Go on a **POWER TRIP** with **FURUNO**

NAVnet TZtouch3

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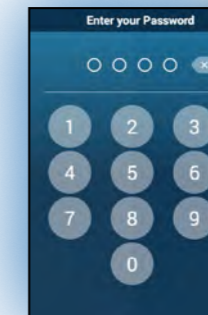
SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

Catalog No. CA000001468
Printed in Japan

Go on a
POWER TRIP

with the most powerful
MFD series available.

NEW!
9"
HYBRID
CONTROL

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!

TZT9F/TZT12F - 9" & 12" HYBRID CONTROL IPS DISPLAY

Hybrid controls enhance these 9" & 12" Multi Function Displays, making them 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.

1

It has all
THE POWER

you've wanted...and more.

- NEW "NavNet Command Center" allows control of up to five 3rd party devices using a built-in HTML browser
- Powerful quad-core processor for lightning-fast response
- Built-in Dual Channel 1kW TruEcho CHIRP™ (TZT12F/16F/19F only) & CW Fish Finder
- High-power 2/3/5kW* TruEcho CHIRP™ Fish Finder network amp (TZT12F/16F/19F only)
- 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 Control 12" and 9" display with RotoKey™ and buttons for added accessibility
- Pin Code Lock - require an optional password to access your TZtouch3 upon startup

*Requires optional DI-FFAMP: Connect a 5kW or 10kW transducer when using the BT-5, power output is 3kW; not compatible with TZT9F

Enter your Password

PIN CODE LOCK

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

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.

(Some features may require additional sensors)
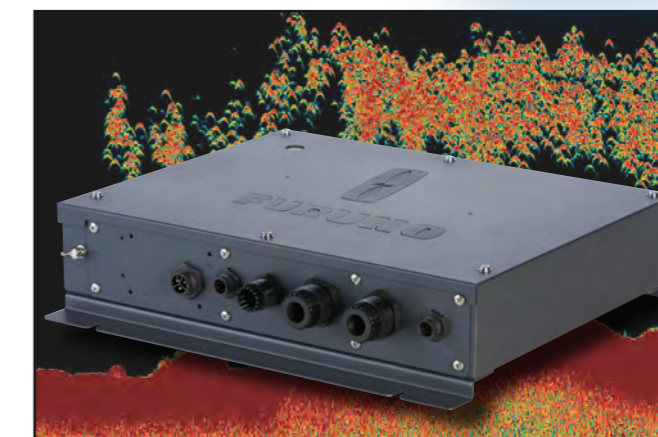
HIGH-POWER TruEcho CHIRP™ FISH FINDER AMP

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!

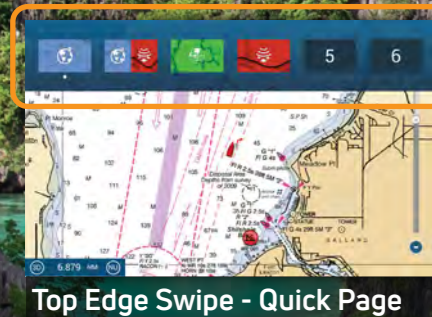(BT-5 required for 5kW/10kW transducers; DI-FFAMP not compatible with TZT9F)

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.
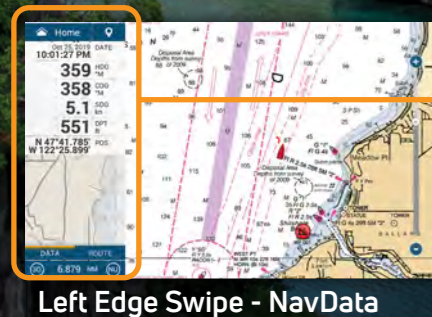
2

Because finding your
HAPPY PLACE
shouldn't be difficult.

Top Edge Swipe - Quick Page

Left Edge Swipe - NavData

Right Edge Swipe - Shortcut

Bottom Edge Swipe - Layers

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.
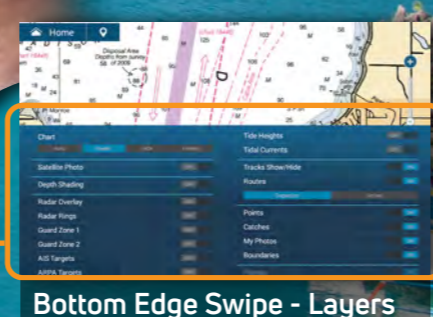
LEFT EDGE SWIPE - NAVDATA

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.

TOP 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.
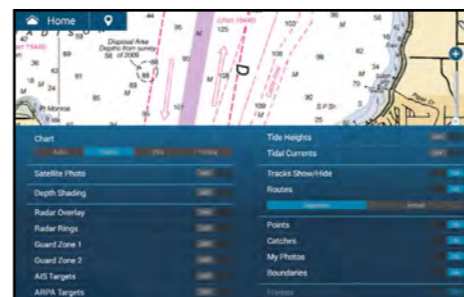
BOTTOM EDGE SWIPE - LAYERS

Swipe up from the bottom to view App Layers. Toggle commonly used items & layer them on your screen.

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" and NEW 9" HYBRID CONTROL DISPLAY

Captains who have smaller boats know that when you are in rough sea conditions, it can be difficult to get an accurate tap on the screen. That's why we made our TZtouch3 12" and NEW 9" MFD with Hybrid Controls. 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.

1. Short press: Home, Long press: Settings
2. Short press: Event, Long press: MOB
3. RotoKey™
4. Short press: Shift Screen Control, Long press: Full Screen
5. Cancel/Center
6. Cursor Pad
7. Short press: Function 1, Long press: Function 2
8. Power/Quick Access Page

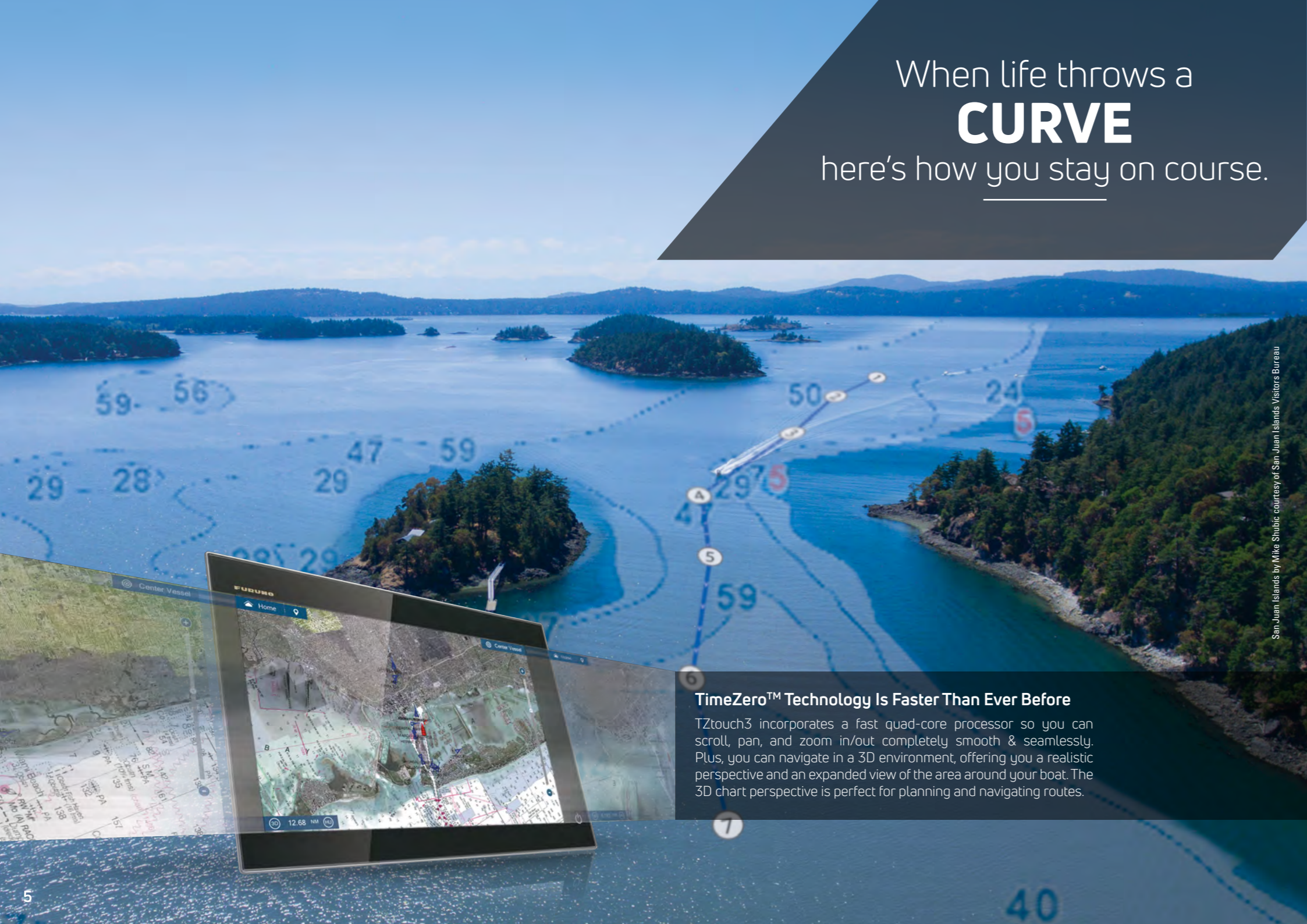## When life throws a
CURVE
here's how you stay on course.

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
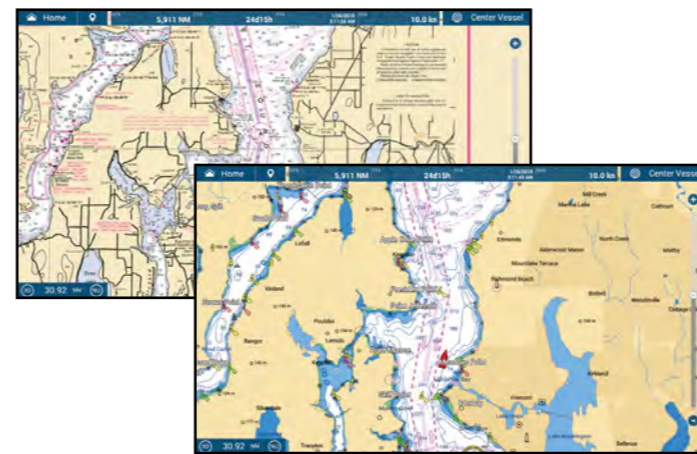# FEATURES YOU NEED
to make a good cruise great!

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.
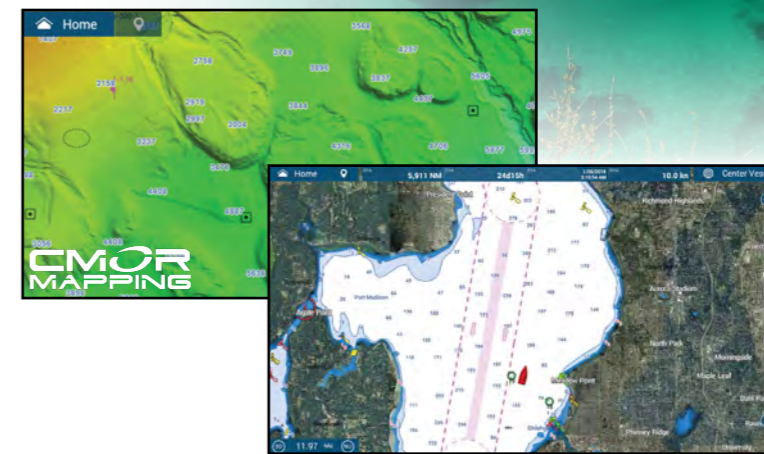
SATELLITE PHOTOFUSION™ & CMOR CHARTS (U.S. ONLY)

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. CMOR's high-resolution, shaded-relief bathymetric bottom images help navigators identify suitable locations for fishing and diving (U.S. only).
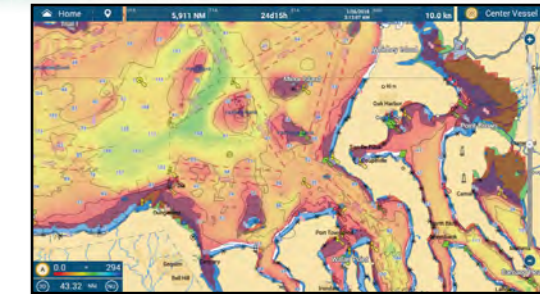
VECTOR & RASTER DEPTH SHADING

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.

CLOUD

TZ PC Software   **Cloud.MyTimezero.com**   **TZ iBoat iOS App**   **TZtouch3**
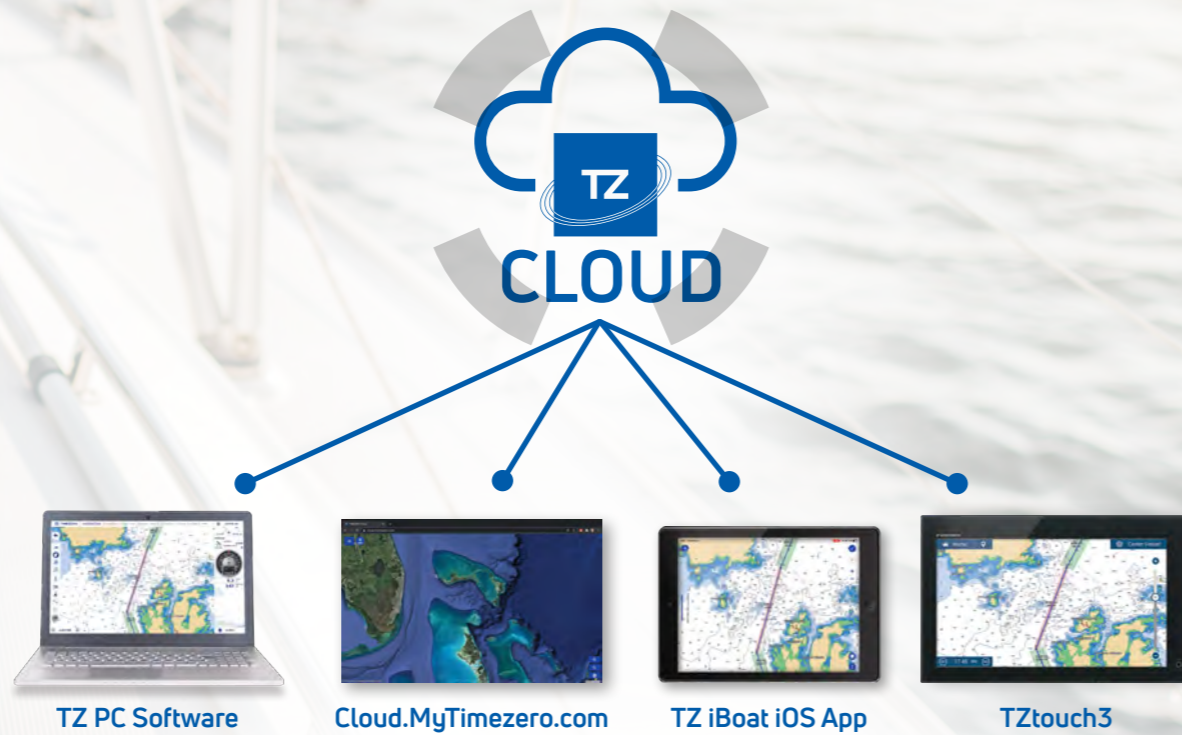
NEVER LOSE WAYPOINTS, ROUTES OR SETTINGS AGAIN WITH TZ CLOUD

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)

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.

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.

GET IT ON Google Play   **Download on the App Store**

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.

Take your adventure
FARTHER
knowing you will get home safe.

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 Analzyer™, 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? Experience high-power Radar and amazing target detection with 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 capability.

DRS25A-NXT

DRS6AX/DRS12AX/DRS25AX

DRS12A-NXT

DRS6A-NXT

DRS4DL+

DRS4D-NXT

	DOME	OPEN ARRAYS - 3.5', 4', or 6'		
NXT	DRS4DNXT	DRS6ANXT	DRS12ANXT	DRS25ANXT
X-CLASS	DRS4DL+	DRS6AX	DRS12AX	DRS25AX

DUAL RANGE MODE (Not available with DRS4DL+)

Simultaneous scanning technology produces a dual progressive scan to display & update two Radar pictures, both long & short range.[1] Autonomous control over gain & anti-clutter can be performed on each Radar presentation.[2] 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.

[1]: Limited to 12NM on DRS-NXT Series, Combination Screens i.e. Bird Mode + Bird Mode, etc. not available

[2]: Auto Sea Mode, Gain, Rain/Sea Clutter not autonomous in Dual-Range Mode on DRS-NXT series
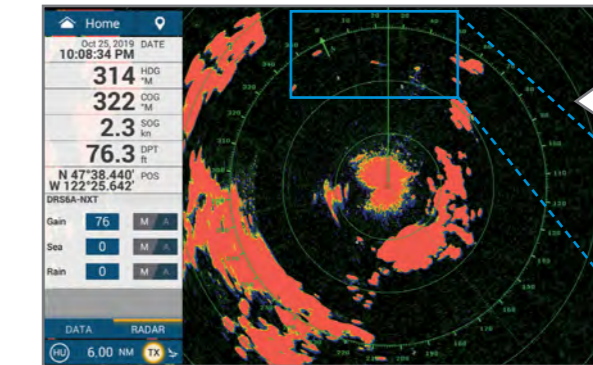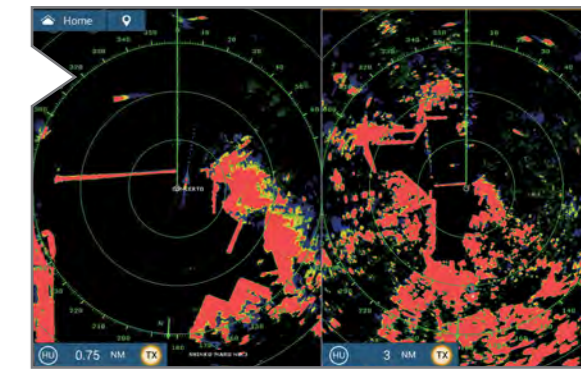
BIRD MODE

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

Stationary vessel

Moving vessel

Flock of birds
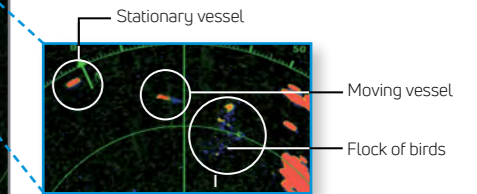
TARGET ANALYZER™

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).
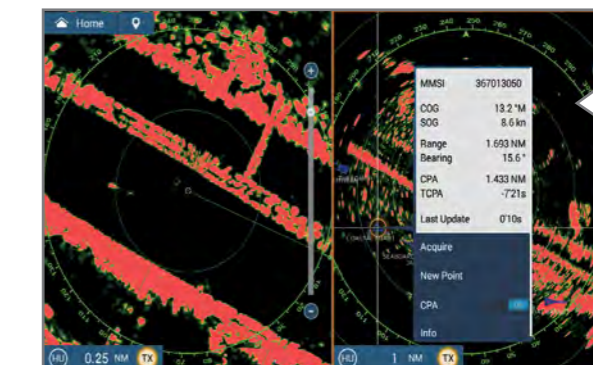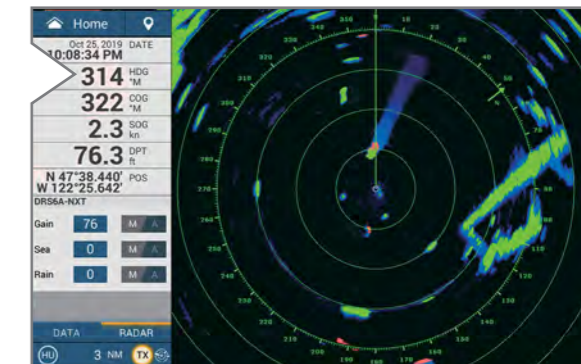
AIS TARGET TRACKING

When connecting an FA-series AIS or FM-4800/4850 to your TZtouch3, AIS targets can be 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.

NavNet TZtouch3
Network/Products Lineup

NAVnet Connect

RADAR
Radar Sensor
DRS4DL+/DRS4D-NXT
DRS6A/12A/25A-NXT
DRS6A/12A/25A X-Class
Ethernet
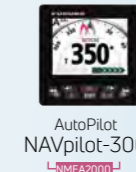
AUTOPILOT
AutoPilot NAVpilot-300
NMEA2000

AutoPilot NAVpilot-711C
NMEA2000 *NMEA0183*

FISH FINDER
FISH FINDER Internal
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
Ethernet

Bottom Discrimination Fish Finder BBDS1

Multi Beam Sonar DFF-3D
Ethernet

TruEcho CHIRP™ 2/3kW Amp*1 DI-FFAMP

COMPASS
Integrated Heading Sensor PG-700
CAN bus

Satellite Compass SCX-20
NMEA2000

Satellite Compass SC-33
NMEA2000 *NMEA0183*

Satellite Compass SC-70
CAN bus *NMEA0183*

AIS
AIS Receiver FA-40
NMEA2000 *NMEA0183*

Class-B AIS Transponder FA-70
NMEA2000 *NMEA0183*

Class-A AIS Transponder FA-170
NMEA0183 *Ethernet*

NEW! 9" HYBRID CONTROL

GPS
GPS Internal Antenna

GPS/WAAS Receiver Antenna GP-330B
NMEA2000

GPS Navigator GP-33
CAN bus *NMEA0183*

External GPS antennas & navigators can also be connected to TZtouch3. You can select which one to use from the settings menu.

TZT9F
9" Hybrid Control

TZT12F
12" Hybrid Control
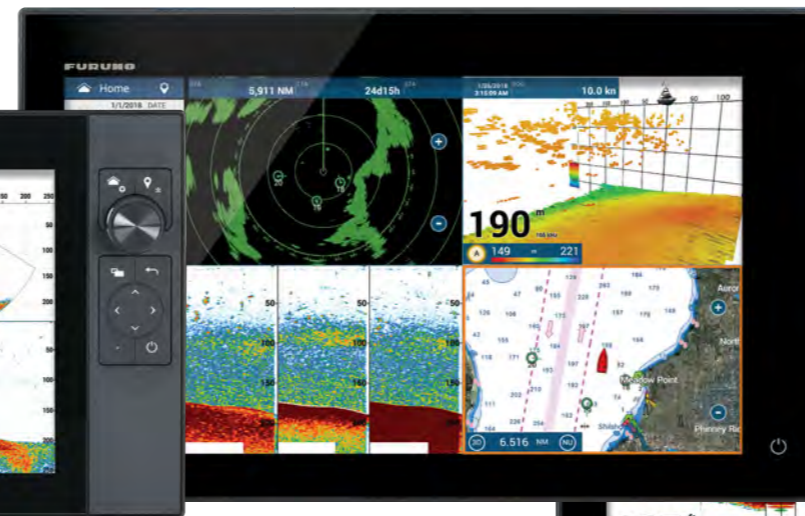
TZT16F
16" Multi Touch

TZT19F
19" Multi Touch

WEATHER/ PC PLOTTER
TZ PC Software
Ethernet

Network Weather Facsimile Receiver FAX-30
Ethernet

Network Satellite Weather and Radio Receiver BBWX4*2
Ethernet

SENSOR
Ultrasonic Weather Station 220WX*3
CAN bus

Depth/Speed/Temp Sensor DST-800 & other smart sensors for depth/speed/temp
CAN bus

OTHERS
NavNet Command Center 3rd Party Compatible Apps (v1.07*)
QUICK
LUMISHORE
victron energy
shadow-caster.com LED LIGHTING
Ethernet
*More apps planned

Marine Entertainment System Fusion APOLLO Series, etc.
Ethernet

IP Camera
Ethernet

Analog Camera
Video

Thermal Camera
Ethernet *Video*

C-ZONE Digital Switching System
CAN bus

INSTRUMENT
Wind Transducer - Analog FI-5001/L*4
NMEA2000

Instrument FI-70
CAN bus

GPS Internal Antenna Internal GPS Antenna TZT9F/TZT12F/TZT16F

NMEA2000 Certified
NavNet TZtouch3 is NMEA 2000 certified. NMEA2000 offers improved data transfer rates and true plug-and-play operation.

FISH FINDER Internal Internal 1kW TruEcho CHIRP™ Fish Finder*
*Dual Channel for TZT12F/TZT16F/TZT19F only, Single Channel for TZT9F only

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

CONVERTER
NMEA Data Converter IF-NMEA2K2
CAN bus *NMEA0183*

Analog NMEA Data Converter IF-NMEAFI
Analog

OPTION
Remote Control Unit MCU-004
USB

Remote Control Unit MCU-002
USB

Keyboard MCU-005
Ethernet

SD Card Unit SDU-001
USB

*1 Optionally connect a 5kW or 10kW transducer to DI-FFAMP using BT-5; DI-FFAMP not compatible with TZT9F.
*2 SiriusXM weather coverage is currently available only in U.S. and Canada. SiriusXM subscription required.

*3 220WX available only in U.S. and Canada.   *4 Requires IFNMEA-IF Data Converter.

We gave you something
TO CHIRP
about!

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!

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 (except TZT9F). 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.

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 199cm (>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.

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. The TZT9F is a single-channel, while the TZT12F/16F/19F all utilize a dual-channel 1kW TruEcho CHIRP Fish Finder.

BOTTOM DISCRIMINATION DISPLAY*

Bottom Discrimination provides detailed information about the composition of the seabed & categorizing it into four different categories: Rocks, Gravel, Sand, and Mud. The composition 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.

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!

ADDITIONAL FISH FINDER OPTIONS

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

More power to see 120°
PORT-STARBOARD
giving you an edge over the competition.

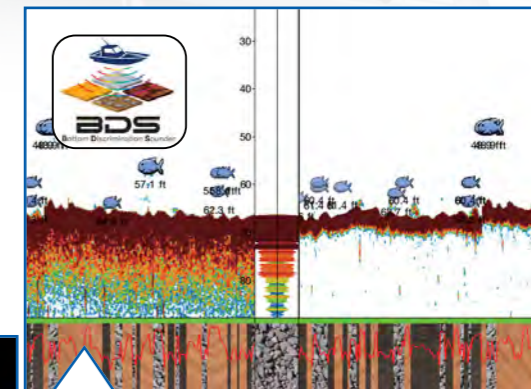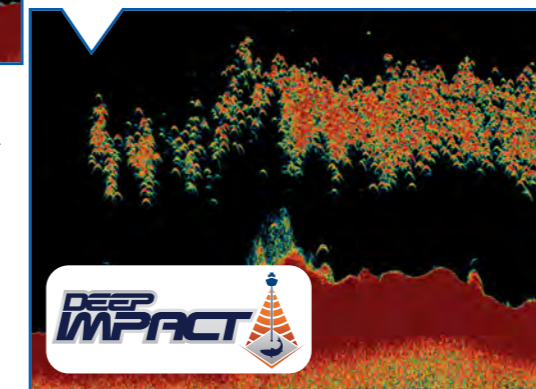Normal down-sounding Fish Finders have a beam angle of 40° or less. But with the DFF-3D Multi Beam Sonar, you see 120° port-starboard for 200m (650+ ft). Plus, with the power of the DFF-3D, you can see fish directly below the boat 300m (nearly 1,000ft). When you match this with the Deep Impact TruEcho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

See fish you would miss with a conventional or CHIRP Fish Finder

10°
20°
40°
120°

←Ultra-wide Transducer - 40°→
DFF3D Transducer - 120°
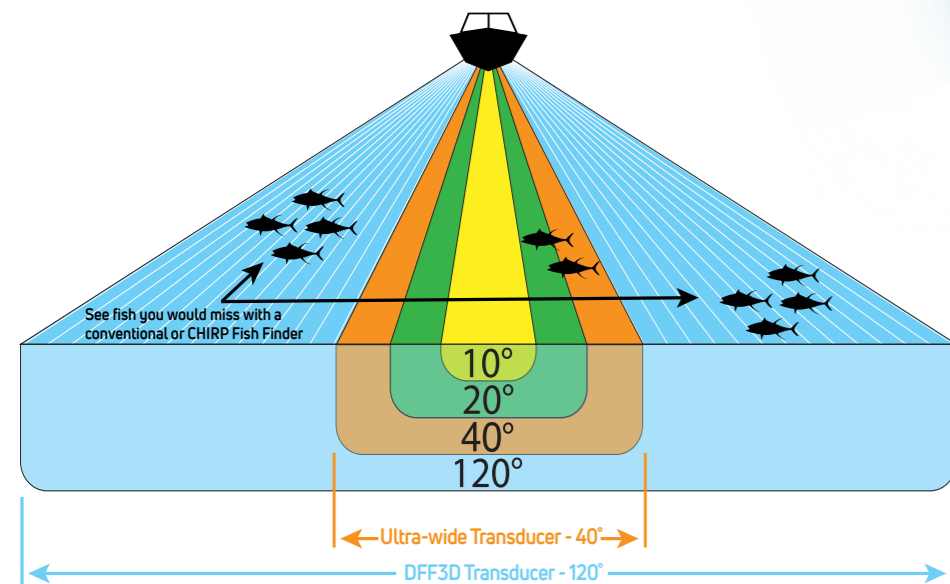
The DFF-3D Multi Beam Sonar operates at 165kHz, giving you fantastic depth penetration while still displaying echoes in high-resolution. Compared to a 40° ultra-wide transducer, you will see 3-times the area around your boat, helping you to find fish you might have otherwise missed. Plus, you can see which side of the boat they are on!

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.
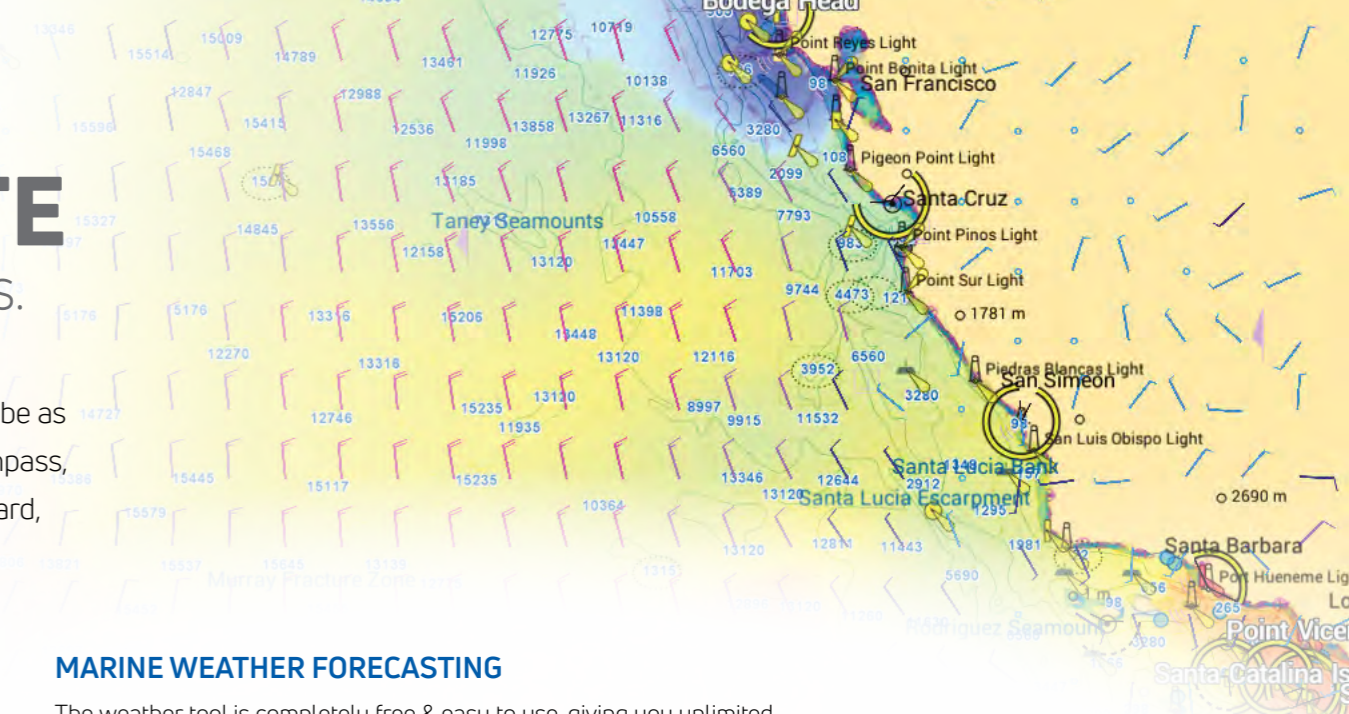
MARINE WEATHER FORECASTING

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. (U.S. & Canada only)

FA-40 & FA-70 AIS RECEIVER & TRANSPONDER

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.
*: GPS Antenna required for FM4850.

SCX-20 SATELLITE COMPASS

The SCX-20 enhances the performance of onboard TZtouch3 sensors such as Radar, Chart Plotter, 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.

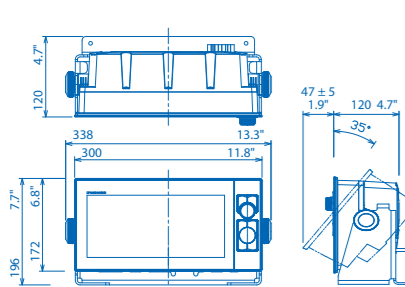| NavNet TZtouch3 MFDs			
MODEL	**TZT9F**	**TZT12F**	**TZT16F**	**TZT19F**
DISPLAY UNIT				
Type	Color TFT multi touch In-Plane Switching (IPS) LCD			
Screen Size	9" Wide	12.1" Wide	15.6" Wide	18.5" Wide
Screen Resolution	HD 1280x720	WXGA 1280 x 800	FHD 1920 x 1080	FHD 1920 x 1080
Screen Brightness	1000 cd/m2(typical)	900 cd/m2 (typical)	1000 cd/m2 (typical)	900 cd/m2 (typical)
Display Colors	16,770,000 colors (Chart Plotter), 64 colors (Radar/Fish Finder)			
Language	Bulgarian, Chinese, Danish, English (USA/UK), Finnish, French, German, Greek, Italian, Japanese, Norwegian, Portuguese, Russian, Spanish, Swedish			
GPS/WAAS				
Receiver Type	GPS: 72 channels, SBAS: 1 channel (C/A mode, WAAS)			--
Receiving Frequency	L1 (1575.42 MHz)			--
Time to First Fix	100 s (cold start)			--
Accuracy	10 m (GPS), 7 m (MSAS), 3 m (WAAS)			--
Position Update Interval	0.1 s (10Hz)			--
CHART PLOTTER				
Cartography	MapMedia mm3d chart (CMOR(U.S. only)/C-MAP/Navionics/NOAA)			
Memory Capacity	30,000 user points, 30,000 points for ship's tracks, 200 planned routes (500 points per route)			
Alarms	Anchor Watch, XTE, Depth*, Speed, Sea Surface Temperature*, Trip Distance, Fuel Gauge*, Wind Alarm*, Boundary Alarm (*external data required)			
RADAR				
Display Modes	Head-up*, North-up *Heading input required.			
Echo Trail	Interval: 15 s, 30 s, 1 min, 3 mins, 6 mins, 15 mins, 30 mins and continuous			
Target Tracking	30 ARPA Targets (Up to 100 Targets can be tracked with DRS-NXT Series Radar)			
Radar Alarms	Guard Zone, CPA/TCPA, Trigger, Video, Azimuth, Heading Line			
FISH FINDER				
Transmit Frequency	CW: 50/200kHz CHIRP: 40kHz to 225kHz			
Transducer	300/600 W or 1 kW* *Matching box MB1100 required for some FURUNO transducers.			
Display Range	2 to 1,200 m, shift: 0 to 1,200 m			
Display Mode	ACCU-FISH™, A-Scope, Auto (Fishing/Cruising), RezBoost™, Bottom Discrimination, TruEcho CHIRP™ and CW			
Picture Advance	8 steps: x4, x2, x1, 1/2, 1/4, 1/8, 1/16, stop			
Fish Finder Alarms	School of fish, School of fish for bottom lock			

Multi Function Display (Tabletop Mount)
TZT9F   3.5 kg 7.7 lb

Multi Function Display (Flush Mount)
TZT9F   3.3 kg 7.3 lb
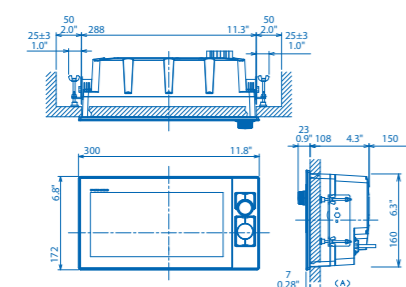
Multi Function Display (Tabletop Mount)
TZT12F   5.6 kg 12.3 lb
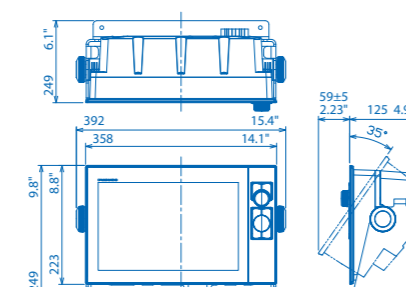
Multi Function Display (Flush Mount)
TZT12F   5.1 kg 11.2 lb
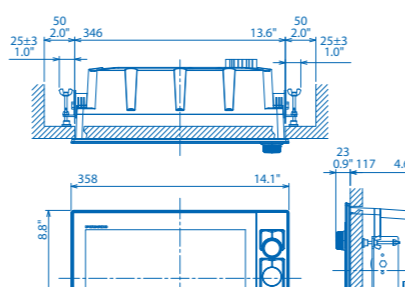
Multi Function Display Flush Mount
TZT12F Cutout Dimension
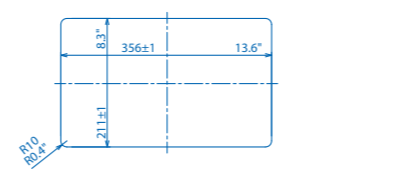
Multi Function Display Flush Mount
TZT9F Cutout Dimension

NavNet TZtouch3 MFDs continued			
MODEL	**TZT9F**	**TZT12F**	**TZT16F**	**TZT19F**
INTERFACE				
CAN bus/NMEA2000	1 Port			
Input	065280, 126992, 126993, 126996, 127237, 127245, 127251, 127257, 127488, 127489, 125505, 128259, 128267, 129025, 129026, 129029, 129330, 129038, 129039, 129040, 129041, 129291, 129538, 129540, 129793, 129794, 129798, 129801, 129802, 129808, 129809, 129810, 130306, 130310, 130311, 130312, 130313, 130314, 130316, 130577, 130578, 130817, 130818, 130820, 130822, 130823, 130826, 130827, 130828, 130880			
Output	126992, 126993, 126996, 127250, 127251, 127257, 127258, 128259, 129025, 129026, 129029, 129033, 129283, 129284, 129285, 130306, 130310, 130311, 130312, 130313, 130314, 130316			
NMEA0183	1 Serial Output Port			
Output	AAM, APB, BOD, DBT, DPT, GGA, GLL, GNS, GSA, GSV, RMB, RMC, RTE, TTM, VDM, VTG, WPL, XTE, ZDA			
LAN	1 Port (100 BASE-TX)		2 Ports (100 BASE-TX)	
USB	1 Port (USB 2.0) for control unit	1 Port (USB 2.0) for touch monitor and control unit:	1 Port (USB 2.0) for touch monitor and control unit: 1 Port USB output	
Video I/O	--	Input: 2 Ports (NTSC/PAL) Output: 1 Port (HDMI 720p)	Input: 2 ports (NTSC/PAL) and 1 port HDMI 1920 x 1080p or less (progressive only) Output: 1 port(HDMI 1080p)	
AUX I/O	2 Ports (Event Switch and External Power Switch) and 1 Port Buzzer Output			
SD Card Slot	1 Micro SD Card Slot (Micro SDXC, rear), 2 Slots Card Unit: Model SDU-001 (option)			
Wireless LAN	IEEE802.11b/g/n, Transmit frequency: 2.412 to 2,462 GHz, 11dBm max			
Transducer	1 Port x MJ10 pin	1 Port x MJ12 pin for transducers, 1 Port x MJ7 pin for DI-FFAMP		
ENVIRONMENT				
Temperature (IEC60945)	-15°C to +55°C			
Relative Humidity	93% or less at +40° C			
Waterproofing	IP56			
POWER				
	12-24 VDC			
	2.6 - 1.3 A	2.3 - 1.2 A	4.3 - 2.2 A	4.7 - 2.3 A
Rectifier (option)	100/110/115/220/230 VAC, 1 phase, 50/60Hz			

Multi Function Display (Tabletop Mount)
TZT16F   6.7 kg 14.7 lb
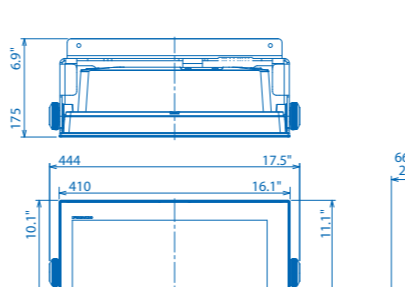
Multi Function Display (Flush Mount)
TZT16F   5.9 kg 13.0 lb
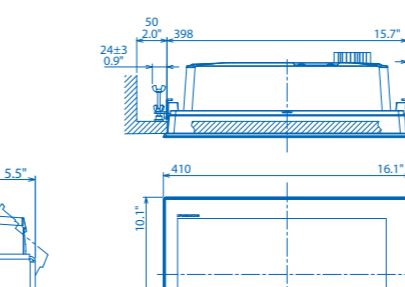
Multi Function Display (Flush Mount)
TZT19F   7.8 kg 17.2 lb
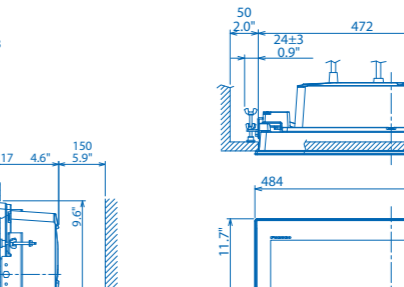
Multi Function Display Flush Mount
TZT16F Cutout Dimension

Multi Function Display Flush Mount
TZT19F Cutout Dimension
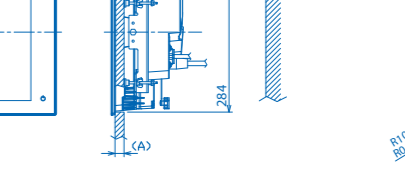
MODEL		NavNet SERIES RADAR SENSOR						NavNet SERIES RADAR SENSOR continued		
		DRS4DL+	DRS4D-NXT	DRS6A-NXT	DRS12A-NXT	DRS25A-NXT		DRS6A X-Class	DRS12A X-Class	DRS25A X-Class
ANTENNA										
Type		ø480 mm Radome (19")	ø610 mm Radome (24")	ø1036 mm Open (3.5') 1255 mm Open (4') 1795 mm Open (6')	ø1036 mm Open (3.5') 1255 mm Open (4') 1795 mm Open (6')	ø1036 mm Open (3.5') 1255 mm Open (4') 1795 mm Open (6')		ø1036 mm Open (3.5') 1255 mm Open (4') 1795 mm Open (6')	ø1255 mm Open (4') 1795 mm Open (6')	
Beam Width	Horizontal	5.2°	3.9° typical (-3 dB) Adjustable between 2° and 3.9° (effective with RezBoost™ control)	2.3°/1.9°/1.35° (effective with RezBoost™ control)	2.3°/1.9°/1.35° (effective with RezBoost™ control)	2.3°/1.9°/1.35° (effective with RezBoost™ control)		2.3°/1.9°/1.35°	1.9°/1.35°	
	Vertical	25°	25°	22°/22°/22°	22°/22°/22°	22°/22°/22°		22°/22°/22°		
Antenna Rotation Speed		24 rpm	24*/36/48 rpm range coupled or 24 rpm fixed * In dual range mode, speed is limited to 24 rpm					24/36/48 rpm range coupled or 24 rpm fixed		
RF TRANSCEIVER										
Frequency		9410 ± 30 MHz	CH1: 9380 MHz (P0N), 9400 MHz (Q0N) CH2: 9400 MHz (P0N), 9420 MHz (Q0N) CH3: 9420 MHz (P0N), 9440 MHz (Q0N)					9410 ±30 MHz		
Pulselength & PRR		S: 0.08 µs/360 Hz (0.0625 to 0.5 NM) M: 0.3 µs/360 Hz (0.75 to 2 NM) L: 0.8 µs/360 Hz (3 to 36 NM)	P0N: 0.08 µs to 1.2 µs/1100 Hz Q0N: 5 µs to 18 µs/1100 Hz	P0N: 0.04µs to 1.2µs/ 700Hz to 2000Hz Q0N: 5µs to 48µs/ 700Hz to 2000Hz				0.08 µs/3000 Hz (0.0625 to 0.75 NM) 0.15 µs/3000 Hz (1 to 1.5 NM) 0.3 µs/1500 Hz (2 NM) 0.5 µs/1000 Hz (3 to 4 NM) 0.8 µs/600 Hz (6 to 9 NM) 1.2 µs/600 Hz (12 to 64 NM) 1.2 µs/550 Hz (72 to 96 NM)		
Peak Output Power		4 kW	Solid-State, 25 W		Solid-State, 100 W	Solid-State, 200 W		6kW	12kW	25kW
Range Scales		0.0625 to 36* NM	0.0625 to 36* NM * In dual range mode, range is limited to 12 NM	0.0625 to 72* NM * In dual range mode, range is limited to 12 NM	0.0625 to 96* NM * In dual range mode, range is limited to 12 NM			0.0625 to 96 NM		
ENVIRONMENT										
		Temperature: -25°C to +55°C, Waterproofing: IPX6	Temperature: -25°C to +55°C, Waterproofing: IP26	Temperature: -25°C to +55°C, Waterproofing: IP56				Temperature: -25°C to +55°C, Waterproofing: IP56		
POWER SUPPLY										
		12-24 VDC, 2.1-1.0 A	12-24 VDC, 2.5-1.3 A	12/24 VDC, 9.5/5.0 A	24 VDC, 5.0 A	24 VDC, 5.6 A		24 VDC, 4.0 A	24 VDC, 4.5 A	24 VDC, 5.6 A

19" Radome Radar Sensor DRS4DL+ 5.7kg 12.7 lb

ø488 19.2"
75 3.0"
220 8.7"
166 6.5"
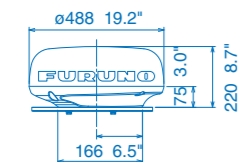
24" Radome Radar Sensor DRS4D-NXT 7.3kg 16.1 lb

ø610 24.0"
75 3.0"
220 8.7"
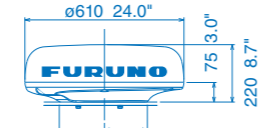
3.5 ft Open Array NXT Radar 22kg 48.5 lb
4 ft Open Array NXT Radar 25kg 55.1 lb
6 ft Open Array NXT Radar 27kg 59.5 lb

XN10A 1036 40.8"
XN12A 1255 49.4"
XN13A 1795 70.7"

266 10.5"
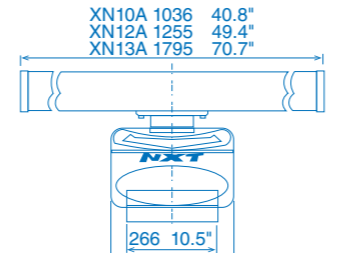
3.5 ft Open Radar Sensor DRS6A X-Class 20.0 kg 44.1 lb
4 ft Open Radar Sensor DRS6A X-Class 21.0 kg 46.3 lb
6 ft Open Radar Sensor DRS6A X-Class 23.0 kg 50.7 lb

4 ft Open Radar Sensor DRS12A X-Class 21.0 kg 46.3 lb
6 ft Open Radar Sensor DRS12A X-Class 23.0 kg 50.7 lb

4 ft Open Radar Sensor DRS25A X-Class 22.0 kg 48.5 lb
6 ft Open Radar Sensor DRS25A X-Class 24.0 kg 53.0 lb

XN10A : 1036 40.8"
XN12A : 1255 49.4"
XN13A : 1795 70.7"

150 5.9"
78 3.1"
4-ø12 Fixing hole
200 7.9"
Bow
4-ø12 Fixing hole
92 3.6"
140 5.5"
200 7.9"
Cable entry
130 5.1"
285 11.2"
160 6.3"
330 13"
445 17.5"
266 10.5"
360 14.2"

MODEL	NETWORK FISH FINDERS			
	DFF1-UHD	BBDS1	DFF3	DI-FFAMP
TRANSCEIVER & DISPLAY				
Display Modes	Single (High or Low frequency), Dual (Both High and Low frequencies), Bottom-lock, Bottom-Zoom, ACCU-FISH™, Bottom Discrimination, Marker Zoom, A-Scope	Single (50 or 200 kHz), Dual (50 and 200 kHz), Bottom-lock, Bottom-Zoom, ACCU-FISH™, Bottom Discrimination, Marker Zoom, A-scope	Single (high or low), Dual (high and low), Bottom-lock, Bottom-Zoom, ACCU-FISH™*, Marker Zoom, A-scope * with CA50/200-1T only	Single (High or Low frequency), Dual (Both High and Low frequencies), Bottom-lock, Bottom-Zoom, A-Scope
Frequency	Dual frequency 30-70 & 175-225 kHz	Dual frequency 50 and 200kHz	The synthesized transducer works with dual frequencies between 28 and 200 kHz	26.6 to 242 kHz
Broadband (CHIRP)	Available	N/A	N/A	Available 2 ch
Range Scale	Max. 1,200m	Max. 1,200m	Max. 3,000m	Max. 3,000m
Output Power	1kW	1kW	3kW	2kW/3kW/5kW/10kW*
ENVIRONMENT				
Temperature	N/A	-15℃ to +55℃		
Waterproofing	IP55	IP20	IP20	IP22
POWER SUPPLY				
	12-24 VDC			12-24 VDC
	30 W, 2.8-1.4 A	12 W, 1.1-0.4 A	30 W, 3.5 A	43.1 W, 3.2-1.9 A
TRANSDUCERS (Specify when ordering)				

Transducers detail:

1 kW (DFF1-UHD)
Broadband transducers by AIRMAR®
42-65 kHz (low), 130-210 kHz (high)
CM265LH, B265LH (with temperature sensor)
CM275LHW, B275LHW

600 W (BBDS1 / DFF3)
50/200 kHz:
520-5PSD (Plastic, thru-hull), 520-5MSD (Bronze, thru-hull),
525-5PWD (Plastic, transom),
525STID-MSD (Bronze, thru-hull with speed/temp sensor),
525STID-PWD (Plastic, transom 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 (DFF3)
28 kHz: 28F-8, 28BL-6HR, 28BL-12HR
38 kHz: 38BL-9HR, 38BL-15HR
50 kHz: 50B-6/6B, 50B-9B, 50BL-12HR, 50BL-24HR
68 kHz: 68F-8H, 68F-30H
82 kHz: 82B-35R
88 kHz: 88B-8, 88B-10, 88F-126H
107 kHz: 100B-10R
150 kHz: 150B-12H
200 kHz: 200B-5S, 200B-8/8B, 200B-12H
50/200 kHz: 50/200-1T

2 kW Dual-Band CHIRP (DI-FFAMP)
PM111LH, PM111LHW, PM111LM, PM411LWM, R109LH, R109LHW, R109LM, R109LM, R111LH, R111LM, R409LWM
2/3 kW Dual-Band CHIRP
CM599LH, CM599LHW, CM599LM, R509LH, R509LHW, R509LM, R599LH, R599LM
2 kW Single-Band CW
28BL-6HR, 38BL-9HR, 50BL-12HR, 82B-35R, 88B-10, 200B-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-38M**, 50F-38**, 88F-126H, 200B-12H
10 kW Single-Band CW*
28F-72**, 50F-70**

*Rated power of these transducer is 5/10 kW, but actual output power from DI-FFAMP is 3 kW. Not compatible with TZT9F.
**Booster Box BT-5 is needed for these transducers.

Network Fish Finder/Bottom Discrimination Sounder BBDS1   1.3 kg 2.9 lb

Network Fish Finder DFF3   3.8 kg 8.4 lb

Network Sounder Power Amplifier DI-FFAMP   6.3 kg 13.9 lb

Note: DI-FFAMP requires connection to the TZtouch3 Internal Fish Finder.

MODEL	NETWORK MULTI BEAM SONAR
	DFF-3D
TRANSCEIVER & 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) * Depending on bottom type and water conditions.
Range Scale	5-1,200m
INTERFACE	
LAN	1 port, Ethernet 10/100Base-TX
External KP	1 port (optional external KP kit required)
ENVIRONMENT	
Temperature	-15℃ to +55℃
Waterproofing	IP55
POWER SUPPLY	
	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)

Network Multi Beam Sonar DFF-3D   3.0 kg 6.6 lb

FA-40/70 AIS Receiver   1.5 kg 3.3 lb

MODEL		AIS RECEIVER	CLASS-B+ AIS TRANSPONDER
		FA-40	FA-70
STANDARDS			
		IEC 60945 Ed.4 IMO MSC.140 (76) ITU-R M.1371-5, EN 303 413 V1.1.1 ITU-R M.1371-5, EN 303 413 V1.1.1 IEC 60945 Ed.4+CORR.1, IEC 62368-1 Ed.3	IMO MSC.140 (76) ITU-R M.1371-5, DSC: ITU-R M.825-3 IEC 62287-1 Ed.3.0, IEC 62287-2 Ed.2.0, EN 303 413 V1.1.1 EN 301 843-1 V2.2.1 IEC 60945 Ed.4+CORR.1, IEC 62368-1 Ed.3, IEC 62311 Ed.1+Ed.2
TRANSPONDER UNIT*	***FA40: RECEIVER UNIT**		
TX/RX Frequency (FA40: RX Frequency)		156.025 to 162.025 MHz	
Output Power		- - - -	5W or 1W(SOTDMA), 2W(CSTDMA)
Channel Spacing		25 kHz	25 kHz
GPS RECEIVER			
Receiving Channels		- - - -	12 channels, SBAS 2 channels, 14 satellites tracking
Rx Frequency		- - - -	1575.42 MHz
Rx Code		- - - -	C/A code
Position Accuracy		- - - -	13 m (2 drms, HDOP <= 4)
INTERFACE			
NMEA0183	Input	ACA, ACK, AIQ, DTM, GBS, GGA, GLL, GNS, HDT, OSD, RMC, SSD, THS, VBW, VSD, VTG	ABM, ACA, ACK, AIQ, BBM, HDT, SSD, THS, VSD (ABM, BBM: SOTDMA only)
	Output	ABK, ACA, ACS, ALR, GGA, GLL, RMC, SSD, TXT, VDM, VDO, VER, VSD, VTG	ABK, ACA, ACS, ALR, GGA, GLL, RMC, SSD, TXT, VDM, VDO, VER, VSD, VTG
NMEA2000	Input	059392, 059904, 060160, 060416, 060928, 065240, 126208, 127250	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, 129540, 129792, 129793, 129794, 129795*, 129796, 129797, 129798, 129800, 129801, 129802, 129803, 129804, 129805, 129806, 129807, 129809, 129810, 129811, 129812, 129813	059392, 059904, 060928, 126208, 126464, 126992, 126993, 126996, 126998, 127258, 129025, 129026,129029, 129038, 129039, 129040, 129041, 129540, 129792, 129793, 129794, 129795*, 129796, 129797, 129798, 129800, 129801, 129802, 129803, 129804*, 129805, 129806, 129807, 129809, 129810, 129811, 129812*, 129813* (*:SOTDMA mode only)
ENVIRONMENT			
Temperature	Antenna Unit	-25℃ to +70℃	-25℃ to +70℃
	Other Units	-15℃ to +55℃	-15℃ to +55℃
Waterproofing	Antenna Unit	IP56	
	Other Units	IP55	
POWER SUPPLY			
Transponder Unit (FA40: Receiver Unit)		12-24 VDC, 0.3-0.2 A	12-24 VDC, 1.8-0.9 A
Display Unit		- - - -	- - - -