SICUREZZA SUL LAVORO MOBILITA' ELETTRICA AMBIENTE ED EFFICIENZA ENERGETICA CONTATORI E SOLUZIONI IOT

Convertitore Modbus TCP Elfin EE11 con Contatore Rayleigh RI-D140

Cablaggio:

morsetto 1 = RJ45 biancoarancio

morsetto 2 = RJ45 arancio

morsetto 3 = RJ45 biancoverde

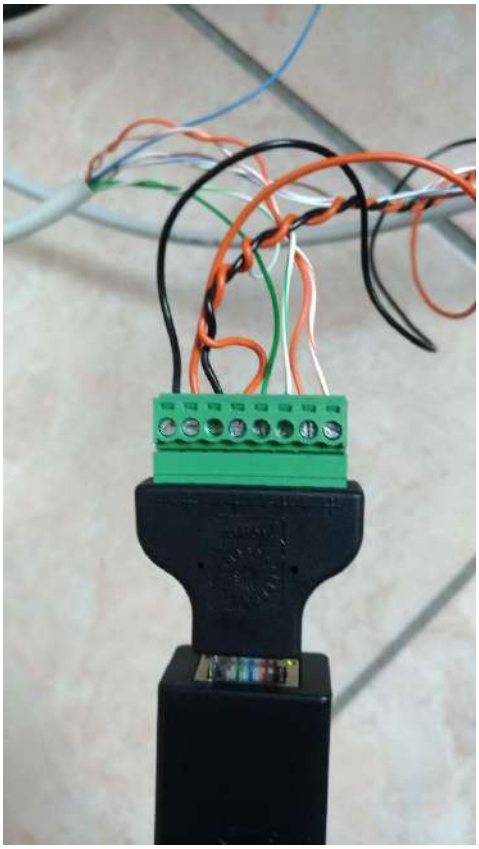
morsetto 4 = RJ45 verde

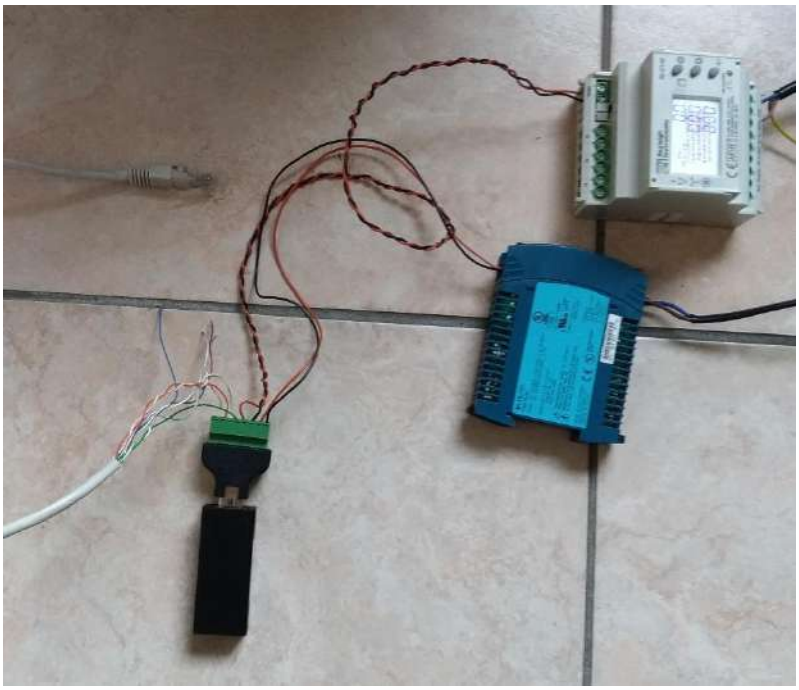
morsetto 5 = RS485+ contatore

morsetto 6 = RS485- contatore

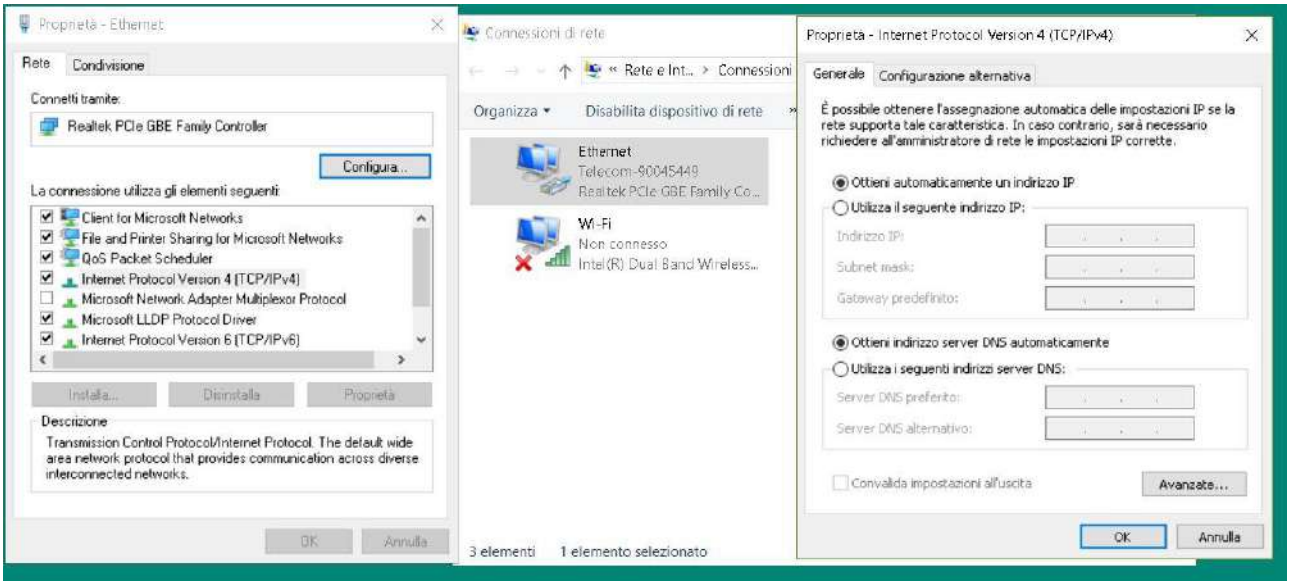
morsetto 7 = alimentazione 12V+

morsetto 8 = alimentazione 12V-





Tramite il **Centro connessioni di rete** nel **Pannello di controllo** impostare la **scheda ethernet** del PC in **DHCP**



Collegare il connettore RJ45 del cavo al PC

Aprire il browser e inserire l'indirizzo: http://169.254.173.207/hide

Username: **admin**

Password: **admin**

Figure 32. Internal Webpage

.Webpage Function

Aggiornare entrambi le voci con i file **EE11_UPGARDE_V1.32.09.bin** e **webpage_build1811161650034149.bin**

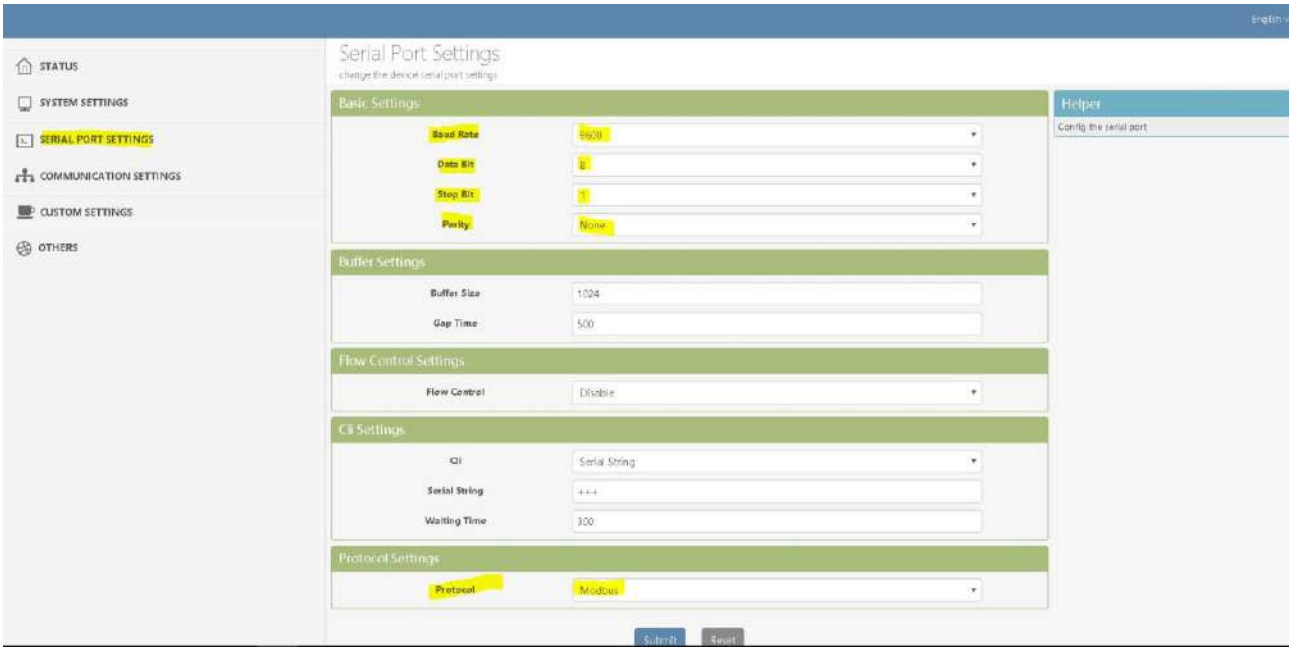
Spegnere e riaccende il convertitore Elfin.

Una volta aggiornato e riavviato il nuovo indirizzo IP sarà 169.254.1.1

Aprire il browser e inserire l'indirizzo http://169.254.1.1

Username: **admin**

Password: **admin**



Nella sezione **Serial Port Settings** impostare:

Protocol : **Modbus**

Baudrate: **9600**

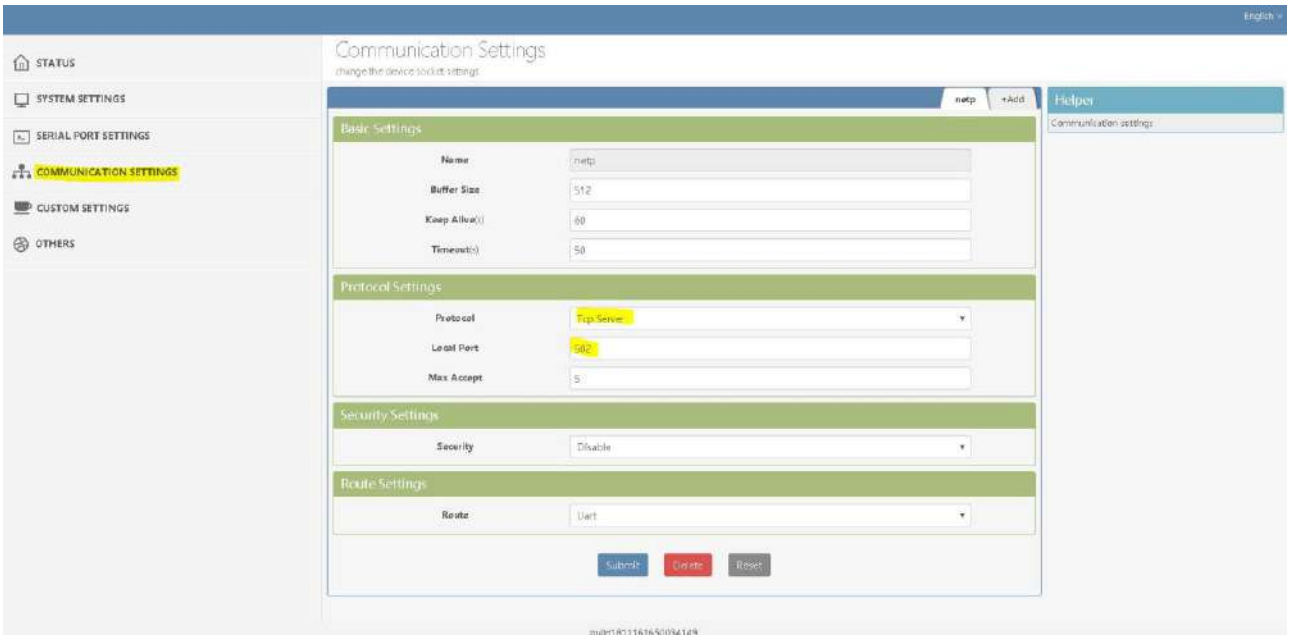
Data Bit: **8**

Stop Bit: **1**

Parity: **None**

La porta seriale del contatore Rayleigh RI-D140 è impostata di default 9600 8 N 1

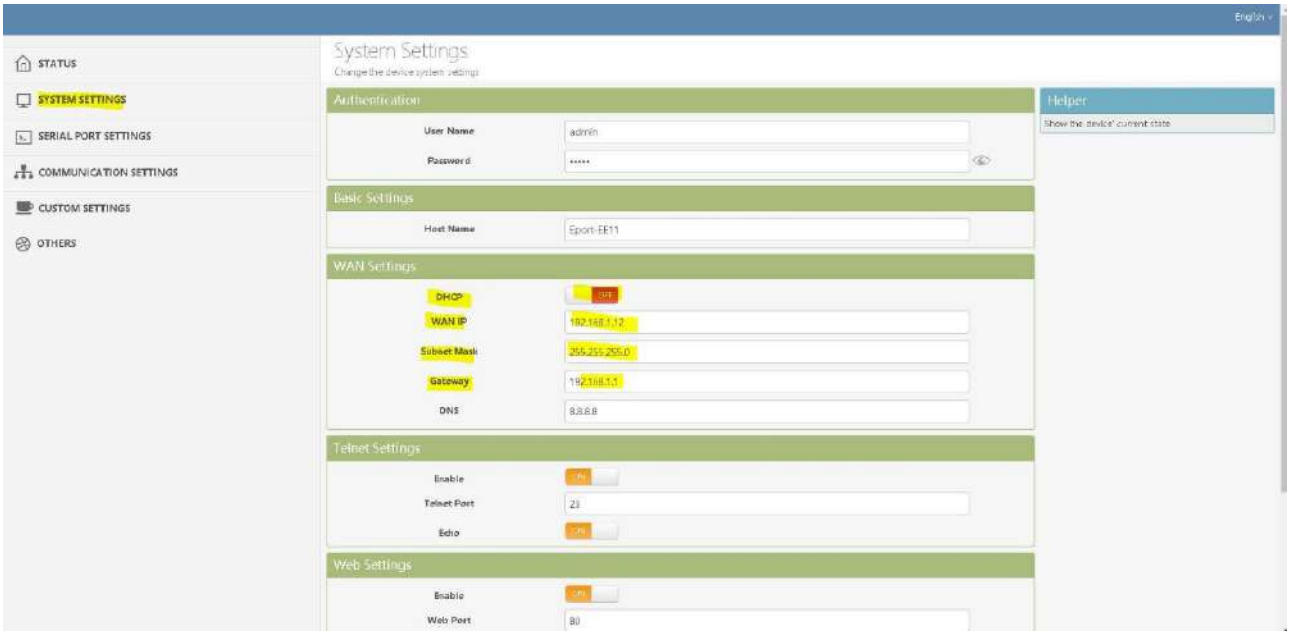
Le impostazioni della porta seriale del contatore Rayleigh RI-D140 sono visualizzabili tramite display.



Nella sezione Communication Settings impostare:

Protocol: **Tcp Server**

Local Port: **502**



Nella sezione **System Settings** dovete disattivare il **DHCP** e impostare un **indirizzo IP** al convertitore compatibile con la vostra rete.

Salvare la configurazione e riavviare il dispositivo.

Dopo che avete spento e riacceso il dispositivo potete collegare il connettore RJ45 del cavo direttamente alla vostra rete e potrete reimpostare sul pc l'indirizzo IP che aveva prima.

A pagina 3 del manuale del contatore Rayleigh RI-D140 è elencata la lista dei registri modbus (compresi lunghezza dei registri e tipo di dato).

Lo **Slave ID** del contatore Rayleigh RI-D140 è **1** di default. Lo Slave ID del contatore Rayleigh RI-D140 e visualizzabile tramite display.

I registri Modbus dal 40000 al 40015 non si possono leggere perché sono bloccati per la direttiva MID.

Gli indirizzi dei registri possono essere traslati di +1 rispetto a quanto riportato sul manuale del contatore.

Lenght Register: 1

Device ID: 1

01: Coil Status

MODBUS REGISTER ADDRESSES LIST

Readable / writable parameters : (Data Structure Interger)

Address	Hex Address	Parameter	Range		Length (Register)
40000	0x00	Password	Min value : 0	Max value : 9999	
40001	0x01	N/W selection	Value : 0x0000	Meaning : 3P4W	1
			Value : 0x0001	Meaning : 3P3W	1
			Value : 0x0002	Meaning : 1P2W-P1	1
40002	0x02	CT Secondary (A)	Min value : 1	Max value : 5	1
40003	0x03	CT primary(CT Secondary=1)(A)	Min value : 1	Max value : 10000	1
		CT primary(CT Secondary=5)(A)	Min value : 5	Max value : 10000	1
40004	0x04	PT Secondary (V)	Min value : 100	Max value : 500	1
40005	0x05	PT primary (V)	Min value : 100	Max value : 500kV	2
40007	0x07	Slave Id	Min value : 1	Max value : 255	1
40009	0x09	Parity	Value: 0x0000	Meaning : None	1
			Value: 0x0001	Meaning : Odd	
			Value: 0x0002	Meaning : Even	
40010	0x0A	Stop bit	Value: 0x0000	Meaning : 1	1
			Value: 0x0001	Meaning : 2	
40011	0x0B	Backlight OFF (sec.)	Min Value : 0	Max Value : 7200	1
40012	0x0C	Factory Default	1	Set to factory setting range	1
40013	0x0D	Reset kWh	1	Reset total active energy	1
40014	0x0E	Reset kVah	1	Reset total apparent energy	1
40015	0x0F	Reset kVArh	1	Reset total reactive energy	1
40016	0x10	Auto mode sequence	Min value : 1	Max value : 18	1
40017	0x11	Page address sequence 1	Page No.: 1-18	Meaning: 1-First page ; 18-Last page	1
40018	0x12	Page address sequence 2	Page No.: 1-18	Meaning: 1-First page ; 18-Last page	1
40019	0x13	Page address sequence 3	Page No.: 1-18	Meaning: 1-First page ; 18-Last page	1
40020	0x14	Page address sequence 4	Page No.: 1-18	Meaning: 1-First page ; 18-Last page	1
40021	0x15	Page address sequence 5	Page No.: 1-18	Meaning: 1-First page ; 18-Last page	1
40022	0x16	Page address sequence 6	Page No.: 1-18	Meaning: 1-First page ; 18-Last page	1
40023	0x17	Page address sequence 7	Page No.: 1-18	Meaning: 1-First page ; 18-Last page	1
40024	0x18	Page address sequence 8	Page No.: 1-18	Meaning: 1-First page ; 18-Last page	1
40025	0x19	Page address sequence 9	Page No.: 1-18	Meaning: 1-First page ; 18-Last page	1
40026	0x1A	Page address sequence 10	Page No.: 1-18	Meaning: 1-First page ; 18-Last page	1
40027	0x1B	Page address sequence 11	Page No.: 1-18	Meaning: 1-First page ; 18-Last page	1
40028	0x1C	Page address sequence 12	Page No.: 1-18	Meaning: 1-First page ; 18-Last page	1
40029	0x1D	Page address sequence 13	Page No.: 1-18	Meaning: 1-First page ; 18-Last page	1
40030	0x1E	Page address sequence 14	Page No.: 1-18	Meaning: 1-First page ; 18-Last page	1
40031	0x1F	Page address sequence 15	Page No.: 1-18	Meaning: 1-First page ; 18-Last page	1
40032	0x20	Page address sequence 16	Page No.: 1-18	Meaning: 1-First page ; 18-Last page	1
40033	0x21	Page address sequence 17	Page No.: 1-18	Meaning: 1-First page ; 18-Last page	1
40054	0x36	Page address sequence 18	Page No.: 1-18	Meaning: 1-First page ; 18-Last page	1
40034	0x22	Demand Interval Method	Value: 0x0000	Meaning : Sliding	1
			Value: 0x0001	Meaning : Fixed	
40035	0x23	Demand Interval Duration	Min Value : 1	Max Value : 30	1
40036	0x24	Demand Interval Length(min)	Min Value : 1	Max Value : 30	1
40037	0x25	Reset MAX kW	1	Reset MAX Active Power	1
40038	0x26	Reset MIN kW	1	Reset MIN Reactive Powar	1
40039	0x27	Reset MAX kVar	1	Reset MAX Reactive Power	1
40040	0x28	Reset MIN kVar	1	Reset MIN Reactive Power	1
40041	0x29	Reset MAX kVA	1	Reset MAX Apparent Power	1
40008	0x08	Baud rate (bps)	Value : 0x0000	Meaning : 300	1
			Value : 0x0001	Meaning : 600	
			Value : 0x0002	Meaning : 1200	
			Value : 0x0003	Meaning : 2400	
			Value : 0x0004	Meaning : 4800	
			Value : 0x0005	Meaning : 9600	
			Value : 0x0006	Meaning : 19200	

MODBUS REGISTER ADDRESSES LIST

Readable parameters : [Length (Register) : 2 ; Data Structure : Float]

Note : In four byte data type , LSB will be displayed on lower address and MSB will be displayed on higher address.

Address	Hex Address	Parameter	Address	Hex Address	Parameter	Address	Hex Address	Parameter
30000	0x00	Voltage 1st Phase	30030	0x1E	kVA1	30060	0x3C	Import kVah
30002	0x02	Voltage 2nd Phase	30032	0x20	kVA2	30062	0x3E	Import kVarh
30004	0x04	Voltage 3rd Phase	30034	0x22	kVA3	30064	0x40	kW MAX Active Power
30006	0x06	Average Voltage LN	30036	0x24	kVAr1	30066	0x42	kW MIN Active Power
30008	0x08	Voltage V12	30038	0x26	kVAr2	30068	0x44	kVar MAX Reactive Power
30010	0x0A	Voltage V23	30040	0x28	kVAr3	30070	0x46	kVar MIN Reactive Power
30012	0x0C	Voltage V31	30042	0x2A	Total kW	30072	0x48	kVa MAX Apparent Power
30014	0x0E	Average Voltage LL	30044	0x2C	Total kVA	30074	0x4A	Export kWh
30016	0x10	Current I1	30046	0x2E	Total kVAr	30076	0x4C	Export kVarh
30018	0x12	Current I2	30048	0x30	PF1	30132	0x84	Serial no(Data Structure : Hex)
30020	0x14	Current I3	30050	0x32	PF2	30134	0x86	Existing MAX active power
30022	0x16	Average Current	30052	0x34	PF3	30136	0x88	Existing MIN active power
30024	0x18	kW1	30054	0x36	Average PF	30138	0x8A	Existing MAX reactive power
30026	0x1A	kW2	30056	0x38	Frequency	30140	0x8C	Existing MIN reactive power
30028	0x1C	kW3	30058	0x3A	Import kWh	30142	0x8E	Existing MAX apparent power

Readable Parameters : [Data Structure : Hex]

NOTE : LSB will be displayed on lower address and MSB will be displayed on higher address.

Address	Hex Address	Parameter	Length		Address	Hex Address	Parameter	Length
31000	0x3E8	Voltage V1N	2		31040	0x410	Kvar3	2
31002	0x3EA	Voltage V2N	2		31042	0x412	Total Kw	2
31004	0x3EC	Voltage V3N	2		31044	0x414	Total Kva	2
31006	0x3EE	Average Voltage LN	2		31046	0x416	Total Kvar	2
31008	0x3F0	Voltage V12	2		31048	0x418	PF1	1
31010	0x3F2	Voltage V23	2		31049	0x419	PF2	1
31012	0x3F4	Voltage V31	2		31050	0x41A	PF3	1
31014	0x3F6	Average Voltage LL	2		31051	0x41B	Average PF	1
31016	0x3F8	Current I1	2		31052	0x41C	Frequency	1
31018	0x3FA	Current I2	2		31054	0x41E	Import kWh	3
31020	0x3FC	Current I3	2		31057	0x421	kVAh	3
31022	0x3FE	Average Current	2		31060	0x424	Import kVArh	3
31024	0x400	Kw1	2		31064	0x428	kW Max active power	2
31026	0x402	Kw2	2		31066	0x42A	kW Min active power	2
31028	0x404	Kw3	2		31068	0x42C	kVAr Max reactive power	2
31030	0x406	Kva1	2		31070	0x42E	kVAr Min reactive power	2
31032	0x408	Kva2	2		31072	0x430	kVA Max apparent power	2
31034	0x40A	Kva3	2		31074	0x432	Export kWh	3
31036	0x40C	Kvar1	2		31077	0x435	Export kVArh	3
31038	0x40E	Kvar2	2					

Energy Rollover Counter Address : This counter will increment when energy is rollover from 9999999 to 0.

Address	Hex Address	Parameter	Length		Address	Hex Address	Parameter	Length
31130	0x46A	IMP Kwh RC*	1		31133	0x46D	EXP Kwh RC*	1
31131	0x46B	IMP Kvah RC*	1		31134	0x46E	EXP Kvarh RC*	1
31132	0x46C	IMP Kvarh RC*	1		NOTE : RC* : Rollover Counter			