



PRO PROFESSIONAL SERIES

# Marine Bridge Instruments IS80, IS70, RI35 Mk2 and Panorama RAI



# Simrad Professional Instrument Systems

## SIMRAD PROFESSIONAL

The Simrad Professional portfolio offers a comprehensive range of marine electronic products spanning instruments, autosteering, gyro compasses, navigation systems, radar, communications and safety. Simrad Professional products are synonymous with sophistication and rugged reliability, providing tried and trusted solutions for a wide range of professional applications. With more than 60 years experience of developing quality products, Simrad are well positioned to meet the needs of today's professional mariners.

## SIMRAD IS80 & IS70 PROFESSIONAL INSTRUMENTS

IS80 & IS70 Instruments provide the professional user with clear, functional instrument displays. Specifically designed to meet the requirements of the commercial market, the range includes multi-mode Heading and Wind displays along with a choice of Analogue displays. Speed, rate of turn, rudder angle, engine RPM, wind indicators and digital heading repeaters are all available in analogue displays. Used by commercial users around the world, the professional marine instruments are available in two sizes via the IS70 (4.5-inch displays) and IS80 (6.8-inch displays) ranges.

### PRO SERIES KEY FEATURES

- ▶ Straight-forward operation through a logical user interface
- ▶ Analogue displays available in two sizes to suit all applications
  - **IS80:** Large 172mm format to match HR80 and WI80
  - **IS70:** Compact 114mm format to maximise use of bridge space
- ▶ Rudder Angle, Rate of Turn, Boat Speed and RPM indicators
- ▶ SimNet provides NMEA2000® and IEC 1162-3 signal compatibility
- ▶ 10-level backlighting, including daylight modes and lighting zones for clear data display in all conditions
- ▶ SimNet, NMEA and voltage input options allow flexible installation with existing equipment
- ▶ SimNet provides central lighting control throughout the system
- ▶ Network system for quick installation, no individual power connections necessary
- ▶ Units are mounted from the front for easy installation.

Both sizes are mounted via a standard DIN 43700 dash cut-out. For external display mounting an outdoor mounting kit is available, this provides an IP66 installation. Compatible with HR80, WI80, IS80 and IS70 units

### ▶ TYPICAL SIMRAD PROFESSIONAL INSTRUMENT SYSTEMS



# HR80 Heading Repeater

A large format, multi-mode heading repeater for the professional user that displays the vessel's heading via both analogue and digital displays for maximum clarity.

The HR80 ensures that critical heading data can be monitored intuitively via simultaneous display in two complementary formats. As part of the Simrad IS80 instrument range from Simrad it sets the very highest standards in reliability and accuracy and is ideal for long periods of continuous use in all conditions.

Interfacing the HR80 with other systems is straight-forward with a high level of compatibility. Heading data is accepted via NMEA0183 or SimNet, valid data received via NMEA0183 is then re-transmitted onto SimNet for use by additional system displays. The SimNet network also allows the lighting of the whole system to be controlled centrally.



▶ HR80 Heading Repeater

## PRO HR80 KEY FEATURES

- ▶ Clear analogue and digital Heading indication
- ▶ LED bar graph turn-rate indicator
- ▶ Actual versus Commanded Heading function
- ▶ Choice of true or magnetic heading reference
- ▶ NMEA 0183 and SimNet compatible

Part Number	Description
27107523	HR80 Gyro Heading Repeater
27107754	Outdoor Kit for IS70/IS80

## ▶ HR80 SYSTEM



◀ HR80 Heading Repeater

▶ Control Unit



▶ GC80 / 85 Gyro Compass



S

0183

SimNet/NMEA 2000  
Compliant

S

NMEA 0183

0183

Note: the Simnet data is NMEA 2000 Compatible



# Rudder Indicators

## IS80 AND IS70 RUDDER ANGLE INDICATORS

IS80 and IS70 Rudder Angle indicators provide a smooth, continuous reading of the rudder angle. 45 and 90 degree scale options are available.

IS70/80 Rudder Angle indicators have a +/- 10V input or are interfaced via the SimNet network which is signal compatible with NMEA2000® and IEC1162 - 3.

Part Number	Description
27107606	IS80 Rudder indicator RI80-45 (+/-45 deg. scale)
27107614	IIS80 Rudder Indicator RI80-90 (+/-90 deg. scale)
27107630	IS70 Rudder indicator RI70-90 (+/-90 deg. scale)
27107648	IS70 Rudder indicator RI70-90 (+/-90 deg. scale)
27107754	IS80 Outdoor mounting kit
000-10125-001	Rudder Indicator Pack (RI70-45, RF25)



► RI80 Rudder Angle



► RI70 Rudder Angle

## RI35 MK2



The RI35 Mk2 Rudder Angle Indicator gives a continuous reading of the rudder position up to 45 degrees on either side of the amidships position.

Designed to operate from frequency or current input signals, generated by a Simrad autopilot feedback unit, the RI35 Mk2 will also accept a NMEA 0183 rudder angle (RSA) signal.

Manufactured in noncorrosive aluminium with a nonreflective black finish, the instrument is a standard modular size (132x108 mm) to match the Simrad AP35 autopilot.

A front panel key is used for illumination and setup. The splash proof construction allows panel, bulkhead or bracket mounting in exposed locations, such as bridge wings as well as wheel house and engine room.



► RI35 Mk2 Rudder Angle Indicator

Part Number	Description
22085146	RI35MK2 Rudder Angle Indicator; Designed for indoor/outdoor mounting. Operates with RF300, NMEA 0183, current 0.1-1.1 mA, or RF45X feedback units. Maximum of four units if operated on frequency; two units if operating on current

## PANORAMA RAI (RUDDER ANGLE INDICATOR)

The Panorama Mk2 Rudder Angle Indicator is designed for overhead mounting on the bridge. The splash proof ABS/PC blend cabinet contains 3 identical scales, for accurate reading of rudder angles from any position in the wheel-house. The indicator is designed for rudder angles up to 45 degrees on either side of midship position.

Part Number	Description
22060966	Panorama U45 Rudder Indicator Mk2 (45°-0-45°), 3-way indicator. For overhead mounting. Adjustable dial light. 24 V. "U" version for voltage input. Works with RF14XU only.



► Panorama U45 Rudder Angle Indicator

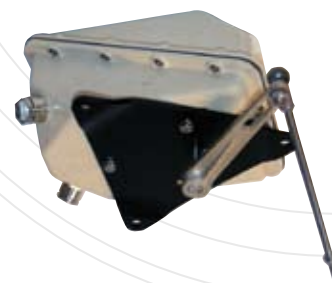
# Sensors

## RF14XU RUDDER FEEDBACK UNIT

The rudder feedback unit transmits a signal proportional to the rudder angle. It is mounted close to the rudder stock and is mechanically connected to the rudder by a transmission link in a 1:1 ratio.

The RF14XU Rudder Feedback Unit consists of a glass reinforced non-flammable polyester housing with a mounting plate of sea-water resistant aluminium. It contains a potentiometer, limit switches and an electronic drive module.

Output is either a voltage varying  $\pm 9$  volts around half the supply voltage, or a frequency signal with 3400 Hz for use with a Simrad autopilot. The shaft of the Feedback Unit is free to travel 360 degrees, but only  $\pm 90$  degrees from midposition are used for signal control. RF14XU is equipped with two sets of micro switches, which can be used as electrical limit switches for the steering gear.



► RF14XU

Part Number	Description
22506950	RF14XU Heavy Duty Feedback Unit; Long life feedback unit with transmission linkage. Separate output for rudder angle indicators. Double set of limit switches. Requires 24VDC supply voltage.

## RF45X RUDDER FEEDBACK UNIT

The RF45X is a medium duty rudder feedback unit. It is a repairable rather than a potted "throw away" item. The RF45X has "universal" frequency output which can be used with both AP35 and AP50, and the older AP45 and AP9 without the use of internal jumpers.

Part Number	Description
22011415	RF45X Rugged rudder Feedback Unit; with transmission link and 2m Cable.



► RF45X

## RF300 RUDDER FEEDBACK

The RF300 is a medium duty rudder feedback unit which connects directly to the Autopilot Pilot Computer using 2 wire frequency interface.

Part Number	Description
20193744	RF300 Rudder Feedback Unit: with transmission link and 10m Cable.



► RF300 Rudder Feedback

## RF25 SIMNET RUDDER FEEDBACK UNIT

The RF25 is a medium duty rudder feedback unit with a SimNet interface. The RF25 will attach directly to Simnet systems for straight-forward installation.

Part Number	Description
22014286	RF25 Rudder Feedback Unit: With transmission link and 5.5 m (18 ft) SimNet cable.

Rudder Indicator Compatibility			
Rudder Feedback Unit ▼	IS80/IS70 Rudder	RI35 Mk2	Panorama
RF14XU	■	■	■
RF45X		■	
RF300		■	
RF25	■		

# WI80 Wind Indicator

A large format, multi-mode wind display for the professional user that provides real time information on wind speed and direction via both analogue and digital displays for maximum clarity.

The WI80 ensures that critical wind data can be monitored in the most intuitive fashion via simultaneous display in two complementary formats. As part of the IS80 instrument range from Simrad it sets the very highest standards in reliability and accuracy and is ideal for long periods of continuous use in all conditions.

Interfacing the WI80 with other systems is straight-forward with a high level of compatibility. Wind data is accepted via NMEA0183 or SimNet, valid data received via NMEA0183 is then re-transmitted onto SimNet for use by additional system displays. The SimNet network also allows the lighting of the whole system to be controlled centrally.



► WI80 Wind Indicator

## PRO WI80 KEY FEATURES

- Analogue Wind Angle – True, Relative or Geographic references
- Digital wind speed – knots, m/s, km/h, mph or Beaufort
- Bargraph indicator displays gust strength and direction
- Alarms for wind speed, shift and direction
- NMEA0183
- SimNet which is signal compatible with NMEA2000

Part Number	Description
27107531	WI80 Wind Indicator
27107754	Outdoor Kit for IS70/IS80

## WS80 ULTRASONIC WIND SENSOR

The highly innovative ultrasonic measuring principle with no moving parts gives accurate and reliable performance without any wear-out problems and without requiring regular service.

The WS80 has four built-in heating elements to prevent snow and ice from building up, and is well-suited for all types of vessels/applications, ranging from fishing to dynamic positioning systems.

An obvious choice if you want high performance and reliability – not low-cost/high-maintenance!

When combining the robust WS80 static wind sensor with the WI80 wind instrument, you get the best wind measuring system for maritime use available on the market today.

Several displays can be placed on different locations onboard the ship, all working from the same WSS sensor and connected by the SimNet CAN network.

The systems can also provide NMEA0183 serial data to other navigation equipment onboard.



► WS80 Wind Sensor

## PRO WI80 KEY FEATURES

- Accurate measures of wind speed and direction
- IP66 housing
- Intelligent heating prevents icing up
- Working temperature down to -52 degrees Celcius
- Well-proven and robust technology
- Extensive field tests in rough weather in the North Atlantic

Part Number	Description
000-10163-001	WS80 Wind Sensor

## IS20 WIND VANE

The IS20 Wind Vane provides high precision wind speed and wind angle information to the system via SimNet.

Part Number	Description
27118082	IS20 Wind vane including bracket and mounting access (no cable)
24006405	20 m (66 ft) Wind vane cable (SimNet)
24006421	35 m (115 ft) Wind vane cable (SimNet)
SIMKIT-1	SimNet Starter Kit-1



▶ IS20 Wind Vane

## Rate of Turn (RoT)

### PRO ROT KEY FEATURES

- ▶ Rate of Turn indicators are available in 30, 120 or 300 deg/min scale options
- ▶ RoT indicators utilise SimNet alongside a wide variety of voltage input options to allow straight-forward system integration.

### INTERFACES

- ▶ Simnet
- ▶ 0-5V
- ▶ +/-5V
- ▶ 0-10V
- ▶ +/-10V

Part Number	Description
27107549	IS80 ROT indicator RT81-30 (+/-30 deg. scale)
27107556	IS80 ROT indicator RT81-120 (+/-120 deg. scale)
27107564	IS80 ROT indicator RT81-300 (+/-300 deg. scale)
27107572	IS70 ROT indicator RT70-30. Rate of turn indicator with 30-degree scale
27107580	IS70 ROT indicator RT70-120. Rate of turn indicator with 120-degree scale
27107598	IS70 ROT indicator RT70-300. Rate of turn indicator with 300-degree scale
27107754	Outdoor Kit for IS70/IS80



▶ IS80 Rate of Turn



▶ IS70 Rate of Turn

# Speed

## PRO SPEED INDICATOR KEY FEATURES

- ▶ Speed indicators are available in 25 or 50kt scale options
- ▶ Speed indicators are interfaced via the SimNet network which is signal compatible with NMEA2000® and IEC1162 - 3.

Part Number	Description
27107697	IS80 Speed indicator SP80-25 (0-25 kts scale)
27107705	IS80 Speed indicator SP80-50 (0-50 kts scale)
27107713	IS70 Speed indicator SP70-25 (0-25 kts scale)
27107721	IS70 Speed indicator SP70-50 (0-50 kts scale)
27107754	Outdoor Kit for IS70/IS80



▶ SP80



▶ SP70

# RPM

## PRO RPM INDICATOR KEY FEATURES

- ▶ RPM indicators are available in 3000 or 6000 RPM scale options.
- ▶ RPM indicators are interfaced via the SimNet network which is signal compatible with NMEA2000® and IEC1162 - 3.

Part Number	Description
27107655	IS80 RPM indicator RPM80-3 (0-3000 RPM scale)
27107663	IS80 RPM indicator RPM80-6 (0-6000 RPM scale)
27107671	IS70 RPM indicator RPM70-3 (0-3000 RPM scale)
27107689	IS70 RPM indicator RPM70-6 (0-6000 RPM scale)
27107754	Outdoor Kit for IS70/IS80



▶ RPM80



▶ RPM70



# Technical Specifications

## ▶ IS80 AND IS70 SERIES GENERAL SPECIFICATIONS

### DISPLAY

Display Type	Analogue
Backlighting Type	Adjustable red LED, illumination (10 steps, lighting zone configurable)

### IS70 MECHANICAL

Construction	ASA/PC Luran S
Width	114 mm (4.5 in)
Height	114 mm (4.5 in)
Mounting	DIN43700 cut-out

### IS80 MECHANICAL

Construction	ASA/PC Luran S
Width	172 mm (6.8 in)
Height	172 mm (6.8 in)
Mounting	DIN43700 cut-out

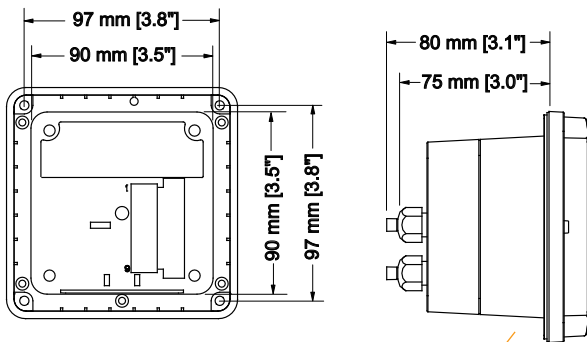
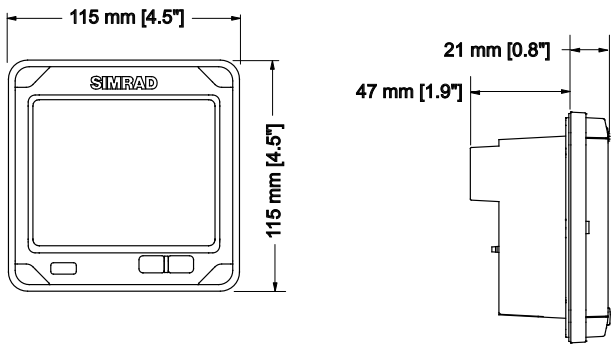
### ENVIRONMENTAL

Sealing	IP66 (front, full IP66 requires outdoor kit)
Humidity Range	95% RH (max 30d/year)
Operating Temp	-15°C to +70°C
Storage Temp	-40°C to +80°C

### POWER

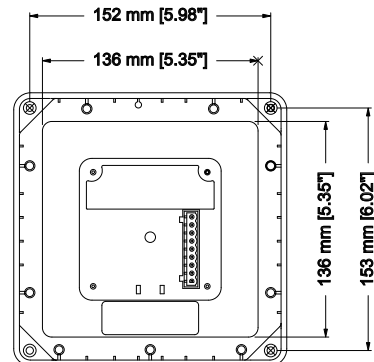
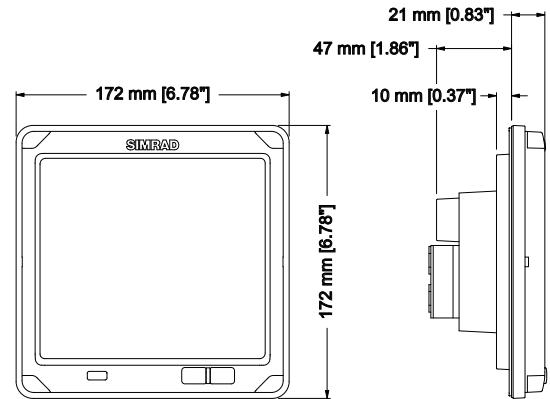
Power Supply	12–24 VDC (SimNet 12V only)
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## ▼ IS70 SERIES



With IP66 Outdoor kit

## ▼ IS80 SERIES



## ► HR80 SPECIFICATIONS

### DISPLAY

Display Type:	Digital/Analogue/Bar
Backlighting Type:	Adjustable red LED illumination (10 steps, lighting zone configurable)

### MECHANICAL

Construction:	ASA/PC Luran S
Width:	172 mm (6.8 in)
Height:	172 mm (6.8 in)
Mounting:	DIN43700 cut-out

### ENVIRONMENTAL

Sealing:	IP66 (front, full IP66 requires outdoor kit)
Humidity Range:	95% RH (max 30d/year)
Operating Temp.:	-15°C to +70°C
Storage Temp.:	-40°C to +80°C

### POWER

Power Supply:	12–24 VDC (SimNet 12V only)
Power Consumption:	<5W

### OTHER

Compass Safe Distance:	400 mm (16 in)
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## ► WI80 SPECIFICATIONS

### DISPLAY

Display Type:	Digital/Analogue/Bar
Backlighting Type:	Adjustable red LED illumination (10 steps, lighting zone configurable)

### MECHANICAL

Construction:	ASA/PC Luran S
Width:	172 mm (6.8 in)
Height:	172 mm (6.8 in)
Mounting:	DIN43700 cut-out

### ENVIRONMENTAL

Sealing:	IP66 (front, full IP66 requires outdoor kit)
Humidity Range:	95% RH (max 30d/year)
Operating Temp.:	-15°C to +70°C
Storage Temp.:	-40°C to +80°C

### POWER

Power Supply:	12–24 VDC (SimNet 12V only)
Power Consumption:	<5W

### OTHER

Compass Safe Distance:	400 mm (16 in)
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## ► WS80 SPECIFICATIONS

### POWER

Power Supply:	12–24 VDC (9.0...31.2V DC)
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### OTHER

Interface:	Combined RS485 and NMEA0183 operation
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## ► RATE OF TURN SPECIFICATIONS

### DISPLAY

Display Type:	Analogue
Backlighting Type:	Adjustable illumination (10 steps)

### MECHANICAL

Construction:	ASA/PC Luran S
Width:	172 mm \ 6.8 in
Height:	172 mm \ 6.8 in

### POWER

Power Supply:	12–24 VDC
Power Consumption:	<5W

### OTHER

Compass Safe Distance:	400 mm \ 15.7 in
Environmental Rating	IP66 (3)
Humidity Range	95% (max 30d/year) rh
Operating Temperature	-15°C to +70°C
Operating Temperature Stored	-40°C to +80°C

## ► RI35 SPECIFICATIONS

### MECHANICAL

Construction	Epoxy coated aluminium
Dimensions	132 mm (5.2 in) x 127 mm (5.0 in) x 58 mm (2.3 in)
Weight	1.0 kg

### ENVIRONMENTAL

Sealing	IP56
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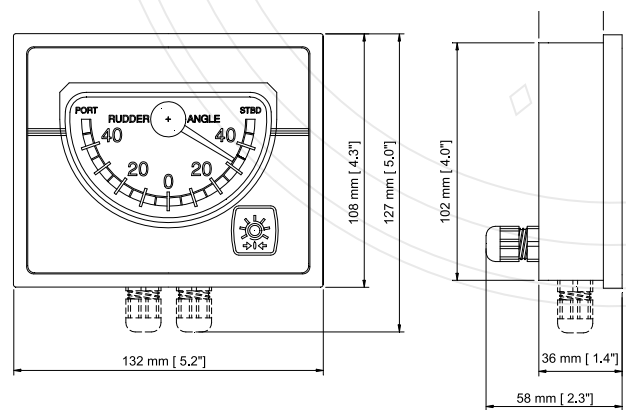
### POWER

Power Supply	12/24V DC -10%/+30%, polarity independent
Power Consumption	Max 3W

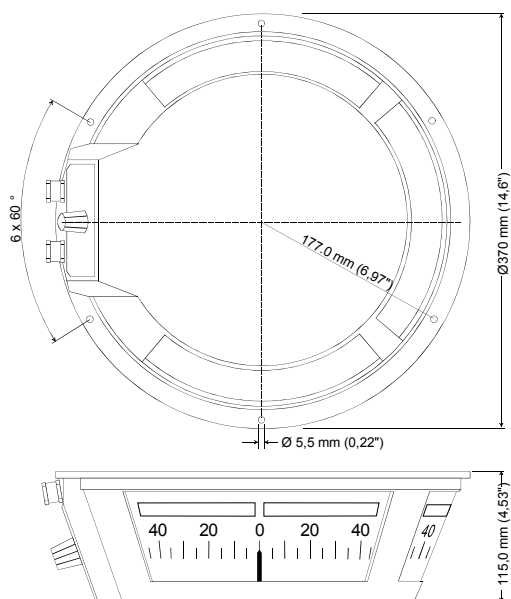
### OTHER

Compass Safe Distance	0.3m (1 ft)
Input Signal	Frequency 3400 Hz (midship reference)
Output Signal	NMEA 0183 RSA 20Hz
Accuracy	0.5 degrees (indicator alone)

## ▼ RI35 RUDDER INDICATOR



## ▼ PANORAMA RAI



# Sales and Service Worldwide

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