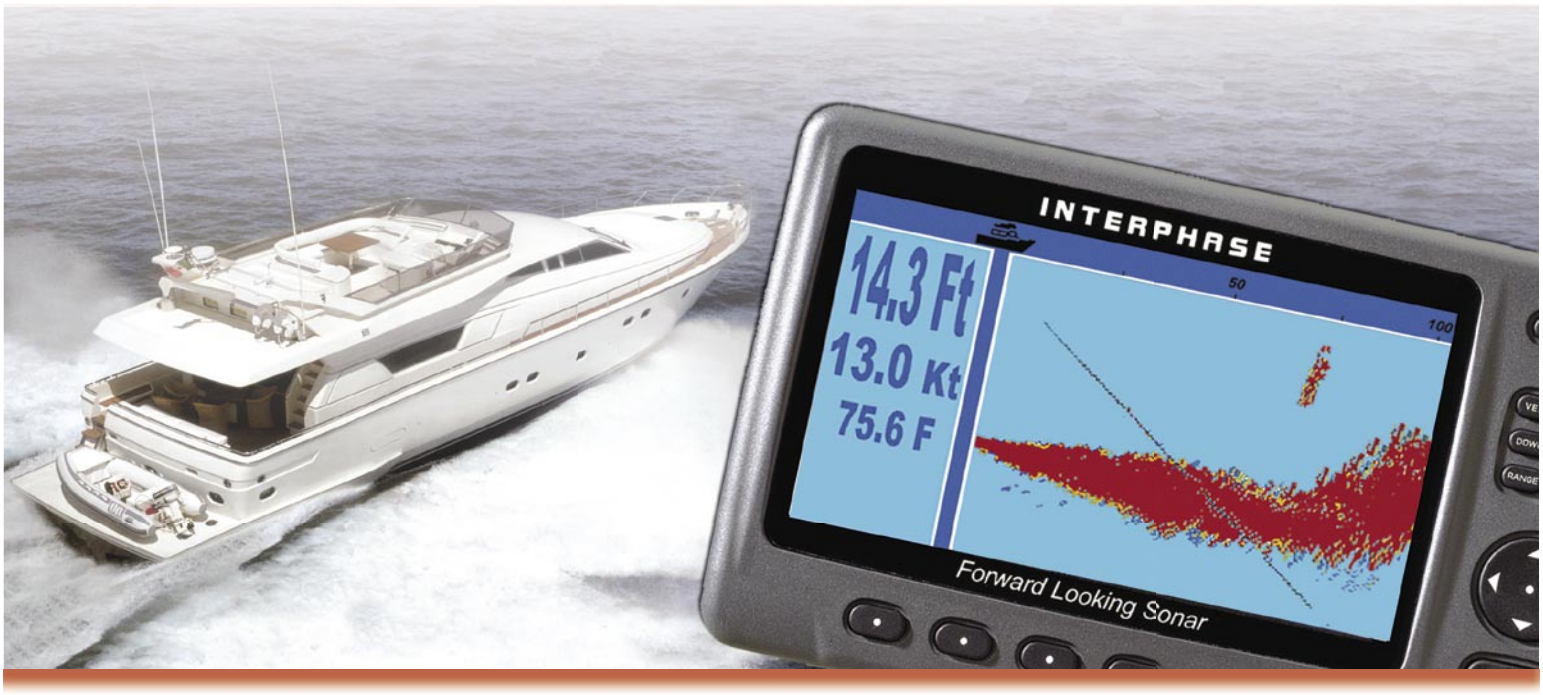
INTERPHASE

FORWARD LOOKING SONAR



www.interphase-tech.com

FORWARD LOOKING TECHNOLOGY

PATENTED TECHNOLOGY

Over four decades ago, the Navy perfected Phased Array Scanning Sonar. Essentially, underwater radar. At that time, it was absolutely state-of-the-art, and the specific technology involved was a closely guarded secret. In 1992, Interphase began mass production of the first reliable, affordable, consumer phased array scanning sonars, with a number of patented advances. Since then, over 35,000 Interphase systems have been installed, all over the world. This brochure describes our latest enhancements to this powerful technology.

Conventional depth sounders only look directly below the vessel and give little or no warning of shallow water, rocks, fish and other submerged objects in the water ahead. For this a vessel must be equipped with a forward looking scanning sonar.

Radar proved it decades ago, you can't avoid, or find, what you can't see. Radar sees above the water, and forward looking scanning sonar sees below.

There are basically three ways to get a sonar transducer to scan. One is to rotate the vessel, the second is to rotate the transducer, and the third measures the time difference (or phase) of received echoes between elements in a transducer array to determine direction. The last method, phased array scanning, is done electronically and requires neither boat movement or unreliable motors to rotate the transducer. It is inherently faster and more reliable. Today, phased array technology is replacing conventional motor driven designs in many areas, such as advanced radar, submarine sonar and medical ultrasound systems.

Interphase's phased array technology is based on an advanced "beamformer design" coupled to an array of carefully spaced peizoceramic transducer elements which produce and steer underwater sonar beams in many different directions by electronically phasing or timing the signals to each element. Depending on the orientation of the array, our phased array systems scan beams over large sectors of forward-looking vertical and horizontal planes. With no moving parts, the transducers are small, robust and easy to install.

TYPES OF FORWARD SCANS

FORWARD VERTICAL SCANNING

See submerged objects and bottom contour directly in front of your boat

In many of our transducers the phased array is oriented to scan a 12° beam vertically from surface directly ahead of the vessel to the bottom below. In this mode, the sonar shows "live action" views of shallowing bottom conditions, underwater structure, large forward obstructions and even fish and schools of bait directly out ahead of your boat.

The vertical scanning display is the most intuitive and easy to understand. We consider it the most basic forward looking mode, and all the products in this brochure include the forward vertical scanning mode.

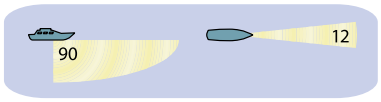
FORWARD HORIZONTAL SCANNING

See a radar-like picture of the submerged area ahead and to each side of your boat

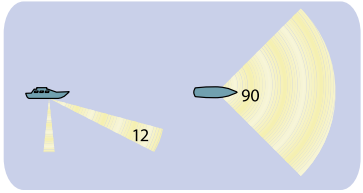
A transducer with a horizontally orientated array scans a 12° beam over a 90° horizontal sector, or with two transducers , a full 180° sector. The array is angled slightly downward, approximately 10°, to minimize surface wave clutter and, in shallower waters will show the bottom forward and to the sides of the vessel.

The horizontal scan is extremely useful to help locate and follow tricky channels, find openings in reefs and passages through small inlets or reef protected bays and lagoons. It also helps to determine depths of the water ahead and to each side of the vessel. And, in deeper waters, the radar-like searchlight scan is a powerful tool for locating and tracking schools of fish and bait.

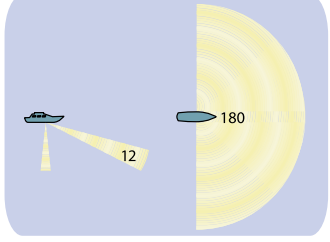
SE-200A, SE-200B, SE200C, ISCAN V90 se, COLOR TWINSCOPE se AND ISCAN 180 se



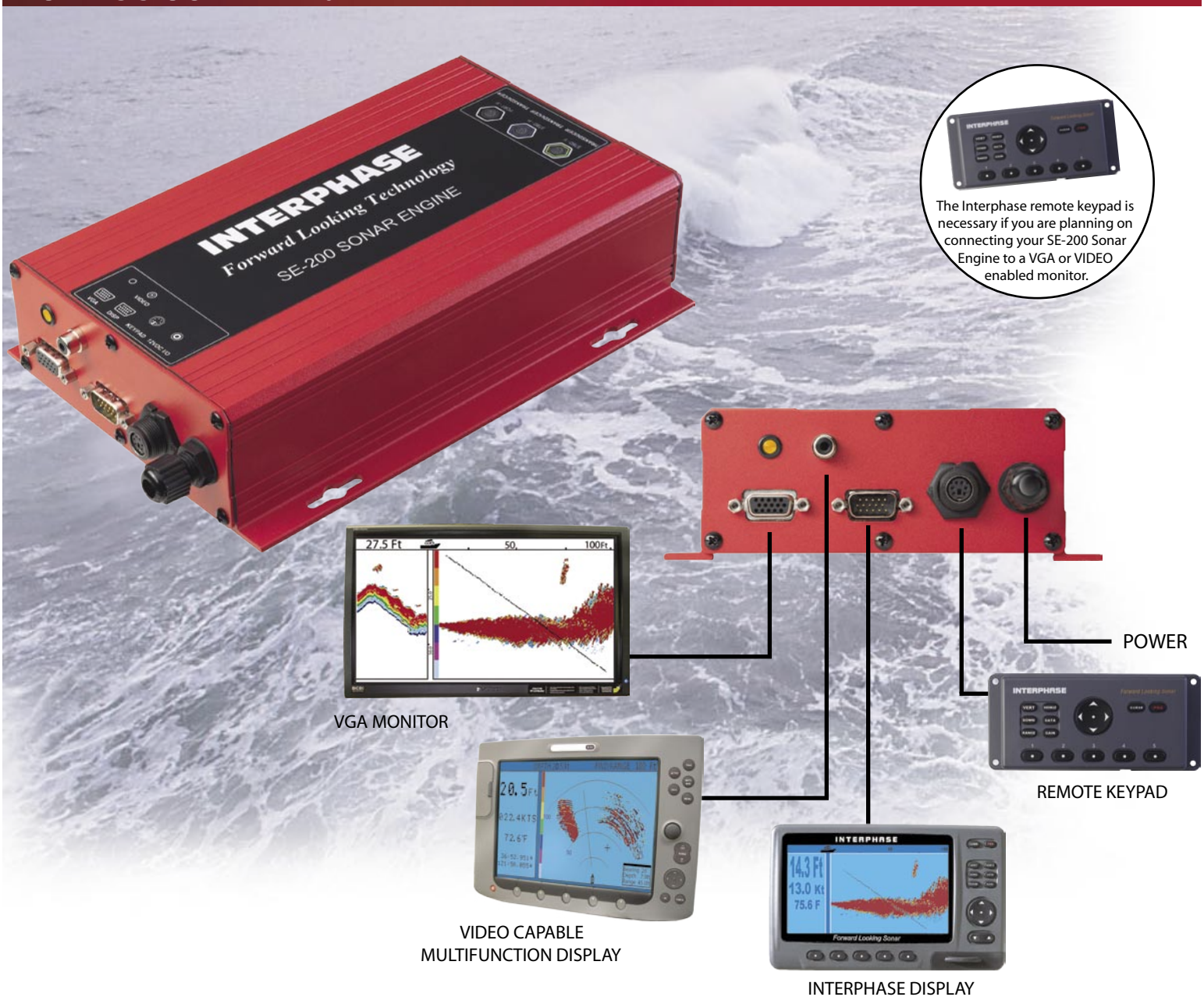
SE-200B AND COLOR TWINSCOPE se



SE-200C AND ISCAN 180 se



SE-200 SONAR ENGINE



SE-200 SONAR ENGINE

These forward looking sonar systems are based on Interphase's new SE-200 "black box" Sonar Engine. Two words can be used to describe the new SE-200 Sonar Engine ***flexibility*** and ***power***. Owners can use the simultaneous composite video, VGA and Interphase display output ports to connect to many different types of displays. Remote keypads, located close to the multifunction or VGA display can be easily connected to the SE-200 Engine to provide complete and simultaneous control from multiple locations. Cable runs to the remote displays and keypads can exceed 200' in length—eliminating the need for expensive and loss producing transducer extension cables and enabling the placement of the SE-200 Engine in a convenient out of the way location in a cabinet or below decks.

Power output is over 3,000 watts peak to peak (400 watts rms) and both transmit and receive beams are focused to provide maximum range and signal-to-noise ratio. The SE-200 Sonar Engine does all the work of creating and scanning multiple acoustic beams and forming complete sonar images to be sent as video or VGA screen displays, meaning that multifunction displays don't slow down because of the extra computational burden.

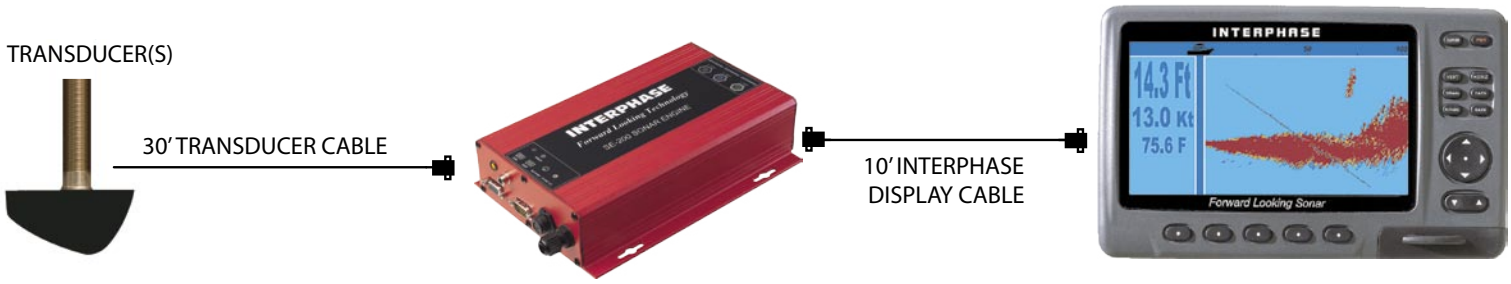
Choose a system using the Interphase 7" display, or one that uses the video or VGA output ports to work with multifunction displays from many manufacturers such as Raymarine, Garmin, Northstar and Furuno, or flat panel displays from manufacturers like VEI, Ambient Nav, Nauticomp or even inexpensive flat panel computer monitors and TV's. The choices are almost limitless!

On the following pages, we've listed six pre-packaged systems that include everything needed to get started. The three versions on page 4 include an Interphase 7" Display, while the three on page 5 come with remote keypad but without display for use with multifunction or VGA monitors. Each of these six basic systems can be further expanded to include additional displays, keypads, longer cables, external alarms, and various inputs and outputs as described on the last pages 6 and 7 of this brochure.

This is forward looking scanning sonar! And, being Interphase, you can be sure it's affordable, easy to use and built to last.

COMPLETE SYSTEMS WITH INTERPHASE 7" DISPLAY

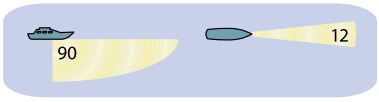
*The systems below come standard with Transducer(s) with 30ft cable, SE-200 Sonar Engine, 10ft VGA cable, 10ft Video cable, 10ft INTERPHASE display cable and Interphase 7 inch Display. * The iScan 180 se also comes with 2 fairing blocks.*



iScan V90 se

Long range Forward Vertical Scan color sonar —up to 1,200 feet ahead.

The iSCAN V90 se scans a beam from the surface to the bottom to show shallow water , hazards and fish directly ahead. It's a great navigational tool and perfect for spotting rock pinnacles, reefs, shallow water and schools of bait.



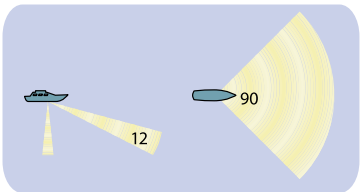
- Long range Vertical Scan mode from surface to bottom. Range up to 1,200' ahead (depending on speed, depth and water conditions)
- Conventional downlooking depthsounding function to 600'
- Split Screen depth or data displays
- Auto Range, Auto Gain
- Shallow water vertical range expansion
- NMEA 0183 speed and lat/lon inputs
- NMEA 0183 digital depth output

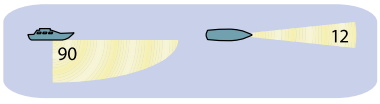
PART#
U1-0200-90A.....W/1 TRANSOM MOUNT TRANSDUCER
U1-0200-90C.....W/1 THRU-HULL TRANSDUCER

Color Twinscope se

Long range Forward Vertical Scan—Plus 90-degree Forward Horizontal Scan

The Color Twinscope se is a true Dual Axis scanning sonar. It includes all the features of the Vertical scanning iSCAN V90 se, plus the ability to use a horizontal scan to sweep over a 90° sector in front and to the sides of the vessel—great for navigating through channels, rocks and coral or tracking schools of bait and fish.





- Includes all features of iSCAN V90 se, plus,
- Uses two phased arrays in single thru-hull or dual transom transducers to scan both forward vertically and forward horizontally

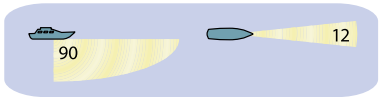
PART#
U1-0200-CLA.....W/2 TRANSOM MOUNT TRANSDUCERS
U1-0200-CLC.....W/1 THRU-HULL TRANSDUCER

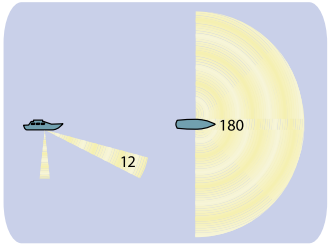
iScan 180 se

Long range Forward Vertical Scan— Plus, uses two transducers for full 180-degree Forward Horizontal Scan

The iSCAN 180 se has all the capabilities of the V90 se and Color Twinscope se plus it uses two synchronized transducers to provide a full 180° horizontal forward scan. Owners can mount one transducer on each side of the keel to eliminate problems from "keel shading" on deep keel vessels. The iSCAN 180se is the ultimate forward scanning sonar for navigating through narrow channels, along ledges, avoiding reefs and rock pinicacles and for locating and tracking fish and schools of bait.

- Uses three phased arrays in two separate transducers for full 180° horizontal scan

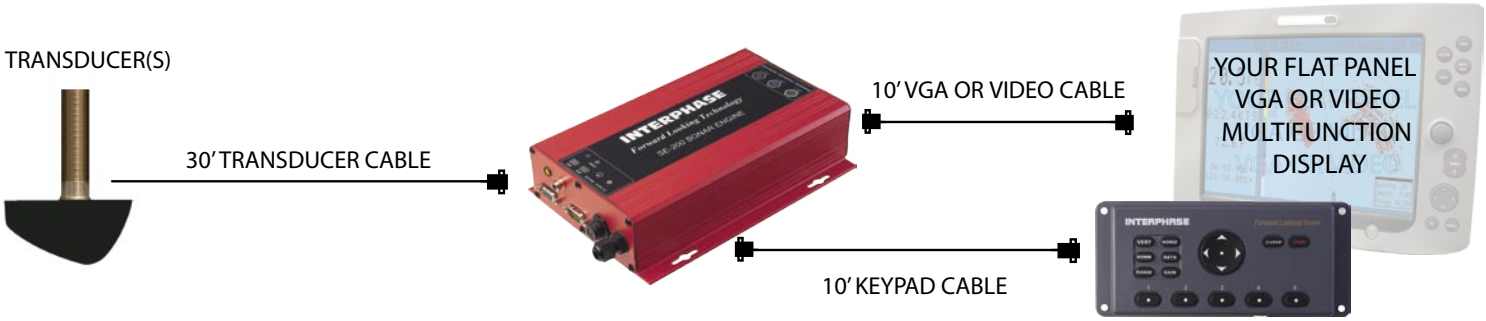




PART# U1-0200-180.....W/2 THRU-HULL TRANSDUCERS
NOTE: Also includes fairing blocks

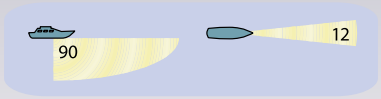
SYSTEMS FOR USE WITH DISPLAYS INCLUDING MOST MULTIFUNCTION AND FLAT PANEL MONITORS

*The following all come standard with Transducer(s) with 30ft cable, SE-200 Sonar Engine, 10ft VGA cable, 10ft Video cable and an Interphase Keypad with 10ft of cable. * The SE-200C also comes with 2 fairing blocks.*



SE-200A

Long range Forward Vertical Scan color sonar —up to 1,200 feet ahead.



Like the iSCAN V90 se at left, the SE-200A scans a forward beam, vertically, from the surface to the bottom to show shallow water, hazards, fish and other submerged objects in the water directly ahead. A great navigational tool and perfect for spotting rock pinnacles, reefs, shallow water and schools of bait.

- Includes remote keypad for use with multifunction or VGA displays.
- Long range Vertical Scan mode from surface to bottom. Range up to 1,200' ahead (depending on speed, depth and water conditions)
- Conventional downlooking depth sounder
- Auto Range, Auto Gain
- Shallow water vertical range expansion
- NMEA 0183 speed and lat/lon inputs
- NMEA 0183 digital depth output

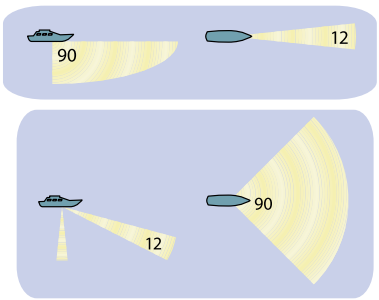
PART#
U1-200A-00A.....W/1 TRANSOM MOUNT TRANSDUCER
U1-200A-00C.....W/1 THRU-HULL TRANSDUCER

SE-200B

Long range Forward Vertical Scan and 90-degree forward horizontal Scan

The SE-200B is a true Dual Axis scanning sonar. It includes all the features of the vertical scanning SE-200A plus the ability to use a horizontal scan to sweep over a 90° sector in front and to the sides of the vessel—great for navigating through channels, rocks and coral or tracking schools of bait and fish.

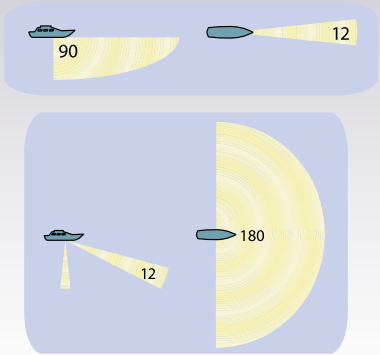
- Includes remote keypad for use with multifunction or VGA displays
- Includes all features of SE-200A, plus,
- Uses two phased arrays in either a single thru-hull or dual transom transducers to scan both vertically and horizontally



PART#
U1-200B-00A.....W/2 TRANSOM MOUNT TRANSDUCERS
U1-200B-00C.....W/1 THRU-HULL TRANSDUCER

SE-200C

Long range Forward Vertical Scan—Plus, uses two transducers for full 180-degree forward horizontal scan



The SE-200C includes all the features and capabilities of the SE-200A and SE-200B, plus it uses two synchronized transducers to provide a full 180° forward horizontal scan. Owners can mount one transducer on each side of the keel to eliminate problems from "keel shading" on deep keel vessels. The SE-200C is the ultimate forward scanning sonar for navigating through narrow channels, along ledges, avoiding reefs and rock pinnacles and for locating and tracking fish and schools of bait.

- Uses two transducer with three phased arrays for full 180° horizontal scanning

PART# U1-200C-00E.....W/2 THRU-HULL TRANSDUCERS
NOTE: Also includes faring blocks

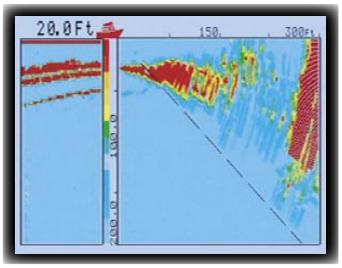
FEATURES INCLUDED ON ALL SE-200 BASED UNITS

- Forward Ranges to 1,200 ft
- Depth Ranges to 600 ft
- Adjustable Scanning Sectors
- Simultaneous VGA and Composite Video outputs
- Up to two remote keypads
- Optional Keypad, Video and VGA Extension Cables Available—up to 250'
- Auto Range/Auto Gain
- 10-16 VDC Less than 1.0Amp

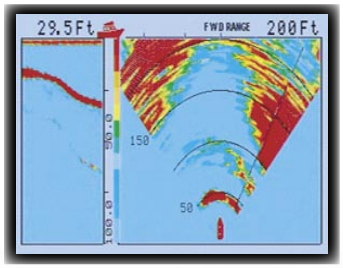
- Separate Gain Controls for Forward and Downlooking modes
- Forward and Downlooking Alarms
- Loud External Alarm Capability
- NMEA 0183 GPS Input (Lat/Lon & Speed)
- 3,000 Watts Peak to Peak Output
- NMEA 0183 Digital Depth Output
- Full Screen Forward Scan Displays
- 12° Beam Angle
- 200 kHz Frequency
- "Power-Off" Memory

- Full Screen Depthsounder Display
- Split Screen Forward Scan and Depthsounder Display
- Split Screen Forward Scan and Digital Data Screen
- Shallow Water Vertical Zoom
- USB for Future Internet Upgrades
- On Screen Cursor shows distance and depth at any point.
- Keel Offset Adjustment
- Sunlight, Daylight and Night Modes

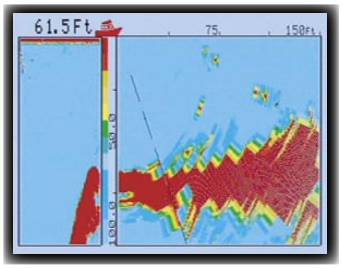
SCREEN CAPTURES



Approaching breakwater in Kingston Harbor, WA. Notice the breakwater 300 ft in front of the vessel in only 20 ft of water!



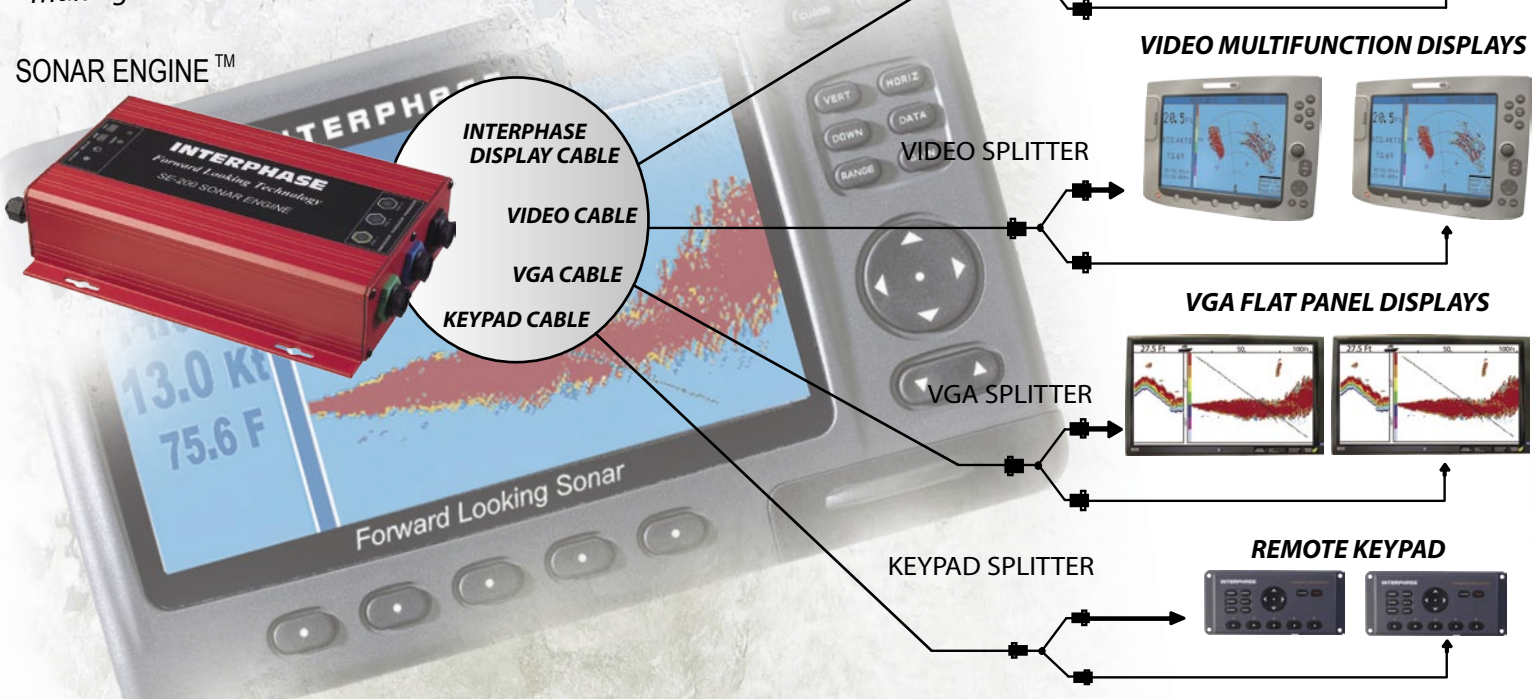
Exiting Patos Island in the State of WA. Note the channel opening is clearly visible.



Vessel entering Shallow Bay on the island of Sucia in WA. Note bottom contour rising in front of the vessel.

ENDLESS CAPABILITIES

The SE-200 Sonar Engine has the ability to connect to multiple screens as well as multiple keypads making second stations a breeze!

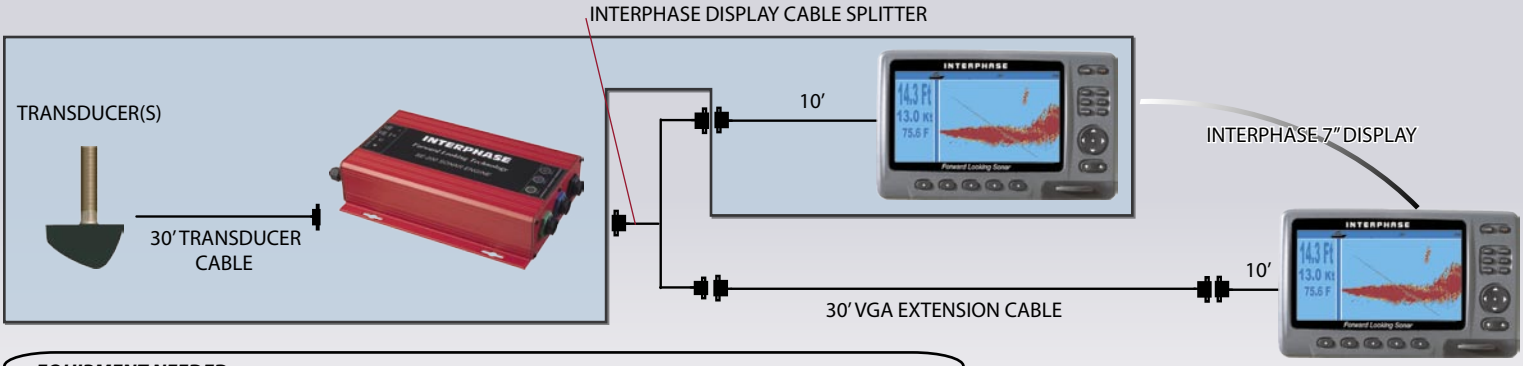


*Connection of the SE-200 Sonar Engine to the input of a Furuno NavNet display utilizing a Furuno 008-523-070 video interface requires an additional accessory- a VGA to video converter. **PART # 23-1016-000**

CONNECTIONS-THREE EXAMPLES OF EXPANDING YOUR SE-200 SYSTEM

#1 SCENARIO—

iScan V90 se with one Interphase Display 40′ from the transducer and a second Interphase display 70′ from the transducer

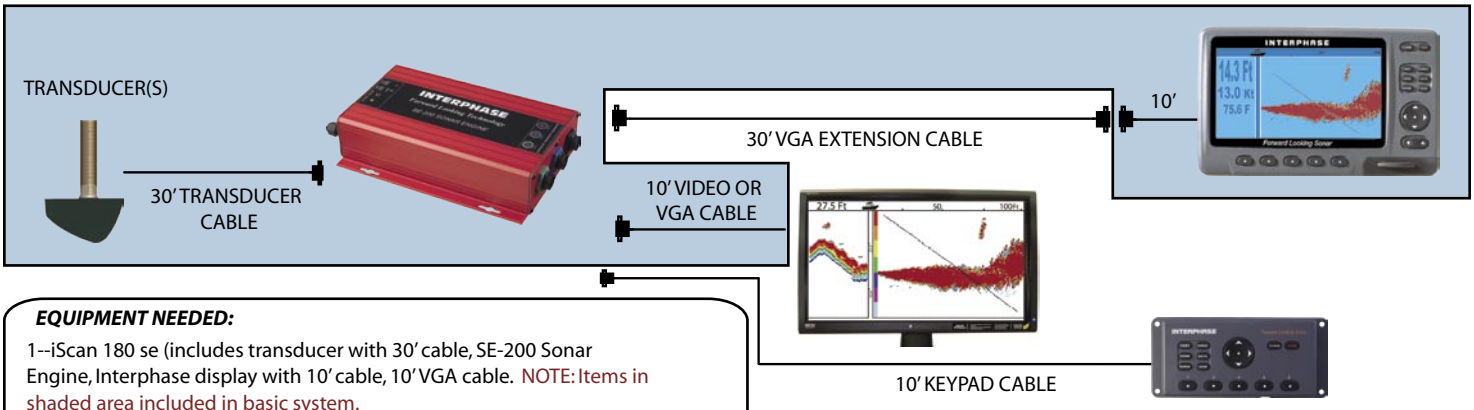


EQUIPMENT NEEDED:

1--iScan V90 se (includes transducer with 30′ cable, SE-200 Sonar Engine and Interphase display with 10′ cable. NOTE: Items in shaded area included in basic system.
1--30′ VGA extension cable
1--Second Interphase VGA display

#2 SCENARIO—

iScan 180 se with Interphase display located 70′ from the transducers and a multifunction display located 40′ from the transducers

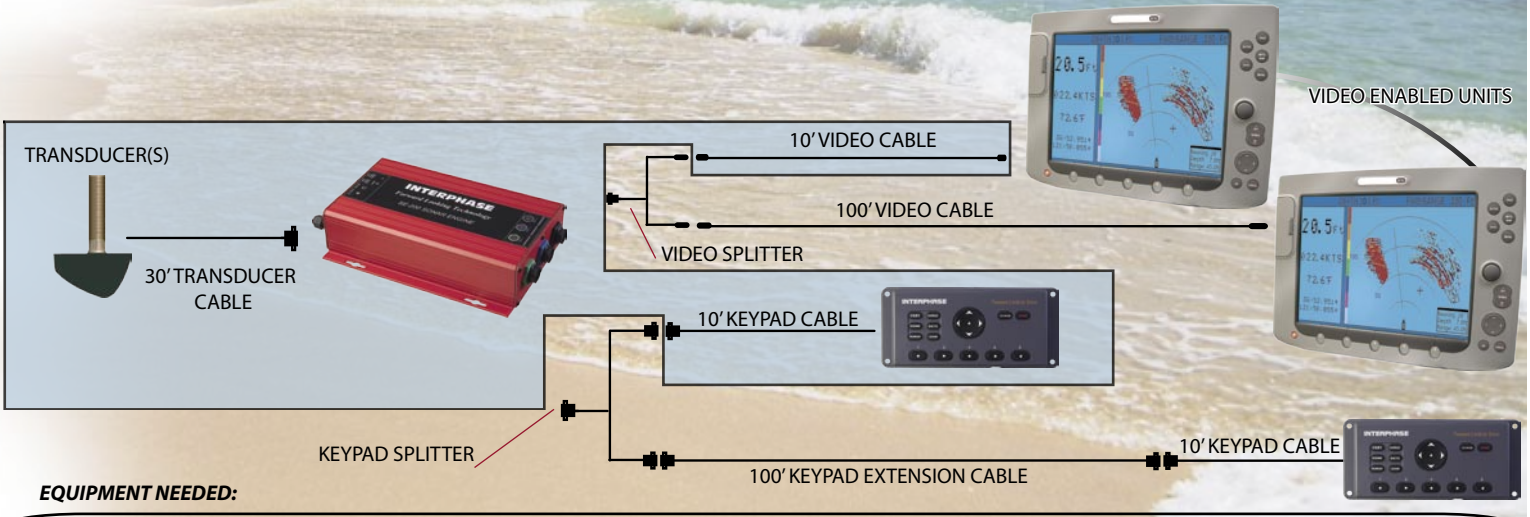


EQUIPMENT NEEDED:

1--iScan 180 se (includes transducer with 30′ cable, SE-200 Sonar Engine, Interphase display with 10′ cable, 10′ VGA cable. NOTE: Items in shaded area included in basic system.
1--30′ VGA extension cable
1--Interphase Keypad w/10′ of cable

#3 SCENARIO—

SE-200B using two multifunction displays, one located 40′ from the transducer and the other located 130′ from the transducer



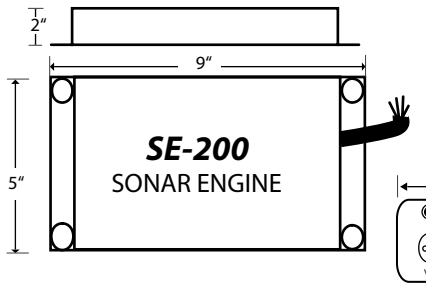
EQUIPMENT NEEDED:

1--SE-200B (includes transducer with 30′ cable, SE-200 Sonar Engine, Interphase Keypad with 10′ cable, 10′ Video cable and 10′ VGA cable. NOTE: Items in shaded area included in basic system.
1--Video cable splitter
1--Interphase Keypad w/10′ of cable
1--Interphase Keypad cable splitter
1--Interphase 100′ Keypad extension cable
1-- VGA cable splitter
1--100′ video extension cable

INTERPHASE

"Add Forward Looking Capability To Multifunction and VGA Displays"

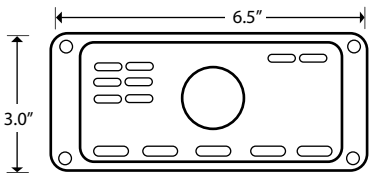
SONAR ENGINE DIMENSIONS



SE-200 SONAR ENGINE

- 6' Power I/O Cable
- 12' Video Cable (M-M)
- 10' VGA Cable (M-M)

KEYPAD DIMENSIONS

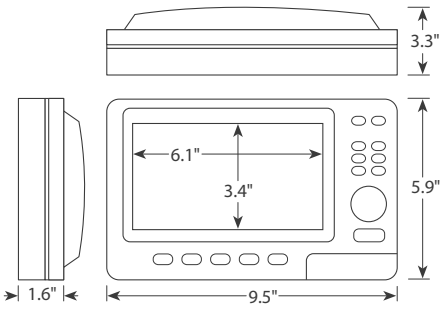


KEYPAD

- 10' Cable---6 Pin Mini Din
- In Dash Mounting Hardware
- On- Dash Mounting Plate

PART# 23-1015-000

INTERPHASE 7" DISPLAY



7" INTERPHASE DISPLAY

- 6' Power I/O Cable
- 10' Interphase VGA Cable

TRANSDUCER EXTENSION CABLES

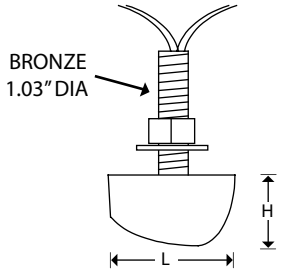
30' 9 PIN MALE-FEMALE ——— 04-0014-008

10' 9 PIN MALE-FEMALE ——— 04-0014-007R

YOUR AUTHORIZED INTERPHASE DEALER

A complete list of Interphase dealers is available at www.interphase-tech.com

TRANSDUCER DIMENSIONS



- TRANSDUCERS COME WITH 30' OF CABLE
- TRANSDUCER EXTENSION CABLES ARE AVAILABLE
  10FT------04-0014-007R
  30FT------04-0014-008
- FAIRING BLOCKS INCLUDED WITH ISCAN 180 SE AND SE-200C

MODEL	TRANSDUCER(S)	L	D	W
SE-200A ISCAN V90 SE	THRU-HULL	T1-I200-026	4.5"	2.4"	2.4"
SE-200A ISCAN V90 SE	TRANSOM MOUNT	T1-I200-025	5.0"	2.8"	2.3"
SE-200B TWINSCOPE SE	THRU-HULL	T1-I200-032	5.0"	2.4"	4.0"
SE-200B TWINSCOPE SE	TRANSOM MOUNT	T1-I200-025 T1-I200-028	5.0" 5.0"	2.8" 2.8"	2.3" 2.3"
SE-200C ISCAN 180 SE	THRU-HULL	T1-I200-035 T1-I200-036	7.0" 7.0"	3.0" 3.0"	4.0" 4.0"

CABLES

VIDEO CABLES (RCA STYLE)

25' MALE-MALE 04-1088-000R
100' MALE-MALE 04-1093-000R

VGA CABLES (15 PIN)

25' MALE-MALE 04-1089-000R
100' MALE-MALE 04-1090-000R

EXTENSION CABLE FOR INTERPHASE DISPLAY

25' MALE-FEMALE 04-1099-000R

KEYPAD CABLES
6-PIN MINI DIN

30' EXTENSION FEMALE-MALE 04-1084-000R

100' EXTENSION FEMALE-MALE 04-1085-000R

CABLE SPLITTERS

VGA SPLITTER
MALE TO (2) FEMALES
04-1092-000R

VIDEO SPLITTER
FEMALE TO (2) MALES
04-1094-000R

KEYPAD SPLITTER
MALE TO (2) FEMALES
04-1080-000R

INTERPHASE DISPLAY SPLITTER
FEMALE TO (2) MALES
04-1095-000R

INTERPHASE
Forward Looking Technology

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