

System for monitoring electro-medical equipment installed at home



INVENTORS: Andrea Abrardo
Mauro Caliani
Claudio Papei

PATENT STATUS : granted

PRIORITY NUMBER: IT20180005591

PUBLICATION: 22/05/2018

PUBLISHED US: WO

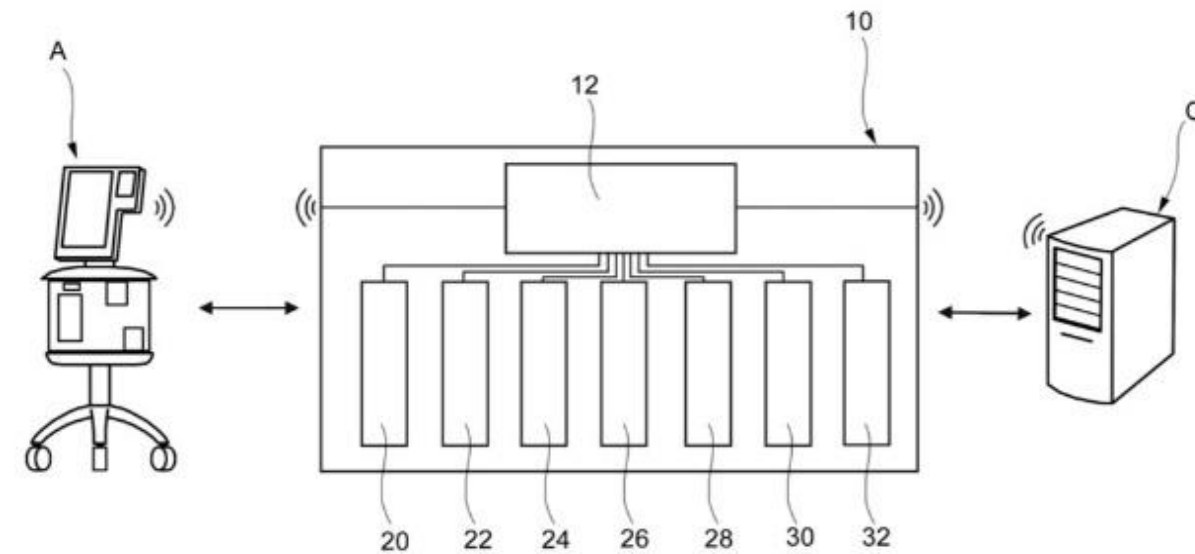
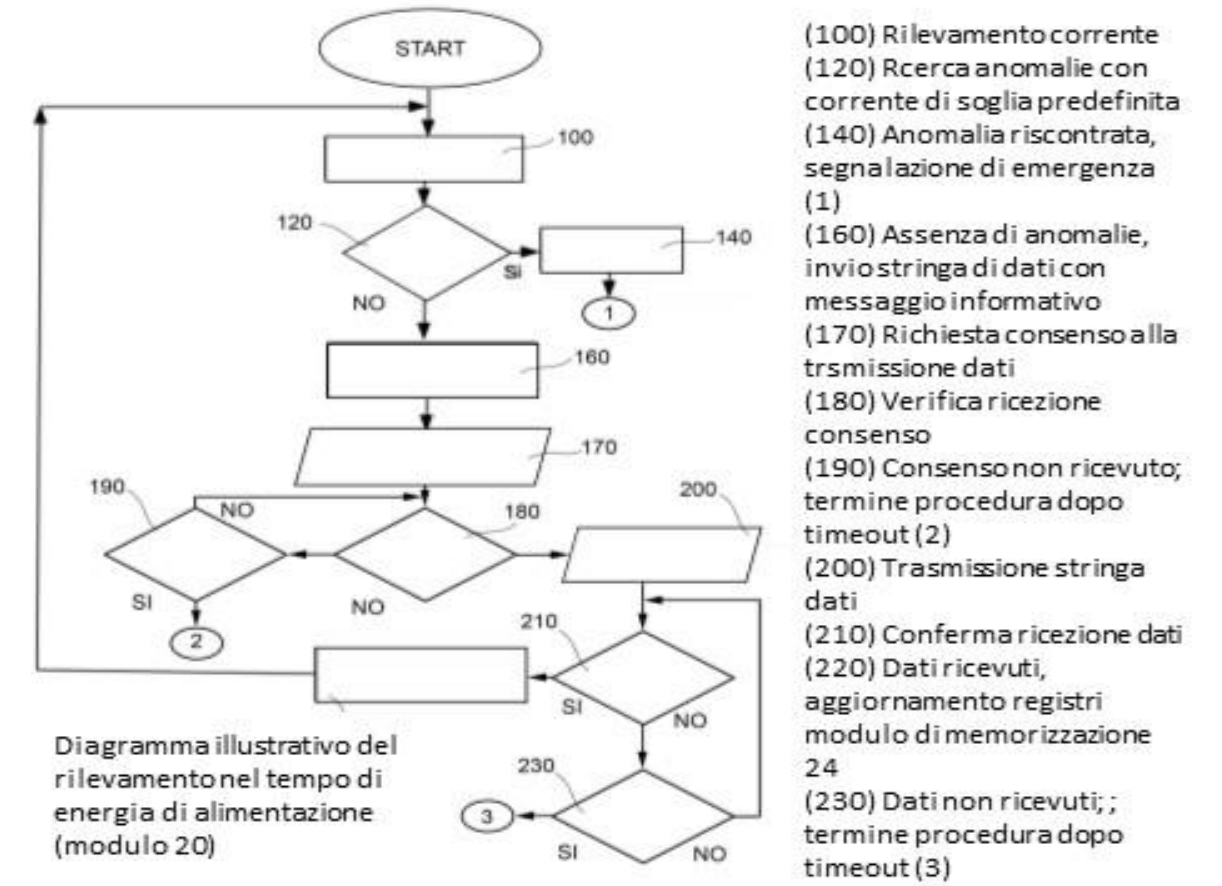
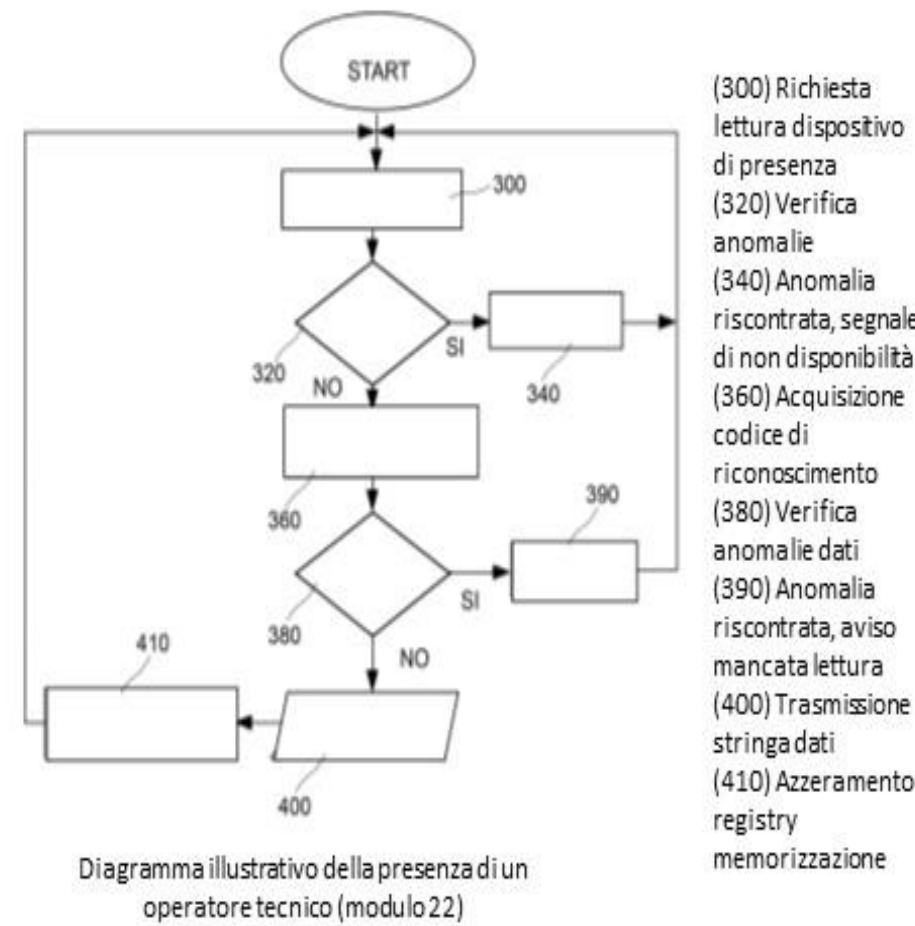
Invention



A remote monitoring system for electromedical devices installed in a patient's home that includes a series of functional modules coupled to at least one electromedical device, capable of detecting the operating status of the device (eg monitoring of actual current consumption, stand operation -by or continuous, any leakage currents) and to detect the presence of operators for the maintenance of the electro-medical device and of the health workers who are treating the patient. Using known communication protocols, the functional modules communicate with a control node capable of transmitting the string of information acquired by the functional modules to remote management units. These remote management units compute the transmitted data and organize the management activities of the electromedical devices, such as medical visit reminders and scheduled and extraordinary device maintenance, the latter case deriving from any anomalies found following the computation of the data transmitted by the node control. The system makes it possible to make the remote management of home electromedical devices effective, reducing costs and travel due to hospitalization of patients and promoting the application of telemedicine.

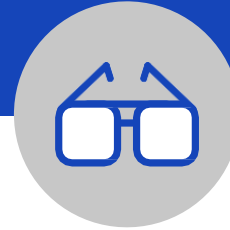
USL Toscana Sud Est of Siena is a co-owner of the patent.

Drawings & pictures



(A) Dispositivo elettromedicale domiciliato; (12) Nodo di controllo; (20 – 32) Moduli funzionali; (C) Unità di gestione remota

Industrial applications



The invention finds its natural place in the Health sector, both in the homes of patients who receive at-home health care and in hospitals. The system is applied both among health care systems and in tools, technologies and digital solutions for health and care including personalized medicine. It fills a gap created in the monitoring of any system that gravitates around the patient, including both technical, maintenance and health, thus ensuring machine safety, reporting and recording all interventions in a systematic way, and providing a valid help both to the patient and to the maintenance technicians. In the context of Industry 4.0, the invention as part of technologies, networks and systems and communication, wireless and wired, can represent an increasingly requested home care system, but also for companies that offer home equipment free loan services, especially for ventilation. Applied in a hospital environment, the safety module also offers predictive analysis concerning the state of "health" of the equipment as well as the actual use of the same.

Possible developments



A prototype of the system has already been created by the University of Siena with the support of the USL Toscana Sud Est, a further step forward would be to build a pre-industrial model. At the moment the two entities, University and USL, are open to collaborations with private partners operating in the field of electronics and communications, perhaps with experience in the sensor sector, for the realization of a maturation project and for the subsequent production of the system. The modularity of the finished product favors reduced costs and would allow returns in the areas of (i) sale/rental of the system; (ii) hardware and software assistance; (iii) product update; (iv) cloud service for managing the communications module. The University of Siena and the USL are available to negotiate specific development agreements, license or options for the direct enhancement of the patent title in question.

For more information:



Tech Transfer Office of Università degli Studi di Siena

Headquarters: via Banchi di Sotto 55, 53100 Siena ITALIA

website : <https://www.unisi.it/>

E-mail: brevetti@unisi.it

For more information:



Ufficio Regionale di Trasferimento Tecnologico

Headquarters: Via Luigi Carlo Farini, 8 50121 Firenze (FI)

E-mail: urtt@regione.toscana.it

