

## SECTION H — ELECTRICITY

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

## H02J CIRCUIT ARRANGEMENTS OR SYSTEMS FOR SUPPLYING OR DISTRIBUTING ELECTRIC POWER; SYSTEMS FOR STORING ELECTRIC ENERGY

**Note(s)**

1. This subclass covers :
  - ac or dc mains or distribution networks;
  - circuit arrangements for battery supplies, including charging or control thereof, or co-ordinated 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.

**Subclass index**

## CIRCUIT ARRANGEMENTS

For distribution networks:

direct current; alternative current.....1/00, 3/00  
 combined; not specified.....5/00, 4/00

For batteries.....7/00

For emergency or stand-by power supply.....9/00

For power supply to auxiliaries of stations.....11/00

For providing remote indication of network conditions.....13/00

SYSTEMS FOR STORING ELECTRICAL ENERGY.....15/00

CIRCUIT ARRANGEMENTS OR SYSTEMS FOR WIRELESS SUPPLY OR DISTRIBUTION OF

ELECTRIC POWER.....50/00

1/00	<b>Circuit arrangements for dc mains or dc distribution networks [1, 2006.01]</b>	3/04	• for connecting networks of the same frequency but supplied from different sources [1, 2006.01]
1/02	• Arrangements for reducing harmonics or ripples [1, 2006.01]	3/06	• • Controlling transfer of power between connected networks; Controlling sharing of load between connected networks [1, 2006.01]
1/04	• Constant-current supply systems [1, 2006.01]	3/08	• • Synchronising of networks [1, 2006.01]
1/06	• Two-wire systems [1, 2006.01]	3/10	• Constant-current supply systems [1, 2006.01]
1/08	• Three-wire systems; Systems having more than three wires [1, 2006.01]	3/12	• for adjusting voltage in ac networks by changing a characteristic of the network load [1, 2006.01]
1/10	• Parallel operation of dc sources [1, 2006.01]	3/14	• • by switching loads on to, or off from, network, e.g. progressively balanced loading [1, 2006.01]
1/12	• • Parallel operation of dc generators with converters, e.g. with mercury-arc rectifier [1, 2006.01]	3/16	• • by adjustment of reactive power [1, 2006.01]
1/14	• Balancing the load in a network [1, 2006.01]	3/18	• Arrangements for adjusting, eliminating or compensating reactive power in networks (for adjustment of voltage H02J 3/16) [1, 2006.01]
1/16	• • using dynamo-electric machines coupled to flywheels [1, 2006.01]	3/20	• • in long overhead lines [1, 2006.01]
3/00	<b>Circuit arrangements for ac mains or ac distribution networks [1, 2006.01]</b>	3/22	• • in cables [1, 2006.01]
3/01	• Arrangements for reducing harmonics or ripples [3, 2006.01]	3/24	• Arrangements for preventing or reducing oscillations of power in networks (by control effected upon a single generator H02P 9/00) [1, 2006.01]
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 [1, 2006.01]	3/26	• Arrangements for eliminating or reducing asymmetry in polyphase networks [1, 2006.01]
		3/28	• Arrangements for balancing the load in a network by storage of energy [1, 2006.01]

- 3/30 • • using dynamo-electric machines coupled to flywheels [1, 2006.01]
- 3/32 • • using batteries with converting means [1, 2006.01]
- 3/34 • Arrangements for transfer of electric power between networks of substantially different frequency [1, 2006.01]
- 3/36 • Arrangements for transfer of electric power between ac networks via a high-tension dc link [1, 2006.01]
- 3/38 • Arrangements for parallelly feeding a single network by two or more generators, converters or transformers [1, 2006.01]
- 3/40 • • Synchronising a generator for connection to a network or to another generator [1, 2006.01]
- 3/42 • • • with automatic parallel connection when synchronism is achieved [1, 2006.01]
- 3/44 • • • with means for ensuring correct phase sequence [1, 2006.01]
- 3/46 • • Controlling the sharing of output between the generators, converters, or transformers [1, 2006.01]
- 3/48 • • • Controlling the sharing of the in-phase component [1, 2006.01]
- 3/50 • • • Controlling the sharing of the out-of-phase component [1, 2006.01]
- 4/00 Circuit arrangements for mains or distribution networks not specified as ac or dc [2, 2006.01]**
- 5/00 Circuit arrangements for transfer of electric power between ac networks and dc networks (H02J 3/36 takes precedence) [1, 2006.01, 2016.01]**
- 7/00 Circuit arrangements for charging or depolarising batteries or for supplying loads from batteries [1, 2006.01]**
- 7/02 • for charging batteries from AC mains by converters [1, 2006.01, 2016.01]
- 7/04 • • Regulation of the charging current or voltage [1, 2006.01]
- 7/06 • • • using discharge tubes or semiconductor devices [1, 2006.01]
- 7/08 • • • • using discharge tubes only [1, 2006.01]
- 7/10 • • • • using semiconductor devices only [1, 2006.01]
- 7/12 • • • using magnetic devices having controllable degree of saturation, i.e. transducers [1, 2006.01]
- 7/14 • for charging batteries from dynamo-electric generators driven at varying speed, e.g. on vehicle [1, 2006.01]
- 7/16 • • Regulation of the charging current or voltage by variation of field [1, 2006.01]
- 7/18 • • • due to variation of ohmic resistance in field circuit, using resistance switching in or out of circuit step by step [1, 2006.01]
- 7/20 • • • due to variation of continuously-variable ohmic resistor [1, 2006.01]
- 7/22 • • • due to variation of make-to-break ratio of intermittently-operating contacts, e.g. using Tirrill regulator [1, 2006.01]
- 7/24 • • • using discharge tubes or semiconductor devices [1, 2006.01]
- 7/26 • • • using magnetic devices with controllable degree of saturation [1, 2006.01]
- 7/28 • • • using magnetic devices with controllable degree of saturation in combination with controlled discharge tube or controlled semiconductor device [1, 2006.01]
- 7/30 • • • using armature-reaction-excited machines [1, 2006.01]
- 7/32 • for charging batteries from a charging set comprising a non-electric prime mover [1, 2006.01]
- 7/34 • Parallel operation in networks using both storage and other DC sources, e.g. providing buffering (H02J 7/14 takes precedence) [1, 4, 2006.01]
- 7/35 • • with light sensitive cells [4, 2006.01]
- 7/36 • Arrangements using end-cell switching [1, 2006.01]
- 9/00 Circuit arrangements for emergency or stand-by power supply, e.g. for emergency lighting [1, 2006.01]**
- 9/02 • in which an auxiliary distribution system and its associated lamps are brought into service [1, 2006.01]
- 9/04 • in which the distribution system is disconnected from the normal source and connected to a standby source [1, 2006.01]
- 9/06 • • with automatic change-over [1, 2006.01]
- 9/08 • • • requiring starting of a prime-mover [1, 2006.01]
- 11/00 Circuit arrangements for providing service supply to auxiliaries of stations in which electric power is generated, distributed or converted [1, 2006.01]**
- 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 [1, 2006.01]**
- 15/00 Systems for storing electric energy (mechanical systems therefor F01-F04; in chemical form H01M) [2, 2006.01]**
- 50/00 Circuit arrangements or systems for wireless supply or distribution of electric power [2016.01]**
- Note(s) [2016.01]**
- 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.
- 50/05 • using capacitive coupling [2016.01]
- 50/10 • using inductive coupling [2016.01]
- 50/12 • • of the resonant type [2016.01]
- 50/15 • using ultrasonic waves [2016.01]
- 50/20 • using microwaves or radio frequency waves [2016.01]
- 50/23 • • characterised by the type of transmitting antennas, e.g. directional array antennas or Yagi antennas [2016.01]
- 50/27 • • characterised by the type of receiving antennas, e.g. rectennas [2016.01]
- 50/30 • using light, e.g. lasers [2016.01]
- 50/40 • using two or more transmitting or receiving devices (H02J 50/50 takes precedence) [2016.01]
- 50/50 • using additional energy repeaters between transmitting devices and receiving devices [2016.01]
- 50/60 • responsive to the presence of foreign objects, e.g. detection of living beings [2016.01]
- 50/70 • involving the reduction of electric, magnetic or electromagnetic leakage fields [2016.01]

50/80 • involving the exchange of data, concerning supply or distribution of electric power, between transmitting devices and receiving devices **[2016.01]**

50/90 • involving detection or optimisation of position, e.g. alignment **[2016.01]**