

Introduction

The technical specifications summarize the main functional and operational characteristics of the Simrad SU90 system, as well as information related to power requirements, physical properties and environmental conditions.

Note _____

In Simrad, we are continuously working to improve the quality and performance of our products. Technical specifications may therefore be changed without prior notice.

Performance specifications

The performance specifications summarize the main functional and operational characteristics of the Simrad SU90.

Operational frequency

- **Selectable:** 20 to 30 kHz in steps of 1 kHz

Operational range

- **Range steps, standard:** 150 to 4500 meters
- **Range steps, optional:** 150 to 8000 meters

Tilt and tip functionality

- **Tilt:** +10 to -60 degrees in 1 degree steps
- **Tip:** +10 to -90 degrees

Transmission

- **Number of transmitter channels:** 384
- **Transmission modes:**
 - 360 degrees omnidirectional
 - 180 degrees vertical

- **Pulse modes:**

- CW (Continuous Wave)
- Hyperbolic FM (Frequency Modulation) ("Chirp")

Reception

- **Number of receiver channels:** 384
- **Gain functions:**
 - TVG (Time Varied Gain)
 - AGC (Automatic Gain Control)
 - RCG (Receiver Controlled Gain)
- **Digital filters:**
 - Ping-to-Ping Filter
 - Noise filter
 - FM Correlation filter
 - Bottom filter

Echo presentations

- **Number of colours:** 16 or 64
- **Display resolution:** Minimum 1280 x 1024 pixels
- **Colours:** Weak, Normal or Strong
- **Palettes:** Choice of colour palettes to fit ambient light conditions

Beams

- **Horizontal transmission:** 360 degrees
- **Horizontal reception:** 8,5 to 13 degrees
- **Vertical transmission:** 4.9 to 7.0 degrees
- **Vertical reception:** 5.3 to 7.4 degrees

Beam widths

- **User selected:** Narrow, Normal or Wide

Stabilisation

- **Roll stabilisation:** Automatic, ± 20 degrees
- **Pitch stabilisation:** Automatic, ± 20 degrees
- Interface to optional peripheral motion reference unit supported

Interfaces

- **Serial lines:** Five serial lines (RS-232/RS-422/RS-485)
- **Transceiver Unit:** Ethernet
- **Optional interfaces:**
 - Scientific output (Ethernet)
 - RAW data output for scientific research (Ethernet)

Hull Unit and transducer

- **Stroke length:**
 - With SU92 hull unit: 1.2 meters
 - With SU93 hull unit: 1.6 meters
- **Maximum vessel speed:**
 - With SU92 hull unit: 21 knots
 - With SU93 hull unit: 18 knots
- **Maximum lowering and retrieval speed:** Same as maximum vessel speed
- **Transducer:**
 - Shape: Cylindrical
 - Number of individual elements: 384

User interface

- **Main control:** Dedicated operating panel with direct access to all main functions
- **Secondary control:** Comprehensive menu system
- **Menu languages:** Greek, Turkish, Chinese, English, French, Icelandic, Italian, Japanese, Korean, Norwegian, Russian, Spanish
- **Operating Panel backlight:** Controlled from the menu
- **Optional equipment:** The SU90 can be controlled from a standard computer mouse or trackball

Weights and outline dimensions

The weights and outline dimension characteristics summarize the physical properties of the Simrad SU90 system.

Note _____

Relevant drawings can be found in the SU90 Installation manual, or downloaded from our website.

- <http://www.simrad.com/su90>

Colour display

The colour display is not a part of the SU90 scope of supply, and it is not manufactured by Simrad. Refer to the documentation provided by the manufacturer.

Processor Unit

- **Make and model:** Simrad Enix
- **Depth:** 385 mm
- **Width:** 479,6 mm (fits in a 19" rack)
- **Height:** 177 mm
- **Weight:** approximately 16 kg

Operating Panel

- **Depth:** 165 mm
- **Width:** 385 mm
- **Height:** 51 mm
- **Weight:** 4 kg

Transceiver Unit

- **Depth:** 665 mm (with shock absorbers)
- **Width:** 563 mm (without transducer plug)
- **Height:** 750 mm (with shock absorbers)
- **Weight:** 75 kg

Hull Unit and transducer

- **Flange diameter:** 760 mm
- **Trunk diameter:** 610 mm

- **Height:**
 - SU92 total: 3228 mm
 - SU92 above trunk: 2118 mm
 - SU93 total: 3628 mm
 - SU93 above trunk: 2518 mm
 - Trunk: 1110 mm
- **Weight:**
 - SU92: approximately 850 kg
 - SU93: approximately 900 kg
- **Transducer:**
 - Diameter: 382 mm
 - Weight: 106 kg

Power specifications

The power specifications summarize the supply power requirements for the Simrad SU90 system.

Colour display

The colour display is not a part of the SU90 scope of supply, and it is not manufactured by Simrad. Refer to the documentation provided by the manufacturer.

Processor Unit

- **Make and model:** Simrad Enix
- **Voltage requirement:** 115/230 Vac / 47 to 63 Hz / single phase
- **Maximum voltage deviation:** 15%
- **Maximum transient:** 20% of nominal voltage, recovery time 3 s
- **Power consumption:** Approximately 500 W @ 230 Vac

Operating Panel

Not applicable. This unit is not powered by AC mains.

Operating Panel Power Supply

- **Voltage requirement:** 115/230 Vac / 47–63 Hz / single phase, nominal

- **Maximum voltage deviation:** 15%
- **Maximum transient:** 20% of nominal voltage, recovery time 3 s
- **Power consumption:** Approximately 10 VA

Transceiver Unit

- **Voltage requirement:** 230 Vac / 47–63 Hz / single phase
- **Maximum voltage deviation:** 15%
- **Maximum transient:** 20% of nominal voltage, recovery time 3 s
- **Power consumption:** Approximately 600 VA

Hull Unit and transducer

- **Voltage requirement:** 230/380/440 Vac / 47 to 63 Hz / 3-phase
- **Maximum voltage deviation, 230 Vac:** 15%
- **Maximum voltage deviation, 380/440 Vac:** 340 to 485 Vac
- **Maximum transient:** 20% of nominal voltage, recovery time 3 s
- **Power consumption:** approximately 3000 VA

Environmental specifications

The environmental specifications summarize the temperature and humidity requirements for the Simrad SU90 system.

Colour display

The colour display is not a part of the SU90 scope of supply, and it is not manufactured by Simrad. Refer to the documentation provided by the manufacturer.

Processor Unit

- **Make and model:** Simrad Enix
- **Operational temperature:** –15 to +55 degrees Celcius
- **Storage temperature:** –20 to +70 degrees Celcius
- **Relative humidity:** 10 to 95% relative non-condensing

Operating Panel

- **Operational temperature:** 0 to +50 degrees Celcius
- **Storage temperature:** -40 to +70 degrees Celcius
- **Relative humidity:** 5 to 95% relative non-condensing

Operating Panel Power Supply

- **Operational temperature:** 0 to +50 degrees Celcius
- **Storage temperature:** -40 to +70 degrees Celcius
- **Relative humidity:** 5 to 95% relative non-condensing

Transceiver Unit

- **Operational temperature:** 0 to +50 degrees Celcius
- **Storage temperature:** -40 to +70 degrees Celcius
- **Relative humidity:** 5 to 95% relative non-condensing

Hull Unit and transducer

- **Operational temperature:** 0 to +50 degrees Celcius
- **Storage temperature:** -20 to +40 degrees Celcius
- **Relative humidity:** 5 to 95 % relative non-condensing

Important _____

The transducer must not be exposed to direct sunlight for a long period of time.

Minimum requirements for display

Unless specifically ordered, the SU90 is not provided with a display. This item must then be purchased locally.

You can use one or two displays on your SU90 Processor Unit computer depending on personal and operational preferences.

Note that both displays will offer the same sonar presentation.

It is important that the chosen display meets the technical system requirements. The display design and construction must allow for marine use, easy access to cables, and a safe installation.

The minimum requirements are:

- **Resolution:** Minimum 1280 x 1024 pixels.
- **Video interface:** Must match the video output formats provided by the computer.

The SU90 Processor Unit offers video output on DVI, HDMI and VideoPort formats.

- **Physical size:** Depends on personal and operational preferences. The SU90 software supports 9:16 displays.