BATTERY CHARGER

APPLICATION CATALOGUE

Battery Charger Connectors
CVB 24-10 SERIES

Radiall™ | VanSystem

VanSystem

About Us

Radiall

Since 1952, Radiall Sa have been enabling the future through collaboration with our customers.
The results are a range of innovative and award-winning products that customers trust for unrivaled repeatability and performance.

Radiall Sa are a global company with facilities around the world that specializes in manufacturing the highest quality interconnect components to support the most demanding applications.

At Radiall, you can rely on us to be the industry's global market leader.

VanSystem

VanSystem is a company founded in Lombardy - Italy, which has been operating since 1985 in the industrial market.
Since 2015 VanSystem is a Radiall company.

Besides connectors with screw or bayonet coupling complying with the Mil-DTL-5015 standard, VanSystem designs and manufactures non-standard products for special applications.
One of VanSystem's strong points is an agile and dynamic organizational structure which enables direct and constant interaction with customers in order to meet all their requirements and build solid, long-term partnerships.
The VanSystem team's professionalism, skill and commitment are at your service to help you achieve the solution you are looking for.

VanSystem's Quality System is qualified according to ISO 9001:2015 and ISO/TS 22163:2017 IRIS Certification™ rules:2017 (International Railway Industry Standard).

IRIS Certification

QUALITY SYSTEM CERTIFICATION ISO 9001 DNV

Battery Charger Connectors - Introduction

CVB 24-10 Series

CVB 24-10 series is used for the connection of on-board battery charger series.

The charger converts single and three phase AC voltage to DC voltage, with high efficiency and reliability.

The connector is sealed and it is usable for any EV terrestrial and marine application.

24-10 arrangement has 7 poles, 46A, 500Vac/700Vdc.

The connectors has a bayonet coupling nut and it is provided with grounding finger to guarantee shielding.

A shielded cable can be used with connector type 96 with F16 conduictive finishes.

The Backshell can be supplied with an internal Metric thread suitable for cable gland or conduit adapters, with cable clamp type C and with integrated gland PHM type.

Features and Benefits

Robust Connection
- Fully protected connectors: no risk to damage the contacts thanks the robust shell
- Supplied with grounding finger, conductive plating and the proper rear accessory
- Suitable for polarizations to prevent un-correct coupling

Easy installation
- Fast and reliable coupling
- Backshell and accessories for fastening cable/conduit fixation

Suitable for harsh environments (adapted for outdoor use)
- Waterproof connection
- Dust proof
- Corrosion resistant

High level of performance
- Working temperature -55°C ÷ 200°C (according to the inserts material)
- EMI protection with grounding finger
- Power connection up to 350A

Products for Power Solutions

- H.F. Battery Chargers
- Line Stabilizers
- DC/DC converters
- AC/DC converter

APPLICATIONS

- Heavy trucks
- Buses
- Marine
- Mining Vehicle
- Taxis
- Light Van
- Portable Energy Storage
- Harsh Environment Applications
- Energy Converter

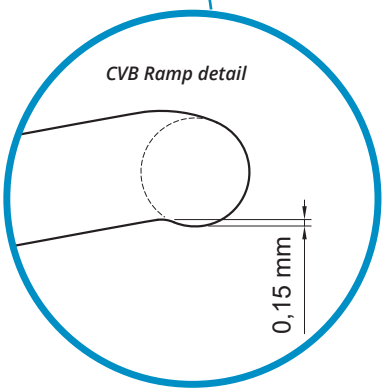
International Standard Document Compliance:

- Mil-DTL-5015 (where applicable)
- VG 95234 (where applicable)
- EN 60529
- European Directive 2011/65/UE (RoHS)

Battery Charger Connectors - General Characteristics

Bayonet Circular Connectors

This is the basic series. The front seal has a double function: it is used to supply the elastic return during the coupling and to guarantee waterproof protection.The locking is obtained by a ramp end drop of 0.15 mm.
The series is compatible with all connectors in accordance with VG95234 specification.



Main characteristics:

- Coupling-nut rotation of 120° only to mate connectors
- Audible, visible and tactile mating
- Interfacial seal between the two halves of the connector
- The bayonet ramps are resistant to damage

Advantages against the threaded version:

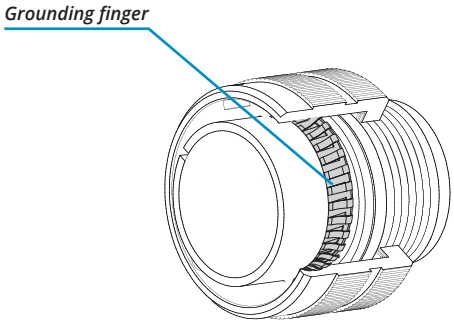
- Fast coupling and uncoupling
- The security of coupling is guaranteed and therefore its reliability is improved
- Resistance to loosening of the coupling nut also in vibration or impact condition
- IP67 waterproof protection when connectors are mated
- High number of mating cycles

External metal shells	Aluminum alloy (on request stainless steel)
Shell finishes	F16 : CCF-Black passivation (conductive) - complies RoHS directives(*)
Insulating rubber parts	Chloroprene rubber
Contacts	Copper alloy Silver plating 3.5µ min.
Corrosion resistance	500 h
IP protection degree (EN 60529)	IP54, IP67, IP68 (waterproof to 10 meters - 12 hours)

(*) Restriction of Hazardous Substances Directives of the European Parliamentn°2002/95/ECissued on 27 January 2003
Alternative materials and finishes are available to suit specific requirements.

Battery Charger Connectors - CVB 96DA 24-10S M32 CR F16

With Socket crimp contacts for cable 8 AWG, Backshell with internal metric thread M32



Main application: Battery Charger

Reference documents:

- Mil-DTL-5015 (where applicable)
- VG 95234 (where applicable)
- EN 60529
- European Directive 2011/65/UE (RoHS)

Connector supplied with:

- Grounding finger
- Backshell with internal metric thread M32

Materials and finishes:

Shells: aluminum alloy - Protective finishes: CCF black (conductive)
Insulating rubber parts: chloroprene rubber
Contacts: copper alloy - Plating: silver 3.5µ min.

Part Number	Short Description	Description
VS212036	CVB 96DA 24-10S M32 CR F16	Plug Bayonet Connector provided with grounding finger to guarantee shielding; Backshell with an internal Metric thread M32 suitable for cable glands or conduit adapters. Contacts arrangement: 24-10 Contacts nr: 7 size 8 – crimp-Socket for cable 8 AWG

ELECTRICAL CHARACTERISTICS

Nominale voltage	Test Voltage	Service	Current rating single contact		Contact resistance	Insulating resistance
			Max 20°	Max 80°		
500Vac 700Vdc	2.000Vac	A	73A	46A	< 1 mΩ	> 5 GΩ

ENVIRONMENTAL CHARACTERISTICS

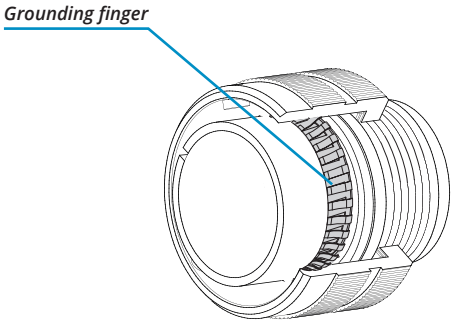
Connectors working temperature	IP Protection degree (EN 60529)
–55°C ÷ +125°C	IP67 (when mated)

MECHANICAL CHARACTERISTICS

Mating system	Mating endurance (IEC 61300-2-2)	Shock and vibrations tests (EN 61373)
Bayonet Coupling System	500 mating cycles minimum	Body mounted, cat. 1, class B

Battery Charger Connectors - CVB 96DA 24-10S M32 CR F16 N397

With Socket crimp contacts for cable 6mm² - 10 AWG, Backshell with internal metric thread M32



Main application: Battery Charger

Reference documents:

- Mil-DTL-5015 (where applicable)
- VG 95234 (where applicable)
- EN 60529
- European Directive 2011/65/UE (RoHS)

Connector supplied with:

- Grounding finger
- Backshell with internal metric thread M32

Materials and finishes:

Shells: aluminum alloy - Protective finishes: CCF black (conductive)
Insulating rubber parts: chloroprene rubber
Contacts: copper alloy - Plating: silver 3.5µ min.

Part Number	Short Description	Description
VS212139	CVB 96DA 24-10S M32 CR F16 N397	Plug Bayonet Connector provided with grounding finger to guarantee shielding; Backshell with an internal Metric thread M32 suitable for cable glands or conduit adapters. Contacts arrangement: 24-10 Contacts nr: 7 size 8-38 – crimp-Socket for cable 6 mm² (10 AWG)

ELECTRICAL CHARACTERISTICS

Nominale voltage	Test Voltage	Service	Current rating single contact		Contact resistance	Insulating resistance
			Max 20°	Max 80°		
500Vac 700Vdc	2.000Vac	A	73A	46A	< 1 mΩ	> 5 GΩ

ENVIRONMENTAL CHARACTERISTICS

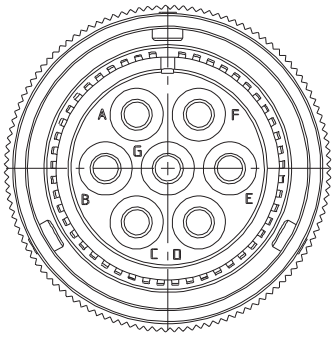
Connectors working temperature	IP Protection degree (EN 60529)
–55°C ÷ +125°C	IP67 (when mated)

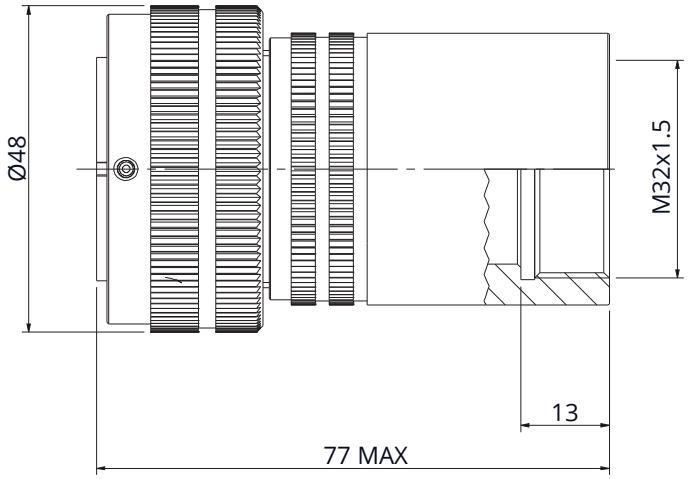
MECHANICAL CHARACTERISTICS

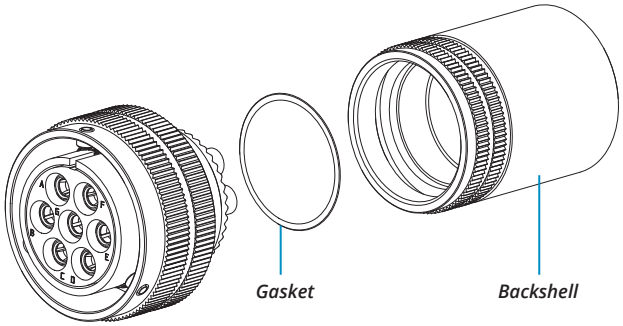
Mating system	Mating endurance (IEC 61300-2-2)	Shock and vibrations tests (EN 61373)
Bayonet Coupling System	500 mating cycles minimum	Body mounted, cat. 1, class B

Battery Charger Connectors - Part number explanation

	CVB		96	DA	24-10	S	M32	CR		F16	N
	Series Code		Shell Type	Connector Class			Backshell internal thread			Shell finish	







Dimensions in mm

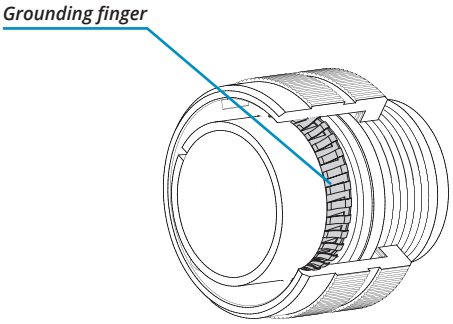
	Insulating material	-	Chloroprene rubber*
CVB	**Series Code**	CVB	Bayonet Connector
	Shell Material	-	Aluminum**
96	**Shell Type**	96	Plug Connector with grounding finger
DA	**Connector Class**	DA	with waterproof O-ring (IP67***)
24-10	**Insert Arrangement**	24-10	7 poles Service A

S	**Contact Gender**	S	Socket contacts
M32	**Backshell internal thread**	M32	Provided with an internal Metric thread M32
CR	**Contact Termination**	CR	Crimp contacts
	Contact Plating	-	Silver plating****
F16	**Shell finish**	F16	CCF - Black passivation RoHS compliance - conductive
N	**Modification Code**	-	with contacts AWG 8
		N397	with contacts AWG 10, 6 mm²

* *On request V: Fluoride rubber (Aggressive environments) - S: Silicone rubber (-55°C ÷ 200°C)*
** *On request CD5: Gold plating*
*** *Protection degree: IP 67 (only in the mating area with mated connectors) according to EN 60529*
**** *On request Stainless Steel Aisi 303 or Aisi 316*

Battery Charger Connectors - CVB 96AC 24-10S CR F16

With Socket crimp contacts for cable 8 AWG, with MS 3057-16C cable clamp



Main application: Battery Charger

Reference documents:

- Mil-DTL-5015 (where applicable)
- VG 95234 (where applicable)
- EN 60529
- European Directive 2011/65/UE (RoHS)

Connector supplied with:

- MS 3057-16C cable clamp (Ø cable 15,5 ÷ 23,8 mm)
- Standard backshell
- Grounding finger

Materials and finishes:

Shells: aluminum alloy - Protective finish: CCF black (conductive)
Insulating rubber parts: chloroprene rubber
Contacts: copper alloy - Plating: silver 3.5µ min.

Part Number	Short Description	Description
VS212075	CVB 96AC 24-10S CR F16	Plug bayonet connector able to accept rear accessories Contacts arrangement: 24-10 Contacts nr: 7 size 8 - crimp-Socket for cable 8 AWG

ELECTRICAL CHARACTERISTICS

Nominale voltage	Test Voltage	Service	Current rating single contact		Contact resistance	Insulating resistance
			Max 20°	Max 80°		
500Vac 700Vdc	2.000Vac	A	73A	46A	< 1 mΩ	> 5 GΩ

ENVIRONMENTAL CHARACTERISTICS

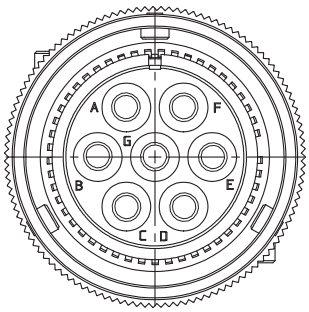
Connectors working temperature	IP Protection degree (EN 60529)
–55°C ÷ +125°C	IP67 (when mated)

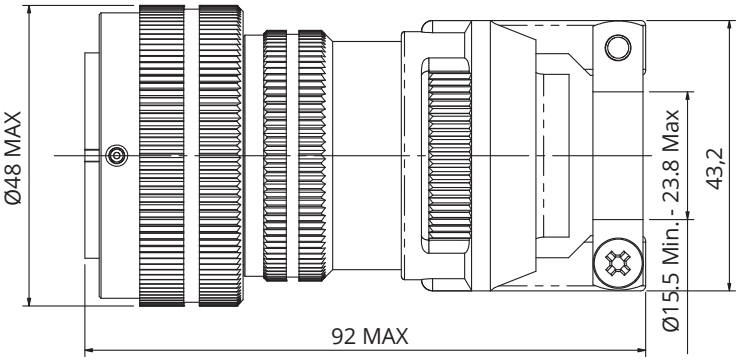
MECHANICAL CHARACTERISTICS

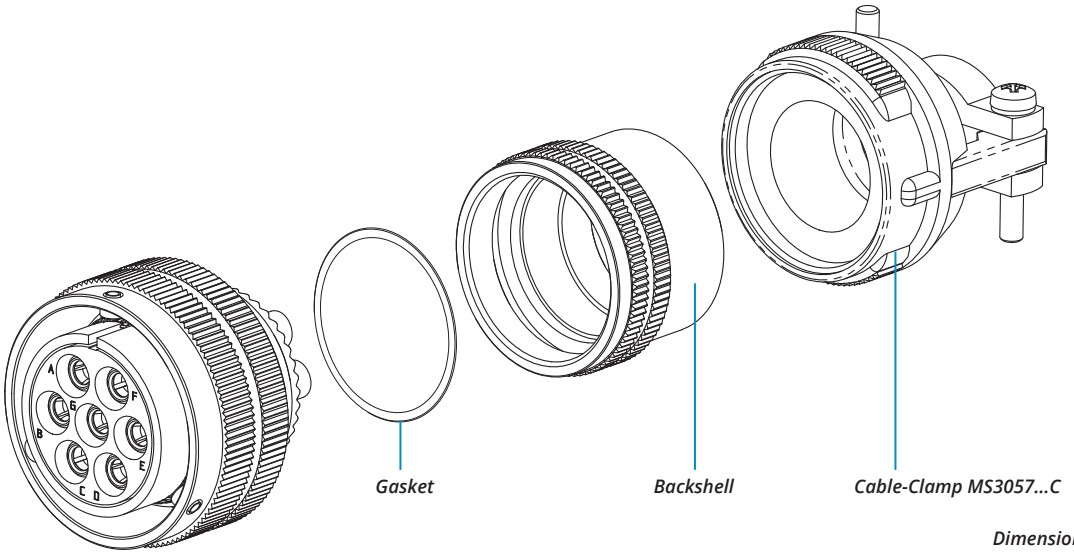
Mating system	Mating endurance (IEC 61300-2-2)	Shock and vibrations tests (EN 61373)
Bayonet Coupling System	500 mating cycles minimum	Body mounted, cat. 1, class B

Battery Charger Connectors - Part number explanation

	CVB		96	AC	24-10	S	CR		F16
	Series Code		Shell Type	Connector Class					Shell finish







Dimensions in mm

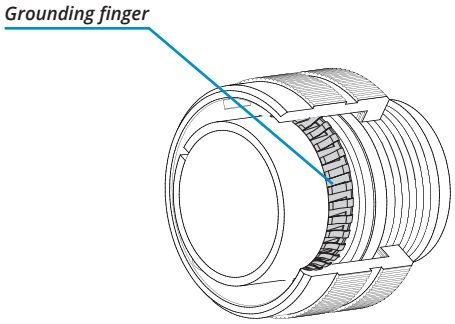
	Insulating material	-	Chloroprene rubber*
CVB	**Series Code**	CVB	Bayonet Connector
	Shell Material	-	Aluminum**
96	**Shell Type**	96	Plug Connector with grounding finger
AC	**Connector Class**	AC	with waterproof O-ring (IP67***)

24-10	**Insert Arrangement**	24-10	7 poles Service A
S	**Contact Gender**	S	Socket contacts
CR	**Contact Termination**	CR	Crimp contacts
	Contact Plating	-	Silver plating****
F16	**Shell finish**	F16	CCF - Black passivation RoHS compliance - conductive

* *On request V: Fluoride rubber (Aggressive environments) - S: Silicone rubber (-55°C ÷ 200°C)*
** *On request CD5: Gold plating*
*** *Protection degree: IP 67 (only in the mating area with mated connectors) according to EN 60529*
**** *On request Stainless Steel Aisi 303 or Aisi 316*

Battery Charger Connectors - CVB 96DA 24-10S MH32E CR F16

With Socket crimp contacts for cable 8 AWG, with metallic cable gland



Main application: Battery Charger

Reference documents:

- Mil-DTL-5015 (where applicable)
- VG 95234 (where applicable)
- EN 60529
- European Directive 2011/65/UE (RoHS)

Connector supplied with:

- Grounding finger
- Backshell with internal metric thread
- Skintop® MS-SC-M nickel-plated brass EMC cable gland (LAPP cod.53112650) (Ø cable 11 ÷ 21 mm) - Ø9 mm minimum above braiding

Materials and finishes:

Shells: aluminum alloy - Protective treatment: CCF black (conductive)
Insulating rubber parts: chloroprene rubber
Contacts: copper alloy - Plating: silver 3.5µ min.

Part Number	Short Description	Description
on request	CVB 96DA 24-10S MH32E CR F16	Plug bayonet connector Contacts arrangement: 24-10 Contacts nr: 7 size 8 – crimp-Socket for cable 8 AWG

ELECTRICAL CHARACTERISTICS

Nominale voltage	Test Voltage	Service	Current rating single contact		Contact resistance	Insulating resistance
			Max 20°	Max 80°		
500Vac 700Vdc	2.000Vac	A	73A	46A	< 1 mΩ	> 5 GΩ

ENVIRONMENTAL CHARACTERISTICS

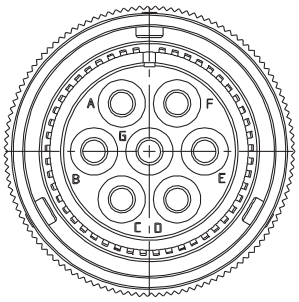
Connectors working temperature	IP Protection degree (EN 60529)
–55°C ÷ +125°C	IP67 (when mated)

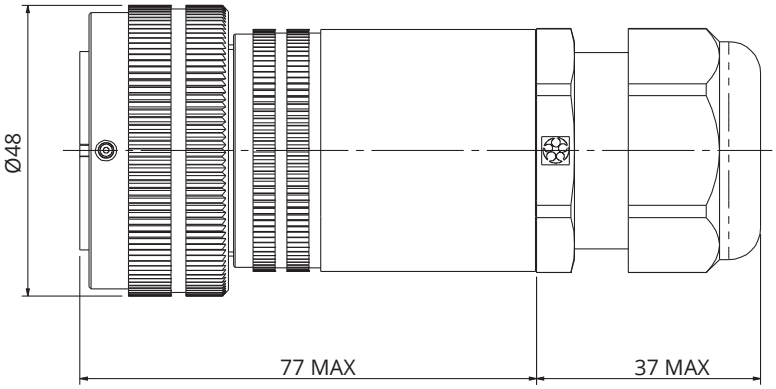
MECHANICAL CHARACTERISTICS

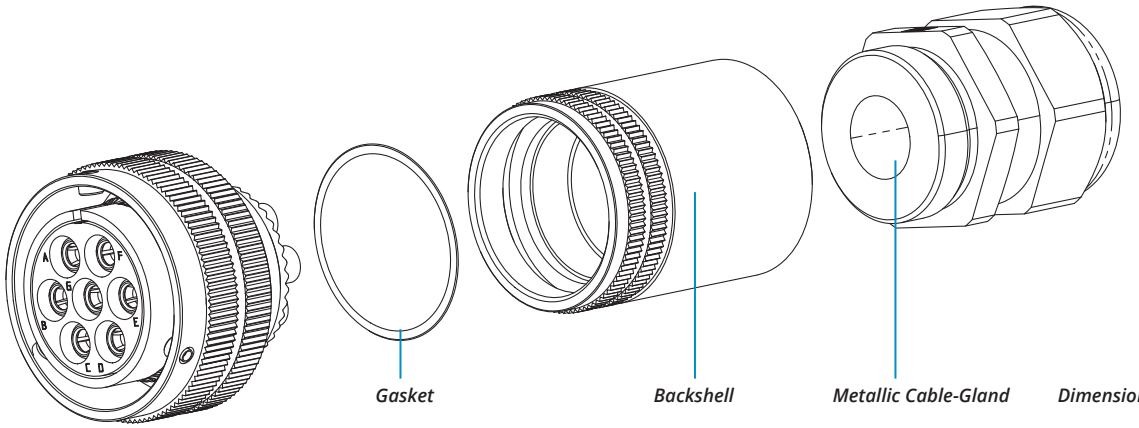
Mating system	Mating endurance (IEC 61300-2-2)	Shock and vibrations tests (EN 61373)
Bayonet Coupling System	500 mating cycles minimum	Body mounted, cat. 1, class B

Battery Charger Connectors - Part number explanation

	CVB		96	DA	24-10	S	MH32E	CR		F16
	Series Code		Shell Type	Connector Class			Backshell internal thread			Shell finish







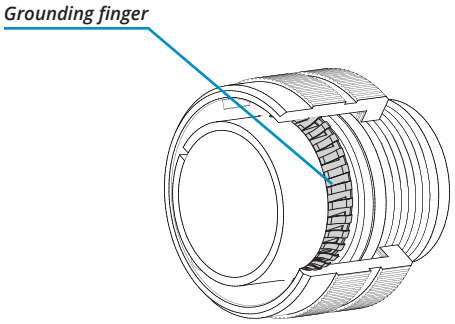
Dimensions in mm

	Insulating material	**-**	Chloroprene rubber*	S	**Contact Gender**	**S**	Socket contacts
CVB	**Series Code**	**CVB**	Bayonet Connector	MH32E	**Backshell internal thread**	**MH32E**	Provided with a Metric thread cable glands M32
	Shell Material	**-**	Aluminum**	CR	**Contact Termination**	**CR**	Crimp contacts
96	**Shell Type**	**96**	Plug Connector with grounding finger		**Contact Plating**	**-**	Silver plating****
DA	**Connector Class**	**DA**	with waterproof O-ring (IP67***)	F16	**Shell finish**	**F16**	CCF - Black passivation RoHS compliance - conductive
24-10	**Insert Arrangement**	**24-10**	7 poles Service A				

* *On request V: Fluoride rubber (Aggressive environments) - S: Silicone rubber (-55°C ÷ 200°C)*
** *On request CD5: Gold plating*
*** *Protection degree: IP 67 (only in the mating area with mated connectors) according to EN 60529*
**** *On request Stainless Steel Aisi 303 or Aisi 316*

Battery Charger Connectors - CVB 98AC 24-10S CR F16

With Socket crimp contacts for cable 8 AWG, with MS 3057-16C cable clamp



Main application: Battery Charger

Reference documents:

- Mil-DTL-5015 (where applicable)
- VG 95234 (where applicable)
- EN 60529
- European Directive 2011/65/UE (RoHS)

Connector supplied with:

- 90° Elbow
- Grounding finger
- MS3057-16C cable clamp (Ø cable 15,5 ÷ 23,8 mm)

Materials and finishes:

Shells: aluminum alloy - Protective finishes: CCF black (conductive)
Insulating rubber parts: chloroprene rubber
Contacts: copper alloy - Plating: silver 3.5µ min.

Part Number	Short Description	Description
VS212085	CVB 98AC 24-10S CR F16	Plug bayonet connector with 90° Elbow Contacts arrangement: 24-10 Contacts nr: 7 size 8 - crimp-Socket for cable 8 AWG

ELECTRICAL CHARACTERISTICS

Nominale voltage	Test Voltage	Service	Current rating single contact		Contact resistance	Insulating resistance
			Max 20°	Max 80°		
500Vac 700Vdc	2.000Vac	A	73A	46A	< 1 mΩ	> 5 GΩ

ENVIRONMENTAL CHARACTERISTICS

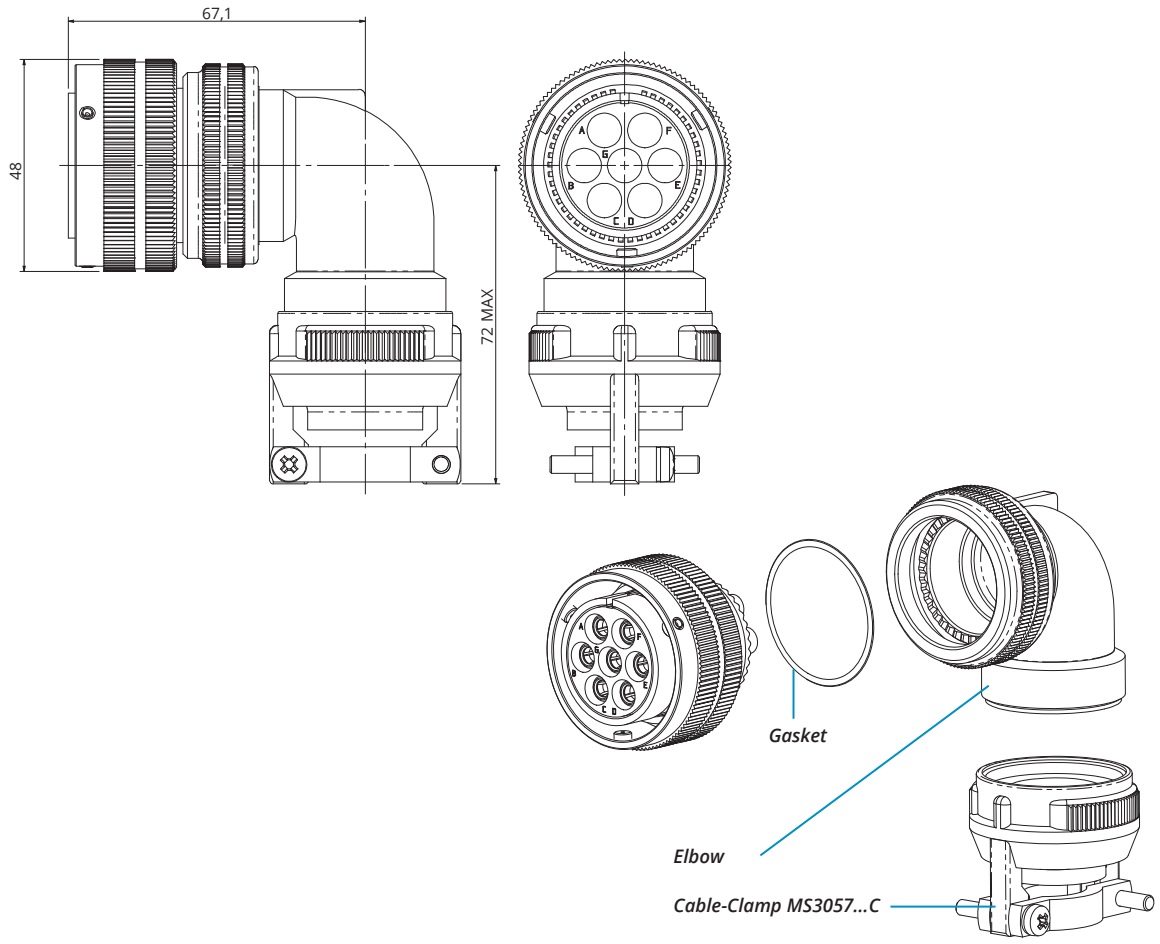
Connectors working temperature	IP Protection degree (EN 60529)
–55°C ÷ +125°C	IP67 (when mated)

MECHANICAL CHARACTERISTICS

Mating system	Mating endurance (IEC 61300-2-2)	Shock and vibrations tests (EN 61373)
Bayonet Coupling System	500 mating cycles minimum	Body mounted, cat. 1, class B

Battery Charger Connectors - Part number explanation

	CVB		98	AC	24-10	S	CR		F16
	Series Code		Shell Type	Connector Class					Shell finish



Dimensions in mm

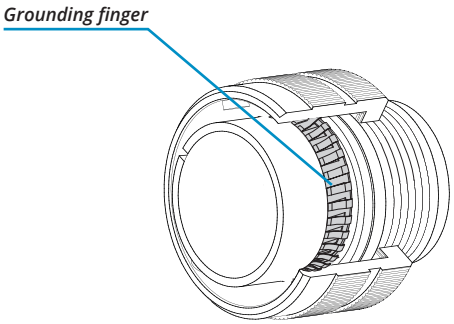
	Insulating material	-	Chloroprene rubber*
CVB	**Series Code**	CVB	Bayonet Connector
	Shell Material	-	Aluminum**
98	**Shell Type**	98	Plug Connector, 90° elbow with grounding finger
AC	**Connector Class**	AC	with waterproof O-ring (IP67***)

24-10	**Insert Arrangement**	24-10	7 poles Service A
S	**Contact Gender**	S	Socket contacts
CR	**Contact Termination**	CR	Crimp contacts
	Contact Plating	-	Silver plating****
F16	**Shell finish**	F16	CCF - Black passivation RoHS compliance - conductive

* *On request V: Fluoride rubber (Aggressive environments) - S: Silicone rubber (-55°C ÷ 200°C)*
** *On request CD5: Gold plating*
*** *Protection degree: IP 67 (only in the mating area with mated connectors) according to EN 60529*
**** *On request Stainless Steel Aisi 303 or Aisi 316*

Battery Charger Connectors - CVB 98AC 24-10S CR F16 N397

With Socket crimp contacts for cable 6mm² - 10 AWG



Main application: Battery Charger

Reference documents:

- Mil-DTL-5015 (where applicable)
- VG 95234 (where applicable)
- EN 60529
- European Directive 2011/65/UE (RoHS)

Connector supplied with:

- 90° Elbow
- Grounding finger
- MS3057-16C cable clamp (Ø cable 15,5 ÷ 23,8 mm)

Materials and finishes:

Shells: aluminum alloy - Protective finishes: CCF black (conductive)
Insulating rubber parts: chloroprene rubber
Contacts: copper alloy - Plating: silver 3.5µ min.

Part Number	Short Description	Description
VS212110	CVB 98AC 24-10S CR F16 N397	Plug bayonet connector with 90° Elbow Contacts arrangement: 24-10 Contacts nr: 7 size 8-38 – crimp-Socket for cable 6 mm² (10 AWG)

ELECTRICAL CHARACTERISTICS

Nominale voltage	Test Voltage	Service	Current rating single contact		Contact resistance	Insulating resistance
			Max 20°	Max 80°		
500Vac 700Vdc	2.000Vac	A	73A	46A	< 1 mΩ	> 5 GΩ

ENVIRONMENTAL CHARACTERISTICS

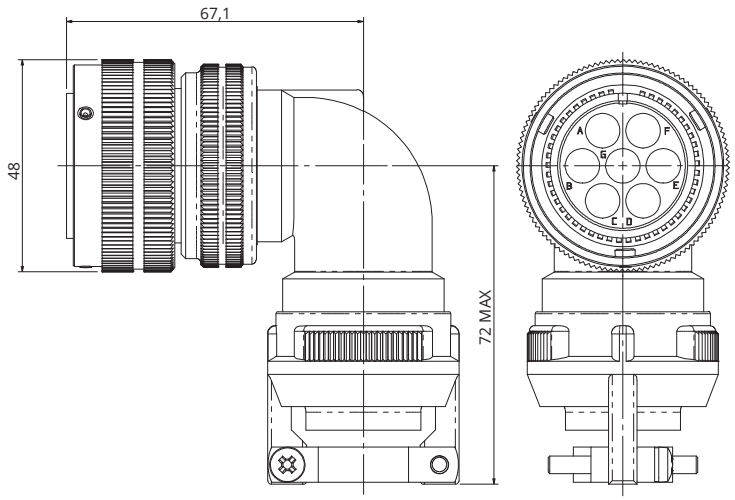
Connectors working temperature	IP Protection degree (EN 60529)
–55°C ÷ +125°C	IP67 (when mated)

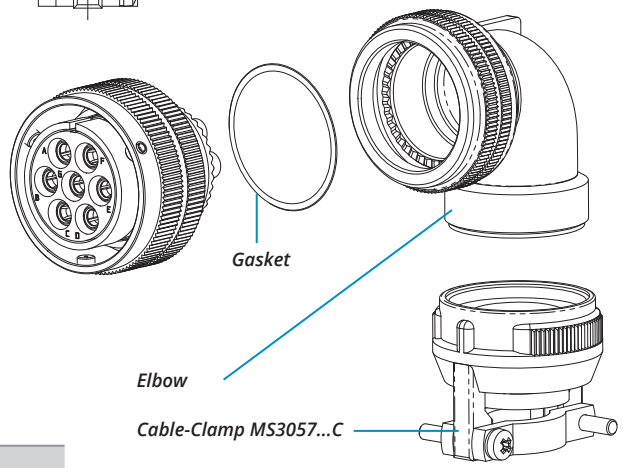
MECHANICAL CHARACTERISTICS

Mating system	Mating endurance (IEC 61300-2-2)	Shock and vibrations tests (EN 61373)
Bayonet Coupling System	500 mating cycles minimum	Body mounted, cat. 1, class B

Battery Charger Connectors - Part number explanation

	CVB		98	AC	24-10	S	CR		F16	N937
	Series Code		Shell Type	Connector Class					Shell finish	





Dimensions in mm

	Insulating material	-	Chloroprene rubber*
CVB	**Series Code**	**CVB**	Bayonet Connector
	Shell Material	-	Aluminum**
98	**Shell Type**	**98**	Plug Connector, 90° elbow with grounding finger
AC	**Connector Class**	**AC**	with waterproof O-ring (IP67***)
24-10	**Insert Arrangement**	**24-10**	7 poles Service A

S	**Contact Gender**	**S**	Socket contacts
CR	**Contact Termination**	**CR**	Crimp contacts
	Contact Plating	-	Silver plating****
F16	**Shell finish**	**F16**	CCF - Black passivation RoHS compliance - conductive
N	**Modification Code**	-	with contacts AWG 8
		N397	with contacts AWG 10, 6 mm²

* *On request V: Fluoride rubber (Aggressive environments) - S: Silicone rubber (-55°C ÷ 200°C)*
** *On request CD5: Gold plating*
*** *Protection degree: IP 67 (only in the mating area with mated connectors) according to EN 60529*
**** *On request Stainless Steel Aisi 303 or Aisi 316*

Battery Charger Connectors - CVB 08DA 24-10S PHM24 CR F16

With Socket crimp contacts for cable 8 AWG

Main application: Battery Charger

Reference documents:

- Mil-DTL-5015 (where applicable)
- VG 95234 (where applicable)
- EN 60529
- European Directive 2011/65/UE (RoHS)

Connector supplied with:

- 90° Elbow
- enviromental cable gland (Ø cable 19 ÷ 24 mm)

Materials and finishes:

Shells: aluminum alloy - Protective finishes: CCF black (conductive)
Insulating rubber parts: chloroprene rubber
Contacts: copper alloy - Plating: silver 3.5µ min.

Part Number	Short Description	Description
on request	CVB 08DA 24-10S PHM24 CR F16	Plug bayonet connector with 90° Elbow Contacts arrangement: 24-10 Contacts nr: 7 size 8 - crimp-Socket for cable 8 AWG

ELECTRICAL CHARACTERISTICS

Nominale voltage	Test Voltage	Service	Current rating single contact		Contact resistance	Insulating resistance
			Max 20°	Max 80°		
500Vac 700Vdc	2.000Vac	A	73A	46A	< 1 mΩ	> 5 GΩ

ENVIRONMENTAL CHARACTERISTICS

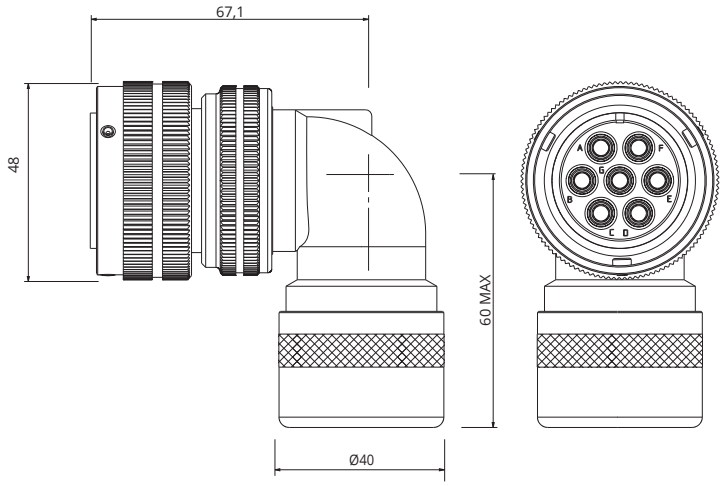
Connectors working temperature	IP Protection degree (EN 60529)
–55°C ÷ +125°C	IP67 (when mated)

MECHANICAL CHARACTERISTICS

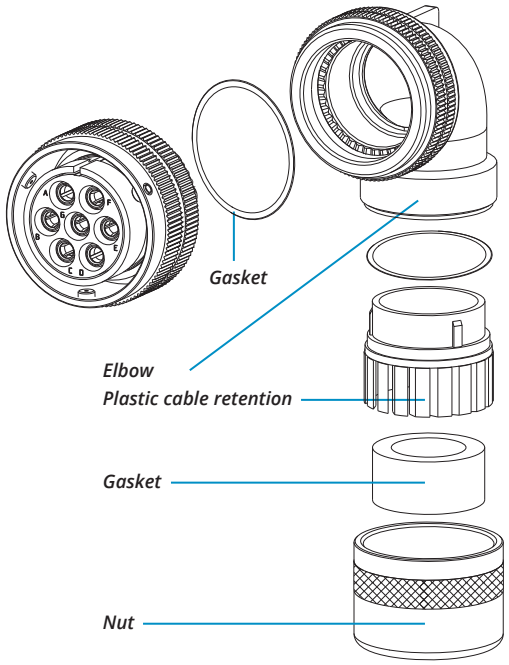
Mating system	Mating endurance (IEC 61300-2-2)	Shock and vibrations tests (EN 61373)
Bayonet Coupling System	500 mating cycles minimum	Body mounted, cat. 1, class B

Battery Charger Connectors - Part number explanation

	CVB		08	DA	24-10	S	PHM	CR		F16
	Series Code		Shell Type	Connector Class			Backshell			Shell finish



Dimensions in mm



	Insulating material	-	Chloroprene rubber*
CVB	**Series Code**	CVB	Bayonet Connector
	Shell Material	-	Aluminum**
08	**Shell Type**	08	Plug Connector, 90° elbow
DA	**Connector Class**	DA	with waterproof O-ring (IP67***)

24-10	**Insert Arrangement**	24-10	7 poles Service A
S	**Contact Gender**	S	Socket contacts
PHM	**Backshell**	PHM24	backshell with enviromental cable gland
CR	**Contact Termination**	CR	Crimp contacts
	Contact Plating	-	Silver plating****
F16	**Shell finish**	F16	CCF - Black passivation RoHS compliance - conductive

* *On request V: Fluoride rubber (Aggressive environments) - S: Silicone rubber (-55°C ÷ 200°C)*
** *On request CD5: Gold plating*
*** *Protection degree: IP 67 (only in the mating area with mated connectors) according to EN 60529*
**** *On request Stainless Steel Aisi 303 or Aisi 316*

Battery Charger Connectors - CVB 08DA 24-10S MH32 CR F16

With Socket crimp contacts for cable 8 AWG, with metallic cable gland

Main application: Battery Charger

Reference documents:

- Mil-DTL-5015 (where applicable)
- VG 95234 (where applicable)
- EN 60529
- European Directive 2011/65/UE (RoHS)

Connector supplied with:

- 90° Elbow
- Backshell with internal metric thread
- Skintop® MS-M nickel-plated brass short cable gland (LAPP cod. 53112790) (Ø cable 16 ÷ 25 mm)

Materials and finishes:

Shells: aluminum alloy - Protective finishes: CCF black (conductive)
Insulating rubber parts: chloroprene rubber
Contacts: copper alloy - Plating: silver 3.5µ min.

Part Number	Short Description	Description
on request	CVB 08DA 24-10S MH32 CR F16	Plug bayonet connector with 90° Elbow Contacts arrangement: 24-10 Contacts nr: 7 size 8 - crimp-Socket for cable 8 AWG

ELECTRICAL CHARACTERISTICS

Nominale voltage	Test Voltage	Service	Current rating single contact		Contact resistance	Insulating resistance
			Max 20°	Max 80°		
500Vac 700Vdc	2.000Vac	A	73A	46A	< 1 mΩ	> 5 GΩ

ENVIRONMENTAL CHARACTERISTICS

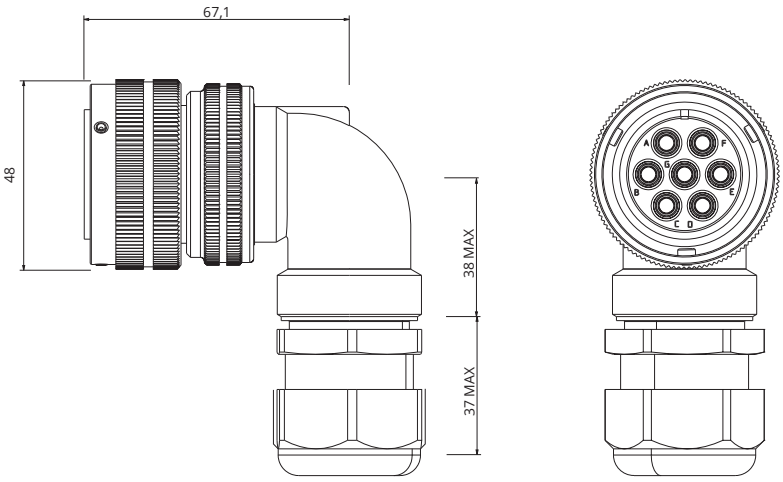
Connectors working temperature	IP Protection degree (EN 60529)
–55°C ÷ +125°C	IP67 (when mated)

MECHANICAL CHARACTERISTICS

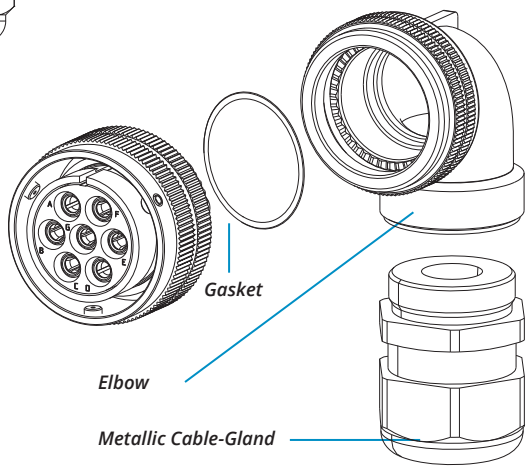
Mating system	Mating endurance (IEC 61300-2-2)	Shock and vibrations tests (EN 61373)
Bayonet Coupling System	500 mating cycles minimum	Body mounted, cat. 1, class B

Battery Charger Connectors - Part number explanation

	CVB		08	DA	24-10	S	MH32	CR		F16
	Series Code		Shell Type	Connector Class						Shell finish



Dimensions in mm



	Insulating material	-	Chloroprene rubber*
CVB	**Series Code**	CVB	Bayonet Connector
	Shell Material	-	Aluminum**
08	**Shell Type**	08	Plug Connector, 90° elbow
DA	**Connector Class**	DA	with waterproof O-ring (IP67***)

24-10	**Insert Arrangement**	24-10	7 poles Service A
S	**Contact Gender**	S	Socket contacts
MH32	**Backshell internal thread**	MH32	Provided with a Metric thread cable glands M32
CR	**Contact Termination**	CR	Crimp contacts
	Contact Plating	-	Silver plating****
F16	**Shell finish**	F16	CCF - Black passivation RoHS compliance - conductive

* *On request V: Fluoride rubber (Aggressive environments) - S: Silicone rubber (-55°C ÷ 200°C)*
** *On request CD5: Gold plating*
*** *Protection degree: IP 67 (only in the mating area with mated connectors) according to EN 60529*
**** *On request Stainless Steel Aisi 303 or Aisi 316*

Battery Charger Connectors - CVB 02A 24-10P CR F16 G

With pin crimp contacts for cable 8 AWG

Main application: Battery Charger

Reference documents:

- Mil-DTL-5015 (where applicable)
- VG 95234 (where applicable)
- EN 60529
- European Directive 2011/65/UE (RoHS)

Connector supplied with:

- Non conductive gasket

Materials and finishes:

Shells: aluminum alloy - Protective treatment: CCF black (conductive)
Insulating rubber parts: chloroprene rubber
Contacts: copper alloy - Plating: silver 3.5µ min.

Part Number	Short Description	Description
VS212035	CVB 02A 24-10P CR F16 G	Front mounting receptacle bayonet connector, unable to accept rear accessories non enviromental (equivalent MS3102A..B bayonet version) Contacts arrangement: 24-10 Contacts nr: 7 size 8 - pin

ELECTRICAL CHARACTERISTICS

Nominale voltage	Test Voltage	Service	Current rating single contact		Contact resistance	Insulating resistance
			Max 20°	Max 80°		
500Vac 700Vdc	2.000Vac	A	73A	46A	< 1 mΩ	> 5 GΩ

ENVIRONMENTAL CHARACTERISTICS

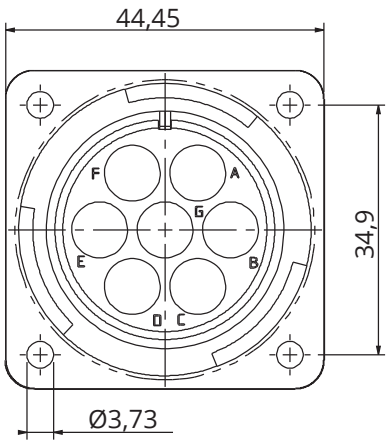
Connectors working temperature	IP Protection degree (EN 60529)
–55°C ÷ +125°C	IP67 (when mated)

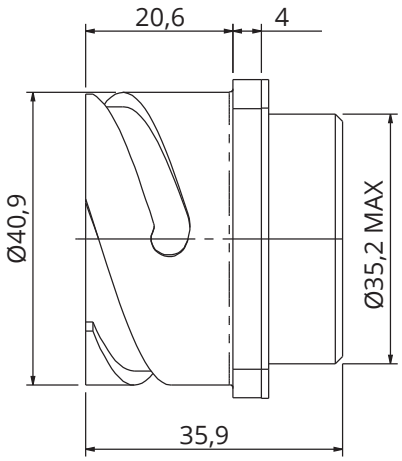
MECHANICAL CHARACTERISTICS

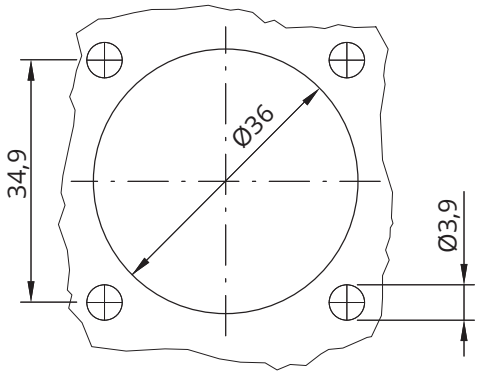
Mating system	Mating endurance (IEC 61300-2-2)	Shock and vibrations tests (EN 61373)
Bayonet Coupling System	500 mating cycles minimum	Body mounted, cat. 1, class B

Battery Charger Connectors - Part number explanation

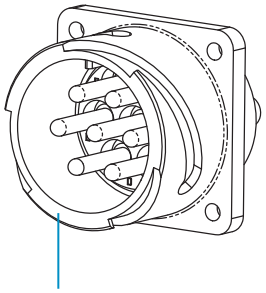
	CVB		02A		24-10	P	CR		F16	G
	Series Code		**Shell Type**						**Shell finish**	



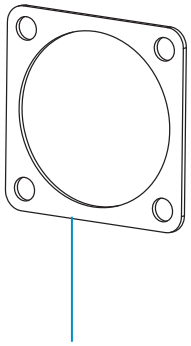




Panel Cut Out



Shell



Panel Gasket

Dimensions in mm

	Insulating material	-	Chloroprene rubber*
CVB	**Series Code**	CVB	Bayonet Connector
	Shell Material	-	Aluminum**
02A	**Shell Type**	02A	Front mounting receptacle connector non enviromental (equivalent MS3102A..B bayonet version)
24-10	**Insert Arrangement**	24-10	7 poles Service A

P	**Contact Gender**	P	Pin contacts
CR	**Contact Termination**	CR	Crimp contacts
	Contact Plating	-	Silver plating****
F16	**Shell finish**	F16	CCF - Black passivation RoHS compliance - conductive
G	**Panel Gasket**	-	Without gasket
		G	Supplied with panel gasket (IP67)

* *On request V: Fluoride rubber (Aggressive environments) - S: Silicone rubber (-55°C ÷ 200°C)*
** *On request CD5: Gold plating*
**** *On request Stainless Steel Aisi 303 or Aisi 316*

Battery Charger Connectors - CVB 02 24-10P LC F16 G

With pin crimp contacts (supplied separately)

Main application: Battery Charger

Reference documents:

- Mil-DTL-5015 (where applicable)
- VG 95234 (where applicable)
- EN 60529
- European Directive 2011/65/UE (RoHS)

Connector supplied with:

- Non conductive gasket

Materials and finishes:

Shells: aluminum alloy - Protective treatment: CCF black (conductive)
Insulating rubber parts: chloroprene rubber

Part Number	Short Description	Description
VS212048	CVB 02 24-10P LC F16 G	Front mounting receptacle bayonet connector unable to accept rear accessories Contacts arrangement: 24-10 Contacts nr: 7 size 8 - pin (supplied separately)

ELECTRICAL CHARACTERISTICS

Nominale voltage	Test Voltage	Service	Current rating single contact		Contact resistance	Insulating resistance
			Max 20°	Max 80°		
500Vac 700Vdc	2.000Vac	A	73A	46A	< 1 mΩ	> 5 GΩ

ENVIRONMENTAL CHARACTERISTICS

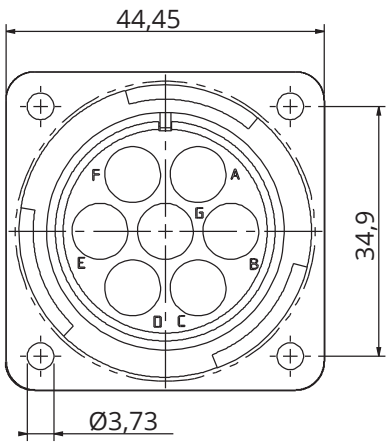
Connectors working temperature	IP Protection degree (EN 60529)
–55°C ÷ +125°C	IP67 (when mated)

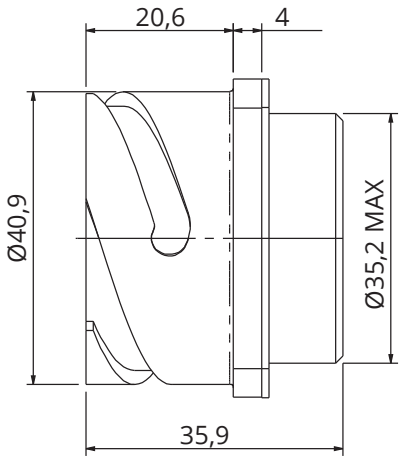
MECHANICAL CHARACTERISTICS

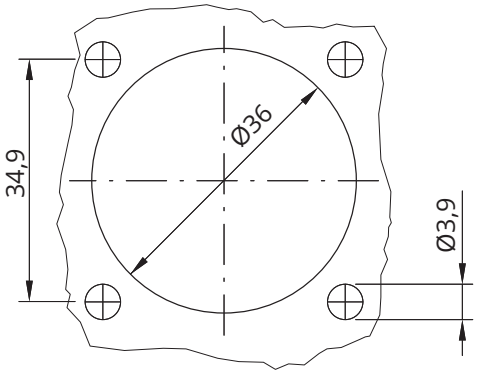
Mating system	Mating endurance (IEC 61300-2-2)	Shock and vibrations tests (EN 61373)
Bayonet Coupling System	500 mating cycles minimum	Body mounted, cat. 1, class B

Battery Charger Connectors - Part number explanation

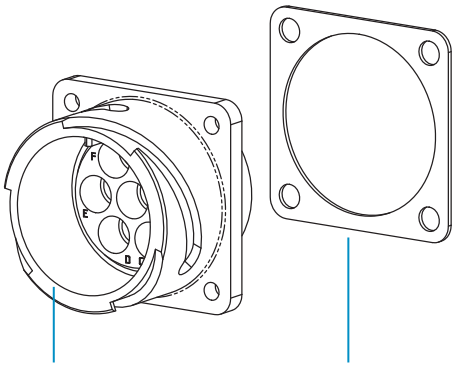
	CVB		02		24-10	P	LC		F16	G
	Series Code		Shell Type						Shell finish	







Panel Cut Out



Shell *Panel Gasket*

Dimensions in mm

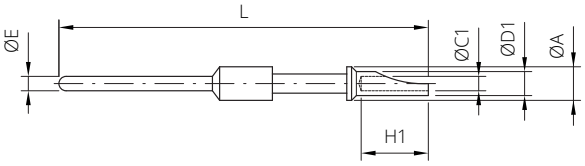
	Insulating material	-	Chloroprene rubber*
CVB	**Series Code**	CVB	Bayonet Connector
	Shell Material	-	Aluminum**
02	**Shell Type**	02	Front mounting receptacle connector unable to accept rear accessories (standard version)
24-10	**Insert Arrangement**	24-10	7 poles Service A

P	**Contact Gender**	P	Pin contacts
LC	**Contact Termination**	LC	Less contacts
	Contact Plating	-	Silver plating****
F16	**Shell finish**	F16	CCF - Black passivation RoHS compliance - conductive
G	**Panel Gasket**	-	Without gasket
		G	Supplied with panel gasket (IP67)

* *On request V: Fluoride rubber (Aggressive environments) - S: Silicone rubber (-55°C ÷ 200°C)*
** *On request CD5: Gold plating*
**** *On request Stainless Steel Aisi 303 or Aisi 316*

Solder Contacts - ST

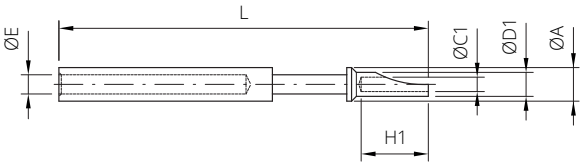
Pin Contacts - Silver Plated



Contact size	Part Number	Short Description	AWG Cable size	ØA	ØE	ØC1	ØC2	ØD1	ØD2	H1	H2	L
8	VS702004	ST385 8P	8	7.8	3.6	-	5.3	-	6.6	-	12.6	36.6

Dimensions in mm

Socket Contacts - Silver Plated

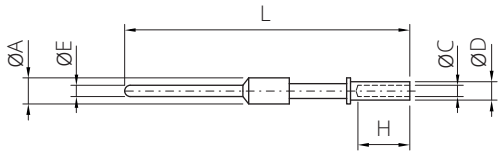


Contact size	Part Number	Short Description	AWG Cable size	ØA	ØE	ØC1	ØC2	ØD1	ØD2	H1	H2	L
8	VS702014	ST385 8S	8	7.8	3.7	-	5.25	-	6.55	-	12.7	36.6

Dimensions in mm

Crimp Contacts - ST

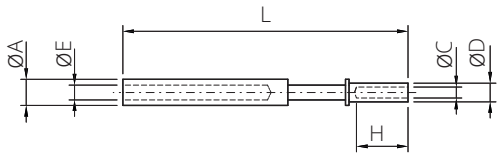
Pin Contacts - Silver Plated



Contact Size	Part Number	Short Description	Wire section (mm²)	AWG cable size	ØA	ØE	ØC	ØD	H	L
8	VS701624	ST485 8P	-	8	7.8	3.6	4.55	6.8	12.2	40.7
8	VS701646	ST485 8-22P	2.5	-	7.8	3.6	2.2	3.8	12.2	40.7
8	VS701647	ST485 8-26P	3	12	7.8	3.6	2.5	3.8	12.2	40.7
8	VS701627	ST485 8-30P	4	-	7.8	3.6	3	4.8	8.3	40.7
8	VS701628	ST485 8-38P	6	10	7.8	3.6	3.6	6.8	12.2	40.6
8	VS701629	ST485 8-50P	10	-	7.8	3.6	5	6.8	12.2	40.7

Dimensions in mm

Socket Contacts - Silver Plated



Contact Size	Part Number	Short Description	Wire section (mm²)	AWG cable size	ØA	ØE	ØC	ØD	H	L
8	VS701524	ST485 8S	-	8	7.8	3.7	4.55	6.8	12.2	40.7
8	VS701546	ST485 8-22S	2.5	-	7.8	3.7	2.2	3.8	12.2	40.7
8	VS701547	ST485 8-26S	3	12	7.8	3.7	2.5	3.8	12.2	40.7
8	VS701527	ST485 8-30S	4	-	7.8	3.7	3	4.8	8.3	40.7
8	VS701528	ST485 8-38S	6	10	7.8	3.7	3.6	6.8	12.2	40.7
8	VS701529	ST485 8-50S	10	-	7.8	3.7	5	7	11.5	40.7

Dimensions in mm

Battery Charger Connectors - CVB 8AC 24 F16

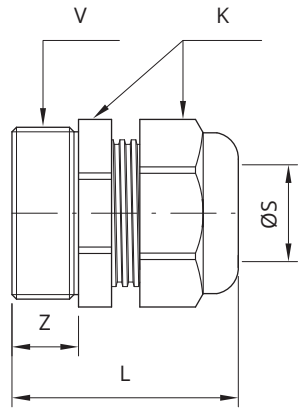
90° Elbow Kit

can be used instead of straight backshell in the connectors:

- CVB 96DA 24-10S M32 CR F16
- CVB 96DA 24-10S M32 CR F16 N397
- CVB 96AC 24-10S M32 CR F16

Part Number	Short Description	Description
VS60235	CVB 8AC 24 F16	Elbow with MS3057-16C cable clamp

Cable gland - metric threaded



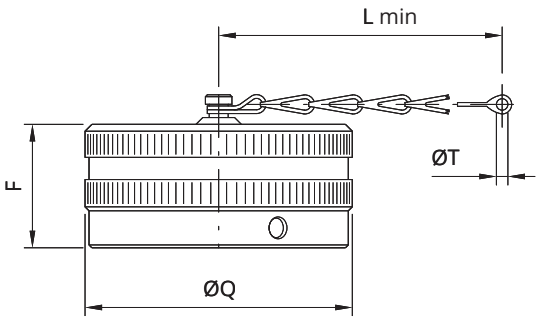
Metallic cable glands

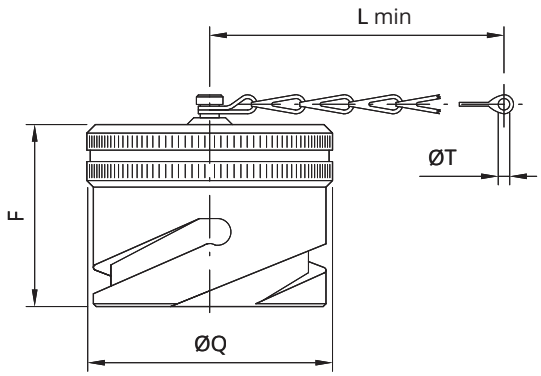
Part Number	Short Description	V	ØS Clamping range	K	Z	L	Over braiding mm	
VS705015	AL M32 M	M32x1.5	11-21	36	10	47	-	standard version
on request	AL M32 MS	M32x1.5	16-25	40	5	43	-	short version
on request	AL M32 ME	M32x1.5	11-21	36	9	42.2	8-18	EMC version

Dimensions in mm

Caps for Bayonet Connectors

Accessories For Connectors





Finishes : F16 CCF - Black passivation (***RoHS compliance)*** - conductive

Caps with chain for connectors version: shell type with ramp
Provided with sealing gasket. Chain and lugs are in stainless steel.
Protection degree: IP 67 (mated to the connector) according to EN 60529.

Shell size	Part Number	Short Description	ØQ	F	L min	ØT
24	VS151132	CVB 043-24 F16	47	21.7	123	4.3

Caps with chain for connector version: shell type with coupling nut
These caps have no sealing gasket because mated with connectors generally provided with front gasket.
Chain and lugs are in stainless steel.
Protection degree: IP 67 (mated to the connector) according to EN 60529.

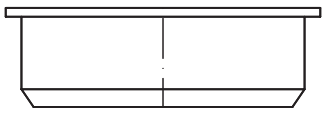
Shell size	Part Number	Short Description	ØQ	F	L min	ØT
24	VS151232	CVB 042-24 F16	43.2	34.5	138	4.3

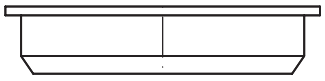
Dimensions in mm

Protective Plastic Dust Caps

These caps are used to protect connectors against dust.
They are not included in the connectors and have to be ordered separately.

The drawings are indicative only and they could be change according to the size





Caps for connectors version: shell type with ramp

Shell size	Part Number	Short Description
24	VS412108	PCVB 043-24

Caps for connector version: shell type with coupling nut

Shell size	Part Number	Short Description
24	VS412138	PCVB 042-24

Contact Crimp Tools

For the instructions concerning assembly and crimping of contacts please consult the appropriate manuals.

We recommend to respect the following general rules:
- always use the tools recommended by Van-System's catalogue or manuals
- apply the suggested norms for tool maintenance and calibration

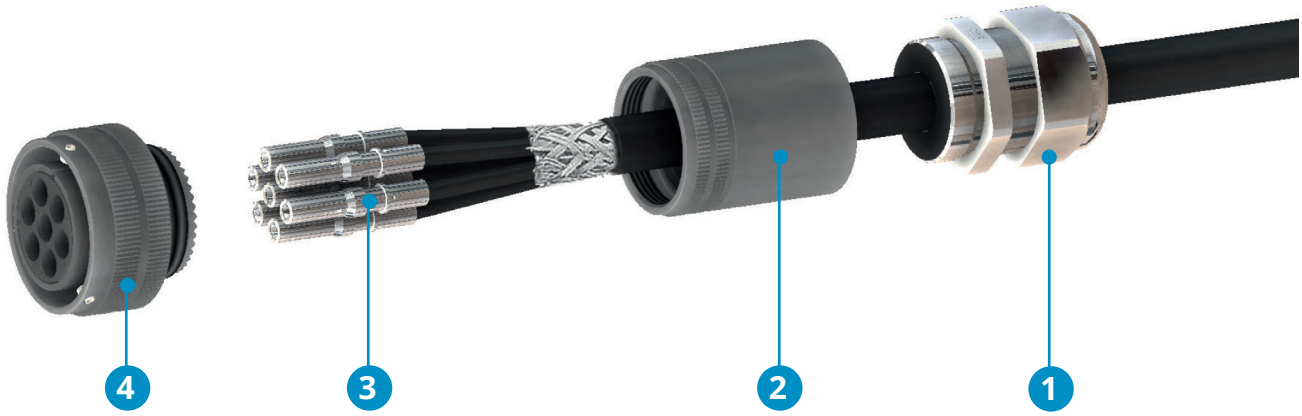
When installing the contacts in the insert, use isopropyl alcohol as lubricant or the appropriate liquid.
DO NOT USE ALTERNATIVE GREASES OR OILS which could damage the insert and affect the functionality of the connector.

Part Number	Short Description	Tool
VS610003	CRT-HT45	Crimping Tool
VS610010	CDI-ME2	Locator/ Crimping Die
VS610024	CTIN-784-8	Insertion Tool
VS610034	CTES-784-8	Removal Tool

Crimping and assembly instructions

List of components

1 Cable Gland
2 Backshell
3 Crimp Contacts
4 Plug connector

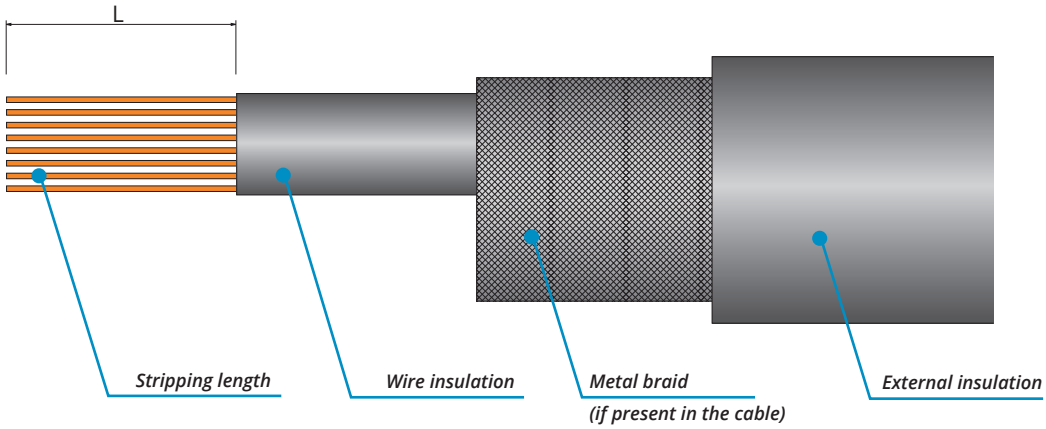


Connector preparation

Insert the stripped wire into the cable gland and the backshell.

Wire preparation

Strip off the external insulation, shorten the metal braid, the screen and strip the wires as shown in the drawings (for the stripping length, see the table).



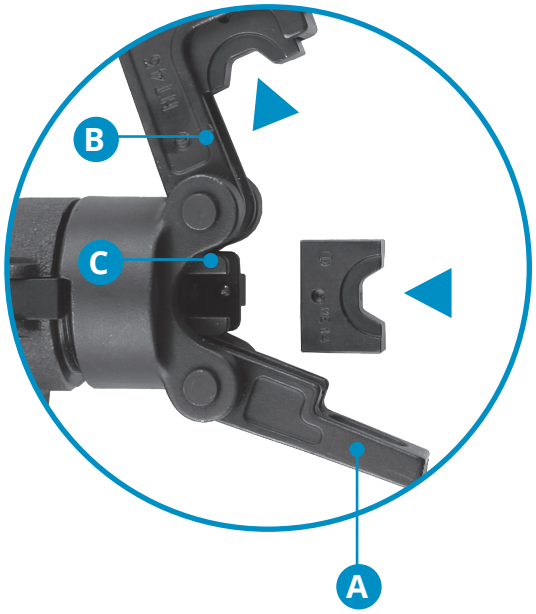
Crimping tools preparation

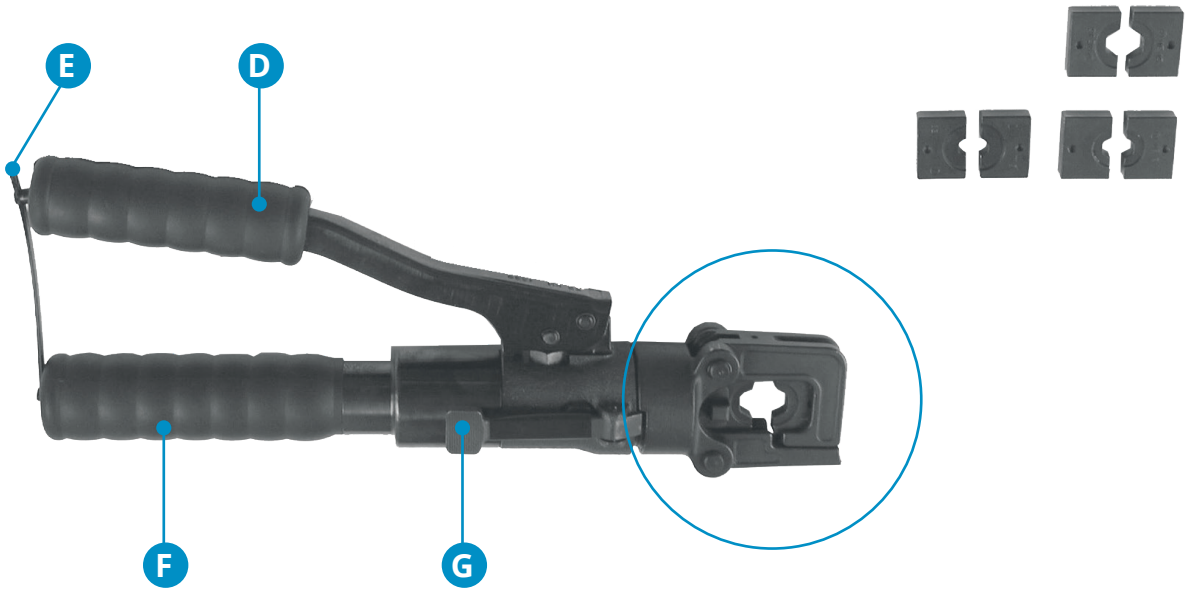
Choose the correct couple of hexagonal dies to use according to the wire size to crimp (see below).

Contacts size	Pin contact code	Socket contact code	Wire section mm²	Wire section AWG	Stripping length L mm	Dies code	Insertion tool code	Extraction tool code
8	ST485 8P	ST485 8S		8	12.0	CDI-ME2	CTIN-784-8	CTES-784-8
8	ST485 8-38P	ST485 8-38S	6	10	12.0	CDI-ME2	CTIN-784-8	CTES-784-8

Crimping and assembly instructions

- Open the head of the crimping tool moving toward the outside the hook (A) till the die-holder (B) is released pushed by the spring internal spring.
- Insert one die in the die-holder (B) till its internal spring will retain it and the other in the bracket of the body's tool (C).
- Close the head rotating the die-holder (B) till the hook (A) will engage it.
- Release the movable handle (D) extracting the plastic strap from the fixed handle (E).
- Before making any further operation check the tool's head is fully closed .
- A partial closing may damage the head.
- The tool is ready to crimp the contact now !!

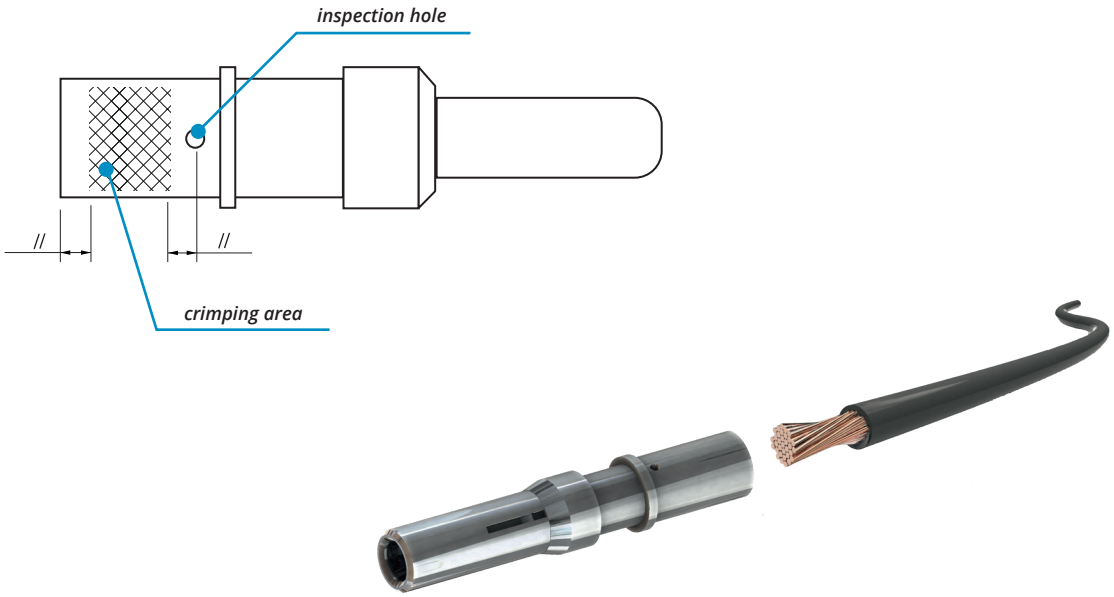




Crimping and assembly instructions

Crimping operation

- Put the stripped end of the wire into the crimp pot of the contact making sure wire(s) is visible through the inspection hole in the contact
- Place the contact between the 2 dies checking the crimping area is placed approximately in the middle between the inspection hole and the terminal edge.

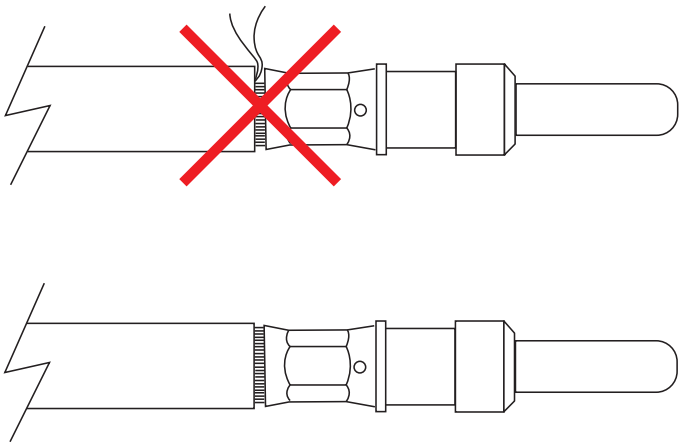


- Closing the movable handle (D) the two dies start to get nearer. For the small opening and the automatic return of the movable handle the tool can be one hand operated.

Crimping and assembly instructions

- Check again the crimping area is correct, otherwise open the dies push thoroughly the release leverage (G) on the tool's side and go back to first point.
- Go on operating on the handle up to the dies are closed (face to face) and the limit stop clicks.
- To open the dies push thoroughly the release leverage (G) on the tool's side.
- Remove the contact and inspect that the wire is visible through the inspection hole in the contact

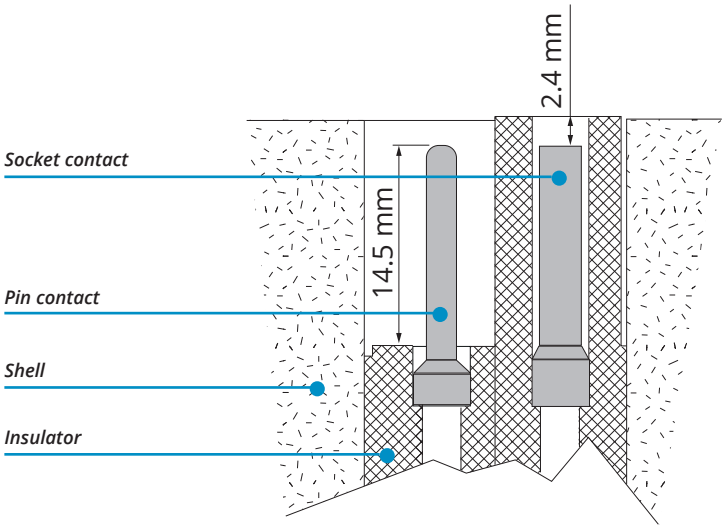
If the crimped part appears like the following reject the contact and replace it.



Crimping and assembly instructions

Contact insertion

- Remove the back shell and other rear accessories (if any) from the inline receptacle or plug. Slide them over the wire bundles in the correct direction and sequence to reassemble after the contacts are inserted.
- Insert a wired contact into the rear of the insulator by hand beginning from the outer cavity and working to the opposite side of the insulator row by row.
- Holding the connector securely, position the correct insertion tool behind the contact. The tool tip butts against the contact shoulder. If the wire is stiff enough it is possible to insert it into the insulator without using the insertion tool. Just hold the wire hose firmly in your hand and proceed as described in the following point.
- Apply firm steady pressure until the contact snaps into the locking cavity in the insulator.
- In order to make this operation easier isopropyl alcohol can be used as lubricant. Make sure the alcohol has completely evaporated after the contacts inserting operation is finished
- Do not use any other kind of lubricant like oil or grease.
- Check the position of the contact to prevent under/over insertion.
- Repeat the above operation for the balance of the contacts.
- To remove the contacts use the correct tool as in the following table.
- Do not try to remove the contact by pulling the crimped wire or using inappropriate tools.



Safety

Information regarding the use of the product within recommended safety limits

To use the connectors described in this catalogue according to the necessary safety requirements we suggest you apply the following criteria:

- use the connectors and connected cables within their electrical and environmental limits
- follow the characteristics of each version (shell, class and type of strain relief) and carefully choose the appropriate connector for the required use
- make sure to respect the procedures regarding the correct assembly of connectors and the crimping of contacts
- any connector damaged during shipment, storage, assembly or use should be replaced
- never uncouple the connectors when under power
- always protect the parts against shock when the circuit is under power
- always check the circuit before putting it under power
- consult Radiall VanSystem Srl if in doubt
- the user must take final responsibility for electrical safety Radiall VanSystem Srl reserves the right to amend the specifications of this catalogue without issuing prior notice.

For the instructions concerning assembly and crimping of contacts please consult the appropriate tools manuals.

We recommend to respect the following general rules:

- to be used always the tools recommended by Radiall VanSystem's catalogue or manuals
- to be applied the suggested norms for tool maintenance and calibration

DO NOT USE ALTERNATIVE GREASES OR OILS which could damage the insert and affect the functionality of the connector.
Radiall VanSystem Srl reserves the right to amend the specifications of this catalogue without issuing prior notice.

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