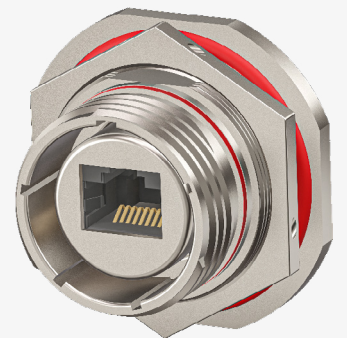


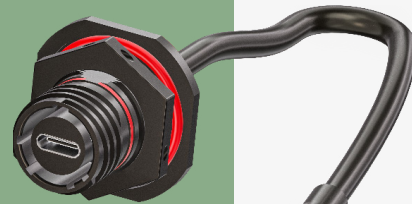


HARSH ENVIRONMENT DATA CONNECTIVITY SOLUTIONS

PRODUCT CATALOG



RJ45 Series



USB-C Series



USB-A Series





EMCA CONNECTOR SOLUTIONS

launched in 2023 to further extend its interconnect reach and complement EMCA electro-mechanic business; our companies are built upon three decades of expertise in the high precision connector industry. We specialise in developing and manufacturing both standard and custom connectors for high-end markets where innovative and high-quality connectors are essential.



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- 04 | WHAT WE STAND FOR
- 09 | RJ45 X1-Series -
Rugged Ethernet Connections
- 30 | USB X2-Series -
Rugged USB Connections
- 77 | Accesories for rugged
Data Connectivity Solutions

IN HOUSE PRODUCTION AND ASSEMBLY

Equipped with modern, state-of-the-art high precision CNC machines, we offer a manufacturing depth that sets us apart. This client collaborative approach allows us to be a reliable and flexible manufacturer, capable of producing anywhere from single pieces to five-digit quantities of interconnect. On this basis we thrive even in challenging market conditions across the globe.



IN HOUSE DESIGN AND DEVELOPMENT

Our expertise and experience in this sector provides a customer solution approach. Whether it's a simple modification to a standard product, or the creation of custom connectors tailored to our clients' specific requirements. Our unique advantage lies in the close collaboration between our mechanical and electrical engineering teams, ensuring that every product we create aligns perfectly with your specification



QUALITY MANAGEMENT

Our unwavering focus is on maintaining the highest standards of quality. With all core operations managed in-house, we exercise full control over our processes. This level of control empowers us to continually refine and enhance our procedures, ensuring that our products consistently meet the highest quality benchmark

PEOPLE AND INNOVATION

Our people are the heart of our success. Our team boasts decades of experience in designing and manufacturing high precision interconnect. Our work culture thrives on openness and diversity, welcoming all opinions and viewpoints. This collaborative atmosphere fuels an environment where ideas evolve into innovative solutions. Our skilled and motivated process workers meticulously assemble and inspect our products to ensure they not only meet but exceed your expectations both in quality and on time delivery.





SUSTAINABILITY

We are committed to sustainability in every aspect of our business. Our products embody innovation, reliability, and superior quality while remaining economically attractive and compliant with RoHS and REACH standards. We stand ready to assist you in transitioning from legacy and non-compliant products to their technically equivalent or superior RoHS and REACH compliant counterparts.

RJ45 RUGGED ETHERNET - X1-SERIES

RJ45 connectors are essential not only in standard networking but also in critical sectors like defense and industry. Serving as the standard interface for Ethernet cables, these connectors establish reliable wired connections between devices.

In defense applications, RJ45 connectors play a crucial role in establishing reliable communication links between military hardware and systems. Similarly, in industrial environments, these connectors contribute to the seamless networking of machinery, sensors, and control systems.

Beyond traditional settings, these connectors, especially ruggedized versions, prove integral in ensuring robust data transmission in challenging environments. Their versatility extends to various sectors, emphasizing their role in both standard and demanding applications.



RJ45 X1-SERIES



10 | CAT6A Feedthrough – Jam Nut X1-9889

12 | CAT6A Feedthrough – Square Flange X1-9888



14 | CAT 6A Feedthrough sealed – Jam Nut X1-9885

16 | CAT 6A Feedthrough sealed – Square Flange X1-9884



18 | CAT5e Feedthrough Bulkhead – Jam Nut X1-9851

20 | CAT5e Feedthrough Bulkhead – Square Flange X1-9850



22 | CAT6A PCB – Jam Nut X1-9887

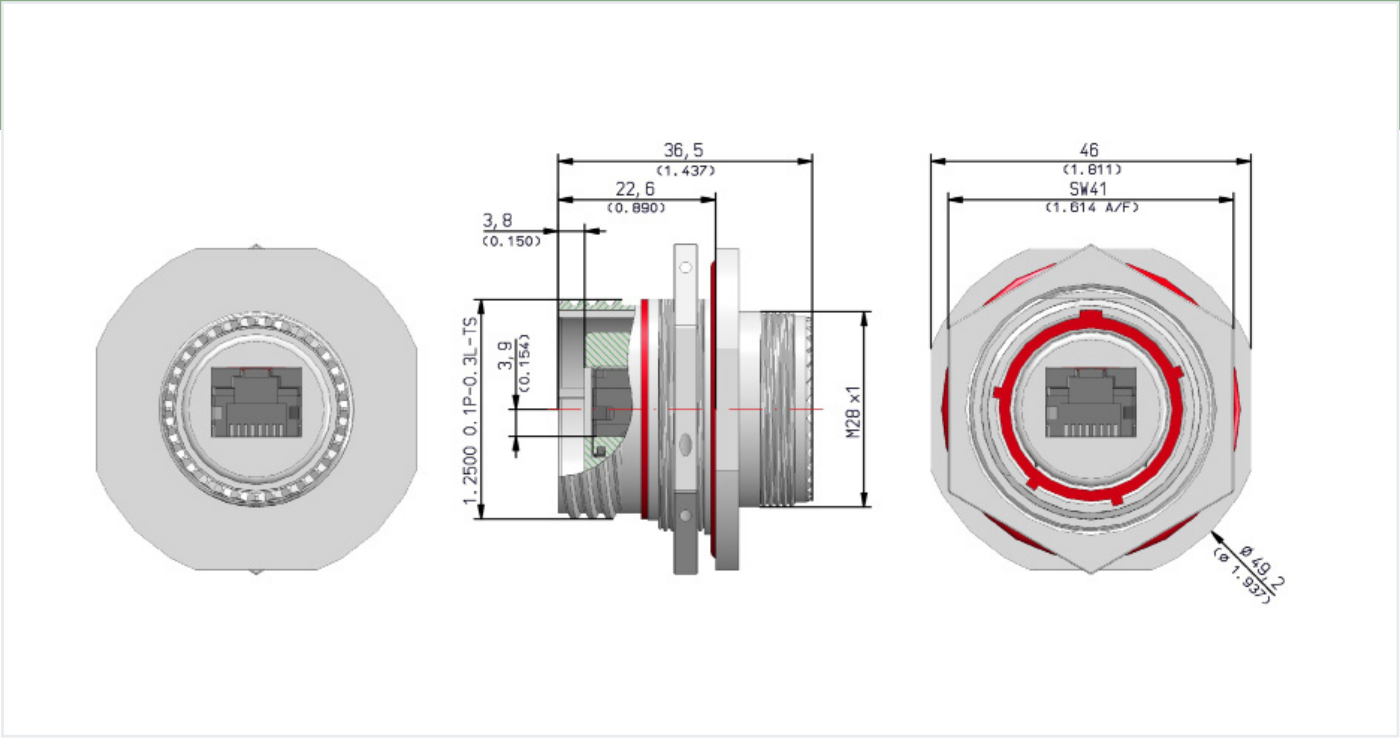
24 | CAT6A PCB – Square Flange X1-9886



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X1-SERIES - RUGGED ETHERNET CONNECTIONS

RJ45 CAT6A FEEDTHROUGH - JAM NUT RECEPTACLE X1-9889



INFORMATION

All dimensions in
mm (inch) unless
otherwise specified.

Shell derived from D38999

PN: X1-9889

Datasheet Version: 2.0

CATALOG:

Harsh Environment
Data Connectivity Solutions

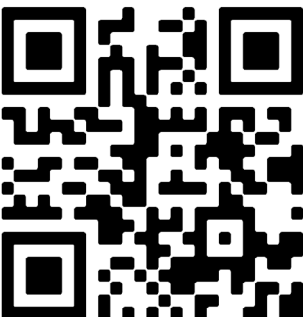


Table A: Material & Plating

Material & Plating Code	Technical Design	ROHS-/REACH Compliant	Electrically Conductive	Salt Spray Resistance according to MIL spec.	Salt Spray Resistance according to VG spec.
V	Tin-Zinc grey Base material: Al-alloy Tin-Zinc over electroless Nickel	Yes	Yes	500 hrs	5 day cyclic
5	Electroless Nickel Base material: Al-alloy	Yes	Yes	48 hrs	n.a.
2	Zinc-Nickel black Coupling ring: Al-alloy, black anodized Shell: Zinc-Nickel black chromate over electroless Nickel	Yes	Yes	500 hrs	n.a.
6	Cadmium olive drab Coupling ring: Al-alloy, olive drab anodized Shell: Al-alloy Cadmium plated olive drab over electroless Nickel	No	Yes	500 hrs	5 day cyclic
9	Marine Bronze Base material: Marine Bronze CuAl10Ni5Fe4 (CW307G) Shotblast, nonreflective	Yes	Yes	n.a.	n.a.
1	Stainless Steel / passivated	Yes	Yes	n.a.	n.a.

Performance

Voltage rating AC	35 V
Voltage rating DC	50 V
Temperature	-40 °C to +120 °C
Mating cycles	>500
Data transmission	10 Gbit/s (500 Mhz)
Pin mapping	1:1 (e.g. Pin1 : Pin1)

Ground of RJ45s connected to housing.

Materials

RJ45 housing	Thermoplastic UL94 V-0
RJ45 shield plating	Tin or Nickel
RJ45 shield	Copper alloy
Contacts plating	Selective Gold (1,27µm)
Contacts	Copper alloy
Housing	See option material
PCB	FR4, UL94V-0

For details about keyway polarization and RJ45 orientation see table 1 and 2 in the full „Harsh Environment Data Connectivity Solutions“ catalog on page 28/29.

How to order

Table X1-9889 19 5 N 0

Basic part number

Shell size

Material & plating code

A

Keyway polarization

1

RJ45 orientation

2

ORDER EXAMPLE

X1-9889-19-5 N 0

CAT6A FEEDTHROUGH - JAM NUT

SIZE 19

ELECTROLESS NICKEL

KEYWAY = N (STANDARD)

RJ45 POSITION = 0°

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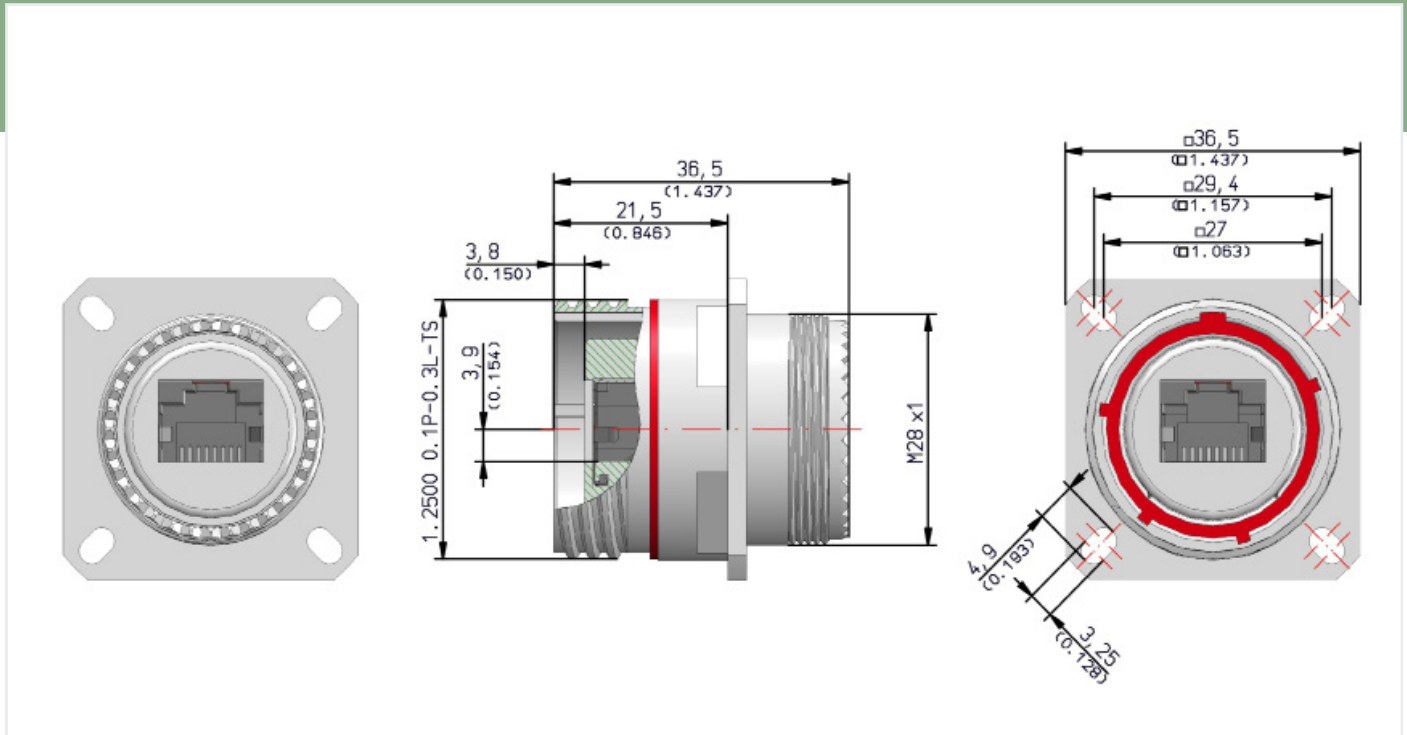
X1-9889 | Datasheet Version 2.0

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X1-SERIES - RUGGED ETHERNET CONNECTIONS

RJ45 CAT6A FEEDTHROUGH – SQUARE FLANGE RECEPTACLE X1-9888



INFORMATION

All dimensions in
mm (inch) unless
otherwise specified.

Shell derived from D38999

PN: X1-9888

Version: 2.0

CATALOG:

Harsh Environment
Data Connectivity Solutions

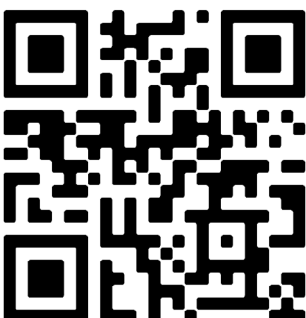


Table A: Material & Plating

Material & Plating Code	Technical Design	ROHS-/REACH Compliant	Electrically Conductive	Salt Spray Resistance according to MIL spec.	Salt Spray Resistance according to VG spec.
V	Tin-Zinc grey Base material: Al-alloy Tin-Zinc over electroless Nickel	Yes	Yes	500 hrs	5 day cyclic
VS	Tin-Zinc black Base material: Al-alloy Tin-Zinc over electroless Nickel	Yes	Yes	500 hrs	5 day cyclic
5	Electroless Nickel Base material: Al-alloy	Yes	Yes	48 hrs	n.a.
2	Zinc-Nickel black Coupling ring: Al-alloy, black anodized Shell: Zinc-Nickel black chromate over electroless Nickel	Yes	Yes	500 hrs	n.a.
6	Cadmium olive drab Coupling ring: Al-alloy, olive drab anodized Shell: Al-alloy Cadmium plated olive drab over electroless Nickel	No	Yes	500 hrs	5 day cyclic
9	Marine Bronze Base material: Marine Bronze CuAl10Ni5Fe4 (CW307G) Shotblast, nonreflective	Yes	Yes	n.a.	n.a.
1	Stainless Steel / passivated	Yes	Yes	n.a.	n.a.

Performance

Voltage rating AC	35 V
Voltage rating DC	50 V
Temperature	-40 °C to +120 °C
Mating cycles	>500
Data transmission	10 Gbit/s (500 Mhz)
Pin mapping	1:1 (e.g. Pin1 : Pin1)

Ground of RJ45s connected to housing.

Materials

RJ45 housing	Thermoplastic UL94 V-0
RJ45 shield plating	Tin or Nickel
RJ45 shield	Copper alloy
Contacts plating	Selective Gold (1,27µm)
Contacts	Copper alloy
Housing	See option material
PCB	FR4, UL94V-0

For details about keyway polarization and RJ45 orientation see table 1 and 2 in the full „Harsh Environment Data Connectivity Solutions“ catalog on page 28/29.

How to order

Table X1-9888 19 5 N 0

Basic part number

Shell size

Material & plating code

A

Keyway polarization

1

RJ45 orientation

2

ORDER EXAMPLE

X1-9888-19-5 N 0

CAT6A FEEDTHROUGH - SQUARE FLANGE

SIZE 19

ELECTROLESS NICKEL

KEYWAY = N (STANDARD)

RJ45 POSITION = 0°

EMCA CONNECTOR SOLUTIONS GMBH

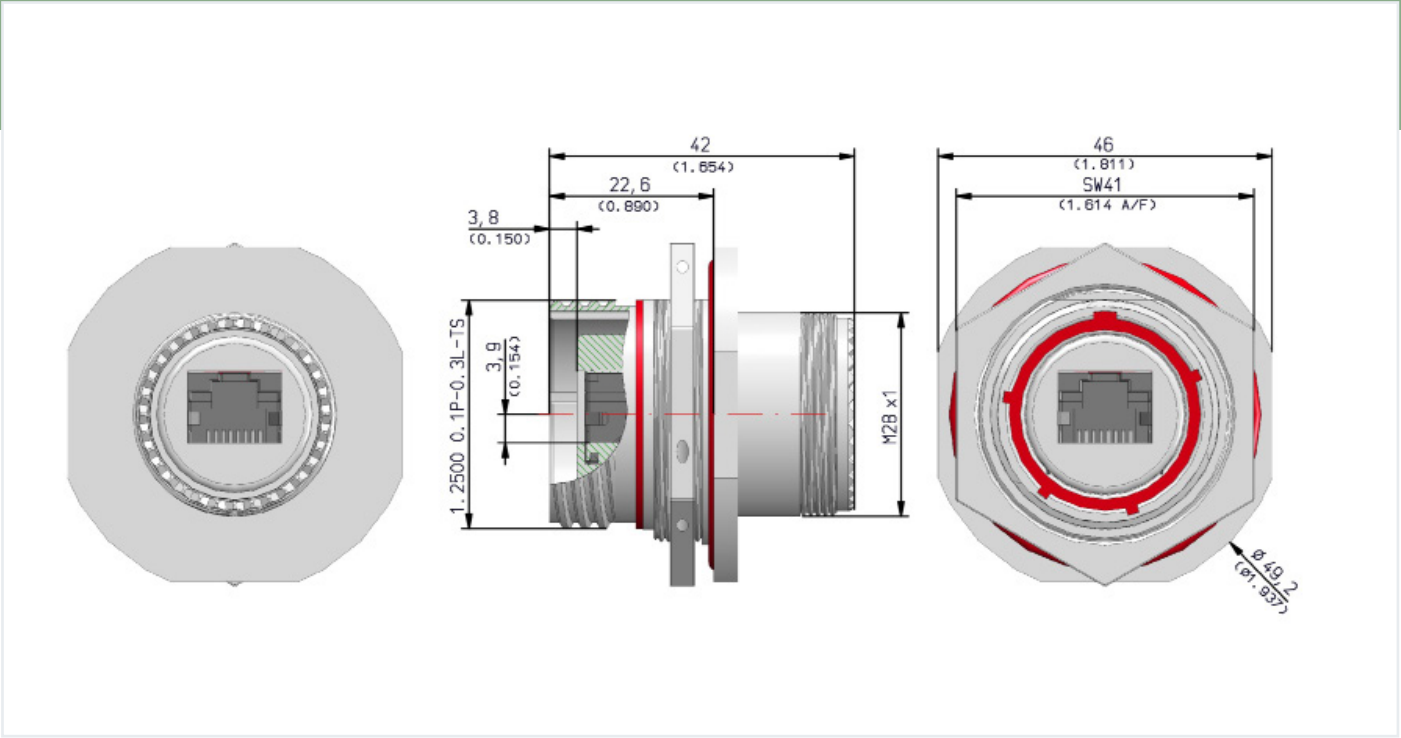
X1-9888 | Version 2.0

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X1-SERIES - RUGGED ETHERNET CONNECTIONS

RJ45 CAT6A FEEDTHROUGH SEALED – JAM NUT RECEPTACLE X1-9885



INFORMATION

All dimensions in
mm (inch) unless
otherwise specified.

Shell derived from D38999

PN: X1-9885
Datasheet Version: 2.0

CATALOG:

Harsh Environment
Data Connectivity Solutions



Table A: Material & Plating

Material & Plating Code	Technical Design	ROHS-/ REACH Compliant	Electrically Conductive	Salt Spray Resistance according to MIL spec.	Salt Spray Resistance according to VG spec.
V	Tin-Zinc grey Base material: Al-alloy Tin-Zinc over electroless Nickel	Yes	Yes	500 hrs	5 day cyclic
5	Electroless Nickel Base material: Al-alloy	Yes	Yes	48 hrs	n.a.
2	Zinc-Nickel black Coupling ring: Al-alloy, black anodized Shell: Zinc-Nickel black chromate over electroless Nickel	Yes	Yes	500 hrs	n.a.
6	Cadmium olive drab Coupling ring: Al-alloy, olive drab anodized Shell: Al-alloy Cadmium plated olive drab over electroless Nickel	No	Yes	500 hrs	5 day cyclic
9	Marine Bronze Base material: Marine Bronze CuAl10Ni5Fe4 (CW307G) Shotblast, nonreflective	Yes	Yes	n.a.	n.a.
1	Stainless Steel / passivated	Yes	Yes	n.a.	n.a.

Performance

Voltage rating AC	35 V
Voltage rating DC	50 V
Temperature	-40 °C to +120 °C
Mating cycles	>500
Data transmission	10 Gbit/s (500 Mhz)
Pin mapping	1:1 (e.g. Pin1 : Pin1)

Ground of RJ45s connected to housing.

Materials

RJ45 housing	Thermoplastic UL94 V-0
RJ45 shield plating	Tin or Nickel
RJ45 shield	Copper alloy
Contacts plating	Selective Gold (1,27µm)
Contacts	Copper alloy
Housing	See option material
PCB	FR4, UL94V-0

For details about keyway polarization and RJ45 orientation see table 1 and 2 in the full „Harsh Environment Data Connectivity Solutions“ catalog on page 28/29.

How to order

Table X1-9885 19 5 N 0

Basic part number

Shell size

Material & plating code

A

Keyway polarization

1

RJ45 orientation

2

ORDER EXAMPLE

X1-9885-19-5 N 0

CAT6A FEEDTHROUGH SEALED - JAM NUT

SIZE 19

ELECTROLESS NICKEL

KEYWAY = N (STANDARD)

RJ45 POSITION = 0°

EMCA CONNECTOR SOLUTIONS GMBH

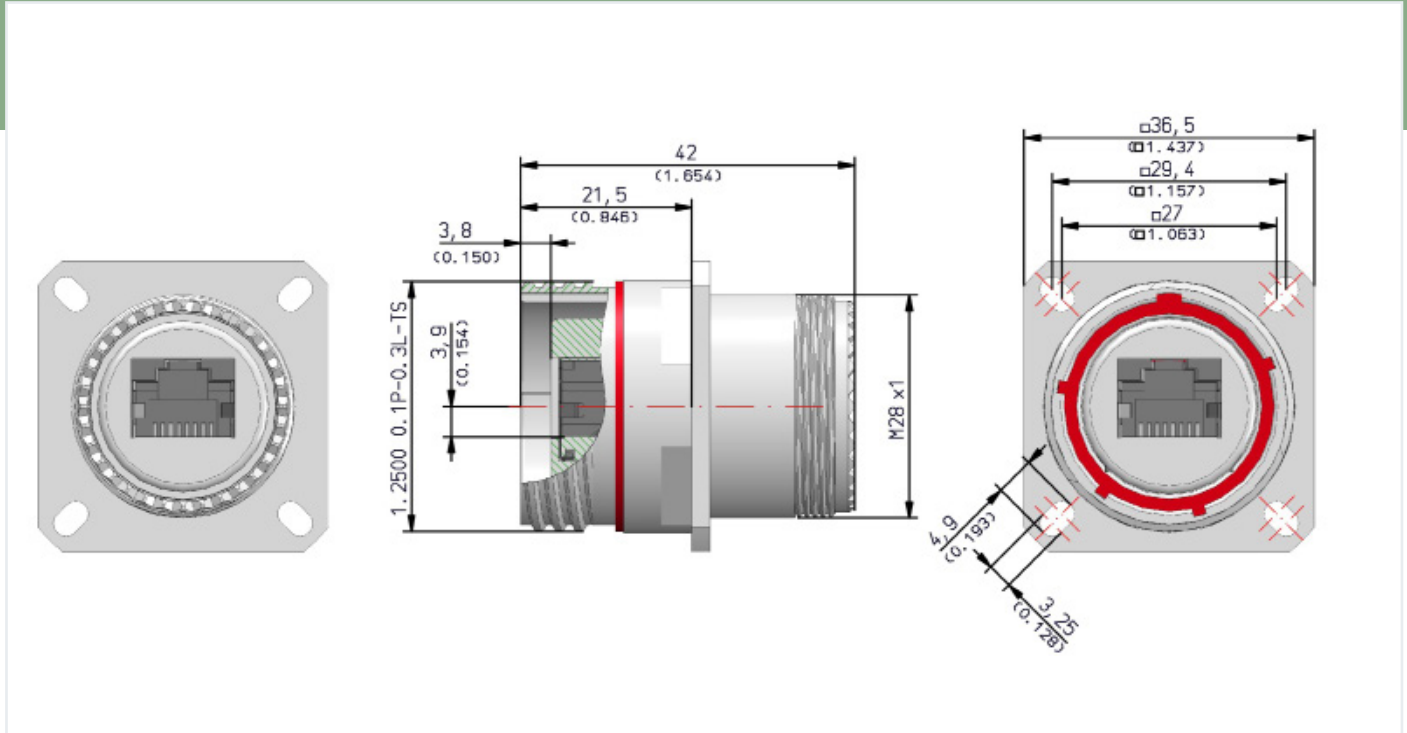
X1-9885 | Datasheet Version 2.0

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X1-SERIES - RUGGED ETHERNET CONNECTIONS

RJ45 CAT6A FEEDTHROUGH SEALED – SQUARE FLANGE X1-9884



INFORMATION

All dimensions in
mm (inch) unless
otherwise specified.

Shell derived from D38999

PN: X1-9884

Datasheet Version: 2.0

CATALOG:

Harsh Environment
Data Connectivity Solutions

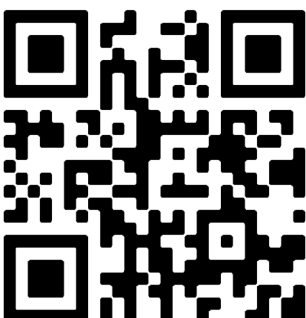


Table A: Material & Plating

Material & Plating Code	Technical Design	ROHS-/REACH Compliant	Electrically Conductive	Salt Spray Resistance according to MIL spec.	Salt Spray Resistance according to VG spec.
V	Tin-Zinc grey Base material: Al-alloy Tin-Zinc over electroless Nickel	Yes	Yes	500 hrs	5 day cyclic
5	Electroless Nickel Base material: Al-alloy	Yes	Yes	48 hrs	n.a.
2	Zinc-Nickel black Coupling ring: Al-alloy, black anodized Shell: Zinc-Nickel black chromate over electroless Nickel	Yes	Yes	500 hrs	n.a.
6	Cadmium olive drab Coupling ring: Al-alloy, olive drab anodized Shell: Al-alloy Cadmium plated olive drab over electroless Nickel	No	Yes	500 hrs	5 day cyclic
9	Marine Bronze Base material: Marine Bronze CuAl10Ni5Fe4 (CW307G) Shotblast, nonreflective	Yes	Yes	n.a.	n.a.
1	Stainless Steel / passivated	Yes	Yes	n.a.	n.a.

Performance

Voltage rating AC	35 V
Voltage rating DC	50 V
Temperature	-40 °C to +120 °C
Mating cycles	>500
Data transmission	10 Gbit/s (500 Mhz)
Pin mapping	1:1 (e.g. Pin1 : Pin1)

Ground of RJ45s connected to housing.

Materials

RJ45 housing	Thermoplastic UL94 V-0
RJ45 shield plating	Tin or Nickel
RJ45 shield	Copper alloy
Contacts plating	Selective Gold (1,27µm)
Contacts	Copper alloy
Housing	See option material
PCB	FR4, UL94V-0

For details about keyway polarization and RJ45 orientation see table 1 and 2 in the full „Harsh Environment Data Connectivity Solutions“ catalog on page 28/29.

How to order

Table X1-9884 19 5 N 0

Basic part number

Shell size

Material & plating code

A

Keyway polarization

1

RJ45 orientation

2

ORDER EXAMPLE

X1-9884-19-5 N 0

CAT6A FEEDTHROUGH SEALED - SQUARE FL.

SIZE 19

ELECTROLESS NICKEL

KEYWAY = N (STANDARD)

RJ45 POSITION = 0°

EMCA CONNECTOR SOLUTIONS GMBH

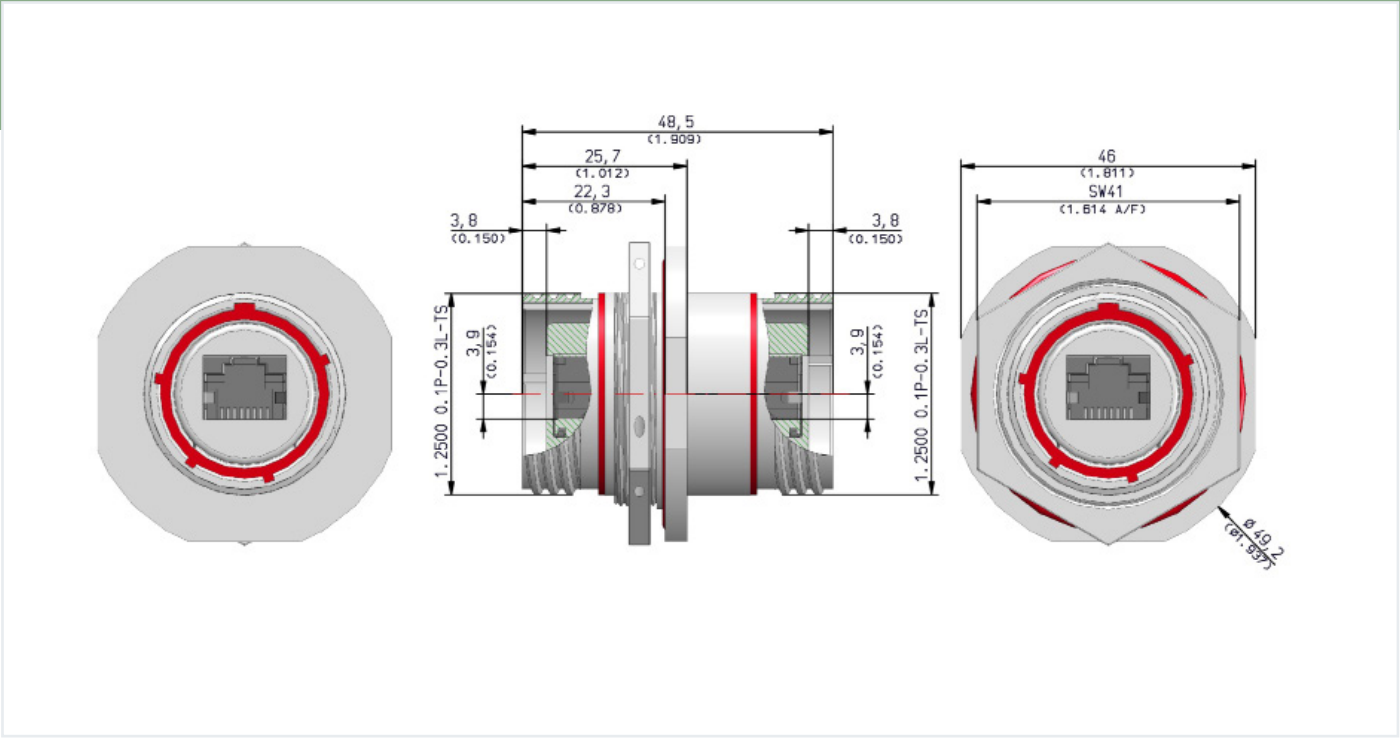
X1-9884 | Datasheet Version 2.0

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X1-SERIES - RUGGED ETHERNET CONNECTIONS

RJ45 CAT5e BULKHEAD FEEDTHROUGH – JAM NUT X1-9851



INFORMATION

All dimensions in
mm (inch) unless
otherwise specified.

Shell derived from D38999

PN: X1-9851

Datasheet Version: 1.0

CATALOG:

Harsh Environment
Data Connectivity Solutions



Table A: Material & Plating

Material & Plating Code	Technical Design	ROHS-/REACH Compliant	Electrically Conductive	Salt Spray Resistance according to MIL spec.	Salt Spray Resistance according to VG spec.
V	Tin-Zinc grey Base material: Al-alloy Tin-Zinc over electroless Nickel	Yes	Yes	500 hrs	5 day cyclic
5	Electroless Nickel Base material: Al-alloy	Yes	Yes	48 hrs	n.a.
2	Zinc-Nickel black Coupling ring: Al-alloy, black anodized Shell: Zinc-Nickel black chromate over electroless Nickel	Yes	Yes	500 hrs	n.a.
6	Cadmium olive drab Coupling ring: Al-alloy, olive drab anodized Shell: Al-alloy Cadmium plated olive drab over electroless Nickel	No	Yes	500 hrs	5 day cyclic
9	Marine Bronze Base material: Marine Bronze CuAl10Ni5Fe4 (CW307G) Shotblast, nonreflective	Yes	Yes	n.a.	n.a.
1	Stainless Steel / passivated	Yes	Yes	n.a.	n.a.

Performance

Voltage rating AC	35 V
Voltage rating DC	50 V
Temperature	-40 °C to +120 °C
Mating cycles	>500
Data transmission	1000 Mbit/s (100 Mhz)
Pin mapping	1:1 (e.g. Pin1 : Pin1)

Ground of RJ45s connected to housing.

Materials

RJ45 housing	Thermoplastic UL94 V-0
RJ45 shield plating	Tin or Nickel
RJ45 shield	Copper alloy
Contacts plating	Selective Gold (1,27µm)
Contacts	Copper alloy
Housing	See option material
PCB	FR4, UL94V-0

For details about keyway polarization and RJ45 orientation see table 1 and 2 in the full „Harsh Environment Data Connectivity Solutions“ catalog on page 28/29.

How to order

Table X1-9851 19 5 N 0

Basic part number

Shell size

Material & plating code

A

Keyway polarization

1

RJ45 orientation

2

ORDER EXAMPLE

X1-9851-19-5 N 0

CAT5e BULKHEAD FEEDTHROUGH - JAM NUT

SIZE 19

ELECTROLESS NICKEL

KEYWAY = N (STANDARD)

RJ45 POSITIONS = 0°

EMCA CONNECTOR SOLUTIONS GMBH

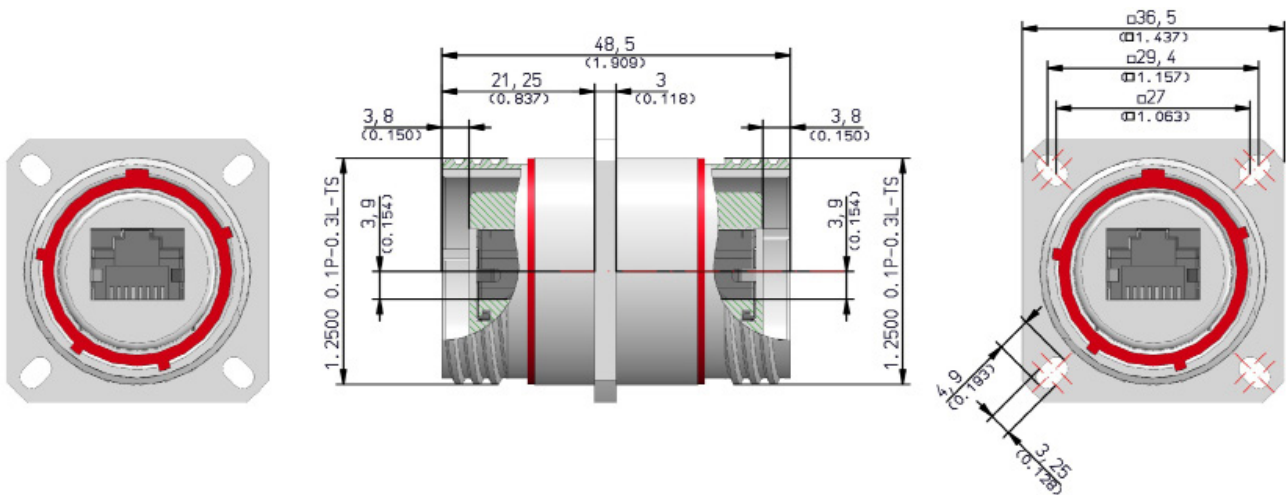
X1-9851 | Datasheet Version 1.0

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X1-SERIES - RUGGED ETHERNET CONNECTIONS

RJ45 CAT5e BULKHEAD FEEDTHROUGH – SQUARE FLANGE X1-9850



INFORMATION

All dimensions in
mm (inch) unless
otherwise specified.

Shell derived from D38999

PN: X1-9850

Datasheet Version: 1.0

CATALOG:

Harsh Environment
Data Connectivity Solutions

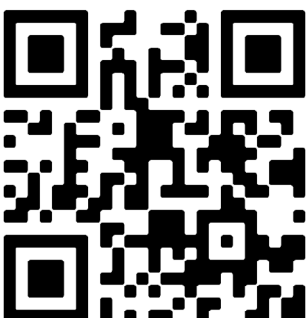


Table A: Material & Plating

Material & Plating Code	Technical Design	ROHS-/REACH Compliant	Electrically Conductive	Salt Spray Resistance according to MIL spec.	Salt Spray Resistance according to VG spec.
V	Tin-Zinc grey Base material: Al-alloy Tin-Zinc over electroless Nickel	Yes	Yes	500 hrs	5 day cyclic
5	Electroless Nickel Base material: Al-alloy	Yes	Yes	48 hrs	n.a.
2	Zinc-Nickel black Coupling ring: Al-alloy, black anodized Shell: Zinc-Nickel black chromate over electroless Nickel	Yes	Yes	500 hrs	n.a.
6	Cadmium olive drab Coupling ring: Al-alloy, olive drab anodized Shell: Al-alloy Cadmium plated olive drab over electroless Nickel	No	Yes	500 hrs	5 day cyclic
9	Marine Bronze Base material: Marine Bronze CuAl10Ni5Fe4 (CW307G) Shotblast, nonreflective	Yes	Yes	n.a.	n.a.
1	Stainless Steel / passivated	Yes	Yes	n.a.	n.a.

Performance

Voltage rating AC	35 V
Voltage rating DC	50 V
Temperature	-40 °C to +120 °C
Mating cycles	>500
Data transmission	1000 Mbit/s (100 Mhz)
Pin mapping	1:1 (e.g. Pin1 : Pin1)

Ground of RJ45s connected to housing.

Materials

RJ45 housing	Thermoplastic UL94 V-0
RJ45 shield plating	Tin or Nickel
RJ45 shield	Copper alloy
Contacts plating	Selective Gold (1,27µm)
Contacts	Copper alloy
Housing	See option material
PCB	FR4, UL94V-0

For details about keyway polarization and RJ45 orientation see table 1 and 2 in the full „Harsh Environment Data Connectivity Solutions“ catalog on page 28/29.

How to order

Table X1-9850 19 5 N 0

Basic part number

Shell size

Material & plating code

A

Keyway polarization

1

RJ45 orientation

2

ORDER EXAMPLE

X1-9850-19-5 N 0

CAT5e BULKHEAD FEEDTHROUGH - SQUARE FL.

SIZE 19

ELECTROLESS NICKEL

KEYWAY = N (STANDARD)

RJ45 POSITIONS = 0°

EMCA CONNECTOR SOLUTIONS GMBH

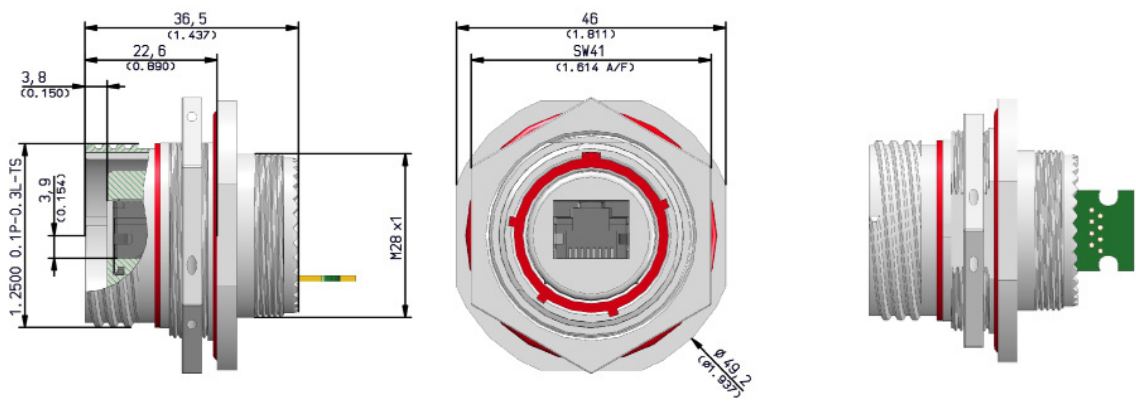
X1-9850 | Datasheet Version 1.0

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X1-SERIES - RUGGED ETHERNET CONNECTIONS

RJ45 CAT6A PCB – JAM NUT RECEPTACLE X1-9887



INFORMATION

All dimensions in
mm (inch) unless
otherwise specified.

Shell derived from D38999

PN: X1-9887

Datasheet Version: 2.0

CATALOG:

Harsh Environment
Data Connectivity Solutions



Table A: Material & Plating

Material & Plating Code	Technical Design	ROHS-/REACH Compliant	Electrically Conductive	Salt Spray Resistance according to MIL spec.	Salt Spray Resistance according to VG spec.
V	Tin-Zinc grey Base material: Al-alloy Tin-Zinc over electroless Nickel	Yes	Yes	500 hrs	5 day cyclic
5	Electroless Nickel Base material: Al-alloy	Yes	Yes	48 hrs	n.a.
2	Zinc-Nickel black Coupling ring: Al-alloy, black anodized Shell: Zinc-Nickel black chromate over electroless Nickel	Yes	Yes	500 hrs	n.a.
6	Cadmium olive drab Coupling ring: Al-alloy, olive drab anodized Shell: Al-alloy Cadmium plated olive drab over electroless Nickel	No	Yes	500 hrs	5 day cyclic
9	Marine Bronze Base material: Marine Bronze CuAl10Ni5Fe4 (CW307G) Shotblast, nonreflective	Yes	Yes	n.a.	n.a.
1	Stainless Steel / passivated	Yes	Yes	n.a.	n.a.

Performance

Voltage rating AC	35 V
Voltage rating DC	50 V
Temperature	-40 °C to +120 °C
Mating cycles	>500
Data transmission	10 Gbit/s (500 Mhz)
Pin mapping	1:1 (e.g. Pin1 : Pin1)

Ground of RJ45s connected to housing.

Materials

RJ45 housing	Thermoplastic UL94 V-0
RJ45 shield plating	Tin or Nickel
RJ45 shield	Copper alloy
Contacts plating	Selective Gold (1,27µm)
Contacts	Copper alloy
Housing	See option material
PCB	FR4, UL94V-0

For details about keyway polarization and RJ45 orientation see table 1 and 2 in the full „Harsh Environment Data Connectivity Solutions“ catalog on page 28/29.

How to order

Table X1-9887 19 5 N 0

Basic part number

Shell size

Material & plating code

A

Keyway polarization

1

RJ45 orientation

2

ORDER EXAMPLE

X1-9887-19-5 N 0

CAT6A PCB - JAM NUT

SIZE 19

ELECTROLESS NICKEL

KEYWAY = N (STANDARD)

RJ45 POSITION = 0°

EMCA CONNECTOR SOLUTIONS GMBH

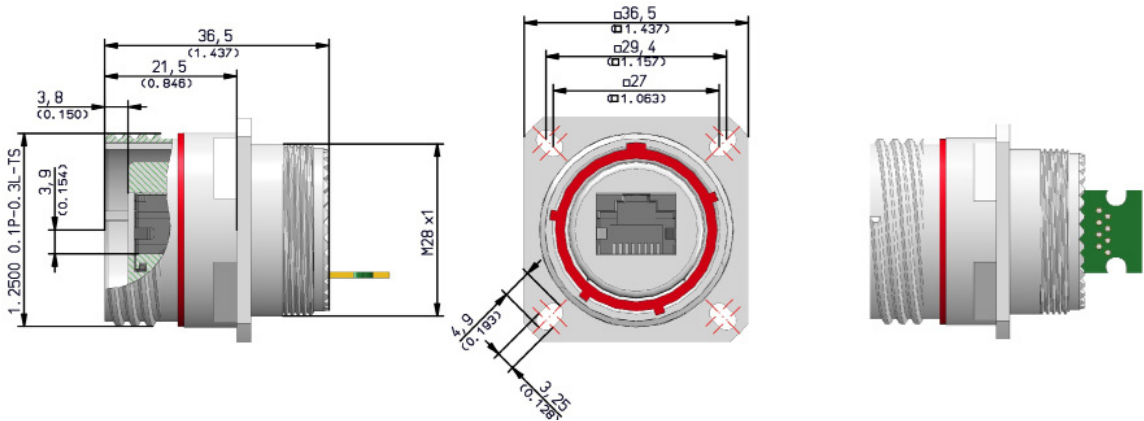
X1-9887 | Datasheet Version 2.0

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X1-SERIES - RUGGED ETHERNET CONNECTIONS

RJ45 CAT6A PCB – SQUARE FLANGE RECEPTACLE X1-9886



INFORMATION

All dimensions in
mm (inch) unless
otherwise specified.

Shell derived from D38999

PN: X1-9886
Datasheet Version: 2.0

CATALOG:

Harsh Environment
Data Connectivity Solutions



Table A: Material & Plating

Material & Plating Code	Technical Design	ROHS-/REACH Compliant	Electrically Conductive	Salt Spray Resistance according to MIL spec.	Salt Spray Resistance according to VG spec.
V	Tin-Zinc grey Base material: Al-alloy Tin-Zinc over electroless Nickel	Yes	Yes	500 hrs	5 day cyclic
5	Electroless Nickel Base material: Al-alloy	Yes	Yes	48 hrs	n.a.
2	Zinc-Nickel black Coupling ring: Al-alloy, black anodized Shell: Zinc-Nickel black chromate over electroless Nickel	Yes	Yes	500 hrs	n.a.
6	Cadmium olive drab Coupling ring: Al-alloy, olive drab anodized Shell: Al-alloy Cadmium plated olive drab over electroless Nickel	No	Yes	500 hrs	5 day cyclic
9	Marine Bronze Base material: Marine Bronze CuAl10Ni5Fe4 (CW307G) Shotblast, nonreflective	Yes	Yes	n.a.	n.a.
1	Stainless Steel / passivated	Yes	Yes	n.a.	n.a.

Performance

Voltage rating AC	35 V
Voltage rating DC	50 V
Temperature	-40 °C to +120 °C
Mating cycles	>500
Data transmission	10 Gbit/s (500 Mhz)
Pin mapping	1:1 (e.g. Pin1 : Pin1)

Ground of RJ45s connected to housing.

Materials

RJ45 housing	Thermoplastic UL94 V-0
RJ45 shield plating	Tin or Nickel
RJ45 shield	Copper alloy
Contacts plating	Selective Gold (1,27µm)
Contacts	Copper alloy
Housing	See option material
PCB	FR4, UL94V-0

For details about keyway polarization and RJ45 orientation see table 1 and 2 in the full „Harsh Environment Data Connectivity Solutions“ catalog on page 28/29.

How to order

Table X1-9886 19 5 N 0

Basic part number

Shell size

Material & plating code

Keyway polarization

RJ45 orientation

A

1

2

ORDER EXAMPLE

X1-9886-19-5 N 0

CAT6A PCB - SQUARE FLANGE

SIZE 19

ELECTROLESS NICKEL

KEYWAY = N (STANDARD)

RJ45 POSITION = 0°

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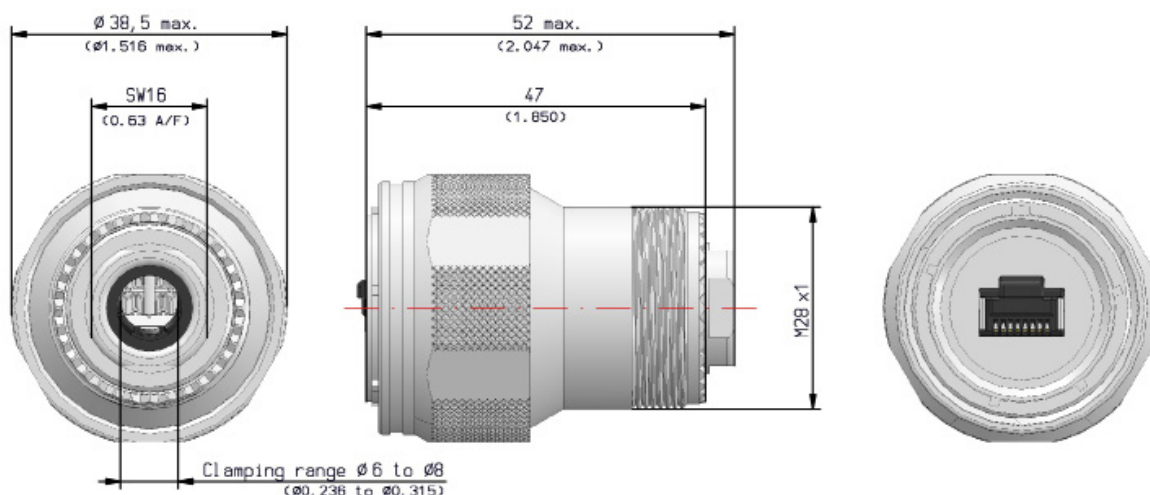
X1-9886 | Datasheet Version 2.0

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X1-SERIES - RUGGED ETHERNET CONNECTIONS

RJ45 CAT6A – FIELD TERMINATION PLUG X1-9878



INFORMATION

All dimensions in
mm (inch) unless
otherwise specified.

Shell derived from D38999

PN: X1-9878

Datasheet Version: 2.0

CATALOG:

Harsh Environment
Data Connectivity Solutions

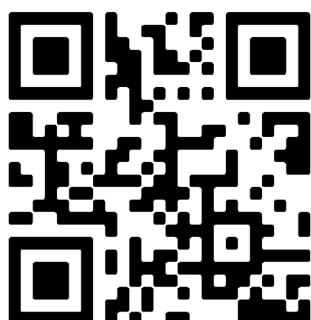


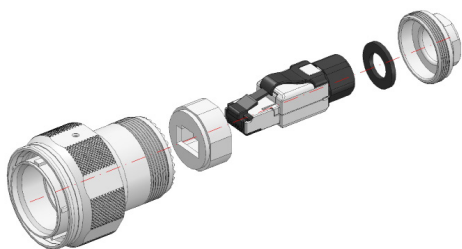
Table A: Material & Plating

Material & Plating Code	Technical Design	ROHS-/REACH Compliant	Electrically Conductive	Salt Spray Resistance according to MIL spec.	Salt Spray Resistance according to VG spec.
V	Tin-Zinc grey Base material: Al-alloy Tin-Zinc over electroless Nickel	Yes	Yes	500 hrs	5 day cyclic
5	Electroless Nickel Base material: Al-alloy	Yes	Yes	48 hrs	n.a.
2	Zinc-Nickel black Coupling ring: Al-alloy, black anodized Shell: Zinc-Nickel black chromate over electroless Nickel	Yes	Yes	500 hrs	n.a.
6	Cadmium olive drab Coupling ring: Al-alloy, olive drab anodized Shell: Al-alloy Cadmium plated olive drab over electroless Nickel	No	Yes	500 hrs	5 day cyclic
9	Marine Bronze Base material: Marine Bronze CuAl10Ni5Fe4 (CW307G) Shotblast, nonreflective	Yes	Yes	n.a.	n.a.
1	Stainless Steel / passivated	Yes	Yes	n.a.	n.a.

Performance

Voltage rating AC / DC	35 V / 50 V
Temperature	-40 °C to +85 °C
Mating cycles	>500
Data transmission	10 Gbit/s (500 Mhz)
IDC wire gauge	22 - 26 AWG

Ground/Shielding of RJ45 connected to housing.



Materials

RJ45 housing	Zinc alloy
Contacts plating	Selective Gold 1,27µm (50 µin)
Contacts	Phosphor bronze alloy
Housing	See option material
IDC	Phosphor bronze alloy with 2,54 µm (100 µin) 100% Sn alloy
Grommet	Polyoxymethylen copolymer

For details about keyway polarization see table 1 in the full „Harsh Environment Data Connectivity Solutions“ catalog.

How to order

Table X1-9878 19 5 N

Basic part number

Shell size

Material & plating code

A

Keyway polarization

1

RJ45 orientation can be selected during assembly. Field termination plug, no special tooling required.

ORDER EXAMPLE

X1-9878-19-5 N

CAT6A FIELD TERMINATION PLUG

SIZE 19

ELECTROLESS NICKEL

KEYWAY=N (STANDARD)

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X1-9878 | Datasheet Version 2.0

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TABLES

Table 1: Key/Keyway Polarization

Shell size 19 for RJ45 X1-Series

Key & Keyway Arrangement Identification Letter	AR° or AP°	BR° or BP°	CR° or CP°	DR° or DP°
N	80	142	196	293
A	135	170	200	310
B	49	169	200	244
C	66	140	200	257
D	62	145	180	280
E	79	153	197	272

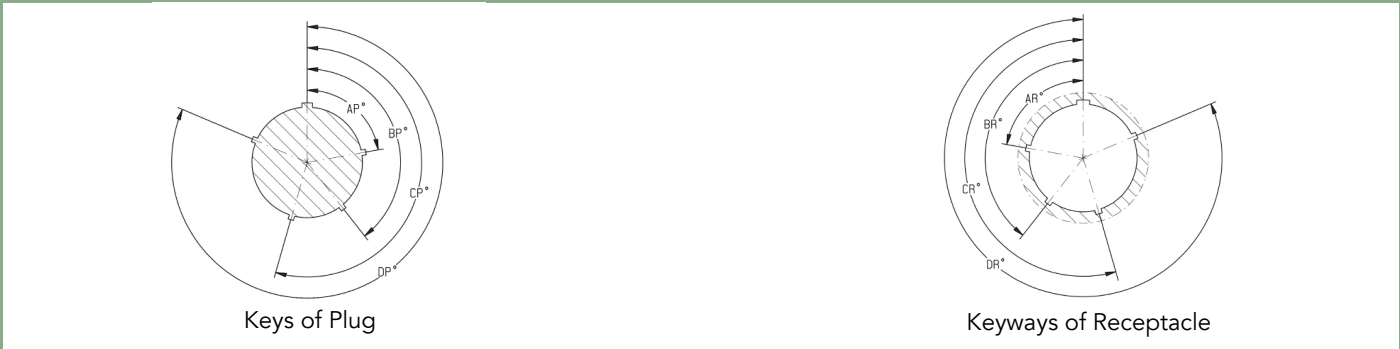
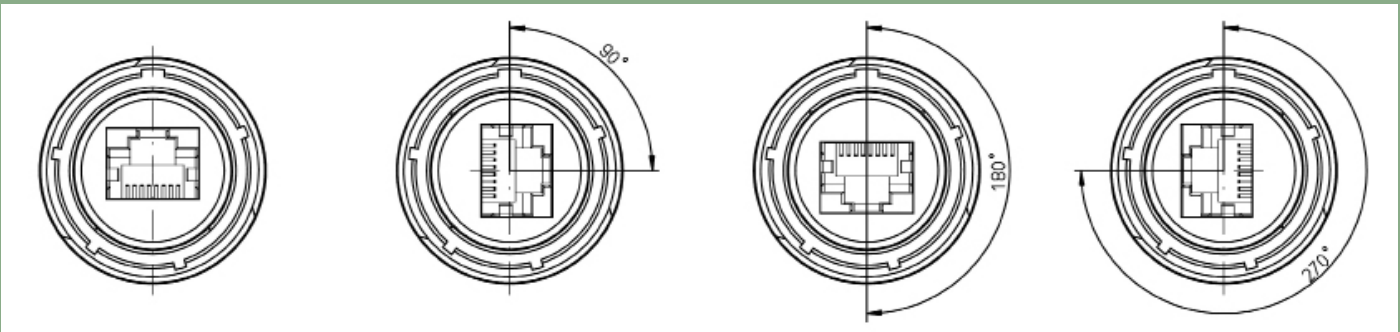


Table 2: RJ45 Orientation

RJ45 Orientation Code	Description	Angle
0	Tab Up	0°
1	Tab Right	90°
2	Tab Down	180°
3	Tab Left	270°



PANEL CUT OUTS

Figure 3: Panel Cut Out for X1-Series Jam Nut Receptacles

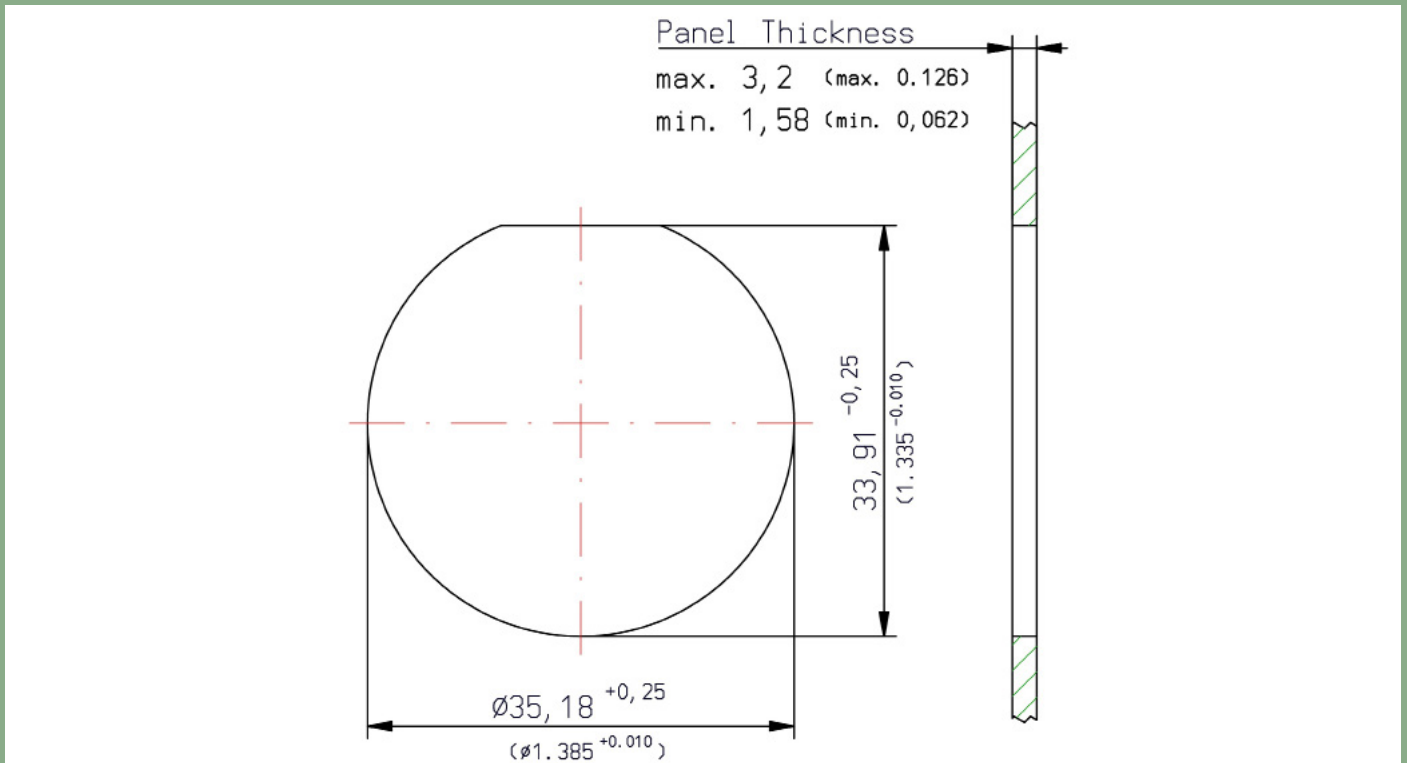
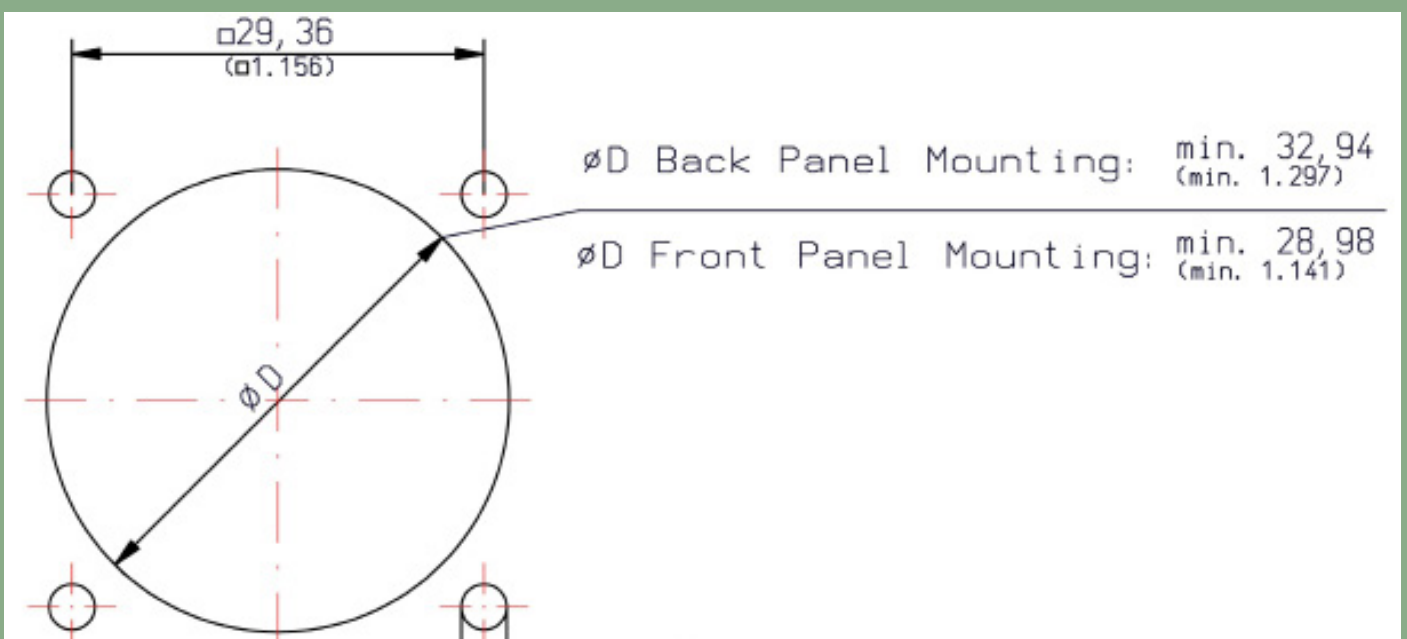


Figure 4: Panel Cut Out for X1-Series Square Flange Receptacles



RUGGED USB CONNECTIONS - X2-SERIES

The X2-Series offers a comprehensive range of USB A and USB C connectors, designed for robust and reliable connections in circular shells with a D38999 style. These connectors are ideal for rugged environments, ensuring durable and stable data and power transmissions.

Key Features

Connector Types:

Single USB A or USB C with both plug and receptacle options. Dual receptacle versions: 2x USB A, 2x USB C, or a mix of 1x USB A and 1x USB C. (Note: Dual receptacles do not have plug options.)

Applications

Making internal USB connections accessible outside enclosures or control cabinets. Data and power supply, including charging applications.

Power-Only Versions:

Dual USB A, dual USB C, and mixed USB A/C configurations are available solely for power supply applications. These versions have data pins short-circuited to be recognized as power-only connections by many USB devices.

Cable Lengths:

Standard cable lengths are available for various needs.

Customization:

Custom connectors can be developed and manufactured based on the X2-Series design. Please contact our sales team for tailored solutions.



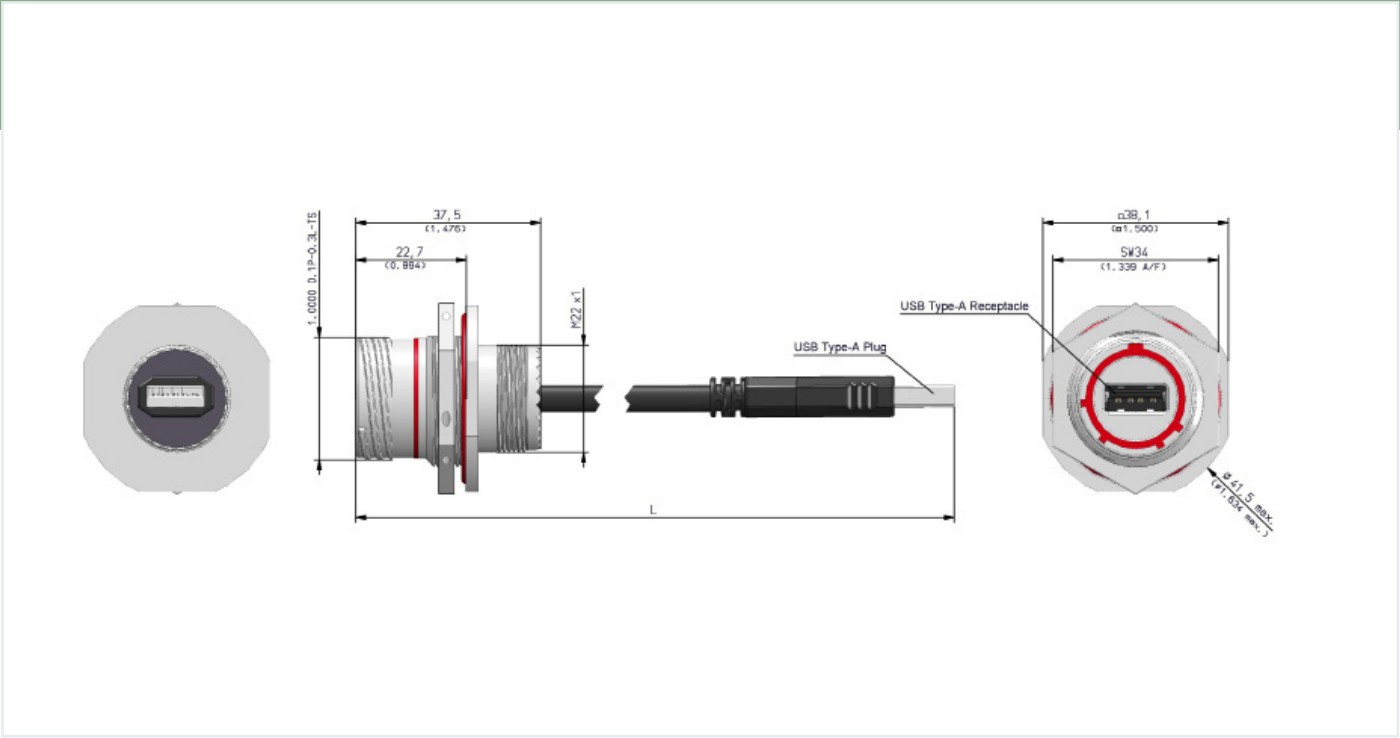
USB X2-SERIES



- | | |
|----|---|
| 10 | USB A – Jam Nut with Cordset – X2-9857 |
| 12 | USB A – Square Flange with Cordset – X2-9856 |
| 14 | USB A – Jam Nut Feedthrough – X2-9853 |
| 16 | USB A – Square Flange Feedthrough – X2-9852 |
| 18 | USB A – Plug with Cordset – X2-9855 |
| 20 | USB A – Jam Nut Dual with Cordset – X2-9865 |
| 22 | USB A – Square Flange Dual with Cordset – X2-9864 |
| 24 | USB A – Jam Nut Dual for Power Supply – X2-9861 |
| 26 | USB A – Square Flange Dual for Power Supply – X2-9860 |
| | |
| 10 | USB C – Jam Nut with Cordset – X2-9876 |
| 12 | USB C – Square Flange with Cordset – X2-9875 |
| 14 | USB C – Plug with Cordset – X2-9874 |
| 16 | USB C – Jam Nut Dual with Cordset – X2-9867 |
| 18 | USB C – Square Dual Flange with Cordset – X2-9866 |
| 20 | USB C – Jam Nut Dual for Power Supply – X2-9847 |
| 22 | USB C – Square Flange Dual for Power Supply – X2-9846 |
| | |
| 16 | USB A/C – Jam Nut with Cordset – X2-9863 |
| 18 | USB A/C – Square Flange with Cordset – X2-9862 |
| 20 | USB A/C – Jam Nut for Power Supply – X2-9859 |
| 22 | USB A/C – Square Flange for Power Supply – X2-9858 |

X2-SERIES – RUGGED USB CONNECTIONS

USB A – JAM NUT RECEPTACLE WITH CORDSET X2-9857



INFORMATION

All dimensions in
mm (inch) unless
otherwise specified.

Shell derived from D38999

PN: X2-9857

Datasheet Version: 1.0

CATALOG:

Harsh Environment
Data Connectivity Solutions

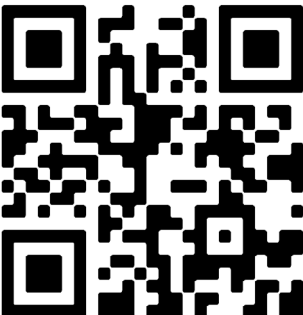


Table A: Material & Plating

Material & Plating Code	Technical Design	ROHS-/ REACH Compliant	Electrically Conductive	Salt Spray Resistance according to MIL spec.	Salt Spray Resistance according to VG spec.
V	Tin-Zinc grey Base material: Al-alloy Tin-Zinc over electroless Nickel	Yes	Yes	500 hrs	5 day cyclic
5	Electroless Nickel Base material: Al-alloy	Yes	Yes	48 hrs	n.a.
2	Zinc-Nickel black Coupling ring: Al-alloy, black anodized Shell: Zinc-Nickel black chromate over electroless Nickel	Yes	Yes	500 hrs	n.a.
6	Cadmium olive drab Coupling ring: Al-alloy, olive drab anodized Shell: Al-alloy Cadmium plated olive drab over electroless Nickel	No	Yes	500 hrs	5 day cyclic
9	Marine Bronze Base material: Marine Bronze CuAl10Ni5Fe4 (CW307G) Shotblast, nonreflective	Yes	Yes	n.a.	n.a.
1	Stainless Steel / passivated	Yes	Yes	n.a.	n.a.

Performance

Voltage Rating (V_BUS)	20 V
Current Rating (V_BUS)	3 A
Temperature	-20 °C to +85 °C
Mating cycles	>500
Compatible with	USB 3.2 Gen 1

Table B: Cable length

Length Code	Length L in mm	Tolerance in mm
0500	500 (19.685)	+ 30 (1.181)
1000	1000 (39,370)	+ 40 (1.575)

Materials

Over molding (plug)	PVC
USB A shell	Nickel plated
Cable jacket	PVC
Housing	See option material

For details about keyway polarization, USB A orientation and panel cut out see page 72-75 in the full „Harsh Environment Data Connectivity Solutions“ catalog.

How to order

Table X2-9857 15 5 N 0 0500

Basic part number	
Shell size	
Material & plating code	A
Keyway polarization	5
USB A orientation	7
Cable length	B

ORDER EXAMPLE

X2-9857-15-5 N 0-0500

USB A – JAM NUT WITH CORDSET

SIZE 15, ELECTROLESS NICKEL

KEYWAY = N (STANDARD)

USB A ORIENTATION = 0° (See drawing)

CABLE LENGTH 500 MM

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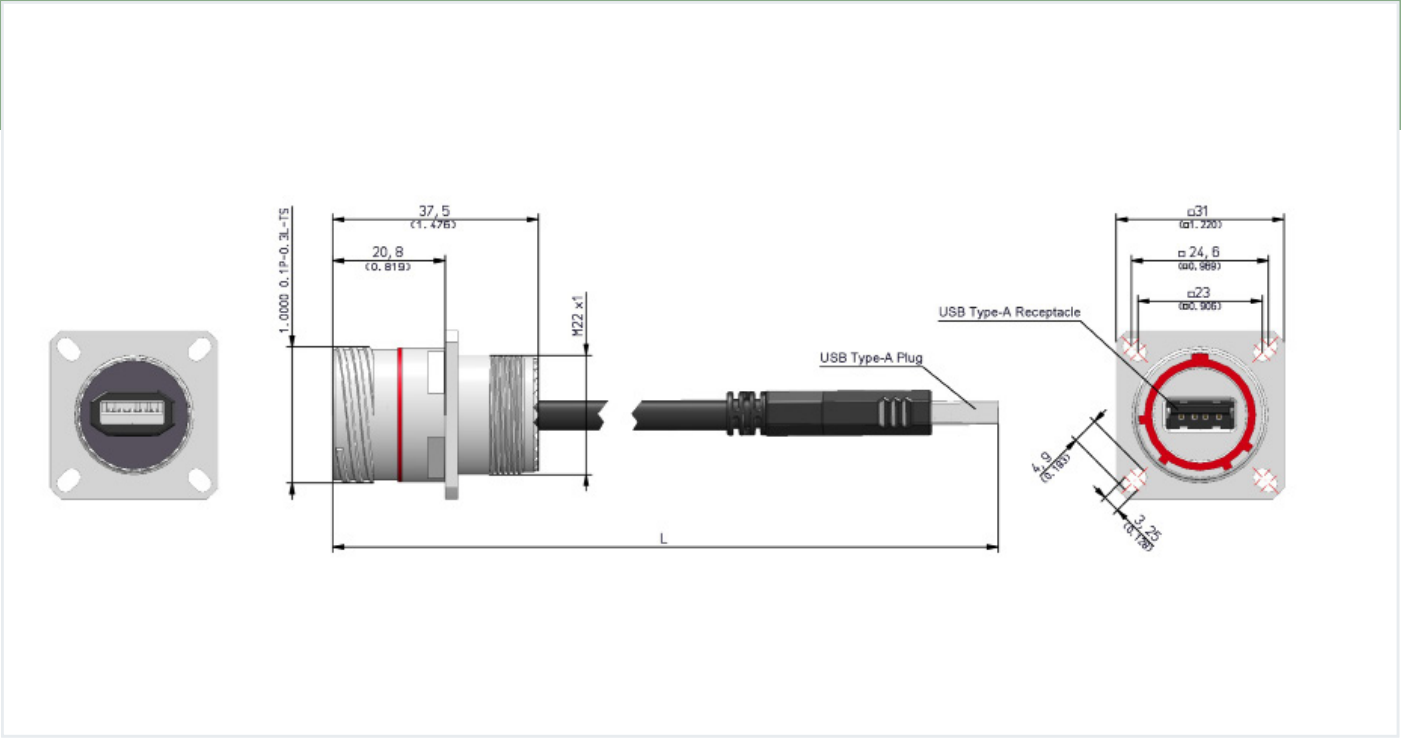
X2-9857 | Datasheet Version 1.0

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X2-SERIES – RUGGED USB CONNECTIONS

USB A – SQUARE FLANGE RECEPTACLE WITH CORDSET X2-9856



INFORMATION

All dimensions in
mm (inch) unless
otherwise specified.

Shell derived from D38999

PN: X2-9856

Datasheet Version: 1.0

CATALOG:

Harsh Environment
Data Connectivity Solutions

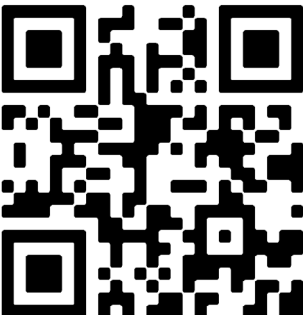


Table A: Material & Plating

Material & Plating Code	Technical Design	ROHS-/REACH Compliant	Electrically Conductive	Salt Spray Resistance according to MIL spec.	Salt Spray Resistance according to VG spec.
V	Tin-Zinc grey Base material: Al-alloy Tin-Zinc over electroless Nickel	Yes	Yes	500 hrs	5 day cyclic
5	Electroless Nickel Base material: Al-alloy	Yes	Yes	48 hrs	n.a.
2	Zinc-Nickel black Coupling ring: Al-alloy, black anodized Shell: Zinc-Nickel black chromate over electroless Nickel	Yes	Yes	500 hrs	n.a.
6	Cadmium olive drab Coupling ring: Al-alloy, olive drab anodized Shell: Al-alloy Cadmium plated olive drab over electroless Nickel	No	Yes	500 hrs	5 day cyclic
9	Marine Bronze Base material: Marine Bronze CuAl10Ni5Fe4 (CW307G) Shotblast, nonreflective	Yes	Yes	n.a.	n.a.
1	Stainless Steel / passivated	Yes	Yes	n.a.	n.a.

Performance

Voltage Rating (V_BUS)	20 V
Current Rating (V_BUS)	3 A
Temperature	-20 °C to +85 °C
Mating cycles	>500
Compatible with	USB 3.2 Gen 1

Table B: Cable length

Length Code	Length L in mm	Tolerance in mm
0500	500 (19.685)	+ 30 (1.181)
1000	1000 (39,370)	+ 40 (1.575)

Materials

Over molding (plug)	PVC
USB A shell	Nickel plated
Cable jacket	PVC
Housing	See option material

For details about keyway polarization, USB A orientation and panel cut out see page 72-75 in the full „Harsh Environment Data Connectivity Solutions“ catalog.

How to order

Table X2-9856 15 5 N 0 0500

Basic part number	
Shell size	
Material & plating code	A
Keyway polarization	5
USB A orientation	7
Cable length	B

ORDER EXAMPLE

X2-9856-15-5 N 0-0500

USB A – SQUARE FLANGE WITH CORDSET

SIZE 15, ELECTROLESS NICKEL

KEYWAY = N (STANDARD)

USB A ORIENTATION = 0° (See drawing)

CABLE LENGTH 500 MM

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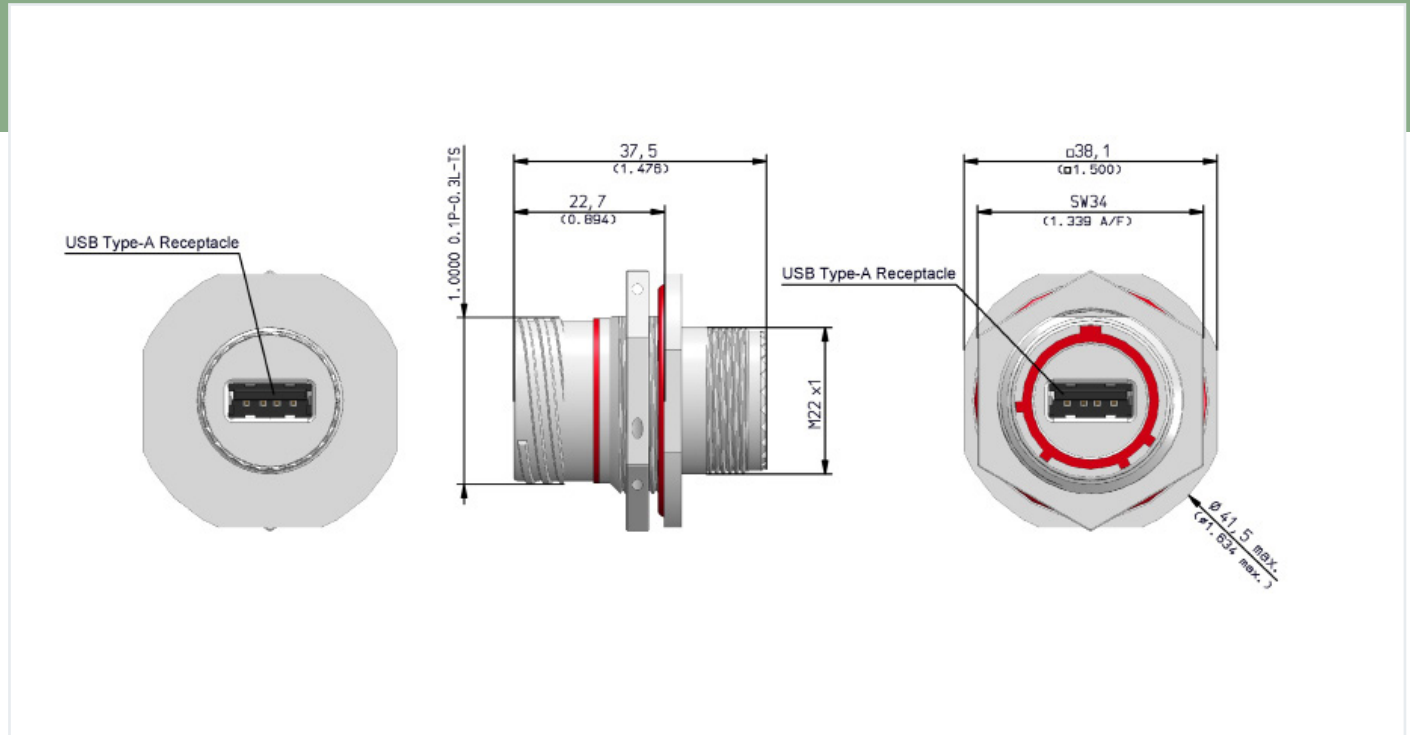
X2-9856 | Datasheet Version 1.0

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X2-SERIES – RUGGED USB CONNECTIONS

USB A FEEDTHROUGH – JAM NUT RECEPTACLE X2-9853



INFORMATION

All dimensions in
mm (inch) unless
otherwise specified.

Shell derived from D38999

PN: X2-9853

Datasheet Version: 1.0

CATALOG:

Harsh Environment
Data Connectivity Solutions



Table A: Material & Plating

Material & Plating Code	Technical Design	ROHS-/REACH Compliant	Electrically Conductive	Salt Spray Resistance according to MIL spec.	Salt Spray Resistance according to VG spec.
V	Tin-Zinc grey Base material: Al-alloy Tin-Zinc over electroless Nickel	Yes	Yes	500 hrs	5 day cyclic
5	Electroless Nickel Base material: Al-alloy	Yes	Yes	48 hrs	n.a.
2	Zinc-Nickel black Coupling ring: Al-alloy, black anodized Shell: Zinc-Nickel black chromate over electroless Nickel	Yes	Yes	500 hrs	n.a.
6	Cadmium olive drab Coupling ring: Al-alloy, olive drab anodized Shell: Al-alloy Cadmium plated olive drab over electroless Nickel	No	Yes	500 hrs	5 day cyclic
9	Marine Bronze Base material: Marine Bronze CuAl10Ni5Fe4 (CW307G) Shotblast, nonreflective	Yes	Yes	n.a.	n.a.
1	Stainless Steel / passivated	Yes	Yes	n.a.	n.a.

Performance

Voltage Rating (V_BUS)	30 V
Current Rating (V_BUS)	1,8 A
Temperature	-40 °C to +85 °C
Mating cycles	>500
Compatible with	USB 3.2 Gen 1

Materials

USB A shell	Nickel plated
Housing	See option material
PCB	FR4, UL94V-0

For details about keyway polarization, USB A orientation and panel cut out see page 72-75 in the full „Harsh Environment Data Connectivity Solutions“ catalog.

How to order

Table X2-9853 15 5 N 0

Basic part number

Shell size

Material & plating code

A

Keyway polarization

5

USB A orientation

7

ORDER EXAMPLE X2-9853-15-5 N 0

USB A FEEDTHROUGH – JAM NUT

SIZE 15

ELECTROLESS NICKEL

KEYWAY = N (STANDARD)

USB A ORIENTATIONS = 0° (See drawing)

EMCA CONNECTOR SOLUTIONS GMBH

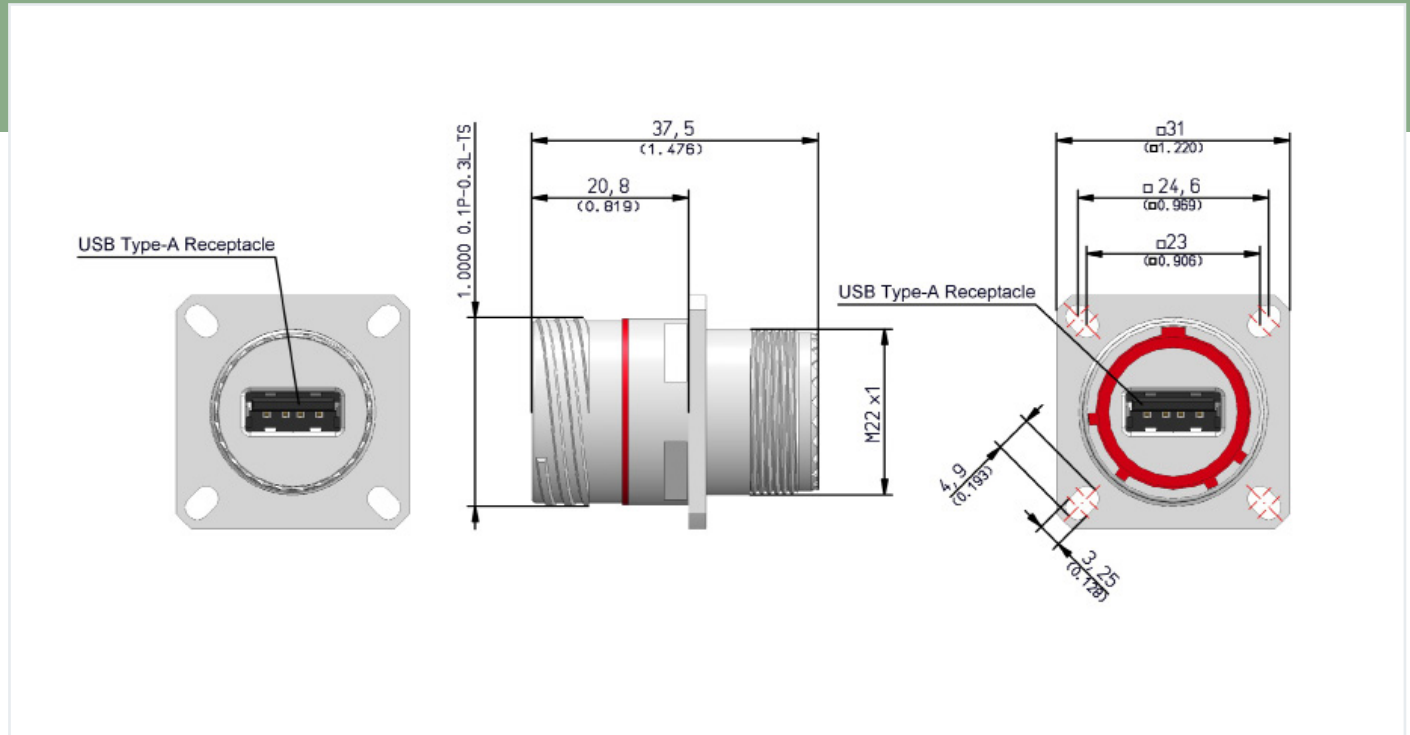
X2-9853 | Datasheet Version 1.0

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X2-SERIES – RUGGED USB CONNECTIONS

USB A FEEDTHROUGH – SQUARE FLANGE RECEPTACLE X2-9852



INFORMATION

All dimensions in
mm (inch) unless
otherwise specified.

Shell derived from D38999

PN: X2-9852

Version: 1.0

CATALOG:

Harsh Environment
Data Connectivity Solutions



Table A: Material & Plating

Material & Plating Code	Technical Design	ROHS-/REACH Compliant	Electrically Conductive	Salt Spray Resistance according to MIL spec.	Salt Spray Resistance according to VG spec.
V	Tin-Zinc grey Base material: Al-alloy Tin-Zinc over electroless Nickel	Yes	Yes	500 hrs	5 day cyclic
VS	Tin-Zinc black Base material: Al-alloy Tin-Zinc over electroless Nickel	Yes	Yes	500 hrs	5 day cyclic
5	Electroless Nickel Base material: Al-alloy	Yes	Yes	48 hrs	n.a.
2	Zinc-Nickel black Coupling ring: Al-alloy, black anodized Shell: Zinc-Nickel black chromate over electroless Nickel	Yes	Yes	500 hrs	n.a.
6	Cadmium olive drab Coupling ring: Al-alloy, olive drab anodized Shell: Al-alloy Cadmium plated olive drab over electroless Nickel	No	Yes	500 hrs	5 day cyclic
9	Marine Bronze Base material: Marine Bronze CuAl10Ni5Fe4 (CW307G) Shotblast, nonreflective	Yes	Yes	n.a.	n.a.
1	Stainless Steel / passivated	Yes	Yes	n.a.	n.a.

Performance

Voltage Rating (V_BUS)	30 V
Current Rating (V_BUS)	1,8 A
Temperature	-40 °C to +85 °C
Mating cycles	>500
Compatible with	USB 3.2 Gen 1

Materials

USB A shell	Nickel plated
Housing	See option material
PCB	FR4, UL94V-0

For details about keyway polarization, USB A orientation and panel cut out see page 72-75 in the full „Harsh Environment Data Connectivity Solutions“ catalog.

How to order

Table X2-9852 15 5 N 0

Basic part number

Shell size

Material & plating code

A

Keyway polarization

5

USB A orientation

7

ORDER EXAMPLE X2-9852-15-5 N 0

USB A FEEDTHROUGH – SQUARE FLANGE

SIZE 15

ELECTROLESS NICKEL

KEYWAY = N (STANDARD)

USB A ORIENTATIONS = 0° (See drawing)

EMCA CONNECTOR SOLUTIONS GMBH

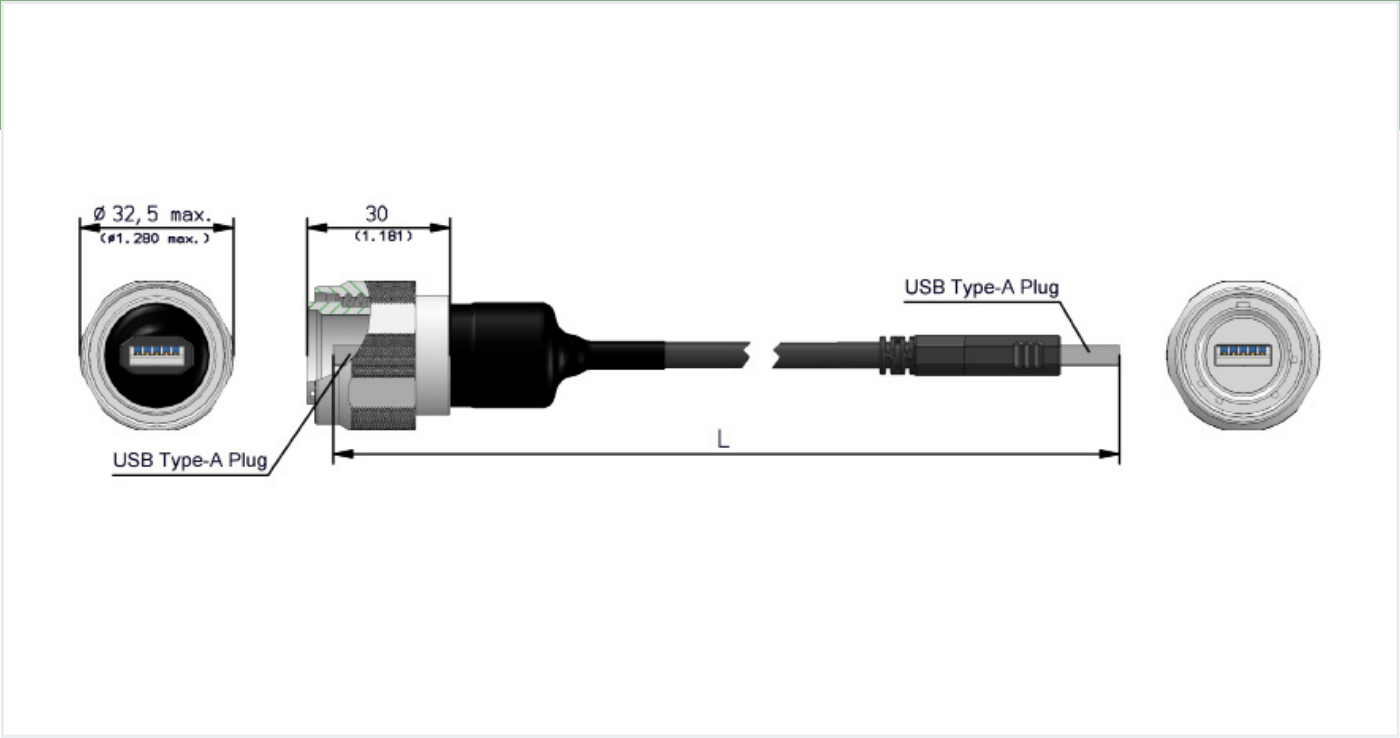
X2-9852 | Version 1.0

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X2-SERIES – RUGGED USB CONNECTIONS

USB A – PLUG WITH CORDSET X2-9855



INFORMATION

All dimensions in
mm (inch) unless
otherwise specified.

Shell derived from D38999

PN: X2-9855

Datasheet Version: 1.0

CATALOG:

Harsh Environment
Data Connectivity Solutions



Table A: Material & Plating

Material & Plating Code	Technical Design	ROHS-/REACH Compliant	Electrically Conductive	Salt Spray Resistance according to MIL spec.	Salt Spray Resistance according to VG spec.
V	Tin-Zinc grey Base material: Al-alloy Tin-Zinc over electroless Nickel	Yes	Yes	500 hrs	5 day cyclic
5	Electroless Nickel Base material: Al-alloy	Yes	Yes	48 hrs	n.a.
2	Zinc-Nickel black Coupling ring: Al-alloy, black anodized Shell: Zinc-Nickel black chromate over electroless Nickel	Yes	Yes	500 hrs	n.a.
6	Cadmium olive drab Coupling ring: Al-alloy, olive drab anodized Shell: Al-alloy Cadmium plated olive drab over electroless Nickel	No	Yes	500 hrs	5 day cyclic
9	Marine Bronze Base material: Marine Bronze CuAl10Ni5Fe4 (CW307G) Shotblast, nonreflective	Yes	Yes	n.a.	n.a.
1	Stainless Steel / passivated	Yes	Yes	n.a.	n.a.

Performance

Voltage Rating (V_BUS)	20 V
Current Rating (V_BUS)	3 A
Temperature	-20 °C to +85 °C
Mating cycles	>500
Compatible with	USB 3.2 Gen 1

Table B: Cable length

Length Code	Length L in mm	Tolerance in mm
1000	1000 (39,370)	+/- 30 (1.181)

Materials

Over molding (plug)	PVC
USB A shell	Nickel plated
Cable jacket	PVC
Housing	See option material

For details about keyway polarization and USB A orientation see page 72-75 in the full „Harsh Environment Data Connectivity Solutions“ catalog.

How to order

	Table	X2-9855	15	5	N	0	0500
Basic part number							
Shell size							
Material & plating code	A						
Keyway polarization	5						
USB A orientation	8						
Cable length	B						

ORDER EXAMPLE

X2-9855-15-5 N 0-1000

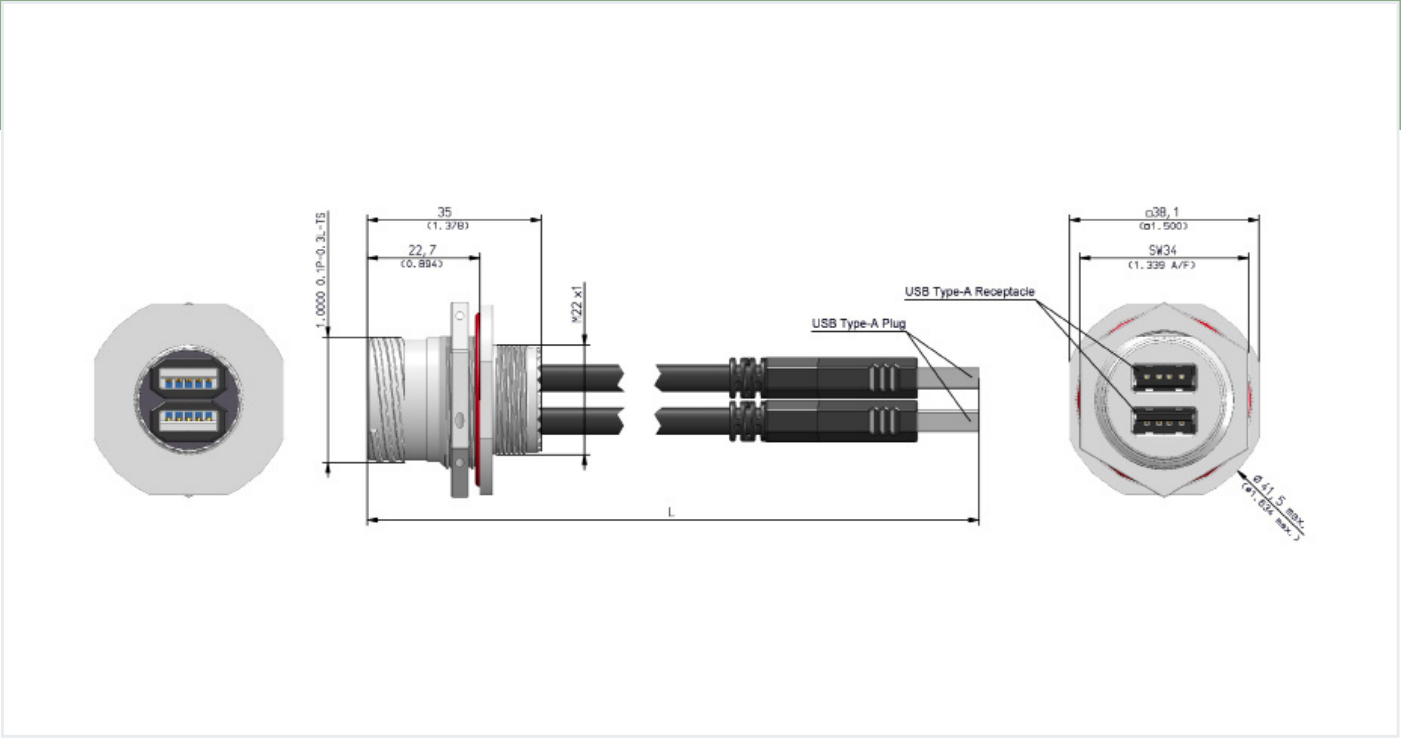
USB A – PLUG WITH CORDSET
SIZE 15, ELECTROLESS NICKEL
KEYWAY = N (STANDARD)
USB A ORIENTATION = 0° (See drawing)
CABLE LENGTH 1000 MM

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X2-9855 | Datasheet Version 1.0
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X2-SERIES – RUGGED USB CONNECTIONS

USB A – JAM NUT DUAL RECEPTACLE WITH CORDSET X2-9865



INFORMATION

All dimensions in
mm (inch) unless
otherwise specified.

Shell derived from D38999

PN: X2-9865

Datasheet Version: 1.0

CATALOG:

Harsh Environment
Data Connectivity Solutions



Table A: Material & Plating

Material & Plating Code	Technical Design	ROHS-/REACH Compliant	Electrically Conductive	Salt Spray Resistance according to MIL spec.	Salt Spray Resistance according to VG spec.
V	Tin-Zinc grey Base material: Al-alloy Tin-Zinc over electroless Nickel	Yes	Yes	500 hrs	5 day cyclic
5	Electroless Nickel Base material: Al-alloy	Yes	Yes	48 hrs	n.a.
2	Zinc-Nickel black Coupling ring: Al-alloy, black anodized Shell: Zinc-Nickel black chromate over electroless Nickel	Yes	Yes	500 hrs	n.a.
6	Cadmium olive drab Coupling ring: Al-alloy, olive drab anodized Shell: Al-alloy Cadmium plated olive drab over electroless Nickel	No	Yes	500 hrs	5 day cyclic
9	Marine Bronze Base material: Marine Bronze CuAl10Ni5Fe4 (CW307G) Shotblast, nonreflective	Yes	Yes	n.a.	n.a.
1	Stainless Steel / passivated	Yes	Yes	n.a.	n.a.

Performance

Voltage Rating (V_BUS)	20 V
Current Rating (V_BUS)	3 A
Temperature	-20 °C to +85 °C
Mating cycles (USB A)	>5.000
Compatible with	USB 3.2 Gen 1

Materials

Over molding (plug)	PVC
USB A shell	Nickel plated
Cable jacket	PVC
Cable type	UL 2725
Housing	See option material

For details about panel cut out see page 72-75 in the full „Harsh Environment Data Connectivity Solutions“ catalog.

Table B: Cable length

Length Code	Length L in mm	Tolerance in mm
0500	500 (19.685)	+ 30 (1.181)
1000	1000 (39,370)	+ 40 (1.575)

How to order

	Table	X2-9865	15	5	0500
Basic part number					
Shell size					
Material & plating code	A				
Cable length	B				

ORDER EXAMPLE

X2-9865-15-5-0500

USB A DUAL – JAM NUT WITH CORDSET

SIZE 15

ELECTROLESS NICKEL

CABLE LENGTH 500 MM

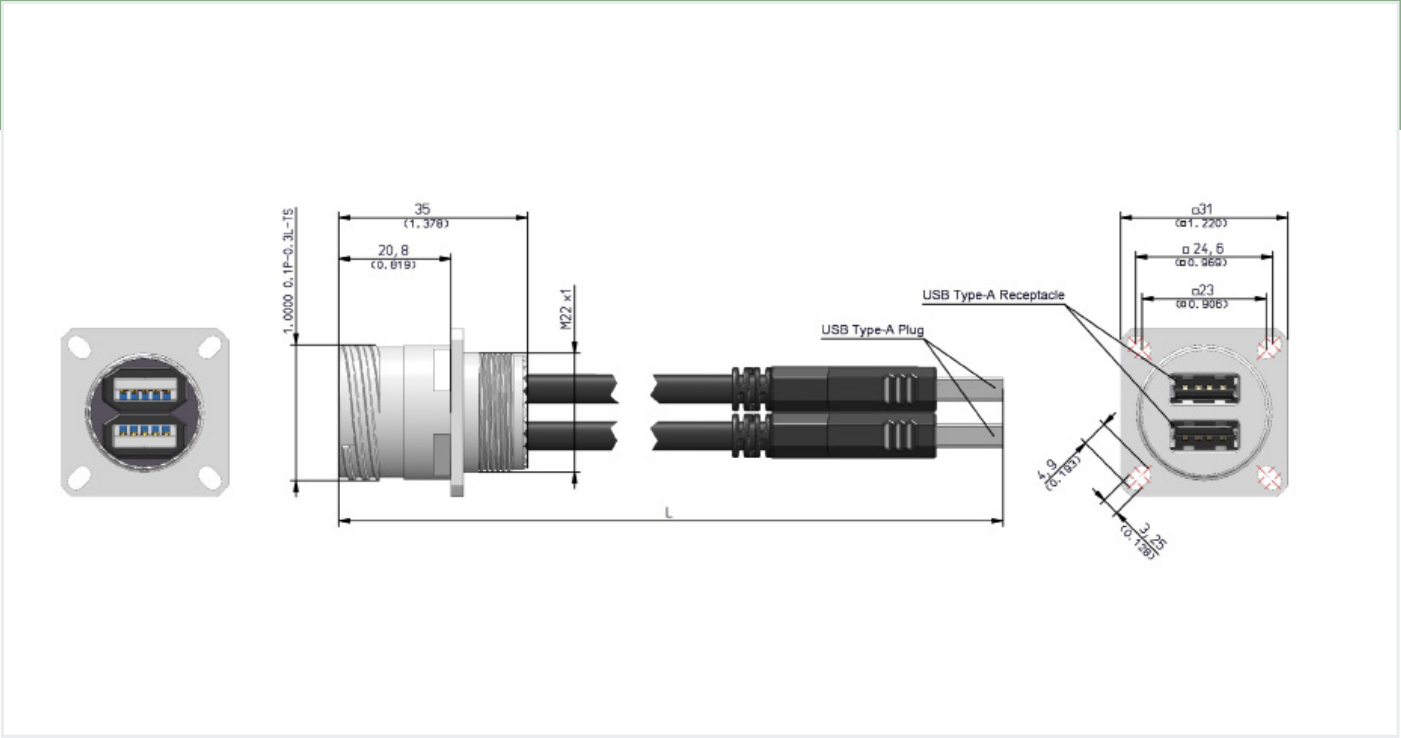
EMCA CONNECTOR SOLUTIONS GMBH

X2-9865 | Datasheet Version 1.0

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X2-SERIES – RUGGED USB CONNECTIONS

USB A – SQUARE FLANGE DUAL RECEPTACLE WITH CORDSET X2-9864



INFORMATION

All dimensions in
mm (inch) unless
otherwise specified.

Shell derived from D38999

PN: X2-9864

Datasheet Version: 1.0

CATALOG:

Harsh Environment
Data Connectivity Solutions



Table A: Material & Plating

Material & Plating Code	Technical Design	ROHS-/ REACH Compliant	Electrically Conductive	Salt Spray Resistance according to MIL spec.	Salt Spray Resistance according to VG spec.
V	Tin-Zinc grey Base material: Al-alloy Tin-Zinc over electroless Nickel	Yes	Yes	500 hrs	5 day cyclic
5	Electroless Nickel Base material: Al-alloy	Yes	Yes	48 hrs	n.a.
2	Zinc-Nickel black Coupling ring: Al-alloy, black anodized Shell: Zinc-Nickel black chromate over electroless Nickel	Yes	Yes	500 hrs	n.a.
6	Cadmium olive drab Coupling ring: Al-alloy, olive drab anodized Shell: Al-alloy Cadmium plated olive drab over electroless Nickel	No	Yes	500 hrs	5 day cyclic
9	Marine Bronze Base material: Marine Bronze CuAl10Ni5Fe4 (CW307G) Shotblast, nonreflective	Yes	Yes	n.a.	n.a.
1	Stainless Steel / passivated	Yes	Yes	n.a.	n.a.

Performance

Voltage Rating (V_BUS)	20 V
Current Rating (V_BUS)	3 A
Temperature	-20 °C to +85 °C
Mating cycles (USB A)	>5.000
Compatible with	USB 3.2 Gen 1

Materials

Over molding (plug)	PVC
USB A shell	Nickel plated
Cable jacket	PVC
Cable type	UL 2725
Housing	See option material

For details about panel cut out see page 72-75 in the full „Harsh Environment Data Connectivity Solutions“ catalog.

Table B: Cable length

Length Code	Length L in mm	Tolerance in mm
0500	500 (19.685)	+ 30 (1.181)
1000	1000 (39,370)	+ 40 (1.575)

How to order

Table X2-9864 15 5 0500

Basic part number

Shell size

Material & plating code

A

Cable length

B

ORDER EXAMPLE X2-9864-15-5-0500

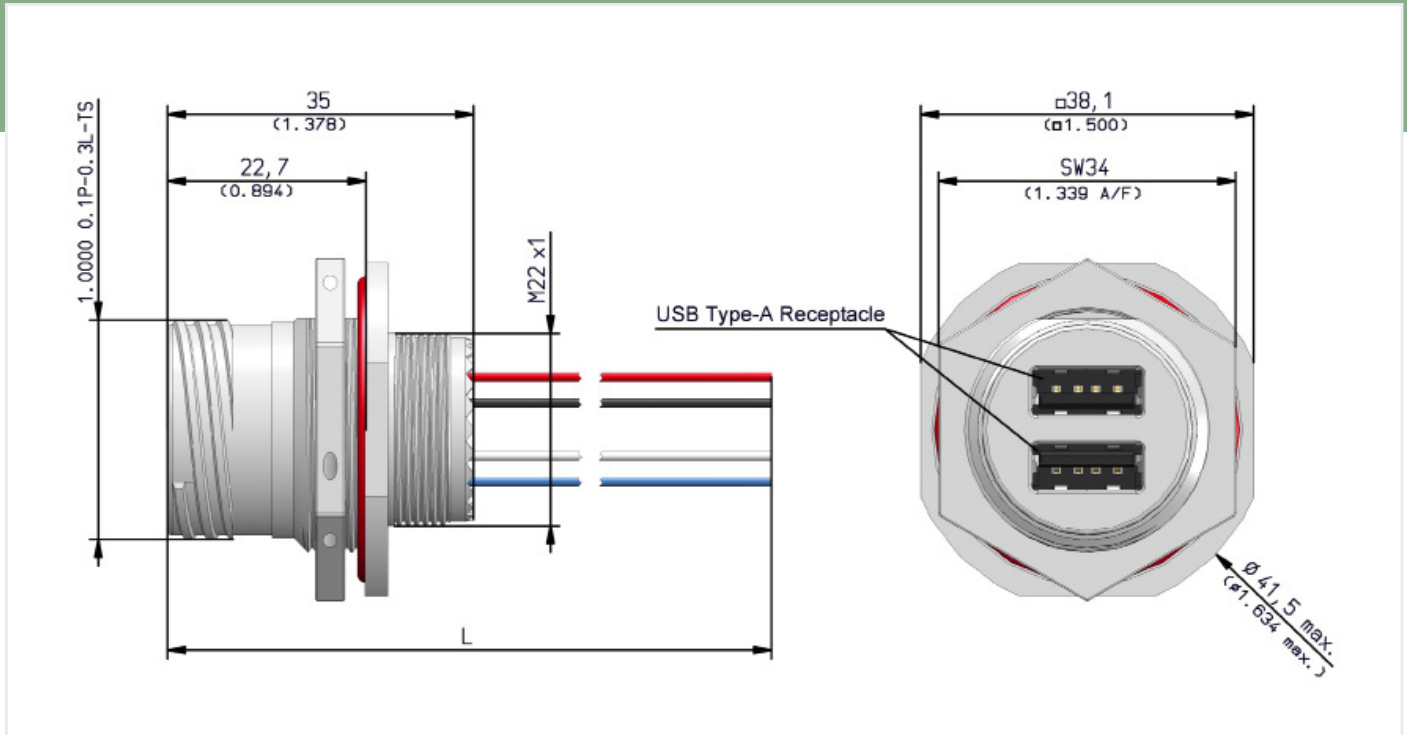
USB A DUAL – SQUARE FLANGE WITH CORDSET
SIZE 15
ELECTROLESS NICKEL
CABLE LENGTH 500 MM

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X2-9864 | Datasheet Version 1.0
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X2-SERIES – RUGGED USB CONNECTIONS

USB A – JAM NUT DUAL RECEPTACLE FOR POWER SUPPLY X2-9861



INFORMATION

All dimensions in
mm (inch) unless
otherwise specified.

Shell derived from D38999

PN: X2-9861

Datasheet Version: 1.0

CATALOG:

Harsh Environment
Data Connectivity Solutions



Table A: Material & Plating

Material & Plating Code	Technical Design	ROHS-/REACH Compliant	Electrically Conductive	Salt Spray Resistance according to MIL spec.	Salt Spray Resistance according to VG spec.
V	Tin-Zinc grey Base material: Al-alloy Tin-Zinc over electroless Nickel	Yes	Yes	500 hrs	5 day cyclic
5	Electroless Nickel Base material: Al-alloy	Yes	Yes	48 hrs	n.a.
2	Zinc-Nickel black Coupling ring: Al-alloy, black anodized Shell: Zinc-Nickel black chromate over electroless Nickel	Yes	Yes	500 hrs	n.a.
6	Cadmium olive drab Coupling ring: Al-alloy, olive drab anodized Shell: Al-alloy Cadmium plated olive drab over electroless Nickel	No	Yes	500 hrs	5 day cyclic
9	Marine Bronze Base material: Marine Bronze CuAl10Ni5Fe4 (CW307G) Shotblast, nonreflective	Yes	Yes	n.a.	n.a.
1	Stainless Steel / passivated	Yes	Yes	n.a.	n.a.

Performance

Voltage Rating	30 V
Current Rating	1,8 A
Temperature	-40 °C to +85 °C
Mating cycles	>5.000 (USB A)
Type-A Receptacle	Pin 2 (D-) and Pin 3 (D+) short-circuited

Materials

USB A shell	Nickel plated
Housing	See option material
Wire type	FLRY: 1mm ²

For charging applications, the achieved performance depends on the devices used.
For details about panel cut out see page 73 in the full „Harsh Environment Data Connectivity Solutions“ catalog.

Table B: Wire length

Length Code	Length L in mm	Tolerance in mm
0500	500 (19,685)	+ 30 (1.181)
1000	1000 (39,370)	+ 40 (1.575)

How to order

	Table	X2-9861	15	5	0500
Basic part number					
Shell size					
Material & plating code	A				
Wire length	B				

ORDER EXAMPLE

X2-9861-15-5-0500

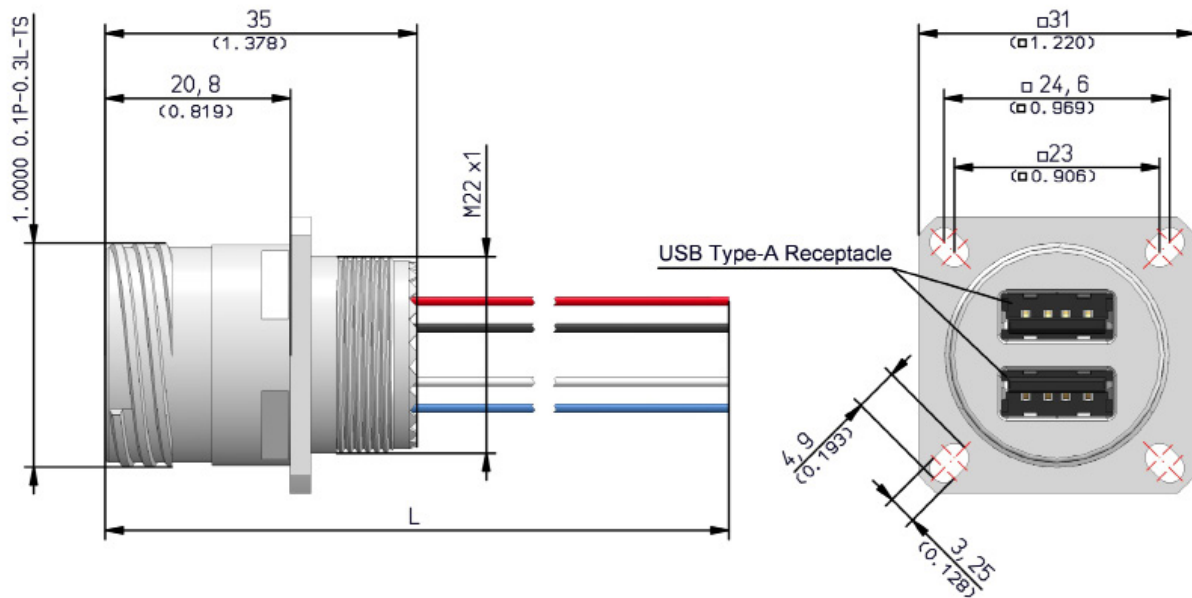
USB A DUAL – JAM NUT FOR POWER SUPPLY
SIZE 15
ELECTROLESS NICKEL
WIRE LENGTH 500 MM

EMCA CONNECTOR SOLUTIONS GMBH

X2-9861 | Datasheet Version 1.0
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X2-SERIES – RUGGED USB CONNECTIONS

USB A – SQUARE FLANGE DUAL RECEPTACLE PWR SUPPLY X2-9860



INFORMATION

All dimensions in
mm (inch) unless
otherwise specified.

Shell derived from D38999

PN: X2-9860

Datasheet Version: 1.0

CATALOG:

Harsh Environment
Data Connectivity Solutions



Table A: Material & Plating

Material & Plating Code	Technical Design	ROHS-/REACH Compliant	Electrically Conductive	Salt Spray Resistance according to MIL spec.	Salt Spray Resistance according to VG spec.
V	Tin-Zinc grey Base material: Al-alloy Tin-Zinc over electroless Nickel	Yes	Yes	500 hrs	5 day cyclic
5	Electroless Nickel Base material: Al-alloy	Yes	Yes	48 hrs	n.a.
2	Zinc-Nickel black Coupling ring: Al-alloy, black anodized Shell: Zinc-Nickel black chromate over electroless Nickel	Yes	Yes	500 hrs	n.a.
6	Cadmium olive drab Coupling ring: Al-alloy, olive drab anodized Shell: Al-alloy Cadmium plated olive drab over electroless Nickel	No	Yes	500 hrs	5 day cyclic
9	Marine Bronze Base material: Marine Bronze CuAl10Ni5Fe4 (CW307G) Shotblast, nonreflective	Yes	Yes	n.a.	n.a.
1	Stainless Steel / passivated	Yes	Yes	n.a.	n.a.

Performance

Voltage Rating	30 V
Current Rating	1,8 A
Temperature	-40 °C to +85 °C
Mating cycles	>5.000 (USB A)
Type-A Receptacle	Pin 2 (D-) and Pin 3 (D+) short-circuited

Materials

USB A shell	Nickel plated
Housing	See option material
Wire type	FLRY: 1mm ²

For charging applications, the achieved performance depends on the devices used.
For details about panel cut out see page 73 in the full „Harsh Environment Data Connectivity Solutions“ catalog.

Table B: Wire length

Length Code	Length L in mm	Tolerance in mm
0500	500 (19,685)	+ 30 (1.181)
1000	1000 (39,370)	+ 40 (1.575)

How to order

	Table	X2-9860	15	5	0500
Basic part number					
Shell size					
Material & plating code	A				
Wire length	B				

ORDER EXAMPLE X2-9860-15-5-0500

USB A DUAL – SQUARE FLANGE FOR PWR
SIZE 15
ELECTROLESS NICKEL
WIRE LENGTH 500 MM

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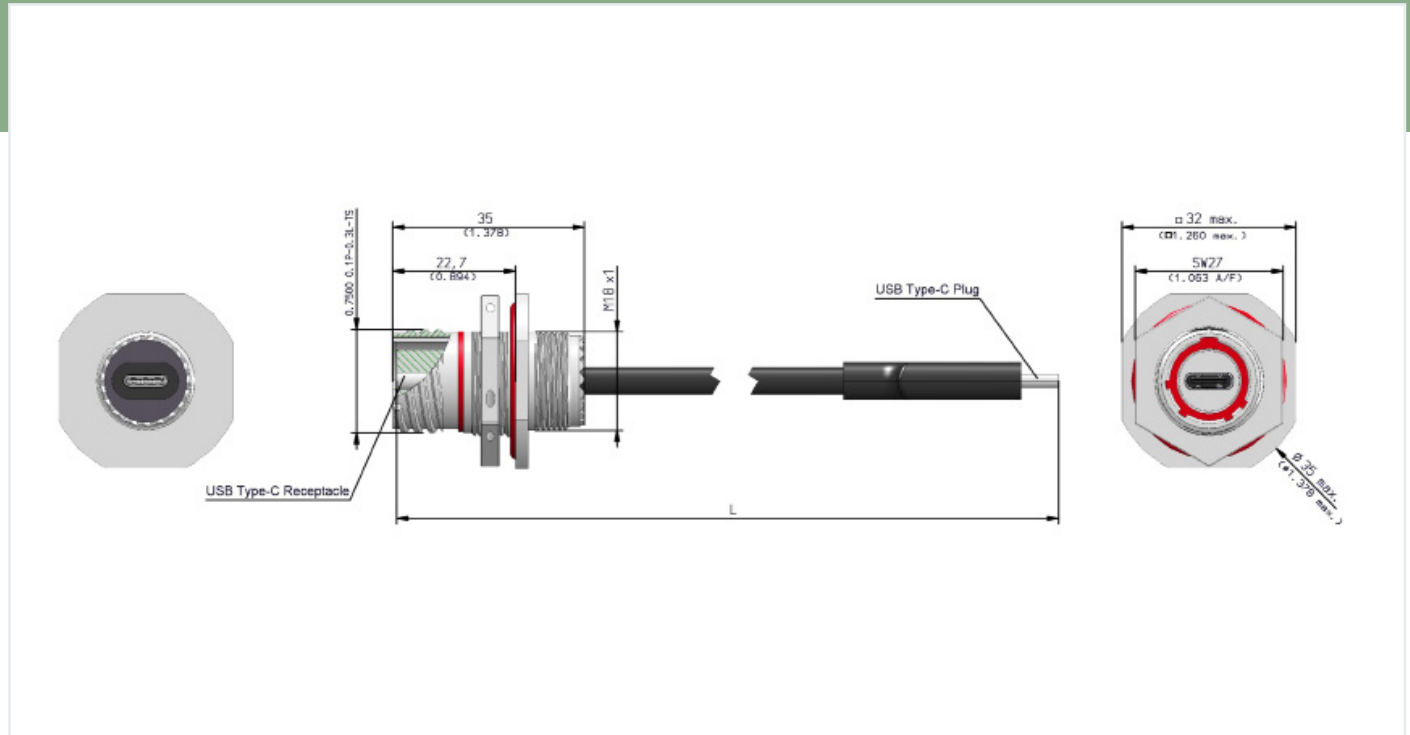
X2-9860 | Datasheet Version 1.0

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X2-SERIES – RUGGED USB CONNECTIONS

USB C – JAM NUT RECEPTACLE WITH CORDSET X2-9876



INFORMATION

All dimensions in
mm (inch) unless
otherwise specified.

Shell derived from D38999

PN: X2-9876

Datasheet Version: 1.0

CATALOG:

Harsh Environment
Data Connectivity Solutions

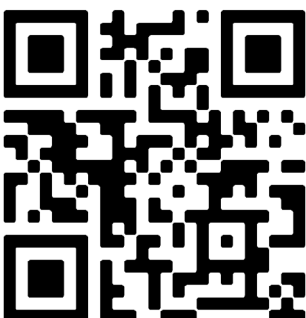


Table A: Material & Plating

Material & Plating Code	Technical Design	ROHS-/REACH Compliant	Electrically Conductive	Salt Spray Resistance according to MIL spec.	Salt Spray Resistance according to VG spec.
V	Tin-Zinc grey Base material: Al-alloy Tin-Zinc over electroless Nickel	Yes	Yes	500 hrs	5 day cyclic
5	Electroless Nickel Base material: Al-alloy	Yes	Yes	48 hrs	n.a.
2	Zinc-Nickel black Coupling ring: Al-alloy, black anodized Shell: Zinc-Nickel black chromate over electroless Nickel	Yes	Yes	500 hrs	n.a.
6	Cadmium olive drab Coupling ring: Al-alloy, olive drab anodized Shell: Al-alloy Cadmium plated olive drab over electroless Nickel	No	Yes	500 hrs	5 day cyclic
9	Marine Bronze Base material: Marine Bronze CuAl10Ni5Fe4 (CW307G) Shotblast, nonreflective	Yes	Yes	n.a.	n.a.
1	Stainless Steel / passivated	Yes	Yes	n.a.	n.a.

Performance

Voltage Rating (V_BUS)	20 V
Current Rating (V_BUS)	5 A
Temperature	-20 °C to +85 °C
Mating cycles	>500
Type-C Receptacle	Pins A7&B7 and A6&B6 connected
Compatible with	USB 3.2 Gen 2

Table B: Cable length

Length Code	Length L in mm	Tolerance in mm
0500	500 (19.685)	+ 30 (1.181)
1000	1000 (39,370)	+ 40 (1.575)

Materials

Over molding (plug)	PVC
USB C	Nickel plated
Cable jacket	PVC
Cable type	UL 2725
Housing	See option material

For details about keyway polarization, USB C orientation and panel cut out see page 72-75 in the full „Harsh Environment Data Connectivity Solutions“ catalog.

How to order

Table X2-9876 11 5 N 0 0500

Basic part number	
Shell size	
Material & plating code	A
Keyway polarization	5
USB C orientation	9
Cable length	B

ORDER EXAMPLE

X2-9876-11-5 N 0-0500

USB C – JAM NUT

SIZE 11, ELECTROLESS NICKEL

KEYWAY = N (STANDARD)

USB C ORIENTATION = 0° (See drawing)

CABLE LENGTH 500 MM

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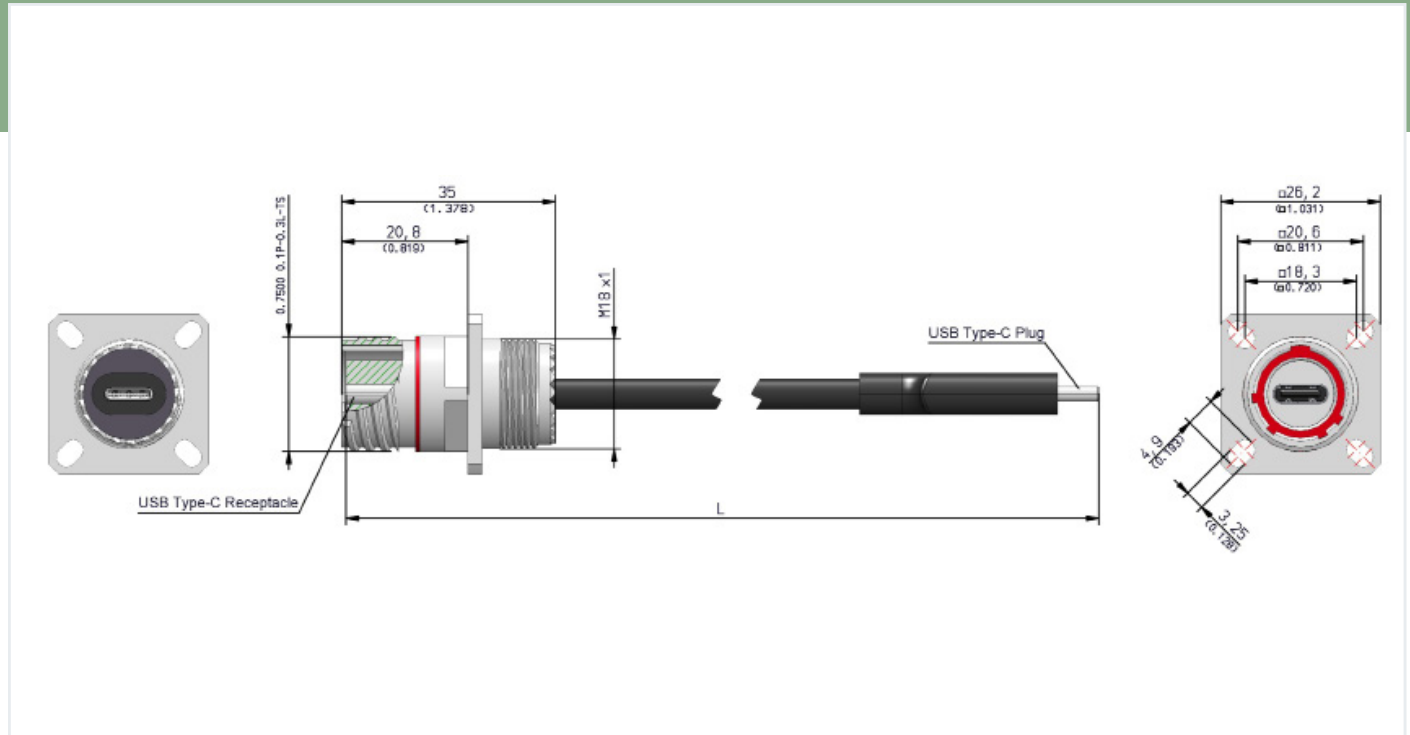
X2-9876 | Datasheet Version 1.0

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X2-SERIES – RUGGED USB CONNECTIONS

USB C – SQUARE FLANGE RECEPTACLE WITH CORDSET X2-9875



INFORMATION

All dimensions in
mm (inch) unless
otherwise specified.

Shell derived from D38999

PN: X2-9875

Datasheet Version: 1.0

CATALOG:

Harsh Environment
Data Connectivity Solutions

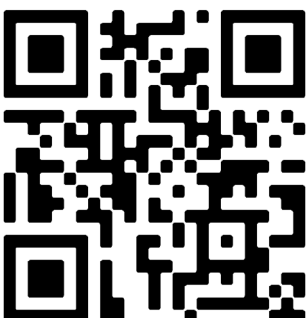


Table A: Material & Plating

Material & Plating Code	Technical Design	ROHS-/REACH Compliant	Electrically Conductive	Salt Spray Resistance according to MIL spec.	Salt Spray Resistance according to VG spec.
V	Tin-Zinc grey Base material: Al-alloy Tin-Zinc over electroless Nickel	Yes	Yes	500 hrs	5 day cyclic
5	Electroless Nickel Base material: Al-alloy	Yes	Yes	48 hrs	n.a.
2	Zinc-Nickel black Coupling ring: Al-alloy, black anodized Shell: Zinc-Nickel black chromate over electroless Nickel	Yes	Yes	500 hrs	n.a.
6	Cadmium olive drab Coupling ring: Al-alloy, olive drab anodized Shell: Al-alloy Cadmium plated olive drab over electroless Nickel	No	Yes	500 hrs	5 day cyclic
9	Marine Bronze Base material: Marine Bronze CuAl10Ni5Fe4 (CW307G) Shotblast, nonreflective	Yes	Yes	n.a.	n.a.
1	Stainless Steel / passivated	Yes	Yes	n.a.	n.a.

Performance

Voltage Rating (V_BUS)	20 V
Current Rating (V_BUS)	5 A
Temperature	-20 °C to +85 °C
Mating cycles	>500
Type-C Receptacle	Pins A7&B7 and A6&B6 connected
Compatible with	USB 3.2 Gen 2

Table B: Cable length

Length Code	Length L in mm	Tolerance in mm
0500	500 (19.685)	+ 30 (1.181)
1000	1000 (39,370)	+ 40 (1.575)

Materials

Over molding (plug)	PVC
USB C	Nickel plated
Cable jacket	PVC
Cable type	UL 2725
Housing	See option material

For details about keyway polarization, USB C orientation and panel cut out see page 72-75 in the full „Harsh Environment Data Connectivity Solutions“ catalog.

How to order

Table X2-9875 11 5 N 0 0500

Basic part number	
Shell size	
Material & plating code	A
Keyway polarization	5
USB C orientation	9
Cable length	B

ORDER EXAMPLE

X2-9875-11-5 N 0-0500

USB C – SQUARE FLANGE

SIZE 11, ELECTROLESS NICKEL

KEYWAY = N (STANDARD)

USB C ORIENTATION = 0° (See drawing)

CABLE LENGTH 500 MM

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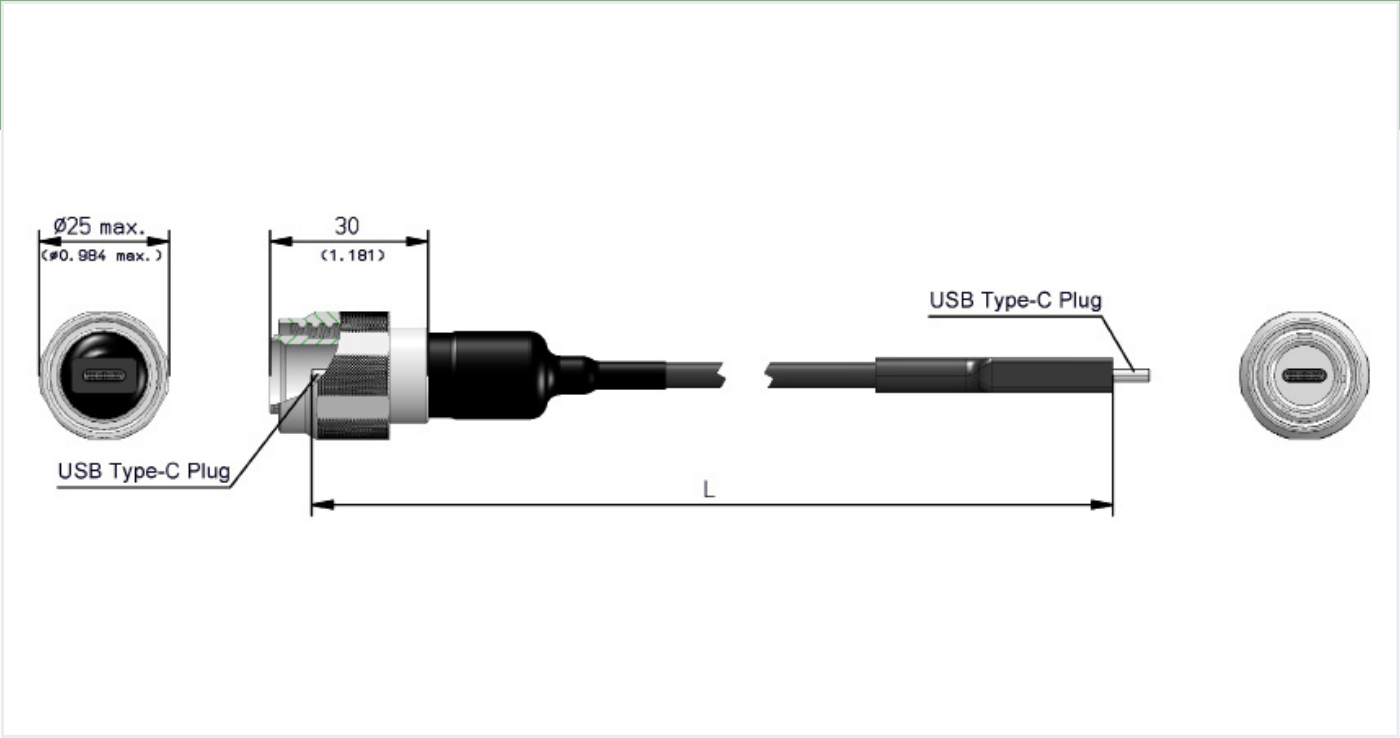
X2-9875 | Datasheet Version 1.0

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X2-SERIES – RUGGED USB CONNECTIONS

USB C – PLUG WITH CORDSET X2-9874



INFORMATION

All dimensions in
mm (inch) unless
otherwise specified.

Shell derived from D38999

PN: X2-9874

Datasheet Version: 1.0

CATALOG:

Harsh Environment
Data Connectivity Solutions



Table A: Material & Plating

Material & Plating Code	Technical Design	ROHS-/REACH Compliant	Electrically Conductive	Salt Spray Resistance according to MIL spec.	Salt Spray Resistance according to VG spec.
V	Tin-Zinc grey Base material: Al-alloy Tin-Zinc over electroless Nickel	Yes	Yes	500 hrs	5 day cyclic
5	Electroless Nickel Base material: Al-alloy	Yes	Yes	48 hrs	n.a.
2	Zinc-Nickel black Coupling ring: Al-alloy, black anodized Shell: Zinc-Nickel black chromate over electroless Nickel	Yes	Yes	500 hrs	n.a.
6	Cadmium olive drab Coupling ring: Al-alloy, olive drab anodized Shell: Al-alloy Cadmium plated olive drab over electroless Nickel	No	Yes	500 hrs	5 day cyclic
9	Marine Bronze Base material: Marine Bronze CuAl10Ni5Fe4 (CW307G) Shotblast, nonreflective	Yes	Yes	n.a.	n.a.
1	Stainless Steel / passivated	Yes	Yes	n.a.	n.a.

Performance

Voltage Rating (V_BUS)	20 V
Current Rating (V_BUS)	5 A
Temperature	-20 °C to +85 °C
Mating cycles	>500
USB	USB 3.2 Gen 2
USB PD	With E-Mark

Table B: Cable length

Length Code	Length L in mm	Tolerance in mm
1000	1000 (39,370)	+/- 30 (1.181)

Materials

USB C	Nickel plated
Cable jacket	PVC
Cable type	UL 2725
Housing	See option material

For details about keyway polarization and USB C orientation see page 72-75 in the full „Harsh Environment Data Connectivity Solutions“ catalog.

How to order

	Table	X2-9874	11	5	N	0	1000
Basic part number							
Shell size							
Material & plating code	A						
Keyway polarization	5						
USB C orientation	10						
Cable length	B						

ORDER EXAMPLE

X2-9874-11-5 N 0-1000

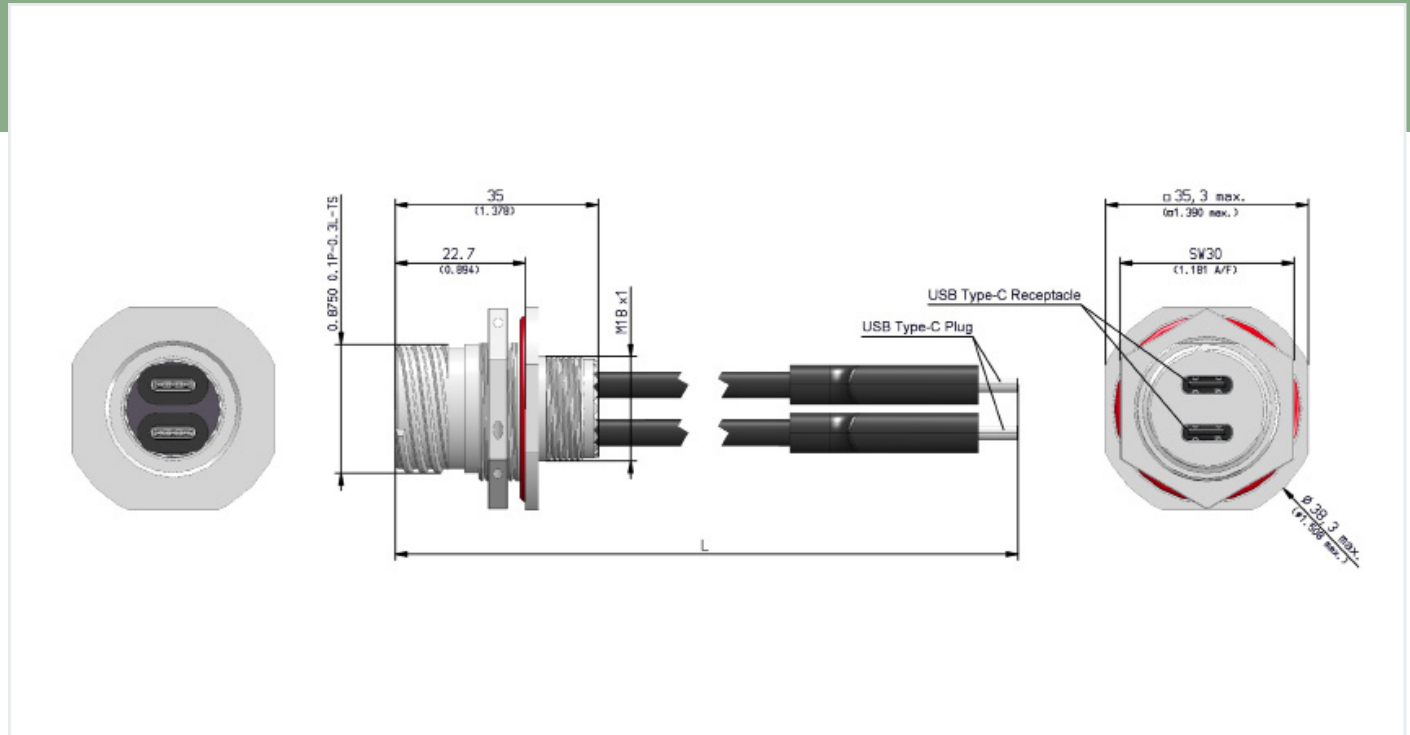
USB C – PLUG WITH CORDSET
SIZE 11, ELECTROLESS NICKEL
KEYWAY = N (STANDARD)
USB C ORIENTATION = 0° (See drawing)
CABLE LENGTH 1000 MM

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X2-9874 | Datasheet Version 1.0
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X2-SERIES – RUGGED USB CONNECTIONS

USB C DUAL – JAM NUT RECEPTACLE WITH CORDSET X2-9867



INFORMATION

All dimensions in
mm (inch) unless
otherwise specified.

Shell derived from D38999

PN: X2-9867

Datasheet Version: 1.0

CATALOG:

Harsh Environment
Data Connectivity Solutions

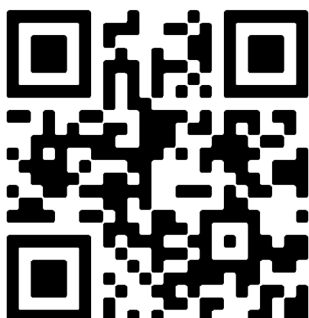


Table A: Material & Plating

Material & Plating Code	Technical Design	ROHS-/REACH Compliant	Electrically Conductive	Salt Spray Resistance according to MIL spec.	Salt Spray Resistance according to VG spec.
V	Tin-Zinc grey Base material: Al-alloy Tin-Zinc over electroless Nickel	Yes	Yes	500 hrs	5 day cyclic
5	Electroless Nickel Base material: Al-alloy	Yes	Yes	48 hrs	n.a.
2	Zinc-Nickel black Coupling ring: Al-alloy, black anodized Shell: Zinc-Nickel black chromate over electroless Nickel	Yes	Yes	500 hrs	n.a.
6	Cadmium olive drab Coupling ring: Al-alloy, olive drab anodized Shell: Al-alloy Cadmium plated olive drab over electroless Nickel	No	Yes	500 hrs	5 day cyclic
9	Marine Bronze Base material: Marine Bronze CuAl10Ni5Fe4 (CW307G) Shotblast, nonreflective	Yes	Yes	n.a.	n.a.
1	Stainless Steel / passivated	Yes	Yes	n.a.	n.a.

Performance

Voltage Rating (V_BUS)	20 V
Current Rating (V_BUS)	5 A
Temperature	-20 °C to +85 °C
Mating cycles (USB C)	>10.000
Type-C Receptacles	Pins A7&B7 and A6&B6 connected
Compatible with	USB 3.2 Gen 2

Materials

Over molding (plug)	PVC
USB C	Nickel plated
Cable jacket	PVC
Cable type	UL 2725
Housing	See option material

For details about panel cut out see page 73 in the full „Harsh Environment Data Connectivity Solutions“ catalog.

Table B: Cable length

Length Code	Length L in mm	Tolerance in mm
0500	500 (19.685)	+ 30 (1.181)
1000	1000 (39,370)	+ 40 (1.575)

How to order

Table X2-9867 13 5 0500

Basic part number

Shell size

Material & plating code

A

Cable length

B

ORDER EXAMPLE

X2-9867-13-5-0500

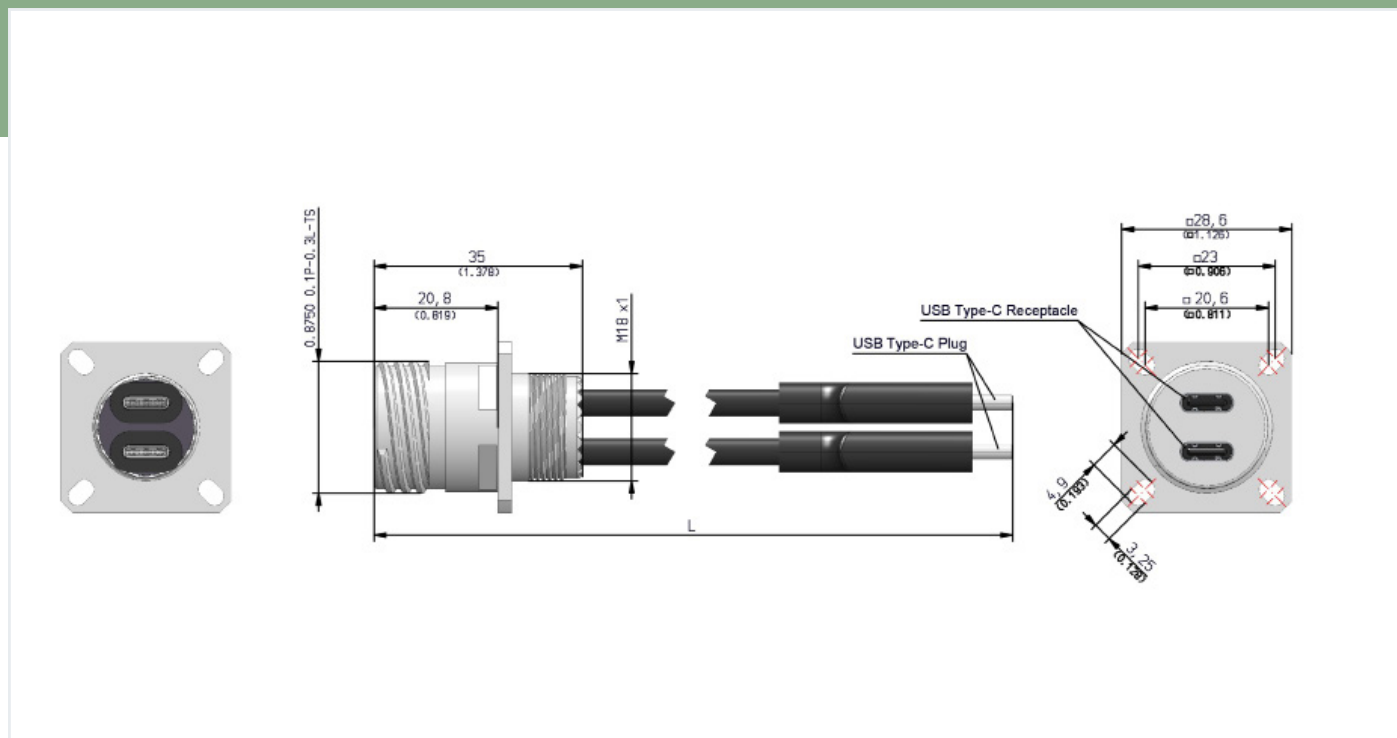
USB C DUAL – JAM NUT WITH CORDSET
SIZE 13
ELECTROLESS NICKEL
CABLE LENGTH 500 MM

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X2-SERIES – RUGGED USB CONNECTIONS

USB C – SQUARE FLANGE DUAL RECEPTACLE WITH CORDSET X2-9866



INFORMATION

All dimensions in
mm (inch) unless
otherwise specified.

Shell derived from D38999

PN: X2-9866

Datasheet Version: 1.0

CATALOG:

Harsh Environment
Data Connectivity Solutions



Table A: Material & Plating

Material & Plating Code	Technical Design	ROHS-/REACH Compliant	Electrically Conductive	Salt Spray Resistance according to MIL spec.	Salt Spray Resistance according to VG spec.
V	Tin-Zinc grey Base material: Al-alloy Tin-Zinc over electroless Nickel	Yes	Yes	500 hrs	5 day cyclic
5	Electroless Nickel Base material: Al-alloy	Yes	Yes	48 hrs	n.a.
2	Zinc-Nickel black Coupling ring: Al-alloy, black anodized Shell: Zinc-Nickel black chromate over electroless Nickel	Yes	Yes	500 hrs	n.a.
6	Cadmium olive drab Coupling ring: Al-alloy, olive drab anodized Shell: Al-alloy Cadmium plated olive drab over electroless Nickel	No	Yes	500 hrs	5 day cyclic
9	Marine Bronze Base material: Marine Bronze CuAl10Ni5Fe4 (CW307G) Shotblast, nonreflective	Yes	Yes	n.a.	n.a.
1	Stainless Steel / passivated	Yes	Yes	n.a.	n.a.

Performance

Voltage Rating (V_BUS)	20 V
Current Rating (V_BUS)	5 A
Temperature	-20 °C to +85 °C
Mating cycles (USB C)	>10.000
Type-C Receptacles	Pins A7&B7 and A6&B6 connected
Compatible with	USB 3.2 Gen 2

Materials

Over molding (plug)	PVC
USB C	Nickel plated
Cable jacket	PVC
Cable type	UL 2725
Housing	See option material

For details about panel cut out see page 73 in the full „Harsh Environment Data Connectivity Solutions“ catalog.

Table B: Cable length

Length Code	Length L in mm	Tolerance in mm
0500	500 (19.685)	+ 30 (1.181)
1000	1000 (39,370)	+ 40 (1.575)

How to order

	Table	X2-9866	13	5	0500
Basic part number					
Shell size					
Material & plating code	A				
Cable length	B				

ORDER EXAMPLE

X2-9866-13-5-0500

USB C DUAL – SQUARE FLANGE WITH CORDSET

SIZE 13

ELECTROLESS NICKEL

CABLE LENGTH 500 MM

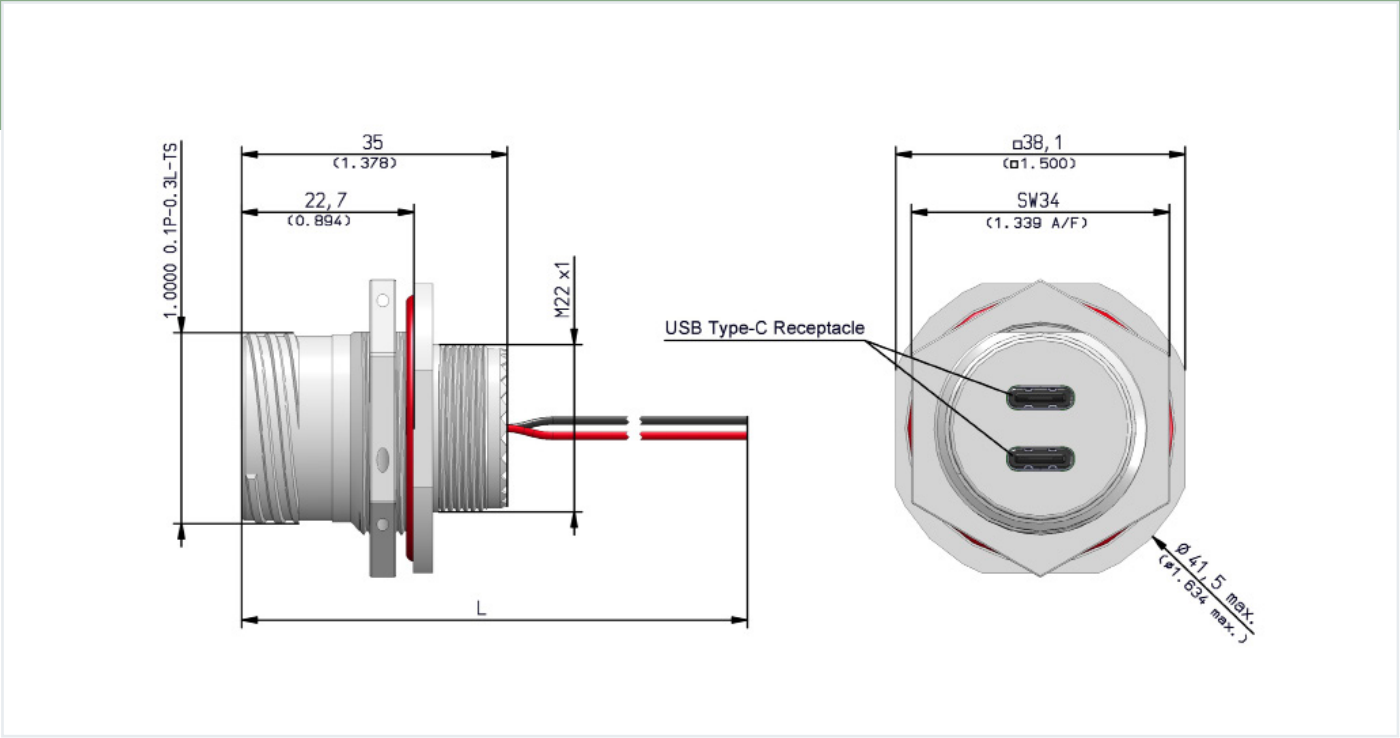
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X2-9866 | Datasheet Version 1.0

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X2-SERIES – RUGGED USB CONNECTIONS

USB C DUAL – JAM NUT RECEPTACLE FOR POWER SUPPLY X2-9847



INFORMATION

All dimensions in
mm (inch) unless
otherwise specified.

Shell derived from D38999

PN: X2-9847

Datasheet Version: 1.0

CATALOG:

Harsh Environment
Data Connectivity Solutions



Table A: Material & Plating

Material & Plating Code	Technical Design	ROHS-/REACH Compliant	Electrically Conductive	Salt Spray Resistance according to MIL spec.	Salt Spray Resistance according to VG spec.
V	Tin-Zinc grey Base material: Al-alloy Tin-Zinc over electroless Nickel	Yes	Yes	500 hrs	5 day cyclic
5	Electroless Nickel Base material: Al-alloy	Yes	Yes	48 hrs	n.a.
2	Zinc-Nickel black Coupling ring: Al-alloy, black anodized Shell: Zinc-Nickel black chromate over electroless Nickel	Yes	Yes	500 hrs	n.a.
6	Cadmium olive drab Coupling ring: Al-alloy, olive drab anodized Shell: Al-alloy Cadmium plated olive drab over electroless Nickel	No	Yes	500 hrs	5 day cyclic
9	Marine Bronze Base material: Marine Bronze CuAl10Ni5Fe4 (CW307G) Shotblast, nonreflective	Yes	Yes	n.a.	n.a.
1	Stainless Steel / passivated	Yes	Yes	n.a.	n.a.

Performance

Voltage Rating (V_BUS)	20 V
Current Rating (V_BUS)	5 A
Temperature	-40 °C to +85 °C
Mating cycles USB C	>10.000 (USB C)
D+/D-	A6&A7 and B6&B7 short-circuited
V_BUS (red)	A4, A9, B4, B9
GND (black)	A1, A12, B1, B12

GND not connected to USB housing. Optional possible, please contact sales office.

Materials

USB C shell	Nickel plated
Housing	See option material
Wire type	FLRY: 1mm ²

Table B: Wire length

Length Code	Length L in mm	Tolerance in mm
0300	300 (11.811)	+ 20 (0.787)
0500	500 (19.685)	+ 30 (1.181)
1000	1000 (39,370)	+ 40 (1.575)

For charging applications, the achieved performance depends on the devices used.
For details about panel cut out see page 73 in the full „Harsh Environment Data Connectivity Solutions“ catalog.

How to order

	Table	X2-9847	15	5	0500
Basic part number					
Shell size					
Material & plating code	A				
Wire length	B				

ORDER EXAMPLE

X2-9847-15-5-0500

USB C DUAL – JAM NUT FOR PWR
SIZE 15
ELECTROLESS NICKEL
WIRE LENGTH 500 MM

EMCA CONNECTOR SOLUTIONS GMBH

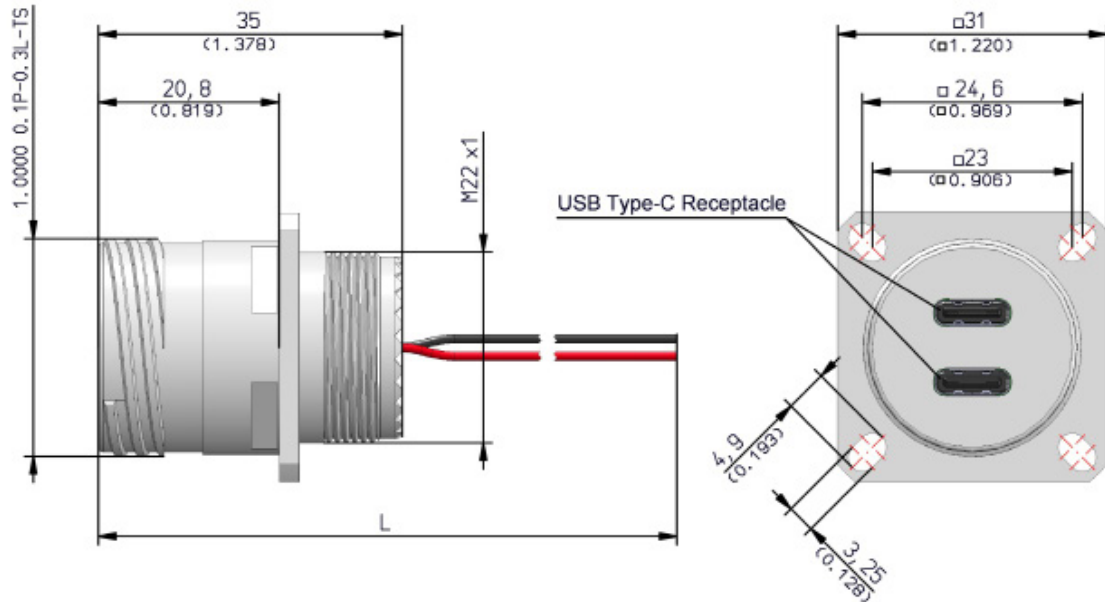
X2-9847 | Datasheet Version 1.0

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X2-SERIES – RUGGED USB CONNECTIONS

USB C DUAL – SQUARE FLANGE FOR POWER SUPPLY X2-9846



INFORMATION

All dimensions in
mm (inch) unless
otherwise specified.

Shell derived from D38999

PN: X2-9846

Datasheet Version: 1.0

CATALOG:

Harsh Environment
Data Connectivity Solutions

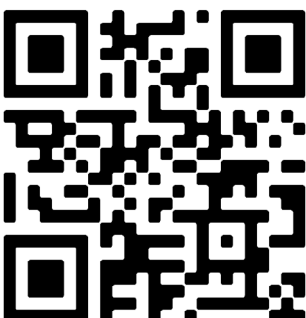


Table A: Material & Plating

Material & Plating Code	Technical Design	ROHS-/REACH Compliant	Electrically Conductive	Salt Spray Resistance according to MIL spec.	Salt Spray Resistance according to VG spec.
V	Tin-Zinc grey Base material: Al-alloy Tin-Zinc over electroless Nickel	Yes	Yes	500 hrs	5 day cyclic
5	Electroless Nickel Base material: Al-alloy	Yes	Yes	48 hrs	n.a.
2	Zinc-Nickel black Coupling ring: Al-alloy, black anodized Shell: Zinc-Nickel black chromate over electroless Nickel	Yes	Yes	500 hrs	n.a.
6	Cadmium olive drab Coupling ring: Al-alloy, olive drab anodized Shell: Al-alloy Cadmium plated olive drab over electroless Nickel	No	Yes	500 hrs	5 day cyclic
9	Marine Bronze Base material: Marine Bronze CuAl10Ni5Fe4 (CW307G) Shotblast, nonreflective	Yes	Yes	n.a.	n.a.
1	Stainless Steel / passivated	Yes	Yes	n.a.	n.a.

Performance

Voltage Rating (V_BUS)	20 V
Current Rating (V_BUS)	5 A
Temperature	-40 °C to +85 °C
Mating cycles USB C	>10.000 (USB C)
D+/D-	A6&A7 and B6&B7 short-circuited
V_BUS (red)	A4, A9, B4, B9
GND (black)	A1, A12, B1, B12

GND not connected to USB housing. Optional possible, please contact sales office.

Materials

USB C shell	Nickel plated
Housing	See option material
Wire type	FLRY: 1mm ²

Table B: Wire length

Length Code	Length L in mm	Tolerance in mm
0300	300 (11.811)	+ 20 (0.787)
0500	500 (19.685)	+ 30 (1.181)
1000	1000 (39,370)	+ 40 (1.575)

For charging applications, the achieved performance depends on the devices used.
For details about panel cut out see page 73 in the full „Harsh Environment Data Connectivity Solutions“ catalog.

How to order

	Table	X2-9846	15	5	0500
Basic part number					
Shell size					
Material & plating code	A				
Wire length	B				

ORDER EXAMPLE X2-9846-15-5-0500

USB C DUAL – SQUARE FLANGE FOR PWR
SIZE 15
ELECTROLESS NICKEL
WIRE LENGTH 500 MM

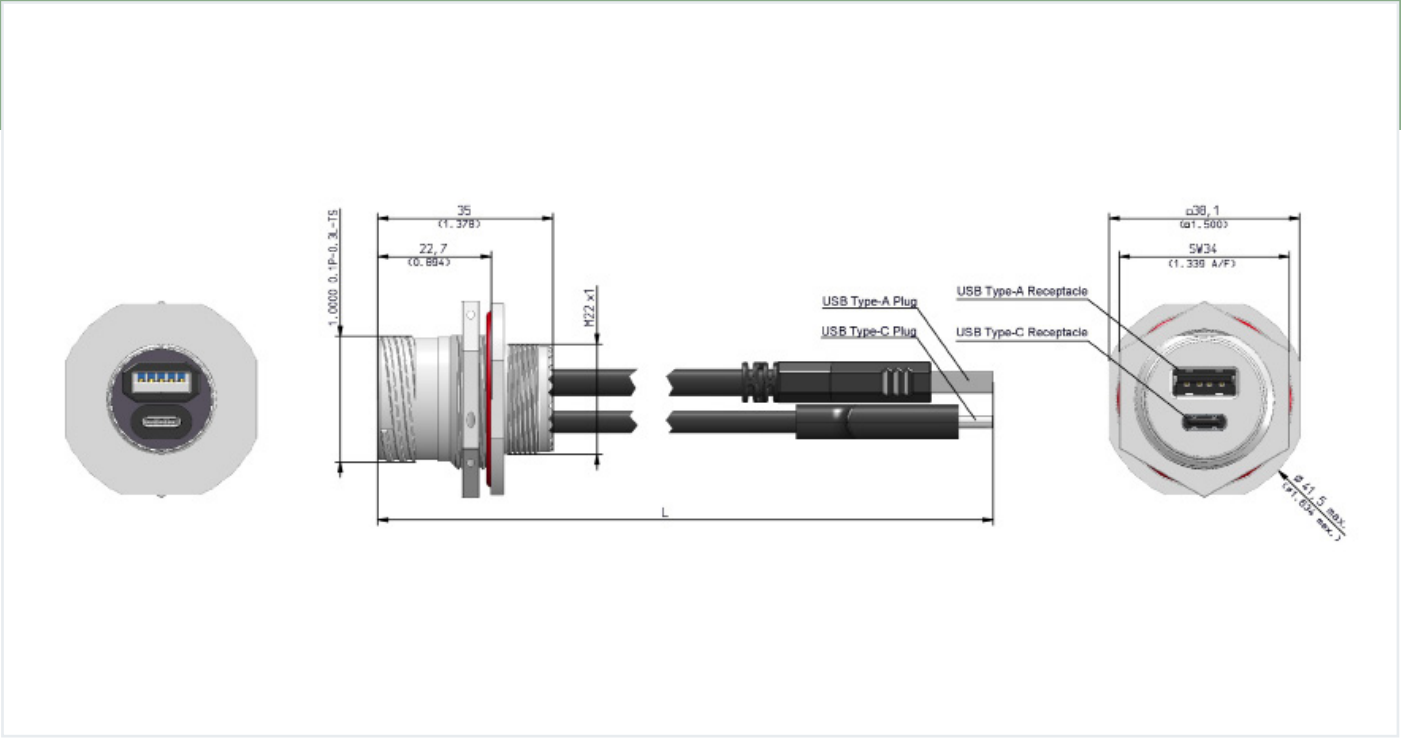
EMCA CONNECTOR SOLUTIONS GMBH

X2-9846 | Datasheet Version 1.0

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X2-SERIES – RUGGED USB CONNECTIONS

USB A/C – JAM NUT RECEPTACLE WITH CORDSET X2-9863



INFORMATION

All dimensions in
mm (inch) unless
otherwise specified.

Shell derived from D38999

PN: X2-9863

Datasheet Version: 1.0

CATALOG:

Harsh Environment
Data Connectivity Solutions



Table A: Material & Plating

Material & Plating Code	Technical Design	ROHS-/REACH Compliant	Electrically Conductive	Salt Spray Resistance according to MIL spec.	Salt Spray Resistance according to VG spec.
V	Tin-Zinc grey Base material: Al-alloy Tin-Zinc over electroless Nickel	Yes	Yes	500 hrs	5 day cyclic
5	Electroless Nickel Base material: Al-alloy	Yes	Yes	48 hrs	n.a.
2	Zinc-Nickel black Coupling ring: Al-alloy, black anodized Shell: Zinc-Nickel black chromate over electroless Nickel	Yes	Yes	500 hrs	n.a.
6	Cadmium olive drab Coupling ring: Al-alloy, olive drab anodized Shell: Al-alloy Cadmium plated olive drab over electroless Nickel	No	Yes	500 hrs	5 day cyclic
9	Marine Bronze Base material: Marine Bronze CuAl10Ni5Fe4 (CW307G) Shotblast, nonreflective	Yes	Yes	n.a.	n.a.
1	Stainless Steel / passivated	Yes	Yes	n.a.	n.a.

Performance

Voltage Rating (V_BUS)	20 V
Current Rating (V_BUS)	3 A / 5 A (USB A/C)
Temperature	-20 °C to +85 °C
Mating cycles (USB)	>5.000 / >10.000 (USB A/C)
Type-C Receptacle	Pins A7&B7 and A6&B6 connected
Compatible with	USB 3.2 Gen 1 / 2 (USB A/C)

Table B: Cable length

Length Code	Length L in mm	Tolerance in mm
0500	500 (19.685)	+ 30 (1.181)
1000	1000 (39.370)	+ 40 (1.575)

Materials

Over molding (plug)	PVC
USB A/C shell	Nickel plated
Cable jacket	PVC
Cable type	UL 2725
Housing	See option material

For details about panel cut out see page 73 in the full „Harsh Environment Data Connectivity Solutions“ catalog.

How to order

	Table	X2-9863	15	5	0500
Basic part number					
Shell size					
Material & plating code	A				
Cable length	B				

ORDER EXAMPLE

X2-9863-15-5-0500

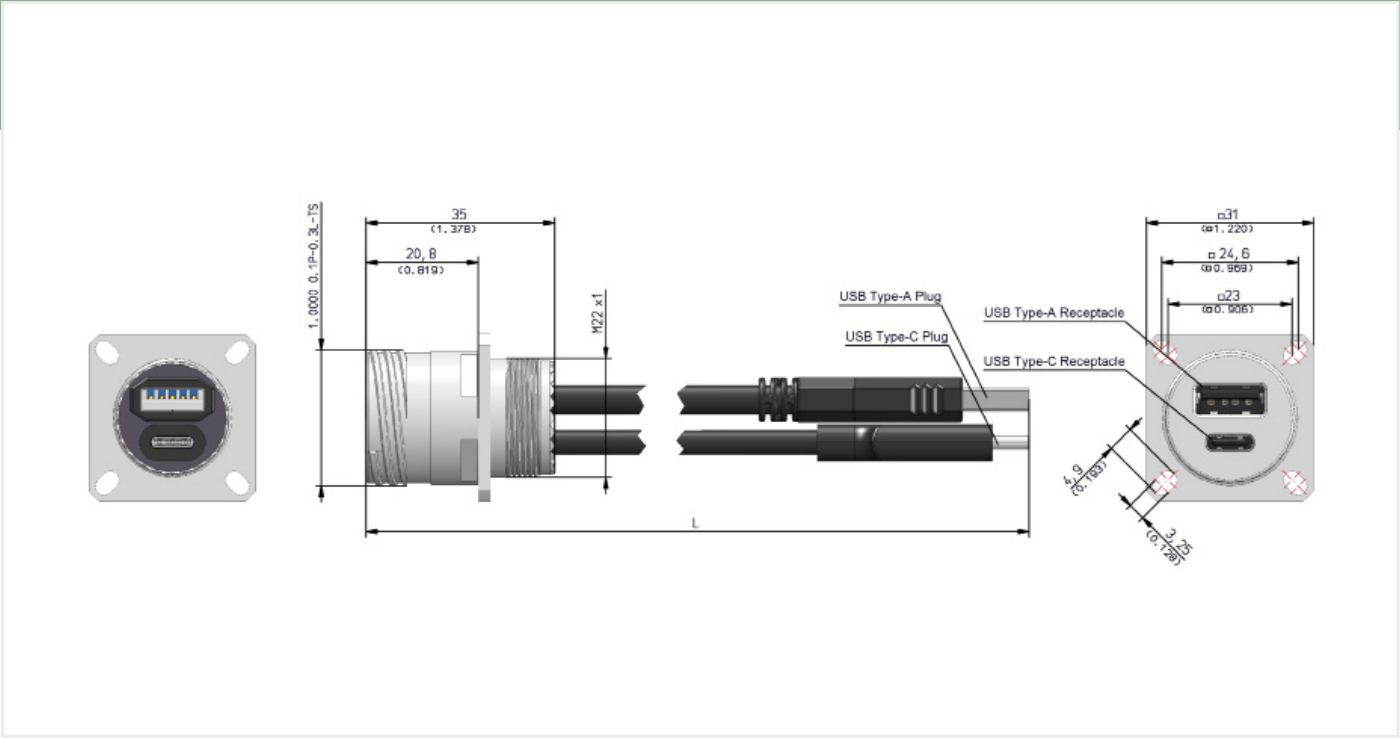
USB A/C – JAM NUT WITH CORDSET
 SIZE 15
 ELECTROLESS NICKEL
 CABLE LENGTH 500 MM

EMCA CONNECTOR SOLUTIONS GMBH

X2-9863 | Datasheet Version 1.0
 SALES@EMCA-CONNECTOR.DE

X2-SERIES – RUGGED USB CONNECTIONS

USB A/C – SQUARE FLANGE RECEPTACLE WITH CORDSET X2-9862



INFORMATION

All dimensions in
mm (inch) unless
otherwise specified.

Shell derived from D38999

PN: X2-9862

Datasheet Version: 1.0

CATALOG:

Harsh Environment
Data Connectivity Solutions



Table A: Material & Plating

Material & Plating Code	Technical Design	ROHS-/REACH Compliant	Electrically Conductive	Salt Spray Resistance according to MIL spec.	Salt Spray Resistance according to VG spec.
V	Tin-Zinc grey Base material: Al-alloy Tin-Zinc over electroless Nickel	Yes	Yes	500 hrs	5 day cyclic
5	Electroless Nickel Base material: Al-alloy	Yes	Yes	48 hrs	n.a.
2	Zinc-Nickel black Coupling ring: Al-alloy, black anodized Shell: Zinc-Nickel black chromate over electroless Nickel	Yes	Yes	500 hrs	n.a.
6	Cadmium olive drab Coupling ring: Al-alloy, olive drab anodized Shell: Al-alloy Cadmium plated olive drab over electroless Nickel	No	Yes	500 hrs	5 day cyclic
9	Marine Bronze Base material: Marine Bronze CuAl10Ni5Fe4 (CW307G) Shotblast, nonreflective	Yes	Yes	n.a.	n.a.
1	Stainless Steel / passivated	Yes	Yes	n.a.	n.a.

Performance

Voltage Rating (V_BUS)	20 V
Current Rating (V_BUS)	3 A / 5 A (USB A/C)
Temperature	-20 °C to +85 °C
Mating cycles (USB)	>5.000 / >10.000 (USB A/C)
Type-C Receptacle	Pins A7&B7 and A6&B6 connected
Compatible with	USB 3.2 Gen 1 / 2 (USB A/C)

Table B: Cable length

Length Code	Length L in mm	Tolerance in mm
0500	500 (19.685)	+ 30 (1.181)
1000	1000 (39.370)	+ 40 (1.575)

Materials

Over molding (plug)	PVC
USB A/C shell	Nickel plated
Cable jacket	PVC
Cable type	UL 2725
Housing	See option material

For details about panel cut out see page 73 in the full „Harsh Environment Data Connectivity Solutions“ catalog.

How to order

Table X2-9862 15 5 0500

Basic part number

Shell size

Material & plating code

A

Cable length

B

ORDER EXAMPLE

X2-9862-15-5-0500

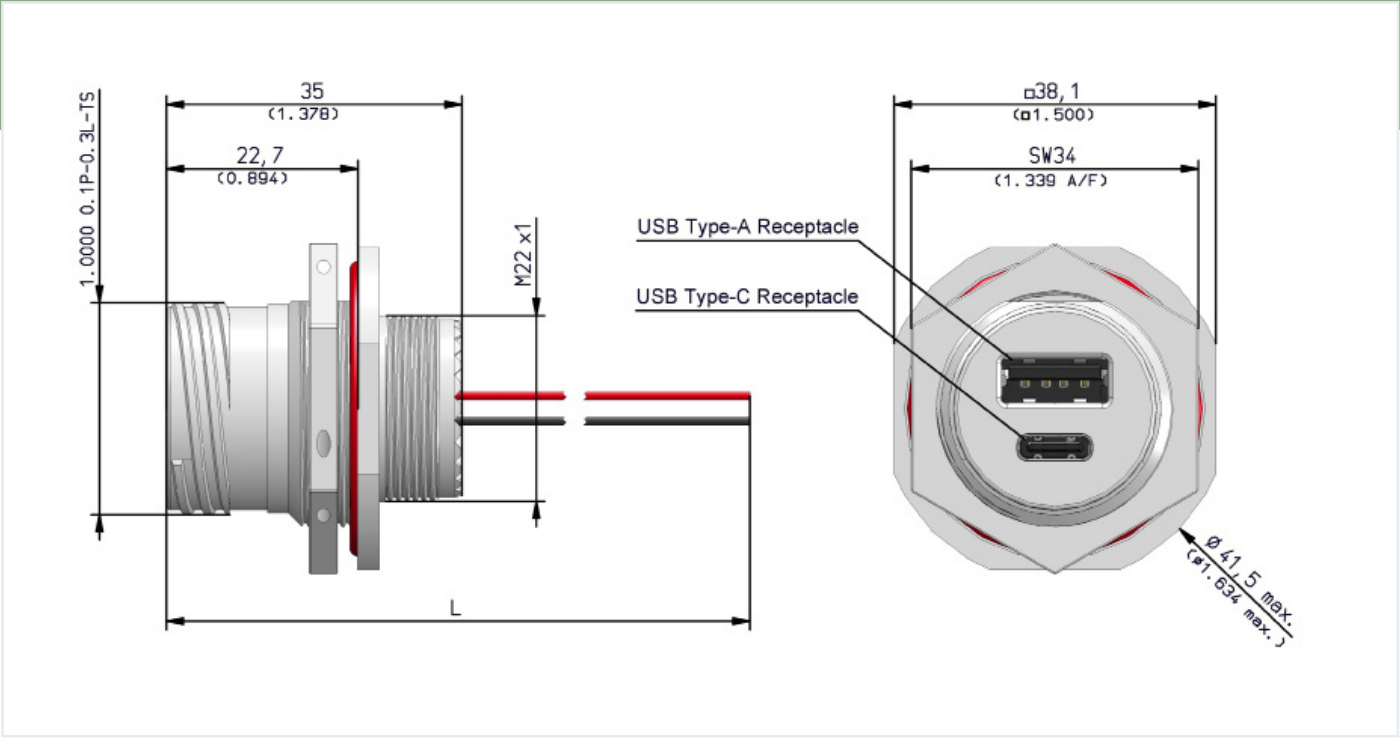
USB A/C – SQUARE FLANGE WITH CORDSET
SIZE 15
ELECTROLESS NICKEL
CABLE LENGTH 500 MM

EMCA CONNECTOR SOLUTIONS GMBH

X2-9862 | Datasheet Version 1.0
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X2-SERIES – RUGGED USB CONNECTIONS

USB A/C – JAM NUT RECEPTACLE FOR POWER SUPPLY X2-9859



INFORMATION

All dimensions in
mm (inch) unless
otherwise specified.

Shell derived from D38999

PN: X2-9859

Datasheet Version: 1.0

CATALOG:

Harsh Environment
Data Connectivity Solutions

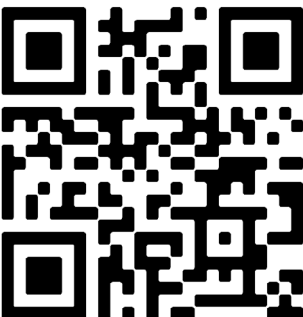


Table A: Material & Plating

Material & Plating Code	Technical Design	ROHS-/REACH Compliant	Electrically Conductive	Salt Spray Resistance according to MIL spec.	Salt Spray Resistance according to VG spec.
V	Tin-Zinc grey Base material: Al-alloy Tin-Zinc over electroless Nickel	Yes	Yes	500 hrs	5 day cyclic
5	Electroless Nickel Base material: Al-alloy	Yes	Yes	48 hrs	n.a.
2	Zinc-Nickel black Coupling ring: Al-alloy, black anodized Shell: Zinc-Nickel black chromate over electroless Nickel	Yes	Yes	500 hrs	n.a.
6	Cadmium olive drab Coupling ring: Al-alloy, olive drab anodized Shell: Al-alloy Cadmium plated olive drab over electroless Nickel	No	Yes	500 hrs	5 day cyclic
9	Marine Bronze Base material: Marine Bronze CuAl10Ni5Fe4 (CW307G) Shotblast, nonreflective	Yes	Yes	n.a.	n.a.
1	Stainless Steel / passivated	Yes	Yes	n.a.	n.a.

Performance

Voltage Rating	30 V / 20 V (USB A/C)
Current Rating	1,8 A / 5 A(USB A/C)
Temperature	-40 °C to +85 °C
Mating cycles	>5.000 / >10.000 (USB A/C)
Type-A Receptacle	Pin 2 (D-) and Pin 3 (D+) short-circuited
Type-C Receptacle	Pins A7&B7 and A6&B6 connected

Materials

USB A/C shell	Nickel plated
Housing	See option material
Wire type	FLRY: 1mm ²

For charging applications, the achieved performance depends on the devices used.
For details about panel cut out see page 73 in the full „Harsh Environment Data Connectivity Solutions“ catalog.

Table B: Wire length

Length Code	Length L in mm	Tolerance in mm
0500	500 (19.685)	+ 30 (1.181)
1000	1000 (39,370)	+ 40 (1.575)

How to order

	Table	X2-9859	15	5	0500
Basic part number					
Shell size					
Material & plating code	A				
Wire length	B				

ORDER EXAMPLE X2-9859-15-5-0500

USB A/C – JAM NUT FOR POWER SUPPLY
SIZE 15
ELECTROLESS NICKEL
WIRE LENGTH 500 MM

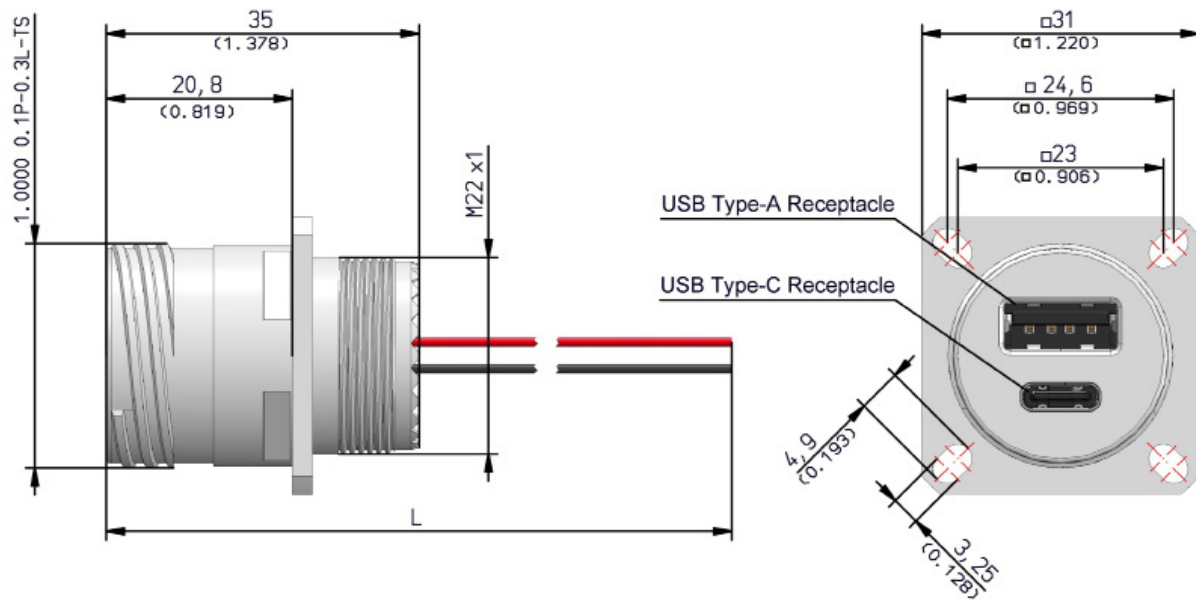
EMCA CONNECTOR SOLUTIONS GMBH

X2-9859 | Datasheet Version 1.0

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X2-SERIES – RUGGED USB CONNECTIONS

USB A/C – SQUARE FLANGE RECEPTACLE FOR POWER SUPPLY X2-9858



INFORMATION

All dimensions in
mm (inch) unless
otherwise specified.

Shell derived from D38999

PN: X2-9858

Datasheet Version: 1.0

CATALOG:

Harsh Environment
Data Connectivity Solutions



Table A: Material & Plating

Material & Plating Code	Technical Design	ROHS-/REACH Compliant	Electrically Conductive	Salt Spray Resistance according to MIL spec.	Salt Spray Resistance according to VG spec.
V	Tin-Zinc grey Base material: Al-alloy Tin-Zinc over electroless Nickel	Yes	Yes	500 hrs	5 day cyclic
5	Electroless Nickel Base material: Al-alloy	Yes	Yes	48 hrs	n.a.
2	Zinc-Nickel black Coupling ring: Al-alloy, black anodized Shell: Zinc-Nickel black chromate over electroless Nickel	Yes	Yes	500 hrs	n.a.
6	Cadmium olive drab Coupling ring: Al-alloy, olive drab anodized Shell: Al-alloy Cadmium plated olive drab over electroless Nickel	No	Yes	500 hrs	5 day cyclic
9	Marine Bronze Base material: Marine Bronze CuAl10Ni5Fe4 (CW307G) Shotblast, nonreflective	Yes	Yes	n.a.	n.a.
1	Stainless Steel / passivated	Yes	Yes	n.a.	n.a.

Performance

Voltage Rating	30 V / 20 V (USB A/C)
Current Rating	1,8 A / 5 A(USB A/C)
Temperature	-40 °C to +85 °C
Mating cycles	>5.000 / >10.000 (USB A/C)
Type-A Receptacle	Pin 2 (D-) and Pin 3 (D+) short-circuited
Type-C Receptacle	Pins A7&B7 and A6&B6 connected

Materials

USB A/C shell	Nickel plated
Housing	See option material
Wire type	FLRY: 1mm ²

For charging applications, the achieved performance depends on the devices used.
For details about panel cut out see page 73 in the full „Harsh Environment Data Connectivity Solutions“ catalog.

Table B: Wire length

Length Code	Length L in mm	Tolerance in mm
0500	500 (19.685)	+ 30 (1.181)
1000	1000 (39,370)	+ 40 (1.575)

How to order

	Table	X2-9858	15	5	0500
Basic part number					
Shell size					
Material & plating code	A				
Wire length	B				

ORDER EXAMPLE

X2-9858-15-5-0500

USB A/C – SQUARE FLANGE FOR POWER SUPPLY

SIZE 15

ELECTROLESS NICKEL

WIRE LENGTH 500 MM

EMCA CONNECTOR SOLUTIONS GMBH

X2-9858 | Datasheet Version 1.0

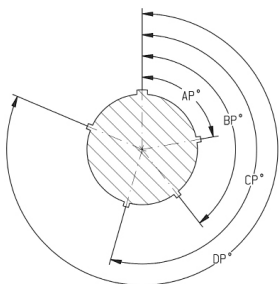
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TABLES

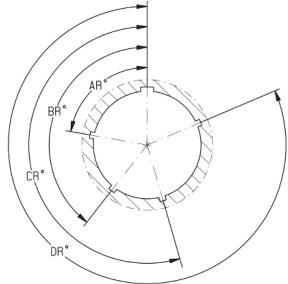
Table 5: Key/Keyway Polarization

Shell size 11, 13 and 15 for USB X2-Series

Key & Keyway Arrangement Identification Letter	AR° or AP°	BR° or BP°	CR° or CP°	DR° or DP°
N	95	141	208	236
A	113	156	182	292
B	90	145	195	252
C	53	156	220	255
D	119	146	176	298
E	51	141	184	242



Keys of Plug

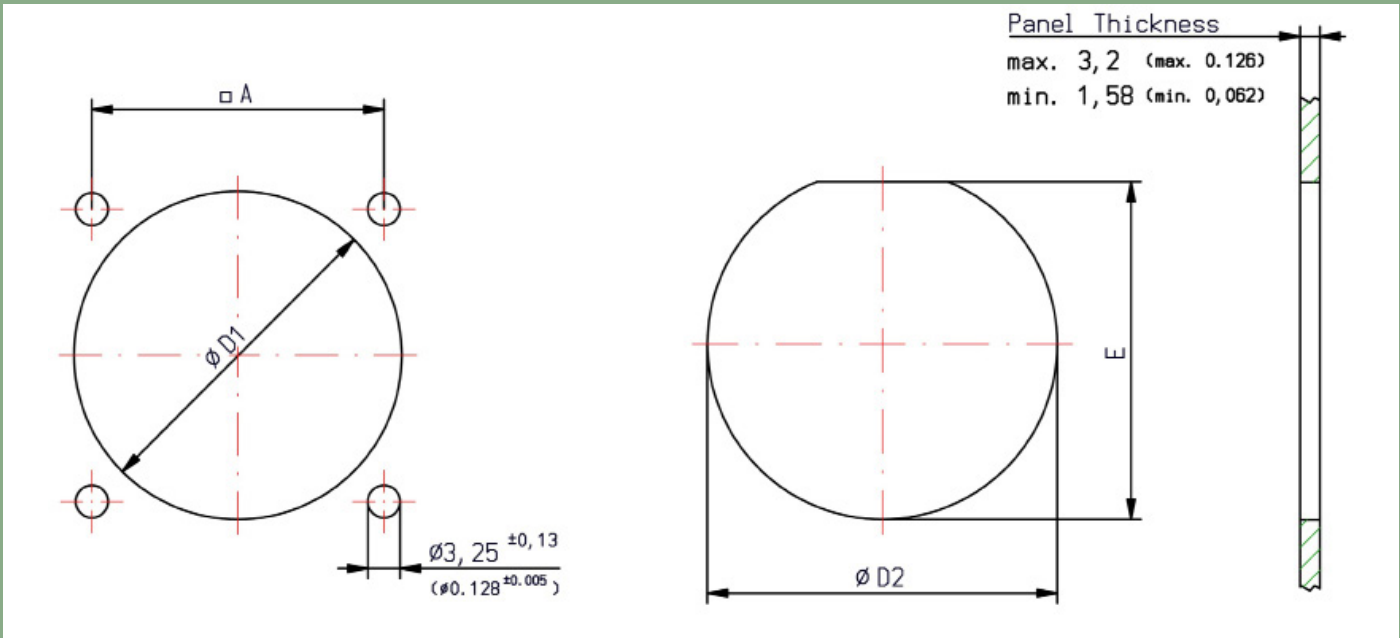


Keyways of Receptacle

Table 6: Panel Cut Outs

Panel Cut Outs for Square FFlange and Jam Nut Receptacles

Shell size	A	øD1 min. Front Panel Mounting	øD1 min. Back Panel Mounting	D2 +0,25 (0.010)	E -0,25 (0.010)
11	20,62 (0.812)	15,88 (0.625)	20,22 (0.796)	20,96 (0.825)	19,59 (0.771)
13	23,01 (0.906)	19,05 (0.750)	23,42 (0.922)	25,65 (1.010)	24,26 (0.955)
15	24,61 (0.969)	23,01 (0.906)	26,59 (1.047)	28,83 (1.135)	27,56 (1.085)
17	26,97 (1.062)	25,81 (1.016)	30,96 (1.219)	32,01 (1.260)	30,73 (1.210)
19	29,36 (1.156)	28,98 (1.141)	32,94 (1.297)	35,18 (1.385)	33,91 (1.335)



TABLES

Table 7: USB A Receptacle Orientation

USB A Orientation Code	Description	Angle
0	Up	0°
1	Right	90°
2	Down	180°
3	Left	270°

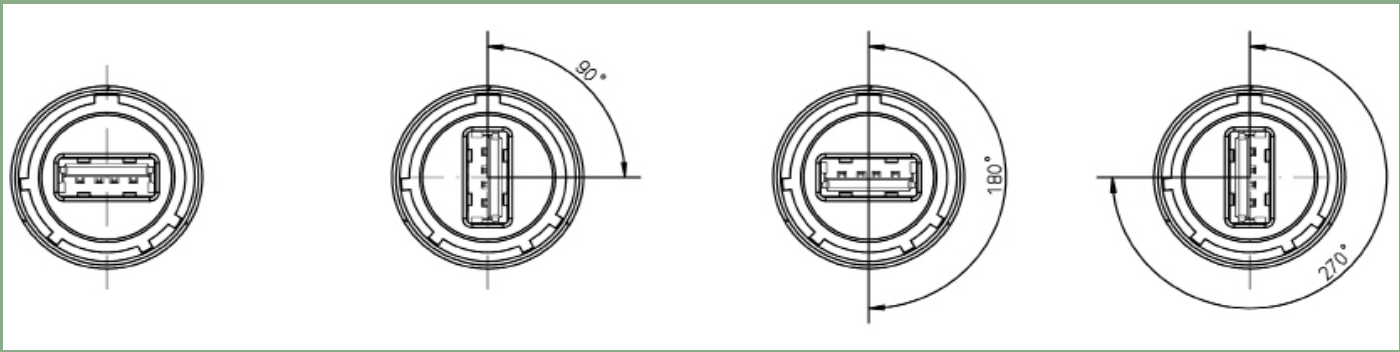


Table 8: USB A Plug Orientation

USB A Plug Orientation Code	Description	Angle
0	Up	0°
1	Right	90°
2	Down	180°
3	Left	270°

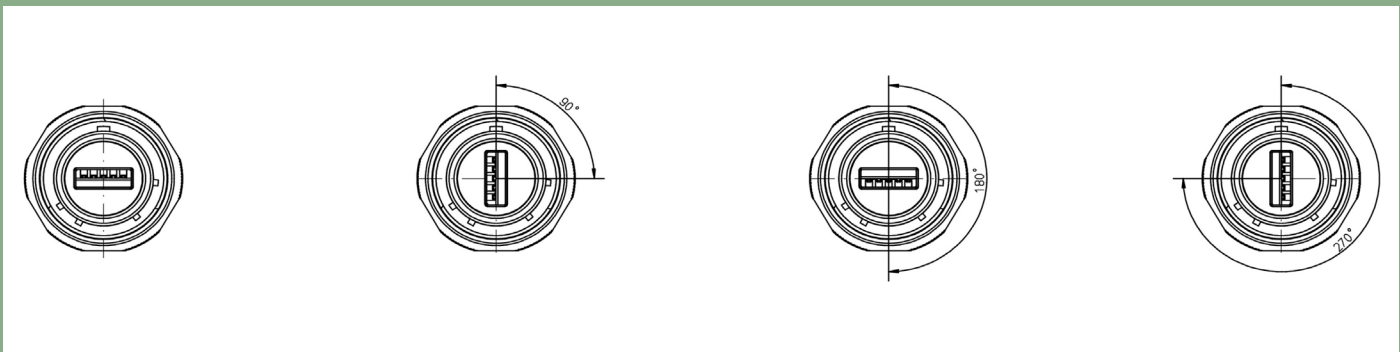


Table 9: USB C Receptacle Orientation

USB C Orientation Code	Description	Angle
0	Horizontally	0°
1	Vertically	90°

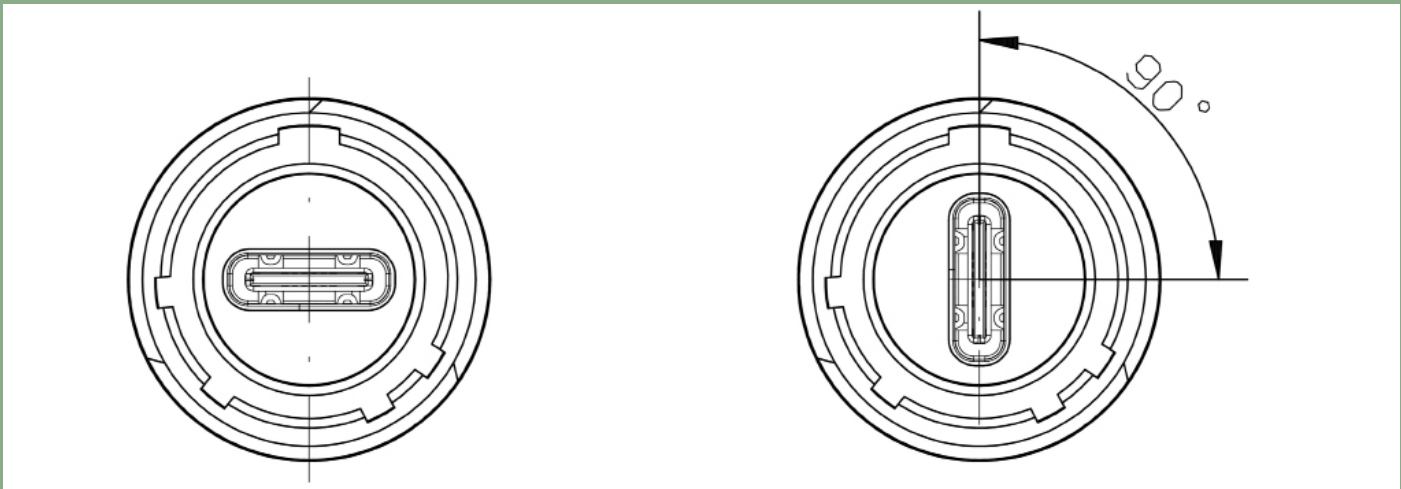
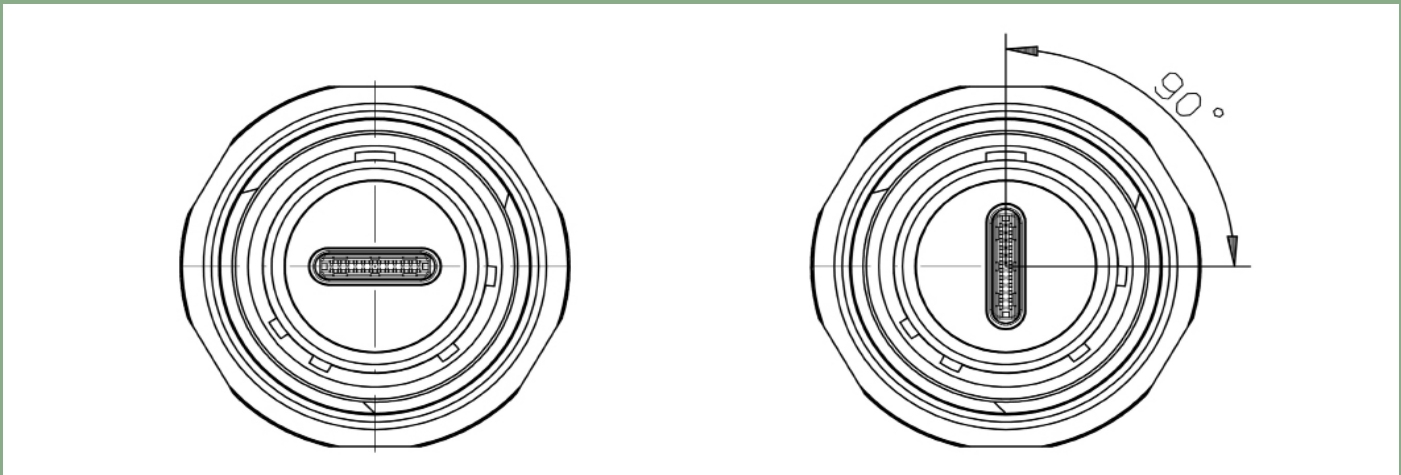


Table 10: USB C Plug Orientation

USB C Plug Orientation Code	Description	Angle
0	Horizontally	0°
1	Vertically	90°



ACCESSORIES FOR DATA CONNECTIVITY SOLUTIONS

The X1-Series and X2-Series from EMCA Connector Solutions offer rugged connection solutions designed for demanding environments.

Both series are supported by a variety of accessories, including protective caps that safeguard plugs and receptacles from dust, moisture, and liquids.

For the X1-Series, a selection of backshells is available, providing further protection and cable management options.

Additionally, gaskets and retainers are offered for square flange versions of both series, ensuring secure, long-lasting installations.

These accessories enhance the durability and versatility of EMCA's X1 and X2 connectors, making them ideal for rugged applications.





PROTECTIVE CAPS



10 | Cap for Plug with rope - YC-9842



12 | Cap for Plug without rope - YC-9841



14 | Cap for Receptacle with rope - YC-9840



16 | Cap for Receptacle without rope - YC-9839

BACKSHELLS



12 | For X1-Series with 0° Straight Band – YA-9870



14 | For X1-Series with 45° Band – YA-9869



16 | For X1-Series with 90° Band – YA-9868

GASKETS



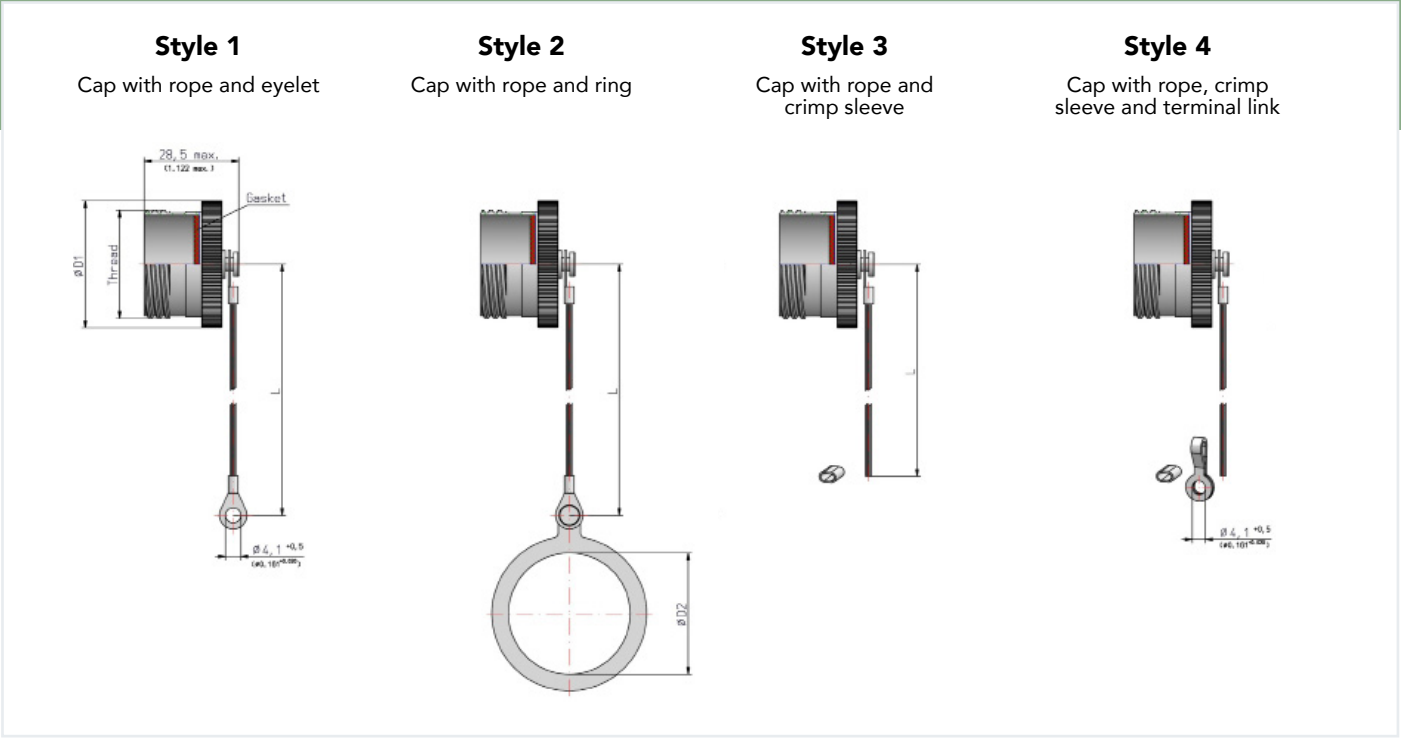
18 | Screened Flange Gasket – YF-9843

RETAINER



20 | Retainer – Ultra Light – YB-9838

PROTECTIVE CAP FOR PLUG WITH ROPE
YC-9842



INFORMATION

All dimensions in
mm (inch) unless
otherwise specified.

PN: YC-9842
Datasheet Version: 1.0

CATALOG:
Harsh Environment
Data Connectivity Solutions

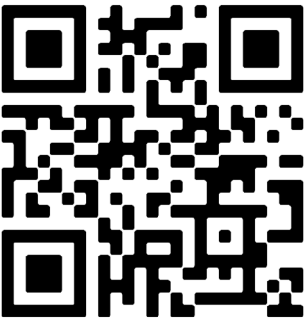


Table A: Material & Plating

Material & Plating Code	Technical Design	ROHS-/ REACH Compliant	Electrically Conductive	Salt Spray Resistance according to MIL spec.	Salt Spray Resistance according to VG spec.
V	Tin-Zinc grey Base material: Al-alloy Tin-Zinc over electroless Nickel	Yes	Yes	500 hrs	5 day cyclic
5	Electroless Nickel Base material: Al-alloy	Yes	Yes	48 hrs	n.a.
2	Zinc-Nickel black Coupling ring: Al-alloy, black anodized Shell: Zinc-Nickel black chromate over electroless Nickel	Yes	Yes	500 hrs	n.a.
6	Cadmium olive drab Coupling ring: Al-alloy, olive drab anodized Shell: Al-alloy Cadmium plated olive drab over electroless Nickel	No	Yes	500 hrs	5 day cyclic
9	Marine Bronze Base material: Marine Bronze CuAl10Ni5Fe4 (CW307G) Shotblast, nonreflective	Yes	Yes	n.a.	n.a.
1	Stainless Steel / passivated	Yes	Yes	n.a.	n.a.

Table B: Basic part number and shell size code

Basic part number and shell size code	Shell size	ØD1 max.	ØD2 min.	G Thread
				Class 2B 0.1P-0.3L-TS
YC-9842-11-_____	11	28,0 (1.102)	15,5 (0.610)	0.7500
YC-9842-13-_____	13	30,5 (1.201)	18,5 (0.728)	0.8750
YC-9842-15-_____	15	31,8 (1.252)	22,5 (0.886)	1.0000
YC-9842-17-_____	17	36,8 (1.449)	25,5 (1.004)	1.1875
YC-9842-19-_____	19	38,1 (1.500)	28,5 (1.122)	1.2500

Table C: Rope material

Order code	Rope material
A	Polyamide, black coloured
B	SST wire rope, black, PTFE jacketed
C	Polyamide, green olive drab coloured

Table D: Rope length

Length code	Available lengths in mm
	+/- 5 +/- (0.197)
01	75 (2.953)
02	100 (3.937)
03	125 (4.921)
04	150 (5.906)
05	200 (7.874)
06	250 (9.843)
07	300 (11.811)
08	400 (15.748)

How to order	Table	YC-9842	19	5	1	A	03
Basic part number							
Shell size	B						
Material & Plating option	A						
Cap style	See above						
Rope material	C						
Rope length	D						

ORDER EXAMPLE

YC-9842-19-5 1 A 03

PROTECTIVE CAP FOR PLUGS

SIZE 19

ELECTROLESS NICKEL

EYELET, BLACK POLYAMIDE ROPE

LENGTH 125 MM

EMCA CONNECTOR SOLUTIONS GMBH

YC-9842 | Datasheet Version 1.0

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PROTECTIVE CAP FOR PLUG WITHOUT ROPE
YC-9841



INFORMATION

All dimensions in
mm (inch) unless
otherwise specified.

PN: YC-9841
Datasheet Version: 1.0

CATALOG:
Harsh Environment
Data Connectivity Solutions



Table A: Material & Plating

Material & Plating Code	Technical Design	ROHS-/ REACH Compliant	Electrically Conductive	Salt Spray Resistance according to MIL spec.	Salt Spray Resistance according to VG spec.
V	Tin-Zinc grey Base material: Al-alloy Tin-Zinc over electroless Nickel	Yes	Yes	500 hrs	5 day cyclic
5	Electroless Nickel Base material: Al-alloy	Yes	Yes	48 hrs	n.a.
2	Zinc-Nickel black Coupling ring: Al-alloy, black anodized Shell: Zinc-Nickel black chromate over electroless Nickel	Yes	Yes	500 hrs	n.a.
6	Cadmium olive drab Coupling ring: Al-alloy, olive drab anodized Shell: Al-alloy Cadmium plated olive drab over electroless Nickel	No	Yes	500 hrs	5 day cyclic
9	Marine Bronze Base material: Marine Bronze CuAl10Ni5Fe4 (CW307G) Shotblast, nonreflective	Yes	Yes	n.a.	n.a.
1	Stainless Steel / passivated	Yes	Yes	n.a.	n.a.

Table B: Basic part number and shell size code

Basic part number and shell size code	Shell size	ØD1 max.	G Thread Class 2B 0.1P-0.3L-TS
YC-9841-11-_____	11	28,0 (1.102)	0.7500
YC-9841-13-_____	13	30,5 (1.201)	0.8750
YC-9841-15-_____	15	31,8 (1,252)	1.0000
YC-9841-17-_____	17	36,8 (1.449)	1.1875
YC-9841-19-_____	19	38,1 (1.500)	1.2500

How to order

Table YC-9841 19 5 WA

Basic part number	
Shell size	B
Material & Plating option	A
Cap style	See above

ORDER EXAMPLE
YC-9841-19-5 WA

PROTECTIVE CAP FOR PLUGS
SIZE 19
ELECTROLESS NICKEL
WITHOUT ATTACHEMENT

EMCA CONNECTOR SOLUTIONS GMBH

YC-9841 | Datasheet Version 1.0
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ACCESSORIES FOR DATA CONNECTIVITY SOLUTIONS

PROTECTIVE CAP FOR RECEPTACLE WITH ROPE YC-9840



INFORMATION

All dimensions in
mm (inch) unless
otherwise specified.

Shell derived from D38999

PN: YC-9840

Datasheet Version: 1.0

CATALOG:

Harsh Environment
Data Connectivity Solutions

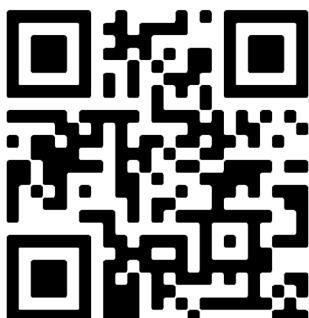


Table A: Material & Plating

Material & Plating Code	Technical Design	ROHS-/REACH Compliant	Electrically Conductive	Salt Spray Resistance according to MIL spec.	Salt Spray Resistance according to VG spec.
V	Tin-Zinc grey Base material: Al-alloy Tin-Zinc over electroless Nickel	Yes	Yes	500 hrs	5 day cyclic
5	Electroless Nickel Base material: Al-alloy	Yes	Yes	48 hrs	n.a.
2	Zinc-Nickel black Coupling ring: Al-alloy, black anodized Shell: Zinc-Nickel black chromate over electroless Nickel	Yes	Yes	500 hrs	n.a.
6	Cadmium olive drab Coupling ring: Al-alloy, olive drab anodized Shell: Al-alloy Cadmium plated olive drab over electroless Nickel	No	Yes	500 hrs	5 day cyclic
9	Marine Bronze Base material: Marine Bronze CuAl10Ni5Fe4 (CW307G) Shotblast, nonreflective	Yes	Yes	n.a.	n.a.
1	Stainless Steel / passivated	Yes	Yes	n.a.	n.a.

Table B: Basic part number and shell size code

Basic part number and shell size code	Shell size	ØD1 max.	ØD2 min.	G Thread
				Class 2B 0.1P-0.3L-TS
YC-9840-11-_____	11	28,0 (1.102)	21,2 (0.835)	0.7500
YC-9840-13-_____	13	30,5 (1.201)	25,5 (1.004)	0.8750
YC-9840-15-_____	15	31,8 (1,252)	29,9 (1.177)	1.0000
YC-9840-17-_____	17	36,8 (1.449)	31,9 (1,256)	1.1875
YC-9840-19-_____	19	38,1 (1.500)	35,0 (1.378)	1.2500

Table C: Rope material

Order code	Rope material
A	Polyamide, black coloured
B	SST wire rope, black, PTFE jacketed
C	Polyamide, green olive drab coloured

Table D: Rope length

Length code	Available lengths in mm
	+/- 5 +/- (0.197)
01	75 (2.953)
02	100 (3.937)
03	125 (4.921)
04	150 (5.906)
05	200 (7.874)
06	250 (9.843)
07	300 (11.811)
08	400 (15.748)

How to order

Table	YC-9840	19	5	1	A	03
Basic part number						
Shell size	B					
Material & Plating option	A					
Cap style	See above					
Rope material	C					
Rope length	D					

ORDER EXAMPLE
YC-9840-19-5 1 A 03
PROTECTIVE CAP FOR RECEPTACLES
SIZE 19
ELECTROLESS NICKEL
EYELET, BLACK POLYAMIDE ROPE
LENGTH 125 MM

EMCA CONNECTOR SOLUTIONS GMBH

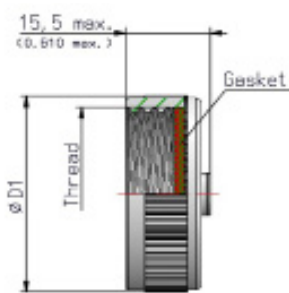
YC-9840 | Datasheet Version 1.0
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PROTECTIVE CAP FOR RECEPTACLE WITHOUT ROPE
YC-9839

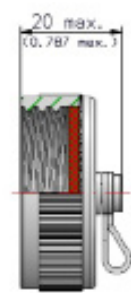
Style WA

Without attachment



Style WR

Without rope, with terminal link



INFORMATION

All dimensions in
mm (inch) unless
otherwise specified.

PN: YC-9839
Datasheet Version: 1.0

CATALOG:
Harsh Environment
Data Connectivity Solutions



Table A: Material & Plating

Material & Plating Code	Technical Design	ROHS-/REACH Compliant	Electrically Conductive	Salt Spray Resistance according to MIL spec.	Salt Spray Resistance according to VG spec.
V	Tin-Zinc grey Base material: Al-alloy Tin-Zinc over electroless Nickel	Yes	Yes	500 hrs	5 day cyclic
5	Electroless Nickel Base material: Al-alloy	Yes	Yes	48 hrs	n.a.
2	Zinc-Nickel black Coupling ring: Al-alloy, black anodized Shell: Zinc-Nickel black chromate over electroless Nickel	Yes	Yes	500 hrs	n.a.
6	Cadmium olive drab Coupling ring: Al-alloy, olive drab anodized Shell: Al-alloy Cadmium plated olive drab over electroless Nickel	No	Yes	500 hrs	5 day cyclic
9	Marine Bronze Base material: Marine Bronze CuAl10Ni5Fe4 (CW307G) Shotblast, nonreflective	Yes	Yes	n.a.	n.a.
1	Stainless Steel / passivated	Yes	Yes	n.a.	n.a.

Table B: Basic part number and shell size code

Basic part number and shell size code	Shell size	ØD1 max.	G Thread
			Class 2B 0.1P-0.3L-TS
YC-9839-11-_____	11	28,0 (1.102)	0.7500
YC-9839-13-_____	13	30,5 (1.201)	0.8750
YC-9839-15-_____	15	31,8 (1,252)	1.0000
YC-9839-17-_____	17	36,8 (1.449)	1.1875
YC-9839-19-_____	19	38,1 (1.500)	1.2500

How to order	Table	YC-9839	19	5	WA
Basic part number					
Shell size	B				
Material & Plating option	A				
Cap style	See drawing				

ORDER EXAMPLE
YC-9839-19-5 WA

PROTECTIVE CAP FOR RECEPTACLE
SIZE 19
ELECTROLESS NICKEL
WITHOUT ATTACHEMENT

EMCA CONNECTOR SOLUTIONS GMBH

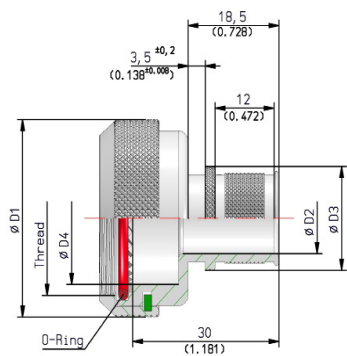
YC-9839 | Datasheet Version 1.0
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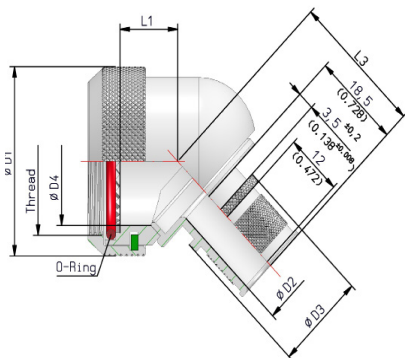
ACCESSORIES FOR DATA CONNECTIVITY SOLUTIONS

X1-SERIES RJ45 BACKSHELLS YA-9868, YA-9869 and YA-9870

YA-9870
Straight Band / CFS Backshell



YA-9869
45° Band / CFS Backshell



YA-9868
90° Band / CFS Backshell

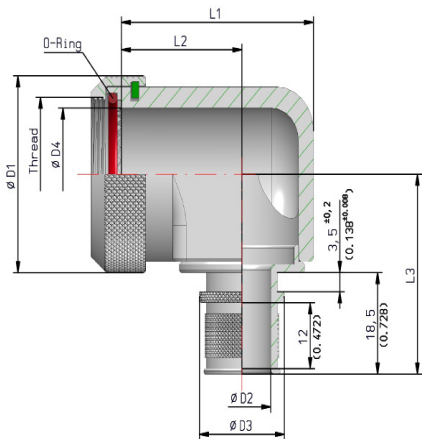


Table A: Material & Plating

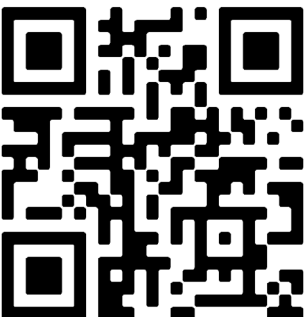
All dimensions in
mm (inch) unless
otherwise specified.

PN: YA-9868
YA-9869
YA-9870

Datasheet Version: 1.0

CATALOG:

Harsh Environment
Data Connectivity Solutions



Material & Plating Code	Technical Design	ROHS-/REACH Compliant	Electrically Conductive	Salt Spray Resistance according to MIL spec.	Salt Spray Resistance according to VG spec.
J (to be used with V plated connectors)	Black Hybrid finish Coupling ring: Al-alloy, black anodized Shell: Electroless Nickel plating, exposed area is selective black coated Screen termination system has a very good electrical conductivity (electroless Nickel) All visible parts are black coloured in assembled condition Version *J* is intermateable with Cadmium-, Tin-Zinc-, Nickel-, Zinc-Nickel-, and Zinc-Cobalt-plated connectors	Yes	Yes	500 hrs	5 day cyclic
5	Electroless Nickel Base material: Al-alloy	Yes	Yes	48 hrs	n.a.
2	Zinc-Nickel black Coupling ring: Al-alloy, black anodized Shell: Zinc-Nickel black chromate over electroless Nickel	Yes	Yes	500 hrs	n.a.
9	Marine Bronze Base material: Marine Bronze CuAl10Ni5Fe4 (CW307G) Shotblast, nonreflective	Yes	Yes	n.a.	n.a.
1	Stainless Steel / passivated	Yes	Yes	n.a.	n.a.

Table B: Cable entry size

Entry Size Code	ØD2 min.	ØD3 max.
05	7,9 (0.311)	15,5 (0.610)
06	9,5 (0.374)	17,2 (0.677)
07	11,1 (0.437)	18,7 (0.736)

Shell size YA-9870 Straight Band

Shell size	ØD1 max.	ØD4 +/- 0,2 (0.008)	G Thread
11	23,0 (0.906)	12,0 (0.472)	M15x1
13	25,9 (1.020)	14,5 (0.571)	M18x1
15	30,2 (1.189)	18,0 (0.709)	M22x1
17	33,0 (1.299)	21,1 (0.831)	M25x1
19	36,2 (1.425)	24,0 (0.945)	M28x1

Shell size YA-9869 45° Band

Shell size	ØD1 max.	ØD4 min.	L1 max.	L2 max.	G Thread
11	23,0 (0.906)	10,5 (0.413)	13,5 (0.531)	29,0 (1.142)	M15x1
13	25,9 (1.020)	13,5 (0.531)	14,0 (0.551)	29,0 (1.142)	M18x1
15	30,2 (1.189)	17,5 (0.689)	14,0 (0.551)	30,0 (1.181)	M22x1
17	33,0 (1.299)	20,0 (0.787)	15,0 (0.591)	31,0 (1.220)	M25x1
19	36,2 (1.425)	23,0 (0.906)	16,0 (0.630)	31,5 (1.240)	M28x1

Shell size YA-9868 90° Band

Shell size	ØD1 max.	ØD4 min.	L1 max.	L2 +/- 0,5 (0.020)	L3 max.	G Thread
11	23,0 (0.906)	10,5 (0.413)	26,5 (1.043)	17,5 (0.689)	33,0 (1.299)	M15x1
13	25,9 (1.020)	13,5 (0.531)	31,0 (1.220)	20,0 (0.787)	35,0 (1.378)	M18x1
15	30,2 (1.189)	17,5 (0.689)	37,0 (1.457)	24,0 (0.945)	37,0 (1.457)	M22x1
17	33,0 (1.299)	20,0 (0.787)	40,0 (1.575)	26,5 (1.043)	38,0 (1.496)	M25x1
19	36,2 (1.425)	23,0 (0.906)	44,5 (1.752)	27,0 (1.063)	40,0 (1.575)	M28x1

How to order

Table YA-9870 19 1 05

Basic part number (Straight, 45° or 90°)

see drawing

Shell size 19 (For RJ45 X1-Series)

Material & Plating option

A

Cable entry size

B

ORDER EXAMPLE YA-9870-19-1 05

STRAIGHT BAND / CFS BACKSHELL

SIZE 19

STAINLESS STEEL

ØD2=7,9 MM

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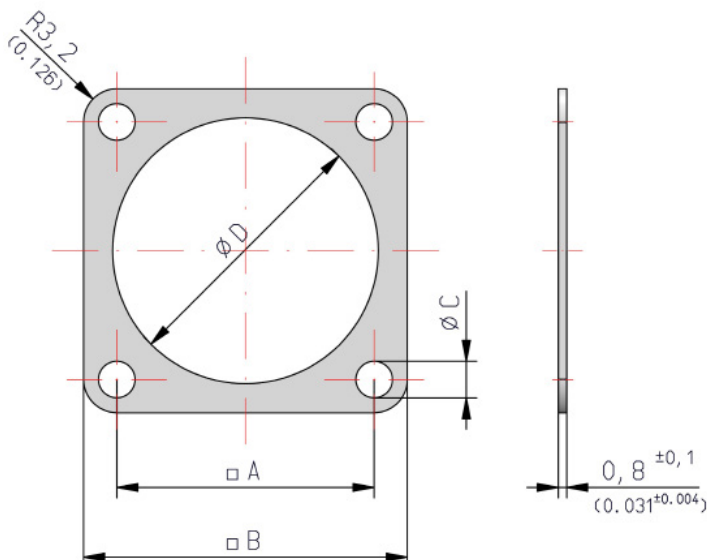
YA-9868, YA-9869 and YA-9870

Datasheet Version 1.0

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emca
connector solutions

SCREENED FLANGE GASKET
YF-9843



All dimensions in
mm (inch) unless
otherwise specified.

PN: YF-9843
Datasheet Version: 1.0

CATALOG:
Harsh Environment
Data Connectivity Solutions



Table A: Material & Plating

Material	Fluorsilicone with Ag/Al conductive filler
Temperature	-55 °C to +160 °C
Colour	blue-grey
Hardness	65±5 Shore
ROHS/ REACH Compliant	Yes

High shielding effectiveness and watertight.
For Connector Receptacles to series: MIL-DTL-38999 Series I, III

Table B: Part Number and Size

Size	Part Number	A +/- 0,25 (0.010)	B +/- 0,25 (0.010)	C - 0,3 (0.012)	D + 0,4 (0.016)	Thickness +/- 0,1 (0.004)
11	YF-9843-11-08B	20,65 (0.812)	26,19 (1.031)	3,5 (0.138)	19,05 (0.75)	0,80 (0.031)
11	YF-9843-11-08F	20,65 (0.812)	26,19 (1.031)	3,5 (0.138)	15,50 (0.610)	0,80 (0.031)
13	YF-9843-13-08B	23,01 (0.906)	28,56 (1.124)	3,5 (0.138)	22,23 (0.875)	0,80 (0.031)
13	YF-9843-13-08F	23,01 (0.906)	28,56 (1.124)	3,5 (0.138)	18,50 (0.728)	0,80 (0.031)
15	YF-9843-15-08B	24,61 (0.969)	30,96 (1.219)	3,5 (0.138)	25,40 (1.000)	0,80 (0.031)
15	YF-9843-15-08F	24,61 (0.969)	30,96 (1.219)	3,5 (0.138)	22,70 (0.894)	0,80 (0.031)
17	YF-9843-17-08B	27,00 (1.063)	34,80 (1.370)	3,5 (0.138)	30,16 (1.187)	0,80 (0.031)
17	YF-9843-17-08F	27,00 (1.063)	34,80 (1.370)	3,5 (0.138)	25,70 (1.012)	0,80 (0.031)
19	YF-9843-19-08B	29,36 (1.155)	36,53 (1.438)	3,5 (0.138)	31,75 (1.250)	0,80 (0.031)
19	YF-9843-19-08F	29,36 (1.155)	36,53 (1.438)	3,5 (0.138)	28,70 (1.130)	0,80 (0.031)

B: Back Panel Mounting
F: Front Panel Mounting

ORDER EXAMPLE YF-9843-19-08B

SCREENED FLANGE GASKET

SIZE 19

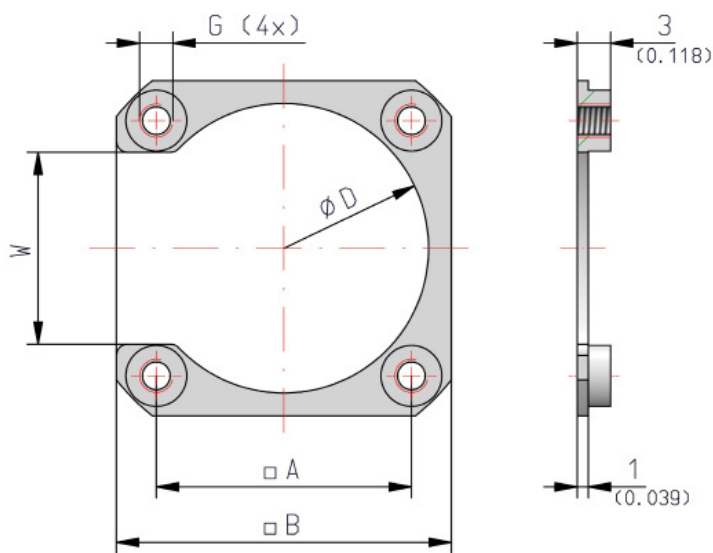
BACK PANEL MOUNTING

EMCA CONNECTOR SOLUTIONS GMBH

YC-9843 | Datasheet Version 1.0

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RETAINER - ULTRA LIGHT
YB-9838



Self-locking threads (G) by M- or UNC-wire thread inserts, Stainless Stell.

All dimensions in
mm (inch) unless
otherwise specified.

PN: YB-9838
Datasheet Version: 1.0

CATALOG:
Harsh Environment
Data Connectivity Solutions



Table A: Material & Plating

Material & Plating Code	Technical Design	ROHS-/REACH Compliant	Electrically Conductive	Salt Spray Resistance according to MIL spec.	Salt Spray Resistance according to VG spec.
3	Black anodized Base material: Al-alloy	Yes	No	500 hrs	n.a.
M	Transparent passivation Sur Tec 650 Base material: Al-alloy	Yes	Yes	96 hrs	n.a.

Table B: Part Number and Size

Size	Part Number	A +/- 0,1 (0.004)	B + 1,0 (0.040) - 0,5 (0.020)	W +/- 0,25 (0.010)	ØD min.	Thread metric/UNC	Mass
11	YB-9838-11- _ -M	20,6 (0.811)	27,8 (1.094)	14,9 (0.587)	22,5 (0,886)	M3	1,2 g
11	YB-9838-11- _ -U	20,6 (0.811)	27,8 (1.094)	14,9 (0.587)	22,5 (0,886)	4-40	1,1 g
13	YB-9838-13- _ -M	23,0 (0.906)	30,2 (1.189)	17,3 (0.681)	26,0 (1.024)	M3	1,2 g
13	YB-9838-13- _ -U	23,0 (0.906)	30,2 (1.189)	17,3 (0.681)	26,0 (1.024)	4-40	1,2 g
15	YB-9838-15- _ -M	24,6 (0.969)	32,5 (1.280)	18,9 (0.744)	28,5 (1.122)	M3	1,3 g
15	YB-9838-15- _ -U	24,6 (0.969)	32,5 (1.280)	18,9 (0.744)	28,5 (1.122)	4-40	1,3 g
17	YB-9838-17- _ -M	27,0 (1.063)	35,7 (1.406)	21,3 (0.839)	31,5 (1.240)	M3	1,4 g
17	YB-9838-17- _ -U	27,0 (1.063)	35,7 (1.406)	21,3 (0.839)	31,5 (1.240)	4-40	1,4 g
19	YB-9838-19- _ -M	29,4 (1.157)	39,0 (1.535)	23,7 (0.933)	34,2 (1.346)	M3	1,6 g
19	YB-9838-19- _ -U	29,4 (1.157)	39,0 (1.535)	23,7 (0.933)	34,2 (1.346)	4-40	1,6 g

How to order	Table	YB-9838	19	3	M
Shell size					
Material & Plating option	A				
Thread type (M or U)	B				

ORDER EXAMPLE

YB-9838-19-3-M

RETAINER - ULTRA LIGHT

SIZE 19

BLACK ANODIZED

METRIC THREAD

EMCA CONNECTOR SOLUTIONS GMBH

YB-9838 | Datasheet Version 1.0

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always up to date
latest catalog version



At EMCA Connector Solutions, we are experts in precision connectors, born out of 30 years of expertise as a spin-off from EMCA electro-mechanic. Our core strengths lie in in-house design, development, production, and assembly, enabling us to craft standard and custom connectors with unparalleled precision.

We prioritize quality, with all operations controlled internally, allowing us to continually enhance our processes and maintain the highest standards. Our diverse and experienced team fosters innovation and thrives on challenges, delivering solutions that meet the most demanding requirements. Committed to sustainability, our products are innovative, reliable, economically competitive, and we stand ready to assist you in transitioning from legacy and non-compliant products to their technically equivalent or superior RoHS and REACH compliant counterparts.

Product specification and performance characteristics are exemplary only and subject to change.

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EMCA Connector Solutions GmbH

Leibnizstrasse 7 | 74211 Leingarten | Germany
www.emca-connector.de

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