XALDIGITAL

CONFIGURATION MANUAL FOR SENDING PLC INFORMATION TO SIGFOX DEVICE USING RS232 PROTOCOL

05/11/2020

SIGFOX material handling information format

The first step is to collect the information from the line to be monitored, for which direct material handling information is extracted, for example:

X: Line identifier in hexadecimal. This means that 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A, B, C, D, E, F, would be sent here. These must be ASCII characters. Example: "A" which in decimal is equivalent to "10".

YYYYYY: Recipe ID. Recipes can also carry letters, so you can't reduce the size: Example: "11128S", this data must be the same in **"ASCII".**

ZZ: Total number of masses manufactured from the start of new target in hexadecimal. This number must be at most FF in hexadecimal than its equivalent is 255 in decimal. Example: The value of "50" in decimal, which its hexadecimal equivalent is "32", which must be ASCII **character.**

WW: Current mass target: Same as above,á the maximum number will be 255 in decimal. Example: "255" which in hexadecimal is FF, which must be ASCII character.

V: ASCII character available. In case you need to add any other value. Example: "1" than in ASCII from being the same value.

To perform it send this information using the RS232 protocol we must attach all the data in a single ASCII format, which must have the following specifications:

The frame format based on the information collected should look like this:
"VYYYYYZZWWX"

From what was explained earlier, the example frame for the data shown is as follows:
"011128S32FF0A"

Para a frame with change and cleanliness must be generated over time in minutes less than 999 and completed with leading zeros:
"00000100101A"

The following plot indicates thatyouexterminating a**10-minute change and cleanup a pothole 1 out of 1 for line 10**

No se Usa	Código de masa						Fabricadas		Programadas		Línea
0	0	0	0	0	1	0	0	1	0	1	A
	Ceros a la izquierda				Tiempo de CYL		Hechas		Programadas		

For air sweeps or discharges that serve to clean or other purpose should not be recognized as mass, the following frame indicates that there is a sweep and the code will be ignored as mass by the system

"00009510101A"

No se Usa	Código de masa						Fabricadas		Programadas		Línea
0	0	0	0	9	5	1	0	1	0	1	A
	Ceros a la izquierda			Barrido			Hechas		Programadas		

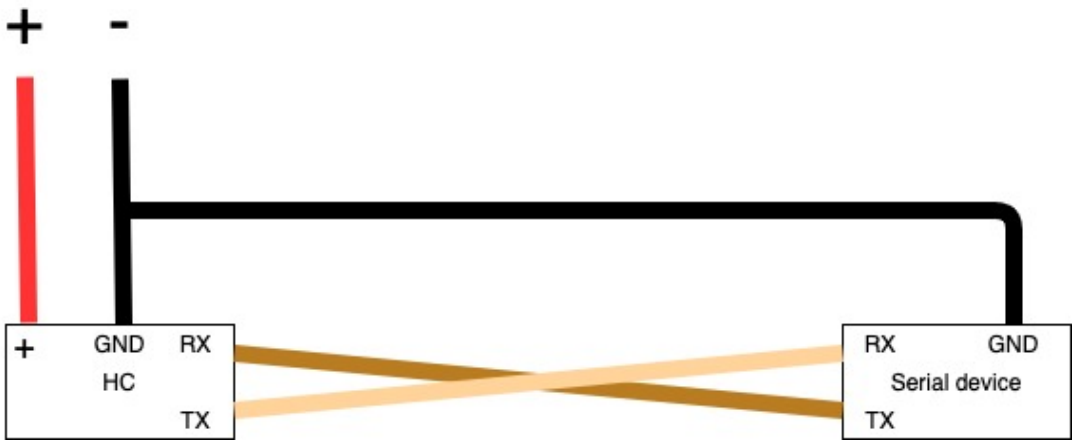
Wiring connection

Cable color	Function	MAXIMUM VOLTAGE
Red	Voltage +	36V DC
Black	Gnd	Gnd
White	Rx	6V DC
Brown	Tx	6V DC

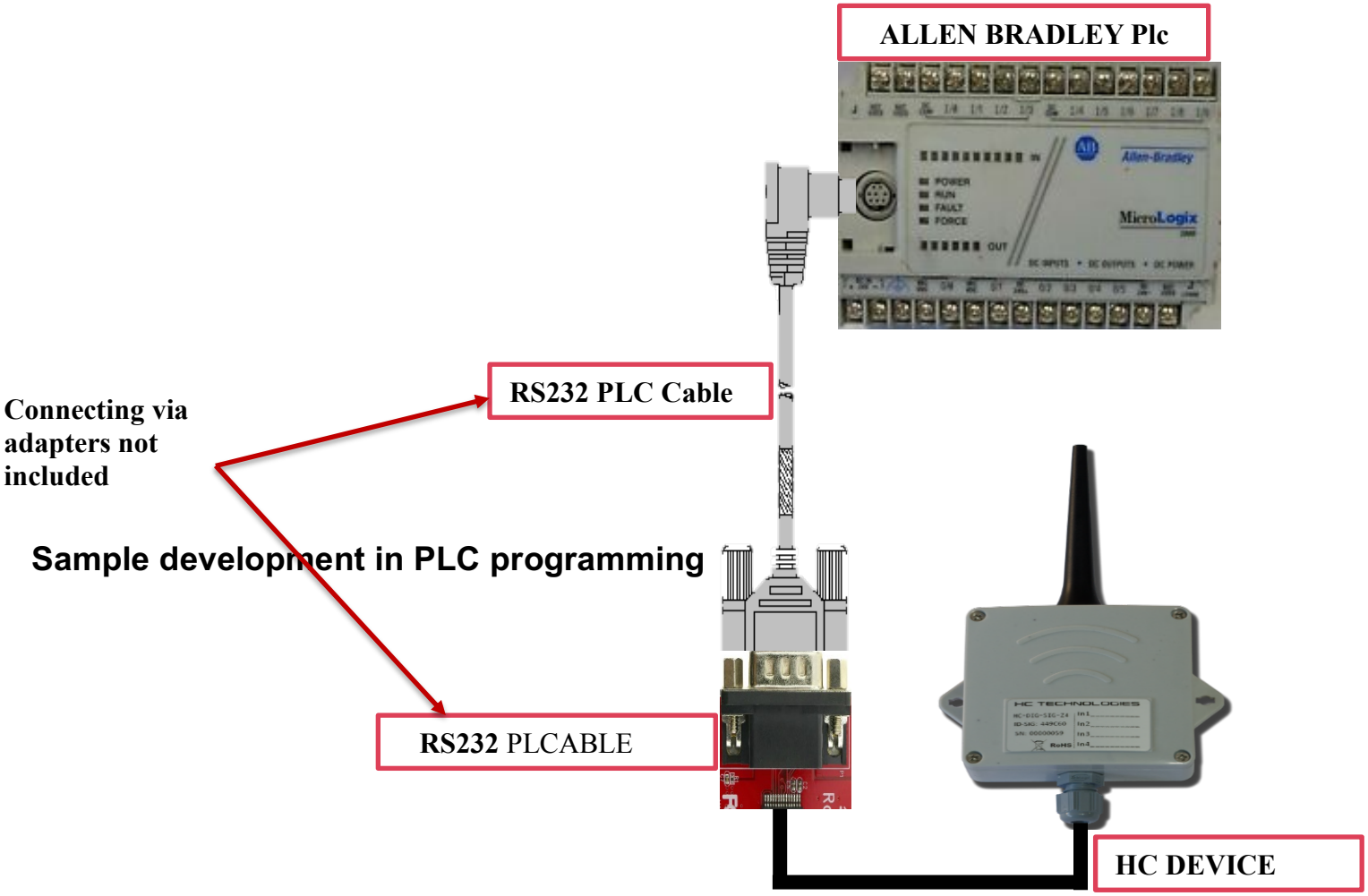
RS232 serial port

The device has RS232 (5V) connection for communication with external devices (PLC, etc.). The following is the connection schema:

Thesquema of the color-coded connection



Thesquema of the connection with **adapters**



NO SPECIAL ACTION IS REQUIRED TO START COMMUNICATION OVER THE SERIAL PORT. THE MAXIMUM FRAME THAT THE DEVICE CAN SEND IS 12 ASCIII BYTES.

THE MAXIMUM FRAME THAT THE DEVICE CAN RECEIVE BEFORE A CARRIAGE RETURN IS 100 ASCII CHARACTERS. THE FRAME SHOULD ALWAYS END WITH A CARRIAGE RETURN (0X0D) (+CR). UPON RECEIVING THE CARRIAGE RETURN THE DEVICE RESPONDS WITH HC OK (+CR).

THE DEVICE ACCORDING TO THE INITIAL CONFIGURATION OR CONFIGURATION RECEIVED BY DOWNLINK WILL CUT UP TO 12 BYTES OF THE FRAME, STARTING WITH THE BYTE INDICATED AS TRAMA START AND ENDING WITH THE BYTE INDICATED AS END TRAMA.

IT IS IMPORTANT TO NOTE THAT THE FIRST BYTE OF THE FRAME IS CONSIDERED BYTE 0, THEREFORE THE BYTES OF THE FRAME ARE COUNTED AS BYTE 0, 1, 2, 3, AND SO ON. THE DEVICE WILL SEND A MAXIMUM OF 12 ASCII BYTES, BUT SMALLER FRAME CHUNKS CAN BE CHOSEN. THE SENT FRAME CONTAINS THE ASCII BYTES SELECTED IN HEXADECIMAL FORMAT, THAT IS, WITH THEIR CORRESPONDING HEXADECIMAL NUMBER IN THE ASCII TABLE (FOR EXAMPLE, THE LETTER A CORRESPONDS TO 65)

THE VELOCITY OF THE TRANSFER BAUDES FOR COMMUNICATION BETWEEN THE HC DEVICE AND THE PLC MUST BE "115200".

IF A DIFFERENT SPEED IS REQUIRED PLEASE INDICATE THE SPEED TO THE XALDIGITAL SUPPORT TEAM TO THE MAIL :

soportegbc@xaldigital.com

Indicating the DeviceID,Baud

For example :

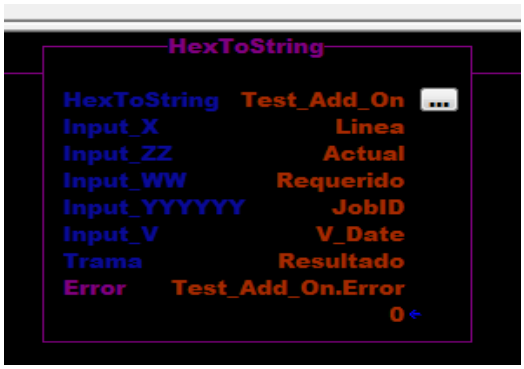
DeviceID: 3DDC06

Baud: 19200

for the necessary configuration to be done, this will require the device to be turned off and on to ting the new configuration.

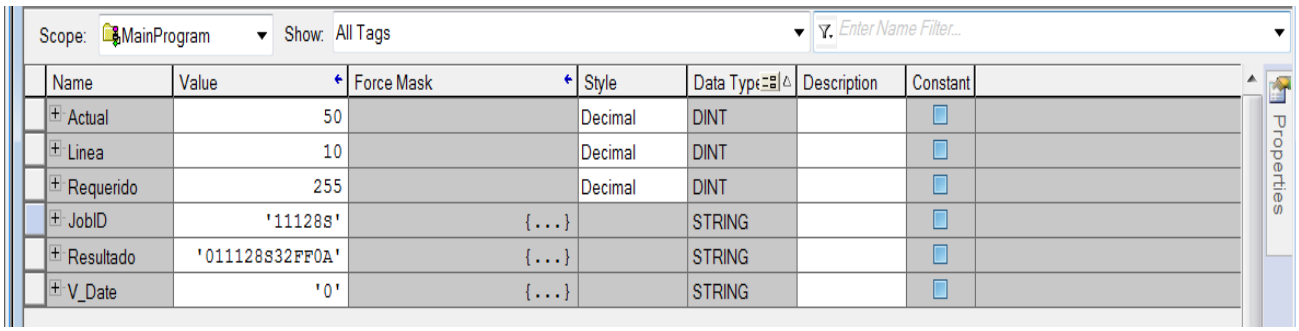
Sample development in PLC programming

To perform the frame fix that will be sent directly to HC devices, an Add_On statement was used, which was developed for this application, using this instruction only requires that its respective fields be filled in, once this is done, the Add_On statement will return the frame value to you as required.



Fields	Description
Input_X	Line identifier
InpuT_ZZ	Total number of masses manufactured
Input_WW	Current mass target
Input_YYYYYY	Recipe ID
Input_V	ASCII character available
Plot	Sorted character set

For the example mentioned at the beginning its respective logic was performed in the PLC and the result were the following values:



Thank you!