KODEN

10.4-inch/15-inch Color LCD
Sonar

ESR-160/180/180BB



ESR-160

ESR-180

Flat screen, High speed scan and Target lock!

FEATURES

Flat screen
The ESR-160 / 180's flat screen allows for flexible installation on the boat. Especially the ESR-160, by its light weight and compact body, fits for mounting on the tight console. ESR-180BB Black Box sonar connects to any XGA type display (owner supplied).

High speed scanning
The fastest echo-refreshing rate in this class allows the user to find schools of fish quickly and minimizes the chance of missing targets.

Target lock
Once the target is locked on, the ESR-160 / 180 controls the transducer's beam angle in azimuth and elevation to keep the school of fish displayed on the screen.

Echo sounder display
A conventional echo sounder display can be shown on the sonar display. This feature is effective in finding a school of fish and its density near the seabed.

Bottom scanning
Bottom scanning up to sector angle of 95 degrees is possible, most suited for focusing on the largest school of fish as well as bottom profiling.

Variable depth marker and cross cursor
Accurate distance to a target can be read off using the variable depth marker. Using the cross cursor, the distance and bearing to the target can be measured accurately.

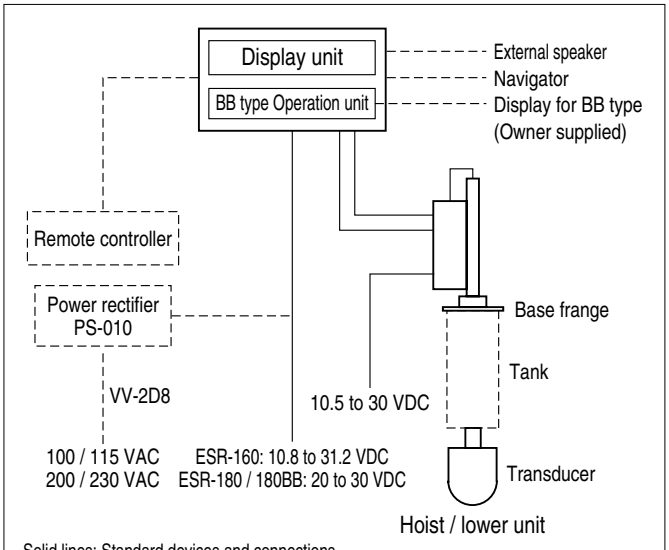
Image off-centering
The entire sonar image can be offset in 4 ways, up, down, left or right, for a larger viewing range.

Built-in standard water temperature sensor
Using this feature, the water surface temperature display is always available.

EQUIPMENT LIST

Standard equipments	Display unit (ESR-160 / 180)	1
	Operation unit (ESR-180BB)	1
	Hoist / lower unit	1 set
	DC power cable, connecting cable	1 set
	Installation materials, spare parts, operation manual	1 set
Options	Remote controller, PVC tank unit, FRP tank unit, External speaker, Power rectifier unit, NMEA output cable, NMEA input cable, Joint pipe (1681 mm / 1981 mm)	

CONNECTIONS

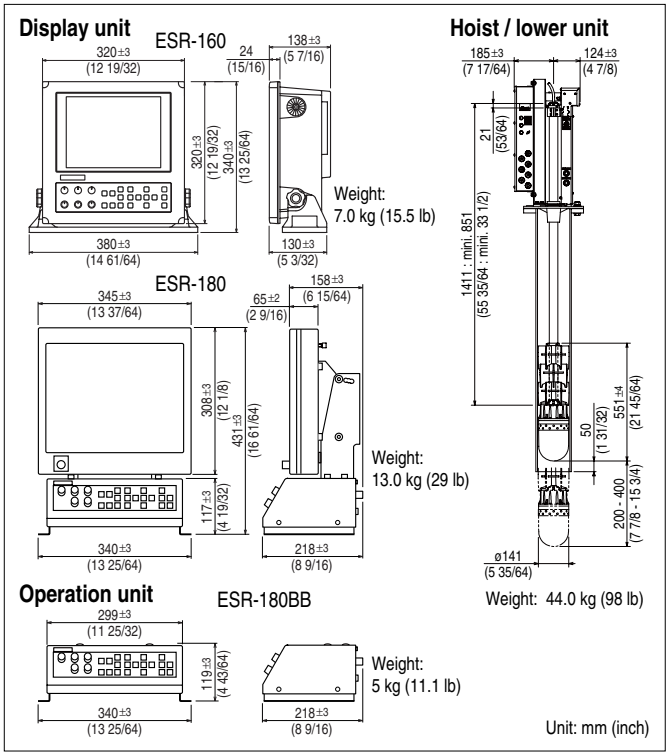


Solid lines: Standard devices and connections.
Dashed lines: Optional devices and connections.

SPECIFICATIONS

Model		ESR-160	ESR-180 / 180BB
Output power (RMS)		1.5 kW	
Output frequency		180 kHz or 80 kHz	
Tilt angle		+5° to -90° (1° step)	
Hoist stroke		200 to 400 mm	
Display size and type		10.4 inch color TFT LCD	15 inch color TFT LCD (Except BB type)
Display resolution		640 x 480 (VGA)	
Basic ranges		20 to 2000 (m), 80 to 6000 (ft), 12 to 1600 (fm / l. fm) (8 ranges can be set to users choice)	
Range units		m, ft, fm, l.fm	
Scanning sector angles	Sonar mode	5° step: 5°, 25°, 45°, 85°, 125°, 165°, 205°, 360° 10° step: 10°, 30°, 50°, 90°, 130°, 170°, 210°, 360°	
	Bottom scan mode	5° step: 5°, 25°, 45°, 65°, 95°, 115°, 145°, 175° 3° step: 3°, 27°, 45°, 63°, 93°, 117°, 147°, 177°	
360° scanning time (extracts)	Scanning range (m)	20 40 80 100 160 200 240 320 400 600 800 1000 1200 1600 2000	
	Scanning time (sec.) 5° step	6.4 8.4 12.2 14.1 19.9 23.8 27.6 35.4 43.2 62.5 81.9 101 121 153 198	
	Scanning time (sec.) 10° step	4.3 5.1 7.0 7.0 10.9 12.8 14.8 18.6 22.5 32.2 41.9 51.5 61.2 80.6 99.9	
Bearing center		5° step	
Presentation modes		Sonar, Off-center, Bottom scan, Echo sounder	
Presentation colors		8 colors (Selected in 4096 colors on color palette)	
Functions		TVG (4 type), Pulse selection (3 types), Color rejection, Dynamic range (3 levels), Compass display, Interference rejection, Power reduction, Bow compensation	
Language		English	
Input data format and sentences		Option: (NMEA 0183) GGA, GLL, VTG	
Output data format and sentences		NMEA 0183 DBT, MTW, TLL	
NMEA ports		Option:2 (input 1 / output 1)	
Power supply	Display unit	10.8 to 31.2 VDC	20 to 30 VDC
	Hoist / lower unit	10.5 to 30 VDC	
Power consumption	Display unit	30 W or less (24 VDC)	38 W or less (24 VDC)
	Hoist / lower unit	110 W or less (24 VDC)	
Environmental			
Operating temperature		0℃ to +50℃	
Water protection		IPX2	IPX1

DIMENSIONS AND WEIGHT



• Design and specifications are subject to change without notice.

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Safety precaution | To ensure proper and safe use of the equipment, please carefully read and follow the instructions in the Operation Manual.

For details, please contact:

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