Go on a POWER TRIP with FURUNO
Go on a POWER TRIP with the most powerful MFD series available.

TZT16F - 16" ALL GLASS IPS DISPLAY
This lightning-fast 16" Multi Function Display features a sleek edge-to-edge glass display that delivers ultra-clear images from any angle. This MFD will not only make your helm functional but will also add style and ergonomics.

TZT19F - 19" ALL GLASS IPS DISPLAY
Experience navigation like never before with this stunning and powerful 19" Multi Function Display. Imagine having one or multiple units on your helm, giving you a conning station that makes it look like you’re the captain of a sci-fi spaceship!

TZT12F - 12" HYBRID CONTROL IPS DISPLAY
Hybrid controls enhance this 12" Multi Function Display, making it easy and intuitive to use under any sea conditions. Rest your hand on the RotoKey™ as you crash through the waves, and navigate easily to your charted destination.
It has all
THE POWER
you’ve wanted... and more.

- More powerful quad-core processor for lightning-fast response
- Built-in Dual Channel 1kW TruEcho CHIRP™ & CW Fish Finder
- High-power 2/3/5kW* TruEcho CHIRP™ Fish Finder network amp
- Power-packed 100W & 200W NXT Solid-State Doppler Radars
- Deep water Multi-Beam Sonar for up to 300m depth & 200m side scan
- Large 19” and 16” multi-touch IPS display for maximum brightness
- Hybrid 12” display with RotoKey™ and buttons for added accessibility
- Pin Code Lock - require a password to access your TZtouch3 upon startup

*Connect a 5kW or 10kW transducer using BT-5, power output is 3kW

THE BENCHMARK FOR RADAR

Furuno NXT Solid-State Doppler Radars pack power like never before. From the DRS4D-NXT dome to the new 200 Watt DRS25A-NXT open array, you will get dynamic features like Target Analyzer™, Fast Target Tracking™, Bird Mode, and Rain Mode.

HIGH-POWER TruEcho CHIRP™ FISH FINDER AMP

Introducing Deep Impact - DI-FFAMP, a new high-power TruEcho CHIRP™ Fish Finder amp designed specifically to work with NavNet TZtouch3. This 2kW or 3kW TruEcho CHIRP™ Fish Finder amp gets you down to the deepest waters to find your catch. You can even connect a 5kW or 10kW transducer! (BT-5 required)

PIN CODE LOCK

The new PIN CODE Lock feature allows you to require a four-digit password to be entered upon startup, keeping your data safe against theft.

DEEP WATER MULTI BEAM SONAR

Imagine real-time 120° port-starboard up to 200m (over 650 ft.) depth and viewing of the water column and seabed directly under the boat 300m (nearly 1,000 ft). The DFF-3D allows you to explore fishing spots and find fish in deep water faster than conventional single beam Fish Finders.
Because finding your happy place shouldn't be difficult.
That’s why we made it as **EASY TO USE** as your phone!

We listened to you and worked tirelessly to make TZtouch3 the easiest MFD on the market to use... bar none. With edge-swipe features and single tap menu options, you’re never more than a tap or swipe away from what you want to see or do. It’s that simple.

**LEFT EDGE SWIPE - NAVDATA**
Swipe from the left to bring up your NavData box. Access general Nav Data from the Data tab or App-specific data when on individual pages.

**DOWN EDGE SWIPE - QUICK PAGE**
Swipe down from the top to select your Quick Pages. Think of these as similar to your car stereo presets. Easily set your favorites with a long press.

**UP EDGE SWIPE - LAYERS**
Swipe up to view App Layers. Toggle commonly used items & layer them on your screen. Options change depending on which page is active.

**RIGHT EDGE SWIPE - SHORTCUT**
Swipe from the right of the screen to bring up the menu of often-used functions, such as Tracks, Position Entry, Tides, ARPA, Fuel, CZone, and more.

**12” HYBRID CONTROL DISPLAY**
Captains who have smaller boats know that when you are crashing through the waves, it can be difficult to get an accurate tap on the screen. That’s why we made our TZtouch3 12” MFD as a Hybrid Touch. You get the best of both worlds with a full multi-touch display and a handy, built-in keyboard that features a RotoKey, cursor pad and dedicated buttons.

3. RotoKey™
5. Cancel/Center
6. Cursor Pad
8. Power/Quick Access Page
When life throws a CURVE here’s how you stay on course.

TimeZero™ Technology Is Faster Than Ever Before

TZtouch3 incorporates a fast quad-core processor so you can scroll, pan, and zoom in/out completely smooth & seamlessly. Plus, you can navigate in a 3D environment, offering you a realistic perspective and an expanded view of the area around your boat. The 3D chart perspective is perfect for planning and navigating routes.
Here are all the FEATURES YOU NEED to make a good cruise great!

You will find them in every harbor around the world. Everyday people who refuse to be constrained by how far they can see. The ones who go all in, because of their love for being on the water. They’ve inspired us to build a Chart Plotter that is not inhibited by standard features. Rather, we’ve created a Chart Plotter with speed & performance that allows you to pursue what thrills you... on any course you choose.

MAPMEDIA VECTOR & RASTER CHART LIBRARY

Freely choose the charts that fit your individual needs. MapMedia brings an extensive library to your TZtouch3 and makes it easy to select raster, vector or fishing charts. C-MAP as well as “Datacore by Navionics” vector cartography are optional charts that can be easily unlocked. MapMedia cartography integrates cutting edge algorithms with high-resolution image processing techniques to deliver a fusion of digital navigation charts and satellite photography.

SATELLITE PHOTOFUSION™

Satellite photography is included in most MapMedia charts and accessed using PhotoFusion™. Land areas (zero depth) are completely opaque, displayed as satellite photos on the chart. As the depth increases, the satellite image is merged with the chart data to provide you with added detail on seabed areas in shallow water without losing vital chart information.

DEPTH SHADING

A depth color scale can be applied to both 2D and 3D vector and raster charts. Transparency levels can be adjusted, so that chart data is visible beneath the color shading. This feature allows you to view water depths at-a-glance with vibrant colors. No more searching for depth numbers, when you can easily set depths to your specified colors.
Welcome to your GO ANYWHERE command center.

NEVER LOSE WAYPOINTS, ROUTES OR SETTINGS AGAIN WITH TZ CLOUD

Create your routes at home using TZ Navigator, a web browser*, or TZ iBoat iOS App. Then you can retrieve them from the cloud & download to your TZtouch3. Also, create events on your MFD and retrieve them at home because the data is synchronized automatically & securely to My TimeZero. TZ Cloud also stores marks, routes, boundaries, photos, and catch data! (*Cloud.MyTimezero.com raster planning charts for US only)

TZ PC Software  TZ iBoat iPadOS App  TZtouch3  Cloud.MyTimezero.com
An intelligent CONNECTION between boat and captain.

When you’re out on the water, you want to be on top of your game. So, you train like the pros. You prep all of your equipment. And before you head out, you do your homework. The good news, TZtouch3 just made it all easier with TZ Cloud and the new TZ First Mate App.

**TZ FIRST MATE APP KEEPS TRACK OF YOUR CATCH & LOCATION**

You put in blood, sweat, and tears finding the perfect hot spot, and guess what, it paid off! Wouldn’t it be nice to make a note of what you caught and how big it was? Now your TZtouch3 display can do that when you drop an event mark. Choose the species, enter length & weight, and even take a picture with your phone. View & edit the marks on your smart devices with the TZ First Mate App, TZ PC Software, or TZ iBoat.

**NavNet VIEWER APP**

Conveniently view instruments as well as the Fish Finder on your smart devices over the Wireless LAN network. Essential nav data such as Depth, Temp, Wind, COG as well as Engine info are accessible from the palm of your hand.

**NavNet REMOTE APP**

Take full control of your TZtouch3 in a whole new way. The NavNet Remote app allows you to operate and view your system with your smart devices remotely.

**NavNet CONTROLLER APP**

Also available is the NavNet Controller App, which allows you to control your TZtouch3 with a scroll pad, cursor pad, and dedicated keys.
GO BOLDLY KNOWING THAT YOUR RADAR WILL GET YOU & YOUR FAMILY HOME SAFELY

When you’re serious about adventure, you will no doubt find yourself navigating at night, moving cautiously in the fog, and probably dodging the occasional squall. The good news is that you will have Furuno’s high-power Radar to guide you every step of the way. Both the NXT Solid-State Doppler and the X-Class Radars have you covered for watching storms with Rain Mode, monitoring hazardous targets with Target Analyzer™, Fast Target Tracking™, and even finding birds with Bird Mode.
More power means BETTER DETECTION of all the targets around you!

Are you ready to go on a Radar power trip? Nowhere else will you find Radar as powerful or with the amazing target detection of Furuno’s NXT and X-Class Radars. We juiced the power of our NXT Solid-State Doppler Radars to give you outstanding long-distance performance that matches their amazing close range ability.

**DUAL RANGE MODE**

Simultaneous scanning technology allows dual progressive scan to display & update two Radar pictures, both long & short range. Autonomous control over gain & anti-clutter can be performed on each Radar presentation. This can be used to have one screen with the gain set to locate birds and buoys, while you use the other Radar screen to navigate. (Not available with DRS4DL+)

**BIRD MODE**

Bird Mode works by automatically adjusting the gain & sea settings for optimal visibility.

**AIS TARGET TRACKING**

When connecting an FA-40/70/170 AIS or FM-4800/4850 to your TIZtouch3, AIS targets can be tracked & displayed on the Radar screen. The Automatic Identification System (AIS) improves safety during travel by sharing the status & position of your vessel with other AIS-equipped vessels nearby.

**TARGET ANALYZER™**

Target Analyzer™ function displays targets that are approaching your vessel & automatically changes color to help you identify potentially dangerous targets. Green echoes are targets that are stationary or are moving away from you, while red echoes are hazardous targets that are moving towards your vessel. Target Analyzer™ improves situational awareness and can increase safety by showing you which targets to watch. (Available with NXT Radars only.)
NavNet TZtouch3
Network/Products Lineup

**RADAR**
- Radar Sensor
  - DR54DL+/DR54D-NXT
  - DR56A/12A/25A NXT
  - DR56A/12A/25A X-Class

**FISH FINDER**
- External Fish Finders can also be connected to TZtouch3. You can select which one to use from the settings menu.
- Fish Finder
  - DFF1-UHD/DFF3
- Bottom Discrimination Fish Finder
  - BBDS1
- Multi Beam Sonar
  - DFF-3D
- TruEcho CHIRP™ 2/3kW Amp
  - DI-FFAMP

**AIS**
- AIS Receiver
  - FA-40
- Class-B AIS Transponder
  - FA-70
- Class-A AIS Transponder
  - FA-170

**WEATHER/PC PLOTTER**
- Network Weather Facsimile Receiver
  - FAX-30
- Network Satellite Weather and Radio Receiver
  - BBWX4*2

**OTHERS**
- Marine Entertainment System
  - Fusion APOLLO Series, etc.
- IP Camera
- Analog Camera
- Thermal Camera
- Digital Switching System

**CONVERTER**
- NMEA Data Converter
  - IF-NMEA2K2
- Analog NMEA Data Converter
  - IF-NMEA1

---

*1 Optionally connect a 5kW or 10kW transducer to DI-FFAMP using BT-5
*2 SiriusXM weather coverage is currently available only in U.S. and Canada. SiriusXM subscription required.
USB
USB
USB
USB
AUTOPILOT

AutoPilot NAVpilot-300
NAVpilot-711C

COMPASS

Integrated Heading Sensor
Satellite Compass
Satellite Compass

GPS

GPS/WAAS Receiver Antenna
GPS Navigator

SENSOR

Ultrasonic Weather Station
Depth/Speed/Temp Sensor

INSTRUMENT

Wind Transducer - Analog
Instrument

OPTION

Remote Control Unit MCU-004
Remote Control Unit MCU-002
Keyboard MCU-005
SD Card Unit SDU-001

Internal 1kW TruEcho CHIRP™ Fish Finder

Interface Connection Legend

Ethernet 100 Base-T Connection
CAN bus Can bus or NMEA2000 Connection
NMEA0183 Connection
Video Video Connection
Analog Analog Connection
USB USB Connection

*3 220WX available only in U.S. and Canada
*4 Requires IFNMEA-IF Data Converter.
We gave you something TO CHIRP about!

GO DEEPER WITH MORE POWER THAN YOU THOUGHT WAS POSSIBLE

You spoke. We listened. And now we delivered! TZtouch3 incorporates a powerful internal 1kW TruEcho CHIRP™ Fish Finder. For many, this is the perfect Fish Finder, but for some, they need even more. So, we proudly bring you Deep Impact (DI-FFAMP), a high-powered 2kW/3kW amplifier that connects to the internal TruEcho CHIRP™ Fish Finder. But if that’s not enough, Deep Impact allows you to connect a 5kW or 10kW transducer with the BT-5. Go big or go home!
We’re pushing fishing technology to its limits and it feels good.

Welcome to the future of high-powered, deep dropping, full-featured Fish Finders. We’re not talking about your daddy’s Fish Finder. We took our commercial fishing know-how and put it into TZtouch3, giving you capabilities that a recreational line of Fish Finders has never seen.

Reach unfathomable depths with Deep Impact!

FIND MORE FISH WITH TruEcho CHIRP™

The internal 1kW TruEcho CHIRP™ Fish Finder inside TZtouch3 is designed to operate across a wide range of frequencies utilizing a broadband transducer and delivers significant advantages to signal clarity & target definition. Due to the constant sweeping of frequencies, it is capable of gathering more & higher quality data than traditional Fish Finders.

DEEP IMPACT TruEcho CHIRP™ AMP

High-powered TruEcho CHIRP is available for TZtouch3 by interfacing the Deep Impact (DI-FFAMP) to the internal Fish Finder. Deep Impact boosts your power to a 2/3 kW CHIRP Fish Finder. High-powered TruEcho CHIRP ensures that your echoes come back strong & clear at every depth range, displaying fish targets and bottom structure with amazing clarity.

BOTTOM DISCRIMINATION DISPLAY*

Bottom Discrimination provides detailed information about knowing the make-up of the seabed & categorizing it into four different categories: Rocks, Gravel, Sand, and Mud. The make-up of the seabed can be tremendously helpful information when looking for fishing grounds, as well as for finding favorable anchoring spots.

*Feature works with certain transducers. Check to ensure your transducer is compatible.

ACCU-FISH™ FISH SIZE ANALYZER*

The ACCU-FISH™ algorithm analyzes echo returns in order to compute individual fish size. The algorithm is capable of calculating fish size ranging from 10 cm up to 199 cm (>4” to <78”) long. Fish depth can also be displayed.

In some instances, fish size indicated on the TZtouch3 may differ from its actual size. Please carefully read the operator’s manual before utilizing this feature.

ADDITIONAL FISH FINDER OPTIONS

In addition to the built-in Fish Finder, you can also connect the DFF3, BBDS1, OR DFF-3D via Ethernet.

NEW! 2kW/3kW CHIRP AMP
More power to see 120°

PORT-STARBOARD
giving you an edge over the competition.

Normal down-sounding Fish Finders have a beam angle of 40° or less. But with the DFF-3D Multi Beam Sonar, you see 120° port-starboard for 200m (650+ ft). Plus, with the power of the DFF-3D, you can see fish directly below the boat 300m (nearly 1,000 ft). When you match this with the Deep Impact TruEcho CHIRP™, you’ll have the ultimate fishing machine!

**USE DFF-3D WITH YOUR FISH FINDER**

This is a powerful combination that helps you get on the fish like never before. Use your standard Fish Finder on low-frequency to go deep (left side of the screen) and then use the DFF-3D for your high-frequency to see fish in the water column. With the 3D History and Triple Beam Modes, you can easily see which side of the boat the fish are located, so you know where to drop your line.

**EASILY SEE WHERE TO DROP LINES**

When you find fish, you can quickly drop a mark on your Chart Plotter for a return drift. Then looking at the DFF-3D’s Cross Section and Side Scan Modes (right side of the screen), you can easily determine which side of the boat the fish are on, how deep they are, and how far out from the boat they are swimming. It’s almost like you have a tracker attached to them!
Build the ultimate NAVIGATION SUITE customized to your specific needs.

The beauty of NavNet TZtouch3 is its scalability - systems can be as big or small as you need. Add, change or remove AIS, VHF, Compass, Weather and other sensors as needed to dial in your dashboard, whether fishing, cruising or sailing.

MARINE WEATHER FORECASTING
The weather tool is completely free & easy to use, giving you unlimited access to weather forecasts worldwide 24 hours a day provided by NavCenter. Select the coverage you want, what type of data you need and for what time period, then you simply download the data.

Also available on TZtouch3 is the BBWX4 SiriusXM Satellite Weather Receiver. Get up-to-date weather info/forecasting, plus play your favorite SiriusXM Satellite Radio channels. (US & Canada only)

FA-40 AND FA-70 AIS
The FA-40/70 AIS receives the vessel name, call sign, position, COG, SOG, and other useful information from surrounding vessels. The FA-70 is a Class-B+ AIS that transmits your vessel information at higher power & faster rates than typical Class B units for added awareness. SOTDMA guarantees an AIS time slot allocation, making you visible in congested waters.

FM-4800/4850 VHF/DSC/GPS/AIS/HAILER
The FM-4800/4850 is a marine VHF Radiotelephone with built-in Class D DSC, GPS Receiver, AIS Receiver, and Simplified Loud Hailer with intercom. Its built-in AIS Receiver can be used to overlay AIS targets on your TZtouch3 & the GPS receiver can be used for a backup.

SCX-20 SATELLITE COMPASS
The SCX-20 enhances the performance of onboard TZtouch3 sensors such as Radar, Chart Plotters, Fish Finders, Sonar, and Autopilot. The unprecedented quad antenna design of the SCX-20 makes it capable of calculating extremely accurate heading, pitch, roll, and heave information.
## Specifications

### NavNet TZtouch3 MFDs

<table>
<thead>
<tr>
<th></th>
<th>TZT12F</th>
<th>TZT16F</th>
<th>TZT19F</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DISPLAY UNIT</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Type</td>
<td>Color TFT multi-touch In-Plane Switching (IPS) LCD</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Screen Size</td>
<td>12.1” Wide</td>
<td>15.6” Wide</td>
<td>18.5” Wide</td>
</tr>
<tr>
<td>Screen Resolution</td>
<td>WXGA 1280 x 800</td>
<td>FHD 1920 x 1080</td>
<td>FHD 1920 x 1080</td>
</tr>
<tr>
<td>Screen Brightness</td>
<td>900 cd/m² (typical)</td>
<td>1000 cd/m² (typical)</td>
<td>900 cd/m² (typical)</td>
</tr>
<tr>
<td>Display Colors</td>
<td>16,770,000 colors (Chart Plotter), 64 colors (Radar/Fish Finder)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Language</td>
<td>Bulgarian, Chinese, Danish, English (USA/UK), Finnish, French, German, Greek, Italian, Japanese, Norwegian, Portuguese, Russian, Spanish, Swedish</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>GPS/WAAS</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Receiver Type</td>
<td>GPS: 72 channels, SBAS: 1 channel (C/A mode, WAAS)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Receiving Frequency</td>
<td>L1 (1575.42 MHz)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Accuracy</td>
<td>100 s (cold start)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Position Update Interval</td>
<td>10 m (GPS), 7 m (MSAS), 3 m (WAAS)</td>
<td>0.1 s (10Hz)</td>
<td></td>
</tr>
<tr>
<td><strong>CHART PLOTTER</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cartography</td>
<td>MapMedia 3D chart (C-MAP/Navionics/NOAA)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Memory Capacity</td>
<td>30,000 user points, 30,000 points for ship’s tracks, 200 planned routes (500 points per route)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alarms</td>
<td>Anchor Watch, XTE, Depth*, Speed, Sea Surface Temperature*, Trip Distance, Fuel Gauge*, Wind Alarm*, Boundary Alarm* (*external data required)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>RADAR</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Display Modes</td>
<td>Head-up*, North-up* *Heading input required</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Target Tracking</td>
<td>interval: 15 s, 30 s, 1 min, 3 mins, 6 mins, 15 mins, 30 mins and continuous 30 ARPA Targets</td>
<td>30 ARPA Targets</td>
<td></td>
</tr>
<tr>
<td>Radar Alarms</td>
<td>Guard Zone, CPA/TCPA, Trigger, Video, Azimuth, Heading Line</td>
<td>30 ARPA Targets</td>
<td></td>
</tr>
<tr>
<td><strong>FISH FINDER</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transmit Frequency</td>
<td>CW: 50/200kHz, CHIRP: 400kHz to 225kHz</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transducer</td>
<td>300/600 W or 1kW* *Matching box MB1100 required for some FURUNO transducers.</td>
<td>300/600 W or 1kW*</td>
<td></td>
</tr>
<tr>
<td>Display Range</td>
<td>2 to 1200 m, shift: 0 to 1200 m</td>
<td>2 to 1200 m, shift: 0 to 1200 m</td>
<td>2 to 1200 m, shift: 0 to 1200 m</td>
</tr>
<tr>
<td>Extension Mode</td>
<td>A-Scope, Auto (Fishing/Cruising), TridBloop™, Bottom Discrimination, TrutEcho CHIRP™</td>
<td>A-Scope, Auto (Fishing/Cruising), TridBloop™, Bottom Discrimination, TrutEcho CHIRP™</td>
<td>A-Scope, Auto (Fishing/Cruising), TridBloop™, Bottom Discrimination, TrutEcho CHIRP™</td>
</tr>
<tr>
<td>Picture Advance</td>
<td>8 steps: x4, x2, x1, 1/2, 1/4, 1/8, 1/16, stop</td>
<td>8 steps: x4, x2, x1, 1/2, 1/4, 1/8, 1/16, stop</td>
<td>8 steps: x4, x2, x1, 1/2, 1/4, 1/8, 1/16, stop</td>
</tr>
<tr>
<td>Fish Finder Alarms</td>
<td>School of fish, School of fish for bottom lock</td>
<td>School of fish, School of fish for bottom lock</td>
<td>School of fish, School of fish for bottom lock</td>
</tr>
</tbody>
</table>

### Multi Function Display (Tabletop Mount) TZT12F
- 5.6 kg / 12.3 lb

### Multi Function Display (Tabletop Mount) TZT16F
- 7.1 kg / 15.7 lb

### Multi Function Display (Tabletop Mount) TZT19F
- 9.2 kg / 20.3 lb

### Multi Function Display (Flush Mount) TZT12F
- 5.1 kg / 11.2 lb

### Multi Function Display (Flush Mount) TZT16F
- 6.7 kg / 14.7 lb

### Multi Function Display (Flush Mount) TZT19F
- 8.8 kg / 19.4 lb
NavNet TZtouch3 MFDs continued

<table>
<thead>
<tr>
<th>INTERFACE</th>
<th>TZT12F</th>
<th>TZT16F</th>
<th>TZT19F</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAN bus/NMEA2000</td>
<td>1 Port</td>
<td>1 Port</td>
<td>1 Port</td>
</tr>
<tr>
<td>Input</td>
<td>126992, 126993, 126996, 127250, 127251, 127257, 127488, 127501, 128259, 128267, 129025, 129026, 129029, 129333, 129554, 129793, 129794, 129801, 129802, 129808, 129809, 129810, 130306, 130310, 130311, 130312, 130313, 130314, 130316, 130577, 130578, 130817, 130818, 130820, 130822, 130823, 130826, 130827, 130880</td>
<td>1 Port</td>
<td>1 Port</td>
</tr>
<tr>
<td>Output</td>
<td>126992, 126993, 126996, 127250, 127251, 127257, 127258, 128259, 128267, 128275, 129025, 129026, 129029, 129033, 129283, 129284, 129285, 130306, 130310, 130311, 130312, 130313, 130314, 130316</td>
<td>1 Port</td>
<td>1 Port</td>
</tr>
<tr>
<td>NMEA0183</td>
<td>1 Serial Output Port</td>
<td>1 Port (100 BASE-TX)</td>
<td>1 Port (USB2.0) for touch monitor and control unit</td>
</tr>
<tr>
<td>USB</td>
<td>1 Port (USB2.0) for touch monitor and control unit</td>
<td>1 Port (USB2.0) for touch monitor and control unit</td>
<td>1 Port USB output</td>
</tr>
<tr>
<td>Video I/O</td>
<td>2 Ports (NTSC/PAL)</td>
<td>2 Ports (NTSC/PAL) and 1 port HDMI 1920 x 1080p or less (progressive only)</td>
<td>2 Ports (NTSC/PAL) and 1 port HDMI 1920 x 1080p or less (progressive only)</td>
</tr>
<tr>
<td>AUX I/O</td>
<td>2 Ports (Event Switch and External Power Switch) and 1 Port Buzzer Output</td>
<td>1 Micro SD Card Slot (Micro SDXC, rear), 2 Slots Card Unit: Model SDU-001 (option)</td>
<td>1 Micro SD Card Slot (Micro SDXC, rear), 2 Slots Card Unit: Model SDU-001 (option)</td>
</tr>
<tr>
<td>SD Card Slot</td>
<td>2 Ports (Event Switch and External Power Switch) and 1 Port Buzzer Output</td>
<td>1 Micro SD Card Slot (Micro SDXC, rear), 2 Slots Card Unit: Model SDU-001 (option)</td>
<td>1 Micro SD Card Slot (Micro SDXC, rear), 2 Slots Card Unit: Model SDU-001 (option)</td>
</tr>
<tr>
<td>Wireless LAN</td>
<td>IEEE802.11b/g/n, Transmit frequency: 2.432 to 2.462 GHz, 11dBm max</td>
<td>IEEE802.11b/g/n, Transmit frequency: 2.432 to 2.462 GHz, 11dBm max</td>
<td>IEEE802.11b/g/n, Transmit frequency: 2.432 to 2.462 GHz, 11dBm max</td>
</tr>
<tr>
<td>Transducer</td>
<td>1 Port</td>
<td>1 Port = DI-FFAMP</td>
<td>1 Port</td>
</tr>
<tr>
<td>ENVIRONMENT</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Temperature (IEC60945)</td>
<td>-10°C to +55°C</td>
<td>93% or less at +40°C</td>
<td></td>
</tr>
<tr>
<td>Relative Humidity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Waterproofing</td>
<td>IP56</td>
<td></td>
<td></td>
</tr>
<tr>
<td>POWER</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rectifier (option)</td>
<td>12-24 VDC</td>
<td>4.7 - 2.3 A</td>
<td>4.7 - 2.3 A</td>
</tr>
<tr>
<td>Rectifier (option)</td>
<td>4.7 - 2.3 A</td>
<td>4.7 - 2.3 A</td>
<td>4.7 - 2.3 A</td>
</tr>
<tr>
<td>Rectifier (option)</td>
<td></td>
<td>100/110/115/220/230 VAC, 1 phase, 50/60Hz</td>
<td></td>
</tr>
</tbody>
</table>

Multi Function Display (Flush Mount) TZT16F 5.9 kg 13.0 lb
Multi Function Display Flush Mount TZT16F Cutout Dimension

Multi Function Display (Flush Mount) TZT19F 7.8 kg 17.2 lb
Multi Function Display Flush Mount TZT19F Cutout Dimension

Multi Function Display (Flush Mount) TZT12F Cutout Dimension

NavNet TZtouch3 Cont.
### NavNet SERIES RADAR SENSOR

<table>
<thead>
<tr>
<th></th>
<th>DRS4DL+</th>
<th>DRS4D-NXT</th>
<th>DRS6A-NXT</th>
<th>DRS12A-NXT</th>
<th>DRS25A-NXT</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ANTENNA</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Type</td>
<td>ø480 mm Radome (19&quot;)</td>
<td>ø610 mm Radome (24&quot;)</td>
<td>ø1036 mm Open (3.5')</td>
<td>ø1036 mm Open (3.5')</td>
<td>ø1036 mm Open (3.5')</td>
</tr>
<tr>
<td>Beam Width</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Horizontal</td>
<td>5.2°</td>
<td>3.9° typical (-3 dB) Adjustable between 2° and 3.9°</td>
<td>2.3°/19°/13.5° (effective with RezBoost™ control)</td>
<td>2.3°/19°/13.5° (effective with RezBoost™ control)</td>
<td>2.3°/19°/13.5° (effective with RezBoost™ control)</td>
</tr>
<tr>
<td>Vertical</td>
<td>25°</td>
<td>25°</td>
<td>22°/22°/22°</td>
<td>22°/22°/22°</td>
<td>22°/22°/22°</td>
</tr>
<tr>
<td>Antenna Rotation Speed</td>
<td>24 rpm</td>
<td>24 rpm</td>
<td>24 rpm</td>
<td>24 rpm</td>
<td>24 rpm</td>
</tr>
<tr>
<td></td>
<td>24/36/48 rpm range coupled or 24 rpm fixed * In dual range mode, speed is limited to 24 rpm</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>RF TRANSEIVER</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Frequency</td>
<td>9410 ± 30 MHz</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pulsedlength &amp; PRR</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>S: 0.08 µs/360 Hz (0.0625 to 0.5 NM)</td>
<td>PON: 0.08 µs to 1.2 µs/700 Hz</td>
<td>PON: 0.04 µs to 2.0 µs/700 Hz to 2000 Hz</td>
<td>PON: 0.04 µs to 2.0 µs/700 Hz to 2000 Hz</td>
<td>PON: 0.04 µs to 2.0 µs/700 Hz to 2000 Hz</td>
<td></td>
</tr>
<tr>
<td>M: 0.3 µs/360 Hz (0.75 to 2 NM)</td>
<td>QON: 5 µs to 18 µs/1100 Hz</td>
<td>QON: 5 µs to 48 µs/700 Hz to 2000 Hz</td>
<td>QON: 5 µs to 48 µs/700 Hz to 2000 Hz</td>
<td>QON: 5 µs to 48 µs/700 Hz to 2000 Hz</td>
<td></td>
</tr>
<tr>
<td>L: 0.8 µs/360 Hz (5 to 36 NM)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Peak Output Power</strong></td>
<td>4 kW</td>
<td>Solid-state, 25 W</td>
<td>Solid-state, 25 W</td>
<td>Solid-state, 100 W</td>
<td>Solid-state, 200 W</td>
</tr>
<tr>
<td><strong>Range Scales</strong></td>
<td>0.0625 to 36* NM</td>
<td>0.0625 to 48* NM</td>
<td>0.0625 to 72* NM</td>
<td>0.0625 to 96* NM</td>
<td>0.0625 to 96* NM</td>
</tr>
<tr>
<td></td>
<td>* In dual range mode, range is limited to 12 NM</td>
<td>* In dual range mode, range is limited to 12 NM</td>
<td>* In dual range mode, range is limited to 12 NM</td>
<td>* In dual range mode, range is limited to 12 NM</td>
<td>* In dual range mode, range is limited to 12 NM</td>
</tr>
<tr>
<td><strong>ENVIRONMENT</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Temperature: -25°C to +55°C</td>
<td>Temperature: -25°C to +55°C</td>
<td>Temperature: -25°C to +55°C</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Waterproofing: IPX6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>POWER SUPPLY</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12-24 VDC, 2.1-10 A</td>
<td>12-24 VDC, 2.5-1.3 A</td>
<td>12/24 VDC, 9.5/10 A</td>
<td>12/24 VDC, 9.5/10 A</td>
<td>12/24 VDC, 9.5/10 A</td>
<td>12/24 VDC, 9.5/10 A</td>
</tr>
</tbody>
</table>

19" Radome Radar Sensor DRS4DL+  5.7kg  12.7 lb

24" Radome Radar Sensor DRS4D-NXT  7.3kg  16.1 lb
## NavNet SERIES RADAR SENSOR

<table>
<thead>
<tr>
<th></th>
<th>DRS6A X-Class</th>
<th>DRS12A X-Class</th>
<th>DRS25A X-Class</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ø1036 mm Open</td>
<td>2.3°/1.9°/1.35°</td>
<td>1.9°/1.5°</td>
<td>22°/22°/22°</td>
</tr>
<tr>
<td>Ø1255 mm Open</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ø1795 mm Open</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Temperature</td>
<td>24/36/48 rpm range coupled or 24 rpm fixed</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>24 VDC, 4 A</td>
<td>24 VDC, 4.5 A</td>
<td>24 VDC, 5.6 A</td>
</tr>
<tr>
<td></td>
<td>6 kW</td>
<td>12 kW</td>
<td>25 kW</td>
</tr>
<tr>
<td>Temperature</td>
<td>-25°C to +55°C</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Waterproofing</td>
<td>IP56</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>0.08 μs/3000 Hz (0.0625 to 0.75 NM)</td>
<td>0.15 μs/5000 Hz (1 to 1.5 NM)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>0.3 μs/1500 Hz (2 NM)</td>
<td>0.5 μs/1000 Hz (3 to 4 NM)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>0.8 μs/600 Hz (6 to 9 NM)</td>
<td>1.2 μs/600 Hz (12 to 64 NM)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1.2 μs/550 Hz (72 to 96 NM)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9410 ±30 MHz</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>0.0625 to 96 NM</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4-ø12 Fixing hole</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4-ø12 Fixing hole</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.5 ft Open Radar Sensor</td>
<td>20.0 kg 44.1 lb</td>
<td>21.0 kg 46.3 lb</td>
<td>22.0 kg 48.5 lb</td>
</tr>
<tr>
<td>4 ft Open Radar Sensor</td>
<td>21.0 kg 46.3 lb</td>
<td>23.0 kg 50.7 lb</td>
<td>24.0 kg 53.0 lb</td>
</tr>
<tr>
<td>6 ft Open Radar Sensor</td>
<td>23.0 kg 50.7 lb</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.5 ft Open Radar Sensor</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 ft Open Radar Sensor</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6 ft Open Radar Sensor</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
# NavNet Series Fish Finders

## Network Fish Finders

<table>
<thead>
<tr>
<th>TRANSCIEVER &amp; DISPLAY</th>
<th>DFF1-UHD</th>
<th>BBDS1</th>
<th>DFF3</th>
<th>DI-FFAMP</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Display Modes</strong></td>
<td>Single (High or Low frequency), Dual (Both High and Low frequencies), Bottom-lock, Bottom-Zoom, ACCU-FISH™, Bottom Discrimination, Marker Zoom, A-Scope</td>
<td>Single (50 or 200 kHz), Dual (50 and 200 kHz), Bottom-lock, Bottom-Zoom, ACCU-FISH™, Bottom Discrimination, Marker Zoom, A-scope</td>
<td>Single (High or Low frequency), Dual (High and Low frequency), Bottom-lock, Bottom-Zoom, ACCU-FISH™, Bottom Discrimination, Marker Zoom, A-scope</td>
<td>Single (High or Low frequency), Dual (Both High and Low frequencies), Bottom-lock, Bottom-Zoom, ACCU-FISH™, Bottom Discrimination, Marker Zoom, A-scope</td>
</tr>
<tr>
<td><strong>Frequency</strong></td>
<td>Dual frequency 50 ±20 &amp; 200 ±25 kHz</td>
<td>Dual frequency 50 and 200kHz</td>
<td>The synthesized transducer works with dual frequencies between 28 and 200 kHz</td>
<td>26.6 to 242 kHz</td>
</tr>
<tr>
<td><strong>Broadband (CHIRP)</strong></td>
<td>Available</td>
<td>N/A</td>
<td>N/A</td>
<td>Available 2 ch</td>
</tr>
<tr>
<td><strong>Range Scale</strong></td>
<td>Max. 1,200m</td>
<td>Max. 1,200m</td>
<td>Max. 3,000m</td>
<td>Max. 3,000m</td>
</tr>
<tr>
<td><strong>Output Power</strong></td>
<td>1kW</td>
<td>1kW</td>
<td>3kW</td>
<td>2kW/3kW</td>
</tr>
</tbody>
</table>

## Environment

| **Temperature**       | N/A | -15°C to +55°C |
| **Waterproofing**     | IP55 | IP20 |

## Power Supply

| **Power Supply**      | 12-24 VDC | 12-24 VDC |

| **Power Supply**      | 30 W, 2.8-1.4 A | 12 W, 1.1-0.4 A |
| **Power Supply**      | 30 W, 3.5 A | 43.1 W, 3.2-1.9 A |

## Transducers (Specify when ordering)

- **1 kW**
  - Broadband transducers by AIRMAR®
  - 62-65 kHz (low), 150-210 kHz (high)
  - CM265LH, B265LH (with temperature sensor)
  - CM275LH, B275LH

- **600 W**
  - 50/200 kHz:
    - 520-5PSD (Plastic, thru-hull), 520-5MSD (Bronze, thru-hull), 525-5PSWD (Plastic, transom), 525-5TID-MSD (Bronze, thru-hull with speed/temp sensor)
  - 1 kW (Optional Matching Box, MB1100 may be required)
  - 50/200 kHz:
    - 50/200-1T, 50/200-12M

- **1/2/3 kW**
  - 28F-8, 28BL-6HR, 28BL-12HR
  - 38BL-9HR, 38BL-15HR
  - 50B-9B, 50L-12HR, 50BL-24HR
  - 68F-9H, 68F-30H
  - 82B-35D
  - 88B-10, 88B-10T, 88F-126H
  - 100B-10R
  - 150B-12H
  - 200B-5S, 200B-8/8B, 200B-12H
  - 50/200 kHz:
    - 50/200-1T

- **2 kW Dual-Band CHIRP**
  - PM111LH, PM511LH, R109LH, R109LHW, R111LH

- **2/3 kW Dual-Band CHIRP**

- **2 kW Single-Band CW**
  - 28BL-6HR, 38BL-9HR, 50L-12HR, 82B-35R, 88B-10, 100B-8/8B

- **3 kW Single-Band CW**
  - 28BL-12HR, 38BL-15HR, 50BL-24HR, 68F-30H, 100B-10R, 150B-12H

- **5 kW Single-Band CW**
  - 28F-72**, 50F-70**

- **10 kW Single-Band CW**
  - 28F-72**, 50F-70**

*Rated power of these transducers is 5/10 kW, but actual output power from DI-FFAMP is 3 kW.
**Booster Box BT-5 is needed for these transducers.

---

**Note:** DI-FFAMP requires connection to the T2touch3 Internal Fish Finder.
### NETWORK MULTI BEAM SONAR DFF-3D

#### Display & Display
- **Display Mode**: Cross Section, Triple/Single Beam Sounder, Side Scan, 3D Sounder History
- **Frequency**: 165 kHz
- **Beam Angle**: 60° Port/Stbd, 120° total
- **Detection Range**:
  - 200 m* (Side beam best performance)
  - 300 m* (Main beam directly under boat)
- **Range Scale**: 5-1200m

#### Interface
- **LAN**: 1 port, Ethernet 10/100Base-TX
- **External KP**: 1 port (optional external KP kit required)

#### Environment
- **Temperature**: -15°C to +55°C
- **Waterproofing**: IP55

#### Power Supply
- **Transducer**: 12-24 VDC, 1.4-0.7 A

#### Transducer
- 165T-B54 or 165T-SS54 (thru-hull mount), or 165T-TM54 (transom mount)
- Combo Transducers: 165T-50/200-SS260 (thru-hull mount), 165T-265LH-PM488 (pocket mount), or 165T-50/200-TM260 (transom mount)

### AIS RECEIVER FA-40

<table>
<thead>
<tr>
<th>Standards</th>
<th>FA-40: Receiver Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>IEC 60945 Ed.4</td>
<td>156.025 to 162.025 MHz</td>
</tr>
<tr>
<td>IMO MSC.1371-5</td>
<td>5W or 1W(SOTDMA), 2W(CSTDMA)</td>
</tr>
<tr>
<td>ITU-R M.1371-5</td>
<td>25 kHz</td>
</tr>
<tr>
<td>EN 301 843-1 V2.2.1</td>
<td>1575.42 MHz</td>
</tr>
<tr>
<td>C/A code</td>
<td>C/A code</td>
</tr>
<tr>
<td>Position Accuracy</td>
<td>13 m (2 drms, HDOP &lt;= 4)</td>
</tr>
</tbody>
</table>

#### Interface
- **NMEA0183 Input**: ACA, ACK, AIQ, DTM, GBS, GGA, GLL, GNS, HDT, ODM, RMC, SSD, THS, VBB, VSD, VTD
- **Output**: ABK, ACA, ACS, ALR, GGA, GLL, RMC, SSD, TXT, VDM, VDO, VFR, VSD, VTD
- **NMEA2000 Input**: 059392, 059904, 060160, 060416, 060928, 065240, 126208, 127250
- **Output**: 059392, 059904, 060928, 126208, 126464, 126992, 126993, 126996, 126998, 127258, 129025, 129026, 129029, 129038, 129039, 129040, 129041, 129042, 129043, 129792, 129793, 129794, 129795, 129796, 129797, 129798, 129800, 129801, 129802, 129803, 129804, 129805, 129806, 129807, 129809, 129810, 129811, 129812, 129813

#### Environment
- **Temperature**: Antenna Unit: -25°C to +70°C
- **Waterproofing**: Antenna Unit: IP56

#### Power Supply
- **Transponder Unit (FA30: Receiver Unit)**: 12-24 VDC, 1.4-0.7 A
- **Display Unit**: **-**

### AIS RECEIVER FA-70

<table>
<thead>
<tr>
<th>Standards</th>
<th>FA40: Receiver Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>IEC 60945 Ed.4</td>
<td>156.025 to 162.025 MHz</td>
</tr>
<tr>
<td>IMO MSC.1371-5</td>
<td>5W or 1W(SOTDMA), 2W(CSTDMA)</td>
</tr>
<tr>
<td>ITU-R M.1371-5</td>
<td>25 kHz</td>
</tr>
<tr>
<td>EN 301 843-1 V2.2.1</td>
<td>1575.42 MHz</td>
</tr>
<tr>
<td>C/A code</td>
<td>C/A code</td>
</tr>
<tr>
<td>Position Accuracy</td>
<td>13 m (2 drms, HDOP &lt;= 4)</td>
</tr>
</tbody>
</table>

#### Interface
- **NMEA0183 Input**: ACA, ACK, AIQ, DTM, GBS, GGA, GLL, GNS, HDT, ODM, RMC, SSD, THS, VBB, VSD, VTD
- **Output**: ABK, ACA, ACS, ALR, GGA, GLL, RMC, SSD, TXT, VDM, VDO, VER, VSD, VTD
- **NMEA2000 Input**: 059392, 059904, 060160, 060416, 060928, 065240, 126208, 127250
- **Output**: 059392, 059904, 060928, 126208, 126464, 126992, 126993, 126996, 126998, 127258, 129025, 129026, 129029, 129038, 129039, 129040, 129041, 129042, 129043, 129792, 129793, 129794, 129795, 129796, 129797, 129798, 129800, 129801, 129802, 129803, 129804, 129805, 129806, 129807, 129809, 129810, 129811, 129812, 129813

#### Environment
- **Temperature**: Antenna Unit: -25°C to +70°C
- **Waterproofing**: Antenna Unit: IP56

#### Power Supply
- **Transponder Unit (FA30: Receiver Unit)**: 12-24 VDC, 1.4-0.7 A
- **Display Unit**: **-**

### AIS Receiver & Transponder

- **FA-40 AIS Receiver**: 0.45 kg, 0.99 lb
- **FA-70 AIS Transponder**: 0.5 kg, 1.10 lb

---

**NavNet Series Multi Beam Sonar**

- **NavNet Series Multi Beam Sonar DFF-3D**
  - 3.0 kg, 6.6 lb

**NavNet Series AIS Receiver & Transponder**

- **FA-40 AIS Receiver**
  - 0.45 kg, 0.99 lb
- **FA-70 AIS Transponder**
  - 0.5 kg, 1.10 lb