H01R  ELECTRICALLY-CONDUCTIVE CONNECTIONS; STRUCTURAL ASSOCIATIONS OF A PLURALITY OF MUTUALLY-INSULATED ELECTRICAL CONNECTING ELEMENTS; COUPLING DEVICES; CURRENT COLLECTORS

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 H05B 3/08. 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, 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;
     b. rails or bus-bars provided with a plurality of discrete connecting locations for counterparts.
4. General details are classified in groups H01R 4/00, H01R 9/00, H01R 11/00.
5. (In this subclass, a contact in a coupling device is regarded as an additional earth contact only if this contact is clearly designed for that purpose.)

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

3/00  Electrically-conductive connections not otherwise provided for
3/08  . for making connection to a liquid ((slip rings with liquid contacts H01R 39/30, H01R 39/646))
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
4/01  . Connections using shape memory materials, e.g. shape memory metal
4/02  . Soldered or welded connections (H01R 4/01 - H01R 12/59 take precedence)
4/021 . . [between two or more cables or wires]
4/022 . . . [comprising preapplied solder]
4/023 . . [between cables or wires and terminals]
4/024 . . . [comprising preapplied solder]
4/025 . . . [with built-in heat generating elements]
4/026 . . . [comprising means for eliminating an insulative layer prior to soldering or welding]
4/027 . . . [comprising means for positioning or holding the parts to be soldered or welded]
4/028 . . . [comprising means for preventing flowing or wicking of solder or flux in parts not desired]
4/029 . . . (Welded connections (H01R 4/021 - H01R 4/028 take precedence))
4/04  . using electrically conductive adhesives
4/06  . Riveted connections (by explosion H01R 4/08)
4/08  . effected by an explosion
4/10  . effected solely by twisting, wrapping, bending, crimping, or other permanent deformation
4/12  . by twisting
4/14  . by wrapping
4/16  . by bending
4/18  . by crimping ((H01R 4/01, H01R 4/295 take precedence; for coaxial cables H01R 9/051B))
4/182 . . . [for flat conductive elements, e.g. flat cables (H01R 4/01 takes precedence)]
Connections, using contact members penetrating or wires entering the cap from the same end for covering or maintaining connections between being actuated by springs the contact members penetrating the insulation edges, e.g. of tuning fork type

Connections using contact members penetrating or cutting insulation or cable strands

the contact members having teeth, prongs, pins or needles penetrating the insulation

having needles or pins

having saw-tooth projections

actuated by clamping screws

actuated by insulated cams or wedges

the contact members having insulation-cutting edges, e.g. of tuning fork type

the contact members being plates having a single slot

Flat plates, e.g. multi-layered flat plates

mounted in an insulating base

one part of the base being movable to push the cable into the slot

Curved plates

the contact members having additional means acting on the insulation or the wire, e.g. additional insulation penetrating means, strain relief means or wire cutting knives

the additional means having two or more slotted flat portions

in serial configuration, e.g. opposing folded slots

forming a U-shape with slotted branches

forming a slotted bight

in parallel configuration

the contact members being in a slotted tubular configuration, e.g. slotted tube-end

the contact members being in a slotted bent configuration, e.g. slotted bight

the contact members having a channel-shaped part, the opposite sidewalls of which comprise insulation-cutting means

the contact members penetrating the insulation being actuated by springs

the contact members penetrating the insulation being actuated by screws, nuts or bolts

penetrating the area under the screw head

penetrating the area under the screw tip

penetrating by means of the screw thread

the contact members penetrating the insulation being actuated by conductive cams or wedges

Insulation penetration combined with permanent deformation of the contact member, e.g. crimping

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 (H01R 4/188, H01R 4/203, H01R 4/5075 take precedence); using shape memory materials H01R 4/01)

Clamped connections, spring connections (made by means of terminals specially adapted for contact with, or insertion into, printed circuits H01R 12/00)

utilising a screw or nut clamping member (H01R 4/50 takes precedence; utilising a clamping member acted on by screw or nut H01R 4/38; for coaxial cables H01R 90521))

having means for preventing complete unscrewing of screw or nut

having means for preventing loosening of screw or nut, e.g. vibration-proof connection

having means for improving contact

having means for facilitating engagement of conductive member or for holding it in position

characterised by the thread of the screw or nut

{Conductive members located parallel to axis of screw}

Conductive members located in slot or hole in screw

Conductive members located under head of screw

Conductive members located under tip of screw

{with intermediate part between tip and conductive member}

{intermediate part attached to the tip of the screw}

utilising a clamping member acted on by screw or nut (H01R 4/50 takes precedence)

Pivotal clamping member

Clamping area to one side of screw only

Clamping areas on both sides of screw

Clamping area between two screws placed side by side

utilising a spring, clip, or other resilient member (H01R 4/52 takes precedence)

{Coil spring}

{axially compressed to retain wire end}

{using a louvre type spring}

{spring force increased by screw, cam, wedge, or other fastening means}

utilising a cam, wedge, cone or ball {also combined with a screw}

{using rotatable cam}

{using a cone}
4/5025 . . . . [combined with a threaded ferrule operating in a direction parallel to the conductor]
4/5033 . . . . [using wedge or pin penetrating into the end of a wire in axial direction of the wire]
4/5041 . . . . [using a tapered groove]
4/505 . . . . [using an eccentric element]
4/5058 . . . . [using a ball]
4/5066 . . . . [mounted in an insulating housing having a cover providing clamping force]
4/5075 . . . . [having an uneven wire receiving surface to improve the contact]
4/5083 . . . . [using a wedge]
4/5091 . . . . [combined with a screw]
4/52 . . . . which is spring loaded
4/54 . . . . {Bayonet or keyhole}
4/56 . . . . one conductor screwing into another
4/58 . . . . characterised by the form or material of the contacting members (H01R 4/01 takes precedence)
4/60 . . . . Connections between or with tubular conductors (H01R 4/56 takes precedence)
4/62 . . . . Connections between conductors of different materials; Connections between or with aluminium or steel-core aluminium conductors (H01R 4/68 takes precedence)
4/625 . . . . [Soldered or welded connections]
4/64 . . . . Connections between or with conductive parts having primarily a non-electric function, e.g. frame, casing, rail
4/643 . . . . {for rigid cylindrical bodies}
4/646 . . . . {for cables or flexible cylindrical bodies}
4/66 . . . . Connections with the terrestrial mass, e.g. earth plate, earth pin
4/68 . . . . Connections to or between superconductive connectors
4/70 . . . . Insulation of connections (end caps H01R 4/22)
4/72 . . . . {Making a soldered electrical connection simultaneously with the heat shrinking}
4/723 . . . . {Making a non-soldered electrical connection simultaneously with the heat shrinking]
4/726 . . . . {Insulating enclosures for terminals (for switches H01H 9/0264)}
9/00 Structural associations of a plurality of mutually-insulated electrical connecting elements, e.g. terminal strips or terminal blocks; Terminals or binding posts mounted upon a base or in a case; Bases therefor
9/03 . . . . Connectors arranged to contact a plurality of the conductors of a multiconductor cable [, e.g. tapping connections]
9/031 . . . . {for multiphase cables, e.g. with contact members penetrating insulation of a plurality of conductors (insulation penetrating contact members in general H01R 4/24)}
9/05 . . . . for coaxial cables
9/0503 . . . . [Connection between two cable ends]
9/0506 . . . . [Connection between three or more cable ends]
9/0509 . . . . [Tapping connections]
9/0512 . . . . [Connections to an additional grounding conductor]
9/0515 . . . . [Connection to a rigid planar substrate, e.g. printed circuit board]
9/0518 . . . . [Connection to outer conductor by crimping or by crimping ferrule]
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

11/01 . . . characterised by the form or arrangement of the conductive interconnection between the connecting locations

11/03 . . . characterised by the relationship between the connecting locations (H01R 11/11 takes precedence)

11/05 . . . the connecting locations having different types of direct connections

11/07 . . . the connecting locations being of the same type but different sizes

11/09 . . . the connecting locations being identical

11/11 . . . End pieces or tapping pieces for wires, supported by the wire and for facilitating electrical connection to some other wire, terminal or conductive member (H01R 11/01 takes precedence)

11/12 . . . End pieces terminating in an eye, hook, or fork

11/14 . . . the hook being adapted for hanging on overhead or other suspended lines, e.g. hot line clamp

11/15 . . . . Hook in the form of a screw clamp

11/16 . . . End pieces terminating in a soldering tip or socket

11/18 . . . End pieces terminating in a probe

11/20 . . . End pieces terminating in a needle point or analogous contact for penetrating insulation or cable strands

11/22 . . . End pieces terminating in a spring clip

11/24 . . . with gripping jaws, e.g. crocodile clip

11/26 . . . End pieces terminating in a screw clamp, screw or nut

11/28 . . . End pieces consisting of a ferrule or sleeve

11/281 . . . . [for connections to batteries]

11/282 . . . . [comprising means for facilitating engagement or disengagement, e.g. quick release terminal]

11/283 . . . . [Bolt, screw or threaded ferrule parallel to the battery post]

11/284 . . . . [comprising means for preventing corrosion, e.g. covers, enclosures filled with gel]

11/285 . . . . [Battery post and cable secured by the same locking means]

11/286 . . . . [having means for improving contact between battery post and clamping member, e.g. uneven interior surface]

11/287 . . . . [Intermediate parts between battery post and cable end piece]

11/288 . . . . [Interconnections between batteries]

11/289 . . . . [characterised by the shape or the structure of the battery post]

11/30 . . . End pieces held in contact by a magnet

11/32 . . . End pieces with two or more terminations

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)

12/50 . . . . Fixed connections

12/51 . . . . for rigid printed circuits or like structures

12/515 . . . . [Terminal blocks providing connections to wires or cables]

12/52 . . . . connecting to other rigid printed circuits or like structures

12/523 . . . . . [by interconnection through aligned holes in the boards or multilayer board]

12/526 . . . . . [the printed circuits being on the same board (with plated through holes H05K 3/42)]

12/53 . . . . connecting to cables except for flat or ribbon cables

12/55 . . . . characterised by the terminals

12/57 . . . . surface mounting terminals

12/58 . . . . terminals for insertion into holes

12/585 . . . . . [Terminals having a press fit or a compliant portion and a shank passing through a hole in the printed circuit board]

12/59 . . . . for flexible printed circuits, flat or ribbon cables or like structures

12/592 . . . . [connections to contact elements]

12/594 . . . . [for shielded flat cable]

12/596 . . . . [Connection of the shield to an additional grounding conductor, e.g. drain wire]

12/598 . . . . [Each conductor being individually surrounded by shield, e.g. multiple coaxial cables in flat structure]

12/61 . . . connecting to flexible printed circuits, flat or ribbon cables or like structures

12/613 . . . . [by means of interconnecting elements]

12/616 . . . . . [having contacts penetrating insulation for making contact with conductors, e.g. needle points]

12/62 . . . connecting to rigid printed circuits or like structures

12/63 . . . connecting to another shape cable

12/65 . . . characterised by the terminal

12/67 . . . . insulation penetrating terminals

12/675 . . . . . [with contacts having at least a slotted plate for penetration of cable insulation, e.g. insulation displacement contacts for round conductor flat cables]

12/68 . . . . comprising deformable portions

12/69 . . . . deformable terminals, e.g. crimping terminals

12/70 . . . . Coupling devices

12/7005 . . . [Guiding, mounting, polarizing or locking means; Extractors (for printed circuit boards H05K)]

12/7011 . . . [Locking or fixing a connector to a PCB]

12/7017 . . . . [Snap means]

12/7023 . . . . [integral with the coupling device]

12/7029 . . . . [not integral with the coupling device]
or like structures for flexible printed circuits, flat or ribbon cables, e.g. display, 
for connection between PCB and component, e.g. e.g. display, 
(Coupling device supported only by cooperation with PCB) 
(Arrangements for power supply) 
(with switch operated by engagement of PCB) 
for rigid printing circuits or like structures 
(co-operating with the surface of the printed circuit or with a coupling device exclusively provided on the surface of the printed circuit (H01R 12/72 takes precedence) 
(with contacts abutting directly the printed circuit; Button contacts therefore provided on the printed circuit) 
(Coupling device provided on the PCB) 
(Contact members provided on the PCB without an insulating housing (contacts for abutting H01R 12/714)) 
(co-operating directly with the rigid printed circuit or like structures) 
(cooperating directly with the edge of the rigid printed circuits) 
(coupling devices mounted on the edge of the printed circuits) 
(containing contact members forming a right angle) 
(containing contact members presenting a contact carrying strip, e.g. edge-like strip) 
(Coupling devices presenting arrays of contacts) 
(Coupling devices presenting without an insulating housing provided on the edge of the PCB) 
connecting to other rigid printed circuits or like structures 
(Printed circuits being in the same plane) 
(Printed circuits including an angle between each other) 
(Printed circuits being substantially perpendicular to each other (for printed connections H05K 3/366) 
connecting to cables except for flat or ribbon cables 
for flexible printed circuits, flat or ribbon cables or like structures 
(Details) 
(Strain relieving means) 
(Retainers) 
(Ground or shield arrangements) 
(Coupling parts carrying pins, blades or analogous contacts (H01R 12/78, H01R 12/79 take precedence)) 
(Coupling parts carrying sockets, clips or analogous counter-contacts (H01R 12/78, H01R 12/79 take precedence)) 
connecting to other flexible printed circuits, flat or ribbon cables or like structures 
connecting to rigid printed circuits or like structures 
connecting to another cable except for flat or ribbon cable 
connected with low or zero insertion force 
connected with pivoting of printed circuits or like after insertion 
contact pressure producing means, contacts activated after insertion of printed circuits or like structures 
(Fluid activated) 
(activated by shape memory material) 
acting automatically by insertion of rigid printed or like structures 
acting manually by rotating or pivoting connector housing parts 
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, H01R 13/6315 takes precedence) 
Details of coupling devices of the kinds covered by groups H01R 12/70 or H01R 24/00 - H01R 33/00 
(Electrical coupling combined with fluidic coupling) 
Contact members 
(formed by the conductors of a cable end) 
characterised by the material, e.g. plating, or coating materials 
(Plated dielectric material) 
(Pins or blades for co-operation with sockets) 
Resilient pins or blades (carrying separate resilient parts H01R 13/15) 
(co-operating with sockets having a circular transverse section) 
(co-operating with sockets having a rectangular transverse section) 
(co-operating with sockets having a square transverse section) 
Resiliently-mounted rigid pins or blades 
Sockets for co-operation with pins or blades 
Resilient sockets (carrying separate resilient parts H01R 13/15) 
(co-operating with pins having a circular transverse section) 
(forked sockets having two legs) 
(co-operating with pins or blades having a rectangular transverse section) 
(co-operating with pins or blades having a square transverse section) 
U-shaped sockets having inwardly bent legs, e.g. spade type 
Resiliently-mounted rigid sockets 
Pins, blades or sockets having separate spring member for producing or increasing contact pressure
Insulating of contact members
Securing contact members in or to a base or case;
Securing in a demountable manner
moulding, riveting
Securing in non-demountable manner, e.g. with either round or flat pin
types of contact member, e.g. socket co-operating
Contact members made of resilient wire
devices { ( H01R 24/84
Contacts for sliding cooperation with identically-
one side only { ( for modular jack type connectors
Pin or blade contacts for sliding co-operation on
end of engagement of coupling part { , e.g. zero
insertion force or no friction
Means for preventing access to live contacts
{ making use of a switch actuated by engagement of
counterpart H01R 13/7036
Means for holding or embracing insulating body,
between them
coupling devices { ( H01R 24/84 takes precedence)
Contact members made of resilient wire
for non-simultaneous co-operation with different
types of contact member, e.g. socket co-operating
assembled by screw or screws
press-fit
assembled by snap action of the parts
assembled by [ a separate ] clip or spring
assembled by screw or screws
composed as a modular blocks or assembly, i.e.
composed of co-operating parts provided with
contact members or holding contact members
between them
Means for holding or embracing insulating body,
e.g. casing { , hoods
for holding or embracing several coupling
parts, e.g. frames
Dustproof, splashproof, drip-proof, waterproof, or
flameproof cases
{ Sealing means between parts of housing or
between housing part and a wall, e.g. sealing
rings
{ Sealing means between cable and housing,
e.g. grommet ( H01R 13/5221 takes
precedence)
{ having at least two cable receiving
openings
{ Sealing between contact members and
housing, e.g. sealing insert
Means for increasing contact pressure at the
end of engagement of coupling part { , e.g. zero
insertion force or no friction
Pins, blades, or sockets shaped, or provided with
separate member, to retain co-operating parts
together
by screw-in connection
by bayonet connection
Contacts for co-operating by abutting
resilient; resiliently-mounted
[characterized by the resilient means]
( conductive elastomers
( using coil springs
( using meander springs
[with opposite contact points, e.g. C beam]
[with a single cantilevered beam]
[by stamped-out resilient contact arm]
[consisting of at least two resilient arms
contacting the same counterpart]
[characterized by the contact point]
[ pin shaped]
[ spherical]
[ for contacting a ball]
[ multiple contact points]
Pin or blade contacts for sliding co-operation on
one side only { ( for modular jack type connectors
Contacts for sliding cooperation with identically-
shaped contact, e.g. for hermaphroditic coupling
devices { ( H01R 24/84 takes precedence)
Contact members made of resilient wire
for non-simultaneous co-operation with different
types of contact member, e.g. socket co-operating
with either round or flat pin
Securing contact members in or to a base or case;
Insulating of contact members
Securing in non-demountable manner, e.g. moulding, riveting
by frictional grip in grommet, panel or base
by permanent deformation of contact member
Securing in a demountable manner
Securing in resilient one-piece base or case,
[ e.g. by friction ]; One-piece base or case
formed with resilient locking means
[ comprising integral flexible contact
retaining fingers]
[ comprising two or more integral flexible
retaining fingers acting on a single
contact]
Securing in base or case composed of a
plurality of insulating parts having at least one
resilient insulating part
Securing by a separate resilient retaining piece
supported by base or case, e.g. collar [ or metal
contact-retention clip]
by resilient locking means on the contact
members; by locking means on resilient contact
members
by stamped-out resilient tongue snapping
behind shoulder in base or case
}
Means for facilitating engagement or disengagement of coupling parts or for holding them in engagement by a magnet

Means for supporting coupling part when not engaged

Means for facilitating engagement or disengagement of coupling parts or for holding them in engagement

Two-part coupling devices held in engagement by a magnet
13/6315 . . . . [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, H01R 12/91 takes precedence)]

13/633 . . . . for disengagement only [(in combination with safety switch H01R 13/7132)]

13/6335 . . . . [comprising a handle]

13/635 . . . . by mechanical pressure, e.g. spring force

13/637 . . . . by fluid pressure, e.g. explosion

13/639 . . . . Additional means for holding or locking coupling parts together, after engagement, (e.g. separate keylock, retainer strap)

13/6392 . . . . [for extension cord]

13/6395 . . . . [for wall or panel outlets]

13/6397 . . . . [with means for preventing unauthorised use]

13/64 . . . . Means for preventing incorrect coupling

13/641 . . . . by indicating incorrect coupling; by indicating correct or full engagement

13/642 . . . . by position or shape of contact members

13/645 . . . . by exchangeable elements on case or base

13/6453 . . . . [comprising pin-shaped elements, capable of being orientated in different angular positions around their own longitudinal axes, e.g. pins with hexagonal base] 

13/6456 . . . . [comprising keying elements at different positions along the periphery of the connector] 

13/646 . . . . specially adapted for high-frequency, e.g. structures providing an impedance match or phase match (non-coaxial protective earth or shield arrangements H01R 13/648; coaxial connectors specially adapted for high frequency H01R 24/40)

13/6461 . . . . Means for preventing cross-talk

13/6463 . . . . using twisted pairs of wires

13/6464 . . . . by adding capacitive elements

13/6466 . . . . on substrates, e.g. PCBs [Printed Circuit Boards]

13/6467 . . . . by cross-over of signal conductors

13/6469 . . . . on substrates

13/6471 . . . . by special arrangement of ground and signal conductors, e.g. GSGS [Ground-Signal-Ground-Signal]

13/6473 . . . . Impedance matching

13/6474 . . . . by variation of conductive properties, e.g. by dimension variations

13/6476 . . . . by making an aperture, e.g. a hole

13/6477 . . . . by variation of dielectric properties

13/648 . . . . Protective earth or shield arrangements on coupling devices [. e.g. anti-static shielding] (coaxially arranged shields H01R 24/38)

13/6485 . . . . [Electrostatic discharge protection (in general H05F 100; for electric apparatus H05K 9/0067)]

13/652 . . . . with earth pin, blade or socket

13/655 . . . . with earth brace

13/658 . . . . High frequency shielding arrangements, e.g. against EMI [Electro-Magnetic Interference] or EMP [Electro-Magnetic Pulse] (coaxial coupling devices specially adapted for high frequency H01R 24/40; for flat or ribbon cable connectors H01R 12/774; for coaxial cable H01R 9/05)]

13/6581 . . . . Shield structure

13/6582 . . . . with resilient means for engaging mating connector

13/6583 . . . . with separate conductive resilient members between mating shield members

13/6584 . . . . formed by conductive elastomeric members, e.g. flat gaskets or O-rings

13/6585 . . . . Shielding material individually surrounding or interposed between mutually spaced contacts

13/6586 . . . . for separating multiple connector modules

13/6587 . . . . for mounting on PCBs

13/6588 . . . . with through openings for individual contacts

13/6589 . . . . with wires separated by conductive housing parts

13/659 . . . . with plural ports for distinct connectors

13/6591 . . . . Specific features or arrangements of connection of shield to conductive members

13/65912 . . . . [for shielded multiconductor cable (coaxial cables with one conductor surrounded by shield H01R 9/05; flat shielded cables H01R 12/594)]

13/65914 . . . . [Connection of shield to additional grounding conductors]

13/65915 . . . . [Twisted pair of conductors surrounded by shield]

13/65917 . . . . [Connection to shield by means of resilient members]

13/65918 . . . . [wherein each conductor is individually surrounded by shield]

13/6592 . . . . the conductive member being a shielded cable

13/6593 . . . . the shield being composed of different pieces

13/6594 . . . . the shield being mounted on a PCB and connected to conductive members

13/6595 . . . . with separate members fixing the shield to the PCB

13/6596 . . . . the conductive member being a metal grounding panel

13/6597 . . . . the conductive member being a contact of the connector

13/6598 . . . . Shield material

13/6599 . . . . Dielectric material made conductive, e.g. plastic material coated with metal

13/66 . . . . Structural association with built-in electrical component (coupling devices having concentrically or coaxially-arranged contacts H01R 24/38)

13/6608 . . . . [with built-in single component (H01R 13/68, H01R 13/70 take precedence)]

13/6616 . . . . [with resistor]

13/6625 . . . . [with capacitive component]

13/663 . . . . [with inductive component, e.g. transformer]

13/6641 . . . . [with diode (with LED H01R 13/7175)]

13/665 . . . . [with built-in electronic circuit (H01R 13/70, H01R 13/719 take precedence)]

13/6658 . . . . [on printed circuit board (H01R 13/6666 - H01R 13/6691 take precedence)]

**WARNING**

This group is no longer used for the classification of new documents as from January 1, 2011. The backlog of this group is being continuously reclassified to H01R 13/6466 and H01R 13/6469
H01R

13/666 . . . . [with built-in overvoltage protection]
13/6675 . . . . [with built-in power supply]
13/6683 . . . . [with built-in sensor]
13/6691 . . . . [with built-in signalling means (H01R 13/717 takes precedence)]
13/68 . . . . with built-in fuse

**WARNING**

The subgroups of H01R 13/68 are not complete pending completion of a reclassification, see also this group

13/684 . . . . the fuse being removable
13/688 . . . . . with housing part adapted for accessing the fuse
13/692 . . . . Turnable housing part
13/696 . . . . the fuse being integral with the terminal, e.g. pin or socket
13/70 . . . . with built-in switch
13/701 . . . . [the switch being actuated by an accessory, e.g. cover, locking member]
13/703 . . . . operated by engagement or disengagement of coupling parts, e.g. dual-continuity coupling part [H01R 13/71 takes precedence]
13/7031 . . . . [Shorting, shunting or bussing of different terminals interrupted or effected on engagement of coupling part, e.g. for ESD protection, line continuity]
13/7032 . . . . . [making use of a separate bridging element directly cooperating with the terminals]
13/7033 . . . . . [making use of elastic extensions of the terminals]
13/7034 . . . . . [the terminals being in direct electric contact separated by double sided connecting element (for printed circuit boards H01R 12/7094)]
13/7035 . . . . [comprising a separated limit switch]
13/7036 . . . . . [the switch being in series with coupling part, e.g. dead coupling, explosion proof coupling]
13/7037 . . . . . [making use of a magnetically operated switch]
13/7038 . . . . . [making use of a remote controlled switch, e.g. relais, solid state switch activated by the engagement of the coupling parts]
13/7039 . . . . . [the coupling part with coding means activating the switch to establish different circuits]
13/707 . . . . interlocked with contact members or counterpart
13/71 . . . . Contact members of coupling parts operating as switch, e.g. linear or rotational movement required after mechanical engagement of coupling part to establish electrical connection
13/713 . . . . the switch being a safety switch
13/7132 . . . . [having ejecting mechanisms]
13/7135 . . . . [with ground fault protector (H01R 13/7132 takes precedence)]
13/7137 . . . . [with thermal interrupter (H01R 13/7132 takes precedence)]
13/717 . . . . with built-in light source
13/7172 . . . . [Conduits for light transmission]
13/7175 . . . . [Light emitting diodes (LEDs)]
13/7177 . . . . [filament or neon bulb]

13/719 . . . . specially adapted for high frequency, e.g. with filters

**WARNING**

The subgroups of H01R 13/719 are not complete pending completion of a reclassification, see also H01R 13/64 and the respective subgroups

13/7193 . . . . with ferrite filters
13/7195 . . . . with planar filters with openings for contacts
13/7197 . . . . with filters integral with or fitted onto contacts, e.g. tubular filters
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
13/74 . . . . Means for mounting coupling parts in openings of a panel
13/741 . . . . [using snap fastening means]
13/743 . . . . [integral with the housing]
13/745 . . . . [separate from the housing]
13/746 . . . . [using a screw ring]
13/748 . . . . [using one or more screws (H01R 13/746 takes precedence)]

24/00 Two-part coupling devices, or either of their cooperating parts, characterised by their overall structure (contact members H01R 13/402; securing contact members in or to a base or case or insulating of contact members H01R 13/40; bases or cases H01R 13/46; means for supporting coupling part when not engaged H01R 13/60; means for facilitating engagement or disengagement of coupling parts or for holding them in engagement H01R 13/62; means for preventing, inhibiting or avoiding incorrect coupling H01R 13/64)

**NOTE**

In this group, it is desirable to add the indexing codes of groups H01R 2101/00 - H01R 2107/00

24/005 . . . . [requiring successive relative motions to complete the coupling, e.g. bayonet type]
24/20 . . . . Coupling parts carrying sockets, clips or analogous contacts and secured only to wire or cable
24/22 . . . . with additional earth or shield contacts
24/28 . . . . Coupling parts carrying pins, blades or analogous contacts and secured only to wire or cable
24/30 . . . . with additional earth or shield contacts
24/38 . . . . having concentrically or coaxially arranged contacts
24/40 . . . . specially adapted for high frequency
24/42 . . . . comprising impedance matching means or electrical components, e.g. filters or switches
24/44 . . . . comprising impedance matching means
24/46 . . . . comprising switches
24/48 . . . . comprising protection devices, e.g. overvoltage protection
24/50 . . . . mounted on a PCB [Printed Circuit Board]
24/52 . . . . mounted in or to a panel or structure
24/525 . . . . [Outlets]
24/54 . . . . Intermediate parts, e.g. adapters, splitters or elbows
24/542 . . . . [Adapters]
24/545 . . . . [Elbows]
Coupling parts adapted for simultaneous co-operation with two or more identical counterparts; with a holder adapted for supporting apparatus to which its counterpart is attached H01R 33/90

Supporting apparatus 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)

Coupling parts adapted for selective co-operation with a counterpart in different ways to establish different circuits, e.g., for voltage selection, for series-parallel selection, (programmable connectors)

Coupling parts supported only by co-operation with counterpart

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

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

Two-pole devices

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

(for dissimilar contact members H01R 13/35; 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)

for simultaneous co-operation with two or more [dissimilar] counterparts

Coupling parts adapted for co-operation with two or more identical counterparts, (for dissimilar contact members H01R 13/35; 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)

Coupling parts supported only by co-operation with counterpart

Intermediate parts for distributing signals}

Intermediate parts for distributing energy to two or more circuits in parallel, e.g. splitter (with a holder adapted for supporting apparatus to which its counterpart is attached H01R 33/94)

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)

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, (programmable connectors)

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)

Intermediate parts for distributing signals}

Intermediate parts for distributing energy to two or more circuits in parallel, e.g. splitter (with a holder adapted for supporting apparatus to which its counterpart is attached H01R 33/94)

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)

Coupling parts adapted for selective co-operation with a counterpart in different ways to establish different circuits, e.g., for voltage selection, for series-parallel selection, (programmable connectors)

Coupling parts supported only by co-operation with counterpart

Intermediate parts for distributing signals}

Intermediate parts for distributing energy to two or more circuits in parallel, e.g. splitter (with a holder adapted for supporting apparatus to which its counterpart is attached H01R 33/94)

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)

Coupling parts adapted for selective co-operation with a counterpart in different ways to establish different circuits, e.g., for voltage selection, for series-parallel selection, (programmable connectors)

Coupling parts supported only by co-operation with counterpart

Details, e.g., end pieces or joints (H01R 25/147 takes precedence)
33/72  . Three-pole devices
33/74  . Devices having four or more poles {, e.g. holders for compact fluorescent lamps}
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
33/7607 . . . {the parallel terminal pins having a circular
       disposition}
33/7614 . . . . . {the terminals being connected to individual
       wires}
33/7621 . . . . . {the wires being connected using screw,
       clamp, wrap or spring connection}
33/7628 . . . . . {the wires being connected using solder}
33/7635 . . . . . {the terminals being collectively connected,
       e.g. to a PCB}
33/7642 . . . . . {socket snap fastened in an opening of a
       PCB}
33/765 . . . . . {the terminal pins having a non-circular
       disposition}
33/7657 . . . . . {characterised by keying or marking means}
33/7664 . . . . . {having additional guiding, adapting, shielding,
       anti-vibration or mounting means}
33/7671 . . . . . {having multiple positions or sockets, e.g.
       stacked sockets while mounting}
33/7678 . . . . . {having a separated part for spark preventing
       means}
33/7685 . . . . . {having internal socket contact by abutting}
33/7692 . . . . . {for supporting a tubular fluorescent lamp (for
       two-pole devices H01R 33/06)}
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
33/942 . . . {for tubular fluorescent lamps}
33/945 . Holders with built-in electrical component
33/9453 . . . {for screw type coupling devices}
33/9456 . . . {for bayonet type coupling devices}
33/95 . with fuse; with thermal switch
33/955 . . . with switch operated manually and independent
       of engagement or disengagement of coupling
33/9555 . . . . . {for screw type coupling devices}
33/96 . with switch operated by engagement or
       disengagement of coupling
33/962 . . . {for screw type coupling devices}
33/965 . Dustproof, splashproof, drip-proof, waterproof, or
       flameproof holders
33/9651 . . . {for screw type coupling devices}
33/9653 . . . {neither pole becoming electrically connected
       until the coupling parts are substantially engaged}
33/9655 . . . {for bayonet type coupling devices}
33/9656 . . . {neither pole becoming electrically connected
       until the coupling parts are substantially engaged}
33/9658 . . . {for tubular fluorescent lamps}
33/97 . Holders with separate means to prevent loosening of
       the coupling or unauthorised removal of apparatus
       held
33/971 . . . {for screw type coupling devices}
33/973 . . . {for bayonet type coupling devices}
33/975 . Holders with resilient means for protecting
       apparatus against vibrations or shocks
33/9753 . . . {for screw type coupling devices}
33/9756 . . . {for bayonet type coupling devices}

35/00 Flexible or turnable line connectors {, i.e. the
rotation angle being limited} (rotary current
collectors, distributors H01R 39/00)
35/02 . Flexible line connectors {without frictional contact
members}
35/025 . . . {having a flexible conductor wound around a
rotation axis}
35/04 . Turnable line connectors with limited rotation angle
       {with frictional contact members}

39/00 Rotary current collectors, distributors or
       interrupters
39/02 . Details {for dynamo electric machines (for current
       collectors not particularly for dynamo electric
       machines H01R 39/60, H01R 39/64)}
39/022 . . . {characterised by the materials used, e.g.
       ceramics}
39/025 . . . . . {Conductive materials}
39/027 . . . . . {Insulating materials}
39/04 . Commutators (wherein the segments are formed
       by extensions of dynamo-electric machine
       winding H02K)
39/045 . . . {the commutators being made of carbon}
39/06 . . . other than with external cylindrical contact
       surface, e.g. flat commutators
39/08 . Slip-rings
39/085 . . . . . {the slip-rings being made of carbon}
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
39/381 . . . {characterised by the application of pressure to
       brush}
39/383 . . . {characterised by the electrical connection to
       the brush holder}
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 B66L 5/00)

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)

Means structurally associated with the brushes for interrupting current (H01R 39/58 takes precedence)

Devices for lubricating or polishing slip-rings or commutators during operation of the collector

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

Means structurally associated with the brushes for interrupting current (H01R 39/58 takes precedence)

Devices for lubricating or polishing slip-rings or commutators during operation of the collector

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

Means structurally associated with the brushes for interrupting current (H01R 39/58 takes precedence)

Hand tools for crimping
for wire processing before connecting to contact members, not provided for in groups H01R 43/02 - H01R 43/26

### 2101/00
- **One pole**

### 2103/00
- **Two poles**

### 2105/00
- **Three poles**

### 2107/00
- **Four or more poles**

#### 2201/00 Connectors or connections adapted for particular applications
- 2201/02 . for antennas
- 2201/04 . for network, e.g. LAN connectors
- 2201/06 . for computer periphery
- 2201/08 . for halogen lamps
- 2201/10 . for dynamoelectric machines
- 2201/12 . for medicine and surgery
- 2201/14 . seismic connectors
- 2201/16 . for telephony
- 2201/18 . for television
- 2201/20 . for testing or measuring purposes
- 2201/22 . for transformers or coils
- 2201/24 . for radio transmission
- 2201/26 . for vehicles