ECLA EUROPEAN CLASSIFICATION

H01R LINE CONNECTORS; CURRENT COLLECTORS (switches, fuses H01H; coupling devices of the waveguide type H01P5/00; switching arrangements for the supply or distribution of electric power H02B; installations of electric lines, cables or auxiliary apparatus H02G; printed means for providing electric connections to or between printed circuits H05K)

Notes

1. This subclass covers:

   - all kinds of contact-making disconnectible and non-disconnectible electric line connectors, 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.

2. This subclass does not cover mounting of connections in or 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 H05B3/08. Structural association of one part of a two-part coupling device with specific electric apparatus is classified with the apparatus e.g. association of cap with incandescent lamp is covered by subclass H01K.

3. In this subclass, a contact in a coupling device is only regarded as an additional earth contact if this contact is clearly designed for that purpose.

4. General details are classified in groups H01R4/00, H01R9/00, H01R11/00.

H01R3/00 **Electrically-conductive connections not otherwise provided for**

H01R3/08 . for making connection to a liquid ([N: slip rings with liquid contacts H01R39/30; H01R39/64E]; electrodes for batteries or accumulators H01M)

H01R4/00 **Electrically-conductive connections between two or more conductive members in direct contact and means for effecting or maintaining such contact** (details of disengageable contacts of two-part coupling devices H01R13/00; two-part coupling devices H01R12/70, H01R24/00 - H01R33/00; flexible or turnable line connectors H01R35/00; non rotary current collectors H01R41/00) [C1104]

H01R4/01 . Connections using shape memory materials, e.g. shape memory metal [N0411]

H01R4/02 . Soldered or welded connections [N: (H01R4/62E, H01R4/72B, H01R12/59 take precedence)] [C1104]

H01R4/02B . . [N: between two or more cables or wires] [N9505]

H01R4/02B2 . . . [N: comprising preapplied solder] [N9505]

H01R4/02D . . [N: between cables or wires and terminals] [N9505]

H01R4/02D2 . . . [N: comprising preapplied solder] [N9505]

H01R4/02H . . [N: with built-in heat generating elements] [N9505]
H01R4/02K . . [N: comprising means for eliminating an insulative layer prior to soldering or welding] [N9505]
H01R4/02M . . [N: comprising means for positioning or holding the parts to be soldered or welded] [N9505]
H01R4/02P . . [N: comprising means for preventing flowing or wicking of solder or flux in parts not desired] [N9505]
H01R4/02W . . [N: Welded connections (H01R4/02B to H01R4/02P take precedence)] [N9505]

H01R4/04 . using electrically conductive adhesives

H01R4/06 . Riveted connections (by explosion H01R4/08)

H01R4/08 . effected by an explosion

H01R4/10 . effected solely by twisting, wrapping, bending, crimping, or other permanent deformation
H01R4/12 . . by twisting
H01R4/14 . . by wrapping
H01R4/16 . . by bending
H01R4/18 . . by crimping [N: (H01R4/01, H01R4/24F take precedence; for coaxial cables H01R9/05H)] [C1104]
H01R4/18F . . . [N: for flat conductive elements, e.g. flat cables (H01R4/01 takes precedence)] [N9410]
H01R4/18H . . . [N: for cylindrical elongated bodies, e.g. cables having circular cross-section (H01R4/01 takes precedence)] [N9410]
H01R4/18H2 . . . . [N: comprising a U-shaped wire-receiving portion] [N9410]
H01R4/18H2B . . . . . [N: combined with a U-shaped insulation-receiving portion] [N9410]
H01R4/18H4 . . . . [N: using a body comprising a plurality of cable-accommodating recesses or bores] [N9410]
H01R4/18K . . . [N: combined with soldering or welding] [N9410]
H01R4/18M . . . [N: having an uneven wire-receiving surface to improve the contact] [N9410]
H01R4/20 . . . using a crimping sleeve [N: (H01R4/01 takes precedence)]
H01R4/20B . . . . [N: having an uneven wire-receiving surface to improve the contact] [N9511]
H01R4/20B2 . . . . . [N: with transversal grooves or threads] [N9511]

H01R4/22 . End caps, i.e. of insulating or conductive material for covering or maintaining connections between wires entering the cap from the same end

H01R4/24 . Needle-point, slotted plate, or analogous contact members penetrating insulation or cable strands [N: (for multiphase cables H01R9/03D; for coaxial cables H01R9/053; for flat cables H01R12/67)] [C1104]
H01R4/24A . . [N: having at least one tooth, prong, pin or needle penetrating the insulation (penetration into a wire end in axial direction H01R4/50E)]
H01R4/24A2 . . . [N: actuated by means of at least one clamping screw (clamped connection using a screw H01R4/30)]
H01R4/24A4 . . . [N: actuated by means of an insulating cam or wedge]
H01R4/24B . . [N: having insulation cutting edges e.g. tuning fork type, slotted plate type, wire type]

H01R4/24B3 . . . [N: the contact member being a single slotted plate]
H01R4/24B3C . . . . [N: flat plate; multi-layered flat plate]
H01R4/24B3C1 . . . . . [N: mounted in an insulating base]
H01R4/24B3C1B . . . . . [N: one part of the base being movable to push the cable into the slot]
H01R4/24B3D . . . . [N: curved plate]
H01R4/24B3D1 . . . . . [N: being tube-shaped with a single slot]
H01R4/24B6 . . . [N: the contact member being provided with additional means acting on the wire e.g. a second insulation penetrating means, strain relief means, wire cutting knife]
H01R4/24B6B . . . . [N: with at least two slotted flat portions]
H01R4/24B6B1 . . . . . [N: being linked in such a way as to form a U-shape, the branches of which are slotted]
H01R4/24B6C . . . . [N: the contact member having a slotted tubular configuration, e.g. slotted tube-end]
H01R4/24B6D . . . . [N: the contact member having a slotted bent configuration, e.g. slotted bight]
H01R4/24B6E . . . . [N: the contact member having a channel-shaped part, the opposite sidewalls of which comprise insulation cutting means]
H01R4/24C . . [N: penetrating insulation by means of a spring, e.g. a coil spring]
H01R4/24D . . [N: penetrating insulation by means of screw, nut or bolt]
H01R4/24D1 . . . [N: penetrating area under the head of the screw]
H01R4/24D2 . . . [N: penetrating area under the tip of the screw]
H01R4/24D3 . . . [N: penetrating by means of the thread of the screw]
H01R4/24E . . [N: penetrating insulation by means of a conductive cam or wedge]
H01R4/24F . . [N: Insulation penetration combined with permanent deformation of contact member, e.g. crimping]

H01R4/26 . 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 ([N: H01R4/18M, H01R4/20B, H01R4/50S take precedence]; using shape memory materials H01R4/01) [C1104]

H01R4/28 . Clamped connections, spring connections (made by means of terminals specially adapted for contact with, or insertion into, printed circuits H01R 12/00) [C1104]
H01R4/30 . . utilising a screw or nut clamping member (H01R4/50 takes precedence; utilising a clamping member acted on by screw or nut H01R4/38; [N: for coaxial cables H01R9/05P])
H01R4/30B . . . [N: having means for preventing complete unscrewing of screw or nut (measures against loss of bolt or nut in general F16B41/00B)]
H01R4/30D . . . [N: having means for preventing loosening of screw or nut, e.g. vibration-proof connection (locking of screw or nut in general F16B39/00 and subgroups)]
H01R4/30F . . . [N: having means for improving contact]
H01R4/30H . . . [N: having means for facilitating engagement of conductive member or for holding it in position]
H01R4/30K . . . [N: characterised by the thread of the screw or nut (shapes of thread, special thread forms F16B33/02)]
H01R4/30M . . . [N: Conductive members located parallel to axis of screw]
H01R4/32 . . . Conductive members located in slot or hole in screw

H01R4/34 . . . Conductive members located under head of screw
H01R4/36 . . . Conductive members located under tip of screw
H01R4/36B . . . . [N: with intermediate part between tip and conductive member]
H01R4/36B2 . . . . . [N: intermediate part attached to the tip of the screw] [N0601]
H01R4/38 . . utilising a clamping member acted on by screw or nut (H01R4/50 takes precedence)
H01R4/40 . . . Pivotable clamping member
H01R4/42 . . . Clamping area to one side of screw only
H01R4/44 . . . Clamping areas on both sides of screw
H01R4/46 . . . Clamping area between two screws placed side by side
H01R4/48 . . utilising a spring, clip, or other resilient member (H01R4/52 takes precedence)
H01R4/48B . . . [N: using a leaf spring]
H01R4/48B2 . . . . [N: adapted for axial insertion of a wire end] [N9705]
H01R4/48B2B . . . . . [N: with an opening in the housing for insertion of a release tool] [N9705]
H01R4/48B2D . . . . . [N: with integral release means] [N9705]
H01R4/48B4 . . . . [N: insertion of a wire only possible by pressing on the spring] [N9705]
H01R4/48H . . . [N: using a wire spring]
H01R4/48H2 . . . . [N: Coil spring] [N9705]
H01R4/48H2B . . . . . [N: axially compressed to retain wire end] [N9705]
H01R4/48N . . . [N: using a louver type spring]
H01R4/48Q . . . [N: spring force increased by screw, cam, wedge, or other fastening means]
H01R4/50 . . utilising a cam, wedge, cone or ball [N: also combined with a screw]
H01R4/50B . . . [N: using rotatable cam]
H01R4/50C . . . [N: using a cone] [N9706]
H01R4/50C2 . . . . [N: combined with a threaded ferrule operating in a direction parallel to the conductor] [N9706]
H01R4/50E . . . [N: using wedge or pin penetrating into the end of a wire in axial direction of the wire]
H01R4/50G . . . [N: using a tapered groove] [N9706]
H01R4/50K . . . [N: using an excentric element] [N9706]
H01R4/50M . . . [N: using a ball] [N9706]
H01R4/50P . . . [N: mounted in an insulating housing having a cover providing clamping force] [N9706]
H01R4/50S . . . [N: having an uneven wire receiving surface to improve the contact] [N9706]
H01R4/50W . . . [N: using a wedge] [N9706]
H01R4/50W2 . . . . [N: combined with a screw] [N9706]
H01R4/52 . . . which is spring loaded

H01R4/54 . [N: IPC6] Bayonet or keyhole

H01R4/56 . One conductor screwing into another

H01R4/58 . characterised by the form or material of the contacting members (H01R 4/01 takes precedence) [C1104]
H01R4/60 . . Connections between or with tubular conductors (H01R4/56 takes precedence)

H01R4/62 . . Connections between conductors of different materials; Connections between or with aluminium or steel-core aluminium conductors (H01R4/68 takes precedence)

H01R4/62E . . . [N: Soldered or welded connections]

H01R4/64 . . Connections between or with conductive parts having primarily a non-electric function, e.g. frame, casing, rail

H01R4/64B . . . [N: for rigid cylindrical bodies]

H01R4/64D . . . [N: for cables or flexible cylindrical bodies]

H01R4/66 . . Connections with the terrestrial mass, e.g. earth plate, earth pin

H01R4/68 . . Connections to or between superconductive connectors

H01R4/70 . Insulation of connections (end caps H01R4/22)

H01R4/72 . . using a heat shrinking insulating sleeve (heat recovarable plastics B29C61/00)

H01R4/72B . . . [N: Making a soldered electrical connection simultaneously with the heat shrinking]

H01R4/72D . . . [N: Making a non-soldered electrical connection simultaneously with the heat shrinking]

H01R9/00 **Connectors and connecting arrangements providing a plurality of mutually insulated connections; Terminals or binding posts mounted upon a base or in a case; Terminal strips; Terminal blocks** (details of direct connections or connections using contact members penetrating insulation H01R4/00; [N: individual connecting parts H01R11/00;] specially adapted for printed circuits, flat or ribbon cables, or like generally planar structures H01R12/00; coupling devices H01R12/70, H01R24/00-H01R33/00; flexible or turnable line connectors H01R35/00) [C1104]

H01R9/03 . Connectors arranged to contact a plurality of the conductors of a multiconductor cable, [N: e.g. tapping connections]

H01R9/03D . . [N: for multiphase cables, e.g. with contact members penetrating insulation of a plurality of conductors (insulation penetrating contact members in general H01R4/24)]

H01R9/03S . . [N: for shielded multiconductor cable (coaxial cables with one conductor surrounded by shield H01R9/05; flat shielded cables H01R12/59S)] [N0705] [M1201]

[N: **WARNING** [N1103]
This group and it subgroups are no longer used for the classification of new documents as from January 01, 2011. The backlog of this group and its subgroups is being continuously reclassified to H01R13/658 and its subgroups
]

H01R9/03S1 . . . [N: connection of the shield to an additional grounding conductor] [N0705]

H01R9/03S2 . . . [N: twisted pair surrounded by shield] [N0705]

H01R9/03S3 . . . [N: connection to shield by action of a resilient member] [N0705]

H01R9/03S5 . . . [N: each conductor being individually surrounded by shield] [N0705]

H01R9/05 . . for coaxial cables

H01R9/05B . . . [N: Connection between two cable ends]

H01R9/05C . . . [N: Connection between three or more cable ends]

H01R9/05D . . . [N: Tapping connections]

H01R9/05E . . . [N: Connections to an additional grounding conductor]

H01R9/05F . . . [N: Connection to a rigid planar substrate, e.g. printed circuit board]

H01R9/05H . . . [N: Connection to outer conductor by crimping or by crimping ferrule (in general H01R4/18)]

H01R9/05P . . . [N: Connection to outer conductor by action of a nut (in general H01R4/30)]

H01R9/05R . . . [N: Connection to outer conductor by action of a clamping member, e.g. screw fastening means (H01R9/05F takes precedence; in general H01R4/38)]

H01R9/05T . . . [N: Connection to outer conductor by action of a resilient member, e.g. spring (in general H01R4/48)]

H01R9/053 . . . using contact members penetrating insulation [N0411]

H01R9/07 . . for flat or ribbon cables [N: or flexible printed circuits]

[N: **WARNING**This group and it subgroups is no longer used for the classification of new documents as from January 01, 2011. The backlog of this group and it subgroups is being continuously reclassified to H01R12/00, H01R12/50 and their respective subgroups.
[N1103]
]

H01R9/07B . . . [N: with exposed conductor portions for connection]

H01R9/07B1 . . . . [N: to another flat or ribbon cable or flexible printed circuit, e.g. by pressing contact areas against each other]

H01R9/07B1B . . . . . [N: by means of interconnecting elements]

H01R9/07B2 . . . . [N: to a cable of another type, e.g. round section cable]

H01R9/07B3 . . . . [N: to conductive elements on a rigid planar substrate, e.g. to a printed circuit board]

H01R9/07B4 . . . . [N: to contact elements]

H01R9/07D . . . [N: with contacts penetrating cable insulation for making contact with conductors, e.g. needle points (in general H01R4/24)]

H01R9/07D1 . . . . [N: with contacts having at least a slotted plate for penetration of cable insulation, e.g. insulation displacement contacts for round conductor flat cables (in general H01R4/24B)]

H01R9/07D1B . . . . . [N: to another flat or ribbon cable or flexible printed circuit, e.g. tapping connection]

H01R9/07D2 . . . . [N: with permanent deformation of contacts, e.g. crimping contacts for rectangular conductor flat cables (in general H01R4/24F)]

H01R9/07S . . . [N: for shielded flat cable] [N0705]

H01R9/07S1 . . . . [N: connection of the shield to an additional grounding conductor] [N0705]

H01R9/07S2 . . . . [N: each conductor being individually surrounded by shield, e.g. multiple coaxial cables in flat structure] [N0705]

H01R9/09 . Connectors for printed circuits (printed connections to or between printed circuits H05K); [N: Terminals, terminal strips, terminal blocks or bases for printed circuits]

[N: **WARNING**This group and it subgroups is no longer used for the classification of new documents as from January 01, 2011. The backlog of this group and it subgroups is being continuously reclassified to H01R12/00, H01R12/50 and their respective subgroups.
[N1103]
]

H01R9/09B . . [N: terminals for or connections to a printed circuit board (H01R9/05F takes precedence)]

H01R9/09B1 . . . [N: Terminals having a press fit or a compliant portion and a shank passing through a hole in the printed circuit board]

H01R9/09B3 . . . [N: Terminal blocks providing connections to wires or cables] [N9603]
H01R9/09B5 . . . [N: Connections on the surface of the printed circuit]
H01R9/09F . . [N: Connections between two or more printed circuits]
H01R9/09F3 . . . [N: by an interconnection through aligned holes in the boards or multilayer board]
H01R9/09F5 . . . [N: the printed circuits being on the same board (with plated through holes H05K3/42)]

H01R9/11 . End pieces for multiconductor cables supported by the cable and for facilitating connections to other conductive members, [N: e.g. for liquid cooled welding cables]

H01R9/15 . Connectors for wire wrapping

H01R9/16 . Fastening of connecting parts to base or case; Insulating connecting parts from base or case (lead-through insulators H01B17/26)
H01R9/18 . . Fastening by means of screw or nut
H01R9/20 . . Fastening by means of rivet or eyelet

H01R9/22 . Bases, e.g. strip, block, panel [N: (for printed circuits H01R12/50)] [C1104]
H01R9/22H . . [N: Insulating enclosures for terminals (for switches H01H9/02D)] [N9603]
H01R9/22S . . [N: comprising a plurality of conductive flat strips providing connection between wires or components (H01R9/24D takes precedence)] [N9603]
H01R9/24 . . Terminal blocks
H01R9/24B . . . [N: Modular blocks (H01R9/26 takes precedence)]
H01R9/24C . . . [N: Means for guiding or retaining wires or cables connected to terminal blocks] [N9603]
H01R9/24D . . . [N: Structural association with built-in components (for coupling parts H01R13/66)] [N9603]
H01R9/24D2 . . . . [N: with built-in switch] [N9603]
H01R9/24D4 . . . . [N: with built-in overvoltage protection] [N9603]
H01R9/24D6 . . . . [N: with built-in fuse] [N9603]
H01R9/24E . . . [N: Electrical interconnections between terminal blocks] [N9603]
H01R9/24E2 . . . . [N: using a planar conductive structure, e.g. printed circuit board] [N9603]
H01R9/24F . . . [N: Means facilitating correct wiring, e.g. marking plates, identification tags] [N9603]
H01R9/24G . . . [N: specially adapted for ground connection] [N9603]
H01R9/24P . . . [N: Terminal blocks structurally associated with plugs or sockets] [N9603]
H01R9/26 . . . Clip-on terminal blocks for side-by-side rail- or strip-mounting
H01R9/26B . . . . [N: Fastening means for mounting on support rail or strip (H01R9/26G takes precedence; for switch or other electrical device H02B1/04C)] [C9504]
H01R9/26C . . . . [N: End clamping members]
H01R9/26D . . . . [N: with built-in electrical component] [C9901]
H01R9/26D2 . . . . . [N: with built-in switch] [N9901]
H01R9/26D4 . . . . . [N: with built-in overvoltage protection] [N9901]
H01R9/26D6 . . . . . [N: with built-in fuse] [N9901]
H01R9/26D8 . . . . . [N: with built-in data-bus connection] [N9901]

H01R9/26D10 . . . . . [N: with built-in test-points] [N9901]
H01R9/26E . . . . [N: Electrical interconnections between two blocks, e.g. by means of busbars]
H01R9/26F . . . . [N: Marking plates or tabs]
H01R9/26G . . . . [N: with ground wire connection to the rail (in general H01R4/64)] [N9504]
H01R9/28 . . Terminal boards

H01R11/00 **Connectors providing two or more spaced connecting locations for conductive members which are thereby interconnected; End pieces for wires or cables, supported by the wire or cable and for facilitating electrical connection to some other wire, terminal, or conductive member (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)** [C1104]

H01R11/01 . characterised by the form or arrangement of the conductive interconnection between the connecting locations

H01R11/03 . characterised by the relationship between the connecting locations (H01R11/11 takes precedence)
H01R11/05 . . the connecting locations having different types of direct connections
H01R11/07 . . the connecting locations being of the same type but different sizes
H01R11/09 . . the connecting locations being identical

H01R11/11 . End pieces or tapping pieces for wires, supported by the wire and for facilitating electrical connection to some other wire, terminal or conductive member (H01R11/01 takes precedence; for multiconductor cables H01R9/11)
H01R11/12 . . End pieces terminating in an eye, hook, or fork
H01R11/14 . . . the hook being adapted for hanging on overhead or other suspended lines, e.g. hot line clamp
H01R11/15 . . . . . Hook in the form of a screw clamp
H01R11/16 . . End pieces terminating in a soldering tip or socket
H01R11/18 . . End pieces terminating in a probe
H01R11/20 . . End pieces terminating in a needle point or analogous contact for penetrating insulation or cable strands
H01R11/22 . . End pieces terminating in a spring clip
H01R11/24 . . . with gripping jaws, e.g. crocodile clip
H01R11/26 . . End pieces terminating in a screw clamp, screw or nut
H01R11/28 . . End pieces consisting of a ferrule or sleeve
H01R11/28B . . . [N: for connections to batteries]
H01R11/28B2 . . . . [N: comprising means for facilitating engagement or disengagement, e.g. quick release terminal]
H01R11/28B4 . . . . [N: Bolt, screw or threaded ferrule parallel to the battery post]
H01R11/28B6 . . . . [N: comprising means for preventing corrosion, e.g. covers, enclosures filled with gel]
H01R11/28B8 . . . . [N: Battery post and cable secured by the same locking means]
H01R11/28B10 . . . . [N: having means for improving contact between battery post and clamping

member, e.g. uneven interior surface]

H01R11/28B12 . . . . [N: Intermediate parts between battery post and cable end piece]

H01R11/28B14 . . . . [N: Interconnections between batteries]

H01R11/28B16 . . . . [N: characterised by the shape or the structure of the battery post]

H01R11/30 . . End pieces held in contact by a magnet

H01R11/32 . . End pieces with two or more terminations

H01R12/00 **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 H05K1/11) [N1103]

[N: **WARNING**Not complete pending completion of a reclassification; see also groups H01R9/07, H01R9/09, H01R23/66, H01R23/68, H01R23/70, H01R23/72 and their respective subgroups
[N1103]
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H01R12/50 . Fixed connections [N1103]

[N: **WARNING**This group and its subgroups are not complete pending completion of a reclassification; see also groups H01R9/07, H01R9/09 and their respective subgroups [N1103]
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H01R12/51 . . for rigid printed circuits or like structures [N1103]

H01R12/51B . . . [N: Terminal blocks providing connections to wires or cables] [N1103]

H01R12/52 . . . connecting to other rigid printed circuits or like structures [N1103]

H01R12/52B . . . . [N: by an interconnection through aligned holes in the boards or multilayer board] [N1103]

H01R12/52D . . . . [N: the printed circuits being on the same board (with plated through holes H05K3/42)] [N1103]

H01R12/53 . . . connecting to cables except for flat or ribbon cables [N1103]

H01R12/55 . . . characterized by the terminals [N1103]

H01R12/57 . . . . surface mounting terminals [N1103]

H01R12/58 . . . . terminals for insertion into holes [N1103]

H01R12/58B . . . . . [N: Terminals having a press fit or a compliant portion and a shank passing through a hole in the printed circuit board] [N1103]

H01R12/59 . . for flexible printed circuits, flat or ribbon cables or like structures [N1103]

H01R12/59C . . . [N: connections to contact elements] [N1103]

H01R12/59S . . . [N: for shielded flat cable] [N1103]

H01R12/59S1 . . . . [N: Connection of the shield to an additional grounding conductor, e.g. drain wire] [N1103]

H01R12/59S2 . . . . [N: Each conductor being individually surrounded by shield, e.g. multiple coaxial cables in flat structure] [N1103]

H01R12/61 . . . connecting to flexible printed circuits, flat or ribbon cables or like structures

N1103]

H01R12/61B . . . . [N: by means of interconnecting elements] [N1103]

H01R12/61B1 . . . . . [N: having contacts penetrating insulation for making contact with conductors, e.g. needle points (in general H01R4/24)] [N1103]

H01R12/62 . . . connecting to rigid printed circuits or like structures [N1103]

H01R12/63 . . . connecting to another shape cable [N1103]

H01R12/65 . . . characterized by the terminal [N1103]

H01R12/67 . . . . insulation penetrating terminals [N1103]

H01R12/67B . . . . . [N: with contacts having at least a slotted plate for penetration of cable insulation, e.g. insulation displacement contacts for round conductor flat cables (in general H01R4/24B)] [N1103]

H01R12/68 . . . . . comprising deformable portions [N1103]

H01R12/69 . . . . deformable terminals e.g. crimping terminals [N1103]

H01R12/70 . Coupling devices [N1103]

[N: **WARNING**This group and its subgroups are not complete pending completion of a reclassification; see also groups H01R23/66, H01R23/68, H01R23/70, H01R23/72 and their respective subgroups
[N1103]
]

H01R12/70A . . [N: Guiding, mounting, polarizing or locking means; Extractors (for printed circuit boards H05K)] [N1103]

H01R12/70A2 . . . [N: Locking or fixing a connector to a PCB] [N1103]

H01R12/70A2A . . . . [N: Snap means] [N1103]

H01R12/70A2A2 . . . . . [N: integral with the coupling device] [N1103]

H01R12/70A2A4 . . . . . [N: not integral with the coupling device] [N1103]

H01R12/70A2D . . . . [N: involving non-elastic deformation, e.g. plastic deformation, melting (H01R12/70A2P takes precedence)] [N1103]

H01R12/70A2G . . . . [N: Gluing or taping] [N1103]

H01R12/70A2H . . . . [N: with a fastener through a screw hole in the coupling device] [N1103]

H01R12/70A2L . . . . [N: characterised by the locating members] [N1103]

H01R12/70A2M . . . . [N: characterised by the movement, e.g. pivoting, camming or translating parallel to the PCB] [N1103]

H01R12/70A2P . . . . [N: Press fitting] [N1103]

H01R12/70A2S . . . . [N: Soldering or welding] [N1103]

H01R12/70C . . [N: for connection between PCB and component, e.g. display (plugging components in general H05K7/10)] [N1103]

H01R12/70E . . [N: Coupling device supported only by cooperation with PCB] [N1103]

H01R12/70P . . [N: Arrangements for power supply] [N1103]

H01R12/70S . . [N: with switch operated by engagement of PCB] [N1103]

H01R12/71 . . for rigid printing circuits or like structures [N1103]

H01R12/71C . . . [N: co-operating with the surface of the printed circuit or with a coupling device exclusively provided on the surface of the printed circuit (H01R12/72 takes precedence)] [N1106]

H01R12/71C2 . . . . [N: with contacts abutting directly the printed circuit; Button contacts therefore provided on the printed circuit] [N1106]

H01R12/71C4 . . . . [N: Coupling device provided on the PCB] [N1106]

H01R12/71C4A . . . . . [N: Contact members provided on the PCB without an insulating housing (contacts for abutting H01R12/71C2)] [N1106]

H01R12/72 . . . coupling with the edge of the rigid printed circuits or like structures [N1103]

H01R12/72B . . . . [N: cooperating directly with the edge of the rigid printed circuits] [N1103]

H01R12/72C . . . . [N: coupling devices mounted on the edge of the printed circuits] [N1106]

H01R12/72C2 . . . . . [N: containing contact members forming a right angle] [N1106]

H01R12/72C4 . . . . . [N: containing contact members presenting a contact carrying strip, e.g. edge-like strip] [N1106]

H01R12/72C6 . . . . . [N: Coupling devices presenting arrays of contacts] [N1106]

H01R12/72C8 . . . . . [N: Coupling devices without an insulating housing provided on the edge of the PCB] [N1106]

H01R12/73 . . . . connecting to other rigid printed circuits or like structures [N1103]

H01R12/73B . . . . . [N: Printed circuits being in the same plane] [N1103]

H01R12/73D . . . . . [N: Printed circuits including an angle between each other] [N1103]

H01R12/73D2 . . . . . [N: Printed circuits being substantially perpendicular to each other (for printed connections H05K3/36C takes precedence)] [N1103]

H01R12/75 . . . connecting to cables except for flat or ribbon cables [N1103]

H01R12/77 . . for flexible printed circuits, flat or ribbon cables or like structures [N1103]

H01R12/77D . . . [N: Details] [N1103]

H01R12/77D2 . . . . [N: Strain relieving means] [N1103]

H01R12/77D4 . . . . [N: Retainers] [N1103]

H01R12/77D6 . . . . [N: Ground or shield arrangements (in general H01R13/658)] [N1103]

H01R12/77P . . . [N: Coupling parts carrying pins, blades or analogous contacts (H01R12/78, H01R12/79 take precedence)] [N1103]

H01R12/77S . . . [N: Coupling parts carrying sockets, clips or analogous counter-contacts (H01R12/78, H01R12/79 take precedence)] [N1103]

H01R12/78 . . . connecting to other flexible printed circuits, flat or ribbon cables or like structures [N1103]

H01R12/79 . . . connecting to rigid printed circuits or like structures [N1103]

H01R12/81 . . . connecting to another cable except for flat or ribbon cable [N1103]

H01R12/82 . . connected with low or zero insertion force [N1103]

H01R12/83 . . . connected with pivoting of printed circuits or like after insertion [N1103]

H01R12/85 . . . contact pressure producing means, contacts activated after insertion of printed circuits or like structures [N1103]

H01R12/85D . . . . [N: Fluid activated] [N1103]

H01R12/85E . . . . [N: activated by shape memory material] [N1103]

H01R12/87 . . . . acting automatically by insertion of rigid printed or like structures [N1103]

H01R12/88 . . . . acting manually by rotating or pivoting connector housing parts [N1103]

H01R12/89 . . . . acting manually by moving connector housing parts linearly e.g. slider [N1103]

H01R12/91 . . allowing relative movement between coupling parts e.g. floating or self aligning (for coupling devices not specially adapted for printed circuits, flat or ribbon cables, or like generally planar structures, H01R13/631B takes precedence) [N1103]

H01R13/00 **Details of coupling devices of the kinds covered by groups H01R 12/70 or H01R 24/00-H01R 33/00** [N: (electro-optical connectors G02B6/24)] [C1104]

H01R13/00C . [N: Electrical coupling combined with fluidic coupling]

H01R13/02 . Contact members
H01R13/02B . . [N: formed by the conductors of a cable end] [N9508]
H01R13/03 . . characterised by the material, e.g. plating, or coating materials
H01R13/03B . . . [N: Plated dielectric material]
H01R13/04 . . Pins or blades for co-operation with sockets
H01R13/05 . . . Resilient pins or blades (carrying separate resilient parts H01R13/15)
H01R13/05B . . . . [N: co-operating with sockets having a circular transverse section]
H01R13/05E . . . . [N: co-operating with sockets having a rectangular transverse section]
H01R13/05H . . . . [N: co-operating with sockets having a square transverse section]
H01R13/08 . . . Resiliently-mounted rigid pins or blades
H01R13/10 . . Sockets for co-operation with pins or blades
H01R13/11 . . . Resilient sockets (carrying separate resilient parts H01R13/15)
H01R13/11B . . . . [N: co-operating with pins having a circular transverse section] [N0701]
H01R13/11D . . . . [N: forked sockets having two legs] [N0701]
H01R13/11E . . . . [N: co-operating with pins or blades having a rectangular transverse section] [N0701]
H01R13/11H . . . . [N: co-operating with pins or blades having a square transverse section] [N0701]
H01R13/115 . . . . U-shaped sockets having inwardly bent legs, e.g. spade type
H01R13/14 . . . Resiliently-mounted rigid sockets
H01R13/15 . . Pins, blades or sockets having separate spring member for producing or increasing contact pressure
H01R13/17 . . . with spring member on the pin
H01R13/18 . . . with the spring member surrounding the socket
H01R13/187 . . . with spring member in the socket
H01R13/193 . . Means for increasing contact pressure at the end of engagement of coupling part, [N: e.g. zero insertion force or no friction(combined with printed circuit boardsH01R23/68B)]
H01R13/20 . . Pins, blades, or sockets shaped, or provided with separate member, to retain co-operating parts together
H01R13/207 . . . by screw-in connection
H01R13/213 . . . by bayonet connection
H01R13/22 . . Contacts for co-operating by abutting
H01R13/24 . . . resilient; resiliently-mounted
H01R13/24A . . . . [N: characterized by the resilient means] [N1006]
H01R13/24A1 . . . . . [N: conductive elastomers] [N1006]
H01R13/24A3 . . . . . [N: using coil springs] [N1006]
H01R13/24A5 . . . . . [N: using meander springs] [N1006]
H01R13/24D . . . . [N: with opposite contact points, e.g. C beam] [N1006]
H01R13/24F . . . . [N: with a single cantilevered beam] [N1006]
H01R13/24H . . . . [N: by stamped-out resilient contact arm] [N1006]
H01R13/24K . . . . [N: consisting of at least two resilient arms contacting the same counterpart]

[N1006]

H01R13/24P . . . . [N: characterized by the contact point] [N1006]

H01R13/24P1 . . . . . [N: pin shaped] [N1006]

H01R13/24P3 . . . . . [N: spherical] [N1006]

H01R13/24P5 . . . . . [N: for contacting a ball] [N1006]

H01R13/24P7 . . . . . [N: multiple contact points] [N1006]

H01R13/26 . . Pin or blade contacts for sliding co-operation on one side only [N: (for modular jack type connectors H01R24/62)] [C1104]

H01R13/28 . . Contacts for sliding cooperation with identically-shaped contact, e.g. for hermaphroditic coupling devices [N: (H01R24/84 takes precedence)] [C1104]

H01R13/33 . . Contact members made of resilient wire

H01R13/35 . . for non-simultaneous co-operation with different types of contact member, e.g. socket co-operation with either round or flat pin [N: (H01R27/00 takes precedence)]

H01R13/40 . Securing contact members in or to a base or case; Insulating of contact members

H01R13/405 . . Securing in non-demountable manner, e.g. moulding, riveting

H01R13/41 . . . by frictional grip in grommet, panel or base

H01R13/415 . . . by permanent deformation of contact member

H01R13/42 . . Securing in a demountable manner

H01R13/422 . . . Securing in resilient one-piece base or case, [N: e.g. by friction]; One-piece base or case formed with resilient locking means

H01R13/422A . . . . [N: comprising integral flexible contact retaining fingers] [N9804]

H01R13/422A1 . . . . . [N: comprising two or more integral flexible retaining fingers acting on a single contact] [N9804]

H01R13/424 . . . Securing in base or case composed of a plurality of insulating parts having at least one resilient insulating part

H01R13/426 . . . Securing by a separate resilient retaining piece supported by base or case, e.g. collar [N: or metal contact-retention clip]

H01R13/428 . . . by resilient locking means on the contact members; by locking means on resilient contact members

H01R13/432 . . . . by stamped-out resilient tongue snapping behind shoulder in base or case

H01R13/434 . . . . by separate resilient locking means on contact member, e.g. retainer collar or ring around contact member

H01R13/436 . . . Securing a plurality of contact members by one locking piece [N: or operation] [C9410]

H01R13/436B . . . . [N: Insertion of locking piece perpendicular to direction of contact insertion] [C9410]

H01R13/436B2 . . . . . [N: comprising a temporary and a final locking position] [C9410]

H01R13/436D . . . . [N: Insertion of locking piece from the front] [C9410]

H01R13/436D2 . . . . . [N: comprising a temporary and a final locking position] [C9410]

H01R13/436F . . . . [N: Insertion of locking piece from the rear] [C9410]

H01R13/436F2 . . . . . [N: comprising a temporary and a final locking position] [C9410]

H01R13/44 . Means for preventing access to live contacts [N: (making use of a switch actuated by engagement of counterpart H01R13/703D)] [C9702]

H01R13/443 . . Dummy Plugs [N0004]

H01R13/447 . . Shutter or cover plate
H01R13/453 . . . Shutter or cover plate opened by engagement of counterpart
H01R13/453B . . . . [N: Rotating shutter]
H01R13/453D . . . . [N: Laterally sliding shutter]
H01R13/453F . . . . [N: Inwardly pivoting shutter]
H01R13/453H . . . . [N: Covers sliding or withdrawing in the direction of engagement]

H01R13/46 . Bases; Cases
H01R13/46F . . [N: Identification means, e.g. labels, tags, markings (H01R9/24F, H01R9/26F take precedence)] [N9704]
H01R13/50 . . formed as an integral body (H01R13/514 takes precedence)
H01R13/50A . . . [N: comprising an integral hinge or a frangible part] [N9804]
H01R13/502 . . composed of different pieces (H01R13/514 takes precedence)
H01R13/502A . . . [N: one or more pieces being of resilient material]
H01R13/504 . . . different pieces being moulded, cemented, welded, e.g. ultrasonic, or swaged together
H01R13/504C . . . . [N: different pieces being assembled by press-fit]
H01R13/506 . . . assembled by snap action of the parts
H01R13/508 . . . assembled by [N: a separate] clip or spring
H01R13/512 . . . assembled by screw or screws
H01R13/514 . . composed as a modular blocks or assembly, i.e. composed of co-operating parts provided with contact members or holding contact members between them
H01R13/516 . . Means for holding or embracing insulating body, e.g. casing, [N: hoods]
H01R13/518 . . . for holding or embracing several coupling parts, e.g. frames
H01R13/52 . . Dustproof, splashproof, drip-proof, waterproof, or flameproof cases
H01R13/52B . . . [N: Sealing means between parts of housing or between housing part and a wall, e.g. sealing rings]
H01R13/52D . . . [N: Sealing means between cable and housing, e.g. grommet (H01R13/52P1 takes precedence)]
H01R13/52D1 . . . . [N: having at least two cable receiving openings]
H01R13/52F . . . [N: Sealing between contact members and housing, e.g. sealing insert]
H01R13/52H . . . [N: Covers]
H01R13/52M . . . [N: characterised by the sealing material, e.g. gels or resins]
H01R13/52P . . . [N: Sealing means between coupling parts, e.g. interfacial seal]
H01R13/52P1 . . . . [N: having cable sealing means]
H01R13/52R . . . [N: for medical use]
H01R13/52T . . . [N: with evacuation of penetrating liquids]
H01R13/523 . . . for use under water
H01R13/527 . . . Flameproof cases (H01R13/70 takes precedence)
H01R13/53 . . Bases or cases for heavy duty; Bases or cases [N: for high voltage] with means for preventing corona or arcing
H01R13/533 . . Bases, cases made for use in extreme conditions, e.g. high temperature, radiation, vibration, corrosive environment, pressure (H01R13/52 takes precedence)

H01R13/56 . Means for preventing chafing or fracture of flexible leads at outlet from coupling part

H01R13/56A . . [N: Bending-relieving]
H01R13/56B . . [N: Torsion-relieving]
H01R13/56E . . [N: Traverse cable outlet or wire connection]

H01R13/58 . Means for relieving strain on wire connection, e.g. cord grip, [N: for avoiding loosening of connections between wires and terminals within a coupling device terminating a cable (for flat or ribbon cables H01R12/77D; for distribution boxes H02G3/06C)] [C1104]
H01R13/58B . . [N: comprising a separate cable clamping part (H01R13/58F takes precedence)] [N9505]
H01R13/58B2 . . . [N: formed by a metallic element crimped around the cable (H01R4/18H2B takes precedence)] [N9505]
H01R13/58B4 . . . [N: the cable clamping being achieved by mounting the separate part on the housing of the coupling device] [N9505]
H01R13/58B6 . . . [N: for cables passing through an aperture in a housing wall, the separate part being captured between cable and contour of aperture (in general H01B17/58D4)] [N9505]
H01R13/58C . . [N: the cable being clamped between assembled parts of the housing] [N9505]
H01R13/58C2 . . . [N: the means comprising additional parts captured between housing parts and cable] [N9505]
H01R13/58C4 . . . [N: the clamping part being flexibly or hingedly connected to the housing][N9505]
H01R13/58D . . [N: the cable being forced in a tortuous or curved path, e.g. knots in cable (H01R13/58C takes precedence)] [N9505]
H01R13/58E . . [N: specially adapted for accommodating various sized cables (H01R13/58C2 takes precedence)] [N9505]
H01R13/58F . . [N: allowing different orientations of the cable with respect to the coupling direction] [N9505]
H01R13/58G . . [N: the strain relief being achieved by molding parts around cable and connections] [N9505]
H01R13/585 . . Grip increasing with strain force
H01R13/59 . . Threaded ferrule or bolt operating in a direction parallel to the cable or wire
H01R13/595 . . Bolts operating in a direction transverse to the cable or wire

H01R13/60 . Means for supporting coupling part when not engaged

H01R13/62 . Means for facilitating engagement or disengagement of coupling parts or for holding them in engagement
H01R13/62A . . [N: Two-part coupling devices held in engagement by a magnet]
H01R13/621 . . Bolt, set screw or screw clamp
H01R13/621A . . . [N: using one or more bolts]
H01R13/622 . . Screw-ring or screw-casing (H01R13/623 takes precedence)
H01R13/623 . . Casing or ring with helicoidal groove
H01R13/625 . . Casing or ring with bayonet engagement
H01R13/627 . . Snap or like fastening
H01R13/627B . . . [N: Latching means integral with the housing (H01R13/627F, H01R13/627H, H01R13/627K take precedence)]
H01R13/627B1 . . . . [N: comprising a single latching arm]

H01R13/627B2 . . . . [N: comprising two latching arms]

H01R13/627D . . . [N: Latching arms not integral with the housing (H01R13/627F, H01R13/627H, H01R13/627K take precedence)]

H01R13/627F . . . [N: comprising one or more balls engaging in a hole or a groove]

H01R13/627H . . . [N: comprising annular latching means, e.g. ring snapping in an annular groove]

H01R13/627K . . . [N: comprising a pin snapping into a recess]

H01R13/629 . . Additional means for facilitating engagement or disengagement of coupling parts, e.g. aligning or guiding means, levers, gas pressure [N: electrical locking indicators, manufacturing tolerances (separate tools or apparatus H01R43/26)]

H01R13/629C . . . [N: comprising a camming member (H01R13/629L and H01R13/641 take precedence)] [N9602] [C0701]

H01R13/629C1 . . . . [N: U-shaped sliding element] [N0812]

H01R13/629C2 . . . . [N: Single camming plate] [N0812]

H01R13/629C3 . . . . [N: Pair of camming plates] [N0812]

H01R13/629C4 . . . . [N: Comprising supplementary or additional locking means] [N0812]

H01R13/629L . . . [N: Comprising exclusively pivoting lever] [N9511] [C0812]

H01R13/629L1 . . . . [N: Pivoting lever comprising own camming means] [C0812] [N0812]

H01R13/629L2 . . . . [N: Pivoting lever comprising gear teeth] [N0812]

H01R13/629L3 . . . . [N: Pivoting lever comprising means indicating incorrect coupling of mating connectors] [N0812]

H01R13/629L4 . . . . [N: Pivoting lever comprising supplementary/additional locking means] [N0812]

H01R13/629L5 . . . . [N: Pivoting lever having extendable handle] [N0812]

H01R13/629L6 . . . . [N: Comprising two pivoting levers] [N0812]

H01R13/629L6A . . . . . [N: Wherein the pivoting levers are two lever plates] [N0812]

H01R13/629M . . . [N: Pivoting levers actuating linearly camming means] [N0812]

H01R13/629P . . . [N: Linear camming means or pivoting lever for connectors for flexible or rigid printed circuit boards, flat or ribbon cables] [N0812]

H01R13/629P1 . . . . [N: Lever acting directly on flexible or rigid printed circuit boards, flat or ribbon cables, e.g. recess provided to this purposeon the surface or edge of the flexible or rigid printed circuit boards, flat or ribbon cables] [N0812]

H01R13/629P2 . . . . [N: Lever acting on a connector mounted onto the flexible or rigid printed circuit boards, flat or ribbon cables] [N0812]

H01R13/631 . . . for engagement only

H01R13/631B . . . . [N: allowing relative movement between coupling parts, e.g. floating connection (for coupling devices specially adapted for printed circuits, flat or ribbon cables, or like generally planar structures, H01R12/91 takes precedence)] [C1103]

H01R13/633 . . . for disengagement only [N: (in combination with safety switch H01R13/713B)]

H01R13/633A . . . . [N: comprising a handle] [N9508]

H01R13/635 . . . . by mechanical pressure, e.g. spring force

H01R13/637 . . . . by fluid pressure, e.g. explosion

H01R13/639 . . Additional means for holding or locking coupling parts together, after engagement, [N: e.g. separate keylock, retainer strap]

H01R13/639B . . . [N: for extension cord]

H01R13/639D . . . [N: for wall or panel outlets]

H01R13/639E . . . [N: with means for preventing unauthorised use]

H01R13/64 . Means for preventing incorrect coupling

H01R13/641 . . by indicating incorrect coupling; by indicating correct or full engagement [N0411]

H01R13/642 . . by position or shape of contact members

H01R13/645 . . by exchangeable elements on case or base

H01R13/645B . . . [N: comprising pin-shaped elements, capable of being orientated in different angular positions around their own longitudinal axes, e.g. pins with hexagonal base] [N9504]

H01R13/645D . . . [N: comprising keying elements at different positions along the periphery of the connector] [N9504]

H01R13/646 . Specially adapted for high-frequency, e.g. structures providing an impedance match or phase match (non-coaxed protective earth or shield arrangements H01R13/648 -H01R13/6599; coaxed connectors specifically adapted for high frequency H01R24/40- H01R24/56) [N0701] [C1103]

[N: **WARNING** [N1103]
This group and its subgroups are not complete pending completion of a reclassification, see also H01R9/03S2, H01R13/66D2, H01R17/12H2, H01R23/00B, H01R23/68D, H01R23/68D2
]

H01R13/6461 . . Means for preventing cross-talk [N1103]

H01R13/6463 . . . using twisted pairs of wires [N1103]

H01R13/6464 . . . by adding capacitive elements [N1103]

H01R13/6466 . . . . on substrates, e.g. PCBs [Printed Circuit Boards] [N1103]

H01R13/6467 . . . by cross-over of signal conductors [N1103]

H01R13/6469 . . . . on substrates [N1103]

H01R13/6471 . . . by special arrangement of ground and signal conductors, e.g. GSGS [Ground-Signal-Ground-Signal] [N1103]

H01R13/6473 . . Impedance matching [N1103]

H01R13/6474 . . . by variation of conductive properties, e.g. by dimension variations [N1103]

H01R13/6476 . . . . by making an aperture, e.g. a hole [N1103]

H01R13/6477 . . . by variation of dielectric properties [N1103]

H01R13/648 . Protective earth or shield arrangements on coupling devices (coaxially arranged shields H01R 24/38) [N: e.g. anti-static shielding] [C1103]

H01R13/648B . . [N: Electrostatic discharge protection (in general H05F1/00, for electric apparatus H05K9/00F)] [N9511]

H01R13/652 . . with earth pin, blade or socket

H01R13/655 . . with earth brace

H01R13/658 . . High frequency shielding arrangements, e.g. against EMI [Electro-Magnetic Interference] or EMP [Electro-Magnetic Pulse] [N: (coaxial coupling devices specially adapted for high frequency H01R24/40; for flat or ribbon cable connectors H01R12/77D4; for coaxial cable H01R9/05)] [C1103]

[N: **WARNING** [N1103]
This group is not complete pending reclassification, see also H01R9/03S, H01R13/658, H01R23/68D and their respective subgroups
]

H01R13/658B . . . [N: with resilient grounding means]

[N: **WARNING** [N1103]
This group is no longer used for the classification of new documents as from January 01, 2011. The backlog of this group is being continuously reclassified to H01R13/6582 and H01R13/6583
]

H01R13/658D . . . [N: using dielectric material made conductive, e.g. plastics material coated with metal]

[N: **WARNING** [N1103]
This group is no longer used for the classification of new documents as from January 01, 2011. The backlog of this group is being continuously reclassified to H01R13/6599
]

H01R13/658E . . . [N: and comprising shielding between neighboring signal paths] [N9505]

[N: **WARNING** [N1103]
This group is no longer used for the classification of new documents as from January 01, 2011. The backlog of this group is being continuously reclassified to H01R13/6585 and H01R13/6586
]

H01R13/6581 . . . Shield structure [N1103]

H01R13/6582 . . . . with resilient means for engaging mating connector [N1103]

H01R13/6583 . . . . . with separate conductive resilient members between mating shield members [N1103]

H01R13/6584 . . . . . formed by conductive elastomeric members, e.g. flat gaskets or O-rings [N1103]

H01R13/6585 . . . . Shielding material individually surrounding or interposed between mutually spaced contacts [N1103]

H01R13/6586 . . . . . for separating multiple connector modules [N1103]

H01R13/6587 . . . . . for mounting on PCBs [N1103]

H01R13/6588 . . . . . with through openings for individual contacts [N1103]

H01R13/6589 . . . . . with wires separated by conductive housing parts [N1103]

H01R13/659 . . . . with plural ports for distinct connectors [N1103]

H01R13/6591 . . . Specific features or arrangements of connection of shield to conductive members [N1103]

H01R13/6592 . . . . the conductive member being a shielded cable [N1103]

H01R13/6593 . . . . . the shield being composed of different pieces [N1103]

H01R13/6594 . . . . the shield being mounted on a PCB and connected to conductive members [N1103]

H01R13/6595 . . . . . with separate members fixing the shield to the PCB [N1103]

H01R13/6596 . . . . the conductive member being a metal grounding panel [N1103]

H01R13/6597 . . . . the conductive member being a contact of the connector [N1103]

H01R13/6598 . . . Shield material [N1103]

H01R13/6599 . . . . Dielectric material made conductive, e.g. plastic material coated with metal [N1103]

H01R13/66 . Structural association with built-in electrical component (Coupling devices having concentrically or coaxially-arranged contacts H01R 24/38-24/56) [C1103]

H01R13/66B . . [N: with built-in single component (H01R13/68, H01R13/70 take precedence)]
H01R13/66B2 . . . [N: with resistor]
H01R13/66B4 . . . [N: with capacitive component]
H01R13/66B6 . . . [N: with inductive component, e.g. transformer]
H01R13/66B8 . . . [N: with diode (with LED H01R13/717L)] [C0801]
H01R13/66D . . [N: with built-in electronic circuit (H01R13/70, H01R13/719 take precedence)]
H01R13/66D2 . . . [N: on printed circuit board (H01R13/66D4 to H01R13/66D10 take precedence)]

[N: **WARNING** [N1103]
This group is no longer used for the classification of new documents as from January 01, 2011. The backlog of this group is being continuously reclassified to H01R13/6466 and H01R13/6469
]

H01R13/66D4 . . . [N: with built-in overvoltage protection]
H01R13/66D6 . . . [N: with built-in power supply]
H01R13/66D8 . . . [N: with built-in sensor]
H01R13/66D10 . . . [N: with built-in signalling means (H01R13/717 takes precedence)]
H01R13/68 . . with built-in fuse

[N: **WARNING** [N1103]
The subgroups of H01R13/68 are not complete pending completion of a reclassification, see also this group
]

H01R13/684 . . . the fuse being removable [N1103]
H01R13/688 . . . . with housing part adapted for accessing the fuse [N1103]
H01R13/692 . . . . . Turnable housing part [N1103]
H01R13/696 . . . the fuse being integral with the terminal, e.g. pin or socket [N1103]
H01R13/70 . . with built-in switch
H01R13/70B . . . [N: the switch being actuated by an accessory, e.g. cover, locking member] [N9702]
H01R13/703 . . . operated by engagement or disengagement of coupling parts, [N: e.g. dual-continuity coupling part] (H01R13/71 takes precedence)
H01R13/703B . . . . [N: Shorting, shunting or bussing of different terminals interrupted or effected on engagement of coupling part, e.g. for ESD protection, line continuity] [N9702]
H01R13/703B2 . . . . . [N: making use of a separate bridging element directly cooperating with the terminals] [N9702]
H01R13/703B4 . . . . . [N: making use of elastic extensions of the terminals] [N9702]
H01R13/703B6 . . . . . [N: the terminals being in direct electric contact separated by double sided connecting element (for printed circuit boards H01R12/70S)] [N9702] [C1104]
H01R13/703C . . . . [N: comprising a separated limit switch] [N9702]
H01R13/703D . . . . [N: the switch being in series with coupling part, e.g. dead coupling, explosion proof coupling] [N9702]
H01R13/703D2 . . . . . [N: making use of a magnetically operated switch] [N9702]
H01R13/703D4 . . . . . [N: making use of a remote controlled switch, e.g. relais, solid state switch activated by the engagement of the coupling parts] [N9702]
H01R13/703F . . . . [N: the coupling part with coding means activating the switch to establish

different circuits] [N9702]

H01R13/707 . . . interlocked with contact members or counterpart

H01R13/71 . . . Contact members of coupling parts operating as switch, [N: e.g. linear or rotational movement required after mechanical engagement of coupling part to establish electrical connection] [C9702]

H01R13/713 . . . the switch being a safety switch [C9703]

H01R13/713B . . . . [N: having ejecting mechanisms]

H01R13/713G . . . . [N: with ground fault protector (H01R13/713B takes precedence)] [N9703]

H01R13/713T . . . . [N: with thermal interrupter (H01R13/713B takes precedence)] [N9703]

H01R13/717 . . with built-in light source [M1103]

H01R13/717C . . . [N: Conduits for light transmission] [N0801]

H01R13/717L . . . [N: Light emitting diodes (LEDs)] [N0801]

H01R13/717N . . . [N: filament or neon bulb] [N0801]

H01R13/719 . . specially adapted for high frequency, e.g. with filters [C1103]

[N: **WARNING** [N1103]
The subgroups of H01R13/719 are not complete pending completion of a reclassification, see also H01R13/646 and the respective subgroups
]

H01R13/7193 . . . with ferrite filters [N1103]

H01R13/7195 . . . with planar filters with openings for contacts [N1103]

H01R13/7197 . . . with filters integral with or fitted onto contacts, e.g. tubular filters [N1103]

H01R13/72 . Means for accommodating flexible lead within the holder [M1201]

H01R13/73 . Means for mounting coupling parts to apparatus or structures, e.g. to a wall

H01R13/74 . . Means for mounting coupling parts in openings of a panel

H01R13/74B . . . [N: using snap fastening means] [N9804]

H01R13/74B2 . . . . [N: integral with the housing] [N9804]

H01R13/74B4 . . . . [N: separate from the housing] [N9804]

H01R13/74D . . . [N: using a screw ring] [N9804]

H01R13/74F . . . [N: using one or more screws (H01R13/74D takes precedence)] [N9804]

H01R23/00 **Two-part coupling devices having four or more poles, with or without additional protective earth connection; Separate parts thereof**

[N: **WARNING**This group is no longer used for the classification of new documents as from January 01, 2011. The backlog of this group is being continuously reclassified to H01R24/00 and its subgroups. See also H01R107/00 as part of the indexing scheme associated with group H01R 24/00 and its subgroups, relating to the number of poles in a two-part coupling device.
[N1103]
]

H01R23/00B . [N: comprising means for reducing cross-talk, e.g. special layout of conductors between input and output pins (by shielding of neighboring signal paths H01R13/658E, H01R23/68D2; twisted pair cables H01B11/02; in line transmission systems H04B3/32; ground circuit layout on printed circuit boards H05K9/00B4B)] [N9504] [C9505]

[N: **WARNING** [N1103]
This group is no longer used for the classification of new documents as from January 01, 2011. The backlog of this group is being continuously reclassified to H01R13/6461, H01R13/6473 and their respective subgroups
]

H01R23/02 . [N: IPC6] having parallely-arranged contacts for sliding engagement with their counter-contacts

[N: **WARNING**This group and it subgroups is no longer used for the classification of new documents as from January 01, 2011. The backlog of this group and it subgroups is being continuously reclassified to H01R24/00 and its subgroups. See also H01R107/00 as part of the indexing scheme associated with group H01R 24/00 and its subgroups, relating to the number of poles in a two-part coupling device.
[N1103]
]

H01R23/02B . . [N: sliding engagement on one side only, e.g. modular jack type]

H01R23/10 . . wherein one coupling part is secured to wire or cable and the other part is secured to apparatus or structure

H01R23/26 . having concentrically or coaxially arranged contacts

[N: **WARNING**This group is no longer used for the classification of new documents as from January 01, 2011. The backlog of this group is being continuously reclassified to H01R24/38 and its subgroups. See also H01R107/00 as part of the indexing scheme associated with group H01R 24/00 and its subgroups, relating to the number of poles in a two-part coupling device.
[N1103]
]

H01R23/27 . Hermaphroditic coupling devices [N: (hermaphroditic contact members H01R13/28)]

[N: **WARNING**This group is no longer used for the classification of new documents as from January 01, 2011. The backlog of this group is being continuously reclassified to H01R24/84
[N1103]
]

H01R23/66 . for connection to or between flat or ribbon cables

[N: **WARNING**This group and it subgroups is no longer used for the classification of new documents as from January 01, 2011. The backlog of this group and it subgroups is being continuously reclassified to H01R12/00, H01R12/70 and their respective subgroups.
[N1103]
]

H01R23/66B . . [N: Details, e.g. strain relieving means, retainers]

H01R23/66B1 . . . [N: Earth or shield arrangements (in general H01R13/648)]

H01R23/66C . . [N: Coupling parts carrying pins, blades or analogous contacts (H01R23/66E, H01R23/66F take precedence)]

H01R23/66D . . [N: Coupling parts carrying sockets, clips or analogous countercontacts (H01R23/66E, H01R23/66F take precedence)]

H01R23/66E . . [N: for connection of flat or ribbon cables between each other, e.g. adaptors]

H01R23/66F . . [N: for connection of flat or ribbon cables to a printed circuit board]

H01R23/68 . [N: IPC6] for connection to or between printed circuits; [N: Non printed connecting arrangements of printed circuit boards (PCB's) (H01R23/66F takes precedence)]

[N: **WARNING**This group and it subgroups is no longer used for the classification of new documents as from January 01, 2011. The backlog of this group and it subgroups is being continuously reclassified to H01R12/00, H01R12/70 and their respective subgroups.
[N1103]
]

H01R23/68A . . [N: for connection between PCB and component, e.g. display (plugging components in general H05K7/10)]

H01R23/68B . . [N: with low or zero insertion force]

H01R23/68B2 . . . [N: and with pivoting of PCB after insertion]

H01R23/68B4 . . . [N: Contact pressure producing means activated after insertion of PCB] [N9712]

H01R23/68B4A . . . . [N: acting linearly (H01R23/68B4C, H01R23/68B4D and H01R23/68B4E take precedence)] [N9712]

H01R23/68B4B . . . . [N: acting by rotation or by pivoting (H01R23/68B4C, H01R23/68B4D and H01R23/68B4E take precedence)] [N9712]

H01R23/68B4C . . . . [N: acting automatically by insertion of PCB] [N9712]

H01R23/68B4D . . . . [N: fluid activated] [N9712]

H01R23/68B4E . . . . [N: activated by shape memory material] [N9712]

H01R23/68C . . [N: Arrangements for power supply bus-bars]

H01R23/68D . . [N: adapted for high frequency]

[N: **WARNING** [N1103]
This group and it subgroups are no longer used for the classification of new documents as from January 01, 2011. The backlog of this group and its subgroups is being continuously reclassified to H01R13/646, H01R13/658 and their respective subgroups
]

H01R23/68D2 . . . [N: and comprising shielding between neighboring signal paths] [N9505]

H01R23/68E . . [N: Coupling parts supported only by cooperation with PCB]

H01R23/68F . . [N: Connectors for contacting one or more arrays of pins or sockets mounted on a PCB (counterparts presenting such arrays H01R23/70K)]

H01R23/70 . . co-operating with the edge of the printed circuit or with a counterpart provided on the edge of the printed circuit [N: (H01R23/68B takes precedence); Counterparts therefor; Special features of the edge of the board]

H01R23/70A . . . [N: Guiding, mounting, polarizing or locking means; Extractors (for printed circuit boards H05K)]

H01R23/70A2 . . . . [N: locking or fixing a connector to a PCB] [N9605]

H01R23/70A2A . . . . . [N: Snap means] [N0404]

H01R23/70A2A2 . . . . . [N: integral with the coupling device] [N0404]

H01R23/70A2A4 . . . . . [N: not integral with the coupling device] [N0404]

H01R23/70A2D . . . . . [N: involving non-elastic deformation, e.g. plastic deformation, melting (H01R23/70A2P takes precedence)] [N0404]

H01R23/70A2G . . . . . [N: Gluing or taping] [N0404]

H01R23/70A2H . . . . . [N: with a fastener through a screw hole in the coupling device] [N0404]

H01R23/70A2L . . . . . [N: characterised by the locating members] [N0404]

H01R23/70A2M . . . . . [N: characterised by the movement, e.g. pivoting, camming or translating parallel to the PCB] [N0404]

H01R23/70A2P . . . . . [N: Press fitting] [N0404]

H01R23/70A2S . . . . . [N: Soldering or welding] [N0404]

H01R23/70B . . . [N: cooperating directly with the edge of the PCB]

H01R23/70K . . . [N: Counterparts, e.g. containing pins forming a right angle, mounted on the edge of the PCB]

H01R23/70K1 . . . . [N: Counterparts presenting a contact carrying strip, e.g. edge-like strip]

H01R23/70K2 . . . . [N: Counterparts presenting arrays of sockets]

H01R23/70K3 . . . . [N: Contact members without an insulating housing provided on the edge of the PCB]

H01R23/70S . . . [N: with switch operated by engagement of PCB] [N9702]

H01R23/72 . . [N: IPC6] co-operating with the surface of the printed circuit or with a counterpart provided on the surface of the printed circuit ([N: H01R23/68B], H01R23/70 take precedence)

H01R23/72B . . . [N: with contacts abutting directly the printed circuit; Button contacts therefor provided on the printed circuit]

H01R23/72K . . . [N: Counterparts provided on the PCB]

H01R23/72K3 . . . . [N: Contact members provided on the PCB without an insulating housing (contacts for abutting H01R23/72B)]

H01R24/00 **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 H01R12/00; specially adapted for supporting apparatus H01R33/00) [N1103]

[N: **Notes**In this group, it is desirable to add the indexing codes of groups H01R101/00 to H01R107/00
[N1103]
]

[N: **WARNING**This group and its subgroups are not complete pending reclassification; see also groups H01R15/00, H01R17/00, H01R19/00, H01R21/00, H01R21/02 and their respective subgroups, and H01R23/00, H01R23/26, H01R23/27
[N1103]
]

H01R24/00B . [N: requiring successive relative motions to complete the coupling, e.g. bayonet type] [N1103]

H01R24/20 . Coupling parts carrying sockets, clips or analogous contacts and secured only to wire or cable [N1103]

H01R24/22 . . with additional earth or shield contacts [N1103]

H01R24/28 . Coupling parts carrying pins, blades or analogous contacts and secured only to wire or cable [N1103]

H01R24/30 . . with additional earth or shield contacts [N1103]

H01R24/38 . having concentrically or coaxially arranged contacts [N1103]

H01R24/40 . . specially adapted for high frequency [N1103]

H01R24/42 . . . comprising impedance matching means or electrical components, e.g. filters or switches [N1103]

H01R24/44 . . . . comprising impedance matching means [N1103]

H01R24/46 . . . . comprising switches [N1103]

H01R24/48 . . . . comprising protection devices, e.g. overvoltage protection [N1103]

H01R24/50 . . . mounted on a PCB [Printed Circuit Board] [N1103]

H01R24/52 . . . mounted in or to a panel or structure [N1103]

H01R24/52A . . . . [N: Outlets] [N1204]

H01R24/54 . . . Intermediate parts, e.g. adapters, splitters or elbows [N1103]

H01R24/54B . . . . [N: Adapters] [N1204]

H01R24/54D . . . . [N: Elbows] [N1204]

H01R24/54F . . . . [N: Splitters] [N1204]

H01R24/56 . . . specially adapted to a specific shape of cables, e.g. corrugated cables, twisted pair cables, cables with two screens or hollow cables [N1103]

H01R24/56B . . . . [N: Cables with two screens] [N1204]

H01R24/56D . . . . [N: Corrugated cables] [N1204]

H01R24/56F . . . . [N: Hollow cables] [N1204]

H01R24/56H . . . . [N: Twisted pair cables] [N1204]

H01R24/58 . Contacts spaced along longitudinal axis of engagement [N1103]

H01R24/60 . Contacts spaced along planar side wall transverse to longitudinal axis of engagement [N1103]

H01R24/62 . . Sliding engagements with one side only, e.g. modular jack coupling devices [N1103]

H01R24/64 . . . for high frequency, e.g. RJ 45 [N1103]

H01R24/66 . with pins, blades or analogous contacts and secured to apparatus or structure, e.g. to a wall [N1103]

H01R24/68 . . mounted on directly pluggable apparatus [N1103]

H01R24/70 . . with additional earth or shield contacts [N1103]

H01R24/76 . with sockets, clips or analogous contacts and secured to apparatus or structure, e.g. to a wall [N1103]

H01R24/78 . . with additional earth or shield contacts [N1103]

H01R24/84 . Hermaphroditic coupling devices [N1103]

H01R24/86 . Parallel contacts arranged about a common axis [N1103]

H01R25/00 **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 H01R31/00; with a holder adapted for supporting apparatus to which its counterpart is attached H01R33/88)

H01R25/00B . [N: the coupling part being secured only to wires or cables]

H01R25/00D . [N: the coupling part being secured to apparatus or structure, e.g. duplex wall receptacle]

H01R25/14 . Rails or bus-bars constructed so that the counterparts can be connected thereto at any point along their length, [N: e.g. track lighting systems] (installation of bus bars H02G5/00) [C9811]

H01R25/14B . . [N: Their counterparts]

H01R25/14D . . [N: Details, e.g. end pieces or joints(H01R25/14Ltakes precedence)][N9807]

H01R25/14L . . [N: Low voltage devices, i.e. safe to touch live conductors] [N9807] [C9811]

H01R25/16 . Rails or bus-bars provided with a plurality of discrete connecting locations for counterparts ([N: protective tubings or conduits H02G3/00; installations of bus-bars H02G5/00)

H01R25/16D . . [N: Details]

H01R25/16D2 . . . [N: Electrical connections between or with rails or bus-bars (rails having primarily a non electrical function H01R4/64)]

H01R25/16F . . [N: Connecting locations formed by flush mounted apparatus]

H01R25/16G . . [N: Connecting locations formed by surface mounted apparatus]

H01R25/16H . . [N: Connecting locations formed by staggering mounted apparatus]

H01R25/16K . . [N: the connecting locations being situated away from the rail or bus-bar]

H01R27/00 **Coupling parts adapted for co-operation with two or more dissimilar counterparts** ([N: for dissimilar contact members H01R13/35]; supported only by co-operation with a counterpart H01R31/00; with a holder adapted for supporting apparatus to which its counterpart is attached H01R33/90)

H01R27/02 . for simultaneous co-operation with two or more [N: dissimilar] counterparts

H01R29/00 **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,** [N: programmable connectors]

H01R31/00 **Coupling parts supported only by co-operation with counterpart**

H01R31/00B . [N: Intermediate parts for distributing signals] [N9703]

H01R31/02 . Intermediate parts for distributing energy to two or more circuits in parallel, e.g. splitter (for linking coupling parts that cannot co-operated H01R31/06; with a holder adapted for supporting apparatus to which its counterpart is attached H01R33/92)

H01R31/06 . Intermediate parts for linking two coupling parts, e.g. adapter (with a holder adapted for supporting apparatus to which its counterpart is attached H01R33/94)

H01R31/06B . . [N: with built-in electric apparatus]

H01R31/08 . Short circuiting members for bridging contacts in a counterpart (insulating members for separating contacts in a counterpart H01H27/04)

H01R31/08B . . [N: Short circuiting bus-strips]

H01R33/00 **Coupling devices in which a holder is adapted for supporting apparatus to which its counterpart is attached; Separate parts thereof (structural association of counterpart with specific apparatus, see the relevant subclass for the apparatus)**

H01R33/02 . Single-pole devices, e.g. holder for supporting one end of a tubular incandescent or neon lamp

H01R33/05 . Two-pole devices

H01R33/06 . . with two current-carrying pins, blades or analogous contacts, having their axes parallel to each other

H01R33/06A . . . [N: for supporting starter switches]

H01R33/08 . . . for supporting tubular fluorescent lamp

H01R33/08B . . . . [N: having contacts on one side only]

H01R33/08D . . . . [N: for a plurality of lamps] [N0012]

H01R33/08F . . . . [N: characterised by the contacts] [N0012]

H01R33/08H . . . . [N: characterised by the lamp holding means] [N0012]

H01R33/08H2 . . . . . [N: with axially resilient member] [N0012]

H01R33/08H4 . . . . . [N: with lamp rotating means] [N0012]

H01R33/08M . . . . [N: characterised by the mounting means] [N0012]

H01R33/08M2 . . . . . [N: for mounting in an opening of a structure] [N0012]

H01R33/08P . . . . [N: composed of different pieces] [N0012]

H01R33/08S . . . . [N: integral with starter holding structure (H01R33/06A for starters only)] [N0012]

H01R33/09 . . . for baseless lamp bulb

H01R33/18 . . having only abutting contacts

H01R33/20 . . having concentrically or coaxially arranged contacts

H01R33/20B . . . [N: secured to structure or printed circuit board]

H01R33/22 . . for screw type base, e.g. for lamp

H01R33/22B . . . [N: secured to structure or printed circuit board]

H01R33/46 . . for bayonet type base

H01R33/46B . . . [N: secured to structure or printed circuit board]

H01R33/72 . Three-pole devices

H01R33/74 . Devices having four or more poles, [N: e.g. holders for compact fluorescent lamps]

H01R33/76 . . Holders with sockets, clips, or analogous contacts adapted for axially-sliding engagement with parallely-arranged pins, blades, or analogous contacts on counterpart, e.g. electronic tube socket

H01R33/76B . . . [N: the parallel terminal pins having a circular disposition] [N0012]

H01R33/76B2 . . . . [N: the terminals being connected to individual wires] [N0012]

H01R33/76B2A . . . . . [N: the wires being connected using screw, clamp, wrap or spring connection] [N0012]

H01R33/76B2B . . . . . [N: the wires being connected using solder] [N0012]

H01R33/76B4 . . . . [N: the terminals being collectively connected, e.g. to a PCB] [N0012]

H01R33/76B4A . . . . . [N: socket snap fastened in an opening of a PCB] [N0012]

H01R33/76D . . . [N: the terminal pins having a non-circular disposition] [N0012]

H01R33/76F . . . [N: characterised by keying or marking means] [N0012]

H01R33/76H . . . [N: having additional guiding, adapting, shielding, anti-vibration or mounting means] [N0012]

H01R33/76J . . . [N: having multiple positions or sockets, e.g. stacked sockets while mounting] [N0012]

H01R33/76L . . . [N: having a separated part for spark preventing means] [N0012]

H01R33/76N . . . [N: having internal socket contact by abutting] [N0012]

H01R33/76P . . . [N: for supporting a tubular fluorescent lamp (for two-pole devices H01R33/06)] [N0012]

H01R33/88 . adapted for simultaneous co-operation with two or more identical counterparts

H01R33/90 . adapted for co-operation with two or more dissimilar counterparts

H01R33/92 . 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

H01R33/94 . Holders formed as intermediate parts for linking a counter-part to a coupling part

H01R33/94F . . [N: for tubular fluorescent lamps] [N0012]

H01R33/945 . Holders with built-in electrical component

H01R33/945B . . [N: for screw type coupling devices]

H01R33/945F . . [N: for bayonet type coupling devices]

H01R33/95 . . with fuse; with thermal switch

H01R33/955 . . with switch operated manually and independent of engagement or disengagement of coupling

H01R33/955B . . . [N: for screw type coupling devices]

H01R33/96 . . with switch operated by engagement or disengagement of coupling

H01R33/96B . . . [N: for screw type coupling devices]

H01R33/965 . Dustproof, splashproof, drip-proof, waterproof, or flameproof holders

H01R33/965B . . [N: for screw type coupling devices]

H01R33/965B1 . . . [N: neither pole becoming electrically connected until the coupling parts are substantially engaged]

H01R33/965F . . [N: for bayonet type coupling devices]

H01R33/965F1 . . . [N: neither pole becoming electrically connected until the coupling parts are substantially engaged]

H01R33/965L . . [N: for tubular fluorescent lamps] [N0012]

H01R33/97 . Holders with separate means to prevent loosening of the coupling or unauthorized removal of apparatus held

H01R33/97B . . [N: for screw type coupling devices]

H01R33/97F . . [N: for bayonet type coupling devices]

H01R33/975 . Holders with resilient means for protecting apparatus against vibrations or shocks

H01R33/975B . . [N: for screw type coupling devices]

H01R33/975F . . [N: for bayonet type coupling devices]

H01R35/00 **Flexible or turnable line connectors,** [N: i.e. the rotation angle being limited] (rotary current collectors, distributors H01R39/00; [N: arrangement of these connectors in vehicle steering wheels B60R16/027; arrangements of electric cables or lines between relatively movable parts H02G11/00]) [C0607]

H01R35/02 . Flexible line connectors [N: without frictional contact members]

H01R35/02B . . [N: having a flexible conductor wound around a rotation axis] [N0012]

H01R35/04 . Turnable line connectors with limited rotation angle [N: with frictional contact members]

H01R39/00 **Rotary current collectors, distributors, or interrupters** (cam-operated switches H01H19/00; structural association with dynamo-electric machine H02K13/00) [C9603]

H01R39/02 . Details [N: for dynamo electric machines (for current collectors not particularly for dynamo electric machines H01R39/60, H01R39/64)] [M1201]

H01R39/02B . . [N: characterised by the materials used, e.g. ceramics] [N9609]

H01R39/02B2 . . . [N: Conductive materials] [N9609]

H01R39/02B4 . . . [N: Insulating materials] [N9609]

H01R39/04 . . Commutators (wherein the segments are formed by extensions of dynamo-electric machine winding H02K)

H01R39/04B . . . [N: the commutators being made of carbon]

H01R39/06 . . . other than with external cylindrical contact surface, e.g. flat commutators

H01R39/08 . . Slip-rings

H01R39/08B . . . [N: the slip-rings being made of carbon]

H01R39/10 . . . other than with external cylindrical contact surface, e.g. flat slip-rings

H01R39/12 . . . using bearing or shaft surface as contact surface

H01R39/14 . . Fastenings of commutators or slip-rings to shafts

H01R39/16 . . . by means of moulded or cast material applied during or after assembly

H01R39/18 . . Contacts for co-operation with commutator or slip-ring, e.g. contact brush

H01R39/20 . . . characterised by the material thereof

H01R39/22 . . . . incorporating lubricating or polishing ingredient

H01R39/24 . . . Laminated contacts; Wire contacts, e.g. metallic brush, carbon fibres

H01R39/26 . . . Solid sliding contacts, e.g. carbon brush

H01R39/27 . . . . End caps on carbon brushes to transmit spring pressure

H01R39/28 . . . Roller contacts; Ball contacts

H01R39/30 . . . Liquid contacts

H01R39/32 . . Connections of conductor to commutator segment

H01R39/34 . . Connections of conductor to slip-ring

H01R39/36 . . Connections of cable or wire to brush

H01R39/38 . . Brush holders

H01R39/38B . . . [N: characterised by the application of pressure to brush] [C9603]

H01R39/38E . . . [N: characterised by the electrical connection to the brush holder] [N9603]

H01R39/38G . . . [N: Means for mechanical fixation of the brush holder] [N9603]

H01R39/38G2 . . . . [N: Electrically insulated bolts] [N9603]

H01R39/38M . . . [N: characterised by the material of the brush holder] [N9603]

H01R39/39 . . . wherein the brush is fixedly mounted in the holder

H01R39/40 . . . enabling brush movement within holder during current collection

H01R39/41 . . . Cartridge type

H01R39/415 . . . . with self-recoiling spring

H01R39/42 . . Devices for lifting brushes

H01R39/44 . . Devices for shifting brushes

H01R39/46 . . Auxiliary means for improving current transfer, or for reducing or preventing sparking or arcing [M1201]

H01R39/48 . . . by air blast; by surrounding collector with non-conducting liquid or gas

H01R39/50 . . . Barriers placed between brushes

H01R39/52 . . . by use of magnets

H01R39/54 . . . by use of impedance between brushes or segments

H01R39/56 . . Devices for lubricating or polishing slip-rings or commutators during operation of the collector

H01R39/58 . . Means structurally associated with the current collector for indicating condition thereof, e.g. for indicating brush wear

H01R39/59 . . Means structurally associated with the brushes for interrupting current (H01R39/58 takes precedence)

H01R39/60 . Devices for interrupted current collection, e.g. commutating device, distributor, interrupter (self-interrupters H01H, e.g. H01H51/34)

H01R39/62 . . with more than one brush co-operating with the same set of segments

H01R39/64 . Devices for uninterrupted current collection

H01R39/64B . . [N: through ball or roller bearing]

H01R39/64E . . [N: through an electrical conductive fluid]

H01R41/00 **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 H01R11/12; current collectors for power supply lines of electrically-propelled vehicles B60L5/00)

H01R41/02 . Devices for interrupted current collection, e.g. distributor (electrically-operated selector switches H01H67/00)

H01R43/00 **Apparatus or processes specially adapted for manufacturing, assembling, maintaining, or repairing of line connectors or current connectors or for joining electric conductors** (of trolley lines B60M1/28; joining cables H02G1/14)

H01R43/00A . [N: Maintenance of line connectors, e.g. cleaning]

H01R43/00C . [N: for making dustproof, splashproof, drip-proof, waterproof, or flameproof connection, coupling, or casing]

H01R43/00E . [N: for elastomeric connecting elements]

H01R43/01 . for connecting unstripped conductors to contact members having insulation cutting edges

H01R43/01A . . [N: Handtools]

H01R43/02 . for soldered or welded connections (soldering or welding in general B23K)

H01R43/02B . . [N: Ultrasonic-, H.F.-, cold- or impact welding]
H01R43/02D . . [N: Resistance welding (H01R43/02G takes precedence)] [N9508]
H01R43/02F . . [N: Laser welding (H01R43/02G takes precedence)] [N9508]
H01R43/02G . . [N: without preliminary removing of insulation before soldering or welding] [N9508]
H01R43/02H . . [N: for applying solder (H01R43/02G takes precedence)] [N9508]
H01R43/02K . . [N: comprising means for controlling the temperature, e.g. making use of the curie point] [N9508]
H01R43/02M . . [N: for simultaneous welding or soldering of a plurality of wires to contact elements] [N9508]
H01R43/02P . . [N: for soldering or welding connectors to a printed circuit board] [N9508]
H01R43/02R . . [N: for positioning or holding parts during soldering or welding process] [N9508]

H01R43/027 . for connecting conductors by clips
H01R43/027A . . [N: by using explosive force]

H01R43/033 . for wrapping or unwrapping wire connections
H01R43/033A . . [N: for unwraping]

H01R43/04 . for forming connections by deformation, e.g. crimping tool
H01R43/042 . . Hand tools for crimping
H01R43/042A . . . [N: combined with other functions, e.g. cutting]
H01R43/042B . . . [N: operated by an explosive force]
H01R43/042C . . . [N: with more than two radially actuated mandrels]
H01R43/042D . . . [N: with mandrels actuated in axial direction to the wire]
H01R43/042E . . . [N: fluid actuated hand crimping tools]
H01R43/042F . . . [N: Power-driven hand crimping tools]
H01R43/045 . . . with contact member feeding mechanism
H01R43/048 . . Crimping apparatus or processes (43/042 takes precedence)
H01R43/048B . . . [N: combined with contact member manufacturing mechanism]
H01R43/048D . . . [N: for eyelet contact members]
H01R43/048F . . . [N: with force measuring means]
H01R43/048H . . . [N: with crimp height adjusting means]
H01R43/05 . . . with wire-insulation stripping
H01R43/052 . . . with wire-feeding mechanism
H01R43/055 . . . with contact member feeding mechanism
H01R43/058 . . Crimping mandrels
H01R43/058B . . . [N: for crimping apparatus with more than two radially actuated mandrels]

H01R43/06 . Manufacture of commutators
H01R43/08 . . in which segments are not separated until after assembly

H01R43/10 . Manufacture of slip-rings

H01R43/12 . Manufacture of brushes

H01R43/14 . Maintenance of current collectors, e.g. reshaping of brushes, cleaning of commutators

H01R43/16	.	for manufacturing contact members, e.g. by punching and by bending
H01R43/18	.	for manufacturing bases or cases for contact members
H01R43/20	.	for assembling or disassembling contact members with insulating base, case or sleeve
H01R43/20B	. .	[N: with a panel or printed circuit board]
H01R43/22	. .	Hand tools
H01R43/24	. .	Assembling by moulding on contact members
H01R43/26	.	for engaging or disengaging the two parts of a coupling device (structural association with two-part coupling device H01R13/629)
H01R43/28	.	for wire processing before connecting to contact members (H01R43/02 to H01R43/26 take precedence)