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FINECABLES

NMEA 2000 CABLES & CONNECTORS



NMEA 2000 Cables & Connectors

For Marine & Vessels



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FINECABLES 2022





Waterproof Connectors

for NMEA 2000 Equipments

About Finecables

Finecables, established in 2003, is committed to being the world's leading manufacturer in industrial connectivity. At Finecables, we combine a strong customer focus along with a wealth of practical industry experience in order to provide our clients all around the world with reliable and innovative connectivity products as well as excellent customer service. Additionally, we continue to extend our self-owned brand @ Finecables in various applications by developing customized products, which cover not only PUSH PULL connectors & industrial connectors, but also electronic interconnection and data networking. Our production capacity is already more than 50 million PCS yearly.

Corporate Culture

Finecables' corporate culture consists of passion, dedication and commitment. We are greatly enthusiastic about what we do and helping our customers realize their dreams and ambitions. We are committed to industrial connectivity and place great emphasis on building long-term partnerships and mutually beneficial relationships with both customers and suppliers. Very simply, we are your ideal business partner!



R & D

With years of experience and technological acquisition and accumulation in industrial connectivity, the R&D team at Finecables utilizes powerful tooling ability and productivity to continue to raise the bar for industry standards. Our unique competitive advantage allows us to research and develop innovative total solutions and fully realize our customer's specific requirements and requests. So far, Finecables has developed over 20,000 kinds of connectors totally.

Quality

Quality is to Finecables what health is to human beings; the core competence of products shall base on its superior performance and reliable quality. Our commitments on "high quality" come from our team's comprehensive understanding in quality. We have designed strict audit and quality control process to assure ourselves and our suppliers are offering the best practice. ISO9001, ISO14001, OHSAS18001, IATF16949, ISO13485 and CE, UL represent our quality value.

Finecables fulfills its core value of "Promptness, Excellence, Awareness, and Gratitude", by insisting our long-term partnership and win-win cooperation with both customers and suppliers.



Products

Through continuous innovation and cutting edge research and development, we continue to expand our product portfolio vastly beyond wire harnesses and industrial connectors. Our current portfolio includes:

- Circular Connectors for industrial applications:(M5/M8/M9/M10/M12/M16/M20/7/8"/M23/RD24)
- Solenoid Valve Connectors for Pneumatic, hydraulic and electro-magnetic applications (Size A/B/C)
- Industrial I/O Connectors for data transmission network (USB/RJ45/Mini-Din/D-SUB/UHF)
- ISO-BUS Connectors and Junction Boxes for field-BUS network control (4/6/8-port M5/M8/M12 connectors with 7/8"/M23 connectors)
- Push-Pull Connectors for medical and industrial applications: Series B/K/S/P
- NMEA 2000 cable connectors for marine & vessels
- Temperature Sensor Probe and Wire/Cable Harness
- Customized Solutions





UL(Underwriters Laboratories) is a safety consulting and certification company headquartered in the United States. UL , established in 1894, provides safety-related certification, validation, testing, inspection, auditing, advising and training services to a wide range of clients, including manufacturers, retailers, policymakers, regulators, service companies, and consumers.

Since 2007 when our Wiring Hareness were awarded UL certification, Finecables has applied many UL certificates to ensure our high-quality products are UL approved. For more detail, please visit at: <http://database.ul.com>

UL Overview Table

| Company Name | Category Name | Link to File |
|----------------------------|---|-------------------------------|
| DONGGUAN FINECABLES CO LTD | Appliance Wiring Material - Component | AVLV2.E343967 |
| DONGGUAN FINECABLES CO LTD | Appliance Wiring Material Certified for Canada - Component | AVLV8.E343967 |
| DONGGUAN FINECABLES CO LTD | Cable Assemblies and Fittings for Industrial Control and Signal Distribution | CYJV.E321413 |
| DONGGUAN FINECABLES CO LTD | Cable Assemblies and Fittings for Industrial Control and Signal Distribution - Component | CYJV2.E321413 |
| DONGGUAN FINECABLES CO LTD | Cable Assemblies and Fittings for Industrial Control and Signal Distribution Certified for Canada | CYJV7.E321413 |
| DONGGUAN FINECABLES CO LTD | Cable Assemblies and Fittings for Industrial Control and Signal Distribution Certified for Canada - Component | CYJV8.E321413 |
| DONGGUAN FINECABLES CO LTD | Communications Cable | DUZX.E466854 |
| DONGGUAN FINECABLES CO LTD | Communications Cable Certified for Canada | DUZX7.E466854 |
| DONGGUAN FINECABLES CO LTD | Connectors for Use in Data, Signal, Control and Power Applications - Component | ECBT2.E364453 |
| DONGGUAN FINECABLES CO LTD | Connectors for Use in Data, Signal, Control and Power Applications Certified for Canada - Component | ECBT8.E364453 |
| DONGGUAN FINECABLES CO LTD | Multi-point Interconnection Power Cable Assemblies for Industrial Machinery | PVVA.E496340 |
| DONGGUAN FINECABLES CO LTD | Multi- point Interconnection Power Cable Assemblies for Industrial Machinery Certified for Canada | PVVA7.E496340 |
| DONGGUAN FINECABLES CO LTD | Wiring Harnesses - Component | ZPFW2.E310634 |
| DONGGUAN FINECABLES CO LTD | Wiring Harnesses Certified for Canada - Component | ZPFW8.E310634 |
| FINECABLES INC | Connectors for Use in Data, Signal, Control and Power Applications - Component | ECBT2.E473386 |
| FINECABLES INC | Connectors for Use in Data, Signal, Control and Power Applications Certified for Canada - Component | ECBT8.E473386 |



CE marking is mandatory for certain product groups within the European Economic Area (EEA; the 28 member states of the EU plus EFTA countries Iceland, Norway, Switzerland and Liechtenstein, plus Turkey). The manufacturer of products made within the EEA and the importer of goods made in other countries must ensure that CE-marked goods conform to standards.

Finecables connectors below have been granted of CE EMC/LVD certification, comply with the Low Voltage Directive and the EMC Directive. For more details, please visit at <http://www.bst-test.com/index.aspx>

CE Overview Table

| Product Series | Certificates | Certificate No. |
|----------------|--------------|--------------------|
| M5 | CE-EMC | BST12110270Y-1EC-1 |
| M5 | CE-LVD | BST12110270Y-1SC-2 |
| M8 | CE-EMC | BTRE0708031298 |
| M8 | CE-LVD | BTRL0707310407 |
| M8 | CE-EMC | BST12110268Y-1EC-1 |
| M8 | CE-LVD | BST12110268Y-1SC-2 |
| M12 | CE-EMC | BTRE0706080858 |
| M12 | CE-LVD | BTRE0706071108 |
| 7/8" | CE-EMC | BST12110269Y-1EC-1 |
| 7/8" | CE-LVD | BST12110269Y-1SC-2 |
| M23 | CE-EMC | BST12060106Y-1EC-1 |
| M23 | CE-LVD | BST12060106Y-1ER-1 |
| M23 | CE-EMC | BST12060107Y-1EC-1 |
| M23 | CE-LVD | BST12060107Y-1SC-2 |
| RJ45 | CE-EMC | BST11070093Y-1EC-1 |
| RJ45 | CE-LVD | BST11070093Y-1SC-2 |
| Solenoid Valve | CE-EMC | BST10120464Y-1ER-1 |
| Solenoid Valve | CE-LVD | BST10120464Y-1SR-2 |
| Solenoid Valve | CE-EMC | BST10120465Y-1ER-1 |
| Solenoid Valve | CE-LVD | BST10120465Y-1SR-2 |
| Solenoid Valve | CE-EMC | BST10120466Y-1ER-1 |
| Solenoid Valve | CE-LVD | BST10120466Y-1SR-2 |

NMEA 2000 Cables & Connectors

For Marine & Vessels



About NMEA 2000 Standard

Finecables expands its product family specially targeted for the marine & vessel industry that features the NMEA 2000 standard.

The NMEA 2000 standard has been created to serve the public interest by facilitating interconnection and interchangeability of equipment digital data, minimizing misunderstanding and confusion between manufacturer's equipment, and being helpful to purchasers in their selection of equipment that should be compatible with each other.

One important design requirement has been to provide for mission critical data and network operations. This standard defines data formats, network protocol, and the minimum physical layer necessary for devices to interface. Single point-of-failure conditions could exist that are capable of disrupting network operation. For critical applications it may be necessary to employ fail-safe designs (e.g. dual networks, redundant cables and network interface circuits) to reduce the possibility of network failure.



Marine & Vessel Applications

For electrical systems, security systems, entertainment systems of marine vessels such as yachts, fishing boats, ferries, small boats.



Aimed at the requirements of a serial data communications network to inter-connect marine electronic equipment on vessels, Finecables has developed serial cable connectors and interconnects solutions.

By means of making full use of the NMEA 2000 standards and connection techniques, Finecables helps you streamline your cable connector systems, wire harness numbers as well as other connecting components, ending up with built-in or integrated connection solutions.

Whenever you build small boats, yachts, fishing boats, or cruises, let us know, because we can help you solve your data communication needs and space limits, but more importantly, the competitive built-in or integrated connection solutions with 30~50% installation time and cost are available at Finecables.

As a professional connector manufacturer that is concerned with safe and enjoyable boating activities, Finecables continues to attempt bridging the gap between mutually exclusive activities that naturally exist in the world of products and people, and offer opportunities for improving equipment capabilities.



Micro Series



Mini Series



Accessories

About NMEA 2000 Network Cables

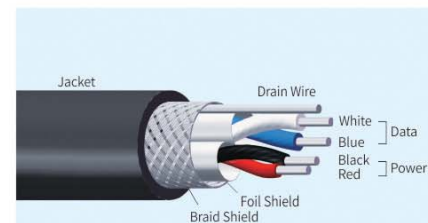
Three types of cable may be used in an NMEA 2000 network: Lite, Mid and Heavy.

The selection of cable type for various portions (including the drop cable) of the network depends on the number of Network Loads attached, the length of the network cables, and the location of the specific cable in the network.

Meanwhile, this cable have the characteristics of the type based on the reference of the ODVA (Open Device Net Vendor Association) specification.



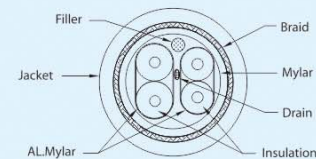
Cable Information



Micro

Recommendd Cables:

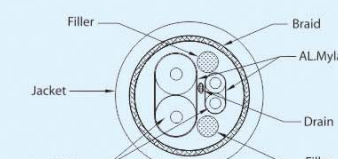
- (24#*1P+AL) + (22#*1P+AL) + Drain + Mylar + Braid
- (24#*1P+AL) + (22#*1P+AL) + Drain + AL + Braid
- (22#*1P+AL) + (18#*1P+AL) + Drain + AL + Braid



Mini

Recommendd Cables:

- (18#*1P+AL) + (15#*1P+AL) + Drain + Braid
- (18#*1P+AL) + (16#*1P+AL) + Drain + AL + Braid



* Customized cable specification can be available

Lite Cable

This cable has the electrical characteristics of the type used with industrial bus systems (e.g. DeviceNet™, Profibus™, and SDS). Lite cable used in NMEA 2000 applications shall have the following characteristics as specified in ODVA:

---Lite cable shall be five-wire constructed with two individually twisted-shielded pairs enclosed by an overall shield with a shield drain wire connecting all three shields. The shields may be foil or braid.

---The five wires shall be stranded-copper with each strand individually tinned to improve corrosion resistance.

---When the recommended wire colors shown in following Tables are not used the cable shall be permanently labeled to indicate the color code in use:

| NMAE 2000 Lite Cable | Minimum Requirements Highlighted |
|---------------------------------|--|
| Signal/Data Pair Specifications | Conductor Pair Min #24 AWG 5 Twists/foot (15 twists/meter) |
| Power Pair Specifications | Conductor Pair Min #22 AWG 5 Twists/foot (15 twists/meter) |
| Connector Compatibility | Only NMEA 2000 Approved Connector |

| Lite Cable Wire Color Codes | | |
|-----------------------------|--------|-------|
| Name | Pair | Color |
| Shield | Drain | Bare |
| NET-S | Power | Red |
| NET-C | Power | Black |
| NET-H | Signal | White |
| NET-L | Signal | Blue |

Mid Cable

This cable has electrical characteristics of the type used with industrial bus systems (e.g., DeviceNet™, Profibus™, and 177 SDS). Mid Cable used in NMEA 2000 applications shall have the following characteristics as specified in ODVA:

--Mid cable shall be five-wire constructed with two individually twisted-shielded pairs enclosed by an overall shield with a shield drain wire connecting all three shields. The shields may be foil or braid.

--The five wires shall be stranded-copper with each strand individually tinned to improve corrosion resistance.

--When the recommended wire colors shown in following Tables are not used the cable shall be permanently labeled to indicate the color code in use:

| NMAE 2000 Mid Cable | Minimum Requirements Highlighted |
|---------------------------|--|
| Data Pair Specifications | Conductor Pair Min #20 AWG 5 Twists/foot (15 twists/meter) |
| Power Pair Specifications | Conductor Pair Min #18 AWG 5 Twists/foot (15 twists/meter) |
| Connector Compatibility | Only NMEA 2000 Approved Connector |

| Mid Cable Wire Color Codes | | |
|----------------------------|--------|-------|
| Name | Pair | Color |
| Shield | Drain | Bare |
| NET-S | Power | Red |
| NET-C | Power | Black |
| NET-H | Signal | White |
| NET-L | Signal | Blue |

Heavy Cable

This cable has the electrical characteristics of the type used with industrial bus systems (e.g. DeviceNet™, Profibus™, and SDS). Heavy Cable used in NMEA 2000 applications has the following characteristics as specified in ODVA:

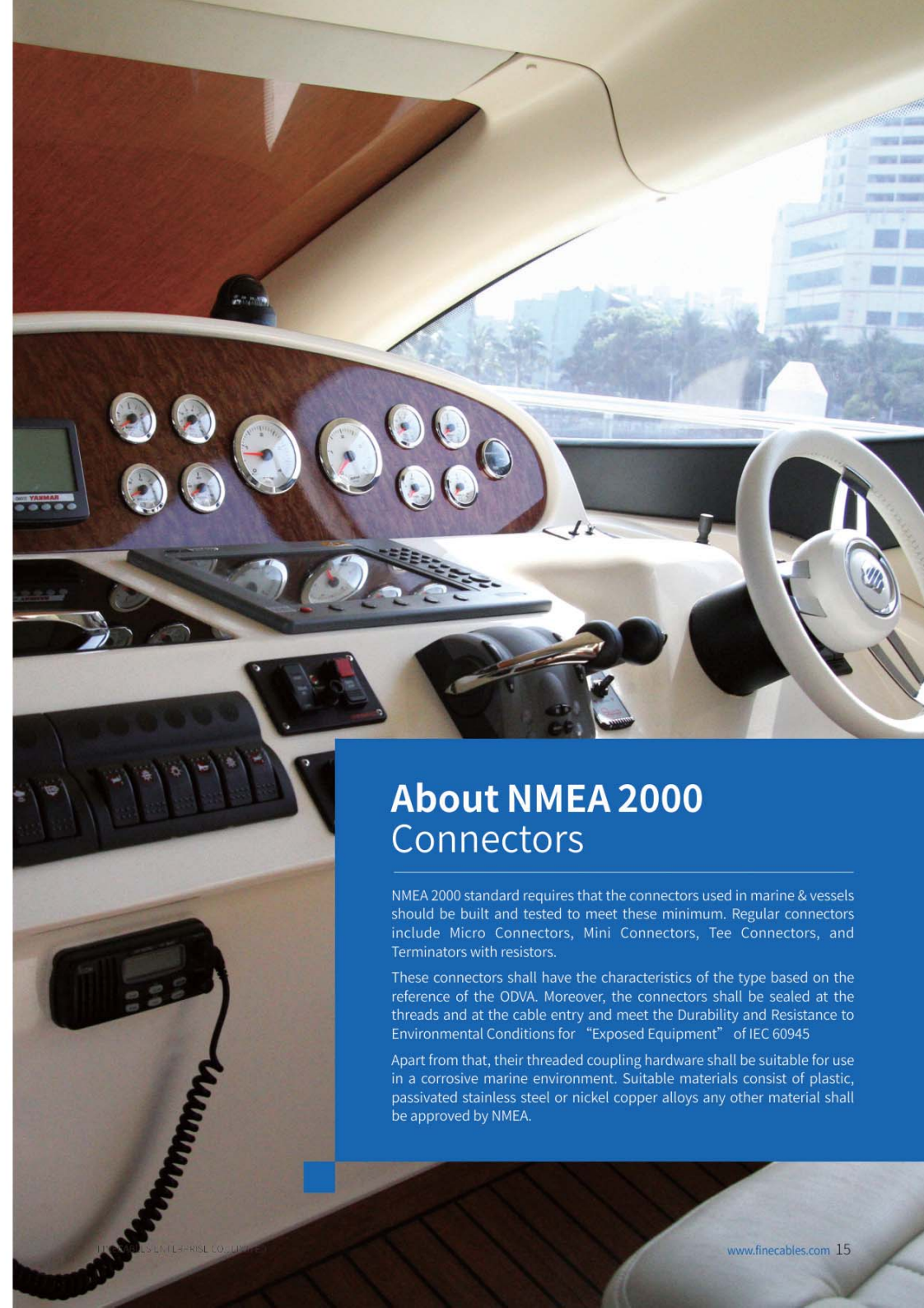
--Heavy cable shall be five-wire constructed with two individually twisted-shielded pairs enclosed by an overall shield with a shield drain wire connecting all three shields. The shields may be foil or braid.

--The five wires shall be stranded-copper with each strand individually tinned to improve corrosion resistance.

--When the recommended wire colors shown in following Tables are not used the cable shall be permanently labeled to indicate the color code in use:

| NMAE 2000 Heavy Cable | Minimum Requirements Highlighted |
|---------------------------|--|
| Data Pair Specifications | Conductor Pair Min #18 AWG 3 Twists/foot (10 twists/meter) |
| Power Pair Specifications | Conductor Pair Min #15 AWG 3 Twists/foot (10 twists/meter) |
| Connector Compatibility | Only NMEA 2000 Approved Connector |

| Heavy Cable Wire Color Codes | | |
|------------------------------|--------|-------|
| Name | Pair | Color |
| Shield | Drain | Bare |
| NET-S | Power | Red |
| NET-C | Power | Black |
| NET-H | Signal | White |
| NET-L | Signal | Blue |



About NMEA 2000 Connectors

NMEA 2000 standard requires that the connectors used in marine & vessels should be built and tested to meet these minimum. Regular connectors include Micro Connectors, Mini Connectors, Tee Connectors, and Terminators with resistors.

These connectors shall have the characteristics of the type based on the reference of the ODVA. Moreover, the connectors shall be sealed at the threads and at the cable entry and meet the Durability and Resistance to Environmental Conditions for "Exposed Equipment" of IEC 60945

Apart from that, their threaded coupling hardware shall be suitable for use in a corrosive marine environment. Suitable materials consist of plastic, passivated stainless steel or nickel copper alloys any other material shall be approved by NMEA.

Micro Connector

NMEA 2000 Micro (Micro-C) Connectors are always used with Lite and Mid cable.

- Male Micro Connector: 5 pin style contacts with M12 x 1.0mm male (outside) connection thread. Rotation required. To mate with coupling female socket.
- Female Micro Connector: 5 pin style female socket contacts with M12 X 1.0 mm female (inside) connection thread. Rotation required. To mate with coupling male plug.
- Below specifies Connector pin-out numbers and wire color designations for the “Micro-C” connectors.



Mini Connector

NMEA 2000 Mini (Mini-C) Connectors are always used with Mid and Heavy cable.

- Male Mini Connector: 5 pin style contacts with 7/8” male (outside) connection thread. Rotation required. To mate with coupling female socket.
- Female Mini Connector: 5 pin style female contacts with 7/8” (inside) connection thread. Rotation required. To mate with coupling male plug.
- Below specifies Connector pin-out numbers and wire color designations for the “Mini-C” connectors.



Tee Connectors

Network “Tee” connectors shall have all five wires from each connector wired in parallel.

Terminator With Resistors

Connectors used to mount termination resistors shall have the termination resistor connected between 262 NET-H and NET-L, no connections are allowed to the other three terminals. When used in exposed 263 locations the termination resistor connections shall meet the Durability and Resistance to Environmental 264 Conditions for “Exposed Equipment” of Section 8, including IEC 60945(4th Edition) Section 8, 265 including Section 8.8 (Rain).



Terminator With Resistor

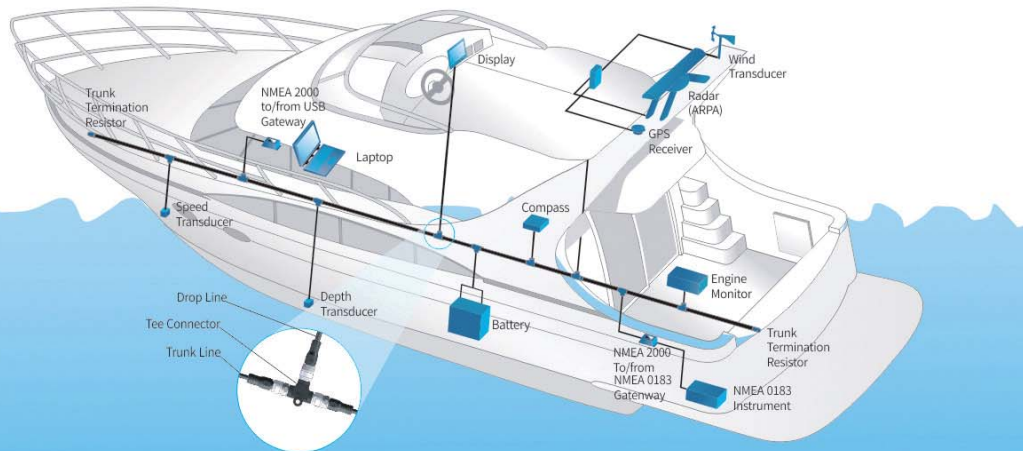
Connectors used to mount termination resistors have the termination resistor connected between NET-H and NET-L, no connections are allowed to the other three terminals. When used in exposed locations, the termination resistor connections meet the Durability and Resistance to Environmental Conditions for “Exposed Equipment” .



About Micro Mid and Mini NMEA 2000 Network Cable Systems

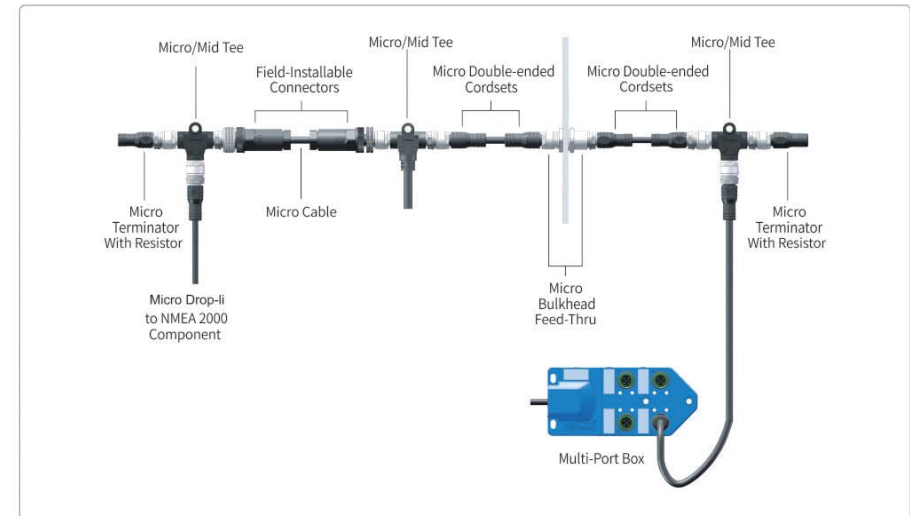
NMEA 2000 cabling systems include three types of connectors: Micro, Mid and Mini series connectors. Generally speaking, the Micro/Mid cable system is used for smaller equipment networks requiring no more than 4A rated currents, while Mini cable system is used for larger networks requiring no more than 8A but over 4A rated currents.

In other words, at Finecables, Micro/Mid connectors refers to M12 series, while, Mid connectors refers to 7/8" series.

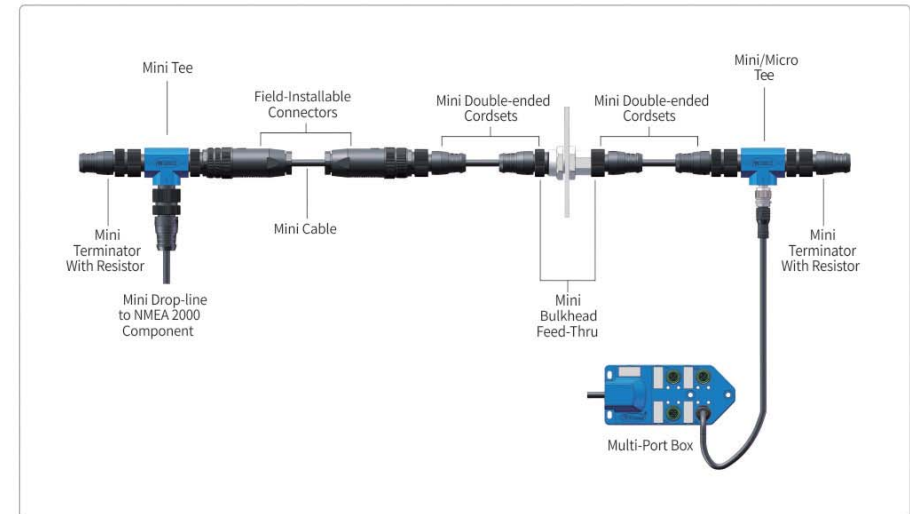


This illustration is for concept only and should not be used for planning or engineering purposes.

Micro/Mid NMEA 2000 Network Example (Rated Current: 4A)



Mini NMEA 2000 Network Example (Rated Current: 8A)

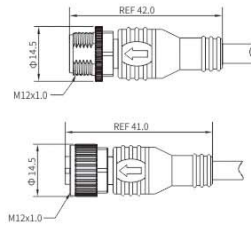


Micro Double-Ended Cordsets (Male-Female)



Micro male connector + light cable + Micro female connector

- Connector series: M12
- Gender: Male & Female
- Coding: A
- Locking type: Fix screw
- Mounting type: Straight
- Part No.: M-MA12-MF-AF05STXX
where XX denote cable length, Max. 20 meters



■ General information



| | | | |
|----------------------|---|------------------------|---------------------------------|
| Standard: | IEC 61076-2-101 | Seal / O-ring: | FKM |
| Ambient temperature: | -40°C ~ +80°C (fixed installation) -20°C ~ +80°C (flexible installation) | Connector contacts: | Brass with gold plated |
| Connector insert: | TPU; PA | Insulation resistance: | ≥ 100MΩ |
| Connector overmold: | TPU | Contact resistance: | ≤ 5mΩ |
| Coupling nut/screw: | Zinc alloy with nickel plated | Shielding: | Unavailable |
| | | IP rating: | IP67, IP69K in locked condition |

■ Electrical data & Mechanical data

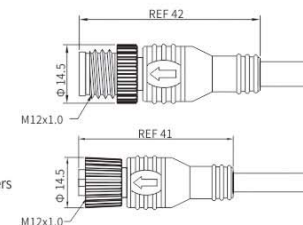
| Contacts | Available Coding | | Rated current | Voltage | | Cable ending & length |
|----------|------------------|-----------|---------------|---------|-----|------------------------------------|
| | A(Male) | A(Female) | | A/C | D/C | |
| 05 pins | | | 4A | 60V | 60V | Customized cable ending and length |

Micro Double-ended Cordsets (Male-Female Plastic Screw/Nut)



Micro male connector + light cable + Micro female connector

- Connector series: M12
- Gender: Male & Female
- Coding: A
- Locking type: Fix screw
- Mounting type: Straight
- Part No.: M-MA12-MF-AP05STXX
where XX denote cable length, Max. 20 meters



■ General information



| | | | |
|----------------------|---|------------------------|--------------------------|
| Standard: | IEC 61076-2-101 | Seal / O-ring: | FKM |
| Ambient temperature: | -40°C ~ +80°C (fixed installation) -20°C ~ +80°C (flexible installation) | Connector contacts: | Brass with gold plated |
| Connector insert: | TPU; PA | Insulation resistance: | ≥ 100MΩ |
| Connector overmold: | TPU | Contact resistance: | ≤ 5mΩ |
| Coupling nut: | PA+GF | Shielding: | Unavailable |
| | | IP rating: | IP67 in locked condition |

■ Electrical data & Mechanical data

| Contacts | Available Coding | | Rated current | Voltage | | Cable ending & length |
|----------|------------------|-----------|---------------|---------|-----|------------------------------------|
| | A(Male) | A(Female) | | A/C | D/C | |
| 05 pins | | | 4A | 60V | 60V | Customized cable ending and length |

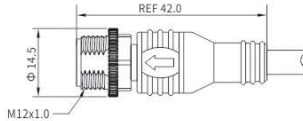
Micro Drop Line



Micro male connector + light cable

- Connector series: M12
- Gender: Male
- Coding: A
- Locking type: Fix screw
- Mounting type: Straight
- Part No.: M-MA12MAF05STXX

where XX denote cable length, Max. 20 meters



■ General information



| | | | |
|----------------------|---|------------------------|---------------------------------|
| Standard: | IEC 61076-2-101 | Coupling nut/screw: | Zinc alloy with nickel plated |
| Ambient temperature: | -40°C ~ +80°C (fixed installation) -20°C ~ +80°C (flexible installation) | Insulation resistance: | ≥ 100MΩ |
| Connector insert: | TPU | Contact resistance : | ≤ 5mΩ |
| Connector contacts: | Brass with gold plated | Shielding: | Unavailable |
| Connector overmold: | TPU | IP rating: | IP67, IP69K in locked condition |

■ Electrical data & Mechanical data

| Contacts | Available Coding A Coding | Rated current | Voltage | | Cable ending & length |
|----------|------------------------------|---------------|---------|-----|------------------------------------|
| | | | A/C | D/C | |
| 05 pins | | 4A | 60V | 60V | Customized cable ending and length |

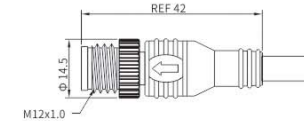
Micro Drop Line (Plastic Screw)



Micro male connector + light cable

- Connector series: M12
- Gender: Male
- Coding: A
- Locking type: Plastic fix screw
- Mounting type: Straight
- Part No.: M-MA12MAP05STXX

where XX denote cable length, Max. 20 meters



■ General information



| | | | |
|----------------------|---|------------------------|--------------------------|
| Standard: | IEC 61076-2-101 | Coupling/screw: | PA+GF |
| Ambient temperature: | -40°C ~ +80°C (fixed installation) -20°C ~ +80°C (flexible installation) | Insulation resistance: | ≥ 100MΩ |
| Connector insert: | TPU | Contact resistance : | ≤ 5mΩ |
| Connector contacts: | Brass with gold plated | Shielding: | Unavailable |
| Connector overmold: | TPU | IP rating: | IP67 in locked condition |

■ Electrical data & Mechanical data

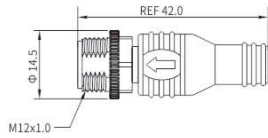
| Contacts | Available Coding A Coding | Rated current | Voltage | | Cable ending & length |
|----------|------------------------------|---------------|---------|-----|------------------------------------|
| | | | A/C | D/C | |
| 05 pins | | 4A | 60V | 60V | Customized cable ending and length |

Micro Male Terminator



Micro male connector, with 120Ω resistor

- Connector series: M12
- Gender: Male
- Coding: A
- Locking type: Fix screw
- Mounting type: Straight
- Part No.: M-MA12MAF05ST-T



■ General information



| | | | |
|----------------------|-------------------------------|------------------------|---------------------------|
| Standard: | IEC 61076-2-101 | Seal/O-ring: | FKM |
| Ambient temperature: | -25°C~+90°C | Insulation resistance: | ≥ 100MΩ |
| Connector insert: | TPU | Contact resistance: | ≤ 5mΩ |
| Connector contacts: | Brass with gold plated | Shielding: | Unavailable |
| Connector screw: | Zinc alloy with nickel plated | IP rating: | IP 67 in locked condition |
| Connector overmold: | TPU | | |

■ Electrical data & Mechanical data

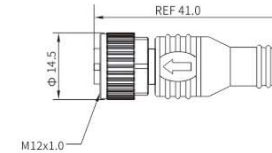
| Contacts | Available Coding A Coding | Rated current | Voltage | | Cable ending & length |
|----------|------------------------------|---------------|---------|-----|------------------------------------|
| | | | A/C | D/C | |
| 05 pins | | 4A | 60V | 60V | Customized cable ending and length |

Micro Female Terminator



Micro female connector, with 120Ω resistor

- Connector series: M12
- Gender: Female
- Coding: A
- Locking type: Fix screw
- Mounting type: Straight
- Part No.: M-MA12FAF05ST-T



■ General information



| | | | |
|----------------------|-------------------------------|------------------------|---------------------------|
| Standard: | IEC 61076-2-101 | Seal/O-ring: | FKM |
| Ambient temperature: | -25°C~+90°C | Insulation resistance: | ≥ 100MΩ |
| Connector insert: | TPU; PA | Contact resistance: | ≤ 5mΩ |
| Connector contacts: | Brass with gold plated | Shielding: | Unavailable |
| Connector screw: | Zinc alloy with nickel plated | IP rating: | IP 67 in locked condition |
| Connector overmold: | TPU | | |

■ Electrical data & Mechanical data

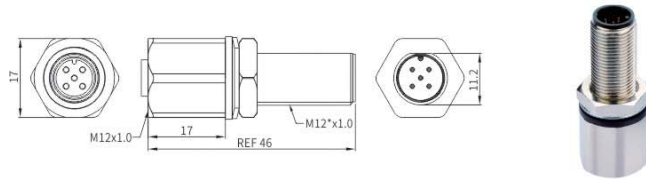
| Contacts | Available Coding A Coding | Rated current | Voltage | | Cable ending & length |
|----------|------------------------------|---------------|---------|-----|------------------------------------|
| | | | A/C | D/C | |
| 05 pins | | 4A | 60V | 60V | Customized cable ending and length |

Micro Bulkhead Connector (Double-ended)



Micro male to Micro female

- Connector series: M12
- Gender: Male & Female
- Coding: A
- Locking type: Fix screw
- Mounting type: Straight
- Part No.: M-MTF-008



■ General information



| | | | |
|----------------------|--------------------------|------------------------|---------------------------|
| Standard: | IEC 61076-2-101 | Seal / O-ring: | Epoxy resin/FKM |
| Ambient temperature: | -25 °C ~ +90 °C | Insulation resistance: | ≥ 100MΩ |
| Connector insert: | PA+GF / TPU | Contact resistance: | ≤ 5mΩ |
| Connector contacts: | Brass with gold plated | Shielding: | Unavailable |
| Connector nut/screw: | Brass with nickel plated | IP rating: | IP 67 in locked condition |

■ Electrical data & Mechanical data

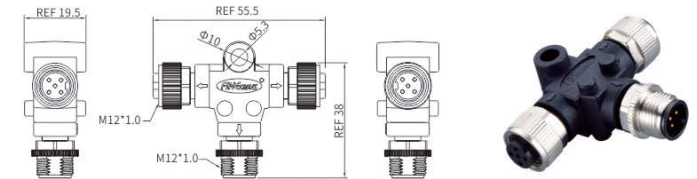
| Contacts | Available Coding | | Part No. | Rated current | Voltage | |
|----------|------------------|-----------|-----------|---------------|---------|-----|
| | A(Male) | A(Female) | | | A/C | D/C |
| 05 pins | | | M-MTF-008 | 4A | 60V | 60V |

Micro Tee Adapter



Micro male + Micro female to Micro female

- Connector series: M12
- Gender: Male & Female
- Coding: A
- Locking type: Fix screw
- Mounting type: T type
- Part No.: M-MTF-A05



■ General information



| | | | |
|----------------------|-------------------------------|------------------------|---------------------------|
| Ambient temperature: | -20°C ~ +80 °C | O-ring: | FKM |
| Connector insert: | TPU; PA | Insulation resistance: | ≥ 100MΩ |
| Connector contacts: | Brass with gold plated | Contact resistance: | ≤ 5mΩ |
| Connector screw/nut: | Zinc alloy with nickel plated | Shielding: | Unavailable |
| Overrmold: | TPU | IP rating: | IP 67 in locked condition |

■ Electrical data & Mechanical data

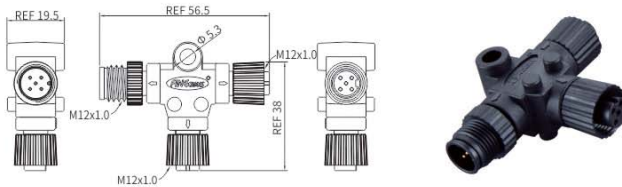
| Contacts | Available Coding | | Rated current | Voltage | |
|----------|------------------|-----------|---------------|---------|-----|
| | A(Male) | A(Female) | | A/C | D/C |
| 05 pins | | | 4A | 60V | 60V |

Micro Tee Adapter (Plastic Screw/Nut)



Micro male + Micro female to Micro female

- Connector series: M12
- Gender: Male & Female
- Coding: A
- Locking type: Plastic fix screw
- Mounting type: T type
- Part No.: M-MTP-A05



■ General information



| | | | |
|----------------------|------------------------|------------------------|---------------------------|
| Standard: | IEC 61076-2-101 | Seal/O-ring: | FKM |
| Ambient temperature: | -20 °C ~ +80 °C | Insulation resistance: | ≥ 100MΩ |
| Connector insert: | TPU; PA | Contact resistance: | ≤ 5mΩ |
| Connector contacts: | Brass with gold plated | Shielding: | Unavailable |
| Connector screw/nut: | PA+GF | IP rating: | IP 67 in locked condition |
| Connector overmold: | TPU | | |

■ Electrical data & Mechanical data

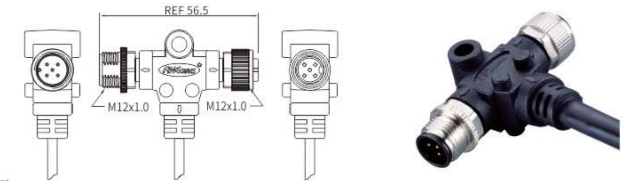
| Contacts | Available Coding | | Rated current | Voltage | |
|----------|------------------|-----------|---------------|---------|-----|
| | A(Male) | A(Female) | | A/C | D/C |
| 05 pins | | | 4A | 60V | 60V |

Micro Tee Cable



M12 T-splitter, male-female, molded cable

- Connector series: M12
- Gender: Male & Female
- Coding: A
- Locking type: Fix screw
- Mounting type: T type
- Part No.: M-MTC-MFAF05-XX
where XX denote cable length, Max. 20 meters



■ General information



| | | | |
|----------------------|-------------------------------|------------------------|---------------------------|
| Standard: | IEC 61076-2-101 | Seal/O-ring: | FKM |
| Ambient temperature: | -20 °C ~ +80 °C | Insulation resistance: | ≥ 100MΩ |
| Connector insert: | TPU; PA | Contact resistance: | ≤ 5mΩ |
| Connector contacts: | Brass with gold plated | Shielding: | Unavailable |
| Connector nut/screw: | Zinc alloy with nickel plated | IP rating: | IP 67 in locked condition |
| Connector overmold: | TPU | | |

■ Electrical data & Mechanical data

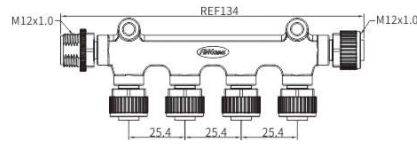
| Contacts | Available Coding | | Rated current | Voltage | | Cable ending & length |
|----------|------------------|-----------|---------------|---------|-----|------------------------------------|
| | A(Male) | A(Female) | | A/C | D/C | |
| 05 pins | | | 4A | 60V | 60V | Customized cable ending and length |

Micro 6T-Adapter



Micro male + Micro female to Micro female (x4)

- Connector series: M12
- Gender: Male & Female
- Coding: A
- Locking type: Fix screw
- Mounting type: T type
- Part No.: M-M6TF-A05



■ General information



| | | | |
|----------------------|-------------------------------|------------------------|---------------------------|
| Standard: | IEC 61076-2-101 | Seal/O-ring: | FKM |
| Ambient temperature: | -20°C~+80°C | Insulation resistance: | ≥ 100MΩ |
| Connector insert: | TPU; PA | Contact resistance: | ≤ 5mΩ |
| Connector contacts: | Brass with gold plated | Shielding: | Unavailable |
| Connector nut/screw: | Zinc alloy with nickel plated | IP rating: | IP 67 in locked condition |
| Connector overmold: | TPU | | |

■ Electrical data & Mechanical data

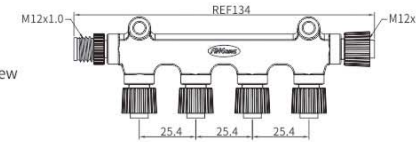
| Contacts | Available Coding | | Rated current | Voltage | |
|----------|------------------|-----------|---------------|---------|-----|
| | A(Male) | A(Female) | | A/C | D/C |
| 05 pins | | | 4A | 60V | 60V |

Micro 6T-Adapter (Plastic Screw/Nut)



Micro male + Micro female to Micro female (x4)

- Connector series: M12
- Gender: Male & Female
- Coding: A
- Locking type: Plastic fix screw
- Mounting type: T type
- Part No.: M-M6TP-A05



■ General information



| | | | |
|----------------------|------------------------|------------------------|---------------------------|
| Standard: | IEC 61076-2-101 | Seal/O-ring: | FKM |
| Ambient temperature: | -20 °C~ + 80°C | Insulation resistance: | ≥ 100MΩ |
| Connector insert: | TPU; PA | Contact resistance: | ≤ 5mΩ |
| Connector contacts: | Brass with gold plated | Shielding: | Unavailable |
| Connector nut/screw: | PA+GF | IP rating: | IP 67 in locked condition |
| Connector overmold: | TPU | | |

■ Electrical data & Mechanical data

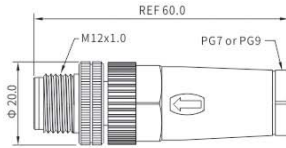
| Contacts | Available Coding | | Rated current | Voltage | |
|----------|------------------|-----------|---------------|---------|-----|
| | A(Male) | A(Female) | | A/C | D/C |
| 05 pins | | | 4A | 60V | 60V |

Micro Field Installable Connector



Micro field installable connector (male, straight)

- Connector series: M12
- Gender: Male
- Coding: A
- Locking type: Fix screw
- Mounting type: Straight
- Part No.: M-MB12MWAFF05ST-3



General information



| | | | |
|----------------------|-------------------------|------------------------|---------------------------|
| Standard: | IEC 61076-2-101 | Seal / O-ring: | FKM |
| Ambient temperature: | -25 °C ~ +90 °C | Insulation resistance: | ≥ 100MΩ |
| Connector insert: | TPU | Contact resistance : | ≤ 5mΩ |
| Connector contacts: | Brass with gold plated | Shielding: | Unavailable |
| Connector nut/screw: | Aluminum Alloy anodized | Suitable cable Dia: | PG7:4~6mm / PG9:6~8mm |
| Connector body: | PA+GF | IP rating: | IP 67 in locked condition |

Electrical data & Mechanical data

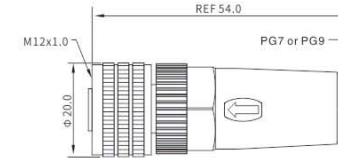
| Contacts | Available Coding A Coding | Rated current | Voltage | | Cable ending & length |
|----------|------------------------------|---------------|---------|-----|------------------------------------|
| | | | A/C | D/C | |
| 05 pins | | 4A | 60V | 60V | Customized cable ending and length |

Micro Field Installable Connector



Micro field installable connector (female, straight)

- Connector series: M12
- Gender: Female
- Coding: A
- Locking type: Fix screw
- Mounting type: Straight
- Part No.: M-MB12FWAFF05ST-3



General information



| | | | |
|----------------------|-------------------------|------------------------|---------------------------|
| Standard: | IEC 61076-2-101 | Seal / O-ring: | FKM |
| Ambient temperature: | -25 °C ~ +90 °C | Insulation resistance: | ≥ 100MΩ |
| Connector insert: | TPU | Contact resistance : | ≤ 5mΩ |
| Connector contacts: | Brass with gold plated | Shielding: | Unavailable |
| Connector nut/screw: | Aluminum Alloy anodized | Suitable cable Dia: | PG7:4~6mm / PG9:6~8mm |
| Connector body: | PA+GF | IP rating: | IP 67 in locked condition |

Electrical data & Mechanical data

| Contacts | Available Coding A Coding | Rated current | Voltage | | Cable ending & length |
|----------|------------------------------|---------------|---------|-----|------------------------------------|
| | | | A/C | D/C | |
| 05 pins | | 4A | 60V | 60V | Customized cable ending and length |

