

Search query (3): [SP]: method and control device for controlling an operating frequency of an energy source in an ac voltage network a power balance-dependent operating parameter and a surroundings parameter of a first energy source, such as a renewable energy source, are provided. a variable target operating parameter for the first energy source is ascertained dependent on the detected surroundings parameter. the target operating parameter can characterize a first energy source state in which a maximally possible output would be generated under the current given conditions of the surroundings. the operating frequency is then controlled dependent on the detected power balance dependent operating parameter and the ascertained target operating parameter such that a deviation of the operating frequency from a specified frequency is coupled to a deviation of the detected power balance-dependent operating parameter from the ascertained target operating parameter.

Results: 8

Search history

Search pn=WO2015176862 (Results 1)

1:

Search [SP]: 1. a method for controlling an operating frequency of a first energy source in an ac voltage network, wherein a power-balance-dependent operating parameter of the first energy source is recorded, the method comprising: a) recording an environmental parameter of the first energy source b) determining a variable desired operating parameter for the first energy source on a basis of the recorded environmental parameter and c) controlling the operating frequency on a basis of the recorded power-balance-dependent operating parameter and the determined desired operating parameter in such a manner that a deviation of the operating frequency from a predefined frequency (fmpp) is coupled to a deviation of the recorded power-balance-dependent operating parameter from the determined desired operating parameter. 2. the method as claimed in claim 1, wherein the first energy source is operated as a voltage source in the ac voltage network. 3. the method as claimed in claim 1, wherein the operating frequency distributed across the ac voltage network is recorded in order to control a second energy source supplying the ac voltage network, further wherein a power of the second energy source is changed on the basis of the recorded operating frequency if the recorded operating frequency deviates from the predefined frequency. 4. the method as claimed in claim 3, wherein, if the recorded operating frequency deviates from the predefined frequency, the power is controlled in such a manner that, as a result of the operating frequency distributed across the ac voltage network being coupled to a power balance of the second energy source, the operating frequency distributed across the ac voltage network approaches the predefined frequency. 5. the method as claimed in claim 3, wherein a variable reference frequency is determined for the second energy source and the power is controlled by means of a proportional controller on the basis of the recorded operating frequency and the determined reference frequency. 6. the method as claimed in claim 5, wherein the reference frequency is controlled by means of an integrating controller on the basis of a deviation of the recorded operating frequency from the predefined frequency. 7. the method as claimed in claim 6, for a plurality of second energy sources supplying the ac voltage network, the power is individually controlled for each of the plurality of second energy sources, the reference frequency is jointly controlled for all of the plurality of second energy sources, and the joint controlled reference frequency is transmitted to the proportional controllers for the plurality of second energy sources. 8. the method as claimed in claim 6, wherein a threshold value for the reference frequency is provided for the integrating controller, the reaching of which threshold value influences integration of the reference frequency. 9. the method as claimed in claim 1, wherein the operating frequency is set by means of an inverter, via which the first energy source is coupled to the ac voltage network. 10. the method as claimed in claim 1, wherein the power-balance-dependent operating parameter increases if a power balance of the first energy source is positive and/or falls if the power balance of the first energy source is negative, and in that the operating frequency is set to be greater than the predefined frequency if the recorded power-balance-dependent operating parameter is greater than the determined desired operating parameter and/or is set to be smaller than the predefined frequency if the recorded power-balance-dependent operating parameter is smaller than the determined desired operating parameter. 11. a control device for controlling an operating frequency of an energy source in an ac voltage network, having all means for carrying out a method as claimed in claim 1. 12. a computer program product for controlling an operating frequency of an energy source in an ac voltage network, set up to carry out a method as claimed in claim 1. (Results 0)

Search [SP]: method and control device for controlling an operating frequency of an energy source in an ac voltage network a power balance-dependent operating parameter and a surroundings parameter of a first energy source, such as a renewable energy source, are provided. a variable target operating parameter for the first energy source is ascertained dependent on the detected surroundings parameter. the target operating parameter can characterize a first energy source state in which a maximally possible output would be generated under the current given conditions of the surroundings. the operating frequency is then controlled dependent on the detected power balance dependent operating parameter and the ascertained target operating parameter such that a deviation of the operating frequency from a specified frequency is coupled to a deviation of the detected power balance-dependent operating parameter from the ascertained target operating parameter. (Results 8)

Title: WIND ENERGY INSTALLATION AND METHOD OF CONTROLLING THE OUTPUT POWER FROM A WIND ENERGY INSTALLATION

Abstract: Source: US2008093857A A wind energy installation and a method of controlling the output power from a wind energy installation to an electrical grid with a specified nominal grid frequency are provided, in which the output power is controlled as a function of the time derivative of the grid frequency.

Classifications:

International (IPC 8-9): F03D9/00 H02J3/08 H02J3/38

H02P9/04 (Advanced/Invention);

F02D29/06 (Advanced/Non-invention);

H02P9/04 (Core/Invention)

CPC: F03D7/0284 F05B2240/96 F05B2270/1033 F05B2270/309

F05B2270/337 Y02E10/723 Y02E10/763 H02J3/386 F03D9/255

F03D7/048

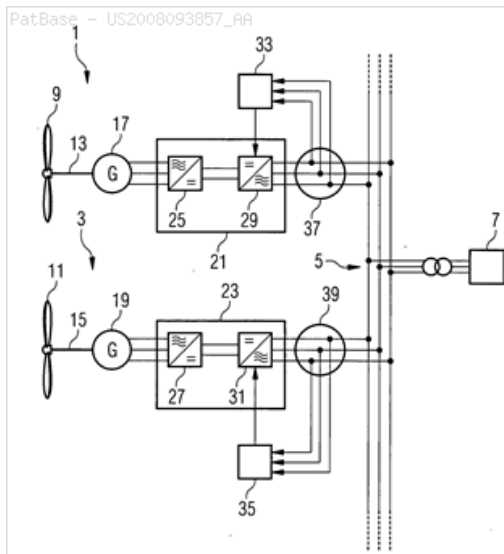
European: F03D7/02P2 F03D7/04E6 F03D9/00C2 H02J3/38

H02J3/38D1 R05B240/96 R05B270/1033 R05B270/309 R05B270/337

Y02E10/72 Y02E10/72F Y02E10/76B

US: 290/40.00B 290/40.00D 290/40B 290/40D 290/44 290/44P

290/55



Family:

Publication number	Publication date	Application number	Application date
DE602006046643 D1	20151029	DE200660046643T	20061019
DK1914419 T3	20151221	DK20060021972T	20061019
EP1914419 A1	20080423	EP20060021972	20061019
EP1914419 B1	20150916	EP20060021972	20061019
ES2552058 T3	20151125	ES20060021972T	20061019
US2008093857 AA	20080424	US20070975333	20071018
US2011109086 AA	20110512	US20110009345	20110119
US7898099 BB	20110301	US20070975333	20071018
US8138621 BB	20120320	US20110009345	20110119

Priority:

EP20060021972 20061019 US20070975333 20071018 US20110009345 20110119

Probable Assignee: SIEMENS AG

Assignee(s): (std): SIEMENS AG ; STIESDAL HENRIK

Assignee(s): SIEMENS AKTIENGESELLSCHAFT

Inventor(s): (std): STIESDAL HENRIK

Agent(s): LOZANO JOSE; SIEMENS INTELLECTUAL PROPERTY DEPARTMENT CORP

Designated states: AL BA DE DK ES GB HR MK RS

Title: VARIABLE SPEED WIND TURBINE DRIVE AND CONTROL SYSTEM

Abstract: Source: US2008296897A A variable speed wind turbine utilizes a hydraulic transmission including a hydraulic pump coupled to a rotor and a hydraulic motor coupled to an induction generator to produce variable frequency power that is converted to grid frequency power by electronic controls.

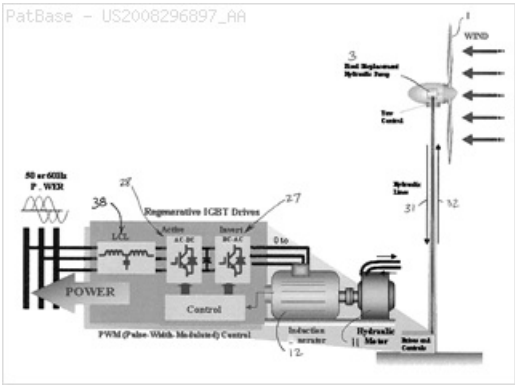
Classifications:

International (IPC 8-9): F03D17/02 F03D9/00 (Advanced/Invention); F03D9/00 (Core/Invention)

CPC: H02J3/386 F16H39/02 Y02E10/725 Y02E10/763 Y02P80/158

European: F16H39/02 H02J3/38 H02J3/38D1 Y02E10/72H Y02E10/76B

US: 290/44 290/44P 290/55



Family:

Publication number	Publication date	Application number	Application date
US2008296897 AA	20081204	US20070943874	20071121
US7569943 BB	20090804	US20070943874	20071121

Priority:

US20060860773P 20061121 US20070943874 20071121

Probable Assignee: PARKER HANNIFIN CORP

Assignee(s): (std): PARKER HANNIFIN CORP

Assignee(s): NATIONAL INST ; NATIONAL INSTITUTES OF HEALTH (NIH) US DEPT OF HEALTH AND HUMAN SERVICES (DHHS) US GOVERNMENT ; NATIONAL INSTITUTES OF HEALTH NIH US DEPT OF HEA ; NATIONAL INSTITUTES OF HEALTH NIH US DEPT OF HEALTH AND HUMAN SERVICES DHHS US GOVERNMENT

Inventor(s): (std): KIMPEL RICHARD D ; KOVACH JOESPH A ; LINDNER NORMAN C ; NICOL BRADLEY E

Agent(s): PARKER HANNIFIN HUNTER MOLNAR BAKER MORGAN CORP; DANIEL J

Title: AC CONNECTED MODULES WITH LINE FREQUENCY OR VOLTAGE VARIATION PATTERN FOR ENERGY CONTROL

Abstract: Source: US2011043160A A control strategy for distributed power generation modules in a power system that varies the line frequency or voltage according to a predetermined pattern to cause a PV inverter to modify its power output and thereby avoid overcharging a battery. When the power system operates in islanded mode, the AC load demand can be lower than the available energy from the PV array, causing the battery to become overcharged. To avoid this scenario, a hybrid inverter executes a pattern generator algorithm that varies the line frequency or voltage linearly, exponentially or any mathematical function or look-up tables. The PV inverter executes a pattern detection algorithm that detects the linear, exponential, or any mathematical function or look-up table change in the line frequency. In response, the PV inverter modifies its power output until an overcharging condition of the battery is removed. The line frequency/voltage can be varied within the anti-islanding limits to avoid premature disruption of the power system, and no additional settings are required at the device level in order to operate in any mode of operation: islanded, grid-connected or genset-connected.

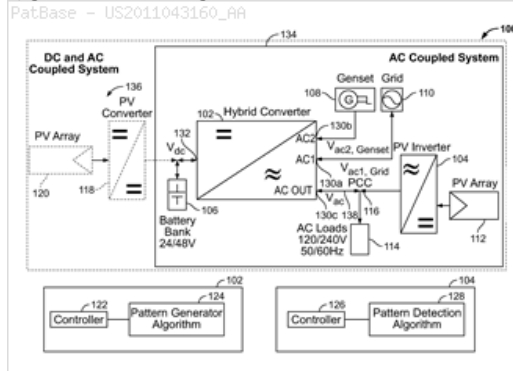
Classifications:

International (IPC 8-9): G05F1/67 H01M10/44 H01M10/46 H02J3/38 H02J7/02 H02J7/04 H02J7/34 H02M1/44 (Advanced/Invention); H02J7/04 (Advanced/Non-Invention)

CPC: Y10S323/906 G05F1/67 H02M1/44 Y02E10/58

European: G05F1/67 H02M1/44 Y02E10/58

US: 320/101 320/101P 320/138 320/139 320/162 320/162S 323/906



Family:

Publication number	Publication date	Application number	Application date
AU2010284447 AA	20110224	AU20100284447	20100811
AU2010284447 BB	20150820	AU20100284447	20100811
BR112012003836 A2	20160322	BR20121103836	20100811
CN102483636 A	20120530	CN201080037180	20100811
CN102483636 B	20140625	CN201080037180	20100811
DE602010011568 D1	20140109	DE201060011568T	20100811
EP2467764 A1	20120627	EP20100759749	20100811
EP2467764 B1	20131106	EP20100759749	20100811
EP2467764 B2	20171025	EP20100759749	20100811
ES2444300 T3	20140224	ES20100759749T	20100811
ES2444300 T5	20180129	ES20100759749T	20100811
IN02414CN2012 A	20130510	IN2012CN02414	20120315
US2011043160 AA	20110224	US20090545234	20090821
US8159178 BB	20120417	US20090545234	20090821
WO11022265 A1	20110224	WO2010US45151	20100811

Priority:

EP20100759749 20100811 US20090545234 20090821 WO2010US45151 20100811

Probable Assignee: SCHNEIDER ELECTRIC SOLAR INVERTERS USA INC

Assignee(s): (std): SCHNEIDER ELECTRIC SOLAR INVERTERS USA INC ; SERBAN EMANUEL ; XANTREX TECHNOLOGY INC

Assignee(s): SCHNEIDER ELECTRIC SOLAR INVERTERS USA INC LIVERMORE

Inventor(s): (std): SERBAN EMANUEL ; EMANUEL SERBAN

Agent(s): WRAYS; MURGITROYD AND CO; LJUNGBERG ROBERT; DE ELZABURU ALBERTO; SCHNEIDER ELECTRIC SQUARE D LEGAL DEPT IP GROUP; NIXON PEABODY LLP; RUDISILL STEPHEN G ET AL

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HK HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PE PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

Title: SYSTEMS AND METHODS FOR OPERATING A SOLAR DIRECT PUMP

Abstract: Source: US2012326649A Systems and methods for operating a solar direct pump are provided. A system for controlling an alternating current (AC) pump includes a photovoltaic module, a temperature sensor that measures a temperature of the photovoltaic module, a calculator that calculates a maximum power point (MPP) voltage of the photovoltaic module based on the temperature of the photovoltaic module, and a frequency controller that adjusts a reference frequency of power supplied to the pump based on the MPP voltage.

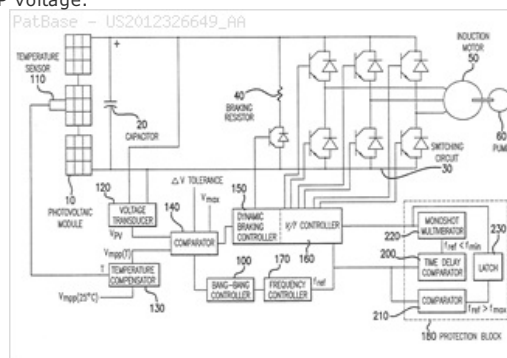
Classifications:

International (IPC 8-9): H02J7/35 H02M7/42 H02M7/5387
H02P7/06 (Advanced/Invention)

CPC: Y02E10/563 H02J1/14 H02J3/383 H02M7/53875
H02M2001/0025 Y02P80/158

European: H02J1/14 H02M7/5387C3 T02J3/38D1S T02M1/00C5
Y02E10/56

US: 318/453



Family:

Publication number	Publication date	Application number	Application date
TW201223111 A	20120601	TW20110108790	20110315
US2012326649 AA	20121227	US20110581911	20110315
WO11115952 A1	20110922	WO2011US28454	20110315

Priority:

US20100313896P 20100315 US20110581911 20110315 WO2011US28454 20110315

Probable Assignee: SOLAR SEMICONDUCTOR INC

Assignee(s): (std): GARIKI GOVARDHANRAO ; PATANAIAK AMIYA ; POSANNAPETA GANGARAM ; SHROFF PIYUSH ; SOLAR SEMICONDUCTOR INC

Inventor(s): (std): SHROFF PIYUSHI ; SHROFF PIYUSH ; POSANNAPETA GANGARAM ; PATANAIAK AMIYA ; GARIKI GOVARDHANRAO

Agent(s): WALTZ SUZANNE C ET AL

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PE PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

Title: POTENTIAL COMPENSATION FOR ELECTRIC INVERTER

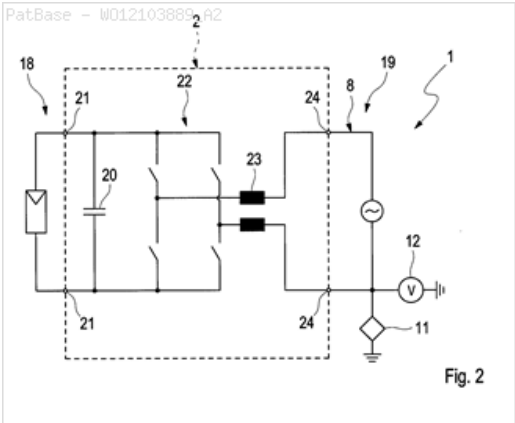
Abstract: The invention relates to an electric frequency changing device (2, 3) for changing the frequency of an electric power supply (6, 8). The electric frequency changing (2, 3) device comprises at least one fast-acting electric potential changing means (11) for changing the electric potential (U) of at least one part of the electric frequency changing device (2, 3) relative to ground potential.

Classifications:

International (IPC 8-9): H02J1/00 H02J3/00 H02M1/14 H02M1/15 (Advanced/Invention)

CPC: Y02E10/563 H02M7/53871 H02J3/383 H02M2001/123 H02M2007/4822 H02M7/493

European: H02J3/38D1S H02M7/5387C T02M1/12C T02M7/48P



Family:

Publication number	Publication date	Application number	Application date
WO12103889 A2	20120809	WO2012DK00009	20120130
WO12103889 A3	20121108	WO2012DK00009	20120130

Priority:

DK20110000062 20110131

Probable Assignee: DANFOSS SOLAR INVERTERS AS

Assignee(s): (std): BORUP UFFE ; HASSE FRERK ; DANFOSS SOLAR INVERTERS AS

Assignee(s): DANFOSS SOLAR INVERTERS A S

Inventor(s): (std): BORUP UFFE ; HASSE FRERK

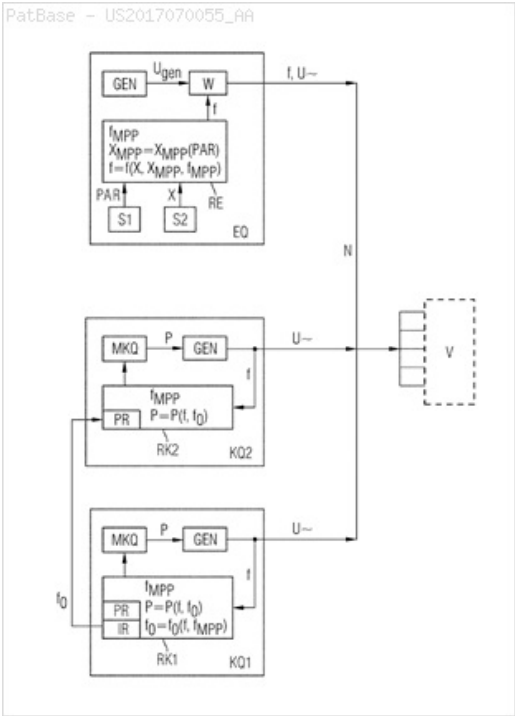
Agent(s): DANFOSS A S

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PE PG PH PL PT QA RO RS RU RW SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

Title: METHOD AND CONTROL DEVICE FOR CONTROLLING AN OPERATING FREQUENCY OF AN ENERGY SOURCE IN AN AC VOLTAGE NETWORK

Abstract: Source: US2017070055A A power balance-dependent operating parameter and a surroundings parameter of a first energy source, such as a renewable energy source, are provided. A variable target operating parameter for the first energy source is ascertained dependent on the detected surroundings parameter. The target operating parameter can characterize a first energy source state in which a maximally possible output would be generated under the current given conditions of the surroundings. The operating frequency is then controlled dependent on the detected power balance dependent operating parameter and the ascertained target operating parameter such that a deviation of the operating frequency from a specified frequency is coupled to a deviation of the detected power balance-dependent operating parameter from the ascertained target operating parameter.

Classifications:
International (IPC 8-9): H02J3/00 H02J3/28 H02J3/38 H02J3/46 (Advanced/Invention)
CPC: H02J3/382 H02J3/383 H02J3/387 H02J2003/007 Y02E10/563 Y02E10/763 Y02E60/76 Y04S40/22 H02J3/46 H02J3/28 H02J3/385 H02J3/381 H02J3/386
US: 307/52



Family:

Publication number	Publication date	Application number	Application date
AU2015263484 AA	20151126	AU20150263484	20150402
AU2015263484 BB	20170713	AU20150263484	20150402
CL2016002306 A1	20170217	CL20160002306	20160913
CO20160002133 A2	20161230	CO20160002133	20160921
DE102014209541 A1	20151126	DE201410209541	20140520
EP3092697 A1	20161116	EP20150713891	20150402
IN201647028494 A	20160930	IN201647028494	20160822
US2017070055 AA	20170309	US20150301732	20150402
WO15176862 A1	20151126	WO2015EP57281	20150402

Priority:

DE201410209541 20140520 WO2015EP57281 20150402

Probable Assignee: SIEMENS AG

Assignee(s): (std): SIEMENS AG

Inventor(s): (std): WILES JEREMY RALPH ; STEINKE FLORIAN ; MUENZ ULRICH ; BUHL MICHAEL BERNHARD ; BAMBERGER JOACHIM ; MUNZ ULRICH

Inventor(s): MANZ ULRICH ; FLORIAN STEINKE ; JEREMY RALPH WILES ; JOACHIM BAMBERGER ; MICHAEL BERNHARD BUHL ; ULRICH MUENZ

Agent(s): SPRUSON AND FERGUSON; ESTUDIO CLARKE MODET AND CO CHILE LIMITADA; CAROLINA MERCEDES DAZA MONTALVO

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

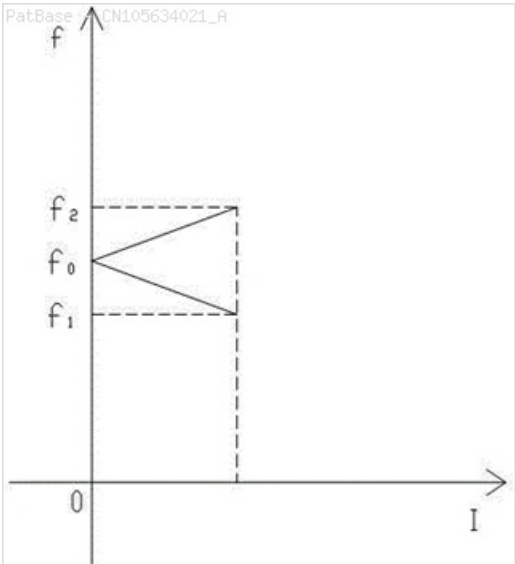
Title: POWER BALANCE CONTROL METHOD FOR INTERNAL COMBUSTION ENGINE DRIVEN GENERATOR SET PARALLEL OPERATION

Abstract: Source: CN105634021A The invention discloses a power balance control method for internal combustion engine driven generator set parallel operation. The power balance control method comprises the steps that 1), a voltage range and a frequency range are predetermined in the controller of each generator set; 2), when the internal combustion engine is started in each time, the generator set controller detects whether voltage output exists in the output circuit or not, and determines a voltage phase reference; and 3), according to a formula $f=K_{ss}I_{ss}\sin \phi +f_0$, the output frequency of each generator set is adjusted within the preset range according to the changes of current I; and according to a formula $U=-k_{ss}I+U_0$, the output voltage of each generator set is adjusted within the preset range according to the changes of current I. According to the power balance control method, the output voltage range and the frequency range are predetermined in each generator set, and the output current change of the generator set is known; the voltage and the frequency output by each generator set are constantly kept within the respective predetermined voltage and frequency ranges, so that the power balance of the generator sets in networking is ensured consequently.

Classifications:

International (IPC 8-9): H02J3/46 (Advanced/Invention)

CPC: H02J3/46 H02J2003/007



Family:

Publication number	Publication date	Application number	Application date
CN105634021 A	20160601	CN201610062699	20160129
CN105634021 B	20171212	CN201610062699	20160129

Priority:

CN201610062699 20160129

Probable Assignee: CHONGQING LIHUA AUTOMATIC TECH CO LTD

Assignee(s): (std): CHONGQING LIHUA AUTOMATIC TECH CO LTD

Assignee(s): CHONGQING LIHUA AUTOMATIC TECHNOLOGY CO ; CHONGQING FORCE AUTOMATION TECHNOLOGY LIABILITY CO LTD

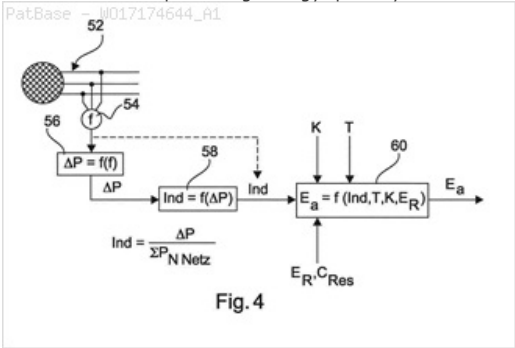
Inventor(s): (std): QIU YONGDONG ; HE LIN ; CHEN BIN

Title: METHOD AND WIND TURBINE FOR FEEDING ELECTRIC POWER

Abstract: The invention relates to a method for feeding electrical power into an electrical supply network by means of at least one wind turbine, or a wind farm comprising a plurality of wind turbines at a network connection point, wherein a plurality of energy generators feed power into the electrical supply network, and a plurality of consumers extract power from the electrical supply network such that there is a power balance between the input power and the extracted power in the electric supply network, which is positive if more power is fed in than is extracted. The method comprises the following steps: monitoring a power indicator representative of the power balance in the electrical supply network; determining a compensation energy quantity as a function of the power indicator; infeeding a basic electric power depending on available wind power, and changing the infeed of the basic electric power by the determined compensating energy quantity.

Classifications:

International (IPC 8-9): F03D7/00 F03D7/04 H02J3/00 H02J3/24 H02J3/28 H02J3/38 H02P9/02 (Advanced/Invention)
CPC: H02J3/386 F03D7/048 H02J3/00 H02J2003/001 H02J2003/388 Y02E10/763 F03D9/257



Family:

Publication number	Publication date	Application number	Application date
DE102016106215 A1	20171005	DE201610106215	20160405
WO17174644 A1	20171012	WO2017EP58082	20170405

Priority:

DE201610106215 20160405

Probable Assignee: WOBLEN PROPERTIES GMBH

Assignee(s): (std): WOBLEN PROPERTIES GMBH

Inventor(s): (std): BROMBACH JOHANNES

Agent(s): EISENFUEHR SPEISER PATENTANWAELTE RECHTSANWAELTE PARTGMBB ET AL

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DJ DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT JP KE KG KH KM KN KP KR KW KZ LA LC LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW