

FURUNO

***R*RADAR**



Models:

FAR-15x8 series
(with 15" or 19" LCD)

Photo: 15" LCD MU-150HD

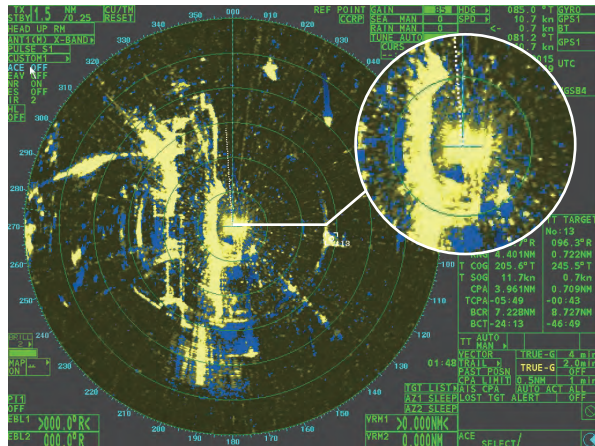


Approved

www.furuno.com

► Automatic Clutter Elimination (ACE) for unprecedented echo clarity

Quickly adjust the radar image with the push of a single button press. When the ACE function is activated, the system automatically adjusts clutter reduction filters and gain control according to the sea and weather conditions selected by the user (calm/rough sea/ hard rain).



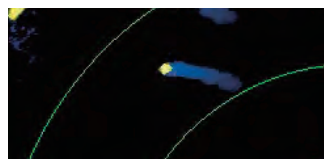
Automatic Clutter Elimination (ACE) OFF



Automatic Clutter Elimination (ACE) ON

► Fast Target Tracking™ (TT)

It only takes a few seconds after a target has been selected, that a speed and course vector is displayed. With accurate tracking information, estimation of other vessels' course and speed is made easier.



Before selecting a target

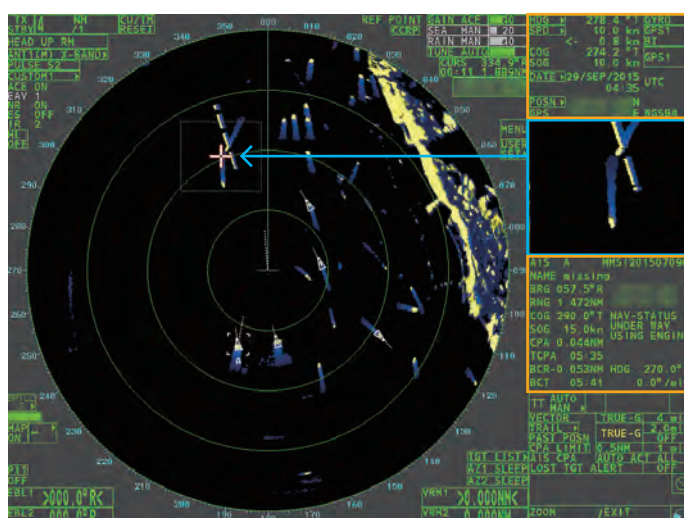


Within a few seconds



Speed and course vector

► Customizable data display for efficient and simple operation



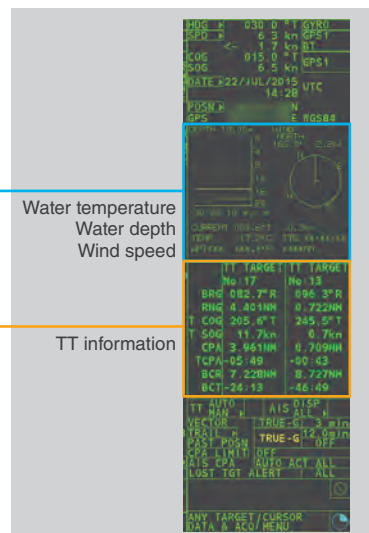
OS data cell

Data cell 1

Close up display

Data cell 2

AIS information



Water temperature
Water depth
Wind speed

TT information

Data display

Whether it be a close up of approaching targets or target information, you can customize the display freely to show the information you need at hand. Up to four TT targets can be displayed as well as two AIS targets, complete with information.

Close up display (Zoom function)

You can view a close up of a point of interest, enlarged two or three times. Enlarge incoming targets for increased situational awareness. Echo trails can also be displayed in order to further enhance situational awareness in busy shipping lanes.

Excellent target detection, improved user interface, made possible with the very latest technologies



RADAR

- ▶ High performance Radar with Cat.2 (500-10,000GT) and Cat.3 (<500GT) support.
- ▶ Accurately tracks other vessels with advanced Target Tracking (TT) function for collision avoidance.
- ▶ Improved sea and rain clutter suppression function.
- ▶ Improved user interface for simple and efficient operation.

Easy to operate control unit

Simple and efficient operation is made possible with individual knobs for setting gain/rain/sea clutter suppression, as well as a RotoKey and touchpad. The optional trackball unit can also be used.



Rotate to adjust
rain reflection,
sea surface reflection, gain

Touchpad area

Rotokey and
frequently used key



Trackball Control Unit
(option)

FAR-15x8 series

FAR-1518/ FAR-1518-BB X-band, 12 kW, TR up
FAR-1528/ FAR-1528-BB X-band, 25 kW, TR up

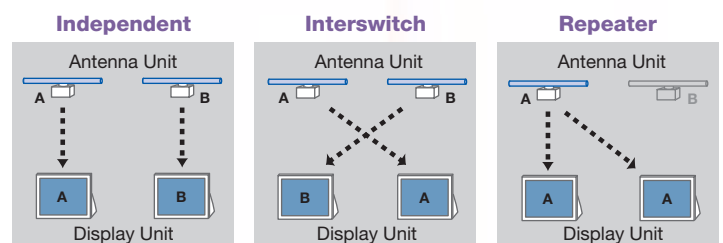
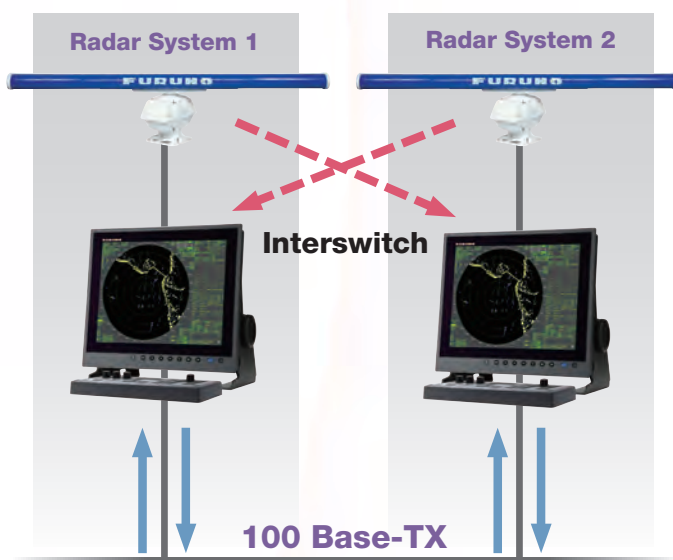
Antenna Unit



Photo: XN24AF



► Scalable Ethernet Network System



FAR-15x8 series utilizes a 100 Base-TX Ethernet connection to network up to two radar systems together. This Ethernet data link gives high-speed and stable navigational data sharing for interswitching as well as sharing data between ECDIS and GPS plotters.

► High visibility monitor MU-190, MU-150HD and MU-152

19" LCD MU-190 (Cat.2), 15" LCD MU-150HD* and MU-152 (Cat.3) are offered to fit the needs of your vessel.

*High brightness ensures great visibility in all environments.

► AIS connectivity built-in, accurately track targets for increased safety

► Display Radar overlay on connected ECDIS

► Customizable warning function for CPA/TCPA, Guardzone and more

► Conforms to IEC62388 and IEC62288

SPECIFICATIONS

PRODUCT NAME
MARINE RADAR

1 Antenna Radiators

- Antenna type
Slotted waveguide array
- Radiator length
4 ft (XN12AF), 6.5 ft (XN20AF), 8 ft (XN24AF)
- Horizontal beamwidth
1.9° (XN12AF), 1.23° (XN20AF), 0.95° (XN24AF)
- Vertical beamwidth
20°
- Sidelobe attenuation
XN12AF
-24dB(within ±10°),
-30dB(outside ±10°)
XN20/24AF
-28dB(within ±10°)
-32dB(outside ±10°)
- Polarization
Horizontal
- Rotation
26 rpm (RSB-120), 48 rpm (RSB-121)

2 RF TRANSCEIVER

- Frequency
9410 MHz ±30 MHz, P0N
- Output power
FAR-1518/FAR-1518-BB
12 kW
FAR-1528/FAR-1528-BB
25 kW
- Minimum range
25 m
- Range discrimination
25 m
- Range accuracy
1 % of range in use or 10 m whichever is the greater
- Bearing accuracy
±1°
- Range, Pulse length and Pulse Repetition Rate

PRR (Hz approx.)	Range scale (NM)											
	0.125	0.25	0.5	0.75	1.5	3	6	12	24	48	96	
3000*	0.08 μs											
2760*	0.12 μs											
1500				0.22 μs								
1000				0.38 μs								
1000							0.68 μs					
600**							1.2 μs					

*2200 Hz approx. with TT range on 32 NM. **500 Hz on 96 NM range.

- IF frequency
60 MHz

3 PROCESSOR UNIT

Range scales and ring interval

Scale (NM)	0.125	0.25	0.5	0.75	1.5	3	6	12	24	48	96
RI (NM)	0.025	0.05	0.1	0.25	0.25	0.5	1	2	4	8	16
Number of rings	5	5	5	3	6	6	6	6	6	6	6

- Warm-up time
3 minutes approx
- Presentation mode
Head-up, STAB Head-up, North-up (TM/RM), Course-up, Stern-up
- Marks
Cursor, Radar ring, Heading mark, North mark, Bearing line, Vector, Map mark, Zoom, VRM, EBL, Acquisition zone
- Target tracking (TT)
Auto or manual acquisition: 50 targets in 0.1 - 32NM
Tracking: 5/10 pts on all target
Time of vector: 0 to 60 minutes
- AIS
Display capacity: 300 targets, Tracking: 5/10 pts on all target
Time of vector: 0 to 60 minutes
- Echo trail
True/Relative, Trail length: 0 to 30 minutes (30 s steps) or continue
- Radar map
5,000 pts
- Interswitch function
Selected from menu

4 MARINE DISPLAY*

	MU-190	MU-150HD	MU-152
Screen size	19-inch LCD	15-inch LCD	15-inch LCD
Brightness	450 cd/m ²	1000 cd/m ²	400 cd/m ²
Contrast ratio	900:1	600:1	900:1
Radar effective diameter	250 mm	213 mm	213 mm

*The display unit for BB-type should be prepared by user.

5 INTERFACE

- Number of ports on processor unit
- Heading
1 port: AD-10 format or IEC61162-2
- Serial
IEC61162-2: 2 ports (AIS/HDG)
IEC61162-1: 4 ports (GPS/LOG/AMS/ECDIS)
- Contact closure
Alert output: 4 ch, Remote ACK input, System fail, Power fail
- Remote display
2 ports (Signal: HD, BP, Trigger and Video)
- LAN
Ethernet 100Base-TX: 1 port
- DVI
DVI-D: 1 port for main display
- RGB
1 port for VDR or RGB monitor
- Data sentences
- Input
ABK, ACK, ACN, ALR, BWC, BWR, CUR, DBK, DBS, DBT, DPT, DTM, GBS, GGA, GLL, GNS, HBT, HDG, HDM, HDT, MTW, MWV, RMB, RMC, RTE, THS, VBW, VDM, VDO, VDR, VHW, VTG, VWR, VWT, WPL, ZDA
- Output
ABM, ACK, ALC, ALF, ALR, ARC, BBM, EVE, HBT, OSD, RSD, TLB, TLL, TTD, TTM, VSD

6 POWER SUPPLY

- Processor Unit
- AC type
FAR-1518/1518-BB
100-115/220-230 VAC: 1.8/0.8 A (26 rpm), 2.2/1.0 A (48 rpm)
FAR-1528/1528-BB
100-115/220-230 VAC: 2.3/1.0 A (26 rpm), 2.6/1.2 A (48 rpm)
- DC type
FAR-1518/1518-BB
24 VDC: 6.1 A max. (26 rpm), 7.2 A max. (48 rpm)
FAR-1528/1528-BB
24 VDC: 7.5 A max. (26 rpm), 8.6 A max. (48 rpm)
- Marine display
MU-150HD: 12-24 VDC 4.5-2.2 A
MU-152: 12-24 VDC 1.9-0.9 A
MU-190: 100-240 VAC 0.7-0.4 A
- Rectifier (RU-1746B-2/RU-3424, option)
100-115/220-230 VAC, 1 phase, 50/60Hz
- Transformer (RU-1803, option)
440 VAC, 1 phase, 50/60Hz

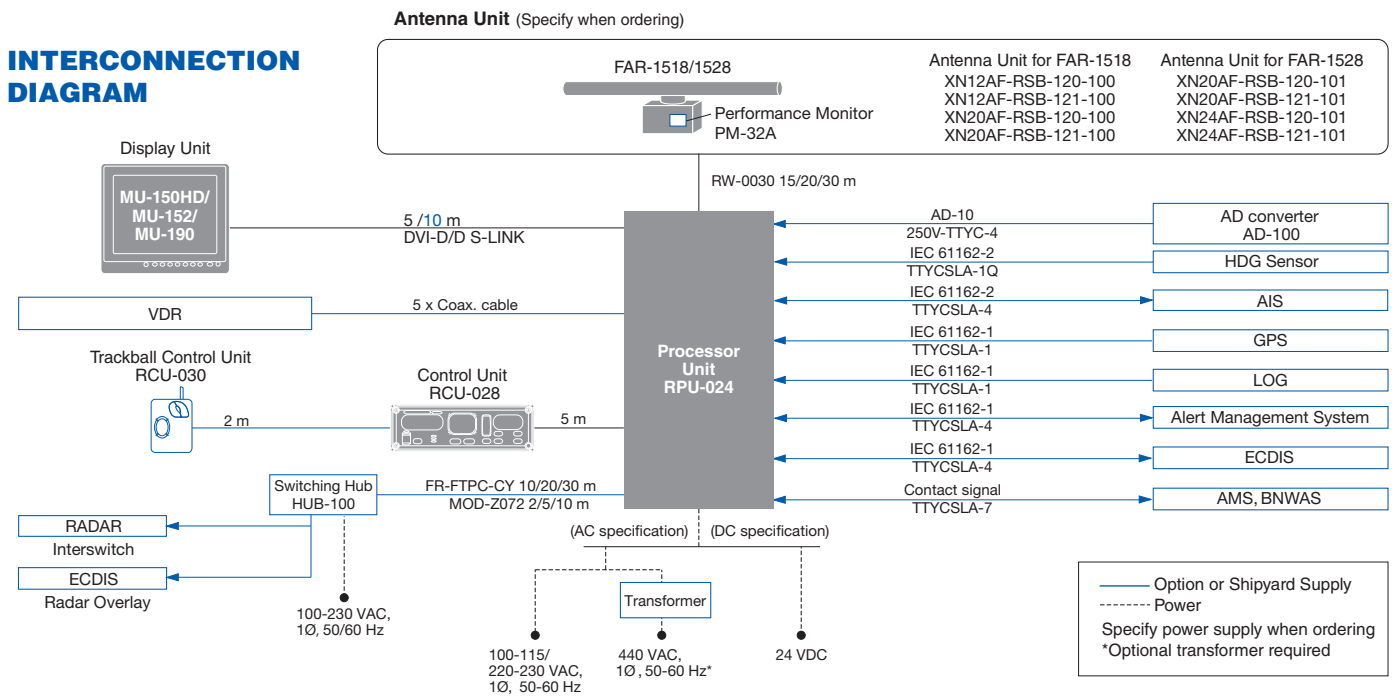
7 ENVIRONMENTAL CONDITIONS

- Ambient temperature
- Antenna Unit
-25°C to +55°C (storage: +70°C or less)
- Processor Unit
-15°C to +55°C
- Marine display
-15°C to +55°C
- Relative humidity
93% or less at +40°C
- Degree of protection
- Antenna Unit
IP56
- Processor Unit
IP20 (IP22: option)
- Control Unit
IP22
- Marine display
IP56 (panel), IP22 (chassis)
- Vibration
IEC 60945 Ed.4

EQUIPMENT LIST

- Standard supply
- Display Unit MU-190, MU-150HD, MU-152 (selectable)
 - Processor Unit RPU-024
 - Control Unit RCU-028
 - Antenna Unit with cable, 15/20/30 m (Specify when ordering)
 - For Display Unit, DVI cable (5 m) DVI-D/D S-LINK 5M, not supplied with BB model
 - Standard Spare Parts and Installation Materials
- Optional supply
- Trackball Control Unit RCU-030
 - Peformance Monitor PM-32A
 - AD Converter AD-100
 - Stepdown Transformer Unit RU-1803
 - AC-DC Power Rectifier
PR-240/PR-850A/RU-3423/RU-1746B-2/RU-3424
 - Radar signal cable (1 m/5 m/10 m/15 m)
RW-4864 1M/RW-4864 5M/RW-4864 10M/RW-4864 15M
 - For Display Unit, DVI cable (10 m) DVI-D/D S-LINK 10M
 - Switching Hub HUB-100

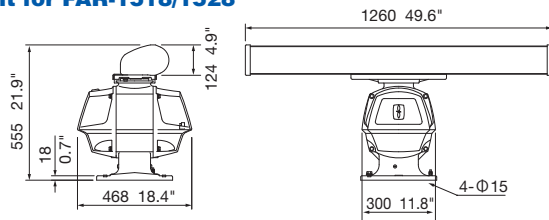
INTERCONNECTION DIAGRAM



Antenna Unit for FAR-1518/1528

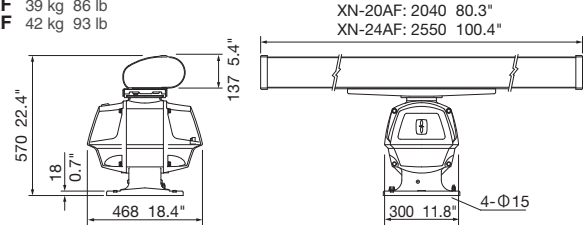
XN12AF

33 kg 73 lb



XN20AF XN24AF

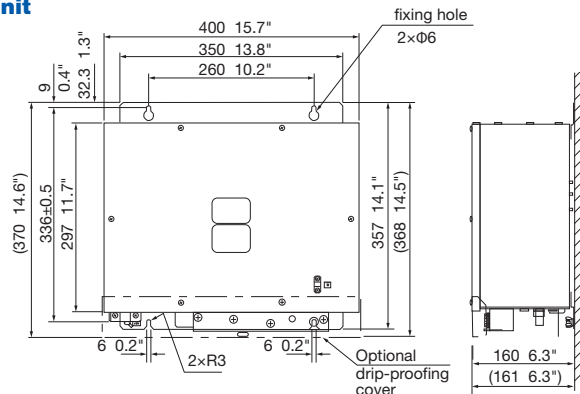
39 kg 86 lb
42 kg 93 lb



Processor Unit

RPU-024

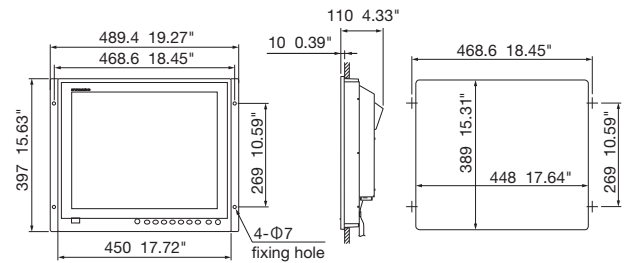
DC 6.2 kg 13.7 lb
AC 6.8 kg 15.0 lb



Display Unit

MU-190 (Flush mount)

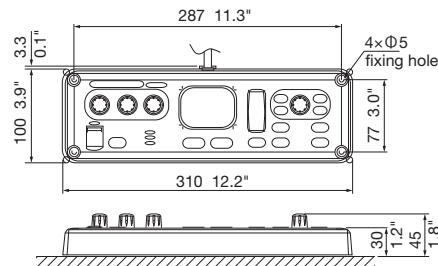
8.8 kg 19.4 lb



Control Unit

RCU-028

1.2 kg 2.6 lb



MU-150HD (Flush mount)

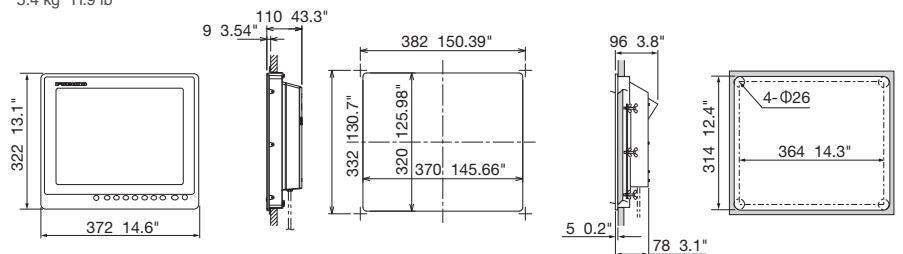
4.9 kg 10.8 lb

MU-152 (Flush mount)

5.4 kg 11.9 lb

MU-152

MU-150HD



Beware of similar products

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