

FURUNO®

Cost-effective, High-performance Radar with Powerful Standard Features

DAYLIGHT-VIEWING 12-INCH RADAR

Models FR-7062/7112/7252



© The future today with FURUNO's electronics technology.

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Catalogue No. R-165c

TRADE MARK REGISTERED
MARCA REGISTRADA



True or relative echo trails,
2 VRMs and 2 floating-origin EBLs,
Target zoom and Off-centering.

High-power (FR-7252: 25 kW) and
high-speed antenna (48 rpm) available.

FR-7062: 6 kW
FR-7112: 12 kW
FR-7252: 25 kW



Especially suited for medium- to small-sized vessels including professional fishing boats, workboats and pleasure craft, the FR-7062/7112/7252 are 12-inch X-band radars ingeniously designed based on FURUNO's years of experience and field-proven technical excellence in marine electronics.

A high-speed 4 ft antenna unit (48 rpm) is optionally available to provide uninterrupted picture updating for high-speed vessels.

These new radars incorporate advanced video processing technology and a logarithmic amplifier combined with automatic tuning and anti-clutter control to provide optimum picture quality on a high-definition CRT screen. Neatly arranged front panel controls include user-programmable function keys and a trackball associated with easy-to-understand menu for simple, user-oriented operation.

Attractive standard features include two each VRMs and floating-origin EBLs, EBL/VRM offset, off-

centering to cursor position, zoom, echo trails, echo stretch, trackball cursor with range/bearing readout, guard zone alarm, and quick restart of transmission in case of accidental power-off.

Four presentation modes are available: Head-up, Course-up, North-up and True Motion with heading and speed data inputs. In True Motion mode, true echo trails can be displayed for easy recognition of moving and fixed targets.

The guard zone alarm function allows you to set a fan- or ring-shaped guard zone at a desired position. There is a choice of inward and outward guard zone alarms. Visual and audible warnings are produced to warn of a target entering or exiting the guard zone.

The Auto Plotter ARP-10 is optionally available for upgrading the FR-7062/7112/7252 to provide automatic target plotting feature.

- 12-inch high-resolution CRT (effective dia. 180 mm)
- Highly visible 8-level target video gradation
- Head-Up, Course-Up*, North-Up* and True Motion** modes
- Logarithmic amplifier
- Cursor position readout in L/L and range/bearing***
- Cursor position output in NMEA 0183***
- Two user programmable function keys
- Automatic tuning and anti-clutter control
- 48 rpm antenna for high-speed vessels (optional for 4 ft radiator only)
- Auto Plotter ARP-10 for automatic plotting of 10 targets with vectors, warning against threatening targets, target data display incl. CPA/TCPA (optional)

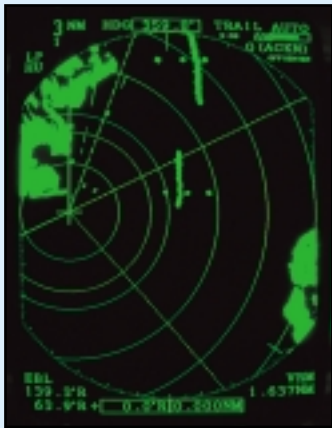
* Heading data required.
 ** Heading and speed data required.
 *** Heading and nav data required.

Nav Data Display



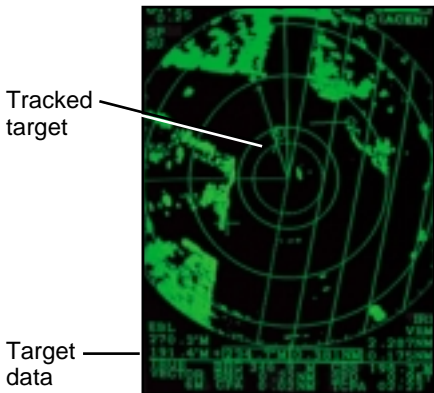
The Nav Data Display shows, in ST-BY condition, own ship position, speed, heading, course made good, cross track error, waypoint with range/bearing and time-to-go, water temperature and depth in graphics or alphanumeric if the radar is hooked up with appropriate sensors.

Echo Trails



The FR-7062/7112/7252 present true echo trails in True Motion mode provided that ship's heading and speed inputs are available. Displayed without smearing of stationary targets, such as land, true echo trails permit intuitive perception of surrounding situation. Relative echo trails are extremely useful for identifying targets on a collision course with your ship. Echo trails are displayed in monotone or multilevel shading with a trail length selected between 15 seconds and 30 minutes, or continuously.

Auto Plotter ARP-10



The Auto Plotter ARP-10, optionally built in the display unit, permits automatic or manual acquisition of up to 10 targets, tracks them at specified plot intervals, presents alphanumeric target data, and triggers a collision alarm for targets violating preset CPA/TCPA limits.

- Target acquisition: Automatic or manual acquisition of up to 10 targets in 0.2-16 nm
- Tracking range: 0.1-16 nm
- Vector mode: True or relative vector
- Vector length: 30 sec, 1, 3, 6, 15 or 30 min.
- Target plot interval: 15 or 30 sec, 1, 2, 3 or 6 min.
- Audio visual alarm: Produced against lost targets and targets on collision course
- Target data display: Range, bearing, course, speed and CPA/TCPA of a chosen target

Heading and speed data required.
 Works with 24 rpm radiator only.

SPECIFICATIONS OF FR-7062/7112/7252

ANTENNA RADIATOR

1. **Type** Slotted waveguide array open radiator
2. **Length** 4 ft (XN12A) or 6 ft (XN13A)
3. **Rotation Speed** 24 rpm standard
(48 rpm optional for 4 ft radiator only)
4. **Wind Load** 100 knots relative wind
(70 knots for 48 rpm version)
5. **Beamwidth** Hor. 1.9°, Vert. 22° (4 ft radiator)
Hor. 1.2°, Vert. 22° (6 ft radiator)

RF TRANSCEIVER

1. **Frequency** 9410 ± 30 MHz (X-band)
2. **Output power** FR-7062: 6 kW
FR-7112: 12 kW
FR-7252: 25 kW
3. **Pulselengths and Pulse Repetition Rates (PRR)**
 - 1/8 to 1.5 nm: 0.08 µs/2100 Hz
 - 1.5, 2 and 3 nm: 0.3 µs/1200 Hz
 - 3 to 96 nm*: 0.8 µs/600 Hz (≤ 36 nm)
 - 550 Hz (48, 64 nm)
 - 500 Hz (72, 96 nm)

* Max. range 64 nm for FR-7062, 72 nm for FR-7112 and 96 nm for FR-7252.

4. Mixer and Local Oscillator

Microwave integrated circuit
Logarithmic amplifier, IF 60 MHz
Bandwidth: 25 MHz (0.08/0.3 µs), 3 MHz (0.8 µs)
6 dB nominal

5. IF amplifier

Bandwidth: 25 MHz (0.08/0.3 µs), 3 MHz (0.8 µs)
6 dB nominal

6. Noise Figure

DISPLAY

1. **Display Type** 12-inch, green phosphor CRT
(8-level gradation)
Effective diameter: 180 mm
Pixels: 481 (H) x 640 (V) dots
Head-up, Course-up*, North-up*,
True motion**
* Heading data required.
** Heading and speed data required.
2. **Display Modes**
3. **Range Scales and Range Ring Intervals (nm)**
Range: 1/8, 1/4, 1/2, 3/4, 1, 1.5, 2, 3, 4, 6, 8, 12, 16, 24, 36, 48, 64, 72, 96
Rings: 1/16, 1/8, 1/4, 1/2, 1, 1, 1, 2, 2, 3, 4, 6, 12, 12, 16, 18, 24
Max. range scale 64 nm for FR-7062, 72 nm for FR-7112,
and 96 nm for FR-7252.
4. **Minimum Range** 25 meters on 0.25 nm range
5. **Range Discrimination** 20 meters or better
6. **Accuracy**
Range: 1% of range in use or 15 m, whichever is greater
Bearing: EBL accuracy ±1° or better
7. **Echo Trails**
True or relative trails in single tone or multi-level shading
Trail length: 15, 30 sec., 1, 3, 6, 15, 30 min., or continuous

8. Nav Data Input/Output

Inputs (NMEA 0183 Ver. 1.5 or 2.0 format) --: Any talker
\$--APB, \$--BWC, \$--DPT, \$--GLL*, \$--GLC, \$--HDG,
\$--MDA, \$--RMA, \$--RMB, \$--RMC, \$--VTG, \$--XTE,
\$--DBK, \$--DBS, \$--DBT, \$--GTD, \$--HDM, \$--HDT,
\$--MTW, \$--BWR, \$--VHW *NMEA 0183 Ver. 1.5 only.
AD-10 format: Heading data
Outputs (NMEA 0183 format)
\$RATLL, \$RARSD, \$RATTM w/ARP-10

9. Other Features

Automatic tuning and anti-clutter control, Echo stretch, Two VRMs,
Two floating-origin EBLs with true/rel bearing readout*, Cross cursor
with range and true/rel bearing* plus L/L** readouts, Parallel index
lines, Off-centering, Zoom, Quick restart in case of accidental power-
off, Nav data display**, Visual and audible guard zone alarms, Two
user-programmable function keys
* Heading data required for true bearing readout.
** Nav data inputs required

ENVIRONMENTAL CONDITIONS (Meets IEC 60945)

Temperature: -25°C to +70°C (Antenna unit)
-15°C to +55°C (Display unit)

POWER SUPPLY

FR-7062/7112: 10.8 to 41.6 VDC
FR-7252: 21.6 to 41.6 VDC
115/230 VAC, 50-60 Hz, 1ø with optional rectifier

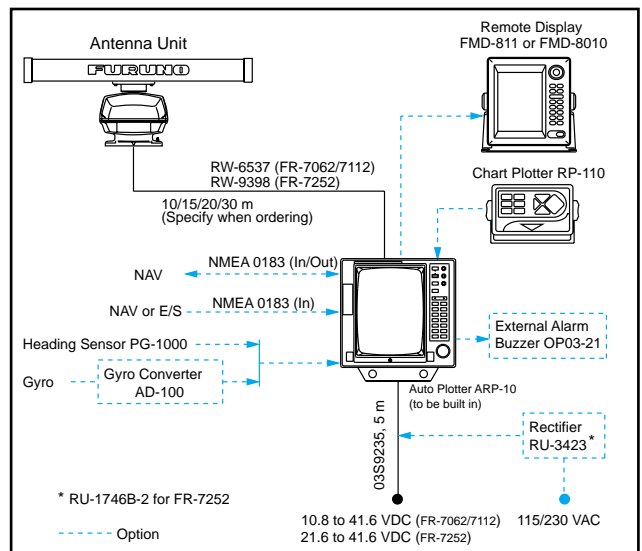
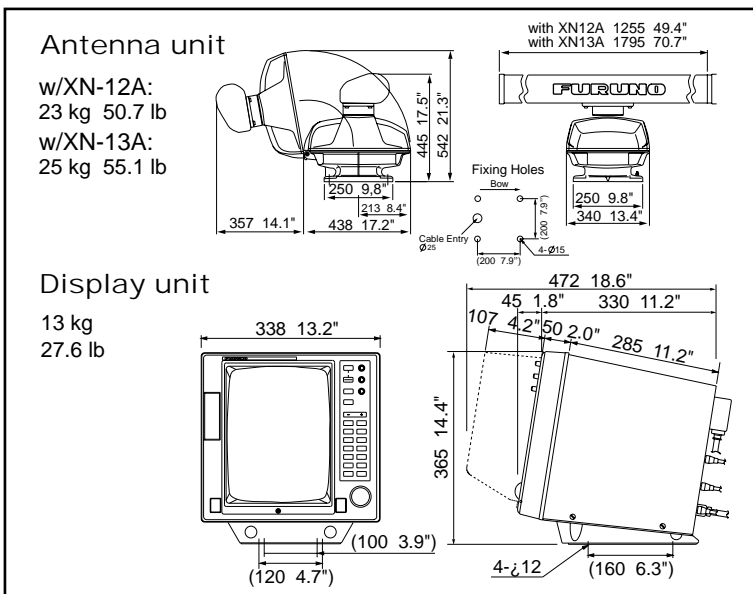
EQUIPMENT LIST

Standard

- | | |
|--|--------|
| 1. Display Unit | 1 unit |
| 2. Antenna Unit w/4 ft (24 or 48 rpm) or 6 ft (24 rpm) radiator | 1 unit |
| 3. Antenna Cable 10, 15, 20 or 30 m (Specify antenna type and cable length when ordering.) | 1 pc. |
| 4. Power Cable 5 m | 1 pc. |
| 5. Standard spare parts and installation materials | 1 set |

Options

1. Rectifier RU-3423* for 115/230 VAC (*RU-174613-2 for FR-7252 with 4 ft/48 rpm and 6 ft/24 rpm antenna)
2. Nav Cable MJ-A6SPF-0012-050 (5m)/-100 (10m) with 2x6 pin connectors
3. Compass Cable MJ-A6SPF0007-100 (10 m) with 2x6 pin connectors
4. External Alarm Buzzer OP03-21
5. Auto Plotter ARP-10 (to be built in display unit)
6. Heading Sensor PG-1000 (w/10 m cable for AD-10 format)
7. Gyro Converter AD-100
8. Remote Display FMD-811 (LCD)
9. Remote Display FMD-8010 (CRT)
10. EMI Filter FP03-05500
11. Color Filter FP03-02920
12. Viewing Hood with Magnifying Lens OP03-120



SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

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