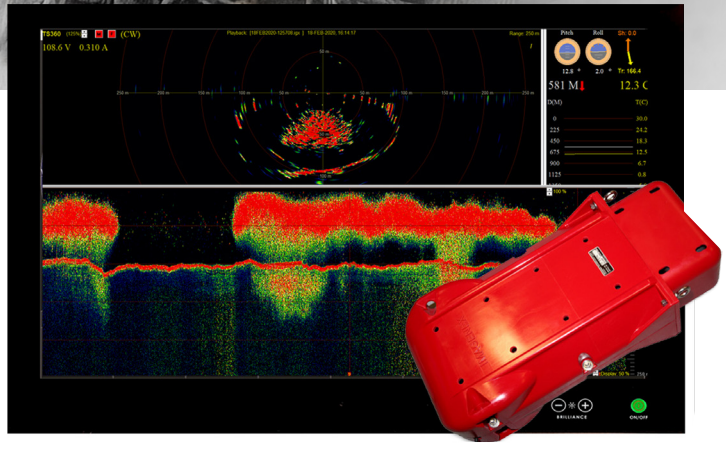
NEW



Trawl Sonar TS-360

360° real-time overview

FURUNO NORGE

Real-time 360° Trawl Sonar

TS-360

High resolution presentation combined with a 360° real-time view allows for continuous observation of the full trawl opening and its surroundings.

TS-360 MONITORING FEATURES

The TS-360 trawl sonar display provides an excellent real-time overview of the trawl opening and its surroundings. The echo presentation is sharp and detailed. A nuanced colour scale is used to present the density of the school of fish, providing an intuitive understanding of its size and movement.

BOTTOM SEPARATION

The foot rope echoes are clearly separated from the bottom echoes, providing the possibility for better adjustment of the trawl, whether it is to increase catch when fish is observed to escape under the foot rope or to avoid more catch, when the trawl is full.

INTEGRATED ECHO SOUNDER

The TS-360 trawl sonar has a common multibeam transducer for the trawl sonar and the integrated echo sounder. Due to multibeam technology the echo sounder's beam width is adjustable from 10° - 40° and can easily be set in any desired direction.

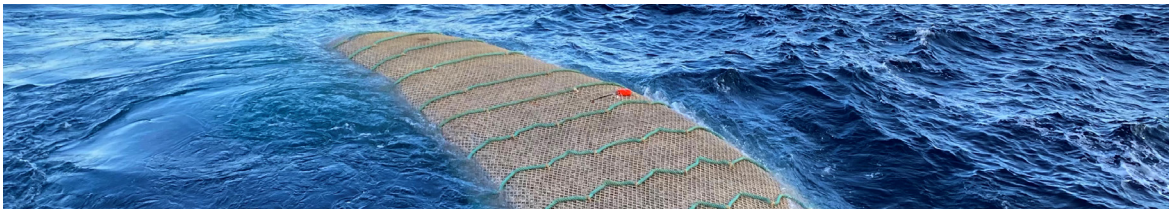
AUTOMATIC ROLL STABILISATION

Automatic roll stabilization can be activated which makes it possible to have a constant downward-pointing echo sounder beam. This is beneficial when you want to monitor the position of the trawl relative to the bottom. It can also be favourable in cases where the trawl sonar is skewed on the trawl and it is desirable to correct the presentation for this.

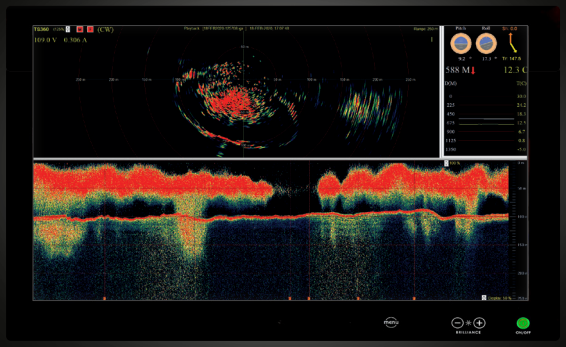
COMPATIBLE FISH FINDING INSTRUMENTS

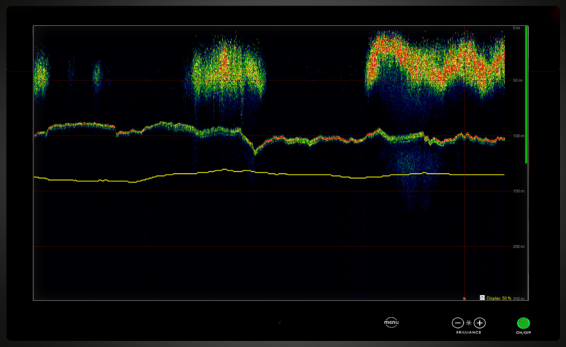
The TS-360 depth data can be exported to a connected echo sounder. The Furuno FSS-3BB and the Furuno FCV-38 are both compatible.

When connected to an echo sounder, the depth of the trawl's headline and foot rope is graphically displayed in the echogram. This provides accurate information, both of the depth of the trawl and the school of fish, which allows for adjustment of the trawl for optimal catch.



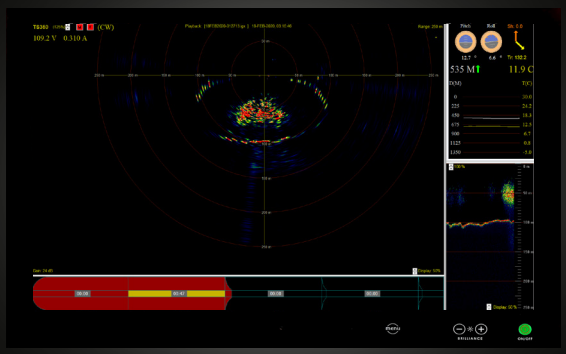
TRAWL SONAR TS-360 – REAL-TIME 360° OVERVIEW



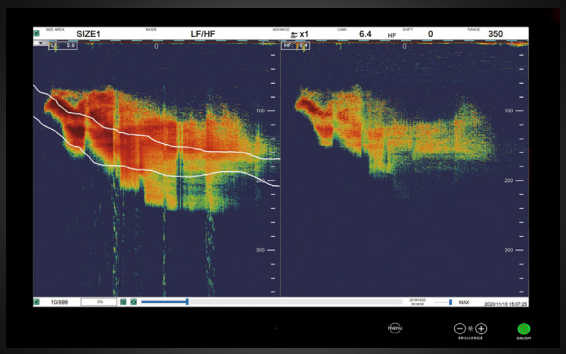


REAL-TIME 360° OVERVIEW OF THE TRAWL OPENING AND THE SURROUNDING AREA
The detection range extends well beyond the trawl opening. Even weak echoes from fish are presented with high precision, while noise is suppressed. The result is a clean and well-defined image of the trawl opening, fish inside the trawl and fish outside of the trawl opening.

A split screen option allows for the simultaneous presentation of both sonar and echo sounder display on the same screen, or on dedicated screens.



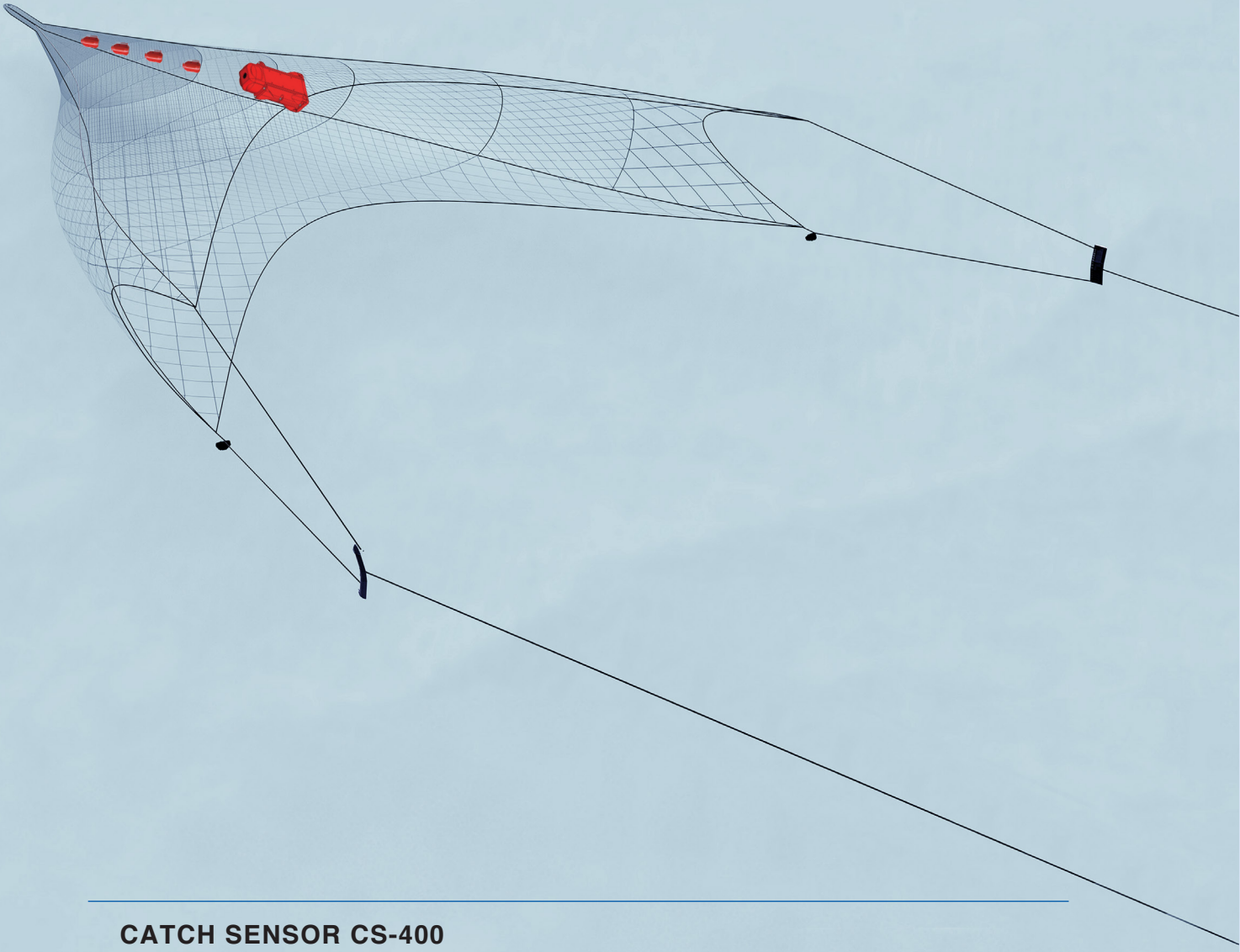
PRESENTATION OF CATCH SENSOR STATUS
As the trawl is filled the catch sensors triggers are released. The presentation of each catch sensor changes from yellow to red. Thus, graphically indicating the trawl filling rate.



CONNECT TS-360 TO YOUR ECHO SOUNDER
Presentation of the headline and foot rope in the Furuno FSS-3BB echogram. This allows for timely adjustment of the trawl for optimal catch.

TRAWL MONITORING SYSTEM

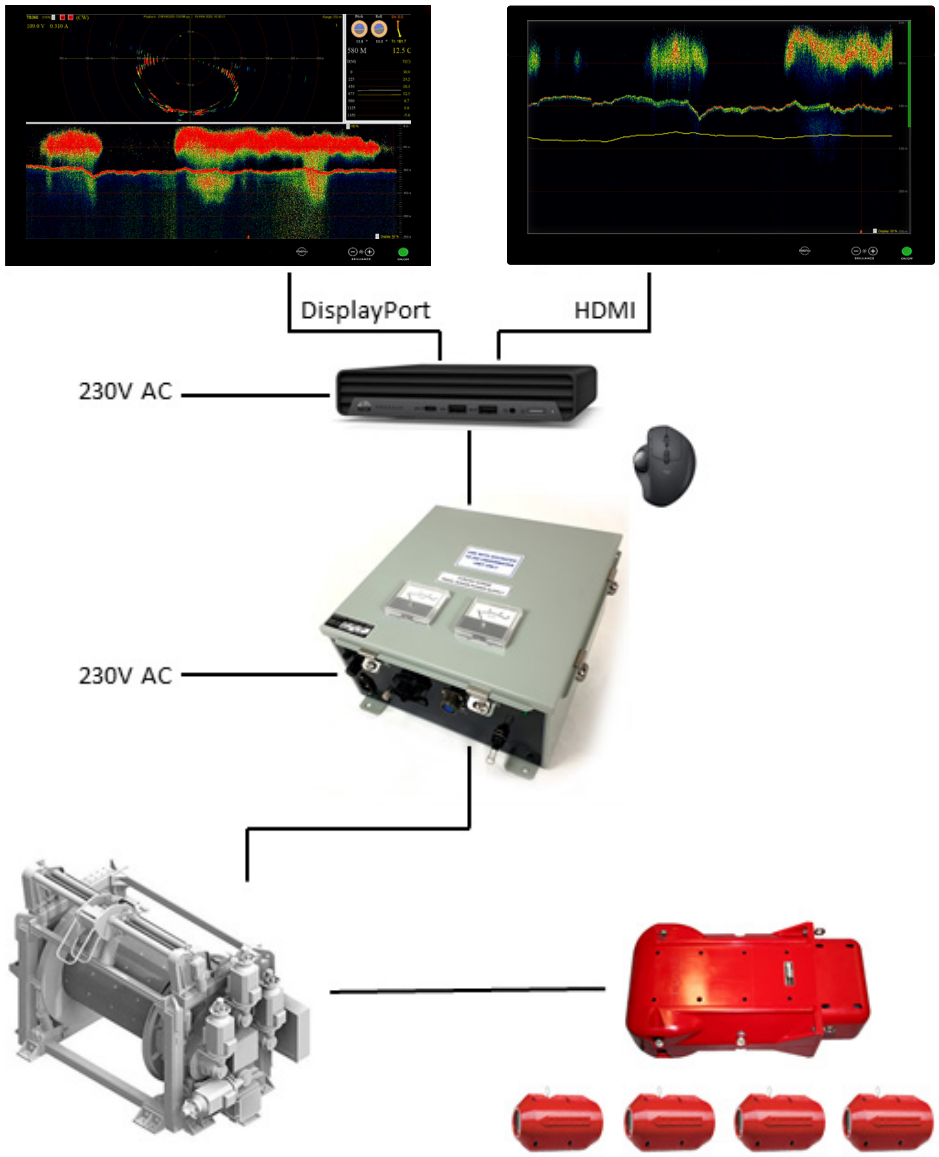
The TS-360 solution is rugged and low maintenance. The transducer has no moving parts which makes it less vulnerable to damage. The communication between the trawl sonar and the on board processor is continious and stable.



CATCH SENSOR CS-400

Catch sensors can be connected to the TS-360. A maximum of four sensors are supported. The signals from the catch sensors are transmitted wirelessly to the trawl sonar. CS-400 is rugged and user friendly with at least 1500 hours operating time before battery change. Batteries are replaced with commercial batteries D/LR20.

TRAWL SONAR TS-360 CONNECTION DIAGRAM



TRAWL SONAR TS-360 HARDWARE SPECIFICATION

UNDERWATER UNIT

Frequency:	120 kHz
Transducer beam width (nominal):	Receive: 360° x 20° Transmit: 360° x 20°
Effective beam with:	3°
Beams:	720
Range resolution:	0.2 % of range
Min. detecatble range:	0.5 meter
Max. operating depth:	2000
Frame rate:	4 sec. per frame. Full 360° coverage
Processor interface:	SHDSL. Ethernet to 2-wire copper extender

Cable requirements:

Max. loop resistance:	100 ohm
Max. atenuation:	20 Db / 100 kHz
Max. cable lenght:	3000 m

Connector:
Subconn BCR2002M bulkhead connector with full rugged stainless steel shell and improved water blocking for the power/signal cable.

Power supply:
130 VDC at less than 30 W (nominal)

Voltage / Current Monitor:
Voltage and current are measured in the underwater unit and displayed on screen.

Weight:
In air: ~ 25.4 kg (56 lbs)
In water: ~ 8.2 kg (18 lbs)

Materials:
6061-T6 Aluminum, 300 Series
Stainless steel, polyurethane and PVC

EQUIPMENT LIST

Underwater unit
Power supply / Interface box
Processor
Trawl sonar software
Track ball

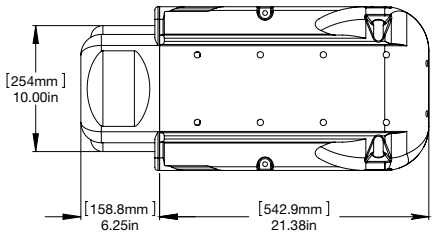
OPTIONS

Underwater unit cage
Catch sensor CS-400
Monitors

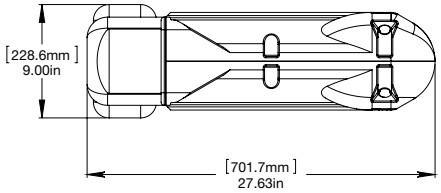
DIMENSIONS

UNDERWATER UNIT

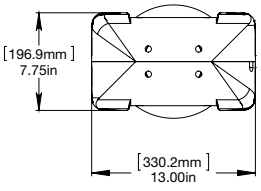
FRONT VIEW



SIDE VIEW

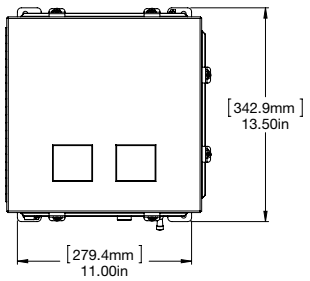


BACK VIEW

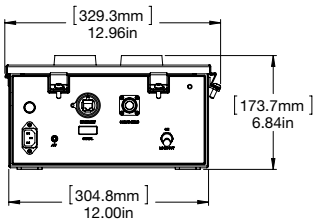


POWER SUPPLY / INTERFACE BOX

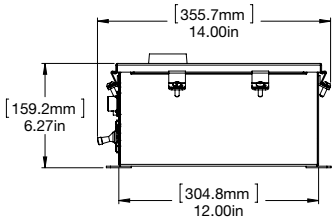
FRONT VIEW



BACK VIEW



SIDE VIEW



NOTES