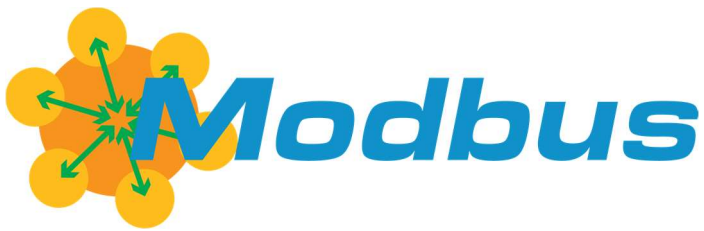


# WRITE FUNCTION IN THE LORA RECEIVER MODBUS TABLE



# Changing the configuration of the sensors which are installed on-site, from the Modbus table

## CONTEXT

- We have already installed transmitters with a LoRa Modbus receiver.
- We now need to adjust the configured period for one of the transmitters. In this example, we are using a TX PULSE ATEX transmitter (initially configured at 10 min, to reconfigure at 5 min).
- To make it easier, we do not want to go through the receiver configuration IP server. We can therefore change the configuration from the Modbus table.

## KEY STAGES OF THE PROCEDURE

1. Identify the initial configurations of the transmitters and their positions in the Modbus table
2. Access the configuration registers in the receiver
3. Find the register that needs to be modified using the **LoRa Configuration Registers** file
4. Write to the register we want to modify
5. Make sure that the transmitter has acquired its new configuration

# 1. IDENTIFYING THE INITIAL CONFIGURATION

The configuration in this case is as follows:

Enless Wireless

M2M & IoT Wireless Expert

CONFIG TX

CONFIG RX

RÉSEAU

MODBUS

LoRa

Configuration des transmetteurs (TX)

+ Ajout TX

<div>✓</div>	Référence TX TX T&H AMB 600-021	Localisation Bureau	Numéro de Série 7	Périodicité 5 mins	<div></div> <div></div>
<div>✓</div>	Référence TX TX PULSE ATEX 600-037	Localisation Bureau	Numéro de Série 16	Périodicité 10 mins	<div></div> <div></div>
<div>✓</div>	Référence TX TX VOC/T&H AMB 600-022	Localisation Bureau	Numéro de Série 9	Périodicité 15 mins	<div></div> <div></div>

3 transmitters already linked to the receiver, including the TX PULSE ATEX set at the 10 min. period

Enless Wireless

M2M & IoT Wireless Expert

CONFIG TX

CONFIG RX

RÉSEAU

MODBUS

LoRa

Général

Admin

Paramètres du récepteur

Vitesse

9600

ID Modbus

1

Bit de données

8

1er registre

0

Bit de stop

1

●

RS232

●

RS485

Parité

Aucune

Avancé

●

Série

●

Modbus

Modbus receiver set for RS232

Enless Wireless

M2M & IoT Wireless Expert

CONFIG TX

CONFIG RX

RÉSEAU

MODBUS

LoRa

Sélectionner un transmetteur

7 - TX T&H AMB 600-021

16 - TX PULSE ATEX 600-037

9 - TX VOC/T&H AMB 600-022

Table Modbus

Export.csv

Registre	Hexadécimal	Décimal	Interprétation
3	0000	0	Identifiant HI
4	0007	7	Identifiant LO
5	0001	1	Type 0 / Version 1
6	0000	0	Statut
7	0000	0	Statut Alarme
8	00da	218	Température 21.8 °C
9	015a	346	Humidité 34.6%
10	0000	0	
11	0000	0	
12	0000	0	
13	0000	0	
14	0000	0	
15	0000	0	
16	0000	0	
17	0000	0	
18	0000	0	
19	0000	0	
20	0003	3	Nombre de trames envoyées 3
21	ffe9	-23	Valeur RSSI -23 dBm
22	0002	2	2 mins depuis dernière lecture

The Modbus table starts in register 3

## 2. ACCESSING THE CONFIGURATION REGISTERS

Open the *LoRa Configuration Registers* Excel file

This file has been supplied by Enless.

Table Position	Modbus Registers	Name	Bytes	Description	Name	Ambient T&H	Ambient T&H / VOC	Ambient T&H / VOC / CO2
1	45003	DeviceID (higher word)	2	Device ID HI	ID	TX T&H AMB 600-021	TX VOC/T&H AMB 600-022	TX CO2/VOC/T&H AMB 600-023
2	45004	DeviceID (lower word)	2	Device ID LO	ID	EN302	EN303	EN304
3	45005	Tx Period	2	Transmission Period in mins	Tx Period (Smin)			
4	45006	TWU Period	2	Time window Upgrade Time in mins	TWU Period (0)			
5	45007	Alarm Threshold Period	2	Alarm Threshold Period in Secs (time before alarm is sent)	zero			
6	45008	Tx Type	2	Transmitter Type	0		1	2
7	45009	Alarm Setting	2	Alarm Setting	Temp Hi - P1 (0)	Temp Hi - P1 (0)	Temp Hi - P1 (0)	Temp Hi - P1 (0)
8	45010	Alarm Setting	2	Alarm Setting	Temp Lo - P2 (0)	Temp Lo - P2 (0)	Temp Lo - P2 (0)	Temp Lo - P2 (0)
9	45011	Alarm Setting	2	Alarm Setting	Hum Hi - P3 (0)	Hum Hi - P3 (0)	Hum Hi - P3 (0)	Hum Hi - P3 (0)
10	45012	Alarm Setting	2	Alarm Setting	Hum Lo - P4 (0)	Hum Lo - P4 (0)	Hum Lo - P4 (0)	Hum Lo - P4 (0)
11	45013	Alarm Setting	2	Alarm Setting	zero	VOC Hi - P5 (0)	VOC Hi - P5 (0)	VOC Hi - P5 (0)
12	45014	Alarm Setting	2	Alarm Setting	zero	VOC Lo - P6 (0)	VOC Lo - P6 (0)	VOC Lo - P6 (0)
13	45015	Alarm Setting	2	Alarm Setting	zero	zero	CO2 Hi - P7 (0)	CO2 Hi - P7 (0)
14	45016	Alarm Setting	2	Alarm Setting	zero	zero	CO2 Lo - P8 (0)	CO2 Lo - P8 (0)
15	45017	Alarm Setting	2	Alarm Setting	zero	zero	zero	zero
16	45018	Alarm Setting	2	Alarm Setting	zero	zero	zero	zero
17	45019	Alarm Setting	2	Alarm Setting	zero	zero	zero	zero

This file shows the architecture of the configuration registers in the receiver’s Modbus table. The configuration registers always start from register 45003 in the Modbus table.

There are 40 configuration registers available for each transmitter (ID, transmission period, alarm thresholds, etc.).

For this example, we want to alter the transmission period for the TX PULSE ATEX 600-037 - ID 16 transmitter directly from the Modbus table. This transmitter is in the second position in the receiver’s Modbus table (see below).

Registre	Hexadécimal	Décimal	Interprétation
23	0000	0	Identifiant HI
24	0010	16	Identifiant LO
25	0501	1281	Type 5 / Version 1
26	0000	0	Statut
27	0000	0	Statut Alarme

### 3. IDENTIFYING THE REGISTER TO BE MODIFIED

Enter the position of the transmitter in the Modbus table in the file

In cell B6, we can enter the position of the TX PULSE ATEX in the receiver's Modbus table, i.e., 2. This will bring up the specific Modbus registers for configuring this transmitter (see below):

Table Position	Modbus Registers	Name	Bytes	Description
2	45043	DeviceID (Higher word)	2	Device ID HI
	45044	DeviceID (Lower word)	2	Device ID LO
	45045	Tx Period	2	Transmission Period in mins
	45046	TWU Period	2	Time window Upgrade Time in mins
	45047	Alarm Threshold Period	2	Alarm Threshold Period in Secs (time before alarm is sent)
	45048	Tx Type	2	Transmitter Type
	45049	Alarm Setting	2	Alarm Setting
	45050	Alarm Setting	2	Alarm Setting
	45051	Alarm Setting	2	Alarm Setting
	45052	Alarm Setting	2	Alarm Setting
	45053	Alarm Setting	2	Alarm Setting
	45054	Alarm Setting	2	Alarm Setting
	45055	Alarm Setting	2	Alarm Setting
	45056	Alarm Setting	2	Alarm Setting
	45057	Alarm Setting	2	Alarm Setting
	45058	Alarm Setting	2	Alarm Setting
	45059	Alarm Setting	2	Alarm Setting

As we will see, the transmission period of the transmitter in the second position in the Modbus table is configured in configuration register **45045**.

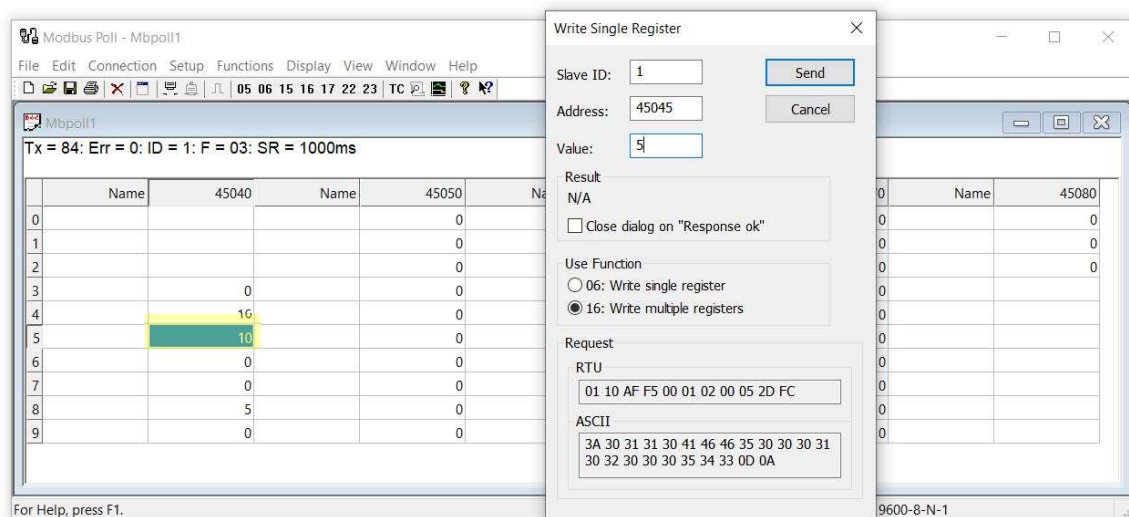
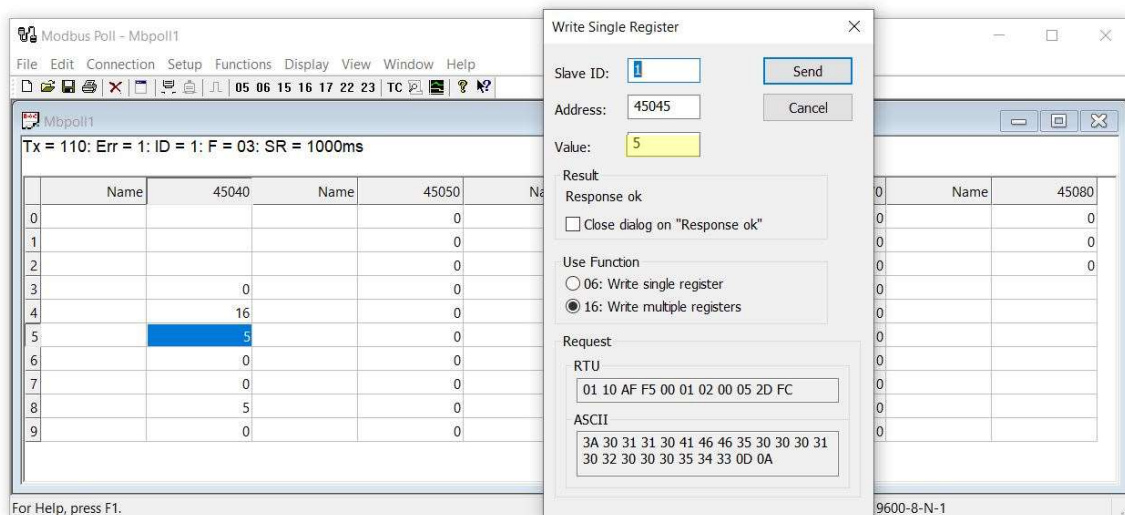
### 4. WRITING IN THE REGISTER

Replacing the period value in the Modbus table

Using the PLC (here we are using the Modbus Poll emulator), we can see in the 45045 register that the originally configured period for this transmitter is 10 minutes, as shown below.

Name	45040	Name	45050	Name	45060	Name	45070	Name	45080
0			0		0		0		0
1			0		0		0		0
2			0		0		0		0
3	0		0		0		0		0
4	16		0		17013		0		0
5	10		0		29285		0		0
6	0		0		24949		0		0
7	0		0		0		0		0
8	5		0		0		0		0
9	0		0		0		0		0

We can now write in this register to adjust the transmission period.



We will be changing the value from 10 to 5, so that the transmission period for the transmitter will now be 5 minutes.

## 5. MAKING SURE THAT THE TRANSMITTER HAS ACQUIRED ITS NEW CONFIGURATION

1. If you enabled the *New Configuration\** function for the products during the initial configuration, the transmitter will acquire its new transmission period within 24 hours.
2. If you did not enable the *New Configuration\** function, you can hold the transmitter push button down for 5 seconds to enable it to acquire its new configuration.

***New Configuration\****: When enabled this function enables the transmitter to poll the receiver every 24 hours to see if there is a new configuration available. This function is enabled on the IP Server when setting the configuration in the advanced configuration options.