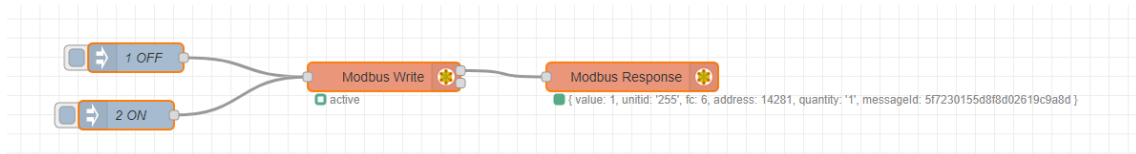
Address	No.	RW	X	Unit	Type	Range	Default Value	Svd	Function Code	Description
14201	1	RW	–	–	BITMAP	–	0x0000	N	03, 06, 16, 100–4	Close and open order for products in the Acti9 range ⁽¹⁾ .

(1)

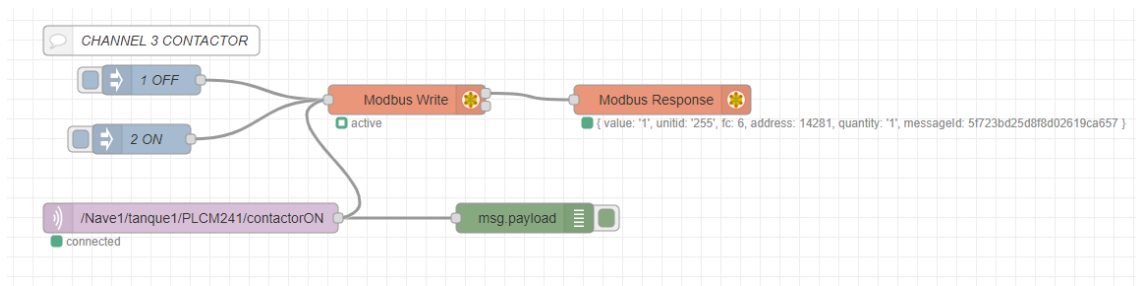
- Bit 0 = open order
- Bit 1 = close order
- Bits 2 to 15 = no meaning

So to put contactor on ON state we write 1 on bit 0 this means writing 1 (binary 01) on register 14281 (channel 3)

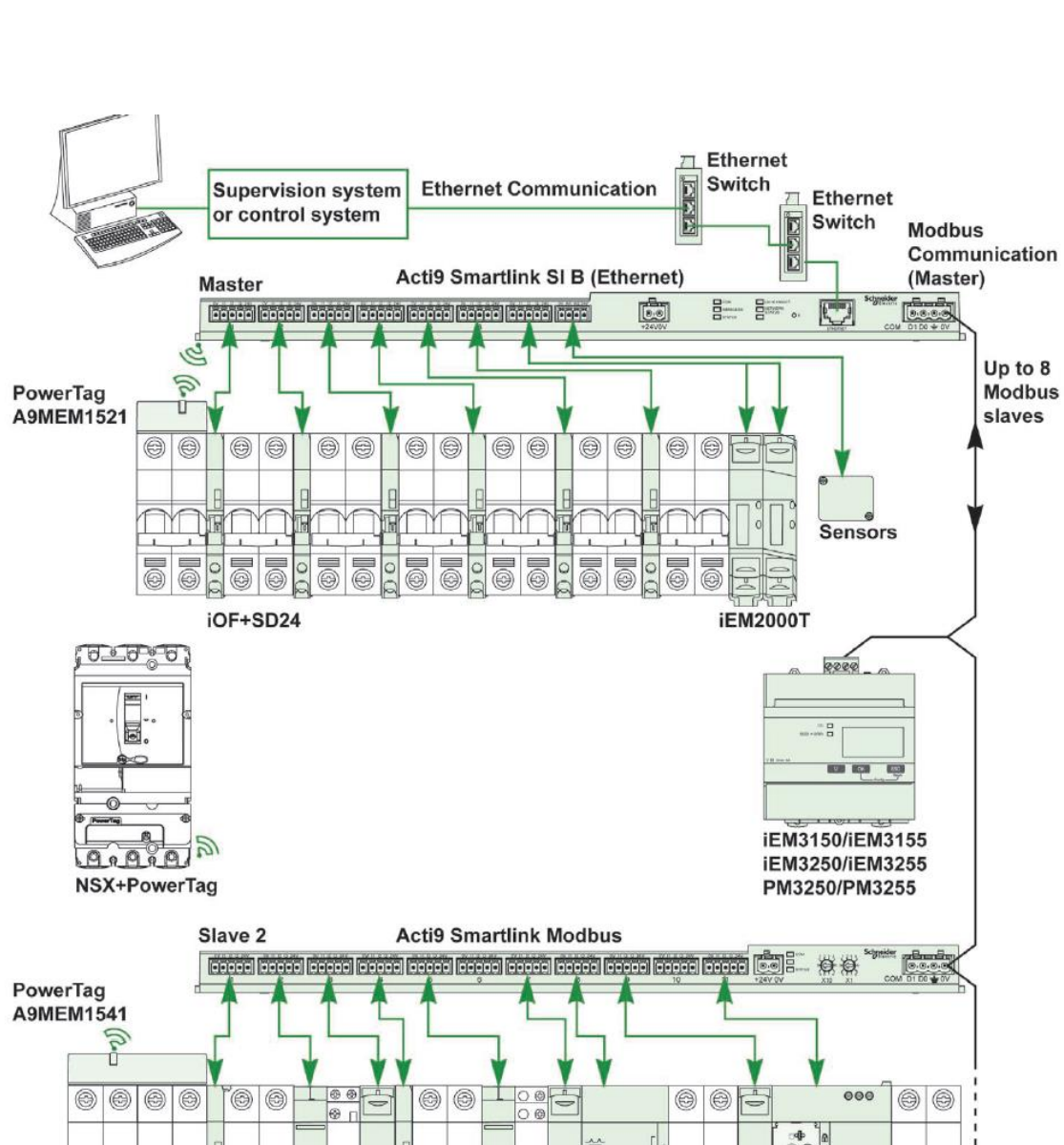
So to put contactor on OFF state we write 1 on bit 1 this means writing 2 (binary 01) on register 14281 (channel 3)



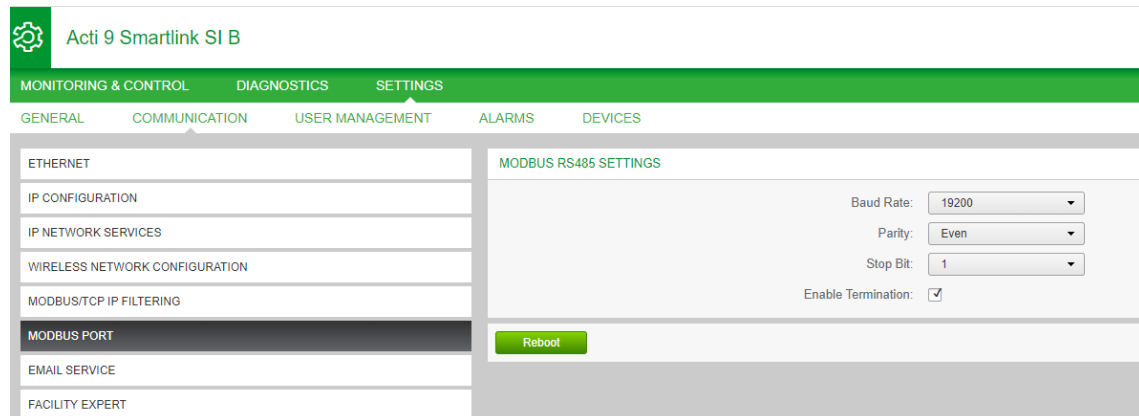
And using the mobile phone



Now we want to use an slave Smart Link module named A9XMSB11



If we look at the Master



And the Slave

Parámetros de comunicación

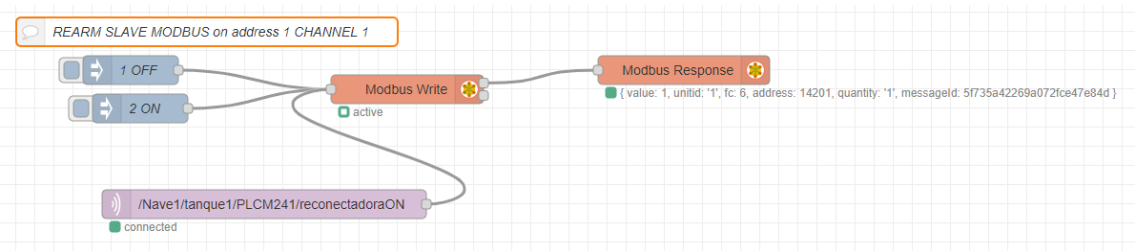
Los valores de los parámetros de comunicación son los siguientes:

Parámetros	Valores autorizados	Valor predeterminado
Velocidad de datos (en Baud)	4.800, 9.600 y 19.200	19.200
Paridad	<ul style="list-style-type: none">• Par y un bit de parada• Impar y un bit de parada• Sin paridad (eliminación del bit de paridad), se necesitan 2 bits de parada.	Par (con 1 bit de parada)

Communication using the Gateway is transparent.

If I select address 1 on Modbus RTU for the slave, then just read on channel 1 of Unit ID 1 (since the master has unit ID 255) And that's all!!!

The addresses are the same than on previous steps only changing the Unit ID.



Edit Modbus-Write node

Delete

Cancel

Done

Properties



Name

Name

Unit-Id

1

FC

FC 6: Preset Single Register ▼


Address

14201

Server

modbus-tcp@192.168.1.230:502 ▼




 Empty msg on fail

☐

 Keep Msg Properties

☐

 Show Activities

☐

 Show Errors

☐

Edit mqtt in node

Delete

Cancel

Done

⚙ Properties

⚙

📄

🖨

🌐 Server

broker.hivemq.com:1883

▼

✎

📋 Topic

/Nave1/tanque1/PLCM241/reconectadoraON

⚙ QoS

2

▼

➡ Output

auto-detect (string or buffer)

▼

🏷 Name

Name

You can see the video here

https://www.youtube.com/watch?v=n24TRDnyP14&ab_channel=XavierFlorensaBerenguer

And you can find the code here

https://github.com/xavierflorensa/Schneider-SmartLink-SI-B-contactor_impulse-relay-on-master-and-rearm-on-slave