



(Amended Claims acc. to International Preliminary
Examination Report)

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Patent Claims

1. A connector housing for connecting an electrical
10 ribbon cable having a series of electrical con-
ductors (13) embedded in an insulating material
(15) in juxtaposed manner and one side thereof
being exposed in the region of a ribbon cable end
(12), and being provided on a broad side with a
15 locking projection (53) extending over at least
part of the ribbon cable width,
said connector housing (31) comprising a cable
insertion opening (43) for pluggably receiving the
ribbon cable end (12) as well as conductor contact
20 receiving cavities for receipt of conductor con-
tacts (75) projecting into the cable insertion
opening (43), for establishing electrical contact
with the individual exposed ribbon cable con-
ductors (13), and being provided with a resilient
25 locking arm (47) having a locking shoulder (51),
whereby, when the ribbon cable end (12) is in-
serted to a minimum depth at which electrical con-
tact is established between the exposed ribbon
cable conductors (12) and the conductor contacts
30 (75), the locking projection (33) and the locking
shoulder (51) are adapted to be brought to a
latched condition.
2. A connector housing according to claim 1, for
35 connecting a ribbon cable the locking projection



(33) of which has an end face (35, 39) at a longitudinal end,

wherein the cable insertion opening (43) comprises a locking projection guide means (53) for guiding the locking projection (33) upon insertion of the ribbon cable end (12) into the cable insertion opening (43), and the end face (35, 39) of the locking projection (33) cooperates with the locking projection guide means (53).

3. A connector housing according to claim 2, wherein the cable insertion opening (43) comprises a longitudinal sidewall located opposite the broad side of the inserted ribbon cable (12) provided with the locking projection (33), and wherein the locking projection guide means (53) is designed as a guiding recess (53) which is formed in the longitudinal sidewall of the cable insertion opening (43) and matched to the profile of the locking projection (33) and in which the locking projection (33) is adapted to be guided during insertion of the ribbon cable end (12) into the cable insertion opening (43).
4. A connector housing according to claim 2 or 3, wherein the cable insertion opening (43) comprises a transverse inner wall (57) located opposite a narrow side of the inserted ribbon cable (12), and wherein the ribbon cable end (12), during insertion into the cable insertion opening (43), is adapted to be guided on one longitudinal side by the transverse inner wall (57) of cable insertion opening (43) and on the other longitudinal side by the end face (35) of locking projection (33).

4. A connector housing according to claim 2 or 3, wherein the cable insertion opening (43) comprises a transverse inner wall (57) located opposite a narrow side of the inserted ribbon cable (12), and wherein the ribbon cable end (12), during insertion into the cable insertion opening (43), is adapted to be guided on one longitudinal side by the transverse inner wall (57) of cable insertion opening (43) and on the other longitudinal side by the end face (35) of locking projection (33).



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5. A connector housing according to claim 3 or 4, for connecting a ribbon cable the locking projection (33) of which is of smaller width than the ribbon cable end (12), with the centre of the locking projection (33) being offset from the longitudinal centre line of the ribbon cable end (12), wherein the centre of the locking recess (53) is preferably offset from the longitudinal centre line of the ribbon cable end (12) such that the ribbon cable end (12) provided with locking projection (33) is adapted to be inserted into cable insertion opening (43) of connector housing (31) in a predetermined position only.
6. A connector housing according to any one of claims 1 to 5, wherein the locking arm (47) is formed integrally with the connector housing (31).
7. A connector housing according to any one of claims 1 to 6, wherein the connector housing is constituted by a connector partial housing (21) and an additional housing (63), and the locking arm (47) is arranged on the additional housing (63) adapted to be latched to connector partial housing (21).
8. A connector housing according to claim 7, wherein the additional housing (63) is provided with a cable through-opening (61), and the additional housing (63), in the region of its longitudinal end remote from cable through-opening (61), has a connector receiving opening (65) in which the connector partial housing (21) is adapted to be received such that the cable insertion opening (29) of connector partial housing (21) is aligned



with the cable through-opening (61) of additional housing (63).

- 5 9. A connector housing according to claim 8,
 wherein on both sides of the connector receiving
 opening (61) there is disposed one resilient
 latching arm (67) each having a latching shoulder
 (71) at the free latching arm end, and the
10 latching shoulders (71) of the two latch arms (67)
 latchingly engage behind connector partial housing
 (21) when connector partial housing (21) is in-
 serted into additional housing (63) until its
 cable insertion opening (29) is in alignment with
 cable through-opening (61) of additional housing
15 (63).
10. A connector housing according to any one of claims
 7 to 9,
 wherein the locking projection guide means or
20 guiding recess (53), respectively, is formed on
 the cable through-opening (61) of additional
 housing (63).
11. A connector housing according to any one of claims
25 1 to 10,
 wherein the connector housing (31) or additional
 housing (63), respectively, formed integrally with
 locking arm (47) is formed of elastic plastics
 material.
- 30 12. A connector housing according to any one of claims
 1 to 11,
 wherein the locking arm (47), when formed in-
 tegrally with connector housing (31) or additional
35 housing (63), respectively, is cut free from a



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sidewall of connector housing (31) or additional housing (63) in the form of a spring arm.

- 5 13. A connector housing according to claim 12,
 wherein locking arm (47) is of lesser wall thick-
 ness than the sidewall with which it is integrally
 formed.
- 10 14. A ribbon cable connector assembly comprising an
 electrical ribbon cable having a series of
 electrical conductors (13) embedded in an insu-
 lating material (15) in juxtaposed manner and one
 side thereof being exposed in the region of a
 ribbon cable end (12),
15 and comprising a connector housing (31) having a
 cable insertion opening (43) for pluggably re-
 ceiving the ribbon cable end (12) as well as con-
 ductor contact receiving cavities for receipt of
 conductor contacts (75) projecting into the cable
20 insertion opening (43), for establishing electri-
 cal contact with the individual exposed ribbon
 cable conductors (13),
 wherein a locking projection (33) is disposed on a
 broad side of the ribbon cable (12) extending over
25 at least part of the ribbon cable width, and the
 connector housing (31) has disposed thereon a re-
 silient locking arm (47) having a locking shoulder
 (51), wherein when ribbon cable end (12) is in-
 serted to a minimum depth at which electrical con-
30 tact is established between the exposed ribbon
 cable conductors (12) and the conductor contacts
 (75), the locking projection (33) and the locking
 shoulder (51) constitute a latched condition.
- 35 15. A connector assembly according to claim 14,



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wherein the locking projection (33) has an end face (35, 39) at a longitudinal end, the cable insertion opening (43) comprises a locking projection guide means (53) for guiding the locking projection (33) upon insertion of the ribbon cable end (12) into the cable insertion opening (43), and the end face (35, 39) of the locking projection (33) cooperates with the locking projection guide means (53).

16. A connector assembly according to claim 15, wherein the cable insertion opening (43) comprises a longitudinal sidewall located opposite the broad side of inserted ribbon cable (12) provided with the locking projection (33), and the locking projection guide means (53) is designed as a guiding recess (53) which is formed in the longitudinal sidewall of the cable insertion opening (43) and matched to the profile of the locking projection (33) and in which the locking projection (33) is guided during insertion of the ribbon cable end (12) into the cable insertion opening (43).

17. A connector assembly according to claim 15 or 16, wherein the cable insertion opening (43) comprises a transverse inner wall (57) located opposite a narrow side of the inserted ribbon cable (12), and wherein the ribbon cable end (12), during insertion into the cable insertion opening (43), is adapted to be guided on one longitudinal side by the transverse inner wall (57) of cable insertion opening (43) and on the other longitudinal side by the end face (35) of locking projection (33).



18. A connector assembly according to claim 15 or 16,
wherein the locking projection (33) has at both
transverse ends thereof one end face (35, 39)
each, which each cooperate with the locking pro-
jection guide means, and the ribbon cable end
(12), upon insertion into cable insertion opening
(43), on both longitudinal ends thereof is guided
by one each of the two face ends (35, 39) of
locking projection (33).
19. A connector assembly according to any one of
claims 16 to 18,
wherein the locking projection (33) is of smaller
width than the ribbon cable end (12), and the
centre of locking projection (33) and the centre
of guiding recess (53) are preferably offset from
the longitudinal centre line of the ribbon cable
end (12) such that the ribbon cable end (12)
provided with locking projection (33) is adapted
to be inserted into cable insertion opening (43)
of connector housing (31) in a predetermined
position only.
20. A connector assembly according to any one of
claims 14 to 19,
wherein a broad side of the ribbon cable end (12)
has a reinforcing layer (19) formed thereon, for
example in the form of a reinforcing film adhered
to the insulating material (15) of ribbon cable
end (12).
21. A connector assembly according to any one of
claims 14 to 20,
wherein the locking projection (33) is designed in
the form of a locking rib extending transversely
of the ribbon cable longitudinal direction.



22. A connector assembly according to claim 21,
wherein the locking rib is of rectangular cross-
section normal to the broad side plane of ribbon
5 cable (12).
23. A connector assembly according to any one of
claims 14 to 22,
wherein the locking projection (33) is constituted
10 by a separate member attached to the reinforcing
layer (19).
24. A connector assembly according to any one of
claims 14 to 22,
15 wherein the locking projection (33) is formed by a
member formed integrally with the reinforcing
layer (19).
25. A connector assembly according to any one of
20 claims 14 to 24,
wherein the locking arm (47) is formed integrally
with the connector housing (31).
26. A connector assembly according to any one of
25 claims 14 to 24,
wherein the connector housing is constituted by a
connector partial housing (21) and an additional
housing (63), and the locking arm (47) is arranged
on the additional housing (63) adapted to be
30 latched to connector partial housing (21).
27. A connector assembly according to claim 26,
wherein the additional housing (63) is provided
with a cable through-opening (61), and the addi-
35 tional housing (63), in the region of its longitu-
dinal end remote from cable through-opening (61),



5 has a connector receiving opening (65) in which the connector partial housing (21) is adapted to be received such that the cable insertion opening (29) of connector partial housing (21) is aligned with the cable through-opening (61) of additional housing (63).

10 28. A connector assembly according to claim 27, wherein on both sides of the connector receiving opening (61) there is disposed one resilient latching arm (67) each having a latching shoulder (71) at the free latching arm end, and the latching shoulders (71) of the two latch arms (67) latchingly engage behind connector partial housing (21) when connector partial housing (21) is inserted into additional housing (63) until its cable insertion opening (29) is in alignment with cable through-opening (61) of additional housing (63).

20 29. A connector assembly according to any of claims 26 to 28, wherein the locking projection guide means or guiding recess (53), respectively, is formed on the cable through-opening (61) of additional housing (63).

30 30. A connector assembly according to any one of claims 14 to 29, wherein the connector housing (31) or additional housing (63), respectively, formed integrally with locking arm (47) is formed of elastic plastics material.

35 31. A connector assembly according to any one of claims 14 to 30,



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5 wherein the locking arm (47), when formed integrally with connector housing (31) or additional housing (63), respectively, is cut free from a sidewall of connector housing (31) or additional housing (63) in the form of a spring arm.

10 32. A connector assembly according to claim 31, wherein locking arm (47) is of lesser wall thickness than the sidewall with which it is integrally formed.