### **CPC** COOPERATIVE PATENT CLASSIFICATION

#### H **ELECTRICITY**

(NOTE omitted)

#### H<sub>0</sub>2 GENERATION; CONVERSION OR DISTRIBUTION OF ELECTRIC POWER

## CIRCUIT ARRANGEMENTS OR SYSTEMS FOR SUPPLYING OR DISTRIBUTING H<sub>0</sub>2J **ELECTRIC POWER; SYSTEMS FOR STORING ELECTRIC ENERGY**

# **NOTES**

- 1. This subclass covers:
  - AC or DC mains or distribution networks;
  - · circuit arrangements for battery supplies, including charging or control thereof, or coordinated supply from two or more sources of any kind;
  - circuit arrangements or systems for wireless supply or distribution of electric power.
- 2. This subclass does not cover:
  - · control of a single motor, generator or dynamo-electric converter, of the types covered by subclass H01F or H02K, which is covered by subclass H02P;
  - control of a single motor or generator, of the types covered by subclass H02N, which is covered by that subclass.

### **WARNING**

1/14

. Balancing the load in a network

In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

1/00	Circuit arrangements for DC mains or DC	1/16	using dynamo-electric machines coupled to
	distribution networks		flywheels
1/001	• {Hot plugging or unplugging of load or power modules to or from power distribution networks}	3/00	Circuit arrangements for AC mains or AC distribution networks
1/002	• {Intermediate AC, e.g. DC supply with intermediated AC distribution}	3/001	• {Methods to deal with contingencies, e.g. abnormalities, faults or failures}
1/02	<ul> <li>Arrangements for reducing harmonics or ripples</li> </ul>	3/0012	• • {Contingency detection}
1/04	<ul> <li>Constant-current supply systems</li> </ul>	3/0012	. {Contingency detection}     . {Transmission line or load transient problems,
1/06	• Two-wire systems	3/00123	e.g. overvoltage, resonance or self-excitation of
1/08	. Three-wire systems; Systems having more than		inductive loads (H02J 3/01 takes precedence)}
	three wires	3/002	• {Flicker reduction, e.g. compensation of flicker
1/082	• • {Plural DC voltage, e.g. DC supply voltage with	2,002	introduced by non-linear load}
	at least two different DC voltage levels}	3/003	• {Load forecast, e.g. methods or systems for
1/084	• • {for selectively connecting the load or loads to		forecasting future load demand}
	one or several among a plurality of power lines or	3/004	• {Generation forecast, e.g. methods or systems for
4 /00 4	power sources}		forecasting future energy generation}
1/086	• • • {for providing alternative feeding paths	3/007	• {Arrangements for selectively connecting the
	between load or loads and source or sources when the main path fails}		load or loads to one or several among a plurality
1/10	Parallel operation of DC sources		of power lines or power sources (for providing
1/102	<ul> <li>Farance operation of DC sources</li> <li>• {being switching converters (H02J 1/108,</li> </ul>		uninterruptable power supply <u>H02J 9/00</u> )}
1/102	H02J 1/12 take precedence)	3/0073	• • {for providing alternative feeding paths between load and source when the main path fails, e.g.
1/106	• • {for load balancing, symmetrisation, or sharing}		transformers, busbars}
1/108	• • {using diodes blocking reverse current flow	3/0075	• • { for providing alternative feeding paths between
	$(\underline{\text{H02J }1/12} \text{ takes precedence})$		load and source according to economic or
1/109	• • {Scheduling or re-scheduling the operation of the		energy efficiency considerations, e.g. economic
	DC sources in a particular order, e.g. connecting		dispatch}
	or disconnecting the sources in sequential,	3/008	• {involving trading of energy or energy transmission
	alternating or in subsets, to meet a given demand}		rights}
1/12	• Parallel operation of DC generators with	3/01	<ul> <li>Arrangements for reducing harmonics or ripples</li> </ul>
1/100	converters, e.g. with mercury-arc rectifier	3/02	• using a single network for simultaneous distribution
1/122	• • {Provisions for temporary connection of DC		of power at different frequencies; using a single
	sources of essentially the same voltage, e.g.		network for simultaneous distribution of AC power
	jumpstart cables}		and of DC power

CPC - 2025.05 1

	<ul> <li>for connecting networks of the same frequency but supplied from different sources</li> </ul>	3/322	• • • {the battery being on-board an electric or hybrid vehicle, e.g. vehicle to grid
3/06	Controlling transfer of power between connected networks; Controlling sharing of load between connected networks		arrangements [V2G], power aggregation, use of the battery for network load balancing, coordinated or cooperative battery charging}
3/08	Synchronising of networks	3/34	. Arrangements for transfer of electric power between
3/10	Constant-current supply systems		networks of substantially different frequency
3/12	for adjusting voltage in AC networks by changing a characteristic of the network load	3/36	Arrangements for transfer of electric power between AC networks via a high-tension DC link
3/14	• • by switching loads on to, or off from, network,	2003/365	• • {Reducing harmonics or oscillations in HVDC}
5/11	e.g. progressively balanced loading	3/38	Arrangements for parallely feeding a single
3/144	• • • {Demand-response operation of the power transmission or distribution network}		network by two or more generators, converters or transformers
3/16	by adjustment of reactive power	3/381	• • {Dispersed generators}
3/18	Arrangements for adjusting, eliminating or	3/388	• • {Islanding, i.e. disconnection of local power
3/10	compensating reactive power in networks (for		supply from the network}
	adjustment of voltage <u>H02J 3/16</u> )	3/40	• • Synchronising a generator for connection to a
3/1807	• • {using series compensators}		network or to another generator
3/1814	• • • {wherein al least one reactive element is	3/42	with automatic parallel connection when
	actively controlled by a bridge converter, e.g.	2/11	synchronisation is achieved
	unified power flow controllers [UPFC]}	3/44	• • • with means for ensuring correct phase sequence
3/1821	• • {using shunt compensators ( <u>H02J 3/1807</u> ,	3/46	Controlling of the sharing of output between the
2/1020	H02J 3/1878 take precedence)	2/166	generators, converters, or transformers
3/1828	• • • { with stepwise control, the possibility of	3/466	• • • {Scheduling the operation of the generators, e.g. connecting or disconnecting generators to
	switching in or out the entire compensating arrangement not being considered as stepwise		meet a given demand}
	control}	3/472	• • • {For selectively connecting the AC sources
3/1835	• • {with stepless control}	3/4/2	in a particular order, e.g. sequential,
3/1842	• • • {wherein at least one reactive element is		alternating or subsets of sources}
5,10.2	actively controlled by a bridge converter, e.g.	3/48	Controlling the sharing of the in-phase
	active filters}		component
3/185	{wherein such reactive element is purely	3/50	Controlling the sharing of the out-of-phase
	inductive, e.g. superconductive magnetic		component
	energy storage systems [SMES]}	4/00	Circuit arrangements for mains or distribution
3/1857	(wherein such bridge converter is a	-,	
	• • • • {wherein such bridge converter is a multilevel converter}		networks not specified as AC or DC
3/1864	multilevel converter} {wherein the stepless control of reactive	5/00	Circuit arrangements for transfer of electric
	<ul><li>multilevel converter}</li><li>• • • {wherein the stepless control of reactive power is obtained by at least one reactive</li></ul>	5/00	Circuit arrangements for transfer of electric power between AC networks and DC networks
	multilevel converter} { wherein the stepless control of reactive power is obtained by at least one reactive element connected in series with a	5/00	Circuit arrangements for transfer of electric
3/1864	multilevel converter} { wherein the stepless control of reactive power is obtained by at least one reactive element connected in series with a semiconductor switch}		Circuit arrangements for transfer of electric power between AC networks and DC networks (H02J 3/36 takes precedence)
	multilevel converter} { wherein the stepless control of reactive power is obtained by at least one reactive element connected in series with a semiconductor switch} {Methods for planning installation of shunt	5/00 7/00	Circuit arrangements for transfer of electric power between AC networks and DC networks
3/1864	multilevel converter} { wherein the stepless control of reactive power is obtained by at least one reactive element connected in series with a semiconductor switch} {Methods for planning installation of shunt reactive power compensators}		Circuit arrangements for transfer of electric power between AC networks and DC networks (H02J 3/36 takes precedence)  Circuit arrangements for charging or depolarising batteries or for supplying loads from batteries
3/1864	multilevel converter} { wherein the stepless control of reactive power is obtained by at least one reactive element connected in series with a semiconductor switch} {Methods for planning installation of shunt reactive power compensators} {using tap changing or phase shifting	<b>7/00</b> 7/00032	Circuit arrangements for transfer of electric power between AC networks and DC networks (H02J 3/36 takes precedence)  Circuit arrangements for charging or depolarising batteries or for supplying loads from batteries
3/1864	<ul> <li>multilevel converter}</li> <li>• • • { wherein the stepless control of reactive power is obtained by at least one reactive element connected in series with a semiconductor switch}</li> <li>• • { Methods for planning installation of shunt reactive power compensators}</li> <li>• • { using tap changing or phase shifting transformers}</li> </ul>	<b>7/00</b> 7/00032	Circuit arrangements for transfer of electric power between AC networks and DC networks (H02J 3/36 takes precedence)  Circuit arrangements for charging or depolarising batteries or for supplying loads from batteries  • {characterised by data exchange}  • • {Charger exchanging data with an electronic device, i.e. telephone, whose internal battery is
3/1864 3/1871 3/1878	multilevel converter} { wherein the stepless control of reactive power is obtained by at least one reactive element connected in series with a semiconductor switch} {Methods for planning installation of shunt reactive power compensators} {using tap changing or phase shifting	<b>7/00</b> 7/00032 7/00034	Circuit arrangements for transfer of electric power between AC networks and DC networks (H02J 3/36 takes precedence)  Circuit arrangements for charging or depolarising batteries or for supplying loads from batteries  • {characterised by data exchange}  • • {Charger exchanging data with an electronic device, i.e. telephone, whose internal battery is under charge}
3/1864 3/1871 3/1878	<ul> <li>multilevel converter}</li> <li>• • • { wherein the stepless control of reactive power is obtained by at least one reactive element connected in series with a semiconductor switch}</li> <li>• • { Methods for planning installation of shunt reactive power compensators}</li> <li>• • { using tap changing or phase shifting transformers}</li> <li>• • { using rotating means, e.g. synchronous}</li> </ul>	<b>7/00</b> 7/00032 7/00034 7/00036	Circuit arrangements for transfer of electric power between AC networks and DC networks (H02J 3/36 takes precedence)  Circuit arrangements for charging or depolarising batteries or for supplying loads from batteries  · {characterised by data exchange}  · · {Charger exchanging data with an electronic device, i.e. telephone, whose internal battery is under charge}  · · {Charger exchanging data with battery}
3/1864 3/1871 3/1878 3/1885	multilevel converter} { wherein the stepless control of reactive power is obtained by at least one reactive element connected in series with a semiconductor switch} { Methods for planning installation of shunt reactive power compensators} . { using tap changing or phase shifting transformers} . { using rotating means, e.g. synchronous generators}	<b>7/00</b> 7/00032 7/00034 7/00036	Circuit arrangements for transfer of electric power between AC networks and DC networks (H02J 3/36 takes precedence)  Circuit arrangements for charging or depolarising batteries or for supplying loads from batteries  • {characterised by data exchange}  • • {Charger exchanging data with an electronic device, i.e. telephone, whose internal battery is under charge}  • • {Charger exchanging data with battery}  • • {Charger exchanging data with battery}
3/1864 3/1871 3/1878 3/1885	multilevel converter} { wherein the stepless control of reactive power is obtained by at least one reactive element connected in series with a semiconductor switch} { Methods for planning installation of shunt reactive power compensators} . { using tap changing or phase shifting transformers} . { using rotating means, e.g. synchronous generators} . { the arrangements being an integral part of the	<b>7/00</b> 7/00032 7/00034 7/00036	Circuit arrangements for transfer of electric power between AC networks and DC networks (H02J 3/36 takes precedence)  Circuit arrangements for charging or depolarising batteries or for supplying loads from batteries  • {characterised by data exchange}  • • {Charger exchanging data with an electronic device, i.e. telephone, whose internal battery is under charge}  • • {Charger exchanging data with battery}  • • {using passive battery identification means, e.g. resistors or capacitors (identification by
3/1864 3/1871 3/1878 3/1885 3/1892	multilevel converter} { wherein the stepless control of reactive power is obtained by at least one reactive element connected in series with a semiconductor switch} {Methods for planning installation of shunt reactive power compensators} . { using tap changing or phase shifting transformers} . { using rotating means, e.g. synchronous generators} . { the arrangements being an integral part of the load, e.g. a motor, or of its control circuit}	<b>7/00</b> 7/00032 7/00034  7/00036 7/00038	Circuit arrangements for transfer of electric power between AC networks and DC networks (H02J 3/36 takes precedence)  Circuit arrangements for charging or depolarising batteries or for supplying loads from batteries  • {characterised by data exchange}  • • {Charger exchanging data with an electronic device, i.e. telephone, whose internal battery is under charge}  • • {Charger exchanging data with battery}  • • {Using passive battery identification means, e.g. resistors or capacitors (identification by mechanical connections H02J 7/0045)}
3/1864 3/1871 3/1878 3/1885 3/1892 3/20	multilevel converter} { wherein the stepless control of reactive power is obtained by at least one reactive element connected in series with a semiconductor switch} {Methods for planning installation of shunt reactive power compensators} {using tap changing or phase shifting transformers} {using rotating means, e.g. synchronous generators} {the arrangements being an integral part of the load, e.g. a motor, or of its control circuit} in long overhead lines in cables . Arrangements for preventing or reducing	<b>7/00</b> 7/00032 7/00034  7/00036 7/00038	Circuit arrangements for transfer of electric power between AC networks and DC networks (H02J 3/36 takes precedence)  Circuit arrangements for charging or depolarising batteries or for supplying loads from batteries  · {characterised by data exchange}  · {Charger exchanging data with an electronic device, i.e. telephone, whose internal battery is under charge}  · {Charger exchanging data with battery}  · {Using passive battery identification means, e.g. resistors or capacitors (identification by mechanical connections H02J 7/0045)}  · · {in response to measured battery parameters,
3/1864 3/1871 3/1878 3/1885 3/1892 3/20 3/22	multilevel converter}  { wherein the stepless control of reactive power is obtained by at least one reactive element connected in series with a semiconductor switch}  { Methods for planning installation of shunt reactive power compensators}  . { using tap changing or phase shifting transformers}  . { using rotating means, e.g. synchronous generators}  . { the arrangements being an integral part of the load, e.g. a motor, or of its control circuit}  . in long overhead lines  . in cables  . Arrangements for preventing or reducing oscillations of power in networks (by control	7/00 7/00032 7/00034 7/00036 7/00038	Circuit arrangements for transfer of electric power between AC networks and DC networks (H02J 3/36 takes precedence)  Circuit arrangements for charging or depolarising batteries or for supplying loads from batteries  • {characterised by data exchange}  • • {Charger exchanging data with an electronic device, i.e. telephone, whose internal battery is under charge}  • • {Charger exchanging data with battery}  • • {using passive battery identification means, e.g. resistors or capacitors (identification by mechanical connections H02J 7/0045)}  • • {in response to measured battery parameters, e.g. voltage, current or temperature profile}
3/1864 3/1871 3/1878 3/1885 3/1892 3/20 3/22 3/24	multilevel converter}  { wherein the stepless control of reactive power is obtained by at least one reactive element connected in series with a semiconductor switch}  { Methods for planning installation of shunt reactive power compensators}  . { using tap changing or phase shifting transformers}  . { using rotating means, e.g. synchronous generators}  . { the arrangements being an integral part of the load, e.g. a motor, or of its control circuit}  . in long overhead lines  . in cables  . Arrangements for preventing or reducing oscillations of power in networks (by control effected upon a single generator H02P 9/00)	7/00 7/00032 7/00034 7/00036 7/00038	Circuit arrangements for transfer of electric power between AC networks and DC networks (H02J 3/36 takes precedence)  Circuit arrangements for charging or depolarising batteries or for supplying loads from batteries  • {characterised by data exchange}  • • {Charger exchanging data with an electronic device, i.e. telephone, whose internal battery is under charge}  • • {Charger exchanging data with battery}  • • {using passive battery identification means, e.g. resistors or capacitors (identification by mechanical connections H02J 7/0045)}  • • • {in response to measured battery parameters, e.g. voltage, current or temperature profile}  • • • {using switches, contacts or markings, e.g.
3/1864 3/1871 3/1878 3/1885 3/1892 3/20 3/22 3/24	multilevel converter}  { wherein the stepless control of reactive power is obtained by at least one reactive element connected in series with a semiconductor switch}  { Methods for planning installation of shunt reactive power compensators}  . { using tap changing or phase shifting transformers}  . { using rotating means, e.g. synchronous generators}  . { the arrangements being an integral part of the load, e.g. a motor, or of its control circuit}  . in long overhead lines  . in cables  . Arrangements for preventing or reducing oscillations of power in networks (by control effected upon a single generator H02P 9/00)  . { The oscillation concerning frequency}	7/00 7/00032 7/00034 7/00036 7/00038 7/00041 7/00043	Circuit arrangements for transfer of electric power between AC networks and DC networks (H02J 3/36 takes precedence)  Circuit arrangements for charging or depolarising batteries or for supplying loads from batteries  • {characterised by data exchange}  • • {Charger exchanging data with an electronic device, i.e. telephone, whose internal battery is under charge}  • • {Charger exchanging data with battery}  • • {using passive battery identification means, e.g. resistors or capacitors (identification by mechanical connections H02J 7/0045)}  • • • {in response to measured battery parameters, e.g. voltage, current or temperature profile}  • • • {using switches, contacts or markings, e.g. optical, magnetic or barcode}
3/1864 3/1871 3/1878 3/1885 3/1892 3/20 3/22 3/24 3/241 3/242	multilevel converter}  { wherein the stepless control of reactive power is obtained by at least one reactive element connected in series with a semiconductor switch}  { Methods for planning installation of shunt reactive power compensators}  . { using tap changing or phase shifting transformers}  . { using rotating means, e.g. synchronous generators}  . { the arrangements being an integral part of the load, e.g. a motor, or of its control circuit}  . in long overhead lines  . in cables  . Arrangements for preventing or reducing oscillations of power in networks (by control effected upon a single generator H02P 9/00)  . { The oscillation concerning frequency}  . { using phasor measuring units [PMU] }	7/00 7/00032 7/00034 7/00036 7/00038 7/00041 7/00043	Circuit arrangements for transfer of electric power between AC networks and DC networks (H02J 3/36 takes precedence)  Circuit arrangements for charging or depolarising batteries or for supplying loads from batteries  • {characterised by data exchange}  • • {Charger exchanging data with an electronic device, i.e. telephone, whose internal battery is under charge}  • • {Charger exchanging data with battery}  • • {using passive battery identification means, e.g. resistors or capacitors (identification by mechanical connections H02J 7/0045)}  • • • {in response to measured battery parameters, e.g. voltage, current or temperature profile}  • • • {using switches, contacts or markings, e.g.
3/1864 3/1871 3/1878 3/1885 3/1892 3/20 3/22 3/24	multilevel converter}  { wherein the stepless control of reactive power is obtained by at least one reactive element connected in series with a semiconductor switch}  { Methods for planning installation of shunt reactive power compensators}  . { using tap changing or phase shifting transformers}  . { using rotating means, e.g. synchronous generators}  . { the arrangements being an integral part of the load, e.g. a motor, or of its control circuit}  . in long overhead lines  . in cables  . Arrangements for preventing or reducing oscillations of power in networks (by control effected upon a single generator HO2P 9/00)  . { The oscillation concerning frequency}  . { using phasor measuring units [PMU] }  . Arrangements for eliminating or reducing	7/00 7/00032 7/00034 7/00036 7/00038 7/00041 7/00043	Circuit arrangements for transfer of electric power between AC networks and DC networks (H02J 3/36 takes precedence)  Circuit arrangements for charging or depolarising batteries or for supplying loads from batteries  • {characterised by data exchange}  • • {Charger exchanging data with an electronic device, i.e. telephone, whose internal battery is under charge}  • • {Charger exchanging data with battery}  • • {using passive battery identification means, e.g. resistors or capacitors (identification by mechanical connections H02J 7/0045)}  • • {in response to measured battery parameters, e.g. voltage, current or temperature profile}  • • {using switches, contacts or markings, e.g. optical, magnetic or barcode}  • {Authentication, i.e. circuits for checking compatibility between one component, e.g. a battery or a battery charger, and another
3/1864 3/1871 3/1878 3/1885 3/1892 3/20 3/22 3/24 3/241 3/242	multilevel converter}  { wherein the stepless control of reactive power is obtained by at least one reactive element connected in series with a semiconductor switch}  { Methods for planning installation of shunt reactive power compensators}  . { using tap changing or phase shifting transformers}  . { using rotating means, e.g. synchronous generators}  . { the arrangements being an integral part of the load, e.g. a motor, or of its control circuit}  . in long overhead lines  . in cables  . Arrangements for preventing or reducing oscillations of power in networks (by control effected upon a single generator HO2P 9/00)  . { The oscillation concerning frequency}  . { using phasor measuring units [PMU] }  . Arrangements for eliminating or reducing asymmetry in polyphase networks	7/00 7/00032 7/00034 7/00036 7/00038 7/00041 7/00043 7/00045	Circuit arrangements for transfer of electric power between AC networks and DC networks (H02J 3/36 takes precedence)  Circuit arrangements for charging or depolarising batteries or for supplying loads from batteries  • {characterised by data exchange}  • • {Charger exchanging data with an electronic device, i.e. telephone, whose internal battery is under charge}  • • {Charger exchanging data with battery}  • • {using passive battery identification means, e.g. resistors or capacitors (identification by mechanical connections H02J 7/0045)}  • • {in response to measured battery parameters, e.g. voltage, current or temperature profile}  • • • {using switches, contacts or markings, e.g. optical, magnetic or barcode}  • • {Authentication, i.e. circuits for checking compatibility between one component, e.g. a battery or a battery charger, and another component, e.g. a power source}
3/1864 3/1871 3/1878 3/1885 3/1892 3/20 3/22 3/24 3/242 3/242 3/26	multilevel converter}  { wherein the stepless control of reactive power is obtained by at least one reactive element connected in series with a semiconductor switch}  { Methods for planning installation of shunt reactive power compensators}  . { using tap changing or phase shifting transformers}  . { using rotating means, e.g. synchronous generators}  . { the arrangements being an integral part of the load, e.g. a motor, or of its control circuit}  . in long overhead lines  . in cables  . Arrangements for preventing or reducing oscillations of power in networks (by control effected upon a single generator HO2P 9/00)  . { The oscillation concerning frequency}  . { using phasor measuring units [PMU] }  . Arrangements for eliminating or reducing	7/00 7/00032 7/00034 7/00036 7/00038 7/00041 7/00043	Circuit arrangements for transfer of electric power between AC networks and DC networks (H02J 3/36 takes precedence)  Circuit arrangements for charging or depolarising batteries or for supplying loads from batteries  • {characterised by data exchange}  • {Charger exchanging data with an electronic device, i.e. telephone, whose internal battery is under charge}  • {Charger exchanging data with battery}  • {Using passive battery identification means, e.g. resistors or capacitors (identification by mechanical connections H02J 7/0045)}  • • {in response to measured battery parameters, e.g. voltage, current or temperature profile}  • • {using switches, contacts or markings, e.g. optical, magnetic or barcode}  • {Authentication, i.e. circuits for checking compatibility between one component, e.g. a battery or a battery charger, and another component, e.g. a power source}  • {with provisions for charging different types of
3/1864 3/1871 3/1878 3/1885 3/1892 3/20 3/22 3/24 3/242 3/242 3/26	multilevel converter}  { wherein the stepless control of reactive power is obtained by at least one reactive element connected in series with a semiconductor switch}  { Methods for planning installation of shunt reactive power compensators}  . { using tap changing or phase shifting transformers}  . { using rotating means, e.g. synchronous generators}  . { the arrangements being an integral part of the load, e.g. a motor, or of its control circuit}  . in long overhead lines  . in cables  . Arrangements for preventing or reducing oscillations of power in networks (by control effected upon a single generator HO2P 9/00)  . { The oscillation concerning frequency}  . { using phasor measuring units [PMU] }  . Arrangements for eliminating or reducing asymmetry in polyphase networks  . Arrangements for balancing of the load in a network	7/00 7/00032 7/00034 7/00036 7/00038 7/00041 7/00043 7/00045	Circuit arrangements for transfer of electric power between AC networks and DC networks (H02J 3/36 takes precedence)  Circuit arrangements for charging or depolarising batteries or for supplying loads from batteries  • {characterised by data exchange}  • {Charger exchanging data with an electronic device, i.e. telephone, whose internal battery is under charge}  • {Charger exchanging data with battery}  • {using passive battery identification means, e.g. resistors or capacitors (identification by mechanical connections H02J 7/0045)}  • • {in response to measured battery parameters, e.g. voltage, current or temperature profile}  • • {using switches, contacts or markings, e.g. optical, magnetic or barcode}  • {Authentication, i.e. circuits for checking compatibility between one component, e.g. a battery or a battery charger, and another component, e.g. a power source}  • {with provisions for charging different types of batteries}
3/1864 3/1871 3/1878 3/1885 3/1892 3/20 3/22 3/24 3/242 3/242 3/26 3/28	multilevel converter }  { wherein the stepless control of reactive power is obtained by at least one reactive element connected in series with a semiconductor switch }  { Methods for planning installation of shunt reactive power compensators }  { using tap changing or phase shifting transformers }  { using rotating means, e.g. synchronous generators }  { the arrangements being an integral part of the load, e.g. a motor, or of its control circuit }  in long overhead lines  in cables  . Arrangements for preventing or reducing oscillations of power in networks (by control effected upon a single generator H02P 9/00)  . { The oscillation concerning frequency }  . { using phasor measuring units [PMU] }  . Arrangements for eliminating or reducing asymmetry in polyphase networks  . Arrangements for balancing of the load in a network by storage of energy  using dynamo-electric machines coupled to flywheels	7/00 7/00032 7/00034 7/00036 7/00038 7/00041 7/00043 7/00045	Circuit arrangements for transfer of electric power between AC networks and DC networks (H02J 3/36 takes precedence)  Circuit arrangements for charging or depolarising batteries or for supplying loads from batteries  · {characterised by data exchange}  · {Charger exchanging data with an electronic device, i.e. telephone, whose internal battery is under charge}  · {Charger exchanging data with battery}  · {Using passive battery identification means, e.g. resistors or capacitors (identification by mechanical connections H02J 7/0045)}  · · {in response to measured battery parameters, e.g. voltage, current or temperature profile}  · · {Using switches, contacts or markings, e.g. optical, magnetic or barcode}  · {Authentication, i.e. circuits for checking compatibility between one component, e.g. a battery or a battery charger, and another component, e.g. a power source}  · {with provisions for charging different types of batteries}  · {acting upon several batteries simultaneously or
3/1864 3/1871 3/1878 3/1885 3/1892 3/20 3/22 3/24 3/242 3/242 3/26 3/28	multilevel converter }  { wherein the stepless control of reactive power is obtained by at least one reactive element connected in series with a semiconductor switch }  { Methods for planning installation of shunt reactive power compensators }  { using tap changing or phase shifting transformers }  { using rotating means, e.g. synchronous generators }  { the arrangements being an integral part of the load, e.g. a motor, or of its control circuit }  in long overhead lines  in cables  . Arrangements for preventing or reducing oscillations of power in networks (by control effected upon a single generator H02P 9/00)  . { The oscillation concerning frequency }  . { using phasor measuring units [PMU] }  . Arrangements for eliminating or reducing asymmetry in polyphase networks  . Arrangements for balancing of the load in a network by storage of energy  . using dynamo-electric machines coupled to	7/00 7/00032 7/00034 7/00036 7/00038 7/00041 7/00043 7/00045	Circuit arrangements for transfer of electric power between AC networks and DC networks (H02J 3/36 takes precedence)  Circuit arrangements for charging or depolarising batteries or for supplying loads from batteries  • {characterised by data exchange}  • {Charger exchanging data with an electronic device, i.e. telephone, whose internal battery is under charge}  • {Charger exchanging data with battery}  • {using passive battery identification means, e.g. resistors or capacitors (identification by mechanical connections H02J 7/0045)}  • • {in response to measured battery parameters, e.g. voltage, current or temperature profile}  • • {using switches, contacts or markings, e.g. optical, magnetic or barcode}  • {Authentication, i.e. circuits for checking compatibility between one component, e.g. a battery or a battery charger, and another component, e.g. a power source}  • {with provisions for charging different types of batteries}
3/1864 3/1871 3/1878 3/1885 3/1892 3/20 3/22 3/24 3/242 3/242 3/26 3/28 3/30	multilevel converter }  { wherein the stepless control of reactive power is obtained by at least one reactive element connected in series with a semiconductor switch }  { Methods for planning installation of shunt reactive power compensators }  { using tap changing or phase shifting transformers }  { using rotating means, e.g. synchronous generators }  { the arrangements being an integral part of the load, e.g. a motor, or of its control circuit }  in long overhead lines  in cables  . Arrangements for preventing or reducing oscillations of power in networks (by control effected upon a single generator H02P 9/00)  . { The oscillation concerning frequency }  . { using phasor measuring units [PMU] }  . Arrangements for eliminating or reducing asymmetry in polyphase networks  . Arrangements for balancing of the load in a network by storage of energy  using dynamo-electric machines coupled to flywheels	7/00 7/00032 7/00034 7/00036 7/00038 7/00041 7/00043 7/00045 7/00047 7/0013	Circuit arrangements for transfer of electric power between AC networks and DC networks (H02J 3/36 takes precedence)  Circuit arrangements for charging or depolarising batteries or for supplying loads from batteries  · {characterised by data exchange}  · {Charger exchanging data with an electronic device, i.e. telephone, whose internal battery is under charge}  · {Charger exchanging data with battery}  · {using passive battery identification means, e.g. resistors or capacitors (identification by mechanical connections H02J 7/0045)}  · · {in response to measured battery parameters, e.g. voltage, current or temperature profile}  · · {using switches, contacts or markings, e.g. optical, magnetic or barcode}  · {Authentication, i.e. circuits for checking compatibility between one component, e.g. a battery or a battery charger, and another component, e.g. a power source}  · {with provisions for charging different types of batteries}  · {acting upon several batteries simultaneously or sequentially (H02J 7/1423 takes precedence)}  · {Circuits for equalisation of charge between batteries}
3/1864 3/1871 3/1878 3/1885 3/1892 3/20 3/22 3/24 3/242 3/242 3/26 3/28 3/30	multilevel converter }  { wherein the stepless control of reactive power is obtained by at least one reactive element connected in series with a semiconductor switch }  { Methods for planning installation of shunt reactive power compensators }  { using tap changing or phase shifting transformers }  { using rotating means, e.g. synchronous generators }  { the arrangements being an integral part of the load, e.g. a motor, or of its control circuit }  in long overhead lines  in cables  . Arrangements for preventing or reducing oscillations of power in networks (by control effected upon a single generator H02P 9/00)  . { The oscillation concerning frequency }  . { using phasor measuring units [PMU] }  . Arrangements for eliminating or reducing asymmetry in polyphase networks  . Arrangements for balancing of the load in a network by storage of energy  using dynamo-electric machines coupled to flywheels	7/00 7/00032 7/00034 7/00036 7/00038 7/00041 7/00043 7/00045 7/00047 7/0013	Circuit arrangements for transfer of electric power between AC networks and DC networks (H02J 3/36 takes precedence)  Circuit arrangements for charging or depolarising batteries or for supplying loads from batteries  · {characterised by data exchange}  · {Charger exchanging data with an electronic device, i.e. telephone, whose internal battery is under charge}  · {Charger exchanging data with battery}  · {using passive battery identification means, e.g. resistors or capacitors (identification by mechanical connections H02J 7/0045)}  · · {in response to measured battery parameters, e.g. voltage, current or temperature profile}  · · {using switches, contacts or markings, e.g. optical, magnetic or barcode}  · {Authentication, i.e. circuits for checking compatibility between one component, e.g. a battery or a battery charger, and another component, e.g. a power source}  · {with provisions for charging different types of batteries}  · {acting upon several batteries simultaneously or sequentially (H02J 7/1423 takes precedence)}  · {Circuits for equalisation of charge between

CPC - 2025.05

7/04

. . Regulation of charging current or voltage

7,002   (Figure 1)   (Figure 2)   (Figure	7/02 7/04	. for charging batteries from AC mains by converters	9/00	Circuit arrangements for emergency or stand-by
7,002   Justing switched or multiplewed charge circuits   7,002   Paralleliserials witching of connection of batteries to charge or load circuit)   7,002   Paralleliserials witching of connection of batteries to charge or load circuit)   7,002   Paralleliserials witching of connection of the plurality of batteries to charge or load circuit)   7,002   Paralleliserials witching of protection   7,003   Paralleliserials witching of protection   7,004   Paralleliserials witching of protection		* · · · · · · · · · · · · · · · · · · ·	0.40.0	
7,002   Caperalle Verlage (view)   7,002   Caperalle Verlage (view)   7,003   Caperalle Verlage (view)   7,004   Capera			7/36	<ul> <li>Arrangements using end-cell switching</li> </ul>
7,70024   Parallelerials witching of commercians   7,712   1,7147   1,7147   1,7148	7/007192			
7,0024   Justing switched or multiplexed charge circuits   7,002	7/00719			• • {using capacitors as storage or buffering devices}
7,0024 . [Unique switched or multiplexed charge circuits] 7,0025 . [Segmential battery discharge in systems with a plurality of hatteries to charge or load circuit] 7,0036 . [Overcharge protection] 7,00309 . [O		in response to non-electric parameters}		charging (with circuits for polarity protection
7.0024 (Characterised by the mechanical construction) 7.0036 (Using reverse polarity correcting or protecting circuits (HD21 7.0034) 7.0036 (Using reverse polarity correcting or protecting circuits (mechanical means of polarity protection) 7.0037 (Using reverse polarity correcting or protecting circuits (HD21 7.0034) 7.0036 (Using connection detecting circuits (HD21 7.0034) 7.0037 (Lusing reverse polarity correction) 7.0038 (Using connection of loads if battery is not under charge, e.g. in vehicle if engine is not running) 7.0039 (Using reverse polarity correcting circuits (HD21 7.0034) 7.0030 (Using reverse polarity correcting circuits (HD21 7.0034) 7.0040 (Lusing reverse polarity correcting or protecting circuits (mechanical means of polarity protection) 7.0044 (Characterised by the mechanical construction) 7.0045 (Lusing connection detecting circuits (HD21 7.0034) 7.0046 (Lusing connection of the charge or protecting containing batteries (HD21 7.0034) 7.0047 (With montioring or indicating devices or circuits) 7.0049 (Lenarcterised by the mechanical construction) 7.0040 (Lenarcterised by the mechanical construction) 7.00404 (Characterised by the mechanical construction) 7.00404 (Lenarcterised by the mechanical construction) 7.00404 (Lenarcterised by the mechanical construction) 7.00405 (Lenarcterised by the mechanical construction) 7.00406 (Lenarcterised by the mechanical construction) 7.00407 (Regulation of charge capacity or state of charge (SOC)) 7.0040 (Lenging or discharging current or voltage by variation of field circuit, using reverse concept or circuits) 7.0040 (Lenging or discharging or discharging current or voltage) 7.0041 (Lenging or discharging or discharging current or voltage) 7.0044 (Lenging or discharging or discharging current or voltage) 7.0045 (Lenging or discharging or discharging current or voltage) 7.0046 (Lenging or discharging or discharging current or voltage) 7.0047 (Lenging or discharging or discharging current or voltage) 7.0048 (Lenging or discharging or discharging current or v	7/007186		7/342	{The other DC source being a battery actively
7,0024 . (Parallels/erial switching of connection of batteries to charge or load circuit) 7,0025 . (Sequential battery discharge in systems with a plantifly of batteries) 7,0026 . (Sequential battery discharge in systems with a plantifly of batteries) 7,0027 (Verith safety or protection) 7,00308 . (Overchalge protection) 7,00309 . (Overchalge protection) 7,00309 . (Overchalge protection) 7,00309 . (Overchalge protection) 7,0031 . (using battery or load disconnect circuits (Ho21-9002 nakes precedence)) 7,0032 . (disconnection of loads if battery is not under charge, e.g. in whicle if engine is not running) 7,0034 . (lawing matter) of loads if battery is not under charge, e.g. in whicle if engine is not running) 7,0036 . (lasing connection detecting circuits (Ho21-70045 takes precedence)) 7,0044 . (elarneterised by the mechanical construction) 7,0045 . (encerning the insertion or the connection of the batteries) 7,0046 . (Exerciting batteries (Ho21-70045 takes precedence)) 7,0047 (with monitoring or indicating devices or circuits) 7,0048 . (Detection of fally charged condition) 7,0049 . (Detection of fally charging or discharging current or whater) 7,0049 . (Detection of remaining charge capacity or state of charge (SOCI) charged condition) 7,0049 . (Detection of fally charging or discharging current or whater) 7,0049 . (Detection of relaye maintenance, battery) 7,0049 . (Detection of relaye maintenance) 7,0049 . (Detection of relaye maintenance) 7,0050 . (Detection of relaye maintenance) 7,0069 . (Radary or charger load switching, e.g. concurrent charging and load supply (Ho21-70013 takes precedence) 7,0071 . (with a programmable schedule) 7,0071 . (with a programmable schedule) 7,0071 . (with a production of pubes during the charging process) 7,0071 . (with circuit scaped or or circuits) 7,0071 . (with a programmable schedule) 7,0071 . (with a programmable schedule) 7,0071 . (with a production of pubes during the charging process) 7,0071 . (with a production of pubes during the charging process) 7,0071 . (with				
7.0024 (Coverdurage protection) 7.0030 (Lusing barrey or load disconnect circuits charge coverdurage circuits (mechanical means of polarity protection) 7.0030 (Lusing coverse polarity correcting protection) 7.004 (Lusing coverse polarity correcting circuits (H021 7.0034 (Lusing connection detecting circuits (H021 7.0034 (Lusing coverse polarity) correction protection p			1/34	
7,0019 . (using switched or multiplexed charge circuits) 7,0024 . [Parallel/serial switching of connection of batteries to charge or load circuit) 7,0025 . (Sequential battery discharge in systems with a plurality of Patteries) 7,0029 . [With safety or protection devices or circuits] 7,00300 . (Overcurrent protection) 7,00300 . (Overcurrent protection) 7,00300 . (Overcurrent protection) 7,00300 . (Overcurrent protection) 7,00310 . (Issing battery or load disconnect circuits (HD21-9002 takes precedence)) 7,0032 . (disconnection of loads if hattery is not under charge, e.g. in vehicle if engine is not running) 7,0034 . (laising returne polarity correction HD21-7,0045) 7,0036 . (Issing councetion detecting circuits (HD21-7,0045) 7,0041 . (specially adapted for holding portable devices containing batteries (HD21-7,0045 takes precedence)) 7,0041 . (with monitoring or indicating devices or circuits) 7,0041 . (Detection of femalining charge capacity or state of charge (SOCI) 7,0068 . (Battery or charger load switching e.g., concurrent charging and load supply (HD21-7,0013 takes precedence)) 7,0069 . (Detection of fulls charge capacity or state of charge in distance of pulses during the charging process) 7,00711 . (with monitoring or indicating devices or circuits) 7,00711 . (with introduction of pulses during the charging process) 7,00711 . (with appranamable schedule) 7,00712 . (in response to battery charging or discharging current or voltage) 7,00713 . (in response to paramaters) 7,00714 . (in response to lottery charging or discharging current or voltage) 7,00715 . (in response to paramaters) 7,00716 . (in response to paramaters) 7,00717 . (in the monitoring or indicating devices or circuits) 7,00718 . (in response to integrated charge or situation of the battery) 7,00719 . (in the count of the paramaters) 7,00710 . (in the count of the param		3 {in response to charge current gradient}	7/3/1	constant speed}
7,0019 . (ausing switched or multiplexed charge circuits) 7,0024 . [Parallel/serial switching of connection of batteries to charge or load circuit] 7,0025 . (Sequential battery discharge in systems with a plurality of batteries) 7,0029 [with safety or protection devices or circuits] 7,00309 . (Overcharge protection) 7,00300 . (Overchorge protection) 7,00300 . (Overchorge protection) 7,00300 . (Overchorge protection) 7,00310 . (Overchorge protection) 7,00310 . (Overchorge protection) 7,00310 . (Overchorge protection) 7,00310 . (Overchorder protection) 7,00310 . (Issing battery or load disconnect circuits (H021-9002 takes precedence)) 7,0032 . (disconnection of loads if battery is not under charge, e.g. in wehicle if engine is not running) 7,0034 . (alsing reverse polarity correction H021-7,0045) 7,0036 . (Issing connection detecting circuits (H021-7,0045) 7,0040 . (specially adapted for holding portable devices precedence)) 7,0041 . (specially adapted for holding portable devices precedence)) 7,0042 . (Detection of fremining charge capacity or state of charge [SOCI] 7,0043 . (Detection of fremining charge capacity or state of charge god discharging and load supply (H021-7,0013 takes precedence)) 7,0046 . (Detection of fremining charge capacity or state of charge and od supply (H021-7,0013 takes precedence)) 7,0047 . (Detection of fremining charge capacity or state of charging and load supply (H021-7,0013 takes precedence)) 7,0049 . (Detection of formal state of health (SOH]) 7,0040 . (Detection of fremining charge capacity or state of charging and load supply (H021-7,0013 takes precedence)) 7,0049 . (Detection of fremining charge capacity or state of charging and load supply (H021-7,0013 takes precedence)) 7,0040 . (Detection of fremining charge capacity or state of charging and load supply (H021-7,0013 takes precedence)) 7,0040 . (Detection of fremining charge capacity or state of charging and load supply (H021-7,0013 takes precedence)) 7,0040 . (Detection of take of health (SOH]) 7,0040 . (Detection of take of	7/00716	6 {in response to integrated charge or		<ul> <li>for charging batteries from a charging set</li> </ul>
7,0024 . [Parallel/scrial switching of connection of batteries to charge or load circuit] 7,0025 . [Sequential battery discharge in systems with a plurality of batteries to charge or load circuit] 7,0026 . [Sequential battery discharge in systems with a plurality of batteries] 7,0027 . [Overcharge protection] 7,00390 . [Overcharge protection] 7,00300 . [Overcharge protection] 7,00301 . [Overcharge protection] 7,0031 . [using battery or load disconnect circuits 7,0032 [Overcharge protection] 7,0031 . [using battery or load disconnect circuits 7,0032 [Overcharder protection] 7,0031 . [using battery or load disconnect circuits 7,0032 [disconnection of loads if battery is not under charge, e.g. in which if engine is not running) 7,0034 . [using reverse polarity correcting or protecting 7,0035 . [using connection detecting circuits (H0217,0045) 7,0036 . [using connection detecting circuits (H0217,0045) 7,0037 . [concerning the insertion or the connection of the batteries] 7,0042 . [characterised by the mechanical construction] 7,0043 . [Overcharge protecting or protecting 7,0044 . [using pattery or load disconnect circuits 7,0045 . [using connection detecting circuits (H0217,0045) 7,0046 . [using connection detecting circuits (H0217,0045) 7,0047 . [with monitoring or indicating devices or circuits] 7,0048 . [Detection of state of health [SOH]] 7,0049 . [Detection of state of health [SOH]] 7,0069 . [Charging or discharging for charge maintenance, battery initiation or rejuvenation] 7,0069 . [Charging or discharging for charge maintenance, battery initiation or rejuvenation] 7,0069 . [Charging or discharging current or voltage] 7,00707 . [Regulation of feel charging current or voltage] 7,00707 . [Regulation of charging or discharging current or voltage] 7,0071 . [with a programmable schedule] 7,0071 . [with particulation of pulses during the charging process] 7,0071 . [with particulation	7/00714	4 {in response to battery charging or discharging	7/30	semiconductor device
7/0019 [using switched or multiplexed charge circuits] 7/0024	7/00712	2 {the cycle being controlled or terminated in	1/20	degree of saturation in combination with
7,0019     [using switched or multiplexed charge circuits]   7,0024   [Parallel/serial switching of connection of batteries to charge or load circuit]   7,0025   [Sequential battery discharge in systems with a plurality of batteries to charge or load circuit]   7,0029   (with safety or protection devices or circuits]   7,1407   (on vehicles not being drive nby a motor, e.g., bicycles)   7,00302   . (Overcharge protection)   7,00304   . (Overcharge protection)   7,00306   . (Overdischarge protection)   7,00306   . (Overdischarge protection)   7,00307   . (Overdischarge protection)   7,00308   . (Overcloage protection)   7,00308   . (Overcloage protection)   7,00309   . (Overdischarge protection)   7,0031   . (using battery or load disconnect circuits (H021 9,002 takes precedence))   7,0032   (disconnection of loads if battery is not under charge, e.g. in vehicle if engine is not running)   7,1450   . (in response to parameters of a vehicle)   7,1466   . (in response to parameters of a vehicle)   7,1470   . (in response to parameters of a vehicle)   7,1470   . (in response to parameters of a vehicle)   7,1470   . (in response to parameters of a vehicle)   7,1470   . (in response to parameters of a vehicle)   7,1470   . (in response to parameters of a vehicle)   7,1470   . (in response to parameters of a vehicle)   7,1470   . (in response to parameters of a vehicle)   7,1470   . (in response to parameters of a vehicle)   7,1470   . (in response to parameters of a vehicle)   7,1470   . (in response to parameters of a vehicle)   7,1470   . (in response to parameters of a vehicle)   7,1470   . (in response to parameters of a vehicle)   7,1471   . (in response to parameters of a vehicle)   . (in response to parameters of a vehi		1 {with introduction of pulses during the charging		degree of saturation
7/0019 {using switched or multiplexed charge circuits} 7/0024 Parallet/serial switching of connection of batteries to charge or load circuit) 7/0025 {Sequential battery discharge in systems with a plurality of batteries to charge or load circuits} 7/0029 . {with safety or protection devices or circuits} 7/0029 . {with safety or protection devices or circuits} 7/003002 . {Overcharge protection} 7/003002 . {Overcharge protection} 7/003030 {Overcharge protection} 7/00306 {Overcurent protection} 7/00308 . {Overvoltage protection} 7/00308 . {Overvoltage protection} 7/00309 . {Overvoltage protection} 7/0031 . {using battery or load disconnect circuits (H021 9/00)2 takes precedence)} 7/0032 . {disconnection of loads if battery is not under charge, e.g. in vehicle if engine is not running} 7/0034 . {using reverse polarity correcting or protecting circuits (mechanical means of polarity protection H021 7/0045) 7/0035 . {characterised by the mechanical construction} 7/0040 . {characterised by the mechanical construction} 7/0041 . {specially adapted for holding portable devices containing batteries (H021 7/0045 takes precedence)} 7/0042 . {concerning the insertion or the connection of the batteries} 7/0043 . {Detection of fully charged condition} 7/0044 . {percentage of the content of the batteries} 7/0045 . {concerning the insertion or the connection of the battery} 7/0046 . {Detection of fully charged condition} 7/0046 . {Detection of fully charged condition} 7/0047 . {Detection of fully charged condition} 7/0048 . {Detection of fully charged condition} 7/0049 . {Detection of fully charged condition} 7/0050 . {Detection of fully charged condition} 7/0060 . {Detection of remaining charge capacity or state of charge [S02]} 7/0060 . {Detection of remaining charge capacity or state of charge [S02]} 7/0060 . {Detection of remaining charge capacity or state of charge [S02]} 7/0060 . {Detection of remaining charge capacity or state of charge [S02]} 7/0060 . {Detection of remaining charge capacity or state		voltage}		devices}
7/0019 [using switched or multiplexed charge circuits] 7/0024 . [Parallel/scrial switching of connection of batteries to charge or load circuit] 7/0025 . {Sequential battery discharge in systems with a plurality of batteries to charge or load circuit} 7/0026 . {Sequential battery discharge in systems with a plurality of batteries} 7/0027 . {with safety or protection devices or circuits} 7/0030 . {Overcharge protection} 7/00300 . {Overcurrent protection} 7/00300 . {Overcurrent protection} 7/00300 . {Overcurrent protection} 7/00300 . {Overchat or overtemperature protection} 7/00300 . {Overchat or overtemperature protection} 7/0031 . {using battery or load disconnect circuits (H021 9/002 takes precedence)} 7/0032 . {using reverse polarity correcting or protection H021 7/0045} 7/0033 . {using reverse polarity correcting or protection H021 7/0045} 7/0044 . {specially adapted for holding portable devices precedence} 7/0045 . {concerning the insertion or the connection of the batteries} 7/0046 . {protection of tatte of health [SOH]} 7/0047 . {with monitoring or indicating devices or circuits} 7/0048 . {Detection of state of health [SOH]} 7/0049 . {Detection of state of health [SOH]} 7/0040 . {Battery or charger load switching, e.g. concurrent charging and load supply (H021 7/0013 takes precedence)} 7/0068 . {Battery or charger load switching, e.g. concurrent charging and load supply (H021 7/0013 takes precedence)} 7/0069 . {Battery or charger load switching, e.g. concurrent charging and load supply (H021 7/0013 takes precedence)} 7/0060 . {Battery or charger load switching, e.g. concurrent charging and load supply (H021 7/0013 takes precedence)} 7/0060 . {Battery or charger load switching, e.g. concurrent charging and load supply (H021 7/0013 takes precedence)} 7/0060 . {Battery or charger load switching, e.g. concurrent charging discharge tubes or semiconductor devices between the construction} 7/0060 . {Battery or charger load switching, e.g. concurrent charging and load supply (H021 7/0013 takes precedence)} 7/		battery initiation or rejuvenation}		• • • {with pulse modulation}
7/0019 (using switched or multiplexed charge circuits) 7/0024 . (Parallel/serial switching of connection of batteries to charge or load circuit) 7/0025 . (Sequential battery discharge in systems with a plurality of batteries) 7/0026 . (With safety or protection devices or circuits) 7/0030 . (Overcharge protection) 7/00302 . (Overcharge protection) 7/00303 . (Overcurrent protection) 7/00308 . (Overvoltage protection) 7/00309 . (Overheat or overtemperature protection) 7/00309 . (Overheat or overtemperature protection) 7/0030 . (suising battery or load disconnect circuits (H021 9/002 takes precedence)) 7/0030 . (suising battery or load disconnect circuits (H021 7/0045)) 7/0030 . (suising batteries) 7/0031 . (suising experted protection) 7/0032 . (suising batteries) 7/0033 . (suising battery or load disconnect circuits (H021 9/002 takes precedence)) 7/0034 . (suising experted protection H021 7/0045)) 7/0035 . (suising experted protection detecting circuits (H021 7/0034 takes precedence)) 7/0040 . (specially adapted for holding portable devices containing batteries (H021 7/0045 takes precedence)) 7/0041 . (specially adapted for holding portable devices containing batteries (H021 7/0045 takes precedence)) 7/0042 . (but monitoring or indicating devices or circuits) 7/0043 . (specially adapted for holding portable devices containing batteries (H021 7/0045 takes precedence)) 7/0044 . (betection of fully charged condition) 7/0045 . (Detection of fully charged condition) 7/0046 . (but monitoring or indicating devices or circuits) 7/0047 . (with monitoring or indicating devices or circuits) 7/0049 . (Detection of state of health [SOH]) 7/0049 . (Detection of state of health [SOH]) 7/0040 . (Detection of	7/0069		7/243	
7/0019 . (using switched or multiplexed charge circuits) 7/0024 . {Parallel/serial switching of connection of batteries to charge or load circuit} 7/0025 . {Sequential battery discharge in systems with a plurality of batteries to charge or load circuit} 7/0026 . {Sequential battery discharge in systems with a plurality of batteries} 7/0029 . {With safety or protection devices or circuits} 7/00302 . {Overcharge protection} 7/00304 . {Overcurent protection} 7/00308 . {Overdischarge protection} 7/00309 . {Overthade protection} 7/00310 . {Overdischarge protection} 7/00309 . {Overhead or overtemperature protection} 7/00310 . {Using battery or load disconnect circuits (H0219/002 takes precedence)} 7/0032 . {disconnection of loads if battery is not under charge, e.g. in which is fingling in the motor of a vehicle for the protection for the part of the p	5555	charging and load supply (H02J 7/0013 takes	7/24	construction}
7/0019 (using switched or multiplexed charge circuits) 7/0024 (Parallel/serial switching of connection of batteries to charge or load circuit) 7/0025 (Sequential battery discharge in systems with a plurality of batteries) 7/0026 . (With safety or protection devices or circuits) 7/00302 . (Overcharge protection) 7/00304 . (Overcurrent protection) 7/00308 . (Overcurent protection) 7/00308 . (Overdischarge protection) 7/00309 . (Overdischarge protection) 7/00309 . (Overdischarge protection) 7/0031 . (using battery or load disconnect circuits (H021 9/002) takes precedence)) 7/0032 . (disconnection of loads if battery is not under charge, e.g. in vehicle if engine is not running) 7/0034 . (using reverse polarity correcting or protection H021 7/0045) 7/0042 . (characterised by the mechanical construction) 7/0043 . (specially adapted for holding portable devices containing batteries (H021 7/0045 takes precedence)) 7/0044 . (specially adapted for holding portable devices containing batteries) 7/0045 . (Detection of fully charged condition) 7/0046 . (Detection of fully charged condition) 7/0047 . (with monitoring or indicating devices or circuits) 7/0049 (Detection of fully charged condition) 7/005 . (Detection of state of health (SOHI) 7/006 . (With circuits adapted for supplyine loads from the		battery}	7/225	• • • {characterised by the mechanical
7/0019 (using switched or multiplexed charge circuits) 7/0024 (Parallel/serial switching of connection of batteries to charge or load circuit) 7/0025 (Sequential battery discharge in systems with a plurality of batteries) 7/0026 . (Sequential battery discharge in systems with a plurality of batteries) 7/0027 . (Overcharge protection devices or circuits) 7/00304 . (Overcharge protection) 7/00306 . (Overcharge protection) 7/00306 . (Overdiage protection) 7/00309 . (Overdiage protection) 7/00309 . (Overhad per protection) 7/00309 . (Overhad per protection) 7/00301 . (using battery or load disconnect circuits (H021 9/002 takes precedence)) 7/0032 (disconnection of loads if battery is not under charge, e.g. in vehicle if engine is not running) 7/0034 . (using reverse polarity correcting or protecting circuits (mechanical means of polarity protection H021 7/0045) 7/0035 . (using connection detecting circuits (H021 7/0034 takes precedence)) 7/00404 . (specially adapted for holding portable devices containing batteries (H021 7/0045 takes precedence)) 7/0047 . (with monitoring or indicating devices or circuits) 7/0048 . (Detection of femaining charge capacity or state of charge [SOC]) 7/0049 (Detection of fully charged condition) 7/0049 (Detection of fully charged condition)			7/22	intermittently-operating contacts, e.g. using
7/0019 {using switched or multiplexed charge circuits} 7/0024 {Parallel/serial switching of connection of batteries to charge or load circuit} 7/0025 {Sequential battery discharge in systems with a plurality of batteries} 7/0026 {with safety or protection devices or circuits} 7/0027 . {with safety or protection devices or circuits} 7/00302 {Overcharge protection} 7/00303 {Overcurrent protection} 7/00306 {Overcurrent protection} 7/00307 {Overcharge protection} 7/00309 {Overcharge protection} 7/00309 {Overcharge protection} 7/0031 . {using battery or load disconnect circuits of the plurality of a special means of polarity protection elacting circuits (mechanical means of polarity protection H021 7/0034) 7/0034 . {using connection detecting circuits (H021 7/0034 takes precedence)} 7/0035 . {using connection detecting circuits (H021 7/0034 takes precedence)} 7/0036 . {using connection detecting circuits (H021 7/0034 takes precedence)} 7/0037 . {using neverse polarity correcting or protecting circuits (mechanical means of polarity protection H021 7/0045) 7/0036 . {using connection detecting circuits (H021 7/0034 takes precedence)} 7/0037 . {using connection detecting circuits (H021 7/0034 takes precedence)} 7/0038 . {using connection detecting circuits (H021 7/0034 takes precedence)} 7/0039 . {using connection detecting circuits (H021 7/0034 takes precedence)} 7/0040 . {using connection detecting circuits (H021 7/0034 takes precedence)} 7/0041 . {using connection detecting circuits (H021 7/0045 takes precedence)} 7/0042 . {characterised by the mechanical construction} 7/0043 . {concerning the insertion or the connection of the batteries} 7/163 {with special means for initiating or limiting the excitation current} 7/164 {with multiple batteries} 7/165 {in response to parameters of a vehicle} 7/166 {by means of controlling devices between the generator} 7/167 {by means of controlling devices between the generator output and the battery} 7/167 {with spec		{Detection of fully charged condition}	= /2 =	resistor
7/0019 {using switched or multiplexed charge circuits} 7/0024 {Parallel/serial switching of connection of batteries to charge or load circuit} 7/0025 {Sequential battery discharge in systems with a plurality of batteries} 7/0029 . {with safety or protection devices or circuits} 7/00301 . {Overcharge protection} 7/00302 . {Overcharge protection} 7/00303 . {Overcurrent protection} 7/00303 . {Overcurrent protection} 7/00309 . {Overcharge protection} 7/00309 . {Using battery or load disconnect circuits (H02J 9/002 takes precedence)} 7/0031 . {using mannetic devices having controllable degree of saturation, i.e. transductors 6 or charging batteries from dynamo-electric generators driven at varying speed, e.g. on vehicle 8 visit a generator driven by a prime mover other than the motor of a vehicle} 9 //00308 . {Overoltage protection} 7/1443 . {with multiple generators} 1/1438 . {with multiple generators} 1/1446 . {in combination with power supplies for loads other than batteries} 1/1446 . {in response to parameters of a vehicle} 1/1446 . {in response to parameters of a vehicle} 1/1446 . {by mechanical action on the generator} 1/1446 . {by mechanical action on the generator} 1/1449 . {by commutation of the charging current or voltage otherwise than by variation of the objection of the generator} 1/1449 . {by commutation of the objection of the charging current or voltage by variation of field} 1/1449 . {by commutation of the charging current or voltage by variation of field} 1/1449 . {by commutation of the charging current or voltage by variation of field} 1/1449 . {by commutation of the charging current or voltage by variation of field} 1/1449 . {by commutation of the charging current or voltage by vari	7/0048		7/20	
7/0019 (using switched or multiplexed charge circuits) 7/0024 . {Parallel/serial switching of connection of batteries to charge or load circuit} 7/0025 . {Sequential battery discharge in systems with a plurality of batteries} 7/0029 . {with safety or protection devices or circuits} 7/00302 . {Overcharge protection} 7/00304 . {Overcurrent protection} 7/00306 . {Overdiage protection} 7/00309 . {Overhead or overtemperature protection} 7/00301 . {using battery or load disconnect circuits (H02J 9/0045) 7/00302 . {disconnection of loads if battery is not under charge, e.g. in vehicle if engine is not running} 7/0034 . {using reverse polarity correcting or protection 7/0035 . {using reverse polarity correcting correcting correcting takes precedence}} 7/0036 . {using connection detecting circuits (H02J 7/0045) 7/0036 . {using connection detecting circuits (H02J 7/0045) 7/0036 . {using connection detecting circuits (H02J 7/0045) 7/0037 . {using discharge tubes only 7/142 . using magnetic devices having controllable degree of saturation, i.e. transductors 7/1407 . for charging batteries from dynamo-electric generators driven at varying speed, e.g. on vehicle generators driven at varying speed, e.g. on vehicle 7/1407 . {on vehicles not being driven by a motor, e.g. bicycles} 7/1415 . {with agenerator driven by a prime mover other than the motor of a vehicle} 7/1423 . {with multiple batteries} 7/1438 . {in combination with power supplies for loads other than batteries} 7/1438 . {in combination with power supplies for loads other than batteries} 7/1446 . {in response to parameters of a vehicle} 7/1446 . {in response to parameters of a vehicle} 7/1446 . {in response to parameters of a vehicle} 7/1446 . {by mechanical action on the generator} 7/1447 . {by mechanical action on the generator} 7/1448 . {by commutation of the charging current or voltage otherwise than by variation of field} 7/1449 . {by commutation of the charging current or voltage by variation of field} 7/1440 . {by commutation of the charging current or				
7/0019 {using switched or multiplexed charge circuits} 7/0024 . {Parallel/serial switching of connection of batteries to charge or load circuit} 7/0025 . {Sequential battery discharge in systems with a plurality of batteries} 7/0029 . {with safety or protection devices or circuits} 7/00302 . {Overcharge protection} 7/00304 . {Overcurrent protection} 7/00308 . {Overcurrent protection} 7/00309 . {Overolase protection} 7/0031 . {using battery or load disconnect circuits (H02J 9/002 takes precedence)} 7/0034 . {using battery or load disconnect circuits (H02J 7/0045)	7/0045	The state of the s	7/18	due to variation of ohmic resistance in field
7/0019 {using switched or multiplexed charge circuits} 7/08 using discharge tubes only 7/0024 . {Parallel/serial switching of connection of batteries to charge or load circuit} 7/12 using magnetic devices having controllable degree of saturation, i.e. transductors 7/0025 . {Sequential battery discharge in systems with a plurality of batteries} 7/14 . {or or charging batteries from dynamo-electric generators driven at varying speed, e.g. on vehicle 7/0029 . {with safety or protection devices or circuits} 7/1407 . {on vehicles not being driven by a motor, e.g. bicycles} 7/00304 . {Overcharge protection} 7/1415 . {with a generator driven by a prime mover other than the motor of a vehicle} 7/00308 . {Overvoltage protection} 7/1423 . {with multiple generators} 7/00309 . {Overheat or overtemperature protection} 7/143 . {with multiple generators} 7/0031 . {using battery or load disconnect circuits (H02J 9/002 takes precedence)} 7/1438 . {in combination with power supplies for loads other than batteries} 7/0032 . {disconnection of loads if battery is not under charge, e.g. in vehicle if engine is not running} 7/1469 . {gegulation of the charging current or voltage otherwise than by variation of field} 7/0034 . {using reverse polarity correcting or protection H021 7/0045)} 7/1484 . {by commutation of the output windings of the generator} 7/0036 . {using connection detecting circuits (H02J 7/0034 takes precedence)} 7/1484 . {by commutation of the output windings of the generator} 7/0042 . {characterised by the mechanical construction} 7/0044 . {specially adapted for holding portable devices} 7/16 . Regulation of the charging current or voltage by		precedence)}	7/163	• • { with special means for initiating or limiting
7/0024 . {Parallel/serial switching of connection of batteries to charge or load circuit}		• • {specially adapted for holding portable devices	7/16	Regulation of the charging current or voltage by
7/0019 {using switched or multiplexed charge circuits} 7/08 using discharge tubes only 7/0024 {Parallel/serial switching of connection of batteries to charge or load circuit} 7/0025 {Sequential battery discharge in systems with a plurality of batteries} 7/0029 . {with safety or protection devices or circuits} 7/00302 . {Overcharge protection} 7/00304 . {Overcurrent protection} 7/00308 . {Overcurrent protection} 7/00309 . {Overvoltage protection} 7/00309 . {Overcharge protection} 7/00309 . {Overcharge protection} 7/00309 . {Overcharge protection} 7/0031 . {using battery or load disconnect circuits (H02J 9/002 takes precedence)} 7/0032 {disconnection of loads if battery is not under charge, e.g. in vehicle if engine is not running} 7/0034 . {using reverse polarity correcting or protection ender than by variation of the output windings of the		takes precedence)}	7/1492	• • • {by means of controlling devices between the
7/0019 {using switched or multiplexed charge circuits} 7/0024 . {Parallel/serial switching of connection of batteries to charge or load circuit} 7/0025 . {Sequential battery discharge in systems with a plurality of batteries} 7/0029 . {with safety or protection devices or circuits} 7/00302 . {Overcharge protection} 7/00304 . {Overcurrent protection} 7/00305 . {Overdischarge protection} 7/00306 . {Overdischarge protection} 7/00308 . {Overvoltage protection} 7/00309 . {Overheat or overtemperature protection} 7/0031 . {using battery or load disconnect circuits (H02J 9/002 takes precedence)} 7/0032 . {disconnection of loads if battery is not under charge, e.g. in vehicle if engine is not running} 7/0034 . {using reverse polarity correcting or protecting 7/0036 . {using reverse polarity correcting or protecting} 7/1469 . {using discharge tubes only 7/12 using magnetic devices having controllable degree of saturation, i.e. transductors 7/14 . using magnetic devices having controllable degree of saturation, i.e. transductors 7/140 . using magnetic devices having controllable degree of saturation, i.e. transductors 7/140 . for charging batteries from dynamo-electric generators driven at varying speed, e.g. on vehicle 7/1407 . {on vehicles not being driven by a motor, e.g. bicycles} 7/1415 . {with a generator driven by a prime mover other than the motor of a vehicle} 7/1423 . {with multiple batteries} 7/1438 . {in combination with power supplies for loads other than batteries} 7/1446 . {in response to parameters of a vehicle} 7/1446 . {multiple generators} 7/1446 . {in response to parameters of a vehicle} 7/1446 . {multiple generators} 7/1446 .	7/0026	<u>H02J 7/0045</u> )}		• • • {by commutation of the output windings of the
7/0019 {using switched or multiplexed charge circuits} 7/08 using discharge tubes only 7/0024 . {Parallel/serial switching of connection of batteries to charge or load circuit} 7/0025 . {Sequential battery discharge in systems with a plurality of batteries} 7/0029 . {with safety or protection devices or circuits} 7/0302 . {Overcharge protection} 7/03030 . {Overcurrent protection} 7/0304 . {Overcurrent protection} 7/0305 . {Overvoltage protection} 7/0306 . {Overvoltage protection} 7/0308 . {Overvoltage protection} 7/0309 . {Overheat or overtemperature protection} 7/0301 . {using battery or load disconnect circuits (H02J 9/002 takes precedence)} 7/032 . {disconnection of loads if battery is not under charge, e.g. in vehicle if engine is not running} 7/04 . {using discharge tubes only 7/12 . using magnetic devices having controllable degree of saturation, i.e. transductors 7/14 . for charging batteries from dynamo-electric generators driven at varying speed, e.g. on vehicle 7/1407 . {on vehicles not being driven by a motor, e.g. bicycles} 7/1415 . {with a generator driven by a prime mover other than the motor of a vehicle} 7/1423 . {with multiple batteries} 7/1433 . {with multiple generators} 7/1438 . {in combination with power supplies for loads other than batteries} 7/1446 . {in response to parameters of a vehicle} 7/1446 . {Regulation of the charging current or voltage}	7/0034		7/1476	
7/0019 {using switched or multiplexed charge circuits} 7/08 using discharge tubes only 7/0024 . {Parallel/serial switching of connection of batteries to charge or load circuit} 7/0025 . {Sequential battery discharge in systems with a plurality of batteries} 7/0029 . {with safety or protection devices or circuits} 7/00302 . {Overcharge protection} 7/00304 . {Overcurrent protection} 7/00306 . {Overcurrent protection} 7/00308 . {Overvoltage protection} 7/00309 . {Overheat or overtemperature protection} 7/0031 . {using battery or load disconnect circuits of than the motor of a vehicle of the multiple generators} 7/1438 . {with multiple generators} 7/1438 . {in combination with power supplies for loads other than batteries}		charge, e.g. in vehicle if engine is not running}		• • {Regulation of the charging current or voltage
<ul> <li>7/0019 {using switched or multiplexed charge circuits}</li> <li>7/08 using discharge tubes only</li> <li>7/0024 {Parallel/serial switching of connection of batteries to charge or load circuit}</li> <li>7/0025 . {Sequential battery discharge in systems with a plurality of batteries}</li> <li>7/0029 . {with safety or protection devices or circuits}</li> <li>7/00302 . {Overcharge protection}</li> <li>7/00304 . {Overcurrent protection}</li> <li>7/00306 . {Overcurrent protection}</li> <li>7/00308 . {Overvoltage protection}</li> <li>7/1423 . {with multiple batteries}</li> <li>7/143 . {with multiple generators}</li> </ul>		$(\underline{\text{H02J 9/002}} \text{ takes precedence})$		other than batteries}
<ul> <li>7/0019 {using switched or multiplexed charge circuits}</li> <li>7/0024 {Parallel/serial switching of connection of batteries to charge or load circuit}</li> <li>7/0025 . {Sequential battery discharge in systems with a plurality of batteries}</li> <li>7/0029 . {with safety or protection devices or circuits}</li> <li>7/00302 . {Overcharge protection}</li> <li>7/00304 . {Overcurrent protection}</li> <li>7/00306 . {Overdischarge protection}</li> <li>7/00308 . {Overvoltage protection}</li> <li>7/1423 . using discharge tubes only</li> <li> using discharge tubes</li> <li> using discharge tubes</li> <li> using discharge tubes</li> <li> using discharge tubes</li> <li> (or charging batteries from dynamo-electric generators driven at varying speed, e.g. on vehicle</li> <li> {on vehicles not being driven by a motor, e.g.</li> <li>. {with a generator driven by a prime mover other than the motor of a vehicle}</li> <li>. {with multiple batteries}</li> </ul>				
<ul> <li>7/0019 {using switched or multiplexed charge circuits}</li> <li>7/0024 {Parallel/serial switching of connection of batteries to charge or load circuit}</li> <li>7/0025 . {Sequential battery discharge in systems with a plurality of batteries}</li> <li>7/0029 . {with safety or protection devices or circuits}</li> <li>7/00302 . {Overcharge protection}</li> <li>7/00304 . {Overcurrent protection}</li> <li>7/00305 . {Overdischarge protection}</li> <li>7/00306 . {Overdischarge protection}</li></ul>				
<ul> <li>7/0019 {using switched or multiplexed charge circuits}</li> <li>7/0024 {Parallel/serial switching of connection of batteries to charge or load circuit}</li> <li>7/0025 {Sequential battery discharge in systems with a plurality of batteries}</li> <li>7/0029 . {with safety or protection devices or circuits}</li> <li>7/00302 {Overcharge protection}</li> <li>7/00304 {Overcurrent protection}</li> <li>7/00305 {with a generator driven by a prime mover other</li> </ul>			7/1423	· · · · · · · · · · · · · · · · · · ·
<ul> <li>7/0019 {using switched or multiplexed charge circuits}</li> <li>7/08 using discharge tubes only</li> <li>7/0024 {Parallel/serial switching of connection of batteries to charge or load circuit}</li> <li>7/0025 {Sequential battery discharge in systems with a plurality of batteries}</li> <li>7/0029 . {with safety or protection devices or circuits}</li> <li>7/1407 using discharge tubes only</li> <li> ousing discharge tubes only</li> <li>. for charging batteries from dynamo-electric generators driven at varying speed, e.g. on vehicle</li> <li>. (on vehicles not being driven by a motor, e.g. bicycles)</li> </ul>			//1415	
<ul> <li>7/0019 {using switched or multiplexed charge circuits}</li> <li>7/08 using discharge tubes only</li> <li>7/0024 {Parallel/serial switching of connection of batteries to charge or load circuit}</li> <li>7/0025 {Sequential battery discharge in systems with a plurality of batteries}</li> <li>7/0029 . {with safety or protection devices or circuits}</li> <li>7/1407 {on vehicles not being driven by a motor, e.g.</li> </ul>			7/1/15	
<ul> <li>7/0019 {using switched or multiplexed charge circuits}</li> <li>7/08 using discharge tubes only</li> <li>7/0024 {Parallel/serial switching of connection of batteries to charge or load circuit}</li> <li>7/0025 {Sequential battery discharge in systems with a plurality of batteries}</li> <li>7/14 using discharge tubes only</li> <li> using magnetic devices having controllable degree of saturation, i.e. transductors</li> <li>. for charging batteries from dynamo-electric generators driven at varying speed, e.g. on vehicle</li> </ul>			7/1407	
<ul> <li>7/0019 {using switched or multiplexed charge circuits}</li> <li>7/08 using discharge tubes only</li> <li>4 (Parallel/serial switching of connection of batteries to charge or load circuit)</li> <li>7/12 using discharge tubes only</li> <li>using magnetic devices having controllable degree of saturation, i.e. transductors</li> </ul>		plurality of batteries}		generators driven at varying speed, e.g. on vehicle
7/0019 {using switched or multiplexed charge circuits} 7/08 using discharge tubes only		batteries to charge or load circuit}		degree of saturation, i.e. transductors
7/0010 ( ) 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	7/0018	• • • {using separate charge circuits}	7/06	• • using discharge tubes or semiconductor devices

CPC - 2025.05

power supply, e.g. for emergency lighting

9/002	• {in which a reserve is maintained in an energy		• • {using phone lines}
	source by disconnecting non-critical loads, e.g.		• • {using optical means}
	maintaining a reserve of charge in a vehicle battery for starting an engine}	13/0002	• • {using ultrasonic means}
9/005	<ul> <li>{using a power saving mode (for copiers</li> </ul>		• • {using wireless data transmission}
2/003	G03G 15/5004)}		• • • {by means of mobile telephony}
9/007	• {Detection of the absence of a load}	13/00026	• • • {involving a local wireless network, e.g. Wi-Fi, ZigBee or Bluetooth}
9/02	• in which an auxiliary distribution system and its	13/00028	• · {involving the use of Internet protocols}
	associated lamps are brought into service	13/00028	
9/04	. in which the distribution system is disconnected	13/00032	operated power network elements or equipment,
	from the normal source and connected to a standby		the power network elements or equipment not
	source		otherwise provided for (circuits specially adapted
9/06	• with automatic change-over {, e.g. UPS systems}		for remote switching of lighting via the power line
9/061	• • • {for DC powered loads}		<u>H05B 47/185</u> )}
9/062	• • • {for AC powered loads}	13/00034	
9/063	{Common neutral, e.g. AC input neutral line	12/00026	electric power substation}
	connected to AC output neutral line and DC middle point}	13/00036	• • {the elements or equipment being or involving switches, relays or circuit breakers (circuits for
9/065	• • • • {for lighting purposes}		indication of single switches H01H 9/167)}
9/066	• • • (for inglifing purposes) • • • (characterised by the use of dynamo-electric	13/0004	• • {involved in a protection system}
	machines (H02J 9/08 takes precedence)}	13/0005	• • {the elements or equipment being or involving
9/067	• • {using multi-primary transformers, e.g.		power plugs or sockets}
	transformer having one primary for each AC	15/00	
	energy source and a secondary for the loads}	15/00	Systems for storing electric energy (mechanical
9/068	• • {Electronic means for switching from one	15/003	systems therefor <u>F01-F04</u> ; in chemical form <u>H01M</u> ) • {in the form of hydraulic energy}
	power supply to another power supply, e.g. to	15/006	• {in the form of pneumatic energy, e.g. compressed
0/00	avoid parallel connection}	13/000	air energy storage [CAES] (accumulators for
9/08	requiring starting of a prime-mover		supplying fluid under pressure F15B 1/04)}
11/00	Circuit arrangements for providing service supply	15/007	• {involving storage in the form of mechanical
	to auxiliaries of stations in which electric power is		energy, e.g. fly-wheels}
	generated, distributed or converted	15/008	• {using hydrogen as energy vector}
	g,	13/000	• (using flydrogen as energy vector)
13/00	Circuit arrangements for providing remote		
13/00	Circuit arrangements for providing remote indication of network conditions, e.g. an	50/00	Circuit arrangements or systems for wireless
13/00	Circuit arrangements for providing remote indication of network conditions, e.g. an instantaneous record of the open or closed		Circuit arrangements or systems for wireless supply or distribution of electric power
13/00	Circuit arrangements for providing remote indication of network conditions, e.g. an instantaneous record of the open or closed condition of each circuitbreaker in the network;		Circuit arrangements or systems for wireless supply or distribution of electric power NOTE
13/00	Circuit arrangements for providing remote indication of network conditions, e.g. an instantaneous record of the open or closed condition of each circuitbreaker in the network; Circuit arrangements for providing remote		Circuit arrangements or systems for wireless supply or distribution of electric power  NOTE  In this main group, the specific types of wireless
13/00	Circuit arrangements for providing remote indication of network conditions, e.g. an instantaneous record of the open or closed condition of each circuitbreaker in the network; Circuit arrangements for providing remote control of switching means in a power distribution		Circuit arrangements or systems for wireless supply or distribution of electric power  NOTE  In this main group, the specific types of wireless technology used for the power transmission
13/00	Circuit arrangements for providing remote indication of network conditions, e.g. an instantaneous record of the open or closed condition of each circuitbreaker in the network; Circuit arrangements for providing remote		Circuit arrangements or systems for wireless supply or distribution of electric power  NOTE  In this main group, the specific types of wireless technology used for the power transmission are covered in groups H02J 50/05-H02J 50/30,
	Circuit arrangements for providing remote indication of network conditions, e.g. an instantaneous record of the open or closed condition of each circuitbreaker in the network; Circuit arrangements for providing remote control of switching means in a power distribution network, e.g. switching in and out of current		Circuit arrangements or systems for wireless supply or distribution of electric power  NOTE  In this main group, the specific types of wireless technology used for the power transmission
<b>13/00</b> 13/00001	Circuit arrangements for providing remote indication of network conditions, e.g. an instantaneous record of the open or closed condition of each circuitbreaker in the network; Circuit arrangements for providing remote control of switching means in a power distribution network, e.g. switching in and out of current consumers by using a pulse code signal carried by the network  . {characterised by the display of information or by}		Circuit arrangements or systems for wireless supply or distribution of electric power  NOTE  In this main group, the specific types of wireless technology used for the power transmission are covered in groups H02J 50/05-H02J 50/30, while aspects relevant to the circuit arrangements
	Circuit arrangements for providing remote indication of network conditions, e.g. an instantaneous record of the open or closed condition of each circuitbreaker in the network; Circuit arrangements for providing remote control of switching means in a power distribution network, e.g. switching in and out of current consumers by using a pulse code signal carried by the network  • {characterised by the display of information or by user interaction, e.g. supervisory control and data	50/00	Circuit arrangements or systems for wireless supply or distribution of electric power  NOTE  In this main group, the specific types of wireless technology used for the power transmission are covered in groups H02J 50/05-H02J 50/30, while aspects relevant to the circuit arrangements or systems thereof are covered in groups H02J 50/40-H02J 50/90.
	Circuit arrangements for providing remote indication of network conditions, e.g. an instantaneous record of the open or closed condition of each circuitbreaker in the network; Circuit arrangements for providing remote control of switching means in a power distribution network, e.g. switching in and out of current consumers by using a pulse code signal carried by the network  • {characterised by the display of information or by user interaction, e.g. supervisory control and data acquisition systems [SCADA] or graphical user	<b>50/00</b> 50/001	Circuit arrangements or systems for wireless supply or distribution of electric power  NOTE  In this main group, the specific types of wireless technology used for the power transmission are covered in groups H02J 50/05-H02J 50/30, while aspects relevant to the circuit arrangements or systems thereof are covered in groups H02J 50/40-H02J 50/90.  • {Energy harvesting or scavenging}
13/00001	Circuit arrangements for providing remote indication of network conditions, e.g. an instantaneous record of the open or closed condition of each circuitbreaker in the network; Circuit arrangements for providing remote control of switching means in a power distribution network, e.g. switching in and out of current consumers by using a pulse code signal carried by the network  • {characterised by the display of information or by user interaction, e.g. supervisory control and data acquisition systems [SCADA] or graphical user interfaces [GUI]}	50/00	Circuit arrangements or systems for wireless supply or distribution of electric power  NOTE  In this main group, the specific types of wireless technology used for the power transmission are covered in groups H02J 50/05-H02J 50/30, while aspects relevant to the circuit arrangements or systems thereof are covered in groups H02J 50/40-H02J 50/90.  • {Energy harvesting or scavenging}  • {Mechanical details of housing or structure aiming}
13/00001 13/00002	Circuit arrangements for providing remote indication of network conditions, e.g. an instantaneous record of the open or closed condition of each circuitbreaker in the network; Circuit arrangements for providing remote control of switching means in a power distribution network, e.g. switching in and out of current consumers by using a pulse code signal carried by the network  • {characterised by the display of information or by user interaction, e.g. supervisory control and data acquisition systems [SCADA] or graphical user interfaces [GUI]}  • {characterised by monitoring}	<b>50/00</b> 50/001	Circuit arrangements or systems for wireless supply or distribution of electric power  NOTE  In this main group, the specific types of wireless technology used for the power transmission are covered in groups H02J 50/05-H02J 50/30, while aspects relevant to the circuit arrangements or systems thereof are covered in groups H02J 50/40-H02J 50/90.  • {Energy harvesting or scavenging}  • {Mechanical details of housing or structure aiming to accommodate the power transfer means, e.g.
13/00001	Circuit arrangements for providing remote indication of network conditions, e.g. an instantaneous record of the open or closed condition of each circuitbreaker in the network; Circuit arrangements for providing remote control of switching means in a power distribution network, e.g. switching in and out of current consumers by using a pulse code signal carried by the network  • {characterised by the display of information or by user interaction, e.g. supervisory control and data acquisition systems [SCADA] or graphical user interfaces [GUI]}  • {characterised by monitoring}  • {characterised by the power network being locally	<b>50/00</b> 50/001	Circuit arrangements or systems for wireless supply or distribution of electric power  NOTE  In this main group, the specific types of wireless technology used for the power transmission are covered in groups H02J 50/05-H02J 50/30, while aspects relevant to the circuit arrangements or systems thereof are covered in groups H02J 50/40-H02J 50/90.  • {Energy harvesting or scavenging}  • {Mechanical details of housing or structure aiming}
13/00001 13/00002 13/00004	Circuit arrangements for providing remote indication of network conditions, e.g. an instantaneous record of the open or closed condition of each circuitbreaker in the network; Circuit arrangements for providing remote control of switching means in a power distribution network, e.g. switching in and out of current consumers by using a pulse code signal carried by the network  • {characterised by the display of information or by user interaction, e.g. supervisory control and data acquisition systems [SCADA] or graphical user interfaces [GUI]}  • {characterised by monitoring}  • {characterised by the power network being locally controlled}	<b>50/00</b> 50/001	Circuit arrangements or systems for wireless supply or distribution of electric power  NOTE  In this main group, the specific types of wireless technology used for the power transmission are covered in groups H02J 50/05-H02J 50/30, while aspects relevant to the circuit arrangements or systems thereof are covered in groups H02J 50/40-H02J 50/90.  • {Energy harvesting or scavenging}  • {Mechanical details of housing or structure aiming to accommodate the power transfer means, e.g. mechanical integration of coils, antennas or
13/00001 13/00002	Circuit arrangements for providing remote indication of network conditions, e.g. an instantaneous record of the open or closed condition of each circuitbreaker in the network; Circuit arrangements for providing remote control of switching means in a power distribution network, e.g. switching in and out of current consumers by using a pulse code signal carried by the network  • {characterised by the display of information or by user interaction, e.g. supervisory control and data acquisition systems [SCADA] or graphical user interfaces [GUI]}  • {characterised by monitoring}  • {characterised by the power network being locally	<b>50/00</b> 50/001 50/005	Circuit arrangements or systems for wireless supply or distribution of electric power  NOTE  In this main group, the specific types of wireless technology used for the power transmission are covered in groups H02J 50/05-H02J 50/30, while aspects relevant to the circuit arrangements or systems thereof are covered in groups H02J 50/40-H02J 50/90.  • {Energy harvesting or scavenging} • {Mechanical details of housing or structure aiming to accommodate the power transfer means, e.g. mechanical integration of coils, antennas or transducers into emitting or receiving devices}
13/00001 13/00002 13/00004	Circuit arrangements for providing remote indication of network conditions, e.g. an instantaneous record of the open or closed condition of each circuitbreaker in the network; Circuit arrangements for providing remote control of switching means in a power distribution network, e.g. switching in and out of current consumers by using a pulse code signal carried by the network  • {characterised by the display of information or by user interaction, e.g. supervisory control and data acquisition systems [SCADA] or graphical user interfaces [GUI]}  • {characterised by monitoring}  • {characterised by the power network being locally controlled}  • {characterised by information or instructions	<b>50/00</b> 50/001 50/005	Circuit arrangements or systems for wireless supply or distribution of electric power  NOTE  In this main group, the specific types of wireless technology used for the power transmission are covered in groups H02J 50/05-H02J 50/30, while aspects relevant to the circuit arrangements or systems thereof are covered in groups H02J 50/40-H02J 50/90.  • {Energy harvesting or scavenging} • {Mechanical details of housing or structure aiming to accommodate the power transfer means, e.g. mechanical integration of coils, antennas or transducers into emitting or receiving devices} • using capacitive coupling
13/00001 13/00002 13/00004	Circuit arrangements for providing remote indication of network conditions, e.g. an instantaneous record of the open or closed condition of each circuitbreaker in the network; Circuit arrangements for providing remote control of switching means in a power distribution network, e.g. switching in and out of current consumers by using a pulse code signal carried by the network  • {characterised by the display of information or by user interaction, e.g. supervisory control and data acquisition systems [SCADA] or graphical user interfaces [GUI]}  • {characterised by monitoring}  • {characterised by the power network being locally controlled}  • {characterised by information or instructions transport means between the monitoring, controlling or managing units and monitored, controlled or operated power network element or electrical	50/001 50/005 50/05 50/10 50/12 50/15	Circuit arrangements or systems for wireless supply or distribution of electric power  NOTE  In this main group, the specific types of wireless technology used for the power transmission are covered in groups H02J 50/05-H02J 50/30, while aspects relevant to the circuit arrangements or systems thereof are covered in groups H02J 50/40-H02J 50/90.  • {Energy harvesting or scavenging} • {Mechanical details of housing or structure aiming to accommodate the power transfer means, e.g. mechanical integration of coils, antennas or transducers into emitting or receiving devices} • using capacitive coupling • using inductive coupling • of the resonant type • using ultrasonic waves
13/00001 13/00002 13/00004 13/00006	Circuit arrangements for providing remote indication of network conditions, e.g. an instantaneous record of the open or closed condition of each circuitbreaker in the network; Circuit arrangements for providing remote control of switching means in a power distribution network, e.g. switching in and out of current consumers by using a pulse code signal carried by the network  - {characterised by the display of information or by user interaction, e.g. supervisory control and data acquisition systems [SCADA] or graphical user interfaces [GUI]}  - {characterised by monitoring}  - {characterised by the power network being locally controlled}  - {characterised by information or instructions transport means between the monitoring, controlling or managing units and monitored, controlled or operated power network element or electrical equipment}	50/001 50/005 50/05 50/10 50/12 50/15 50/20	Circuit arrangements or systems for wireless supply or distribution of electric power  NOTE  In this main group, the specific types of wireless technology used for the power transmission are covered in groups H02J 50/05-H02J 50/30, while aspects relevant to the circuit arrangements or systems thereof are covered in groups H02J 50/40-H02J 50/90.  • {Energy harvesting or scavenging} • {Mechanical details of housing or structure aiming to accommodate the power transfer means, e.g. mechanical integration of coils, antennas or transducers into emitting or receiving devices} • using capacitive coupling • using inductive coupling • of the resonant type • using ultrasonic waves • using microwaves or radio frequency waves
13/00001 13/00002 13/00004	Circuit arrangements for providing remote indication of network conditions, e.g. an instantaneous record of the open or closed condition of each circuitbreaker in the network; Circuit arrangements for providing remote control of switching means in a power distribution network, e.g. switching in and out of current consumers by using a pulse code signal carried by the network  • {characterised by the display of information or by user interaction, e.g. supervisory control and data acquisition systems [SCADA] or graphical user interfaces [GUI]}  • {characterised by monitoring}  • {characterised by the power network being locally controlled}  • {characterised by information or instructions transport means between the monitoring, controlling or managing units and monitored, controlled or operated power network element or electrical equipment}  • • {using the power network as support for the	50/001 50/005 50/05 50/10 50/12 50/15	Circuit arrangements or systems for wireless supply or distribution of electric power  NOTE  In this main group, the specific types of wireless technology used for the power transmission are covered in groups H02J 50/05-H02J 50/30, while aspects relevant to the circuit arrangements or systems thereof are covered in groups H02J 50/40-H02J 50/90.  • {Energy harvesting or scavenging} • {Mechanical details of housing or structure aiming to accommodate the power transfer means, e.g. mechanical integration of coils, antennas or transducers into emitting or receiving devices} • using capacitive coupling • using inductive coupling • of the resonant type • using ultrasonic waves • using microwaves or radio frequency waves • characterised by the type of transmitting antennas,
13/00001 13/00002 13/00004 13/00007	Circuit arrangements for providing remote indication of network conditions, e.g. an instantaneous record of the open or closed condition of each circuitbreaker in the network; Circuit arrangements for providing remote control of switching means in a power distribution network, e.g. switching in and out of current consumers by using a pulse code signal carried by the network  • {characterised by the display of information or by user interaction, e.g. supervisory control and data acquisition systems [SCADA] or graphical user interfaces [GUI]}  • {characterised by monitoring}  • {characterised by the power network being locally controlled}  • {characterised by information or instructions transport means between the monitoring, controlling or managing units and monitored, controlled or operated power network element or electrical equipment}  • • {using the power network as support for the transmission}	50/001 50/005 50/05 50/10 50/12 50/15 50/20 50/23	Circuit arrangements or systems for wireless supply or distribution of electric power  NOTE  In this main group, the specific types of wireless technology used for the power transmission are covered in groups H02J 50/05-H02J 50/30, while aspects relevant to the circuit arrangements or systems thereof are covered in groups H02J 50/40-H02J 50/90.  • {Energy harvesting or scavenging} • {Mechanical details of housing or structure aiming to accommodate the power transfer means, e.g. mechanical integration of coils, antennas or transducers into emitting or receiving devices} • using capacitive coupling • using inductive coupling • of the resonant type • using ultrasonic waves • using microwaves or radio frequency waves • characterised by the type of transmitting antennas, e.g. directional array antennas or Yagi antennas
13/00001 13/00002 13/00004 13/00007 13/00009	Circuit arrangements for providing remote indication of network conditions, e.g. an instantaneous record of the open or closed condition of each circuitbreaker in the network; Circuit arrangements for providing remote control of switching means in a power distribution network, e.g. switching in and out of current consumers by using a pulse code signal carried by the network  • {characterised by the display of information or by user interaction, e.g. supervisory control and data acquisition systems [SCADA] or graphical user interfaces [GUI]}  • {characterised by monitoring}  • {characterised by the power network being locally controlled}  • {characterised by information or instructions transport means between the monitoring, controlling or managing units and monitored, controlled or operated power network element or electrical equipment}  • • {using the power network as support for the transmission}  • • • {using pulsed signals}	50/001 50/005 50/05 50/10 50/12 50/15 50/20	Circuit arrangements or systems for wireless supply or distribution of electric power  NOTE  In this main group, the specific types of wireless technology used for the power transmission are covered in groups H02J 50/05-H02J 50/30, while aspects relevant to the circuit arrangements or systems thereof are covered in groups H02J 50/40-H02J 50/90.  {Energy harvesting or scavenging}  {Mechanical details of housing or structure aiming to accommodate the power transfer means, e.g. mechanical integration of coils, antennas or transducers into emitting or receiving devices}  using capacitive coupling  using inductive coupling  of the resonant type  using ultrasonic waves  characterised by the type of transmitting antennas, e.g. directional array antennas or Yagi antennas  characterised by the type of receiving antennas,
13/00001 13/00002 13/00004 13/00007	Circuit arrangements for providing remote indication of network conditions, e.g. an instantaneous record of the open or closed condition of each circuitbreaker in the network; Circuit arrangements for providing remote control of switching means in a power distribution network, e.g. switching in and out of current consumers by using a pulse code signal carried by the network  • {characterised by the display of information or by user interaction, e.g. supervisory control and data acquisition systems [SCADA] or graphical user interfaces [GUI]}  • {characterised by monitoring}  • {characterised by the power network being locally controlled}  • {characterised by information or instructions transport means between the monitoring, controlling or managing units and monitored, controlled or operated power network element or electrical equipment}  • • {using the power network as support for the transmission}  • • • {using modification of a parameter of the	50/001 50/005 50/05 50/10 50/12 50/15 50/20 50/23 50/27	Circuit arrangements or systems for wireless supply or distribution of electric power  NOTE  In this main group, the specific types of wireless technology used for the power transmission are covered in groups H02J 50/05-H02J 50/30, while aspects relevant to the circuit arrangements or systems thereof are covered in groups H02J 50/40-H02J 50/90.  {Energy harvesting or scavenging}  {Mechanical details of housing or structure aiming to accommodate the power transfer means, e.g. mechanical integration of coils, antennas or transducers into emitting or receiving devices}  using capacitive coupling  using inductive coupling  of the resonant type  using ultrasonic waves  characterised by the type of transmitting antennas, e.g. directional array antennas or Yagi antennas  characterised by the type of receiving antennas, e.g. rectennas
13/00001 13/00002 13/00004 13/00006 13/00007 13/00009 13/0001	Circuit arrangements for providing remote indication of network conditions, e.g. an instantaneous record of the open or closed condition of each circuitbreaker in the network; Circuit arrangements for providing remote control of switching means in a power distribution network, e.g. switching in and out of current consumers by using a pulse code signal carried by the network  • {characterised by the display of information or by user interaction, e.g. supervisory control and data acquisition systems [SCADA] or graphical user interfaces [GUI]}  • {characterised by monitoring}  • {characterised by the power network being locally controlled}  • {characterised by information or instructions transport means between the monitoring, controlling or managing units and monitored, controlled or operated power network element or electrical equipment}  • • {using the power network as support for the transmission}  • • • {using modification of a parameter of the network power signal}	50/00 50/001 50/005 50/05 50/10 50/12 50/15 50/20 50/23 50/27 50/30	Circuit arrangements or systems for wireless supply or distribution of electric power  NOTE  In this main group, the specific types of wireless technology used for the power transmission are covered in groups H02J 50/05-H02J 50/30, while aspects relevant to the circuit arrangements or systems thereof are covered in groups H02J 50/40-H02J 50/90.  {Energy harvesting or scavenging}  {Mechanical details of housing or structure aiming to accommodate the power transfer means, e.g. mechanical integration of coils, antennas or transducers into emitting or receiving devices}  using capacitive coupling  using inductive coupling  of the resonant type  using ultrasonic waves  using microwaves or radio frequency waves  characterised by the type of transmitting antennas, e.g. directional array antennas or Yagi antennas  characterised by the type of receiving antennas, e.g. rectennas  using light, e.g. lasers
13/00001 13/00002 13/00004 13/00007 13/00009	Circuit arrangements for providing remote indication of network conditions, e.g. an instantaneous record of the open or closed condition of each circuitbreaker in the network; Circuit arrangements for providing remote control of switching means in a power distribution network, e.g. switching in and out of current consumers by using a pulse code signal carried by the network  • {characterised by the display of information or by user interaction, e.g. supervisory control and data acquisition systems [SCADA] or graphical user interfaces [GUI]}  • {characterised by monitoring}  • {characterised by the power network being locally controlled}  • {characterised by information or instructions transport means between the monitoring, controlling or managing units and monitored, controlled or operated power network element or electrical equipment}  • • {using the power network as support for the transmission}  • • • {using modification of a parameter of the network power signal}  • • {using an auxiliary transmission line}	50/001 50/005 50/05 50/10 50/12 50/15 50/20 50/23 50/27	Circuit arrangements or systems for wireless supply or distribution of electric power  NOTE  In this main group, the specific types of wireless technology used for the power transmission are covered in groups H02J 50/05-H02J 50/30, while aspects relevant to the circuit arrangements or systems thereof are covered in groups H02J 50/40-H02J 50/90.  {Energy harvesting or scavenging}  {Mechanical details of housing or structure aiming to accommodate the power transfer means, e.g. mechanical integration of coils, antennas or transducers into emitting or receiving devices}  using capacitive coupling  using inductive coupling  of the resonant type  using ultrasonic waves  characterised by the type of transmitting antennas, e.g. directional array antennas or Yagi antennas  characterised by the type of receiving antennas, e.g. rectennas  using light, e.g. lasers  using two or more transmitting or receiving devices
13/00001 13/00002 13/00004 13/00006 13/00007 13/00009 13/00011 13/00012	Circuit arrangements for providing remote indication of network conditions, e.g. an instantaneous record of the open or closed condition of each circuitbreaker in the network; Circuit arrangements for providing remote control of switching means in a power distribution network, e.g. switching in and out of current consumers by using a pulse code signal carried by the network  • {characterised by the display of information or by user interaction, e.g. supervisory control and data acquisition systems [SCADA] or graphical user interfaces [GUI]}  • {characterised by monitoring}  • {characterised by the power network being locally controlled}  • {characterised by information or instructions transport means between the monitoring, controlling or managing units and monitored, controlled or operated power network element or electrical equipment}  • • {using the power network as support for the transmission}  • • • {using modification of a parameter of the network power signal}	50/00 50/001 50/005 50/05 50/10 50/12 50/15 50/20 50/23 50/27 50/30	Circuit arrangements or systems for wireless supply or distribution of electric power  NOTE  In this main group, the specific types of wireless technology used for the power transmission are covered in groups H02J 50/05-H02J 50/30, while aspects relevant to the circuit arrangements or systems thereof are covered in groups H02J 50/40-H02J 50/90.  {Energy harvesting or scavenging}  {Mechanical details of housing or structure aiming to accommodate the power transfer means, e.g. mechanical integration of coils, antennas or transducers into emitting or receiving devices}  using capacitive coupling  using inductive coupling  of the resonant type  using ultrasonic waves  using microwaves or radio frequency waves  characterised by the type of transmitting antennas, e.g. directional array antennas or Yagi antennas  characterised by the type of receiving antennas, e.g. rectennas  using light, e.g. lasers
13/00001 13/00002 13/00004 13/00006 13/00007 13/00009 13/00011 13/00012	Circuit arrangements for providing remote indication of network conditions, e.g. an instantaneous record of the open or closed condition of each circuitbreaker in the network; Circuit arrangements for providing remote control of switching means in a power distribution network, e.g. switching in and out of current consumers by using a pulse code signal carried by the network  • {characterised by the display of information or by user interaction, e.g. supervisory control and data acquisition systems [SCADA] or graphical user interfaces [GUI]}  • {characterised by monitoring}  • {characterised by the power network being locally controlled}  • {characterised by information or instructions transport means between the monitoring, controlling or managing units and monitored, controlled or operated power network element or electrical equipment}  • • {using the power network as support for the transmission}  • • {using pulsed signals}  • • • {using modification of a parameter of the network power signal}  • • {using an auxiliary transmission line}  • • • {carrying signals having the network frequency	50/00 50/001 50/005 50/05 50/10 50/12 50/15 50/20 50/23 50/27 50/30 50/40	Circuit arrangements or systems for wireless supply or distribution of electric power  NOTE  In this main group, the specific types of wireless technology used for the power transmission are covered in groups H02J 50/05-H02J 50/30, while aspects relevant to the circuit arrangements or systems thereof are covered in groups H02J 50/40-H02J 50/90.  {Energy harvesting or scavenging}  {Mechanical details of housing or structure aiming to accommodate the power transfer means, e.g. mechanical integration of coils, antennas or transducers into emitting or receiving devices}  using capacitive coupling  using inductive coupling  of the resonant type  using ultrasonic waves  characterised by the type of transmitting antennas, e.g. directional array antennas or Yagi antennas  characterised by the type of receiving antennas, e.g. rectennas  using light, e.g. lasers  using two or more transmitting or receiving devices (H02J 50/50 takes precedence)
13/00001 13/00002 13/00004 13/00006 13/00007 13/00009 13/00012 13/00014 13/00016	Circuit arrangements for providing remote indication of network conditions, e.g. an instantaneous record of the open or closed condition of each circuitbreaker in the network; Circuit arrangements for providing remote control of switching means in a power distribution network, e.g. switching in and out of current consumers by using a pulse code signal carried by the network  • {characterised by the display of information or by user interaction, e.g. supervisory control and data acquisition systems [SCADA] or graphical user interfaces [GUI]}  • {characterised by monitoring}  • {characterised by the power network being locally controlled}  • {characterised by information or instructions transport means between the monitoring, controlling or managing units and monitored, controlled or operated power network element or electrical equipment}  • • {using the power network as support for the transmission}  • • • {using pulsed signals}  • • • {using modification of a parameter of the network power signal}  • • {carrying signals having the network frequency or DC signals}  • • • {using a wired telecommunication network or a data transmission bus}	50/00 50/001 50/005 50/05 50/10 50/12 50/15 50/20 50/23 50/27 50/30 50/40	Circuit arrangements or systems for wireless supply or distribution of electric power  NOTE  In this main group, the specific types of wireless technology used for the power transmission are covered in groups H02J 50/05-H02J 50/30, while aspects relevant to the circuit arrangements or systems thereof are covered in groups H02J 50/40-H02J 50/90.  {Energy harvesting or scavenging} {Mechanical details of housing or structure aiming to accommodate the power transfer means, e.g. mechanical integration of coils, antennas or transducers into emitting or receiving devices} using capacitive coupling using inductive coupling of the resonant type using ultrasonic waves using microwaves or radio frequency waves characterised by the type of transmitting antennas, e.g. directional array antennas or Yagi antennas c. characterised by the type of receiving antennas, e.g. rectennas using light, e.g. lasers using two or more transmitting or receiving devices (H02J 50/50 takes precedence)  {the two or more transmitting or the two or more receiving devices being integrated in the same unit, e.g. power mats with several coils or
13/00001 13/00002 13/00004 13/00006 13/00007 13/00009 13/00012 13/00014 13/00016	Circuit arrangements for providing remote indication of network conditions, e.g. an instantaneous record of the open or closed condition of each circuitbreaker in the network; Circuit arrangements for providing remote control of switching means in a power distribution network, e.g. switching in and out of current consumers by using a pulse code signal carried by the network  • {characterised by the display of information or by user interaction, e.g. supervisory control and data acquisition systems [SCADA] or graphical user interfaces [GUI]}  • {characterised by monitoring}  • {characterised by the power network being locally controlled}  • {characterised by information or instructions transport means between the monitoring, controlling or managing units and monitored, controlled or operated power network element or electrical equipment}  • • {using the power network as support for the transmission}  • • {using modification of a parameter of the network power signal}  • • {using an auxiliary transmission line}  • • {carrying signals having the network frequency or DC signals}  • • {using a wired telecommunication network or a	50/00 50/001 50/005 50/05 50/10 50/12 50/15 50/20 50/23 50/27 50/30 50/40	Circuit arrangements or systems for wireless supply or distribution of electric power  NOTE  In this main group, the specific types of wireless technology used for the power transmission are covered in groups H02J 50/05-H02J 50/30, while aspects relevant to the circuit arrangements or systems thereof are covered in groups H02J 50/40-H02J 50/90.  {Energy harvesting or scavenging} {Mechanical details of housing or structure aiming to accommodate the power transfer means, e.g. mechanical integration of coils, antennas or transducers into emitting or receiving devices} using capacitive coupling using inductive coupling of the resonant type using ultrasonic waves using microwaves or radio frequency waves characterised by the type of transmitting antennas, e.g. directional array antennas or Yagi antennas characterised by the type of receiving antennas, e.g. rectennas using light, e.g. lasers using two or more transmitting or receiving devices (H02J 50/50 takes precedence)  {the two or more transmitting or the two or more receiving devices being integrated in the

CPC - 2025.05 4

50/50	using additional energy repeaters between	2310/10	The network having a local or delimited stationary
	transmitting devices and receiving devices		The network having a local or delimited stationary reach
50/502	<ul> <li>• {the energy repeater being integrated together with the emitter or the receiver}</li> </ul>	2310/12	The local stationary network supplying a household or a building
50/60	• responsive to the presence of foreign objects, e.g.	2310/14	The load or loads being home appliances
	detection of living beings	2310/16	The load or loads being an Information and
50/70	<ul> <li>involving the reduction of electric, magnetic or</li> </ul>		Communication Technology [ICT] facility
	electromagnetic leakage fields	2310/18	The network being internal to a power source or
50/80	• involving the exchange of data, concerning		plant
	supply or distribution of electric power, between	2310/20	The network being internal to a load
50/90	transmitting devices and receiving devices involving detection or optimisation of position, e.g.	2310/22	The load being a portable electronic device
30/90	alignment	2310/23	The load being a medical device, a medical implant, or a life supporting device
2203/00	Indexing scheme relating to details of circuit	2310/40	• The network being an on-board power network, i.e.
	arrangements for AC mains or AC distribution		within a vehicle
	networks	2310/42	for ships or vessels
2203/10	Power transmission or distribution systems	2310/44	for aircrafts
	management focussing at grid-level, e.g. load	2310/46	for ICE-powered road vehicles
	flow analysis, node profile computation, meshed	2310/48	for electric vehicles [EV] or hybrid vehicles
	network optimisation, active network management or spinning reserve management	2310/50	<ul><li>[HEV]</li><li>for selectively controlling the operation of the loads</li></ul>
2203/20	Simulating, e g planning, reliability check,	2310/50	The controlling of the operation of the load not
2203/20	modelling or computer assisted design [CAD]	2310/32	being the total disconnection of the load, i.e.
			entering a degraded mode or in current limitation
2207/00	Indexing scheme relating to details of circuit	2310/54	according to a pre-established time schedule
	arrangements for charging or depolarising batteries or for supplying loads from batteries	2310/56	characterised by the condition upon which the
2207/10	Control circuit supply, e.g. means for supplying		selective controlling is based
2207/10	power to the control circuit	2310/58	The condition being electrical
2207/20	Charging or discharging characterised by the power	2310/60	Limiting power consumption in the network
	electronics converter		or in one section of the network, e.g. load
2207/30	Charge provided using DC bus or data bus of a	2310/62	shedding or peak shaving
	computer	2310/02	• • • The condition being non-electrical, e.g. temperature
2207/40	• adapted for charging from various sources, e.g. AC,	2310/64	The condition being economic, e.g. tariff
2205/50	DC or multivoltage		based load management
2207/50	Charging of capacitors, supercapacitors, ultra- capacitors or double layer capacitors	2310/66	• • one of the loads acting as master and the other or others acting as slaves
2213/00	Indexing scheme relating to details of circuit	2310/70	Load identification
2215/00	arrangements for providing remote indication of	2310,70	• Education
	network conditions of for circuit arrangements for		
	providing remote control of switching means in a		
	power distribution network		
2213/10	using simultaneously two or more different		
	transmission means		
2300/00	Systems for supplying or distributing electric		
	power characterised by decentralized, dispersed,		
	or local generation		
2300/10	The dispersed energy generation being of fossil origin, e.g. diesel generators		
2300/20	• The dispersed energy generation being of renewable		
	origin		
2300/22	The renewable source being solar energy		
2300/24	of photovoltaic origin		
2300/26	involving maximum power point tracking control for photovoltaic sources		
2300/28	The renewable source being wind energy		
2300/30	The power source being a fuel cell		
2300/40	wherein a plurality of decentralised, dispersed or		
	local energy generation technologies are operated		
	simultaneously		
2310/00	The network for supplying or distributing electric		
	power characterised by its spatial reach or by the		

CPC - 2025.05 5

load