

## SECTION H — ELECTRICITY

### H01 BASIC ELECTRIC ELEMENTS

**H01R ELECTRICALLY-CONDUCTIVE CONNECTIONS; STRUCTURAL ASSOCIATIONS OF A PLURALITY OF MUTUALLY-INSULATED ELECTRICAL CONNECTING ELEMENTS; COUPLING DEVICES; CURRENT COLLECTORS** (switches, fuses H01H; coupling devices of the waveguide type H01P 5/00; switching arrangements for the supply or distribution of electric power H02B; installations of electric cables or lines, or of combined optical and electric cables or lines, or of auxiliary apparatus H02G; printed means for providing electric connections to or between printed circuits H05K)

#### Note(s)

- This subclass covers:
  - all kinds of contact-making disconnectable and non-disconnectable electric line connecting devices, coupling devices, lamp or similar holders or current collectors for all kinds of electric lines, cables or apparatus;
  - non-printed means for electric connections to or between printed circuits.
- This subclass does not cover mounting of connections in or on specified apparatus. Such mounting is covered by the relevant subclass for such apparatus, e.g. mounting in junction or distribution boxes is covered by subclass H02B or H02G, high-temperature connections for heating elements is covered by group H05B 3/08. Structural association of one part of a coupling device with specific electric apparatus is classified with the apparatus, e.g. association of cap with incandescent lamp is covered by subclass H01K.
- In this subclass, the following expressions are used with the meaning indicated:
  - "pin" is a rigid or flexible conductor for engagement with an appropriately shaped socket to establish contact therewith;
  - "socket" is a rigid or flexible conductor for receiving an appropriate pin to establish electrical contact therewith;
  - "coupling devices" are devices having two or more parts specially adapted so as to be capable of ready and repeated physical engagement or disengagement, without the use of a tool, for the purpose of establishing or breaking an electrical path. Examples of such devices having more than two parts are: a) adapters for linking two coupling parts; and b) rails or bus-bars provided with a plurality of discrete connecting locations for counterparts.
- General details are classified in groups H01R 4/00, H01R 9/00, H01R 11/00, H01R 12/00.

#### Subclass index

##### CONNECTIONS; CONNECTING ELEMENTS

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Other connections.....	3/00

##### COUPLINGS

Direct connections between conductors and conductive members of coupling.....	4/00
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##### FLEXIBLE OR TURNABLE LINE CONNECTORS.....35/00

##### CURRENT COLLECTORS

Rotary; non-rotary.....	39/00, 41/00
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##### MANUFACTURE.....43/00

**3/00 Electrically-conductive connections not otherwise provided for**

- 3/08 • for making connection to a liquid (electrodes for batteries or accumulators H01M)

**4/00 Electrically-conductive connections between two or more conductive members in direct contact, i.e. touching one another; Means for effecting or maintaining such contact; Electrically-conductive connections having two or more spaced connecting locations for conductors and using contact members penetrating insulation** (details of contacts of coupling devices H01R 13/00; coupling devices H01R 12/70, H01R 24/00-H01R 33/00; flexible or turnable line

- connectors H01R 35/00 non-rotary current collectors H01R 41/00) [3]
- 4/01 • Connections using shape memory materials, e.g. shape memory metal [7]
- 4/02 • Soldered or welded connections (H01R 4/62, H01R 12/59, H01R 12/65 take precedence) [3, 7]
- 4/04 • using electrically conductive adhesives [3]
- 4/06 • Riveted connections (by explosion H01R 4/08) [3]
- 4/08 • effected by an explosion [3]
- 4/10 • effected solely by twisting, wrapping, bending, crimping, or other permanent deformation [3]
- 4/12 • • by twisting [3]
- 4/14 • • by wrapping [3]
- 4/16 • • by bending [3]
- 4/18 • • by crimping (H01R 4/01, H01R 4/24 take precedence) [3, 7]
- 4/20 • • using a crimping sleeve [3]
- 4/22 • End caps, i.e. caps of insulating or conductive material for covering or maintaining connections between wires entering the cap from the same end [3]
- 4/24 • Connections using needle-point, slotted-plate, or analogous contact members penetrating insulation or cable strands [3]
- 4/26 • Connections in which at least one of the connecting parts has projections which bite into or engage the other connecting part in order to improve the contact (using shape memory materials H01R 4/01) [3]
- 4/28 • Clamped connections; Spring connections (made by means of terminals specially adapted for contact with, or insertion into, printed circuits H01R 12/00) [3, 7]
- 4/30 • • using a screw or nut clamping member (H01R 4/50 takes precedence; using a clamping member acted on by screw or nut H01R 4/38) [3]
- 4/32 • • • Conductive members located in slot or hole in screw [3]
- 4/34 • • • Conductive members located under head of screw [3]
- 4/36 • • • Conductive members located under tip of screw [3]
- 4/38 • • using a clamping member acted on by screw or nut (H01R 4/50 takes precedence) [3]
- 4/40 • • • Pivotal clamping member [3]
- 4/42 • • • Clamping area to one side of screw only [3]
- 4/44 • • • Clamping areas on both sides of screw [3]
- 4/46 • • • Clamping area between two screws placed side by side [3]
- 4/48 • • using a spring, clip or other resilient member (H01R 4/52 takes precedence) [3]
- 4/50 • • using a cam, wedge, cone or ball [3]
- 4/52 • • • which is spring loaded [3]
- 4/56 • one conductor screwing into another [3]
- 4/58 • characterised by the form or material of the contacting members (H01R 4/01 takes precedence) [3, 7]
- 4/60 • • Connections between or with tubular conductors (H01R 4/56 takes precedence) [3]
- 4/62 • • Connections between conductors of different materials; Connections between or with aluminium or steel-core aluminium conductors (H01R 4/68 takes precedence) [3]
- 4/64 • • Connections between or with conductive parts having primarily a non-electric function, e.g. frame, casing, rail [3]
- 4/66 • • Connections with the terrestrial mass, e.g. earth plate, earth pin [3]
- 4/68 • • Connections to or between superconductive conductors [3]
- 4/70 • Insulation of connections (end caps H01R 4/22) [3]
- 4/72 • • using a heat shrinking insulating sleeve [4]
- 9/00 Structural associations of a plurality of mutually-insulated electrical connecting elements, e.g. terminal strips, terminal blocks; Terminals or binding posts mounted upon a base or in a case; Bases therefor** (details of direct connections or connections using contact members penetrating insulation H01R 4/00; specially adapted for printed circuits, flat or ribbon cables, or like generally planar structures H01R 12/00; coupling devices H01R 12/70, H01R 24/00-H01R 33/00; flexible or turnable line connectors H01R 35/00) [3]
- 9/03 • Connectors arranged to contact a plurality of the conductors of a multiconductor cable [3]
- 9/05 • • for coaxial cables [3]
- 9/053 • • • using contact members penetrating insulation [7]
- 9/11 • End pieces for multiconductor cables supported by the cable and for facilitating connections to other conductive members [3]
- 9/15 • Connectors for wire wrapping [3]
- 9/16 • Fastening of connecting parts to base or case; Insulating connecting parts from base or case (lead-through insulators H01B 17/26) [3]
- 9/18 • • Fastening by means of screw or nut [3]
- 9/20 • • Fastening by means of rivet or eyelet [3]
- 9/22 • Bases, e.g. strip, block, panel [3]
- 9/24 • • Terminal blocks [3]
- 9/26 • • • Clip-on terminal blocks for side-by-side rail or strip-mounting [3]
- 9/28 • • Terminal boards [3]
- 11/00 Individual connecting elements providing two or more spaced connecting locations for conductive members which are, or may be, thereby interconnected, e.g. end pieces for wires or cables supported by the wire or cable and having means for facilitating electrical connection to some other wire, terminal, or conductive member, blocks of binding posts** (connections between members in direct contact H01R 4/00; structural associations of a plurality of mutually-insulated electrical connecting elements H01R 9/00; coupling devices H01R 12/70, H01R 24/00-H01R 29/00, H01R 33/00; flexible or turnable line connectors H01R 35/00) [3]
- 11/01 • characterised by the form or arrangement of the conductive interconnection between their connecting locations [3]
- 11/03 • characterised by the type of the connecting locations on the individual element or by the type of the connections between the connecting locations and the conductive members (H01R 11/11 takes precedence) [3]
- 11/05 • • the connecting locations having different types of direct connections [3]
- 11/07 • • the connecting locations being of the same type but different sizes [3]
- 11/09 • • the connecting locations being identical [3]
- 11/11 • End pieces or tapping pieces for wires or cables, supported by the wire or cable and having means for facilitating electrical connection to some other wire, terminal, or conductive member (H01R 11/01 takes precedence) [3]
- 11/12 • • End pieces terminating in an eye, hook, or fork [3]

- 11/14 • • • the hook being adapted for hanging on overhead or other suspended lines, e.g. hot line clamp [3]
- 11/15 • • • • Hook in the form of a screw clamp [3]
- 11/16 • • End pieces terminating in a soldering tip or socket [3]
- 11/18 • • End pieces terminating in a probe [3]
- 11/20 • • End pieces terminating in a needle point or analogous contact for penetrating insulation or cable strands [3]
- 11/22 • • End pieces terminating in a spring clip [3]
- 11/24 • • • with gripping jaws, e.g. crocodile clip [3]
- 11/26 • • End pieces terminating in a screw clamp, screw or nut [3]
- 11/28 • • End pieces consisting of a ferrule or sleeve [3]
- 11/30 • • End pieces held in contact by a magnet [3]
- 11/32 • • End pieces with two or more terminations [3]
- 12/00 **Structural associations of a plurality of mutually-insulated electrical connecting elements, specially adapted for printed circuits, e.g. printed circuit boards (PCBs), flat or ribbon cables, or like generally planar structures, e.g. terminal strips, terminal blocks; Coupling devices specially adapted for printed circuits, flat or ribbon cables, or like generally planar structures; Terminals specially adapted for contact with, or insertion into, printed circuits, flat or ribbon cables, or like generally planar structures** (printed connections to, or between, printed circuits H05K 1/11) [7]
- 12/50 • Fixed connections [2011.01]
- 12/51 • • for rigid printed circuits or like structures [2011.01]
- 12/52 • • • connecting to other rigid printed circuits or like structures [2011.01]
- 12/53 • • • connecting to cables except for flat or ribbon cables [2011.01]
- 12/55 • • • characterised by the terminals [2011.01]
- 12/57 • • • • surface mounting terminals [2011.01]
- 12/58 • • • • terminals for insertion into holes [2011.01]
- 12/59 • • for flexible printed circuits, flat or ribbon cables or like structures [2011.01]
- 12/61 • • • connecting to flexible printed circuits, flat or ribbon cables or like structures [2011.01]
- 12/62 • • • connecting to rigid printed circuits or like structures [2011.01]
- 12/63 • • • connecting to another shape cable [2011.01]
- 12/65 • • • characterised by the terminal [2011.01]
- 12/67 • • • • insulation penetrating terminals [2011.01]
- 12/68 • • • • • comprising deformable portions [2011.01]
- 12/69 • • • • deformable terminals e.g. crimping terminals [2011.01]
- 12/70 • Coupling devices [2011.01]
- 12/71 • • for rigid printing circuits or like structures [2011.01]
- 12/72 • • • coupling with the edge of the rigid printed circuits or like structures [2011.01]
- 12/73 • • • • connecting to other rigid printed circuits or like structures [2011.01]
- 12/75 • • • connecting to cables except for flat or ribbon cables [2011.01]
- 12/77 • • for flexible printed circuits, flat or ribbon cables or like structures [2011.01]
- 12/78 • • • connecting to other flexible printed circuits, flat or ribbon cables or like structures [2011.01]
- 12/79 • • • connecting to rigid printed circuits or like structures [2011.01]
- 12/81 • • • connecting to another cable except for flat or ribbon cable [2011.01]
- 12/82 • • connected with low or zero insertion force [2011.01]
- 12/83 • • • connected with pivoting of printed circuits or like after insertion [2011.01]
- 12/85 • • • contact pressure producing means, contacts activated after insertion of printed circuits or like structures [2011.01]
- 12/87 • • • • acting automatically by insertion of rigid printed or like structures [2011.01]
- 12/88 • • • • acting manually by rotating or pivoting connector housing parts [2011.01]
- 12/89 • • • • acting manually by moving connector housing parts linearly e.g. slider [2011.01]
- 12/91 • • allowing relative movement between coupling parts e.g. floating or self aligning [2011.01]
- 13/00 **Details of coupling devices of the kinds covered by groups H01R 12/70 or H01R 24/00-H01R 33/00** [1, 7]
- 13/02 • Contact members
- 13/03 • • characterised by the material, e.g. plating or coating materials [4]
- 13/04 • • Pins or blades for co-operation with sockets
- 13/05 • • • Resilient pins or blades (carrying separate resilient parts H01R 13/15) [3]
- 13/08 • • • Resiliently-mounted rigid pins or blades
- 13/10 • • Sockets for co-operation with pins or blades
- 13/11 • • • Resilient sockets (carrying separate resilient parts H01R 13/15) [3]
- 13/115 • • • • U-shaped sockets having inwardly-bent legs [3]
- 13/14 • • • Resiliently-mounted rigid sockets
- 13/15 • • Pins, blades or sockets having separate spring member for producing or increasing contact pressure [3]
- 13/17 • • • the spring member being on the pin [3]
- 13/18 • • • with the spring member surrounding the socket
- 13/187 • • • the spring member being in the socket [3]
- 13/193 • • Means for increasing contact pressure at the end of engagement of coupling part [3]
- 13/20 • • Pins, blades, or sockets shaped, or provided with separate member, to retain co-operating parts together
- 13/207 • • • by screw-in connection [3]
- 13/213 • • • by bayonet connection [3]
- 13/22 • • Contacts for co-operating by abutting
- 13/24 • • • resilient; resiliently mounted
- 13/26 • • Pin or blade contacts for sliding co-operation on one side only
- 13/28 • • Contacts for sliding co-operation with identically-shaped contact, e.g. for hermaphroditic coupling devices
- 13/33 • • Contact members made of resilient wire [3]
- 13/35 • • for non-simultaneous co-operation with different types of contact member, e.g. socket co-operating with either round or flat pin [3]
- 13/40 • Securing contact members in or to a base or case; Insulating of contact members
- 13/405 • • Securing in non-demountable manner, e.g. moulding, riveting [3]
- 13/41 • • • by frictional grip in grommet, panel or base [3]
- 13/415 • • • by permanent deformation of contact member [3]

- 13/42 • • Securing in a demountable manner
- 13/422 • • • in resilient one-piece base or case; One-piece base or case formed with resilient locking means [3]
- 13/424 • • • in base or case composed of a plurality of insulating parts having at least one resilient insulating part [3]
- 13/426 • • • by separate resilient retaining piece supported by base or case, e.g. collar [3]
- 13/428 • • • by resilient locking means on the contact members; by locking means on resilient contact members [3]
- 13/432 • • • • by stamped-out resilient tongue snapping behind shoulder in base or case [3]
- 13/434 • • • • by separate resilient locking means on contact member, e.g. retainer collar or ring around contact member [3]
- 13/436 • • • Securing a plurality of contact members by one locking piece [3]
- 13/44 • Means for preventing access to live contacts
- 13/443 • • Dummy plugs [7]
- 13/447 • • Shutter or cover plate [3]
- 13/453 • • • Shutter or cover plate opened by engagement of counterpart [3]
- 13/46 • Bases; Cases
- 13/50 • • formed as an integral body (H01R 13/514 takes precedence) [3]
- 13/502 • • composed of different pieces (H01R 13/514 takes precedence) [3]
- 13/504 • • • different pieces being moulded, cemented, welded, e.g. ultrasonic, or swaged together [3]
- 13/506 • • • assembled by snap action of the parts [3]
- 13/508 • • • assembled by clip or spring [3]
- 13/512 • • • assembled by screw or screws [3]
- 13/514 • • formed as a modular block or assembly, i.e. composed of co-operating parts provided with contact members or holding contact members between them [3]
- 13/516 • • Means for holding or embracing insulating body, e.g. casing [3]
- 13/518 • • • for holding or embracing several coupling parts, e.g. frames [3]
- 13/52 • • Dustproof, splashproof, drip-proof, waterproof, or flameproof cases
- 13/523 • • • for use under water [3]
- 13/527 • • • Flameproof cases (H01R 13/70 takes precedence) [3]
- 13/53 • • Bases or cases for heavy duty; Bases or cases with means for preventing corona or arcing [3]
- 13/533 • • Bases or cases made for use in extreme conditions, e.g. high temperature, radiation, vibration, corrosive environment, pressure (H01R 13/52 takes precedence) [3]
- 13/56 • Means for preventing chafing or fracture of flexible leads at outlet from coupling part
- 13/58 • Means for relieving strain on wire connection, e.g. cord grip
- 13/585 • • Grip increasing with strain force [3]
- 13/59 • • Threaded ferrule or bolt operating in a direction parallel to the cable or wire [3]
- 13/595 • • Bolts operating in a direction transverse to the cable or wire [3]
- 13/60 • Means for supporting coupling part when not engaged
- 13/62 • Means for facilitating engagement or disengagement of coupling parts or for holding them in engagement [3]
- 13/621 • • Bolt, set screw or screw clamp [3, 5]
- 13/622 • • Screw-ring or screw-casing (H01R 13/623 takes precedence) [5]
- 13/623 • • Casing or ring with helicoidal groove [3, 5]
- 13/625 • • Casing or ring with bayonet engagement [3, 5]
- 13/627 • • Snap-action fastening [3]
- 13/629 • • Additional means for facilitating engagement or disengagement of coupling parts, e.g. aligning or guiding means, levers, gas pressure [3]
- 13/631 • • • for engagement only [3]
- 13/633 • • • for disengagement only [3]
- 13/635 • • • • by mechanical pressure, e.g. spring force [3]
- 13/637 • • • • by fluid pressure, e.g. explosion [3]
- 13/639 • • Additional means for holding or locking coupling parts together after engagement [3]
- 13/64 • Means for preventing, inhibiting or avoiding incorrect coupling
- 13/641 • • by indicating incorrect coupling; by indicating correct or full engagement [7]
- 13/642 • • by position or shape of contact members [3]
- 13/645 • • by exchangeable elements on case or base [3]
- 13/646 • • *specially adapted for high-frequency, e.g. structures providing an impedance match or phase match (non-coaxed protective earth or shield arrangements H01R 13/648-H01R 13/6599; coaxial connectors specifically adapted for high frequency H01R 24/40-H01R 24/56) [7, 2011.01]*
- 13/6461 • • Means for preventing cross-talk [2011.01]
- 13/6463 • • • using twisted pairs of wires [2011.01]
- 13/6464 • • • by adding capacitive elements [2011.01]
- 13/6466 • • • • on substrates, e.g. PCBs [Printed Circuit Boards] [2011.01]
- 13/6467 • • • by cross-over of signal conductors [2011.01]
- 13/6469 • • • • on substrates [2011.01]
- 13/6471 • • • by special arrangement of ground and signal conductors, e.g. GSGS [Ground-Signal-Ground-Signal] [2011.01]
- 13/6473 • • Impedance matching [2011.01]
- 13/6474 • • • by variation of conductive properties, e.g. by variation of dimensions [2011.01]
- 13/6476 • • • • by making an aperture, e.g. a hole [2011.01]
- 13/6477 • • • by variation of dielectric properties [2011.01]
- 13/648 • Protective earth or shield arrangements on coupling devices (coaxially arranged shields H01R 24/38) [3]
- 13/652 • • with earth pin, blade or socket [3]
- 13/655 • • with earth brace [3]
- 13/658 • • High frequency shielding arrangements, e.g. against EMI [Electro-Magnetic Interference] or EMP [Electro-Magnetic Pulse] [3, 2011.01]
- 13/6581 • • • Shield structure [2011.01]
- 13/6582 • • • • with resilient means for engaging mating connector [2011.01]
- 13/6583 • • • • • with separate conductive resilient members between mating shield members [2011.01]
- 13/6584 • • • • • formed by conductive elastomeric members, e.g. flat gaskets or O-rings [2011.01]
- 13/6585 • • • • Shielding material individually surrounding or interposed between mutually spaced contacts [2011.01]
- 13/6586 • • • • • for separating multiple connector modules [2011.01]
- 13/6587 • • • • • for mounting on PCBs [2011.01]
- 13/6588 • • • • • with through openings for individual contacts [2011.01]

- 13/6589 • • • • • with wires separated by conductive housing parts [2011.01]
- 13/659 • • • • • with plural ports for distinct connectors [2011.01]
- 13/6591 • • • • • Specific features or arrangements of connection of shield to conductive members [2011.01]
- 13/6592 • • • • • the conductive member being a shielded cable [2011.01]
- 13/6593 • • • • • the shield being composed of different pieces [2011.01]
- 13/6594 • • • • • the shield being mounted on a PCB and connected to conductive members [2011.01]
- 13/6595 • • • • • with separate members fixing the shield to the PCB [2011.01]
- 13/6596 • • • • • the conductive member being a metal grounding panel [2011.01]
- 13/6597 • • • • • the conductive member being a contact of the connector [2011.01]
- 13/6598 • • • • • Shield material [2011.01]
- 13/6599 • • • • • Dielectric material made conductive, e.g. plastic material coated with metal [2011.01]
- 13/66 • • • • • Structural association with built-in electrical component (coupling devices having concentrically or coaxially-arranged contacts H01R 24/38-H01R 24/56)
- 13/68 • • • • • with built-in fuse [1, 2011.01]
- 13/684 • • • • • the fuse being removable [2011.01]
- 13/688 • • • • • with housing part adapted for accessing the fuse [2011.01]
- 13/692 • • • • • Turnable housing part [2011.01]
- 13/696 • • • • • the fuse being integral with the terminal, e.g. pin or socket [2011.01]
- 13/70 • • • • • with built-in switch
- 13/703 • • • • • operated by engagement or disengagement of coupling parts (H01R 13/71 takes precedence) [3]
- 13/707 • • • • • interlocked with contact members or counterpart [3]
- 13/71 • • • • • Contact members of coupling parts operating as switch [3]
- 13/713 • • • • • the switch being a safety switch [3]
- 13/717 • • • • • with built-in light source [3]
- 13/719 • • • • • specially adapted for high frequency, e.g. with filters [4, 2011.01]
- 13/7193 • • • • • with ferrite filters [2011.01]
- 13/7195 • • • • • with planar filters with openings for contacts [2011.01]
- 13/7197 • • • • • with filters integral with or fitted onto contacts, e.g. tubular filters [2011.01]
- 13/72 • • • • • Means for accommodating flexible lead within the holder
- 13/73 • • • • • Means for mounting coupling parts to apparatus or structures, e.g. to a wall [4]
- 13/74 • • • • • for mounting coupling parts in openings of a panel [3]
- 24/00** • • • • • **Two-part coupling devices, or either of their cooperating parts, characterised by their overall structure** (specially adapted for printed circuits, flat or ribbon cables, or like structures H01R 12/00; specially adapted for supporting apparatus H01R 33/00) [7, 2011.01]
- Note(s)**
- In this group, it is desirable to add the indexing codes of groups H01R 101/00-H01R 107/00.
- 24/20 • • • • • Coupling parts carrying sockets, clips or analogous contacts and secured only to wire or cable [2011.01]
- 24/22 • • • • • with additional earth or shield contacts [2011.01]
- 24/28 • • • • • Coupling parts carrying pins, blades or analogous contacts and secured only to wire or cable [2011.01]
- 24/30 • • • • • with additional earth or shield contacts [2011.01]
- 24/38 • • • • • having concentrically or coaxially arranged contacts [2011.01]
- 24/40 • • • • • specially adapted for high frequency [2011.01]
- 24/42 • • • • • comprising impedance matching means or electrical components, e.g. filters or switches [2011.01]
- 24/44 • • • • • comprising impedance matching means [2011.01]
- 24/46 • • • • • comprising switches [2011.01]
- 24/48 • • • • • comprising protection devices, e.g. overvoltage protection [2011.01]
- 24/50 • • • • • mounted on a PCB [Printed Circuit Board] [2011.01]
- 24/52 • • • • • mounted in or to a panel or structure [2011.01]
- 24/54 • • • • • Intermediate parts, e.g. adapters, splitters or elbows [2011.01]
- 24/56 • • • • • specially adapted for specific shapes of cables, e.g. corrugated cables, twisted pair cables, cables with two screens or hollow cables [2011.01]
- 24/58 • • • • • Contacts spaced along longitudinal axis of engagement [2011.01]
- 24/60 • • • • • Contacts spaced along planar side wall transverse to longitudinal axis of engagement [2011.01]
- 24/62 • • • • • Sliding engagements with one side only, e.g. modular jack coupling devices [2011.01]
- 24/64 • • • • • for high frequency, e.g. RJ 45 [2011.01]
- 24/66 • • • • • with pins, blades or analogous contacts and secured to apparatus or structure, e.g. to a wall [2011.01]
- 24/68 • • • • • mounted on directly pluggable apparatus [2011.01]
- 24/70 • • • • • with additional earth or shield contacts [2011.01]
- 24/76 • • • • • with sockets, clips or analogous contacts and secured to apparatus or structure, e.g. to a wall [2011.01]
- 24/78 • • • • • with additional earth or shield contacts [2011.01]
- 24/84 • • • • • Hermaphroditic coupling devices [2011.01]
- 24/86 • • • • • Parallel contacts arranged about a common axis [2011.01]
- 25/00** • • • • • **Coupling parts adapted for simultaneous co-operation with two or more identical counterparts, e.g. for distributing energy to two or more circuits** (supported only by co-operation with a counterpart H01R 31/00; with a holder adapted for supporting apparatus to which its counterpart is attached H01R 33/88)
- 25/14 • • • • • Rails or bus-bars constructed so that the counterparts can be connected thereto at any point along their length (supporting elements for lighting devices, displaceable along guiding elements and making electrical contact with conductors running along the guiding elements F21V 21/35; installations of bus-bars H02G 5/00) [3]
- 25/16 • • • • • Rails or bus-bars provided with a plurality of discrete connecting locations for counterparts (installations of bus-bars H02G 5/00) [3]
- 27/00** • • • • • **Coupling parts adapted for co-operation with two or more dissimilar counterparts** (supported only by co-operation with a counterpart H01R 31/00; with a holder adapted for supporting apparatus to which its counterpart is attached H01R 33/90)

## H01R

- 27/02 • for simultaneous co-operation with two or more counterparts
- 29/00 Coupling parts for selective co-operation with a counterpart in different ways to establish different circuits, e.g. for voltage selection, for series/parallel selection**
- 31/00 Coupling parts supported only by co-operation with counterpart**
- 31/02 • Intermediate parts for distributing energy to two or more circuits in parallel, e.g. splitter (for linking two coupling parts H01R 31/06; with a holder adapted for supporting apparatus to which its counterpart is attached H01R 33/92)
- 31/06 • Intermediate parts for linking two coupling parts, e.g. adapter (with a holder adapted for supporting apparatus to which its counterpart is attached H01R 33/94) [4]
- 31/08 • Short-circuiting members for bridging contacts in a counterpart (insulating members inserted between normally-closed contacts H01H 27/04)
- 33/00 Coupling devices specially adapted for supporting apparatus and having one part acting as a holder providing support and electrical connection via a counterpart which is structurally associated with the apparatus, e.g. lamp holders; Separate parts thereof** (structural association of counterpart with specific apparatus, see the relevant subclass for the apparatus)
- 33/02 • Single-pole devices, e.g. holder for supporting one end of a tubular incandescent or neon lamp
- 33/05 • Two-pole devices [4]
- 33/06 • • with two current-carrying pins, blades, or analogous contacts, having their axes parallel to each other [4]
- 33/08 • • • for supporting tubular fluorescent lamp [4]
- 33/09 • • • for baseless lamp bulb [4]
- 33/18 • • having only abutting contacts
- 33/20 • • having concentrically or coaxially arranged contacts
- 33/22 • • for screw type base, e.g. for lamp [4]
- 33/46 • • for bayonet type base [4]
- 33/72 • Three-pole devices
- 33/74 • Devices having four or more poles
- 33/76 • • Holders with sockets, clips or analogous contacts, adapted for axially-sliding engagement with parallelly-arranged pins, blades, or analogous contacts on counterpart, e.g. electronic tube socket
- 33/88 • adapted for simultaneous co-operation with two or more identical counterparts
- 33/90 • adapted for co-operation with two or more dissimilar counterparts
- 33/92 • Holders formed as intermediate parts for distributing energy in parallel through two or more counterparts at least one of which is attached to apparatus to be held
- 33/94 • Holders formed as intermediate parts for linking a counter-part to a coupling part
- 33/945 • Holders with built-in electrical component [4]
- 33/95 • • with fuse; with thermal switch [4]
- 33/955 • • with switch operated manually and independent of engagement or disengagement of coupling [4]
- 33/96 • • with switch operated by engagement or disengagement of coupling [4]
- 33/965 • Dustproof, splashproof, drip-proof, waterproof, or flameproof holders [4]
- 33/97 • Holders with separate means to prevent loosening of the coupling or unauthorised removal of apparatus held [4]
- 33/975 • Holders with resilient means for protecting apparatus against vibrations or shocks [4]
- 35/00 Flexible or turnable line connectors** (rotary current collectors, distributors H01R 39/00)
- 35/02 • Flexible line connectors [4]
- 35/04 • Turnable line connectors with limited rotation angle [4]
- 39/00 Rotary current collectors, distributors, or interrupters** (cam-operated switches H01H 19/00; structural associations of current collectors with, or disposition of current collectors in, dynamo-electric motors or generators H02K 13/00)
- 39/02 • Details
- 39/04 • • Commutators (wherein the segments are formed by extensions of dynamo-electric machine winding H02K)
- 39/06 • • • other than with external cylindrical contact surface, e.g. flat commutators
- 39/08 • • Slip-rings
- 39/10 • • • other than with external cylindrical contact surface, e.g. flat slip-rings
- 39/12 • • • using bearing or shaft surface as contact surface
- 39/14 • • Fastenings of commutators or slip-rings to shafts
- 39/16 • • • by means of moulded or cast material applied during or after assembly
- 39/18 • • Contacts for co-operation with commutator or slip-ring, e.g. contact brush
- 39/20 • • • characterised by the material thereof
- 39/22 • • • incorporating lubricating or polishing ingredient
- 39/24 • • • Laminated contacts; Wire contacts, e.g. metallic brush, carbon fibres
- 39/26 • • • Solid sliding contacts, e.g. carbon brush
- 39/27 • • • End caps on carbon brushes to transmit spring pressure
- 39/28 • • • Roller contacts; Ball contacts
- 39/30 • • • Liquid contacts
- 39/32 • • Connections of conductor to commutator segment
- 39/34 • • Connections of conductor to slip-ring
- 39/36 • • Connections of cable or wire to brush
- 39/38 • • Brush holders
- 39/39 • • • wherein the brush is fixedly mounted in the holder
- 39/40 • • • enabling brush movement within holder during current collection
- 39/41 • • • cartridge type
- 39/415 • • • • with self-recoiling spring [4]
- 39/42 • • Devices for lifting brushes
- 39/44 • • Devices for shifting brushes
- 39/46 • • Auxiliary means for improving current transfer, or for reducing or preventing sparking or arcing
- 39/48 • • • by air blast; by surrounding collector with non-conducting liquid or gas
- 39/50 • • • Barriers placed between brushes
- 39/52 • • • by use of magnets
- 39/54 • • • by use of impedance between brushes or segments
- 39/56 • • Devices for lubricating or polishing slip-rings or commutators during operation of the collector

- 39/58 • • Means structurally associated with the current collector for indicating condition thereof, e.g. for indicating brush wear
  - 39/59 • • Means structurally associated with the brushes for interrupting current (H01R 39/58 takes precedence) [4]
  - 39/60 • Devices for interrupted current collection, e.g. commutating device, distributor, interrupter (self-interrupters H01H, e.g. H01H 51/34)
  - 39/62 • • with more than one brush co-operating with the same set of segments
  - 39/64 • Devices for uninterrupted current collection
  - 41/00 Non-rotary current collectors for maintaining contact between moving and stationary parts of an electric circuit** (end pieces terminating in a hook or the like H01R 11/12; current collectors for power supply lines of electrically-propelled vehicles B60L 5/00)
  - 41/02 • Devices for interrupted current collection, e.g. distributor (electrically-operated selector switches H01H 67/00)
  - 43/00 Apparatus or processes specially adapted for manufacturing, assembling, maintaining, or repairing of line connectors or current collectors or for joining electric conductors** (of trolley lines B60M 1/28; joining cables H02G 1/14)
  - 43/01 • for connecting unstripped conductors to contact members having insulation cutting edges [4]
  - 43/02 • for soldered or welded connections (soldering or welding in general B23K)
  - 43/027 • for connecting conductors by clips [4]
  - 43/033 • for wrapping or unwrapping wire connections [4]
  - 43/04 • for forming connections by deformation, e.g. crimping tool
  - 43/042 • • Hand tools for crimping [4]
  - 43/045 • • • with contact member feeding mechanism [4]
  - 43/048 • • Crimping apparatus or processes (H01R 43/042 takes precedence) [4]
  - 43/05 • • • with wire-insulation stripping [4]
  - 43/052 • • • with wire-feeding mechanism [4]
  - 43/055 • • • with contact member feeding mechanism [4]
  - 43/058 • • Crimping mandrels [4]
  - 43/06 • Manufacture of commutators
  - 43/08 • • in which segments are not separated until after assembly
  - 43/10 • Manufacture of slip-rings
  - 43/12 • Manufacture of brushes
  - 43/14 • Maintenance of current collectors, e.g. reshaping of brushes, cleaning of commutators
  - 43/16 • for manufacturing contact members, e.g. by punching and by bending [4]
  - 43/18 • for manufacturing bases or cases for contact members [4]
  - 43/20 • for assembling or disassembling contact members with insulating base, case or sleeve [4]
  - 43/22 • • Hand tools [4]
  - 43/24 • • Assembling by moulding on contact members [4]
  - 43/26 • for engaging or disengaging the two parts of a coupling device (structural association with coupling device H01R 13/629) [4]
  - 43/28 • for wire processing before connecting to contact members (H01R 43/02-H01R 43/26 take precedence) [4]
- Indexing scheme associated with group H01R 24/00, relating to the number of poles in a two-part coupling device. [7]**
- 101/00 One pole [7]**
  - 103/00 Two poles [7]**
  - 105/00 Three poles [7]**
  - 107/00 Four or more poles [7]**