

123solar meterN

some talks about solar and metering
<https://www.123solar.org/phpBB/>

Omnik protocol

<https://www.123solar.org/phpBB/viewtopic.php?f=9&t=368>

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Omnik protocol

by **ginorosi**

Posted: **Tue Nov 22, 2016 8:58 pm**

I substituted a PVI 3.0 with 3.0 Omnik, on line research for Omnik logger result only WiFi loggin that intercepting the data flow to omnik portal:

<https://github.com/Woutrrr/Omnik-Data-Logger>

<https://github.com/t3kpunk/Omniksol-PV-Logger>

etc

but I wanted through RS485 / 422,

I would like to create a python script or php to read data from the serial.

I sniffed the transmissions between a solarlog 1000 and via RS422 Inverter with one USB485 on Rx+/Tx+ and one on RX-/TX-

String data from SL to inverter is :

"3a 3a 01 00 00 01 11 02 00 00 89"

the response string from inverter is

"3a 3a 00 01 01 00 11 82 20 00 e0 0e dc 0e d4 00 0a 00 0d 00 26 09 54 13 89 03 76 00 00 00 20 00 00 00 00 01 00 00 00 00 05 a5" is :

3a3a00010100118220 Header

00e0 Temp

0edc VP1

0ed4 VP2

000a IP1

000d IP2

0026 IAC

0954 VAC

1389 FRQ

0376 PAC

00000020 TOTAL ENERGY

00000000 HOURS TOTAL ????

0001 MODE ????

0000 ERROR ????

0000 ERROR ????

05a5 CHKSUM

I acquire a USB-RS422 on aliexpress , wait delivery ; I try to write a script to pass data to 123solar, if someone wants to help?

continue..... and sorry for english

Re: Omnik protocol

by **ginorosi**

Posted: **Mon Mar 27, 2017 9:31 pm**

Here at last , after many times , this script in Python, read true this adapter USB-RS422

[https://it.aliexpress.com/item/YN4852-U ... a4e086a9dc](https://it.aliexpress.com/item/YN4852-U...a4e086a9dc) the Omnik TL2 inverter ,

script p1.py

```
import binascii
```

```
import serial
```

```

import struct
import time

a = 0
b = 0
d = 0

ser = serial.Serial()

ser.port="/dev/ttyUSB0"
ser.baudrate=9600
ser.parity=serial.PARITY_NONE
ser.stopbits=serial.STOPBITS_ONE
ser.bytesize=serial.EIGHTBITS
ser.timeout = 1
ser.open()
ser.flushInput() #flush input buffer, discarding all its contents
ser.flushOutput()#flush output buffer, aborting current output

ser.write(serial.to_bytes([0x3A,0x3A,0x01,0x00,0x00,0x00,0x10,0x04,0x00,0x00,0x89])
time.sleep(.100)
ser.write(serial.to_bytes([0x3A,0x3A,0x01,0x00,0x00,0x00,0x10,0x04,0x00,0x00,0x89])
time.sleep(.100)
ser.write(serial.to_bytes([0x3A,0x3A,0x01,0x00,0x00,0x00,0x10,0x04,0x00,0x00,0x89])
time.sleep(.100)
ser.write(serial.to_bytes([0x3A,0x3A,0x01,0x00,0x00,0x00,0x10,0x00,0x00,0x00,0x85])
d = ser.readline(27)
d = binascii.hexlify(d)
time.sleep(.100)

ser.write(serial.to_bytes([0x3a,0x3a,0x01,0x00,0x00,0x00,0x10,0x01,0x11,0x49,0x54,
d = ser.readline(12)
d = binascii.hexlify(d)

ser.write(serial.to_bytes([0x3a,0x3a,0x01,0x00,0x00,0x10,0x11,0x10,0x00,0x00,0xa6])
#ser.write(serial.to_bytes([0x3a,0x3a,0x01,0x00,0x00,0x10,0x11,0x02,0x00,0x00,0x98])
d = ser.read(112)
d = binascii.hexlify(d)

a = d[19:22]
TEMP = int(a,16)/10

a = d[23:26]
b = d[27:30]
VCC = (int(a,16)+int(b,16))/20

a = d[35:38]
b = d[39:42]
ICC = (int(a,16)+int(b,16))/10

a = d[47:50]
ICA = int(a,16)/10

a = d[59:62]
VCA = int(a,16)/10

```

```

a = d[70:74]
FRQ = int(a,16)/100

a = d[74:78]
PCA = int(a,16)

a = d[94:98]
KWHG = int(a,16)/100

if FRQ > 0:
    a = (str(TEMP) + " " + str(VCC) + " " + str(ICC) + " " + str(ICA) + " " + str(V
    print (a)
    RET = 'OK'
and the script omnik.php for protocol
<?php

// Omnik.php is a program for reading the parameters out via RS422 of Omnik invert
// by Gino Rosi

$SDTE = date("Ymd H:i:s");
$d = array();
$FRQ = 0;

$a = exec("python /srv/http/123solar/scripts/protocols/p1.py");

$d = preg_split('/[[:space:]]+/', $a);

$I1V = $d[1];
$I1A = $d[2];
$I1P = $I1V * $I1A;
$I2V = 0;
$I2A = 0;
$I2P = 0;
$FRQ = $d[5];
$G1V = $d[4];
$G1A = $d[3];
$G1P = $d[6];
$EFF = ($G1P/$I1P)*100;
$INVT = $d[0];
$BOOT = 0;
$KWHT = $d[7];

if ($FRQ > 0) {
    $RET = 'OK';
}

?>

```

I'm sorry because some installers profit from the work of Jean Mark, selling logger, and other forums peddle your work for them

Re: Omnik protocol

by **jeanmarc**

Posted: **Tue Mar 28, 2017 6:56 am**

Hi Gino,

Thanks for the work. Is there any _startup.php and _check.php scripts ?
Is the pooling fast ?

Could you tell me who are the installers that sell 123solar ?

I have to remind them that it's illegal 😡

Re: Omnik protocol

by **ginorosi**

Posted: **Tue Mar 28, 2017 10:06 am**

There are no portals that sell, but in other forums exist installers that mount your system, they do it for free I have doubts.

The script works on Omnik TL2 with RS485 , That in reality is a RS422 4 wire.

Location and list code of error and mode inverter are unknown , the reading is less than a second on Orange PI One, a problem that the total kwh have a decimal and the average is 1200w of the resolution, the total day have 2 decimal and minimum resolution is 120w , the graph as a hacksaw

check

```
<?php
if(!defined('checkaccess')){die('Direct access not permitted');}
$ILEAK = 0;
$RISO = 0;
$PPEAK = 0;
$PPEAKOTD = 0;
$RET = 'NOK'; // No output
// Info file
// unset no info $CMD_INFO = "";
// Alarm
// unset no alarm $CMD_ALARM = "";
?>
```

startup

```
<?php
if(!defined('checkaccess')){die('Direct access not permitted');}
$CMD_INFO = "";
?>
```

Re: Omnik protocol

by **ginorosi**

Posted: **Mon Nov 06, 2017 1:09 pm**

I rewritten the script all in PHP :

```
<?php
```

```
// Omnik.php is a program for reading the parameters out via RS422 of Omnik invert
// by Gino Rosi
```

```
$SDTE = date("Ymd H:i:s");
```

```
$data = array();
```

```
$FRQ = 0;
```

```
include_once('PhpSerial.php');
```

```
$serial = new PhpSerial;
$serial->deviceSet("/dev/ttyUSB0");
$serial->confBaudRate(9600);
$serial->confParity("none");
$serial->confCharacterLength(8);
$serial->confStopBits(1);
$serial->confFlowControl("none");

$serial->deviceOpen();

$str = "\x3a\x3a\x01\x00\x00\x00\x10\x04\x00\x00\x89";
$serial->sendMessage($str);
usleep(100000);

$serial->sendMessage($str);
usleep(100000);

$serial->sendMessage($str);
usleep(100000);

$str = "\x3a\x3a\x01\x00\x00\x00\x10\x00\x00\x00\x85";
$serial->sendMessage($str);
$read = $serial->readPort();

$str = "\x3a\x3a\x01\x00\x00\x00\x10\x01\x11\x49\x54\x42\x4e\x33\x30\x32\x30\x31\x00";
$serial->sendMessage($str);
$read = $serial->readPort();

$str = "\x3a\x3a\x01\x00\x00\x10\x11\x10\x00\x00\xa6";
$serial->sendMessage($str);
$read = $serial->readPort();

$data = bin2hex($read);

$INVT= hexdec(substr($data, 18, 4))/10;

$I1V= (hexdec(substr($data, 22, 4))+hexdec(substr($data, 26, 4)))/20;
if ($I1V < 100) {
    $I1V = 360;
}

$I1A= (hexdec(substr($data, 34, 4))+hexdec(substr($data, 38, 4)))/10;

$I1P = $I1V * $I1A;

$G1A= hexdec(substr($data, 46, 4))/10;

$G1V= hexdec(substr($data, 58, 4))/10;

$FRQ= hexdec(substr($data, 70, 4))/100;

$G1P= hexdec(substr($data, 74, 4));

$KWHT= hexdec(substr($data, 93, 5))/100;

$BOOT = 0;
```

```
if ($FRQ > 0) {  
    $RET = 'OK';  
    print $FRQ;  
}
```

?>

If launch from terminal omnik.php work's good , if launch 123solar from terminal and press button START green ok work's and live data is OK ; but booting normally, not START 123solar/admin button is STOP red and not change button START green only STOP , what is the problem , the libraries all long PhpSerial.php?

Re: Omnik protocol

by **jeanmarc**

Posted: **Mon Nov 06, 2017 7:37 pm**

💡 Enable debug and reboot to see what it say

Re: Omnik protocol

by **ginorosi**

Posted: **Fri Nov 10, 2017 2:46 pm**

Ok , i try tomorrow

Re: Omnik protocol

by **ginorosi**

Posted: **Sat Nov 11, 2017 1:05 pm**

Resolved! 😊 the error this

```
11/11/2017 12:20:11 Stopping 123Solar  
  
11/11/2017 12:20:14 Starting 123Solar  
  
PHP Fatal error: No stty available, unable to run. in  
/srv/http/123solar/scripts/protocols/PhpSerial.php on line 55  
11/11/2017 12:28:26 Starting 123Solar
```

search and modify the PhpSerial.php [https://stackoverflow.com/questions/233 ... it-working](https://stackoverflow.com/questions/233...it-working)

Now is very fast , ans less resource is minimal respect to python.

Thank's

Re: Omnik protocol

by **Themechanix**

Posted: **Wed Dec 09, 2020 3:17 pm**

I know it's an old thread but i have a problem with omnik inverter 4k tl2. I have 123solar installed on raspberry PI3 with Raspbian Buster. I folloed this guide: [http://www.flanesi.it/doku/doku.php?id= ... one_buster](http://www.flanesi.it/doku/doku.php?id=...one_buster)

The problem is that i don't see any data from the inverter.

This is the 123solar debug:

```
##* 09/12/2020 15:00:34 Starting 123Solar debug (9419)
```

```
PHP Notice: Undefined variable: CMD_RETURN in /var/www/123solar/scripts/123solar.  
PHP Notice: Undefined variable: CMD_RETURN in /var/www/123solar/scripts/123solar.
```

```
PHP Notice: Undefined variable: CMD_RETURN in /var/www/123solar/scripts/123solar.
PHP Notice: Undefined variable: CMD_RETURN in /var/www/123solar/scripts/123solar.
PHP Notice: Undefined variable: CMD_RETURN in /var/www/123solar/scripts/123solar.
and this is line 506 in /var/www/123solar/scripts/123solar.php:
if ($RET != 'OK' && trim($CMD_RETURN) && ($nowUTCs > ($sun_info['sunrise'] + 1800) && $nowUTCs
< ($sun_info['sunset'] - 1800))) { //NOK
```

I also did a communication test with these parameters:

```
inverter: omnik protocol
single: phase
Port: /dev/ttyUSB0
RS485 | IP adress : 0
Communication options : -Y3
```

```
1 : ERROR !
2 : ERROR !
3 : ERROR !
4 : ERROR !
5 : ERROR !
6 : ERROR !
7 : ERROR !
8 : ERROR !
9 : ERROR !
10 : ERROR !
```

Errors while testing :

Any idea?

Complimenti Gino per il lavoro!

Re: Omnik protocol

by **jeanmarc**

Posted: **Wed Dec 09, 2020 3:33 pm**

For the error in line 506, the scripts/protocols/omnik.php need to have a \$CMD_RETURN = "; on top.

Read _protocols.txt in that directory : \$CMD_RETURN The return string. Always initialize to allow the 'Communication Error' test

Try always you com app alone : README (who does anyway)

Install and test the communication application(s) for your inverter(s) and make sure it is reliable !