Claims

1 A marine power conduit interface assembly comprising a housing having an axis and a bore to receive a marine power conduit;

at least one slide adapted to slide in an axial direction relative to the housing;

a locking device adapted to secure the assembly within a socket of a marine energy generator, the locking device having at least one locking arm movable from a first radially retracted position to a second radially expanded position relative to the axis, and a lock operator adapted to move the locking arm from the first to the second position, wherein the lock operator and the locking arm engage by relative sliding movement along the axis to move the locking arm between the first and second radial positions;

wherein the locking arm is disposed on one of the housing and the slide and the lock operator is mounted on the other of the housing and the slide, and wherein relative sliding movement of the housing and slide in an axial direction ~~moves the~~ causes relative movement of a first tapered face~~s of~~ on the lock operator and a second tapered face on ~~and~~ the locking arm ~~relative to one another~~ to move the locking arm between the first and second radial positions;

wherein the assembly comprises a latch having a release position in which the slide is axially movable relative to the housing ~~and,~~ and a latched position in which relative sliding of the housing and the slide is restricted by the latch;

wherein the slide comprises at least one leg extending axially within the bore of the housing and an annular section in the form of a ring;

wherein the leg is disposed in a groove formed in the inner surface of the bore of the housing;

wherein the ring comprises a flange which extends radially outwards from the outer surface of the housing; and

wherein the ring is connected to the at least one leg by a radially inwardly extending finger passing through a slot in the housing.

2 A marine power conduit interface assembly as claimed in claim 1, wherein the housing is cylindrical.

~~3 A marine power conduit interface assembly as claimed in claim 1 or claim 2, wherein one of the locking arm and the lock operator has a tapered face which engages a face of the other.~~

~~4 A marine power conduit interface assembly as claimed in any preceding claim, wherein the lock operator is on the slide and the locking arm is on the housing.~~

~~5~~3 A marine power conduit interface assembly as claimed in any preceding claim, wherein the latch comprises a latch member on the slide and a latch plate on the housing~~.~~

~~6 A marine power conduit interface assembly as claimed in claim 5~~, and wherein the latch member is movable, relative to the housing, to engage and disengage with the plate.

~~7~~4 A marine power conduit interface assembly as claimed in any preceding claim having multiple legs each disposed in a respective groove, and wherein the legs and grooves are circumferentially spaced around the axis.

~~8~~5 A marine power conduit interface assembly as claimed in claim ~~7~~4~~.~~, wherein the legs support the lock operator at cantilever ends disposed at an inner end of the housing.

~~9~~6 A marine power conduit interface assembly as claimed in any preceding claim, wherein the lock operator is mounted on one end of the slide, and wherein the latch is mounted on the other end of the slide, spaced apart from the lock operator.

~~10~~7 A marine power conduit interface assembly as claimed in any preceding claim wherein the assembly has an inner end, adapted to pass through the socket in the marine energy generator, and an outer end, which in use remains external to the socket, and wherein the assembly comprises a stop member between the inner and outer ends, limiting passage of the housing into the socket, wherein the stop member is connected to the slide, and extends radially outward from the housing.

~~11~~8 A marine power conduit interface assembly as claimed in claim ~~10,~~7, wherein insertion of the assembly into the socket activates the locking device when the outer surface of the socket engages a radially extending shoulder on the locking device which extends radially outward from the housing thereby resisting further inward movement of the slide into the socket and causing sliding movement of the slide relative to the housing.

~~12~~9 A marine power conduit interface assembly as claimed in any preceding claim, wherein the locking arm is constrained to pivot by less than 90° relative to the housing.

~~13~~10 A marine power conduit interface assembly as claimed in claim ~~12~~9, wherein in the second radially expanded position the locking arm is disposed at an angle of less than 90° relative to the housing and wherein a free end of the locking arm is disposed between a pivot point of the locking arm and an inner end of the assembly adapted to be inserted into the socket.

~~14~~11 A marine power conduit interface assembly as claimed in claim ~~13~~10 ~~or claim 14~~, wherein in the second radially expanded position the locking arm is disposed at an angle of less than 70° relative to the housing.

~~15~~12 A marine power conduit interface assembly as claimed in any preceding claim, wherein the groove formed in the inner surface of the bore is open to the inner surface of the bore and has a radial depth which is less than the wall thickness of the housing.

~~16~~13 A marine power conduit interface assembly as claimed in any preceding claim, wherein the radial depth of the groove is at least equal to the radial dimension of the leg.

~~17~~14 A marine power conduit interface assembly as claimed in any preceding claim, wherein the groove has a rectilinear cross section with straight side walls, and with a flat base opposite an open side of the groove.

~~18~~15 A marine power conduit interface assembly as claimed in claim ~~17~~14, wherein the leg and the groove have the same shape of cross-section.

~~19~~16 A marine power conduit interface assembly as claimed in any preceding claim, wherein the locking device is selectively actuable from the release position to the latched position and from the latched position to the release position.

~~20~~17 A marine power conduit interface assembly as claimed in claim ~~19~~16, wherein the locking device is selectively actuable from the release position to the latched position and from the latched position to the release position in response to relative axial movement between the slide and the housing.

~~21~~18 A marine power conduit interface assembly as claimed in any preceding claim, wherein the leg and the annular section move as a single unit in an axial direction.

~~22~~19 A marine power conduit interface assembly as claimed in claim ~~21~~18, wherein the slot receiving the radially extending finger passes through inner and outer faces of the housing.

~~23~~20 A marine power conduit interface assembly as claimed in claim ~~21~~18, wherein the slot extends in an axial direction, and wherein the axial length of the slot limits the axial movement of the slide.

~~24 A marine power conduit interface assembly comprising a housing having an axis and a bore to receive a marine power conduit;~~
~~at least one slide adapted to slide in an axial direction relative to the housing;~~
~~a locking device adapted to secure the assembly within a socket of a marine energy generator, the locking device having at least one locking arm movable from a first radially retracted position to a second radially expanded position relative to the axis, and a lock operator adapted to move the locking arm from the first to the second position, wherein the lock operator and the locking arm engage by relative sliding movement along the axis to move the locking arm between the first and second radial positions;~~

~~wherein the locking arm is disposed on one of the housing and the slide and the lock operator is mounted on the other of the housing and the slide, and wherein relative sliding movement of the housing and slide in an axial direction moves the tapered faces of the lock operator and the locking arm relative to one another to move the locking arm between the first and second radial positions;~~

~~wherein the assembly comprises a latch having a release position in which the slide is axially movable relative to the housing and, and a latched position in which relative sliding of the housing and the slide is restricted by the latch;~~

~~wherein the slide comprises at least one leg extending axially within the bore of the housing and an annular section in the form of a ring;~~

~~wherein the leg is disposed in a groove formed in the inner surface of the bore of the housing;~~

~~wherein the ring comprises a flange which extends radially outwards from the outer surface of the housing; and~~

~~wherein the ring is connected to the at least one leg by a radially inwardly extending finger passing through a slot in the housing;~~

~~wherein the groove formed in the inner surface of the bore is open to the inner surface of the bore and has a radial depth which is less than the wall thickness of the housing, and wherein the radial depth of the groove is at least equal to the radial dimension of the leg; and~~

~~wherein the locking device is selectively actuable from the release position to the latched position and from the latched position to the release position.~~