

415U-1 Battery OK signal in a 415U-2

The 415U-1 does not have setpoint on the Battery or supply. We can send the battery or supply as an analog however at the Receiving end (415U-2) we get setup some basic Logic to give an alarm based on a particular voltage.

415U-X-1 Configuration

Connect to the 415U-1 using a Terminal package (TerraTerm, RealTerm, Procomm, Etc) at 9600, 8, N,1.

Select “a) Engineer” and use Password “Elproeng” to get into the menu system.

Go to “b) I/O setup” and then select “g) Battery Voltage” then configures the following parameters.

```

Battery
REG      30505
Format  F-4
sens     5
Value    12.74 V
    
```

Reg is the Register in the Base 415U-2 where the Voltage is going to be sent. This is a general-purpose integer location that will hold the battery voltage value.

Format will be a F-4 (floating point) but we will only be looking at the upper part of the value. Select “Report format” / “Custom type and Length” / “Floating Point”

Sens = Leave at 5.

Save all setting then move to the Base radio (415U-2)

On the Base Radio we use some very basic Logic to create an alarm based on the threshold of the battery voltage.

Logic in the 415U-2 is below.

Basically, it will read the register and checks if it’s less than the threshold value.

Threshold value is calculated using an online calculator (below) to get the Floating-point representation.

<https://www.h-schmidt.net/FloatConverter/IEEE754.html>

11.0V will be 0x41300000 Hex. Ignore the low 16 bits and convert 0x4130 to Decimal to get 16688.

Then if the battery voltage is Less than the threshold value, stores a 1 to the Register else it stores a 0.

#	Operation	I ?	N ?	{ ?	Value/Register ?	Notes and Comments ?
1	LOAD	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	30505	Load the high word of the value of the Mapped Battery voltage (Map FP to a General Register)
2	LT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	16688	Threshold upper 16 bits of FP and convert Hex 0x4130 to Dec. - 11V=16688, 13V=16720
3	STOR	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	10505	Store the accumulator to the Low battery alarm register 0 for OK, 1 for low battery.

Max rows: 300

If the battery V is 12.7 and threshold is 11V (16688) Batt Low register will be off (0) and if the threshold value was changed to 13 V (16720) the Batt Low Reg changes to On (1)