

# CPC COOPERATIVE PATENT CLASSIFICATION

## H ELECTRICITY

(NOTE omitted)

### H02 GENERATION; CONVERSION OR DISTRIBUTION OF ELECTRIC POWER

#### H02J CIRCUIT ARRANGEMENTS OR SYSTEMS FOR SUPPLYING OR DISTRIBUTING 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

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 distribution networks

##### WARNING

Group [H02J 1/00](#) is incomplete pending reclassification of documents from group [H02J 13/0003](#).

Group [H02J 1/00](#) is also impacted by reclassification into group [H02J 1/001](#).

Groups [H02J 13/0003](#), [H02J 1/00](#), and [H02J 1/001](#) should be considered in order to perform a complete search.

#### 1/001 {Hot plugging or unplugging of load or power modules to or from power distribution networks}

##### WARNING

Group [H02J 1/001](#) is incomplete pending reclassification of documents from groups [H02J 1/00](#) and [H02J 13/0003](#).

Groups [H02J 1/00](#), [H02J 13/0003](#), and [H02J 1/001](#) should be considered in order to perform a complete search.

#### 1/002 {Intermediate AC, e.g. DC supply with intermediated AC distribution}

##### WARNING

Group [H02J 1/002](#) is incomplete pending reclassification of documents from group [H02J 13/0003](#).

Groups [H02J 13/0003](#) and [H02J 1/002](#) should be considered in order to perform a complete search.

#### 1/02 {Arrangements for reducing harmonics or ripples}

##### WARNING

Group [H02J 1/02](#) is incomplete pending reclassification of documents from group [H02J 13/0003](#).

Groups [H02J 13/0003](#) and [H02J 1/02](#) should be considered in order to perform a complete search.

#### 1/04 {Constant-current supply systems}

##### WARNING

Group [H02J 1/04](#) is incomplete pending reclassification of documents from group [H02J 13/0003](#).

Groups [H02J 13/0003](#) and [H02J 1/04](#) should be considered in order to perform a complete search.

#### 1/06 {Two-wire systems}

##### WARNING

Group [H02J 1/06](#) is incomplete pending reclassification of documents from group [H02J 13/0003](#).

Groups [H02J 13/0003](#) and [H02J 1/06](#) should be considered in order to perform a complete search.

1/08	<ul style="list-style-type: none"> <li>Three-wire systems; Systems having more than three wires</li> </ul> <p><b>WARNING</b></p> <p>Group <a href="#">H02J 1/08</a> is incomplete pending reclassification of documents from group <a href="#">H02J 13/0003</a>.</p> <p>Groups <a href="#">H02J 13/0003</a> and <a href="#">H02J 1/08</a> should be considered in order to perform a complete search.</p>	2001/104 (Frozen)	<ul style="list-style-type: none"> <li>{for synchronisation}</li> </ul> <p><b>WARNING</b></p> <p>Group <a href="#">H02J 2001/104</a> is no longer used for the classification of documents as of January 1, 2020.</p> <p>The content of this group is being reclassified into groups <a href="#">H02J 1/10</a>, <a href="#">H02J 1/102</a>, <a href="#">H02J 1/106</a>, <a href="#">H02J 1/108</a>, <a href="#">H02J 1/109</a>, <a href="#">H02J 1/12</a>, and <a href="#">H02J 1/122</a>.</p> <p>Groups <a href="#">H02J 2001/104</a>, <a href="#">H02J 1/10</a>, <a href="#">H02J 1/102</a>, <a href="#">H02J 1/106</a>, <a href="#">H02J 1/108</a>, <a href="#">H02J 1/109</a>, <a href="#">H02J 1/12</a>, and <a href="#">H02J 1/122</a> should be considered in order to perform a complete search.</p>
1/082	<ul style="list-style-type: none"> <li>{Plural DC voltage, e.g. DC supply voltage with at least two different DC voltage levels}</li> </ul> <p><b>WARNING</b></p> <p>Group <a href="#">H02J 1/082</a> is incomplete pending reclassification of documents from group <a href="#">H02J 13/0003</a>.</p> <p>Groups <a href="#">H02J 13/0003</a> and <a href="#">H02J 1/082</a> should be considered in order to perform a complete search.</p>	1/106	<ul style="list-style-type: none"> <li>{for load balancing, symmetrisation, or sharing}</li> </ul> <p><b>WARNING</b></p> <p>Group <a href="#">H02J 1/106</a> is incomplete pending reclassification of documents from groups <a href="#">H02J 2001/104</a> and <a href="#">H02J 13/0003</a>.</p> <p>Groups <a href="#">H02J 2001/104</a>, <a href="#">H02J 13/0003</a>, and <a href="#">H02J 1/106</a> should be considered in order to perform a complete search.</p>
1/084	<ul style="list-style-type: none"> <li>{for selectively connecting the load or loads to one or several among a plurality of power lines or power sources}</li> </ul> <p><b>WARNING</b></p> <p>Group <a href="#">H02J 1/084</a> is incomplete pending reclassification of documents from group <a href="#">H02J 13/0003</a>.</p> <p>Groups <a href="#">H02J 13/0003</a> and <a href="#">H02J 1/084</a> should be considered in order to perform a complete search.</p>	1/108	<ul style="list-style-type: none"> <li>{using diodes blocking reverse current flow (<a href="#">H02J 1/12</a> takes precedence)}</li> </ul> <p><b>WARNING</b></p> <p>Group <a href="#">H02J 1/108</a> is incomplete pending reclassification of documents from groups <a href="#">H02J 2001/104</a> and <a href="#">H02J 13/0003</a>.</p> <p>Groups <a href="#">H02J 2001/104</a>, <a href="#">H02J 13/0003</a>, and <a href="#">H02J 1/108</a> should be considered in order to perform a complete search.</p>
1/086	<ul style="list-style-type: none"> <li>{for providing alternative feeding paths between load or loads and source or sources when the main path fails}</li> </ul> <p><b>WARNING</b></p> <p>Group <a href="#">H02J 1/086</a> is incomplete pending reclassification of documents from group <a href="#">H02J 13/0003</a>.</p> <p>Groups <a href="#">H02J 13/0003</a> and <a href="#">H02J 1/086</a> should be considered in order to perform a complete search.</p>	1/109	<ul style="list-style-type: none"> <li>{Scheduling or re-scheduling the operation of the DC sources in a particular order, e.g. connecting or disconnecting the sources in sequential, alternating or in subsets, to meet a given demand}</li> </ul> <p><b>WARNING</b></p> <p>Group <a href="#">H02J 1/109</a> is incomplete pending reclassification of documents from groups <a href="#">H02J 2001/104</a> and <a href="#">H02J 13/0003</a>.</p> <p>Groups <a href="#">H02J 2001/104</a>, <a href="#">H02J 13/0003</a>, and <a href="#">H02J 1/109</a> should be considered in order to perform a complete search.</p>
1/10	<ul style="list-style-type: none"> <li>Parallel operation of dc sources</li> </ul> <p><b>WARNING</b></p> <p>Group <a href="#">H02J 1/10</a> is incomplete pending reclassification of documents from groups <a href="#">H02J 2001/104</a> and <a href="#">H02J 13/0003</a>.</p> <p>Groups <a href="#">H02J 2001/104</a>, <a href="#">H02J 13/0003</a>, and <a href="#">H02J 1/10</a> should be considered in order to perform a complete search.</p>	1/12	<ul style="list-style-type: none"> <li>Parallel operation of dc generators with converters, e.g. with mercury-arc rectifier</li> </ul> <p><b>WARNING</b></p> <p>Group <a href="#">H02J 1/12</a> is incomplete pending reclassification of documents from groups <a href="#">H02J 2001/104</a> and <a href="#">H02J 13/0003</a>.</p> <p>Groups <a href="#">H02J 2001/104</a>, <a href="#">H02J 13/0003</a>, and <a href="#">H02J 1/12</a> should be considered in order to perform a complete search.</p>
1/102	<ul style="list-style-type: none"> <li>{being switching converters (<a href="#">H02J 1/108</a>, <a href="#">H02J 1/12</a> take precedence)}</li> </ul> <p><b>WARNING</b></p> <p>Group <a href="#">H02J 1/102</a> is incomplete pending reclassification of documents from groups <a href="#">H02J 2001/104</a> and <a href="#">H02J 13/0003</a>.</p> <p>Groups <a href="#">H02J 2001/104</a>, <a href="#">H02J 13/0003</a>, and <a href="#">H02J 1/102</a> should be considered in order to perform a complete search.</p>		

- 1/122 . . {Provisions for temporary connection of DC sources of essentially the same voltage, e.g. jumpstart cables}
- WARNING**
- Group [H02J 1/122](#) is incomplete pending reclassification of documents from groups [H02J 2001/104](#) and [H02J 13/0003](#).
- Groups [H02J 2001/104](#), [H02J 13/0003](#), and [H02J 1/122](#) should be considered in order to perform a complete search.
- 1/14 . . Balancing the load in a network
- WARNING**
- Group [H02J 1/14](#) is incomplete pending reclassification of documents from group [H02J 13/0003](#).
- Groups [H02J 13/0003](#) and [H02J 1/14](#) should be considered in order to perform a complete search.
- 1/16 . . using dynamo-electric machines coupled to flywheels
- WARNING**
- Group [H02J 1/16](#) is incomplete pending reclassification of documents from group [H02J 13/0003](#).
- Groups [H02J 13/0003](#) and [H02J 1/16](#) should be considered in order to perform a complete search.
- 3/00 Circuit arrangements for ac mains or ac distribution networks**
- WARNING**
- Group [H02J 3/00](#) is incomplete pending reclassification of documents from group [H02J 13/0006](#).
- Groups [H02J 13/0006](#) and [H02J 3/00](#) should be considered in order to perform a complete search.
- 3/001 . . {Methods to deal with contingencies, e.g. abnormalities, faults or failures}
- WARNING**
- Group [H02J 3/001](#) is impacted by reclassification into groups [H02J 3/0012](#) and [H02J 3/00125](#).
- Groups [H02J 3/001](#), [H02J 3/0012](#), and [H02J 3/00125](#) should be considered in order to perform a complete search.
- 3/0012 . . {Contingency detection}
- WARNING**
- Group [H02J 3/0012](#) is incomplete pending reclassification of documents from groups [H02J 3/001](#) and [H02J 13/0006](#).
- Groups [H02J 3/001](#), [H02J 13/0006](#), and [H02J 3/0012](#) should be considered in order to perform a complete search.
- 3/00125 . . {Transmission line or load transient problems, e.g. overvoltage, resonance or self-excitation of inductive loads ([H02J 3/01](#) takes precedence)}
- WARNING**
- Group [H02J 3/00125](#) is incomplete pending reclassification of documents from groups [H02J 3/001](#) and [H02J 13/0006](#).
- Groups [H02J 3/001](#), [H02J 13/0006](#), and [H02J 3/00125](#) should be considered in order to perform a complete search.
- 3/002 . . {Flicker reduction, e.g. compensation of flicker introduced by non-linear load}
- WARNING**
- Group [H02J 3/002](#) is incomplete pending reclassification of documents from group [H02J 13/0006](#).
- Groups [H02J 13/0006](#) and [H02J 3/002](#) should be considered in order to perform a complete search.
- 3/003 . . {Load forecast, e.g. methods or systems for forecasting future load demand}
- WARNING**
- Group [H02J 3/003](#) is incomplete pending reclassification of documents from group [H02J 13/0006](#).
- Groups [H02J 13/0006](#) and [H02J 3/003](#) should be considered in order to perform a complete search.
- 3/004 . . {Generation forecast, e.g. methods or systems for forecasting future energy generation}
- WARNING**
- Group [H02J 3/004](#) is incomplete pending reclassification of documents from group [H02J 13/0006](#).
- Groups [H02J 13/0006](#) and [H02J 3/004](#) should be considered in order to perform a complete search.
- 3/005 . . {Arrangements for selectively connecting the load to one among a plurality of power lines or power sources ([for providing uninterruptable power supply H02J 9/00](#))}
- WARNING**
- Group [H02J 3/005](#) is no longer used for the classification of documents as of January 1, 2020.
- The content of this group is being reclassified into groups [H02J 3/007](#) and [H02J 3/0075](#).
- Groups [H02J 3/005](#), [H02J 3/007](#), and [H02J 3/0075](#) should be considered in order to perform a complete search.
- (Frozen)

- 3/007 . {Arrangements for selectively connecting the load or loads to one or several among a plurality of power lines or power sources (for providing uninterruptable power supply [H02J 9/00](#))}
- WARNING**
- Group [H02J 3/007](#) is incomplete pending reclassification of documents from groups [H02J 3/005](#) and [H02J 13/0006](#).
- Groups [H02J 3/005](#), [H02J 13/0006](#), and [H02J 3/007](#) should be considered in order to perform a complete search.
- 3/0073 . . {for providing alternative feeding paths between load and source when the main path fails, e.g. transformers, busbars}
- WARNING**
- Group [H02J 3/0073](#) is incomplete pending reclassification of documents from group [H02J 13/0006](#).
- Groups [H02J 13/0006](#) and [H02J 3/0073](#) should be considered in order to perform a complete search.
- 3/0075 . . {for providing alternative feeding paths between load and source according to economic or energy efficiency considerations, e.g. economic dispatch}
- WARNING**
- Group [H02J 3/0075](#) is incomplete pending reclassification of documents from groups [H02J 3/005](#) and [H02J 13/0006](#).
- Groups [H02J 3/005](#), [H02J 13/0006](#), and [H02J 3/0075](#) should be considered in order to perform a complete search.
- 3/008 . {involving trading of energy or energy transmission rights}
- WARNING**
- Group [H02J 3/008](#) is incomplete pending reclassification of documents from group [H02J 13/0006](#).
- Groups [H02J 13/0006](#) and [H02J 3/008](#) should be considered in order to perform a complete search.
- 3/01 . Arrangements for reducing harmonics or ripples
- WARNING**
- Group [H02J 3/01](#) is incomplete pending reclassification of documents from group [H02J 13/0006](#).
- Groups [H02J 13/0006](#) and [H02J 3/01](#) should be considered in order to perform a complete search.
- 3/02 . using a single network for simultaneous distribution of power at different frequencies; using a single network for simultaneous distribution of ac power and of dc power
- WARNING**
- Group [H02J 3/02](#) is incomplete pending reclassification of documents from groups [H02J 13/0006](#), [H02J 13/0093](#), and [H02J 13/0096](#).
- Groups [H02J 3/02](#), [H02J 13/0006](#), [H02J 13/0093](#), and [H02J 13/0096](#) should be considered in order to perform a complete search.
- 3/04 . for connecting networks of the same frequency but supplied from different sources
- WARNING**
- Group [H02J 3/04](#) is incomplete pending reclassification of documents from group [H02J 13/0006](#).
- Groups [H02J 13/0006](#) and [H02J 3/04](#) should be considered in order to perform a complete search.
- 3/06 . . Controlling transfer of power between connected networks; Controlling sharing of load between connected networks
- WARNING**
- Group [H02J 3/06](#) is incomplete pending reclassification of documents from group [H02J 13/0006](#).
- Groups [H02J 13/0006](#) and [H02J 3/06](#) should be considered in order to perform a complete search.
- 3/08 . . Synchronising of networks
- WARNING**
- Group [H02J 3/08](#) is incomplete pending reclassification of documents from group [H02J 13/0006](#).
- Groups [H02J 13/0006](#) and [H02J 3/08](#) should be considered in order to perform a complete search.
- 3/10 . Constant-current supply systems
- WARNING**
- Group [H02J 3/10](#) is incomplete pending reclassification of documents from group [H02J 13/0006](#).
- Groups [H02J 13/0006](#) and [H02J 3/10](#) should be considered in order to perform a complete search.

- 3/12 . for adjusting voltage in ac networks by changing a characteristic of the network load

**WARNING**

Group [H02J 3/12](#) is incomplete pending reclassification of documents from group [H02J 13/0006](#).

Groups [H02J 13/0006](#) and [H02J 3/12](#) should be considered in order to perform a complete search.

- 3/14 . . by switching loads on to, or off from, network, e.g. progressively balanced loading

**WARNING**

Group [H02J 3/14](#) is incomplete pending reclassification of documents from group [H02J 13/0006](#).

Group [H02J 3/14](#) is also impacted by reclassification into group [H02J 3/144](#).

Groups [H02J 13/0006](#), [H02J 3/14](#), and [H02J 3/144](#) should be considered in order to perform a complete search.

- 3/144 . . . {Demand-response operation of the power transmission or distribution network}

**WARNING**

Group [H02J 3/144](#) is incomplete pending reclassification of documents from groups [H02J 3/14](#) and [H02J 13/0006](#).

Groups [H02J 3/14](#), [H02J 13/0006](#), and [H02J 3/144](#) should be considered in order to perform a complete search.

- 3/16 . . by adjustment of reactive power

**WARNING**

Group [H02J 3/16](#) is incomplete pending reclassification of documents from group [H02J 13/0006](#).

Groups [H02J 13/0006](#) and [H02J 3/16](#) should be considered in order to perform a complete search.

- 3/18 . Arrangements for adjusting, eliminating or compensating reactive power in networks (for adjustment of voltage [H02J 3/16](#))

**WARNING**

Group [H02J 3/18](#) is incomplete pending reclassification of documents from group [H02J 13/0006](#).

Groups [H02J 13/0006](#) and [H02J 3/18](#) should be considered in order to perform a complete search.

- 3/1807 . . {using series compensators}

**WARNING**

Group [H02J 3/1807](#) is incomplete pending reclassification of documents from group [H02J 13/0006](#).

Groups [H02J 13/0006](#) and [H02J 3/1807](#) should be considered in order to perform a complete search.

- 3/1814 . . . {wherein at least one reactive element is actively controlled by a bridge converter, e.g. unified power flow controllers [UPFC]}

**WARNING**

Group [H02J 3/1814](#) is incomplete pending reclassification of documents from group [H02J 13/0006](#).

Groups [H02J 13/0006](#) and [H02J 3/1814](#) should be considered in order to perform a complete search.

- 3/1821 . . {using shunt compensators ([H02J 3/1807](#), [H02J 3/1878](#) take precedence)}

**WARNING**

Group [H02J 3/1821](#) is incomplete pending reclassification of documents from group [H02J 13/0006](#).

Groups [H02J 13/0006](#) and [H02J 3/1821](#) should be considered in order to perform a complete search.

- 3/1828 . . . {with stepwise control, the possibility of switching in or out the entire compensating arrangement not being considered as stepwise control}

**WARNING**

Group [H02J 3/1828](#) is incomplete pending reclassification of documents from group [H02J 13/0006](#).

Groups [H02J 13/0006](#) and [H02J 3/1828](#) should be considered in order to perform a complete search.

- 3/1835 . . . {with stepless control}

**WARNING**

Group [H02J 3/1835](#) is incomplete pending reclassification of documents from group [H02J 13/0006](#).

Groups [H02J 13/0006](#) and [H02J 3/1835](#) should be considered in order to perform a complete search.

- 3/1842 . . . . {wherein at least one reactive element is actively controlled by a bridge converter, e.g. active filters}

**WARNING**

Group [H02J 3/1842](#) is incomplete pending reclassification of documents from group [H02J 13/0006](#).

Groups [H02J 13/0006](#) and [H02J 3/1842](#) should be considered in order to perform a complete search.

- 3/185 . . . . . {wherein such reactive element is purely inductive, e.g. superconductive magnetic energy storage systems [SMES]}

**WARNING**

Group [H02J 3/185](#) is incomplete pending reclassification of documents from group [H02J 13/0006](#).

Groups [H02J 13/0006](#) and [H02J 3/185](#) should be considered in order to perform a complete search.

- 3/1857 . . . . . {wherein such bridge converter is a multilevel converter}

**WARNING**

Group [H02J 3/1857](#) is incomplete pending reclassification of documents from group [H02J 13/0006](#).

Groups [H02J 13/0006](#) and [H02J 3/1857](#) should be considered in order to perform a complete search.

- 3/1864 . . . . . {wherein the stepless control of reactive power is obtained by at least one reactive element connected in series with a semiconductor switch}

**WARNING**

Group [H02J 3/1864](#) is incomplete pending reclassification of documents from group [H02J 13/0006](#).

Groups [H02J 13/0006](#) and [H02J 3/1864](#) should be considered in order to perform a complete search.

- 3/1871 . . . {Methods for planning installation of shunt reactive power compensators}

**WARNING**

Group [H02J 3/1871](#) is incomplete pending reclassification of documents from group [H02J 13/0006](#).

Groups [H02J 13/0006](#) and [H02J 3/1871](#) should be considered in order to perform a complete search.

- 3/1878 . . {using tap changing or phase shifting transformers}

**WARNING**

Group [H02J 3/1878](#) is incomplete pending reclassification of documents from group [H02J 13/0006](#).

Groups [H02J 13/0006](#) and [H02J 3/1878](#) should be considered in order to perform a complete search.

- 3/1885 . . {using rotating means, e.g. synchronous generators}

**WARNING**

Group [H02J 3/1885](#) is incomplete pending reclassification of documents from group [H02J 13/0006](#).

Groups [H02J 13/0006](#) and [H02J 3/1885](#) should be considered in order to perform a complete search.

- 3/1892 . . {the arrangements being an integral part of the load, e.g. a motor, or of its control circuit}

**WARNING**

Group [H02J 3/1892](#) is incomplete pending reclassification of documents from group [H02J 13/0006](#).

Groups [H02J 13/0006](#) and [H02J 3/1892](#) should be considered in order to perform a complete search.

- 3/20 . . in long overhead lines

**WARNING**

Group [H02J 3/20](#) is incomplete pending reclassification of documents from group [H02J 13/0006](#).

Groups [H02J 13/0006](#) and [H02J 3/20](#) should be considered in order to perform a complete search.

- 3/22 . . in cables

**WARNING**

Group [H02J 3/22](#) is incomplete pending reclassification of documents from group [H02J 13/0006](#).

Groups [H02J 13/0006](#) and [H02J 3/22](#) should be considered in order to perform a complete search.

- 3/24 . . Arrangements for preventing or reducing oscillations of power in networks (by control effected upon a single generator [H02P 9/00](#))

**WARNING**

Group [H02J 3/24](#) is incomplete pending reclassification of documents from group [H02J 13/0006](#).

Group [H02J 3/24](#) is also impacted by reclassification into groups [H02J 3/241](#) and [H02J 3/242](#).

Groups [H02J 3/24](#), [H02J 13/0006](#), [H02J 3/241](#) and [H02J 3/242](#) should be considered in order to perform a complete search.

- 3/241 . . {The oscillation concerning frequency}

**WARNING**

Group [H02J 3/241](#) is incomplete pending reclassification of documents from groups [H02J 3/24](#) and [H02J 13/0006](#).

Groups [H02J 3/24](#), [H02J 13/0006](#), and [H02J 3/241](#) should be considered in order to perform a complete search.

- 3/242 . . {using phasor measuring units [PMU] }

**WARNING**

Group [H02J 3/242](#) is incomplete pending reclassification of documents from groups [H02J 3/24](#) and [H02J 13/0006](#).

Groups [H02J 3/24](#), [H02J 13/0006](#), and [H02J 3/242](#) should be considered in order to perform a complete search.

- 3/26 . Arrangements for eliminating or reducing asymmetry in polyphase networks

**WARNING**

Group [H02J 3/26](#) is incomplete pending reclassification of documents from group [H02J 13/0006](#).

Groups [H02J 13/0006](#) and [H02J 3/26](#) should be considered in order to perform a complete search.

- 3/28 . Arrangements for balancing of the load in a network by storage of energy

**WARNING**

Group [H02J 3/28](#) is incomplete pending reclassification of documents from group [H02J 13/0006](#).

Groups [H02J 13/0006](#) and [H02J 3/28](#) should be considered in order to perform a complete search.

- 3/30 . . using dynamo-electric machines coupled to flywheels

**WARNING**

Group [H02J 3/30](#) is incomplete pending reclassification of documents from group [H02J 13/0006](#).

Groups [H02J 13/0006](#) and [H02J 3/30](#) should be considered in order to perform a complete search.

- 3/32 . . using batteries with converting means

**WARNING**

Group [H02J 3/32](#) is incomplete pending reclassification of documents from group [H02J 13/0006](#).

Group [H02J 3/32](#) is also impacted by reclassification into group [H02J 3/322](#).

Groups [H02J 13/0006](#), [H02J 3/32](#), and [H02J 3/322](#) should be considered in order to perform a complete search.

- 3/322 . . . {the battery being on-board an electric or hybrid vehicle, e.g. vehicle to grid arrangements [V2G], power aggregation, use of the battery for network load balancing, coordinated or cooperative battery charging }

**WARNING**

Group [H02J 3/322](#) is incomplete pending reclassification of documents from groups [H02J 3/32](#), [H02J 7/0027](#), and [H02J 13/0006](#).

Groups [H02J 3/322](#), [H02J 3/32](#), [H02J 7/0027](#), and [H02J 13/0006](#) should be considered in order to perform a complete search.

- 3/34 . Arrangements for transfer of electric power between networks of substantially different frequency

**WARNING**

Group [H02J 3/34](#) is incomplete pending reclassification of documents from group [H02J 13/0006](#).

Groups [H02J 13/0006](#) and [H02J 3/34](#) should be considered in order to perform a complete search.

- 3/36 . Arrangements for transfer of electric power between ac networks via a high-tension dc link

**WARNING**

Group [H02J 3/36](#) is incomplete pending reclassification of documents from group [H02J 13/0006](#).

Groups [H02J 13/0006](#) and [H02J 3/36](#) should be considered in order to perform a complete search.

- 2003/365 . . {Reducing harmonics or oscillations in HVDC }

- 3/38 . Arrangements for parallely feeding a single network by two or more generators, converters or transformers

**WARNING**

Group [H02J 3/38](#) is incomplete pending reclassification of documents from group [H02J 13/0006](#).

Groups [H02J 13/0006](#) and [H02J 3/38](#) should be considered in order to perform a complete search.

- 3/381 . . {Dispersed generators }

**WARNING**

Group [H02J 3/381](#) is incomplete pending reclassification of documents from group [H02J 13/0006](#).

Groups [H02J 13/0006](#) and [H02J 3/381](#) should be considered in order to perform a complete search.

3/382 . . . {the generators exploiting renewable energy}  
(Frozen)

**WARNING**

Group [H02J 3/382](#) is no longer used for the classification of documents as of January 1, 2020.

The content of this group is being reclassified into groups [H02J 2300/20](#), [H02J 2300/22](#), [H02J 3/388](#), [H02J 3/40](#), [H02J 3/42](#), [H02J 3/44](#), [H02J 3/46](#), [H02J 3/466](#), [H02J 3/472](#), [H02J 3/48](#), and [H02J 3/50](#).

Groups [H02J 3/382](#), [H02J 2300/20](#), [H02J 2300/22](#), [H02J 3/388](#), [H02J 3/40](#), [H02J 3/42](#), [H02J 3/44](#), [H02J 3/46](#), [H02J 3/466](#), [H02J 3/472](#), [H02J 3/48](#), and [H02J 3/50](#) should be considered in order to perform a complete search.

3/383 . . . . {Solar energy, e.g. photovoltaic energy  
(Frozen) (generation of electric power by conversion of light [H02S](#))}

**WARNING**

Group [H02J 3/383](#) is no longer used for the classification of documents as of January 1, 2020.

The content of this group is being reclassified into groups [H02J 2300/24](#), [H02J 3/388](#), [H02J 3/40](#), [H02J 3/42](#), [H02J 3/44](#), [H02J 3/46](#), [H02J 3/466](#), [H02J 3/472](#), [H02J 3/48](#), and [H02J 3/50](#).

Groups [H02J 3/383](#), [H02J 2300/24](#), [H02J 3/388](#), [H02J 3/40](#), [H02J 3/42](#), [H02J 3/44](#), [H02J 3/46](#), [H02J 3/466](#), [H02J 3/472](#), [H02J 3/48](#), and [H02J 3/50](#) should be considered in order to perform a complete search.

3/385 . . . . {Maximum power point tracking control  
(Frozen) for photovoltaic sources}

**WARNING**

Group [H02J 3/385](#) is no longer used for the classification of documents as of January 1, 2020.

The content of this group is being reclassified into groups [H02J 2300/26](#), [H02J 3/388](#), [H02J 3/40](#), [H02J 3/42](#), [H02J 3/44](#), [H02J 3/46](#), [H02J 3/466](#), [H02J 3/472](#), [H02J 3/48](#), and [H02J 3/50](#).

Groups [H02J 3/385](#), [H02J 2300/26](#), [H02J 3/388](#), [H02J 3/40](#), [H02J 3/42](#), [H02J 3/44](#), [H02J 3/46](#), [H02J 3/466](#), [H02J 3/472](#), [H02J 3/48](#), and [H02J 3/50](#) should be considered in order to perform a complete search.

3/386 . . . . {Wind energy (wind motors [F03D](#))}  
(Frozen)

**WARNING**

Group [H02J 3/386](#) is no longer used for the classification of documents as of January 1, 2020.

The content of this group is being reclassified into groups [H02J 2300/28](#), [H02J 3/388](#), [H02J 3/40](#), [H02J 3/42](#), [H02J 3/44](#), [H02J 3/46](#), [H02J 3/466](#), [H02J 3/472](#), [H02J 3/48](#), and [H02J 3/50](#).

Groups [H02J 3/386](#), [H02J 2300/28](#), [H02J 3/388](#), [H02J 3/40](#), [H02J 3/42](#), [H02J 3/44](#), [H02J 3/46](#), [H02J 3/466](#), [H02J 3/472](#), [H02J 3/48](#), and [H02J 3/50](#) should be considered in order to perform a complete search.

3/387 . . . {using fuel cells (fuel cells per se [H01M 8/00](#))}  
(Frozen)

**WARNING**

Group [H02J 3/387](#) is no longer used for the classification of documents as of January 1, 2020.

The content of this group is being reclassified into groups [H02J 2300/30](#), [H02J 3/388](#), [H02J 3/40](#), [H02J 3/42](#), [H02J 3/44](#), [H02J 3/46](#), [H02J 3/466](#), [H02J 3/472](#), [H02J 3/48](#), and [H02J 3/50](#).

Groups [H02J 3/387](#), [H02J 2300/30](#), [H02J 3/388](#), [H02J 3/40](#), [H02J 3/42](#), [H02J 3/44](#), [H02J 3/46](#), [H02J 3/466](#), [H02J 3/472](#), [H02J 3/48](#), and [H02J 3/50](#) should be considered in order to perform a complete search.

3/388 . . {Islanding, i.e. disconnection of local power supply from the network}

**WARNING**

Group [H02J 3/388](#) is incomplete pending reclassification of documents from groups [H02J 3/382](#), [H02J 3/383](#), [H02J 3/385](#), [H02J 3/386](#), [H02J 3/387](#), and [H02J 13/0006](#).

Groups [H02J 3/388](#), [H02J 3/382](#), [H02J 3/383](#), [H02J 3/385](#), [H02J 3/386](#), [H02J 3/387](#), and [H02J 13/0006](#) should be considered in order to perform a complete search.

3/40 . . Synchronising a generator for connection to a network or to another generator

**WARNING**

Group [H02J 3/40](#) is incomplete pending reclassification of documents from groups [H02J 3/382](#), [H02J 3/383](#), [H02J 3/385](#), [H02J 3/386](#), [H02J 3/387](#), and [H02J 13/0006](#).

Groups [H02J 3/40](#), [H02J 3/382](#), [H02J 3/383](#), [H02J 3/385](#), [H02J 3/386](#), [H02J 3/387](#), and [H02J 13/0006](#) should be considered in order to perform a complete search.

- 3/42 . . . with automatic parallel connection when synchronisation is achieved

**WARNING**

Group [H02J 3/42](#) is incomplete pending reclassification of documents from groups [H02J 3/382](#), [H02J 3/383](#), [H02J 3/385](#), [H02J 3/386](#), [H02J 3/387](#), and [H02J 13/0006](#).

Groups [H02J 3/42](#), [H02J 3/382](#), [H02J 3/383](#), [H02J 3/385](#), [H02J 3/386](#), [H02J 3/387](#), and [H02J 13/0006](#) should be considered in order to perform a complete search.

- 3/44 . . . with means for ensuring correct phase sequence

**WARNING**

Group [H02J 3/44](#) is incomplete pending reclassification of documents from groups [H02J 3/382](#), [H02J 3/383](#), [H02J 3/385](#), [H02J 3/386](#), [H02J 3/387](#), and [H02J 13/0006](#).

Groups [H02J 3/44](#), [H02J 3/382](#), [H02J 3/383](#), [H02J 3/385](#), [H02J 3/386](#), [H02J 3/387](#), and [H02J 13/0006](#) should be considered in order to perform a complete search.

- 3/46 . . Controlling of the sharing of output between the generators, converters, or transformers

**WARNING**

Group [H02J 3/46](#) is incomplete pending reclassification of documents from groups [H02J 3/382](#), [H02J 3/383](#), [H02J 3/385](#), [H02J 3/386](#), [H02J 3/387](#), and [H02J 13/0006](#).

Group [H02J 3/46](#) is also impacted by reclassification into groups [H02J 3/466](#) and [H02J 3/472](#).

Groups [H02J 3/46](#), [H02J 3/382](#), [H02J 3/383](#), [H02J 3/385](#), [H02J 3/386](#), [H02J 3/387](#), [H02J 13/0006](#), [H02J 3/466](#) and [H02J 3/472](#) should be considered in order to perform a complete search.

- 3/466 . . . {Scheduling the operation of the generators, e.g. connecting or disconnecting generators to meet a given demand}

**WARNING**

Group [H02J 3/466](#) is incomplete pending reclassification of documents from groups [H02J 3/382](#), [H02J 3/383](#), [H02J 3/385](#), [H02J 3/386](#), [H02J 3/387](#), and [H02J 3/46](#).

Groups [H02J 3/466](#), [H02J 3/382](#), [H02J 3/383](#), [H02J 3/385](#), [H02J 3/386](#), [H02J 3/387](#), and [H02J 3/46](#) should be considered in order to perform a complete search.

- 3/472 . . . . {For selectively connecting the AC sources in a particular order, e.g. sequential, alternating or subsets of sources}

**WARNING**

Group [H02J 3/472](#) is incomplete pending reclassification of documents from groups [H02J 3/382](#), [H02J 3/383](#), [H02J 3/385](#), [H02J 3/386](#), [H02J 3/387](#), [H02J 3/46](#), and [H02J 13/0006](#).

Groups [H02J 3/472](#), [H02J 3/382](#), [H02J 3/383](#), [H02J 3/385](#), [H02J 3/386](#), [H02J 3/387](#), [H02J 3/46](#), and [H02J 13/0006](#) should be considered in order to perform a complete search.

- 3/48 . . . Controlling the sharing of the in-phase component

**WARNING**

Group [H02J 3/48](#) is incomplete pending reclassification of documents from groups [H02J 3/382](#), [H02J 3/383](#), [H02J 3/385](#), [H02J 3/386](#), [H02J 3/387](#), and [H02J 13/0006](#).

Groups [H02J 3/48](#), [H02J 3/382](#), [H02J 3/383](#), [H02J 3/385](#), [H02J 3/386](#), [H02J 3/387](#), and [H02J 13/0006](#) should be considered in order to perform a complete search.

- 3/50 . . . Controlling the sharing of the out-of-phase component

**WARNING**

Group [H02J 3/50](#) is incomplete pending reclassification of documents from groups [H02J 3/382](#), [H02J 3/383](#), [H02J 3/385](#), [H02J 3/386](#), [H02J 3/387](#), and [H02J 13/0006](#).

Groups [H02J 3/50](#), [H02J 3/382](#), [H02J 3/383](#), [H02J 3/385](#), [H02J 3/386](#), [H02J 3/387](#), and [H02J 13/0006](#) should be considered in order to perform a complete search.

- 4/00 **Circuit arrangements for mains or distribution networks not specified as ac or dc**

**WARNING**

Group [H02J 4/00](#) is incomplete pending reclassification of documents from group [H02J 13/0096](#).

Groups [H02J 13/0096](#) and [H02J 4/00](#) should be considered in order to perform a complete search.

- 5/00 **Circuit arrangements for transfer of electric power between ac networks and dc networks ([H02J 3/36](#) takes precedence)**

**WARNING**

Group [H02J 5/00](#) is incomplete pending reclassification of documents from group [H02J 5/005](#).

Groups [H02J 5/005](#) and [H02J 5/00](#) should be considered in order to perform a complete search.

- 5/005 . {with inductive power transfer (for charging  
(Frozen) [H02J 7/025](#))}

**WARNING**

Group [H02J 5/005](#) is no longer used for the classification of documents as of January 1, 2020.

The content of this group is being reclassified into groups [H02J 5/00](#), [H02J 50/001](#), [H02J 50/005](#), [H02J 50/10](#), [H02J 50/12](#), [H02J 50/30](#), [H02J 50/40](#), [H02J 50/402](#), [H02J 50/50](#), [H02J 50/502](#), [H02J 50/60](#), [H02J 50/70](#), [H02J 50/80](#), and [H02J 50/90](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- 7/00** **Circuit arrangements for charging or depolarising batteries or for supplying loads from batteries**

**WARNING**

Group [H02J 7/00](#) is incomplete pending reclassification of documents from groups [H02J 7/0077](#), [H02J 7/0085](#), [H02J 7/0088](#), and [H02J 7/025](#).

Groups [H02J 7/00](#), [H02J 7/0077](#), [H02J 7/0085](#), [H02J 7/0088](#), and [H02J 7/025](#) should be considered in order to perform a complete search.

- 7/0003 . {with provision for charging different types of  
(Frozen) batteries}

**WARNING**

Group [H02J 7/0003](#) is no longer used for the classification of documents as of January 1, 2020.

The content of this group is being reclassified into groups [H02J 7/00032](#), [H02J 7/00034](#), [H02J 7/00045](#), and [H02J 7/00047](#).

Groups [H02J 7/0003](#), [H02J 7/00032](#), [H02J 7/00034](#), [H02J 7/00045](#), and [H02J 7/00047](#) should be considered in order to perform a complete search.

- 7/00032 . {characterised by data exchange}

**WARNING**

Group [H02J 7/00032](#) is incomplete pending reclassification of documents from group [H02J 7/0003](#).

Groups [H02J 7/0003](#) and [H02J 7/00032](#) should be considered in order to perform a complete search.

- 7/00034 . . {Charger exchanging data with an electronic device, i.e. telephone, whose internal battery is under charge}

**WARNING**

Group [H02J 7/00034](#) is incomplete pending reclassification of documents from group [H02J 7/0003](#).

Groups [H02J 7/0003](#) and [H02J 7/00034](#) should be considered in order to perform a complete search.

- 7/00036 . . {Charger exchanging data with battery}

- 7/00038 . . {using passive battery identification means, e.g. resistors or capacitors (identification by mechanical connections [H02J 7/0045](#))}
- 7/00041 . . . {in response to measured battery parameters, e.g. voltage, current or temperature profile}
- 7/00043 . . . {using switches, contacts or markings, e.g. optical, magnetic or barcode}
- 7/00045 . . {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}

**WARNING**

Group [H02J 7/00045](#) is incomplete pending reclassification of documents from group [H02J 7/0003](#).

Groups [H02J 7/0003](#) and [H02J 7/00045](#) should be considered in order to perform a complete search.

- 7/00047 . {with provisions for charging different types of batteries}

**WARNING**

Group [H02J 7/00047](#) is incomplete pending reclassification of documents from group [H02J 7/0003](#).

Groups [H02J 7/0003](#) and [H02J 7/00047](#) should be considered in order to perform a complete search.

- 7/0013 . {acting upon several batteries simultaneously or sequentially ([H02J 7/1423](#) takes precedence)}

**WARNING**

Group [H02J 7/0013](#) is incomplete pending reclassification of documents from groups [H02J 7/0021](#), [H02J 7/0022](#), and [H02J 7/0027](#).

Groups [H02J 7/0013](#), [H02J 7/0021](#), [H02J 7/0022](#), and [H02J 7/0027](#) should be considered in order to perform a complete search.

- 7/0014 . . {Circuits for equalisation of charge between batteries}

**WARNING**

Group [H02J 7/0014](#) is incomplete pending reclassification of documents from groups [H02J 7/0021](#), [H02J 7/0022](#), and [H02J 7/0027](#).

Groups [H02J 7/0014](#), [H02J 7/0021](#), [H02J 7/0022](#), and [H02J 7/0027](#) should be considered in order to perform a complete search.

- 7/0016 . . . {using shunting, discharge or bypass circuits}

**WARNING**

Group [H02J 7/0016](#) is incomplete pending reclassification of documents from groups [H02J 7/0021](#), [H02J 7/0022](#), and [H02J 7/0027](#).

Groups [H02J 7/0016](#), [H02J 7/0021](#), [H02J 7/0022](#), and [H02J 7/0027](#) should be considered in order to perform a complete search.

7/0018 . . . {using separate charge circuits}

#### **WARNING**

Group [H02J 7/0018](#) is incomplete pending reclassification of documents from groups [H02J 7/0021](#), [H02J 7/0022](#), and [H02J 7/0027](#).

Groups [H02J 7/0018](#), [H02J 7/0021](#), [H02J 7/0022](#), and [H02J 7/0027](#) should be considered in order to perform a complete search.

7/0019 . . . {using switched or multiplexed charge circuits}

#### **WARNING**

Group [H02J 7/0019](#) is incomplete pending reclassification of documents from groups [H02J 7/0021](#), [H02J 7/0022](#), and [H02J 7/0027](#).

Groups [H02J 7/0019](#), [H02J 7/0021](#), [H02J 7/0022](#), and [H02J 7/0027](#) should be considered in order to perform a complete search.

7/0021 . . {Monitoring or indicating circuits ([H02J 7/0026](#) takes precedence)}

#### **WARNING**

Group [H02J 7/0021](#) is no longer used for the classification of documents as of January 1, 2020.

The content of this group is being reclassified into groups [H02J 7/0047](#), [H02J 7/0048](#), [H02J 7/0049](#), [H02J 7/005](#), [H02J 7/0013](#), [H02J 7/0014](#), [H02J 7/0016](#), [H02J 7/0018](#), [H02J 7/0019](#), [H02J 7/0024](#), and [H02J 7/0025](#).

All groups listed in this Warning should be considered in order to perform a complete search.

7/0022 . . {Management of charging with batteries permanently connected to charge circuit ([H02J 7/0014](#) takes precedence)}

#### **WARNING**

Group [H02J 7/0022](#) is no longer used for the classification of documents as of January 1, 2020.

The content of this group is being reclassified into groups [H02J 7/0013](#), [H02J 7/0014](#), [H02J 7/0016](#), [H02J 7/0018](#), [H02J 7/0019](#), [H02J 7/0024](#), and [H02J 7/0025](#).

All groups listed in this Warning should be considered in order to perform a complete search.

7/0024 . . {Parallel/serial switching of connection of batteries to charge or load circuit}

#### **WARNING**

Group [H02J 7/0024](#) is incomplete pending reclassification of documents from groups [H02J 7/0021](#), [H02J 7/0022](#), and [H02J 7/0027](#).

Groups [H02J 7/0024](#), [H02J 7/0021](#), [H02J 7/0022](#), and [H02J 7/0027](#) should be considered in order to perform a complete search.

7/0025 . . {Sequential battery discharge in systems with a plurality of batteries}

#### **WARNING**

Group [H02J 7/0025](#) is incomplete pending reclassification of documents from groups [H02J 7/0021](#), [H02J 7/0022](#), [H02J 7/0027](#), [H02J 7/0063](#), and [H02J 2007/0067](#).

Groups [H02J 7/0025](#), [H02J 7/0021](#), [H02J 7/0022](#), [H02J 7/0027](#), [H02J 7/0063](#), and [H02J 2007/0067](#) should be considered in order to perform a complete search.

7/0026 . . {using safety or protection circuits, e.g. overcharge/discharge disconnection}

(Frozen)

#### **WARNING**

Group [H02J 7/0026](#) is no longer used for the classification of documents as of January 1, 2020.

The content of this group is being reclassified into groups [H02J 7/0029](#), [H02J 7/00302](#), [H02J 7/00304](#), [H02J 7/00306](#), [H02J 7/00308](#), and [H02J 7/00309](#).

Groups [H02J 7/0026](#), [H02J 7/0029](#), [H02J 7/00302](#), [H02J 7/00304](#), [H02J 7/00306](#), [H02J 7/00308](#), and [H02J 7/00309](#) should be considered in order to perform a complete search.

7/0027 . . {Stations for charging mobile units, e.g. of electric vehicles, of mobile telephones ([H02J 7/0021](#), [H02J 7/0026](#) take precedence)}

(Frozen)

#### **WARNING**

Group [H02J 7/0027](#) is no longer used for the classification of documents as of January 1, 2020.

The content of this group is being reclassified into groups [H02J 3/322](#), [H02J 7/0013](#), [H02J 7/0014](#), [H02J 7/0016](#), [H02J 7/0018](#), [H02J 7/0019](#), [H02J 7/0024](#), [H02J 7/0025](#), [H02J 7/0042](#), [H02J 7/0044](#), [H02J 7/0045](#), [H02J 2310/22](#), [H02J 2310/40](#), [H02J 2310/42](#), [H02J 2310/44](#), [H02J 2310/46](#), and [H02J 2310/48](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- 7/0029 . . {with safety or protection devices or circuits}

**WARNING**

Group [H02J 7/0029](#) is incomplete pending reclassification of documents from groups [H02J 7/0026](#), [H02J 7/027](#), [H02J 7/1461](#), and [H02J 7/166](#).

Group [H02J 7/0029](#) is also impacted by reclassification into groups [H02J 7/00302](#), [H02J 7/00304](#), [H02J 7/00306](#), [H02J 7/00308](#), and [H02J 7/00309](#).

Groups [H02J 7/0029](#), [H02J 7/0026](#), [H02J 7/027](#), [H02J 7/1461](#), and [H02J 7/166](#), [H02J 7/00302](#), [H02J 7/00304](#), [H02J 7/00306](#), [H02J 7/00308](#), and [H02J 7/00309](#) should be considered in order to perform a complete search.

- 7/00302 . . {Overcharge protection}

**WARNING**

Group [H02J 7/00302](#) is incomplete pending reclassification of documents from groups [H02J 7/0026](#), [H02J 7/0029](#), [H02J 7/027](#), [H02J 7/1461](#), and [H02J 7/166](#).

Groups [H02J 7/00302](#), [H02J 7/0026](#), [H02J 7/0029](#), [H02J 7/027](#), [H02J 7/1461](#), and [H02J 7/166](#) should be considered in order to perform a complete search.

- 7/00304 . . {Overcurrent protection}

**WARNING**

Group [H02J 7/00304](#) is incomplete pending reclassification of documents from groups [H02J 7/0026](#), [H02J 7/0029](#), [H02J 7/027](#), [H02J 7/1461](#), and [H02J 7/166](#).

Groups [H02J 7/00304](#), [H02J 7/0026](#), [H02J 7/0029](#), [H02J 7/027](#), [H02J 7/1461](#), and [H02J 7/166](#) should be considered in order to perform a complete search.

- 7/00306 . . {Overdischarge protection}

**WARNING**

Group [H02J 7/00306](#) is incomplete pending reclassification of documents from groups [H02J 7/0026](#), [H02J 7/0029](#), [H02J 7/027](#), [H02J 7/1461](#), and [H02J 7/166](#).

Groups [H02J 7/00306](#), [H02J 7/0026](#), [H02J 7/0029](#), [H02J 7/027](#), [H02J 7/1461](#), and [H02J 7/166](#) should be considered in order to perform a complete search.

- 7/00308 . . {Overvoltage protection}

**WARNING**

Group [H02J 7/00308](#) is incomplete pending reclassification of documents from groups [H02J 7/0026](#), [H02J 7/0029](#), [H02J 7/027](#), [H02J 7/1461](#), and [H02J 7/166](#).

Groups [H02J 7/00308](#), [H02J 7/0026](#), [H02J 7/0029](#), [H02J 7/027](#), [H02J 7/1461](#), and [H02J 7/166](#) should be considered in order to perform a complete search.

- 7/00309 . . {Overheat or overtemperature protection}

**WARNING**

Group [H02J 7/00309](#) is incomplete pending reclassification of documents from groups [H02J 7/0026](#), [H02J 7/0029](#), [H02J 7/027](#), [H02J 7/1461](#), and [H02J 7/166](#).

Groups [H02J 7/00309](#), [H02J 7/0026](#), [H02J 7/0029](#), [H02J 7/027](#), [H02J 7/1461](#), and [H02J 7/166](#) should be considered in order to perform a complete search.

- 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 circuits ([mechanical means of polarity protection H02J 7/0045](#))}

- 7/0036 . . {using connection detecting circuits ([H02J 7/0034](#) takes precedence)}

- 7/0042 . {characterised by the mechanical construction}

**WARNING**

Group [H02J 7/0042](#) is incomplete pending reclassification of documents from groups [H02J 7/0027](#) and [H02J 7/025](#).

Groups [H02J 7/0027](#), [H02J 7/025](#), and [H02J 7/0042](#) should be considered in order to perform a complete search.

- 7/0044 . . {specially adapted for holding portable devices containing batteries ([H02J 7/0045](#) takes precedence)}

**WARNING**

Group [H02J 7/0044](#) is incomplete pending reclassification of documents from groups [H02J 7/0027](#) and [H02J 7/025](#).

Groups [H02J 7/0027](#), [H02J 7/025](#), and [H02J 7/0044](#) should be considered in order to perform a complete search.

- 7/0045 . . {concerning the insertion or the connection of the batteries}

**WARNING**

Group [H02J 7/0045](#) is incomplete pending reclassification of documents from groups [H02J 7/0027](#) and [H02J 7/025](#).

Groups [H02J 7/0027](#), [H02J 7/025](#), and [H02J 7/0045](#) should be considered in order to perform a complete search.

- 7/0047 . {with monitoring or indicating devices or circuits}

#### **WARNING**

Group [H02J 7/0047](#) is incomplete pending reclassification of documents from groups [H02J 7/0021](#), [H02J 7/027](#), [H02J 7/1461](#), and [H02J 7/166](#).

Group [H02J 7/0047](#) is also impacted by reclassification into groups [H02J 7/0048](#) and [H02J 7/005](#).

Groups [H02J 7/0047](#), [H02J 7/0021](#), [H02J 7/027](#), [H02J 7/1461](#), and [H02J 7/166](#) should be considered in order to perform a complete search.

- 7/0048 . . {Detection of remaining charge capacity or state of charge [SOC]}

#### **WARNING**

Group [H02J 7/0048](#) is incomplete pending reclassification of documents from groups [H02J 7/0021](#), [H02J 7/0047](#), [H02J 7/027](#), [H02J 7/1461](#), and [H02J 7/166](#).

Groups [H02J 7/0048](#), [H02J 7/0021](#), [H02J 7/0047](#), [H02J 7/027](#), [H02J 7/1461](#), and [H02J 7/166](#) should be considered in order to perform a complete search.

- 7/0049 . . . {Detection of fully charged condition}

#### **WARNING**

Group [H02J 7/0049](#) is incomplete pending reclassification of documents from groups [H02J 7/0021](#), [H02J 7/027](#), [H02J 7/1461](#), and [H02J 7/166](#).

Groups [H02J 7/0049](#), [H02J 7/0021](#), [H02J 7/027](#), [H02J 7/1461](#), and [H02J 7/166](#) should be considered in order to perform a complete search.

- 7/005 . . {Detection of state of health [SOH]}

#### **WARNING**

Group [H02J 7/005](#) is incomplete pending reclassification of documents from groups [H02J 7/0021](#), [H02J 7/0047](#), [H02J 7/027](#), [H02J 7/1461](#), and [H02J 7/166](#).

Groups [H02J 7/005](#), [H02J 7/0021](#), [H02J 7/0047](#), [H02J 7/027](#), [H02J 7/1461](#), and [H02J 7/166](#) should be considered in order to perform a complete search.

- 7/0063 . {with circuits adapted for supplying loads from the battery}

#### **WARNING**

Group [H02J 7/0063](#) is impacted by reclassification into groups [H02J 7/0025](#), [H02J 7/007](#), [H02J 7/0071](#), [H02J 7/00711](#), [H02J 7/00712](#), [H02J 7/00714](#), [H02J 7/00716](#), [H02J 7/00718](#), [H02J 7/007182](#), [H02J 7/007184](#), [H02J 7/007186](#), [H02J 7/007188](#), [H02J 7/00719](#), [H02J 7/007192](#), and [H02J 7/007194](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- 2007/0067 . . {Discharge management, i.e. discharge current reduction at low state of charge, sequential battery discharge in systems with a plurality of battery}

(Frozen)

#### **WARNING**

Group [H02J 2007/0067](#) is no longer used for the classification of documents as of January 1, 2020.

The content of this group is being reclassified into groups [H02J 7/0025](#), [H02J 7/007](#), [H02J 7/0071](#), [H02J 7/00711](#), [H02J 7/00712](#), [H02J 7/00714](#), [H02J 7/00716](#), [H02J 7/00718](#), [H02J 7/007182](#), [H02J 7/007184](#), [H02J 7/007186](#), [H02J 7/007188](#), [H02J 7/00719](#), [H02J 7/007192](#), and [H02J 7/007194](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- 7/0068 . {Battery or charger load switching, e.g. concurrent charging and load supply ([H02J 7/0013](#) takes precedence)}

- 7/0069 . {Charging or discharging for charge maintenance, battery initiation or rejuvenation}

- 7/007 . {Regulation of charging or discharging current or voltage}

#### **WARNING**

Group [H02J 7/007](#) is incomplete pending reclassification of documents from groups [H02J 7/0063](#), [H02J 2007/0067](#), [H02J 7/042](#), [H02J 2007/10](#), and [H02J 7/125](#).

Group [H02J 7/007](#) is also impacted by reclassification into groups [H02J 7/00712](#) and [H02J 7/007188](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- 7/0071 . . {with a programmable schedule}

#### **WARNING**

Group [H02J 7/0071](#) is incomplete pending reclassification of documents from groups [H02J 7/0063](#), [H02J 2007/0067](#), [H02J 7/0072](#), [H02J 7/042](#), [H02J 2007/10](#), and [H02J 7/125](#).

Groups [H02J 7/0071](#), [H02J 7/0063](#), [H02J 2007/0067](#), [H02J 7/0072](#), [H02J 7/042](#), [H02J 2007/10](#), and [H02J 7/125](#) should be considered in order to perform a complete search.

- 7/00711 . . {with introduction of pulses during the charging process}

#### **WARNING**

Group [H02J 7/00711](#) is incomplete pending reclassification of documents from groups [H02J 7/0063](#), [H02J 2007/0067](#), [H02J 7/0072](#), [H02J 7/042](#), [H02J 2007/10](#), and [H02J 7/125](#).

All groups listed in this Warning should be considered in order to perform a complete search.

7/00712 . . . {the cycle being controlled or terminated in response to electric parameters}

**WARNING**

Group [H02J 7/00712](#) is incomplete pending reclassification of documents from groups [H02J 7/0063](#), [H02J 2007/0067](#), [H02J 7/007](#), [H02J 7/0077](#), [H02J 7/008](#), [H02J 7/042](#), [H02J 7/085](#), [H02J 2007/10](#), and [H02J 7/125](#).

All groups listed in this Warning should be considered in order to perform a complete search.

7/00714 . . . {in response to battery charging or discharging current}

**WARNING**

Group [H02J 7/00714](#) is incomplete pending reclassification of documents from groups [H02J 7/0063](#), [H02J 2007/0067](#), [H02J 7/0072](#), [H02J 7/0078](#), [H02J 7/008](#), [H02J 7/042](#), [H02J 7/045](#), [H02J 7/085](#), [H02J 2007/10](#), and [H02J 7/125](#).

All groups listed in this Warning should be considered in order to perform a complete search.

7/00716 . . . {in response to integrated charge or discharge current}

**WARNING**

Group [H02J 7/00716](#) is incomplete pending reclassification of documents from groups [H02J 7/0063](#), [H02J 2007/0067](#), [H02J 7/0072](#), [H02J 7/0078](#), [H02J 7/008](#), [H02J 7/042](#), [H02J 7/085](#), [H02J 2007/10](#), and [H02J 7/125](#).

All groups listed in this Warning should be considered in order to perform a complete search.

7/00718 . . . {in response to charge current gradient}

**WARNING**

Group [H02J 7/00718](#) is incomplete pending reclassification of documents from groups [H02J 7/0063](#), [H02J 2007/0067](#), [H02J 7/0072](#), [H02J 7/0078](#), [H02J 7/008](#), [H02J 7/042](#), [H02J 7/045](#), [H02J 7/085](#), [H02J 2007/10](#), and [H02J 7/125](#).

All groups listed in this Warning should be considered in order to perform a complete search.

7/007182 . . . {in response to battery voltage}

**WARNING**

Group [H02J 7/007182](#) is incomplete pending reclassification of documents from groups [H02J 7/0063](#), [H02J 2007/0067](#), [H02J 7/0072](#), [H02J 7/008](#), [H02J 7/0086](#), [H02J 7/042](#), [H02J 7/045](#), [H02J 7/085](#), [H02J 2007/10](#), and [H02J 7/125](#).

All groups listed in this Warning should be considered in order to perform a complete search.

7/007184 . . . {in response to battery voltage gradient}

**WARNING**

Group [H02J 7/007184](#) is incomplete pending reclassification of documents from groups [H02J 7/0063](#), [H02J 2007/0067](#), [H02J 7/0072](#), [H02J 7/008](#), [H02J 7/0086](#), [H02J 7/042](#), [H02J 7/045](#), [H02J 7/085](#), [H02J 2007/10](#), and [H02J 7/125](#).

All groups listed in this Warning should be considered in order to perform a complete search.

7/007186 . . . {obtained with the battery disconnected from the charge or discharge circuit}

**WARNING**

Group [H02J 7/007186](#) is incomplete pending reclassification of documents from groups [H02J 7/0063](#), [H02J 2007/0067](#), [H02J 7/0072](#), [H02J 7/0085](#), [H02J 7/042](#), [H02J 7/045](#), [H02J 7/085](#), [H02J 2007/10](#), and [H02J 7/125](#).

All groups listed in this Warning should be considered in order to perform a complete search.

7/007188 . . {the charge cycle being controlled or terminated in response to non-electric parameters}

**WARNING**

Group [H02J 7/007188](#) is incomplete pending reclassification of documents from groups [H02J 7/0063](#), [H02J 2007/0067](#), [H02J 7/007](#), [H02J 7/0072](#), [H02J 7/0088](#), [H02J 7/042](#), [H02J 7/087](#), [H02J 2007/10](#), and [H02J 7/125](#).

All groups listed in this Warning should be considered in order to perform a complete search.

7/00719 . . . {in response to degree of gas development in the battery}

#### **WARNING**

Group [H02J 7/00719](#) is incomplete pending reclassification of documents from groups [H02J 7/0063](#), [H02J 2007/0067](#), [H02J 7/0072](#), [H02J 7/042](#), [H02J 7/087](#), [H02J 2007/10](#), and [H02J 7/125](#).

All groups listed in this Warning should be considered in order to perform a complete search.

7/007192 . . . {in response to temperature}

#### **WARNING**

Group [H02J 7/007192](#) is incomplete pending reclassification of documents from groups [H02J 7/0063](#), [H02J 2007/0067](#), [H02J 7/0072](#), [H02J 7/0091](#), [H02J 7/042](#), [H02J 7/087](#), [H02J 2007/10](#), and [H02J 7/125](#).

Group [H02J 7/007192](#) is also impacted by reclassification into group [H02J 7/007194](#).

All groups listed in this Warning should be considered in order to perform a complete search.

7/007194 . . . . {of the battery}

#### **WARNING**

Group [H02J 7/007194](#) is incomplete pending reclassification of documents from groups [H02J 7/0063](#), [H02J 2007/0067](#), [H02J 7/007192](#), [H02J 7/0072](#), [H02J 7/0091](#), [H02J 7/042](#), [H02J 7/087](#), [H02J 2007/10](#), and [H02J 7/125](#).

All groups listed in this Warning should be considered in order to perform a complete search.

7/0072 . . {using semiconductor devices only}  
(Frozen)

#### **WARNING**

Group [H02J 7/0072](#) is no longer used for the classification of documents as of January 1, 2020.

The content of this group is being reclassified into groups [H02J 7/0071](#), [H02J 7/00711](#), [H02J 7/00714](#), [H02J 7/00716](#), [H02J 7/00718](#), [H02J 7/007182](#), [H02J 7/007184](#), [H02J 7/007186](#), [H02J 7/007188](#), [H02J 7/00719](#), [H02J 7/007192](#), and [H02J 7/007194](#).

All groups listed in this Warning should be considered in order to perform a complete search.

7/0077 . . . {the charge cycle being terminated in response to electric parameters ([H02J7/0093](#) takes precedence)}

#### **WARNING**

Group [H02J 7/0077](#) is no longer used for the classification of documents as of January 1, 2020.

The content of this group is being reclassified into groups [H02J 7/00](#) and [H02J 7/00712](#).

Groups [H02J 7/0077](#), [H02J 7/00](#), and [H02J 7/00712](#) should be considered in order to perform a complete search.

7/0078 . . . . {in response to discharge current, e.g. using a coulometer, pilot cell}  
(Frozen)

#### **WARNING**

Group [H02J 7/0078](#) is no longer used for the classification of documents as of January 1, 2020.

The content of this group is being reclassified into groups [H02J 7/00714](#), [H02J 7/00716](#), and [H02J 7/00718](#).

Groups [H02J 7/0078](#), [H02J 7/00714](#), [H02J 7/00716](#), and [H02J 7/00718](#) should be considered in order to perform a complete search.

7/008 . . . . {with the battery connected to the charge circuit}  
(Frozen)

#### **WARNING**

Group [H02J 7/008](#) is no longer used for the classification of documents as of January 1, 2020.

The content of this group is being reclassified into groups [H02J 7/00712](#), [H02J 7/00714](#), [H02J 7/00716](#), [H02J 7/00718](#), [H02J 7/007182](#), and [H02J 7/007184](#).

All groups listed in this Warning should be considered in order to perform a complete search.

7/0085 . . . . {with the battery disconnected from the charge circuit}  
(Frozen)

#### **WARNING**

Group [H02J 7/0085](#) is no longer used for the classification of documents as of January 1, 2020.

The content of this group is being reclassified into groups [H02J 7/00](#) and [H02J 7/007186](#).

Groups [H02J 7/0085](#), [H02J 7/00](#), and [H02J 7/007186](#) should be considered in order to perform a complete search.

7/0086 . . . . {and in response to battery voltage}  
(Frozen)

### **WARNING**

Group [H02J 7/0086](#) is no longer used for the classification of documents as of January 1, 2020.

The content of this group is being reclassified into groups [H02J 7/007182](#) and [H02J 7/007184](#).

Groups [H02J 7/0086](#), [H02J 7/007182](#), and [H02J 7/007184](#) should be considered in order to perform a complete search.

7/0088 . . . {the charge cycle being terminated in response to non-electric parameters ([H02J7/0093](#) takes precedence)}

(Frozen)

### **WARNING**

Group [H02J 7/0088](#) is no longer used for the classification of documents as of January 1, 2020.

The content of this group is being reclassified into groups [H02J 7/00](#) and [H02J 7/007188](#).

Groups [H02J 7/0088](#), [H02J 7/00](#), and [H02J 7/007188](#) should be considered in order to perform a complete search.

7/0091 . . . . {in response to temperature of the battery}  
(Frozen)

### **WARNING**

Group [H02J 7/0091](#) is no longer used for the classification of documents as of January 1, 2020.

The content of this group is being reclassified into groups [H02J 7/007192](#) and [H02J 7/007194](#).

Groups [H02J 7/0091](#), [H02J 7/007192](#), and [H02J 7/007194](#) should be considered in order to perform a complete search.

7/02 . . for charging batteries from ac mains by converters

### **WARNING**

Group [H02J 7/02](#) is incomplete pending reclassification of documents from group [H02J 7/022](#).

Groups [H02J 7/022](#) and [H02J 7/02](#) should be considered in order to perform a complete search.

7/022 . . {characterised by the type of converter}  
(Frozen)

### **WARNING**

Group [H02J 7/022](#) is no longer used for the classification of documents as of January 1, 2020.

The content of this group is being reclassified into groups [H02J 7/02](#) and [H02J 2207/20](#).

Groups [H02J 7/022](#), [H02J 7/02](#), and [H02J 2207/20](#) should be considered in order to perform a complete search.

7/025 . . . {using non-contact coupling, e.g. inductive, capacitive}  
(Frozen)

### **WARNING**

Group [H02J 7/025](#) is no longer used for the classification of documents as of January 1, 2020.

The content of this group is being reclassified into groups [H02J 50/001](#), [H02J 50/005](#), [H02J 50/10](#), [H02J 50/12](#), [H02J 50/30](#), [H02J 50/40](#), [H02J 50/402](#), [H02J 50/50](#), [H02J 50/502](#), [H02J 50/60](#), [H02J 50/70](#), [H02J 50/80](#), [H02J 50/90](#), [H02J 7/00](#), [H02J 7/0042](#), [H02J 7/0044](#), and [H02J 7/0045](#).

All groups listed in this Warning should be considered in order to perform a complete search.

7/027 . . {with safety or indicating device}  
(Frozen)

### **WARNING**

Group [H02J 7/027](#) is no longer used for the classification of documents as of January 1, 2020.

The content of this group is being reclassified into groups [H02J 7/0029](#), [H02J 7/00302](#), [H02J 7/00304](#), [H02J 7/00306](#), [H02J 7/00308](#), [H02J 7/00309](#), [H02J 7/0047](#), [H02J 7/0048](#), [H02J 7/0049](#), and [H02J 7/005](#).

All groups listed in this Warning should be considered in order to perform a complete search.

7/04 . . Regulation of charging current or voltage

7/042 . . . {the charge cycle being controlled in response to a measured parameter}  
(Frozen)

### **WARNING**

Group [H02J 7/042](#) is no longer used for the classification of documents as of January 1, 2020.

The content of this group is being reclassified into groups [H02J 7/007](#), [H02J 7/0071](#), [H02J 7/00711](#), [H02J 7/00712](#), [H02J 7/00714](#), [H02J 7/00716](#), [H02J 7/00718](#), [H02J 7/007182](#), [H02J 7/007184](#), [H02J 7/007186](#), [H02J 7/007188](#), [H02J 7/00719](#), [H02J 7/007192](#), and [H02J 7/007194](#).

All groups listed in this Warning should be considered in order to perform a complete search.

7/045 . . . . {in response to voltage or current}  
(Frozen)

#### **WARNING**

Group [H02J 7/045](#) is no longer used for the classification of documents as of January 1, 2020.

The content of this group is being reclassified into groups [H02J 7/00714](#), [H02J 7/00718](#), [H02J 7/007182](#), [H02J 7/007184](#), and [H02J 7/007186](#).

All groups listed in this Warning should be considered in order to perform a complete search.

7/06 . . . using discharge tubes or semiconductor devices

7/08 . . . using discharge tubes only

7/085 . . . . {the charge cycle being terminated in response to electric parameters}  
(Frozen)

#### **WARNING**

Group [H02J 7/085](#) is no longer used for the classification of documents as of January 1, 2020.

The content of this group is being reclassified into groups [H02J 7/00712](#), [H02J 7/00714](#), [H02J 7/00716](#), [H02J 7/00718](#), [H02J 7/007182](#), [H02J 7/007184](#), and [H02J 7/007186](#).

All groups listed in this Warning should be considered in order to perform a complete search.

7/087 . . . . {the charge cycle being terminated in response to non-electric parameters}  
(Frozen)

#### **WARNING**

Group [H02J 7/087](#) is no longer used for the classification of documents as of January 1, 2020.

The content of this group is being reclassified into groups [H02J 7/007188](#), [H02J 7/00719](#), [H02J 7/007192](#), and [H02J 7/007194](#).

All groups listed in this Warning should be considered in order to perform a complete search.

2007/10 . . . . {using semiconductor devices only}  
(Frozen)

#### **WARNING**

Group [H02J 2007/10](#) is no longer used for the classification of documents as of January 1, 2020.

The content of this group is being reclassified into groups [H02J 7/007](#), [H02J 7/0071](#), [H02J 7/00711](#), [H02J 7/00712](#), [H02J 7/00714](#), [H02J 7/00716](#), [H02J 7/00718](#), [H02J 7/007182](#), [H02J 7/007184](#), [H02J 7/007186](#), [H02J 7/007188](#), [H02J 7/00719](#), [H02J 7/007192](#), and [H02J 7/007194](#).

All groups listed in this Warning should be considered in order to perform a complete search.

7/12 . . . using magnetic devices having controllable degree of saturation, i.e. transductors

7/125 . . . . {in combination with discharge tubes or semiconductor devices}  
(Frozen)

#### **WARNING**

Group [H02J 7/125](#) is no longer used for the classification of documents as of January 1, 2020.

The content of this group is being reclassified into groups [H02J 7/007](#), [H02J 7/0071](#), [H02J 7/00711](#), [H02J 7/00712](#), [H02J 7/00714](#), [H02J 7/00716](#), [H02J 7/00718](#), [H02J 7/007182](#), [H02J 7/007184](#), [H02J 7/007186](#), [H02J 7/007188](#), [H02J 7/00719](#), [H02J 7/007192](#), and [H02J 7/007194](#).

All groups listed in this Warning should be considered in order to perform a complete search.

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}

7/143 . . {with multiple generators}

7/1438 . . {in combination with power supplies for loads other than batteries}

7/1446 . . {in response to parameters of a vehicle}

7/1461 . . {with safety or indication devices}  
(Frozen)

#### **WARNING**

Group [H02J 7/1461](#) is no longer used for the classification of documents as of January 1, 2020.

The content of this group is being reclassified into groups [H02J 7/0029](#), [H02J 7/00302](#), [H02J 7/00304](#), [H02J 7/00306](#), [H02J 7/00308](#), [H02J 7/00309](#), [H02J 7/0047](#), [H02J 7/0048](#), [H02J 7/0049](#), and [H02J 7/005](#).

All groups listed in this Warning should be considered in order to perform a complete search.

7/1469 . . {Regulation of the charging current or voltage otherwise than by variation of field}

7/1476 . . . {by mechanical action on the generator}

7/1484 . . . {by commutation of the output windings of the generator}

7/1492 . . . {by means of controlling devices between the generator output and the battery}

7/16 . . Regulation of the charging current or voltage by variation of field

7/163 . . . {with special means for initiating or limiting the excitation current}

- 7/166 . . . {with safety or indicating devices}

(Frozen)

### **WARNING**

Group [H02J 7/166](#) is no longer used for the classification of documents as of January 1, 2020.

The content of this group is being reclassified into groups [H02J 7/0029](#), [H02J 7/00302](#), [H02J 7/00304](#), [H02J 7/00306](#), [H02J 7/00308](#), [H02J 7/00309](#), [H02J 7/0047](#), [H02J 7/0048](#), [H02J 7/0049](#), and [H02J 7/005](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- 7/18 . . . due to variation of ohmic resistance in field circuit, using resistance switching in or out of circuit step by step
- 7/20 . . . due to variation of continuously variable ohmic resistor
- 7/22 . . . due to variation of make-to-break ratio of intermittently-operating contacts, e.g. using Tirrill regulator
- 7/225 . . . . {characterised by the mechanical construction}
- 7/24 . . . using discharge tubes or semiconductor devices
- 7/243 . . . . {with on/off action}
- 7/2434 . . . . {with pulse modulation}
- 7/2437 . . . . {using thyristors or triacs as final control devices}
- 7/26 . . . using magnetic devices with controllable degree of saturation
- 7/28 . . . using magnetic devices with controllable degree of saturation in combination with controlled discharge tube or controlled semiconductor device
- 7/30 . . . using armature-reaction-excited machines
- 7/32 . for charging batteries from a charging set comprising a non-electric prime mover {rotating at constant speed}
- 7/34 . Parallel operation in networks using both storage and other dc sources, e.g. providing buffering ([H02J 7/14](#) takes precedence)
- 7/342 . . {The other DC source being a battery actively interacting with the first one, i.e. battery to battery charging (with circuits for polarity protection [H02J 7/0034](#))}
- 7/345 . . {using capacitors as storage or buffering devices}
- 7/35 . . with light sensitive cells
- 7/36 . Arrangements using end-cell switching

### **9/00 Circuit arrangements for emergency or stand-by power supply, e.g. for emergency lighting**

- 9/002 . {in which a reserve is maintained in an energy source by disconnecting non-critical loads, e.g. maintaining a reserve of charge in a vehicle battery for starting an engine}
- 9/005 . {using a power saving mode (for copiers [G03G 15/5004](#))}
- 9/007 . . {Detection of the absence of a load}
- 9/02 . in which an auxiliary distribution system and its associated lamps are brought into service

- 9/04 . in which the distribution system is disconnected from the normal source and connected to a standby source
- 9/06 . . with automatic change-over {, e.g. UPS systems}
- 9/061 . . . {for DC powered loads}
- 9/062 . . . {for AC powered loads}
- 9/063 . . . . {Common neutral, e.g. AC input neutral line connected to AC output neutral line and DC middle point}
- 9/065 . . . . {for lighting purposes}
- 9/066 . . . {characterised by the use of dynamo-electric machines ([H02J 9/08](#) takes precedence)}
- 9/067 . . . {using multi-primary transformers, e.g. transformer having one primary for each AC energy source and a secondary for the loads}
- 9/068 . . . {Electronic means for switching from one power supply to another power supply, e.g. to avoid parallel connection}
- 9/08 . . . requiring starting of a prime-mover

### **11/00 Circuit arrangements for providing service supply to auxiliaries of stations in which electric power is generated, distributed or converted**

### **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 network, e.g. switching in and out of current consumers by using a pulse code signal carried by the network**

### **WARNING**

Group [H02J 13/00](#) is incomplete pending reclassification of documents from groups [H02J 13/0003](#), [H02J 13/0006](#), [H02J 13/0013](#), [H02J 13/0079](#), and [H02J 13/0086](#).

Groups [H02J 13/00](#), [H02J 13/0003](#), [H02J 13/0006](#), [H02J 13/0013](#), [H02J 13/0079](#), and [H02J 13/0086](#) should be considered in order to perform a complete search.

- 13/00001 . {characterised by the display of information or by user interaction, e.g. supervisory control and data acquisition systems [SCADA] or graphical user interfaces [GUI]}

### **WARNING**

Group [H02J 13/00001](#) is incomplete pending reclassification of documents from groups [H02J 13/0003](#), [H02J 13/0006](#), [H02J 13/0079](#), [H02J 13/0086](#), [H02J 13/0093](#), and [H02J 13/0096](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- 13/00002 . {characterised by monitoring}

**WARNING**

Group [H02J 13/00002](#) is incomplete pending reclassification of documents from groups [H02J 13/0003](#), [H02J 13/0006](#), [H02J 13/0079](#), [H02J 13/0086](#), [H02J 13/0093](#), and [H02J 13/0096](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- 13/00004 . {characterised by the power network being locally controlled}

**WARNING**

Group [H02J 13/00004](#) is incomplete pending reclassification of documents from groups [H02J 13/0003](#), [H02J 13/0006](#), [H02J 13/0079](#), [H02J 13/0086](#), [H02J 13/0093](#), and [H02J 13/0096](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- 13/00006 . {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}

**WARNING**

Group [H02J 13/00006](#) is incomplete pending reclassification of documents from groups [H02J 13/0003](#), [H02J 13/0006](#), [H02J 13/0013](#), [H02J 13/0079](#), [H02J 13/0086](#), [H02J 13/0093](#), and [H02J 13/0096](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- 13/00007 . . {using the power network as support for the transmission}

**WARNING**

Group [H02J 13/00007](#) is incomplete pending reclassification of documents from groups [H02J 13/0003](#), [H02J 13/0006](#), [H02J 13/0017](#), [H02J 13/0079](#), [H02J 13/0082](#), [H02J 13/0086](#), [H02J 13/0089](#), [H02J 13/0093](#), and [H02J 13/0096](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- 13/00009 . . . {using pulsed signals}

**WARNING**

Group [H02J 13/00009](#) is incomplete pending reclassification of documents from groups [H02J 13/0003](#), [H02J 13/0006](#), [H02J 13/0017](#), [H02J 13/0079](#), [H02J 13/0082](#), [H02J 13/0086](#), [H02J 13/0089](#), [H02J 13/0093](#), and [H02J 13/0096](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- 13/0001 . . . {using modification of a parameter of the network power signal}

**WARNING**

Group [H02J 13/0001](#) is incomplete pending reclassification of documents from groups [H02J 13/0003](#), [H02J 13/0006](#), [H02J 13/0017](#), [H02J 13/0079](#), [H02J 13/0082](#), [H02J 13/0086](#), [H02J 13/0089](#), [H02J 13/0093](#), and [H02J 13/0096](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- 13/00012 . . {using an auxiliary transmission line}

**WARNING**

Group [H02J 13/00012](#) is incomplete pending reclassification of documents from groups [H02J 13/0003](#), [H02J 13/0006](#), [H02J 13/0017](#), [H02J 13/0079](#), [H02J 13/0086](#), [H02J 13/0093](#), and [H02J 13/0096](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- 13/00014 . . . {carrying signals having the network frequency or DC signals}

**WARNING**

Group [H02J 13/00014](#) is incomplete pending reclassification of documents from groups [H02J 13/0003](#), [H02J 13/0006](#), [H02J 13/0017](#), [H02J 13/0079](#), [H02J 13/0086](#), [H02J 13/0093](#), and [H02J 13/0096](#).

All groups listed in this Warning should be considered in order to perform a complete search.

13/00016 . . {using a wired telecommunication network or a data transmission bus}

**WARNING**

Group [H02J 13/00016](#) is incomplete pending reclassification of documents from groups [H02J 13/0003](#), [H02J 13/0006](#), [H02J 13/0017](#), [H02J 13/0062](#), [H02J 13/0079](#), [H02J 13/0086](#), [H02J 13/0093](#), and [H02J 13/0096](#).

All groups listed in this Warning should be considered in order to perform a complete search.

13/00017 . . . {using optical fiber}

**WARNING**

Group [H02J 13/00017](#) is incomplete pending reclassification of documents from groups [H02J 13/0003](#), [H02J 13/0006](#), [H02J 13/0017](#), [H02J 13/0062](#), [H02J 13/0079](#), [H02J 13/0086](#), [H02J 13/0093](#), and [H02J 13/0096](#).

All groups listed in this Warning should be considered in order to perform a complete search.

13/00018 . . . {using phone lines}

**WARNING**

Group [H02J 13/00018](#) is incomplete pending reclassification of documents from groups [H02J 13/0003](#), [H02J 13/0006](#), [H02J 13/0017](#), [H02J 13/0079](#), [H02J 13/0086](#), [H02J 13/0093](#), and [H02J 13/0096](#).

All groups listed in this Warning should be considered in order to perform a complete search.

13/00019 . . {using optical means}

**WARNING**

Group [H02J 13/00019](#) is incomplete pending reclassification of documents from groups [H02J 13/0003](#), [H02J 13/0006](#), [H02J 13/0017](#), [H02J 13/0079](#), [H02J 13/0086](#), [H02J 13/0093](#), and [H02J 13/0096](#).

All groups listed in this Warning should be considered in order to perform a complete search.

13/0002 . . {using ultrasonic means}

**WARNING**

Group [H02J 13/0002](#) is incomplete pending reclassification of documents from groups [H02J 13/0003](#), [H02J 13/0006](#), [H02J 13/0017](#), [H02J 13/0079](#), [H02J 13/0086](#), [H02J 13/0093](#), and [H02J 13/0096](#).

All groups listed in this Warning should be considered in order to perform a complete search.

13/00022 . . {using wireless data transmission}

**WARNING**

Group [H02J 13/00022](#) is incomplete pending reclassification of documents from groups [H02J 13/0003](#), [H02J 13/0006](#), [H02J 13/0017](#), [H02J 13/0075](#), [H02J 13/0079](#), [H02J 13/0086](#), [H02J 13/0093](#), and [H02J 13/0096](#).

All groups listed in this Warning should be considered in order to perform a complete search.

13/00024 . . . {by means of mobile telephony}

**WARNING**

Group [H02J 13/00024](#) is incomplete pending reclassification of documents from groups [H02J 13/0003](#), [H02J 13/0006](#), [H02J 13/0017](#), [H02J 13/0075](#), [H02J 13/0079](#), [H02J 13/0086](#), [H02J 13/0093](#), and [H02J 13/0096](#).

All groups listed in this Warning should be considered in order to perform a complete search.

13/00026 . . . {involving a local wireless network, e.g. Wi-Fi, ZigBee or Bluetooth}

**WARNING**

Group [H02J 13/00026](#) is incomplete pending reclassification of documents from groups [H02J 13/0003](#), [H02J 13/0006](#), [H02J 13/0017](#), [H02J 13/0075](#), [H02J 13/0079](#), [H02J 13/0086](#), [H02J 13/0093](#), and [H02J 13/0096](#).

All groups listed in this Warning should be considered in order to perform a complete search.

13/00028 . . {involving the use of Internet protocols}

**WARNING**

Group [H02J 13/00028](#) is incomplete pending reclassification of documents from groups [H02J 13/0003](#), [H02J 13/0006](#), [H02J 13/0017](#), [H02J 13/0079](#), [H02J 13/0086](#), [H02J 13/0093](#), and [H02J 13/0096](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- 13/0003 . {for DC networks}  
(Frozen)

**WARNING**

Group [H02J 13/0003](#) is no longer used for the classification of documents as of January 1, 2020.

The content of this group is being reclassified into groups [H02J 1/00](#), [H02J 1/001](#), [H02J 1/002](#), [H02J 1/02](#), [H02J 1/04](#), [H02J 1/06](#), [H02J 1/08](#), [H02J 1/082](#), [H02J 1/084](#), [H02J 1/086](#), [H02J 1/10](#), [H02J 1/102](#), [H02J 1/106](#), [H02J 1/108](#), [H02J 1/109](#), [H02J 1/12](#), [H02J 1/122](#), [H02J 1/14](#), [H02J 1/16](#), [H02J 13/00](#), [H02J 13/00001](#), [H02J 13/00002](#), [H02J 13/00004](#), [H02J 13/00006](#), [H02J 13/00007](#), [H02J 13/00009](#), [H02J 13/0001](#), [H02J 13/00012](#), [H02J 13/00014](#), [H02J 13/00016](#), [H02J 13/00017](#), [H02J 13/00018](#), [H02J 13/00019](#), [H02J 13/0002](#), [H02J 13/00022](#), [H02J 13/00024](#), [H02J 13/00026](#), [H02J 13/00028](#), [H02J 13/00032](#), [H02J 13/00034](#), [H02J 13/00036](#), [H02J 13/0004](#), [H02J 13/0005](#), and [H02J 2213/10](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- 13/00032 . {Systems characterised by the controlled or operated power network elements or equipment, the power network elements or equipment not otherwise provided for (circuits specially adapted for remote switching of lighting via the power line [H05B 47/185](#))}

**WARNING**

Group [H02J 13/00032](#) is incomplete pending reclassification of documents from groups [H02J 13/0003](#), [H02J 13/0006](#), [H02J 13/0017](#), [H02J 13/0079](#), [H02J 13/0086](#), [H02J 13/0093](#), and [H02J 13/0096](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- 13/00034 . . {the elements or equipment being or involving an electric power substation}

**WARNING**

Group [H02J 13/00034](#) is incomplete pending reclassification of documents from groups [H02J 13/0003](#), [H02J 13/0006](#), [H02J 13/0017](#), [H02J 13/0079](#), [H02J 13/0086](#), [H02J 13/0093](#), and [H02J 13/0096](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- 13/00036 . . {the elements or equipment being or involving switches, relays or circuit breakers (circuits for indication of single switches [H01H 9/167](#))}

**WARNING**

Group [H02J 13/00036](#) is incomplete pending reclassification of documents from groups [H02J 13/0003](#), [H02J 13/0006](#), [H02J 13/0017](#), [H02J 13/0079](#), [H02J 13/0086](#), [H02J 13/0093](#), and [H02J 13/0096](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- 13/0004 . . . {involved in a protection system}

**WARNING**

Group [H02J 13/0004](#) is incomplete pending reclassification of documents from groups [H02J 13/0003](#), [H02J 13/0006](#), [H02J 13/0017](#), [H02J 13/0079](#), [H02J 13/0086](#), [H02J 13/0093](#), and [H02J 13/0096](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- 13/0005 . . {the elements or equipment being or involving power plugs or sockets}

**WARNING**

Group [H02J 13/0005](#) is incomplete pending reclassification of documents from groups [H02J 13/0003](#), [H02J 13/0006](#), [H02J 13/0017](#), [H02J 13/0079](#), [H02J 13/0086](#), [H02J 13/0093](#), and [H02J 13/0096](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- 13/0006 . {for single frequency AC networks}  
(Frozen)

**WARNING**

Group [H02J 13/0006](#) is no longer used for the classification of documents as of January 1, 2020.

The content of this group is being reclassified into groups [H02J 3/00](#), [H02J 3/0012](#), [H02J 3/00125](#), [H02J 3/002](#), [H02J 3/003](#), [H02J 3/004](#), [H02J 2203/10](#), [H02J 2203/20](#), [H02J 3/007](#), [H02J 3/0073](#), [H02J 3/0075](#), [H02J 3/008](#), [H02J 3/01](#), [H02J 3/02](#), [H02J 3/04](#), [H02J 3/06](#), [H02J 3/08](#), [H02J 3/10](#), [H02J 3/12](#), [H02J 3/14](#), [H02J 3/144](#), [H02J 3/16](#), [H02J 3/18](#), [H02J 3/1807](#), [H02J 3/1814](#), [H02J 3/1821](#), [H02J 3/1828](#), [H02J 3/1835](#), [H02J 3/1842](#), [H02J 3/185](#), [H02J 3/1857](#), [H02J 3/1864](#), [H02J 3/1871](#), [H02J 3/1878](#), [H02J 3/1885](#), [H02J 3/1892](#), [H02J 3/20](#), [H02J 3/22](#), [H02J 3/24](#), [H02J 3/241](#), [H02J 3/242](#), [H02J 3/26](#), [H02J 3/28](#), [H02J 3/30](#), [H02J 3/32](#), [H02J 3/322](#), [H02J 3/34](#), [H02J 3/36](#), [H02J 3/38](#), [H02J 3/381](#), [H02J 3/472](#), [H02J 3/388](#), [H02J 3/40](#), [H02J 3/42](#), [H02J 3/44](#), [H02J 3/46](#), [H02J 3/48](#), [H02J 3/50](#), [H02J 13/00](#), [H02J 13/00001](#), [H02J 13/00002](#), [H02J 13/00004](#), [H02J 13/00006](#), [H02J 13/00007](#), [H02J 13/00009](#), [H02J 13/0001](#), [H02J 13/00012](#), [H02J 13/00014](#), [H02J 13/00016](#), [H02J 13/00017](#), [H02J 13/00018](#), [H02J 13/00019](#), [H02J 13/0002](#), [H02J 13/00022](#), [H02J 13/00024](#), [H02J 13/00026](#), [H02J 13/00028](#), [H02J 13/00032](#), [H02J 13/00034](#), [H02J 13/00036](#), [H02J 13/0004](#), [H02J 13/0005](#), and [H02J 2213/10](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- 13/0013 . . {characterised by transmission structure between the control or monitoring unit and the controlled or monitored unit}  
(Frozen)

**WARNING**

Group [H02J 13/0013](#) is no longer used for the classification of documents as of January 1, 2020.

The content of this group is being reclassified into groups [H02J 13/00](#) and [H02J 13/00006](#).

Groups [H02J 13/0013](#), [H02J 13/00](#), and [H02J 13/00006](#) should be considered in order to perform a complete search.

- 13/0017 . . . {with direct transmission between the control or monitoring unit and the controlled or monitored unit}  
(Frozen)

**WARNING**

Group [H02J 13/0017](#) is no longer used for the classification of documents as of January 1, 2020.

The content of this group is being reclassified into groups [H02J 13/00007](#), [H02J 13/00009](#), [H02J 13/0001](#), [H02J 13/00012](#), [H02J 13/00014](#), [H02J 13/00016](#), [H02J 13/00017](#), [H02J 13/00018](#), [H02J 13/00019](#), [H02J 13/0002](#), [H02J 13/00022](#), [H02J 13/00024](#), [H02J 13/00026](#), [H02J 13/00028](#), [H02J 13/00032](#), [H02J 13/00034](#), [H02J 13/00036](#), [H02J 13/0004](#), [H02J 13/0005](#), and [H02J 2213/10](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- 13/0062 . . . . {using a data transmission bus}  
(Frozen)

**WARNING**

Group [H02J 13/0062](#) is no longer used for the classification of documents as of January 1, 2020.

The content of this group is being reclassified into groups [H02J 13/00016](#) and [H02J 13/00017](#).

Groups [H02J 13/0062](#), [H02J 13/00016](#), and [H02J 13/00017](#) should be considered in order to perform a complete search.

- 13/0075 . . . . {using radio means}  
(Frozen)

**WARNING**

Group [H02J 13/0075](#) is no longer used for the classification of documents as of January 1, 2020.

The content of this group is being reclassified into groups [H02J 13/00022](#), [H02J 13/00024](#), and [H02J 13/00026](#).

Groups [H02J 13/0075](#), [H02J 13/00022](#), [H02J 13/00024](#), and [H02J 13/00026](#) should be considered in order to perform a complete search.

13/0079 . . . {with transmission using an intermediate  
(Frozen) treatment level between the control or  
monitoring unit and the controlled or monitored  
unit}

#### **WARNING**

Group [H02J 13/0079](#) is no longer used  
for the classification of documents as of  
January 1, 2020.

The content of this group is being  
reclassified into groups [H02J 13/00](#),  
[H02J 13/00001](#), [H02J 13/00002](#),  
[H02J 13/00004](#), [H02J 13/00006](#),  
[H02J 13/00007](#), [H02J 13/00009](#),  
[H02J 13/0001](#), [H02J 13/00012](#),  
[H02J 13/00014](#), [H02J 13/00016](#),  
[H02J 13/00017](#), [H02J 13/00018](#),  
[H02J 13/00019](#), [H02J 13/0002](#),  
[H02J 13/00022](#), [H02J 13/00024](#),  
[H02J 13/00026](#), [H02J 13/00028](#),  
[H02J 13/00032](#), [H02J 13/00034](#),  
[H02J 13/00036](#), [H02J 13/0004](#),  
[H02J 13/0005](#), and [H02J 2213/10](#).

All groups listed in this Warning should be  
considered in order to perform a complete  
search.

13/0082 . . . . {using the power network as transmission  
(Frozen) support}

#### **WARNING**

Group [H02J 13/0082](#) is no longer used  
for the classification of documents as of  
January 1, 2020.

The content of this group is being  
reclassified into groups [H02J 2213/10](#),  
[H02J 13/00007](#), [H02J 13/00009](#), and  
[H02J 13/0001](#).

Groups [H02J 13/0082](#), [H02J 2213/10](#),  
[H02J 13/00007](#), [H02J 13/00009](#), and  
[H02J 13/0001](#) should be considered in  
order to perform a complete search.

13/0086 . . . . {with transmission using plurality of  
(Frozen) intermediate treatment level between the  
control or monitoring unit and the controlled or  
monitored unit}

#### **WARNING**

Group [H02J 13/0086](#) is no longer used  
for the classification of documents as of  
January 1, 2020.

The content of this group is being  
reclassified into groups [H02J 13/00](#),  
[H02J 13/00001](#), [H02J 13/00002](#),  
[H02J 13/00004](#), [H02J 13/00006](#),  
[H02J 13/00007](#), [H02J 13/00009](#),  
[H02J 13/0001](#), [H02J 13/00012](#),  
[H02J 13/00014](#), [H02J 13/00016](#),  
[H02J 13/00017](#), [H02J 13/00018](#),  
[H02J 13/00019](#), [H02J 13/0002](#),  
[H02J 13/00022](#), [H02J 13/00024](#),  
[H02J 13/00026](#), [H02J 13/00028](#),  
[H02J 13/00032](#), [H02J 13/00034](#),  
[H02J 13/00036](#), [H02J 13/0004](#),  
[H02J 13/0005](#), and [H02J 2213/10](#).

All groups listed in this Warning should be  
considered in order to perform a complete  
search.

13/0089 . . . . {using the power network as transmission  
(Frozen) support}

#### **WARNING**

Group [H02J 13/0089](#) is no longer used  
for the classification of documents as of  
January 1, 2020.

The content of this group is being  
reclassified into groups [H02J 2213/10](#),  
[H02J 13/00007](#), [H02J 13/00009](#), and  
[H02J 13/0001](#).

Groups [H02J 13/0089](#), [H02J 2213/10](#),  
[H02J 13/00007](#), [H02J 13/00009](#), and  
[H02J 13/0001](#) should be considered in  
order to perform a complete search.

13/0093 . {for AC networks with plurality frequencies}  
(Frozen)

#### **WARNING**

Group [H02J 13/0093](#) is no longer used  
for the classification of documents as of  
January 1, 2020.

The content of this group is being reclassified  
into groups [H02J 3/02](#), [H02J 13/00001](#),  
[H02J 13/00002](#), [H02J 13/00004](#), [H02J 13/00006](#),  
[H02J 13/00007](#), [H02J 13/00009](#), [H02J 13/0001](#),  
[H02J 13/00012](#), [H02J 13/00014](#), [H02J 13/00016](#),  
[H02J 13/00017](#), [H02J 13/00018](#), [H02J 13/00019](#),  
[H02J 13/0002](#), [H02J 13/00022](#), [H02J 13/00024](#),  
[H02J 13/00026](#), [H02J 13/00028](#), [H02J 13/00032](#),  
[H02J 13/00034](#), [H02J 13/00036](#), [H02J 13/0004](#),  
[H02J 13/0005](#), and [H02J 2213/10](#).

All groups listed in this Warning should be  
considered in order to perform a complete  
search.

- 13/0096 . {for networks combining AC and DC power}  
(Frozen)

**WARNING**

Group [H02J 13/0096](#) is no longer used for the classification of documents as of January 1, 2020.

The content of this group is being reclassified into groups [H02J 3/02](#), [H02J 4/00](#), [H02J 13/00001](#), [H02J 13/00002](#), [H02J 13/00004](#), [H02J 13/00006](#), [H02J 13/00007](#), [H02J 13/00009](#), [H02J 13/0001](#), [H02J 13/00012](#), [H02J 13/00014](#), [H02J 13/00016](#), [H02J 13/00017](#), [H02J 13/00018](#), [H02J 13/00019](#), [H02J 13/0002](#), [H02J 13/00022](#), [H02J 13/00024](#), [H02J 13/00026](#), [H02J 13/00028](#), [H02J 13/00032](#), [H02J 13/00034](#), [H02J 13/00036](#), [H02J 13/0004](#), [H02J 13/0005](#), and [H02J 2213/10](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- 15/00** **Systems for storing electric energy (mechanical systems therefor [F01-F04](#); in chemical form [H01M](#))**

**WARNING**

Group [H02J 15/00](#) is impacted by reclassification into groups [H02J 15/007](#) and [H02J 15/008](#).

Groups [H02J 15/00](#), [H02J 15/007](#), and [H02J 15/008](#) should be considered in order to perform a complete search.

- 15/003 . {in the form of hydraulic energy}  
15/006 . {in the form of pneumatic energy, e.g. compressed air energy storage [CAES] (accumulators for supplying fluid under pressure [F15B 1/04](#))}  
15/007 . {involving storage in the form of mechanical energy, e.g. fly-wheels}

**WARNING**

Group [H02J 15/007](#) is incomplete pending reclassification of documents from group [H02J 15/00](#).

Groups [H02J 15/00](#) and [H02J 15/007](#) should be considered in order to perform a complete search.

- 15/008 . {using hydrogen as energy vector}

**WARNING**

Group [H02J 15/008](#) is incomplete pending reclassification of documents from group [H02J 15/00](#).

Groups [H02J 15/00](#) and [H02J 15/008](#) should be considered in order to perform a complete search.

- 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](#).

**WARNING**

Group [H02J 50/00](#) is impacted by reclassification into groups [H02J 50/001](#) and [H02J 50/005](#).

Groups [H02J 50/00](#), [H02J 50/001](#), and [H02J 50/005](#) should be considered in order to perform a complete search.

- 50/001 . {Energy harvesting or scavenging}

**WARNING**

Group [H02J 50/001](#) is incomplete pending reclassification of documents from groups [H02J 5/005](#), [H02J 7/025](#), and [H02J 50/00](#).

Groups [H02J 50/001](#), [H02J 5/005](#), [H02J 7/025](#), and [H02J 50/00](#) should be considered in order to perform a complete search.

- 50/005 . {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}

**WARNING**

Group [H02J 50/005](#) is incomplete pending reclassification of documents from groups [H02J 5/005](#), [H02J 7/025](#), and [H02J 50/00](#).

Groups [H02J 50/005](#), [H02J 5/005](#), [H02J 7/025](#), and [H02J 50/00](#) should be considered in order to perform a complete search.

- 50/05 . using capacitive coupling

- 50/10 . using inductive coupling

**WARNING**

Group [H02J 50/10](#) is incomplete pending reclassification of documents from groups [H02J 5/005](#) and [H02J 7/025](#).

Groups [H02J 5/005](#), [H02J 7/025](#), and [H02J 50/10](#) should be considered in order to perform a complete search.

- 50/12 . . of the resonant type

**WARNING**

Group [H02J 50/12](#) is incomplete pending reclassification of documents from groups [H02J 5/005](#) and [H02J 7/025](#).

Groups [H02J 5/005](#), [H02J 7/025](#), and [H02J 50/12](#) should be considered in order to perform a complete search.

- 50/15 . using ultrasonic waves

- 50/20 . using microwaves or radio frequency waves

- 50/23 . . characterised by the type of transmitting antennas, e.g. directional array antennas or Yagi antennas

- 50/27 . . characterised by the type of receiving antennas, e.g. rectennas

- 50/30
- using light, e.g. lasers
- WARNING**
- Group [H02J 50/30](#) is incomplete pending reclassification of documents from groups [H02J 5/005](#) and [H02J 7/025](#).
- Groups [H02J 5/005](#), [H02J 7/025](#), and [H02J 50/30](#) should be considered in order to perform a complete search.
- 50/40
- using two or more transmitting or receiving devices ([H02J 50/50](#) takes precedence)
- WARNING**
- Group [H02J 50/40](#) is incomplete pending reclassification of documents from groups [H02J 5/005](#) and [H02J 7/025](#).
- Group [H02J 50/40](#) is also impacted by reclassification into group [H02J 50/402](#).
- Groups [H02J 50/40](#), [H02J 5/005](#) and [H02J 7/025](#) and [H02J 50/402](#) should be considered in order to perform a complete search.
- 50/402
- . {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 antennas with several sub-antennas}
- WARNING**
- Group [H02J 50/402](#) is incomplete pending reclassification of documents from groups [H02J 5/005](#), [H02J 7/025](#), and [H02J 50/40](#).
- Groups [H02J 50/402](#), [H02J 5/005](#), [H02J 7/025](#), and [H02J 50/40](#) should be considered in order to perform a complete search.
- 50/50
- using additional energy repeaters between transmitting devices and receiving devices
- WARNING**
- Group [H02J 50/50](#) is incomplete pending reclassification of documents from groups [H02J 5/005](#) and [H02J 7/025](#).
- Group [H02J 50/50](#) is also impacted by reclassification into group [H02J 50/502](#).
- Groups [H02J 50/50](#), [H02J 5/005](#) and [H02J 7/025](#) should be considered in order to perform a complete search.
- 50/502
- . {the energy repeater being integrated together with the emitter or the receiver}
- WARNING**
- Group [H02J 50/502](#) is incomplete pending reclassification of documents from groups [H02J 5/005](#), [H02J 7/025](#), and [H02J 50/50](#).
- Groups [H02J 50/502](#), [H02J 5/005](#), [H02J 7/025](#), and [H02J 50/50](#) should be considered in order to perform a complete search.
- 50/60
- responsive to the presence of foreign objects, e.g. detection of living beings
- WARNING**
- Group [H02J 50/60](#) is incomplete pending reclassification of documents from groups [H02J 5/005](#) and [H02J 7/025](#).
- Groups [H02J 5/005](#), [H02J 7/025](#), and [H02J 50/60](#) should be considered in order to perform a complete search.
- 50/70
- involving the reduction of electric, magnetic or electromagnetic leakage fields
- WARNING**
- Group [H02J 50/70](#) is incomplete pending reclassification of documents from groups [H02J 5/005](#) and [H02J 7/025](#).
- Groups [H02J 5/005](#), [H02J 7/025](#), and [H02J 50/70](#) should be considered in order to perform a complete search.
- 50/80
- involving the exchange of data, concerning supply or distribution of electric power, between transmitting devices and receiving devices
- WARNING**
- Group [H02J 50/80](#) is incomplete pending reclassification of documents from groups [H02J 5/005](#) and [H02J 7/025](#).
- Groups [H02J 5/005](#), [H02J 7/025](#), and [H02J 50/80](#) should be considered in order to perform a complete search.
- 50/90
- involving detection or optimisation of position, e.g. alignment
- WARNING**
- Group [H02J 50/90](#) is incomplete pending reclassification of documents from groups [H02J 5/005](#) and [H02J 7/025](#).
- Groups [H02J 5/005](#), [H02J 7/025](#), and [H02J 50/90](#) should be considered in order to perform a complete search.
- 2203/00 Indexing scheme relating to details of circuit arrangements for AC mains or AC distribution networks**
- 2203/10
- Power transmission or distribution systems management focussing at grid-level, e.g. load flow analysis, node profile computation, meshed network optimisation, active network management or spinning reserve management
- WARNING**
- Group [H02J 2203/10](#) is incomplete pending reclassification of documents from group [H02J 13/0006](#).
- Groups [H02J 13/0006](#) and [H02J 2203/10](#) should be considered in order to perform a complete search.

- 2203/20 . Simulating, e.g. planning, reliability check, modelling or computer assisted design [CAD]
- WARNING**
- Group [H02J 2203/20](#) is incomplete pending reclassification of documents from group [H02J 13/0006](#).
- Groups [H02J 13/0006](#) and [H02J 2203/20](#) should be considered in order to perform a complete search.
- 2207/00 Indexing scheme relating to details of circuit arrangements for charging or depolarising batteries or for supplying loads from batteries**
- 2207/10 . Control circuit supply, e.g. means for supplying power to the control circuit
- 2207/20 . Charging or discharging characterised by the power electronics converter
- WARNING**
- Group [H02J 2207/20](#) is incomplete pending reclassification of documents from group [H02J 7/022](#).
- Groups [H02J 7/022](#) and [H02J 2207/20](#) should be considered in order to perform a complete search.
- 2207/30 . Charge provided using DC bus or data bus of a computer
- 2207/40 . adapted for charging from various sources, e.g. AC, DC or multivoltage
- 2207/50 . Charging of capacitors, supercapacitors, ultra-capacitors or double layer capacitors (using capacitors as storage or buffering device in cooperation with batteries [H02J 7/345](#))
- 2213/00 Indexing scheme relating to details of circuit arrangements for providing remote indication of 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
- WARNING**
- Group [H02J 2213/10](#) is incomplete pending reclassification of documents from groups [H02J 13/0003](#), [H02J 13/0006](#), [H02J 13/0017](#), [H02J 13/0079](#), [H02J 13/0082](#), [H02J 13/0086](#), [H02J 13/0089](#), [H02J 13/0093](#), and [H02J 13/0096](#).
- All groups listed in this Warning should be considered in order to perform a complete search.
- 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
- WARNING**
- Group [H02J 2300/20](#) is incomplete pending reclassification of documents from group [H02J 3/382](#).
- Groups [H02J 3/382](#) and [H02J 2300/20](#) should be considered in order to perform a complete search.
- 2300/22 . . The renewable source being solar energy
- WARNING**
- Group [H02J 2300/22](#) is incomplete pending reclassification of documents from group [H02J 3/382](#).
- Groups [H02J 3/382](#) and [H02J 2300/22](#) should be considered in order to perform a complete search.
- 2300/24 . . . of photovoltaic origin
- WARNING**
- Group [H02J 2300/24](#) is incomplete pending reclassification of documents from group [H02J 3/383](#).
- Groups [H02J 3/383](#) and [H02J 2300/24](#) should be considered in order to perform a complete search.
- 2300/26 . . . . involving maximum power point tracking control for photovoltaic sources (maximum power point systems in particular [G05F 1/67](#))
- WARNING**
- Group [H02J 2300/26](#) is incomplete pending reclassification of documents from group [H02J 3/385](#).
- Groups [H02J 3/385](#) and [H02J 2300/26](#) should be considered in order to perform a complete search.
- 2300/28 . . The renewable source being wind energy (wind motors [F03D](#))
- WARNING**
- Group [H02J 2300/28](#) is incomplete pending reclassification of documents from group [H02J 3/386](#).
- Groups [H02J 3/386](#) and [H02J 2300/28](#) should be considered in order to perform a complete search.
- 2300/30 . The power source being a fuel cell
- WARNING**
- Group [H02J 2300/30](#) is incomplete pending reclassification of documents from group [H02J 3/387](#).
- Groups [H02J 3/387](#) and [H02J 2300/30](#) should be considered in order to perform a complete search.
- 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 load**

- 2310/10 . The network having a local or delimited stationary reach
- 2310/12 . . The local stationary network supplying a household or a building
- 2310/14 . . . The load or loads being home appliances
- 2310/16 . . . The load or loads being an Information and Communication Technology [ICT] facility
- 2310/18 . . The network being internal to a power source or plant
- 2310/20 . . The network being internal to a load
- 2310/22 . . . The load being a portable electronic device

**WARNING**

Group [H02J 2310/22](#) is incomplete pending reclassification of documents from group [H02J 7/0027](#).

Groups [H02J 7/0027](#) and [H02J 2310/22](#) should be considered in order to perform a complete search.

- 2310/23 . . . The load being a medical device, a medical implant, or a life supporting device
- 2310/40 . The network being an on-board power network, i.e. within a vehicle

**WARNING**

Group [H02J 2310/40](#) is incomplete pending reclassification of documents from group [H02J 7/0027](#).

Groups [H02J 7/0027](#) and [H02J 2310/40](#) should be considered in order to perform a complete search.

- 2310/42 . . for ships or vessels

**WARNING**

Group [H02J 2310/42](#) is incomplete pending reclassification of documents from group [H02J 7/0027](#).

Groups [H02J 7/0027](#) and [H02J 2310/42](#) should be considered in order to perform a complete search.

- 2310/44 . . for aircrafts

**WARNING**

Group [H02J 2310/44](#) is incomplete pending reclassification of documents from group [H02J 7/0027](#).

Groups [H02J 7/0027](#) and [H02J 2310/44](#) should be considered in order to perform a complete search.

- 2310/46 . . for ICE-powered road vehicles

**WARNING**

Group [H02J 2310/46](#) is incomplete pending reclassification of documents from group [H02J 7/0027](#).

Groups [H02J 7/0027](#) and [H02J 2310/46](#) should be considered in order to perform a complete search.

- 2310/48 . . for electric vehicles [EV] or hybrid vehicles [HEV]

**WARNING**

Group [H02J 2310/48](#) is incomplete pending reclassification of documents from group [H02J 7/0027](#).

Groups [H02J 7/0027](#) and [H02J 2310/48](#) should be considered in order to perform a complete search.

- 2310/50 . for selectively controlling the operation of the loads
- 2310/52 . . The controlling of the operation of the load not being the total disconnection of the load, i.e. entering a degraded mode or in current limitation
- 2310/54 . . according to a pre-established time schedule
- 2310/56 . . characterised by the condition upon which the selective controlling is based
- 2310/58 . . . The condition being electrical
- 2310/60 . . . . Limiting power consumption in the network or in one section of the network, e.g. load shedding or peak shaving
- 2310/62 . . . The condition being non-electrical, e.g. temperature
- 2310/64 . . . . The condition being economic, e.g. tariff based load management
- 2310/66 . . one of the loads acting as master and the other or others acting as slaves
- 2310/70 . Load identification