



NMEA 2000® Marine Network Solution



ODS Electronics

Quality Products · Innovative Solution



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About ODS

ODS Electronics Co., Ltd., established in 2011, is a professional designer and manufacturer of waterproof connector solution for harsh and rugged environment conditions. Our mission is to commit to our client's success by providing a competitive and the highest quality connector solution. This spirit is also shown in our logo "ODS" which means Outdoor Solutions provider.

ODS has earned its reputation as a world-class supplier by consistently providing quality products, service excellence and aggressive delivery schedules. Each customer has a unique request and design, hence, flexibility is always our first concern. We help customers in solving troublesome logistics and design problems with excellent waterproof flexibility and competitive cost.

It is this understanding that makes ODS grow. As ODS has its own factories, so our model functions can standardize and customize components and make deliveries on design basis. With this model, ODS brings greater speed, agility, quality and efficiency to every customer.

With a combined production space of over 10,000m² in our factories in China, we are able to exercise complete control over production schedules. Through close management among offices and factories, ODS could serve customers in dynamic ways but still consistently deliver quality products that adhere to strict quality standards.



◀ ODS HQ | Taipei, Taiwan
 ▼ Factory | Kunshan, China

MICRO NMEA 2000® Network Example

- ✓ NMEA2000® Approved
- ✓ Easy to Install
- ✓ Robust Design and Construction
- ✓ Waterproof to IP67/68



About NMEA 2000®

The NMEA 2000® is a communication plug-and-play standard between electronic devices. It is based on CAN communication protocol and specifically designed for working with multiple marine equipment, including marine engines, on a single net.

The protocol is used to create a network of electronic devices - chiefly marine instruments - on a boat. Various instruments that meet the NMEA 2000

standard are connected to one central cable, known as a backbone. The backbone powers each instrument and relays data among all of the instruments on the network. This allows one display unit to show many different types of information. It also allows the instruments to work together, since they share data. NMEA 2000 is meant to be "plug and play" to allow devices made by different manufacturers to communicate with each other.



NMEA 2000® Marine Network Solution

From the highest quality products supporting numerous outdoor applications, ODS Electronics introduces you the most reliable and up-to-date connector and cabling solutions for the Marine Industry. **ODS' MARINE NETWORK SOLUTION** features connectors, cable assemblies and accessories in plastic and metal versions specifically designed to fit marine requirements.

As a certified NMEA 2000 member, this series follows the requirements of a serial data communications network to interconnect marine electronic equipment on vessels. Equipment designed to this system will have the ability to share data, including commands and status with other compatible equipment over a single channel.

ODS' connector products are made with superb quality and enhanced performance making it possible to simplify your system needs with cost-effective offer and wide array of waterproof connector choices.



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NMEA 2000® - Light Cable Micro (Metal Nut)

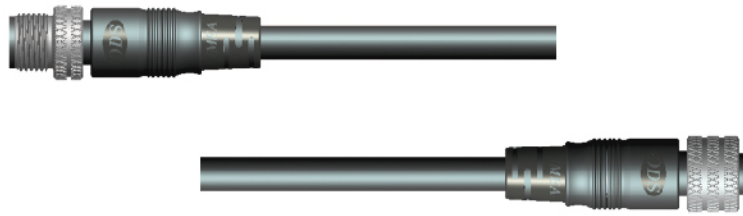


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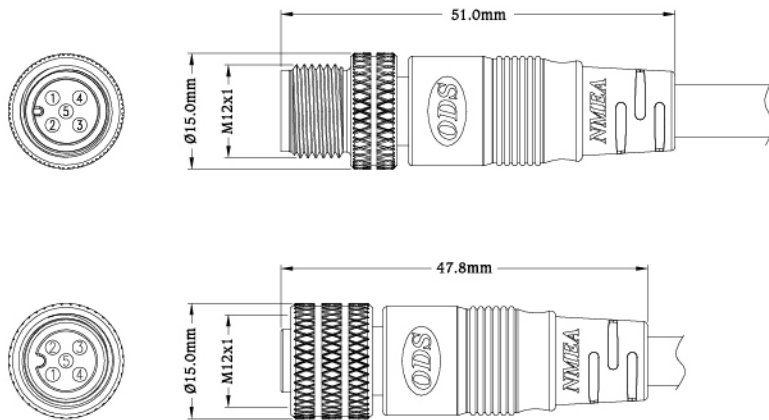
General Specifications

	RECEPTACLE / BULKHEAD	ADAPTORS	FIELD INSTALLABLE	CABLES
PIN CONFIGURATION	5 Contacts	5 Contacts	5 Contacts	5 Contacts
CONTACT HOUSING	Nylon + GF	Nylon + GF	Nylon + GF	Nylon + GF
CONTACTS	Copper Alloy, Gold Plated/ Copper Alloy, Gold 30u"	Copper Alloy, Gold Plated	Copper Alloy, Gold 30u"	Copper Alloy, Gold 30u"
COUPLING NUT	Brass, Nickel 120u"	Brass, Nickel 120u"	Brass, Nickel 120u"	Brass, Nickel 120u"
SHELL / OVERMOULD	Brass, Nickel 120u"	PP	PP	PP
RATED CURRENT	5.0 Amps	5.0 Amps	5.0 Amps	3.0 Amps
RATED VOLTAGE	60 V / 125 V	125 V	30 V AC / 36 V DC	125 V
PROTECTION CLASS	IEC IP68	IEC IP67	IEC IP67	IEC IP67
TEMPERATURE RANGE	-40°C ~ +105°C	-20°C ~ +80°C	-25°C ~ +85°C	-20°C ~ +80°C
CABLE SPEC	-	-	-	PVC Jacket/Sunlight Resistant/ Oil Resistant UL 1277 Oil Res II
CABLE DIAMETER	-	-	6.0 ~ 8.0 mm	-
APPROVAL	- / 		Pending	



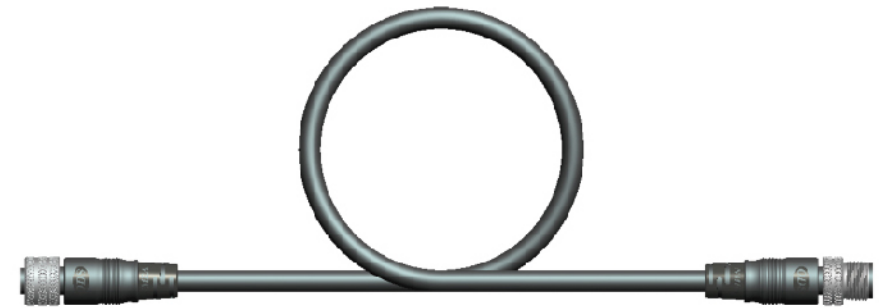
Single-Ended Cordsets

- Used with field-installable connectors
- Available in various cable lengths to match installation requirements



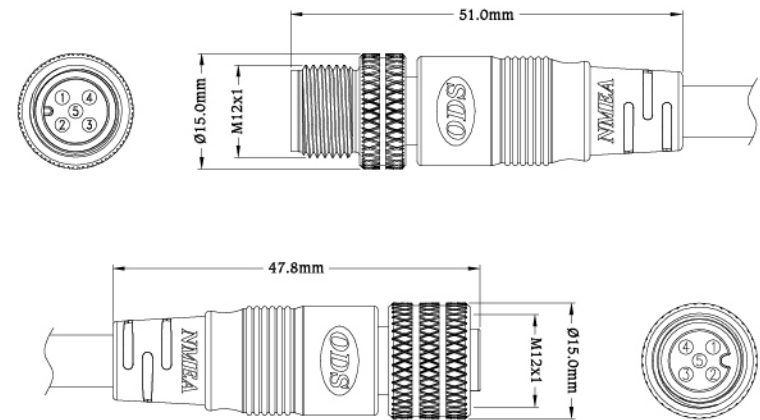
PART NUMBER	DESCRIPTION	APPROVAL
NAMBM05MCC-SLC7GXXX	Male Single-Ended Cordsets	
NAMBF05FCC-SLC7GXXX	Female Single-Ended Cordsets	

XXX - denotes length in Meters (i.e. 01M for 1M, 02M for 2M)



Double-Ended Cordsets

- Male and female cable ends for trunk or drop lines
- Available in various cable lengths to match installation requirements



PART NUMBER	DESCRIPTION	APPROVAL
NAD-MM1MF1000GXXX	Male-Female Double-Ended Cordsets	

XXX - denotes length in Meters (i.e. 01M for 1M, 02M for 2M)

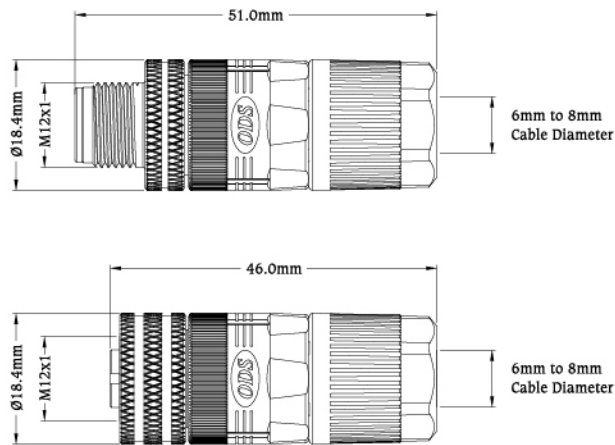
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Field Installable Connectors

- Used with single-ended cordsets, available in Male and Female connector versions
- Easily installed in the field thru screw-in termination

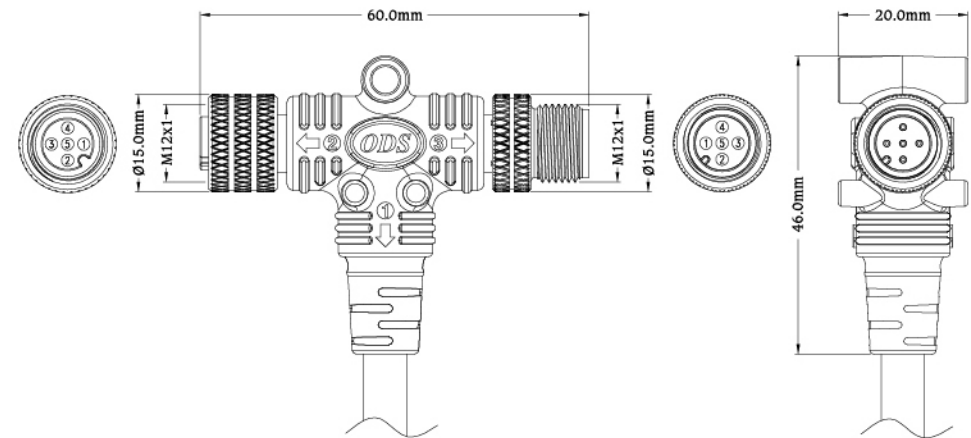


PART NUMBER	DESCRIPTION	APPROVAL
NBMDM05MCC-SLW7001	Male Field Installable Screw-In	Pending
NBMDF05FCC-SLW7001	Female Field Installable Screw-In	Pending



Powertap-Tee Cable

- Gives power to the NMEA 2000® network
- Male and Female on each end



PART NUMBER	DESCRIPTION	APPROVAL
NAP-MM1MF1000GXXX	Male-Female Powertap-Tee Cable	

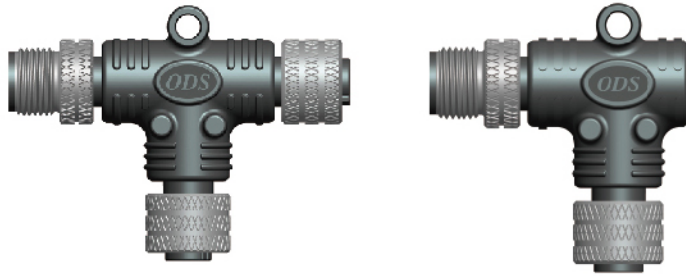
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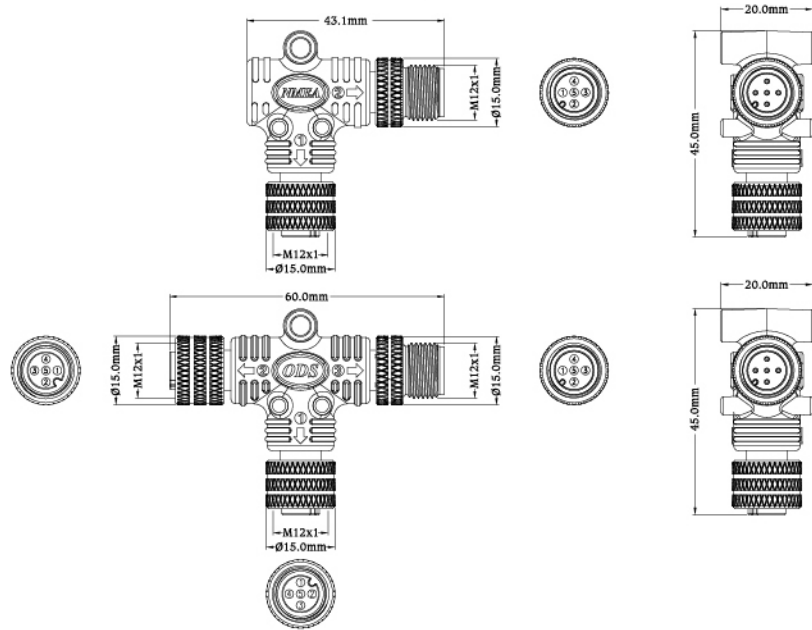
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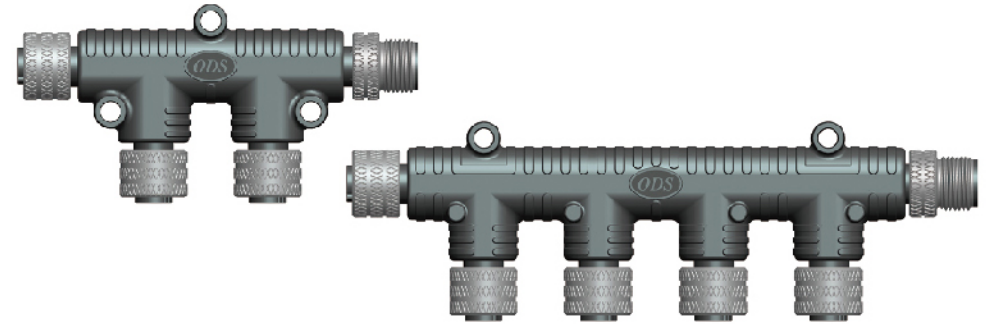


T-Adaptor / Elbow Adaptor

- T-adaptor allows for a drop connection
- Elbow adaptor easily connects to a tee or double-ended cordsets making 90° turns at the end or anywhere along the system

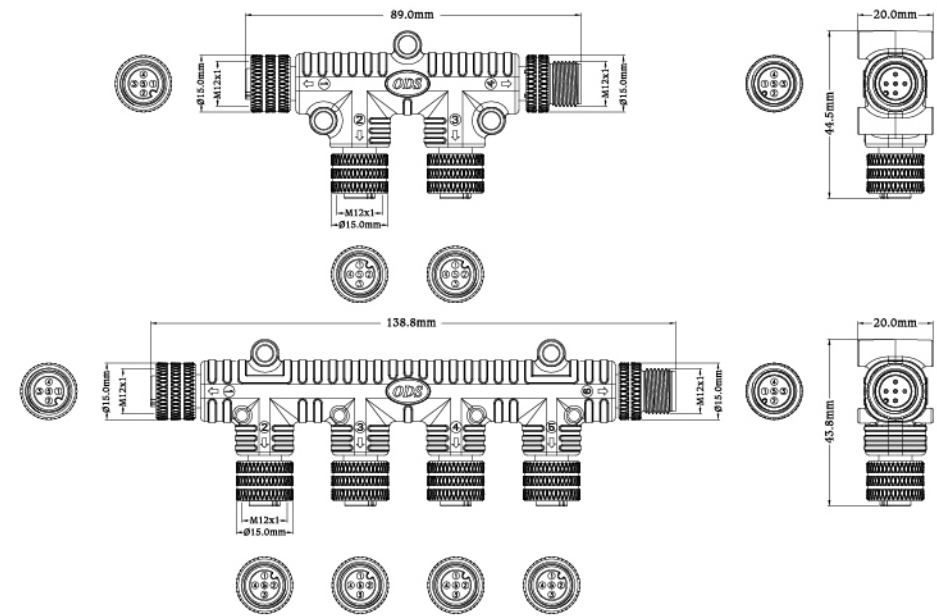


PART NUMBER	DESCRIPTION	APPROVAL
NAT-MM1MF1MF1001	Male-Female-Female T-Adaptor	
NAE-MM1MF1000001	Male-Female-Female Elbow Adaptor	

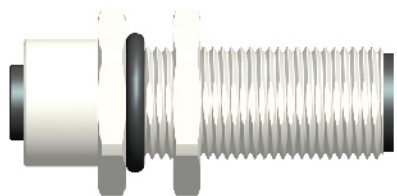


2-Way / 4-Way Adaptors

- Allow several drop cables to be consolidated and connected back to the trunk
- Provides neat connections along the network

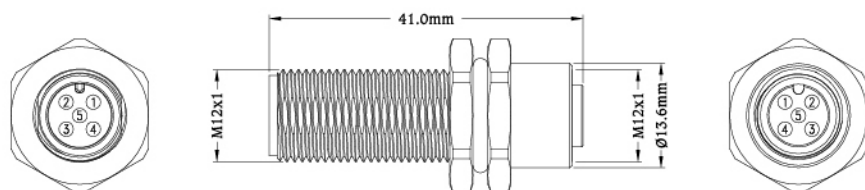



PART NUMBER	DESCRIPTION	APPROVAL
NBW-MM1MF1MF2001	2-Way Adaptor	
NAW-MM1MF1MF4001	4-Way Adaptor	



Bulkhead Feed-Thru

- Allows new connection points in a network through panels or bulkheads
- Creates positive alignment of connections

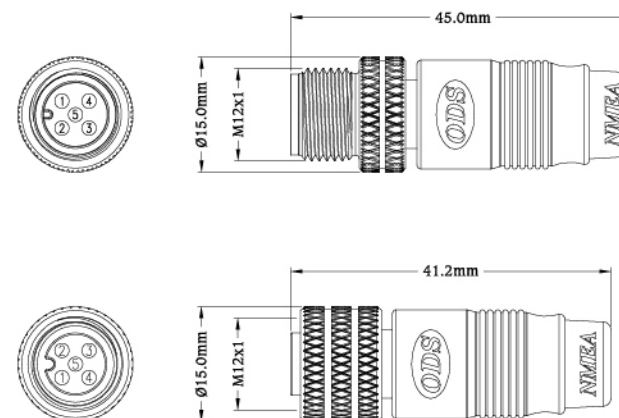




PART NUMBER	DESCRIPTION	APPROVAL
NMH-MM1MF1000001	Bulkhead Feed-Thru	



Termination Resistors

- Terminates both ends of a network
- Available in Male and Female connector versions



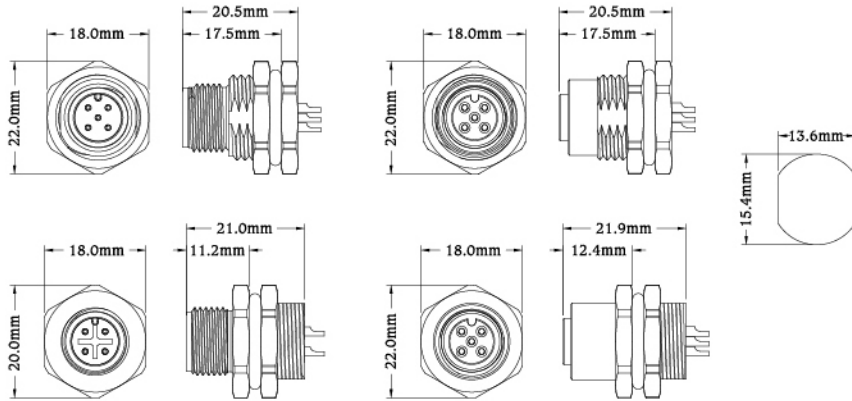
PART NUMBER	DESCRIPTION	APPROVAL
NAR-MM1000000001	Male Termination Resistor	
NAR-MF1000000001	Female Termination Resistor	

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Receptacles

- Provides panel-mount capability ideal for use in enclosures
- Available in Front or Rear Mount connections

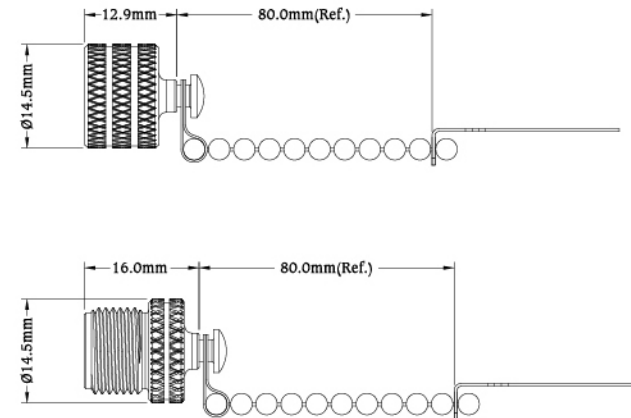


PART NUMBER	DESCRIPTION	APPROVAL
MMARM05MCC-SHS8001	Male Conn, Rear Fastened, Solder Contacts	N/A
MMAPM05MCC-SHS8001	Male Conn, Front Fastened, Solder Contacts	N/A
MMAPM05MCC-SHP8001	Male Conn, Front Fastened, PCB Contacts	N/A
MMARF05FCC-SHS8001	Female Conn, Rear Fastened, Solder Contacts	N/A
MMAPF05FCC-SHS8001	Female Conn, Front Fastened, Solder Contacts	N/A
MMAPF05FCC-SHP8001	Female Conn, Front Fastened, PCB Contacts	N/A



Waterproof Caps

- Available in Male and Female



PART NUMBER	DESCRIPTION	APPROVAL
CPMMPMCSM71	Waterproof Cap for Male Conn	N/A
CPMMPFCSM71	Waterproof Cap for Female Conn	N/A




NMEA 2000® - Light Cable Micro (Plastic Nut)



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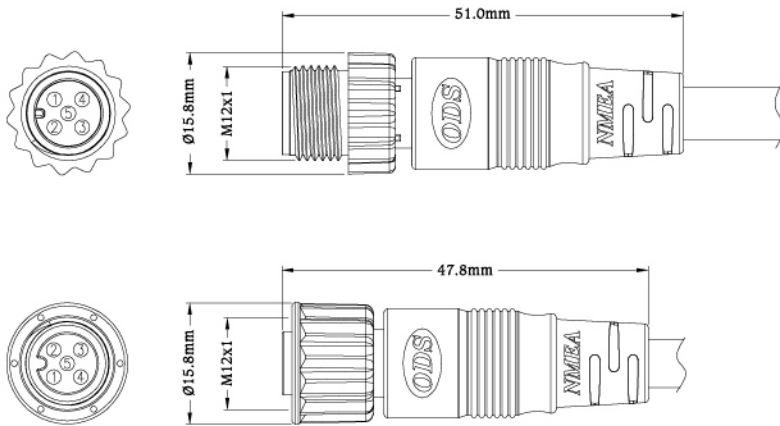
General Specifications

	RECEPTACLE	ADAPTORS	CABLES
PIN CONFIGURATION	5 Contacts	5 Contacts	5 Contacts
CONTACT HOUSING	Nylon + GF	Nylon + GF	Nylon + GF
CONTACTS	Copper Alloy, Gold Plated	Copper Alloy, Gold 30u"	Copper Alloy, Gold 30u"
CONNECTOR BODY / NUT	Nylon + GF	Nylon + GF	Nylon + GF
SHELL / OVERMOULD	-	PP	PP
RATED CURRENT	5.0 Amps	5.0 Amps	3.0 Amps
RATED VOLTAGE	60 V / 125 V	125 V	125 V
PROTECTION CLASS	IEC IP68	IEC IP67	IEC IP67
TEMPERATURE RANGE	-40°C ~ +105°C	-20°C ~ +80°C	-20°C ~ +80°C
CABLE SPEC	-	-	PVC Jacket / Sunlight Resistant / Oil Resistant UL 1277 Oil Res II
CABLE DIAMETER	-	-	-
APPROVAL	-		



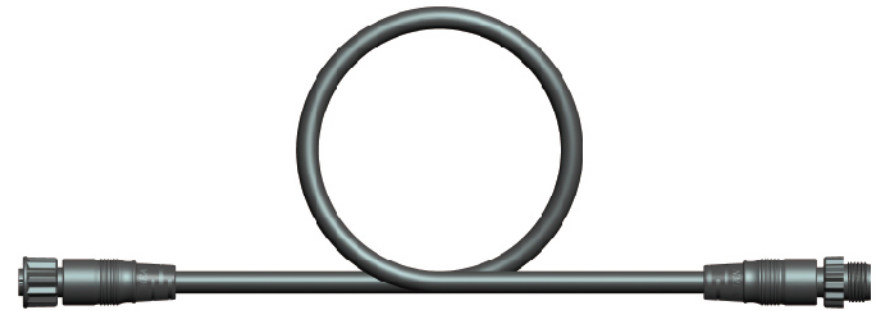
Single-Ended Cordsets

- Used with field-attachable connectors
- Available in various cable lengths to match installation requirements



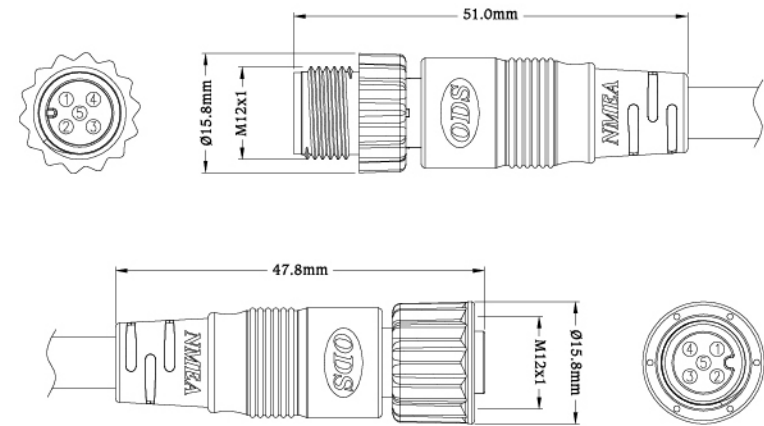
PART NUMBER	DESCRIPTION	APPROVAL
NPMBM05MCC-SLC7GXXX	Male Single-Ended Cordsets	
NPMBF05FCC-SLC7GXXX	Female Single-Ended Cordsets	

XXX - denotes length in Meters (i.e. 01M for 1M, 02M for 2M)



Double-Ended Cordsets

- Male and female cable ends for trunk or drop lines
- Available in various cable lengths to match installation requirements



PART NUMBER	DESCRIPTION	APPROVAL
NPD-MM1MF1000GXXX	Male-Female Double-Ended Cordsets	

XXX - denotes length in Meters (i.e. 01M for 1M, 02M for 2M)

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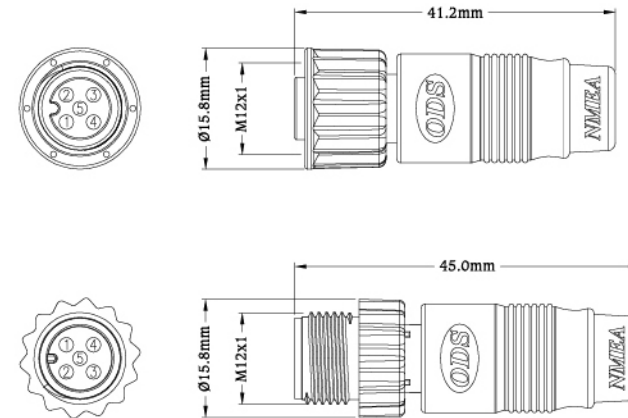
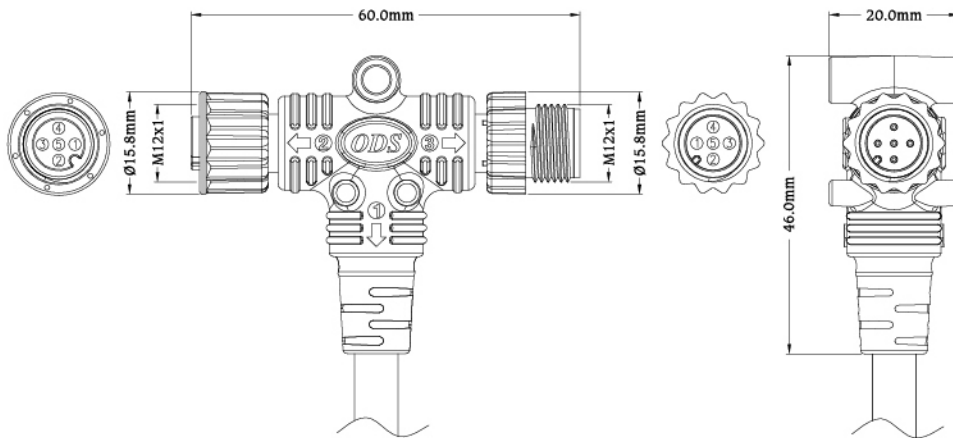


Powertap-Tee Cable

- Gives power to the NMEA 2000® network
- Male and Female on each end

Termination Resistors

- Terminates both ends of a network
- Available in Male and Female connector versions

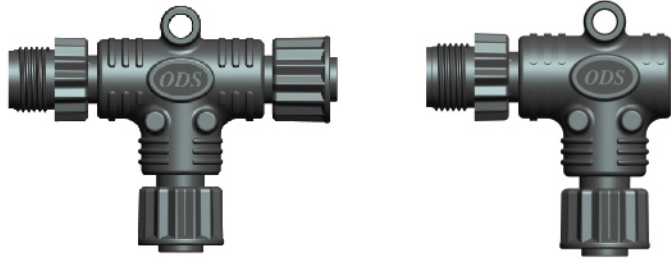


PART NUMBER	DESCRIPTION	APPROVAL
NPP-MM1MF1000GXXX	Male-Female Powertap-Tee Cable	

PART NUMBER	DESCRIPTION	APPROVAL
NPR-MM100000001	Male Termination Resistor	
NPR-MF100000001	Female Termination Resistor	

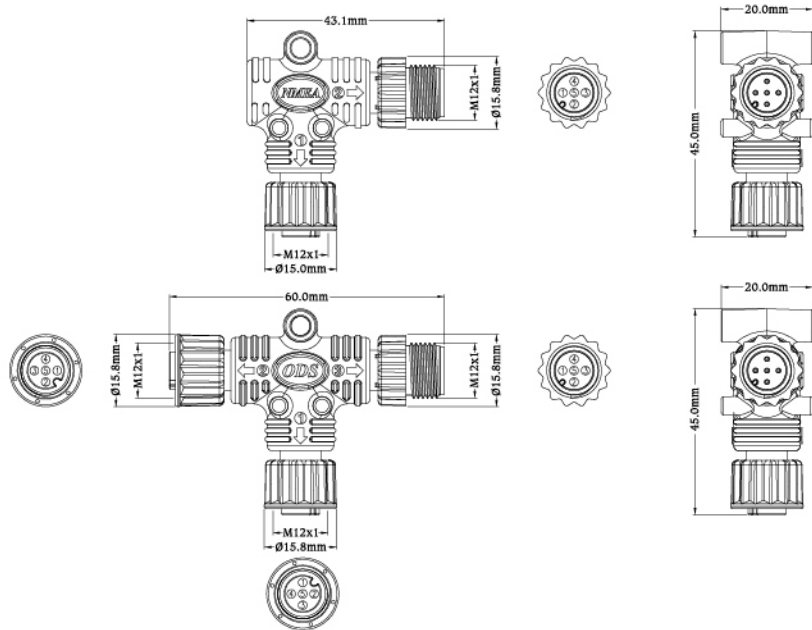
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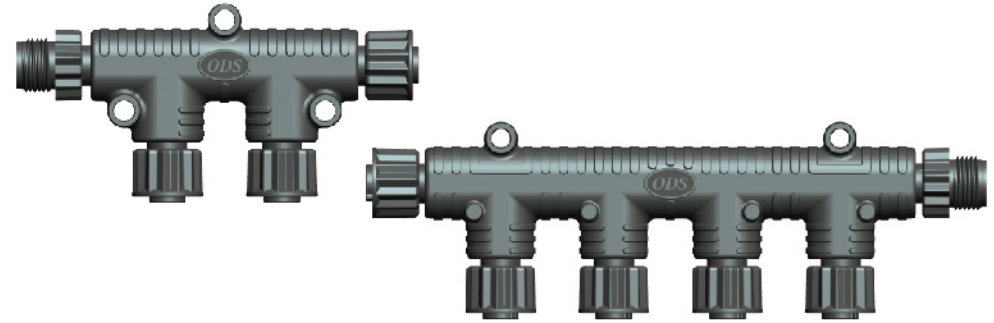


T-Adaptor / Elbow Adaptor

- T-adaptor allows for a drop connection
- Elbow adaptor easily connects to a tee or double-ended cordsets making 90° turns at the end or anywhere along the system

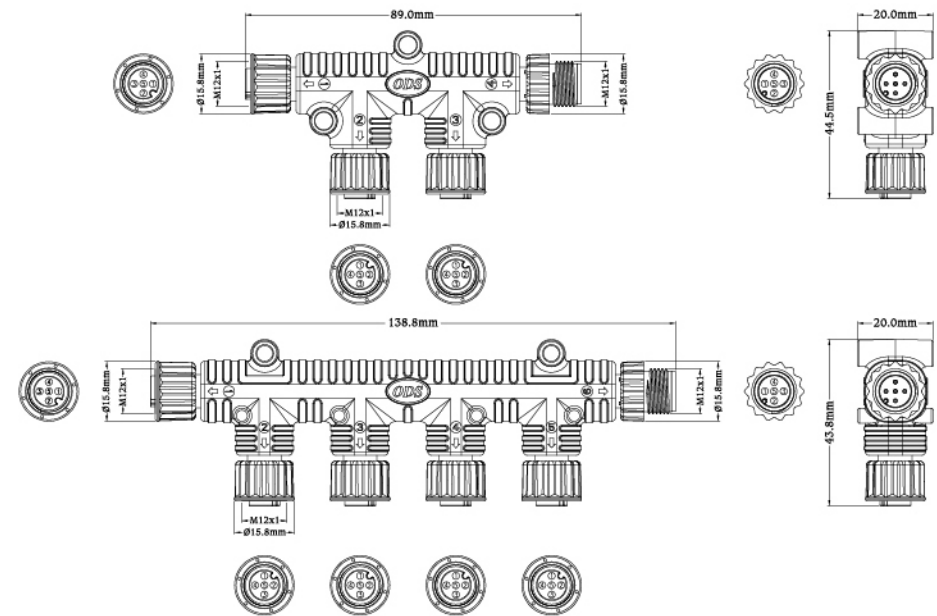


PART NUMBER	DESCRIPTION	APPROVAL
NPT-MM1MF1MF1001	Male-Female-Female T-Adaptor	
NPE-MM1MF1000001	Male-Female-Female Elbow Adaptor	



2-Way & 4-Way Adaptors

- Allow several drop cables to be consolidated and connected back to the trunk
- Provides neat connections along the network

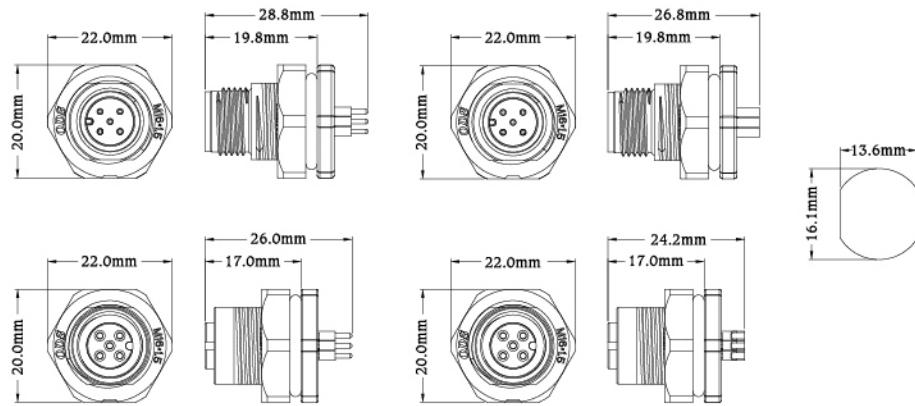


PART NUMBER	DESCRIPTION	APPROVAL
NRW-MM1MF1MF2001	2-Way Adaptor	Pending
NPW-MM1MF1MF4001	4-Way Adaptor	Pending



Receptacles

- Provides panel-mount capability ideal for use in enclosures
- Available in PCB or Solder contacts

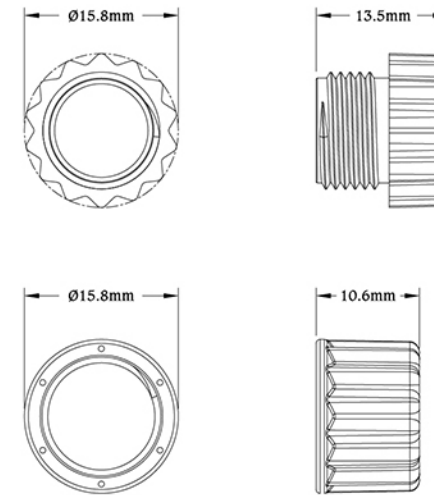


PART NUMBER	DESCRIPTION	APPROVAL
MPAPM05MCC-SHS8001	Male Conn, Front Fastened, Solder Contacts	N/A
MPAPM05MCC-SHP8001	Male Conn, Front Fastened, PCB Contacts	N/A
MPAPF05FCC-SHS8001	Female Conn, Front Fastened, Solder Contacts	N/A
MPAPF05FCC-SHP8001	Female Conn, Front Fastened, PCB Contacts	N/A



Waterproof Caps

- Available in Male and Female



PART NUMBER	DESCRIPTION	APPROVAL
CPMPPMCSN71	Waterproof Cap for Female Conn	N/A
CPMPCFCSN71	Waterproof Cap for Female Conn	N/A



Marine Electronic Devices Connector Solutions



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Circular Connectors



Circular Connectors

- 4 different sizes available (Mini, Standard, Middle & Large) to cater various pin counts from 2 to 23 contacts
- Options from 2A to 20A current pin rating
- Receptacles, Field Installation & Cable Molding available
- Different mating styles: Screw Thread, 2-Point Lock, 3-Point Lock
- Hybrid Connectors available – Power+Data in one
- 94V-0, (f1) for Receptacle & Field Installation
- IP67/IP68 Ingress Protection; UV Resistant
- Up to 1,000 mating cycles
- Configurable & customizable



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Network I/O Connectors



Network I/O Connectors

- Both Metal & Plastic connectors available
- Receptacles, Field Installation & Cable Molding available
- Different mating styles: Screw Thread & 3-Point Lock
- EIA/TIA CAT5e
- 94V-0, (f1) for Receptacle & Field Installation
- IP67/IP68 Ingress Protection
- Up to 1,000 mating cycles
- Configurable & customizable



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USB Connectors

USB Connectors

- Both Metal & Plastic connectors available
- Receptacles & Cable Molding available
- USB-A & USB-B Type available, USB 2.0
- PnP – Plug and Play
- 94V-0, (f1) for Receptacle & Field Installation
- IP67 Ingress Protection
- Up to 1,000 mating cycles
- Configurable & customizable



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RS232 Connectors

RS232 Connectors

- 9Pin, 15Pin, HD15Pin/26Pin available
- Receptacles & Cable Molding available
- Various connection types : Solder, PCB Straight & R/A
- IP67 Ingress Protection
- Up to 1,000 mating cycles
- Configurable & customizable



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HDMI Connectors

HDMI Connectors

- Receptacles & Cable Molding available
- 3-Point Lock Mating Style
- IP67 Ingress Protection
- Up to 1,000 mating cycles



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Cable Joiner

Cable Joiner

- 4 Pin (20A) available
- Higher pin count available upon request
- Conform to IEC 60998-2-1
- Connection thru Screw-In Terminals
- Smallest connector length in the market over competition
- Simple to use, bi-directional
- IP68 Ingress Protection



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