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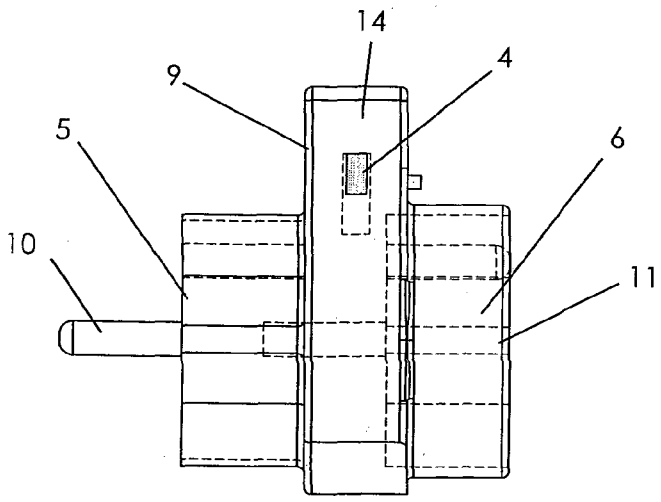
(54) Title: METER MEASURING ELECTRICAL ENERGY WITH THE BINARY OUTPUT

FIG. 1



(57) Abstract: The object of the invention is a meter measuring the electricity usage of the binary output, for measuring the electricity consumption measured by applying a momentary electric current, which has a measuring unit in the form of digital watt-hour (1), the display (2), USB (3) binary output (4), the electrical plug (5), sockets (6), the wireless radio Wi-Fi (7), and the circuit board with a microprocessor (8), whereby, on one side there are pins (10), and symmetrically on the other side, there are holes (11) socket (6), the connection is an LCD screen (2), and between the socket (6) and the display unit (2) is situated are pressed (12), while on the side (13) 's USB port (3) and on the side (14) binary output (digital) (4), while inside there is a digital power meter (1), USB (3) binary output (4), LCD (2), the printed circuit board with a microprocessor (8), the Wi-Fi (7), control buttons meter (12), socket type C / E / F (6), pins electric plug type C / E / F (10).

Meter measuring electrical energy with the binary output

The object of the invention is a meter measuring the electricity usage with the binary output, for measuring the electricity consumption measured by applying a momentary electric current.

There are known devices capable of measuring the use of electricity without the possibility of immediate transfer of information to a higher logical unit management operation of the device. They are also known alternative methods of providing information about the current power consumption using cable connections.

Existing devices only transmit information to the panel via cables, which were cumbersome to install. The information provided be analyzed at headquarters and possibly the tasks were performed by other devices. In fact, several devices being built system, and individual devices did not pursue independently tasks in an intelligent, programmed, able to change under the influence of other information the way.

The device according to the invention solves the problem of having to build-identical systems to achieve the functionality and without the remote control of the bilateral device. The device creates a standalone, autonomous system able to replicate, control, and fully communicate with the user via a mobile phone. The device has a microprocessor they thus can be programmed (timer (day / week / month)), and use as a protective device (cut off at too high current consumption (amp, watt) or too long current consumption (watt-hour). The device has a digital output so that can control external devices with power up to 3kW.

The meter according to the invention is shown in the accompanying drawings, in which Figure 1 shows a meter in a side view; Figure 2 is a front view of the meter, Figure 3 shows a view of the meter on the other side.

The apparatus consists of: measurement module (digital watt-hour) / 1 /, a display / 2 /, the USB port / 3 /, the binary output / 4 /, the electrical plug / 5 /, the socket (electrical) of C / E / F / 6 / module wireless Wi-Fi / 7 /, the circuit board with a microprocessor / 8 /.

On one of the sides of the machine / 9 / are pins / 10 / meter allowing for plugging into an electrical outlet in the wall of the arrangement corresponding to the standard plugs C / E / F. Symmetrically, on the other side, there are holes / 11 / socket / 6 /, allowing insertion of the plug into the meter device whose power consumption is measured. Over the socket is LCD screen / 2 /. Between socket / 6 / and the display / 2 /, there are control buttons / 12 /. On one of the sides / 13 / meter's USB / 3 /, allowing for sending the measurement results to an external device. On the opposite side / 14 / provided binary output (digital) / 4 /.

The machine has a control and measurement system composed of a current meter (digital power meter) / 1 /, USB port / 3 /, Coil / 4 /, LCD / 2 /, the circuit board with a microprocessor / 8 / module Wi- Fi / 7 /, a measure of the control buttons / 12 /, the socket of C / E / F / 6 /, the pins of the electrical connector of C / E / F / 10 /.

The meter is powered from the mains. Control buttons / 12 / are used to change the values displayed on the screen: voltage, current, frequency, power (instantaneous, in a given unit of time), electricity consumption during the period.

The solution according to the invention is shown in more detail in the example of operation. Scheme of data in the device looks like this: data from the meter (watt-hour digital) are sent via the microprocessor to the LCD display / 2 /, USB port / 3 /, Coil / 4 /, through which you can control other devices with the power to 3kW, using any device that supports Wi-Fi connectivity.

Patent claim

Meter for measuring electrical energy with an output binary characterized in that the measuring module is in the form of digital watt-hour / 1 /, the display / 2 /, USB / 3 / binary output / 4 /, the electrical plug / 5 /, sockets / 6 / module, the wireless Wi-Fi / 7 /, and the circuit board with a microprocessor / 8 /, wherein, on one of its sides studs / 10 /, and symmetrically on the other side, there are holes / 11 / socket / 6 /, the socket is LCD screen / 2 /, and between the seat / 6 / and the display / 2 /, are located buttons / 12 /, while on the side / 13 /'s USB port / 3 /, and Side / 14 / binary output (digital) / 4 /, while inside there is a digital power meter / 1 /, USB / 3 / binary output / 4 /, LCD / 2 /, the printed circuit board with a microprocessor / 8 / module Wi-Fi / 7 /, control buttons meter / 12 /, socket type C / E / F / 6 /, pins electric plug type C / E / F / 10 /.

FIG. 3

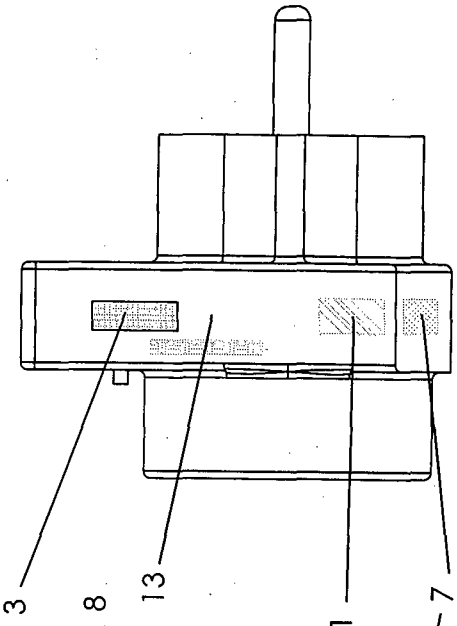


FIG. 2

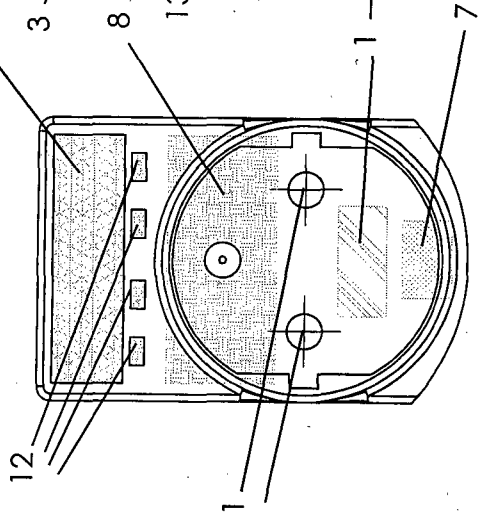
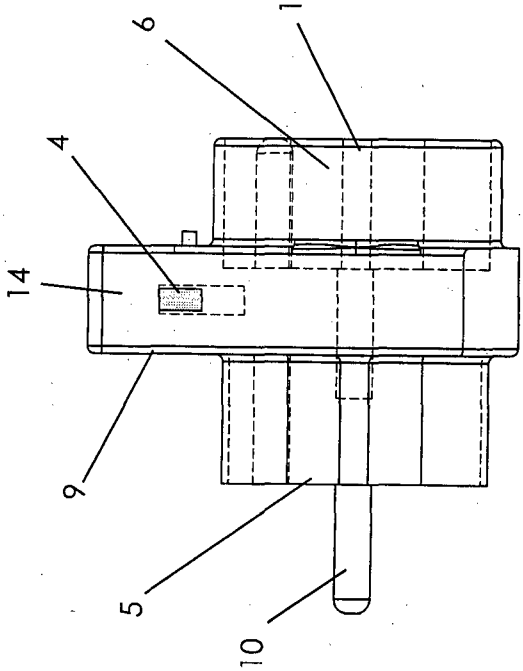


FIG. 1



INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER
INV. G01R22/06 G01D4/00
ADD.

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
G01R G01D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2014/300489 A1 (RICE PATRICK JEREMY [AU]) 9 October 2014 (2014-10-09) abstract; figures 1-4 paragraphs [0001], [0008] - [0009], [0013] - [0018], [0024] - [0030], [0048], [0090], [0092] - [0096], [0102], [0112], [0114], [0117]	1
A	"EL-EPM02HQ, Energy Meter Manual", , 20 May 2009 (2009-05-20), pages 1-6, XP055239372, Retrieved from the Internet: URL:http://www.sunelectronics.gr/extra/manuals/MANUAL_EL-EPM02HQ_COMP.pdf [retrieved on 2016-01-07] page 1 - page 6	1

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[X] Further documents are listed in the continuation of Box C.

[X] See patent family annex.

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Date of the actual completion of the international search	Date of mailing of the international search report
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C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 2010/211509 A1 (JACOBS RICHARD B [US]) 19 August 2010 (2010-08-19) abstract; figures 1A, 1B,5 paragraphs [0008], [0010], [0036] -----	1

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INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No
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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
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