

Magnetic Compass Systems



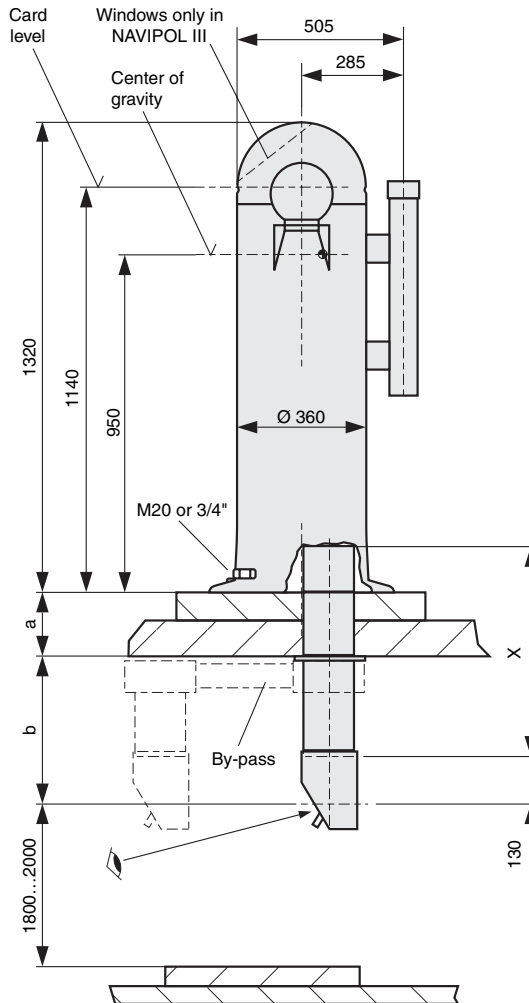
Sperry Marine

Magnetic Compass Systems

The Sperry Marine Magnetic Compass System

Sperry Marine manufactures its own magnetic compasses and binnacles. The wide range of equipment offered by the comprehensive Sperry Marine Magnetic Compass System program includes aluminium alloy binnacles, the legendary **Jupiter** magnetic flat glass compass, a flux-gate pick-off with an integrated sine/cosine interface, by-pass arrangements, azimuth devices, electronic compasses and magnetic compass autopilots (TMC). All of these products are manufactured to Sperry Marine's well-known high standards.

The NAVIPOL Magnetic Compass Binnacles



NAVIPOL I Standard and Steering Compass Reflector Binnacle

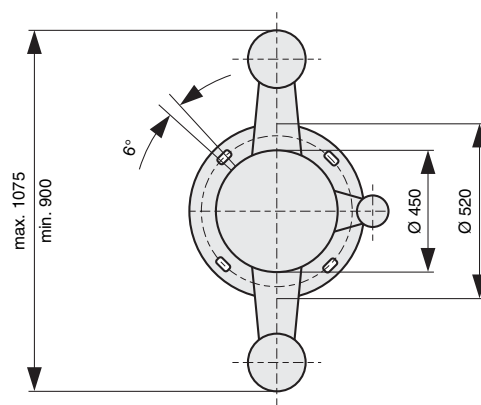
The length of the reflector tube is determined by $x = a + b$
Reflector tubes are available in the following lengths

- 1000 mm
- 1500 mm
- 2000 mm

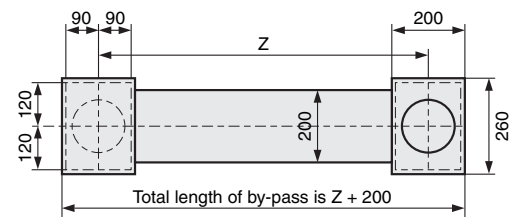
NAVIPOL II Standard and Steering Compass Binnacle

NAVIPOL III Steering Compass Binnacle with Window

NAVIPOL IU Standard and Steering Compass Reflector Binnacle with a By-pass Arrangement



All dimensions in mm



$$a + b + Z = \text{max. } 4000 \text{ mm}$$

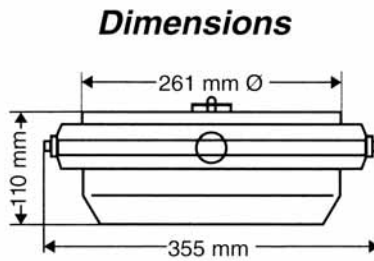
$$Z \text{ minimum} = 410 \text{ mm}$$

Technical Data

Standard power supply 230 VAC or 115 VAC or 24 VDC
Emergency power supply 230 VAC or 115 VAC or 24 VDC
Weight 60 kg
All binnacles are supplied with a **Jupiter** magnetic compass, a dimmer and B, C, D and Flinder's bar correctors.
Optional: Protective cover, set of additional B and C compensating magnets, replacement parts kit, azimuth device PV 24.

Cover photo of „Altonia“
by courtesy of
Peter Döhle Schiffahrts-KG

The JUPITER Flat Glass Magnetic Compass



JUPITER in an Overhead Mounting Bracket

Bearing compass, steering compass, reflector compass and overhead compass for large vessels. A “class A” compass with a card diameter of 180 mm. It meets ISO 449 standards and is type approved in accordance with the EC Council Directive 96/98/EC. Further type approvals for many other countries are available on request. The **Jupiter** compass may be installed in all NAVIPOL binnacles and its accuracy is better than 0.5°. Weight: 8.7 kg.

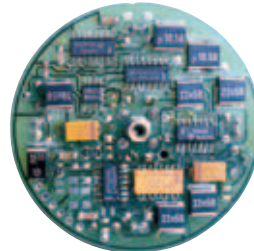
Options include: flux-gate pick-off, shadow pin, wooden transport box, replacement parts kit, azimuth device.

The Flux Gate with the Integrated Sine / Cosine Interface

The Sperry Marine flux gate is an in-house development which combines modern electronic technology with SMD manufacturing techniques to produce a very compact unit which also incorporates a fully integrated sine/cosine interface.

Technical Data

Power requirements	12 V ± 20%
Power rating	40 mA
Output voltage	± 3.75 VDC (variable ± 1.5 V to ± 4 V)
	two channels sine and cosine and a reference output



Integrated circuitry with sine/cosine interface in SMD technology.



Dimensions	
Body	70 mm Ø
Height	34 mm
Mounting base	80 mm Ø

An adapter kit is available for attachment to non Sperry Marine compasses.

Type approved in accordance with the EC Council Directive 96/98/EC in combination with a JUPITER magnetic compass.

An Electronic Compass with an automatic total compensation feature is also available from Sperry Marine. Heading output format is NMEA 0183 to 0.1° resolution. Accuracy 0.2° RMS. Dimensions: body 120 mm Ø; height 104 mm; mounting base 152 mm Ø.

Universal Digital Repeater

The Universal Digital Repeater in combination with an autopilot indicates the corrected magnetic compass heading through the RS 422 magnetic compass heading output from the autopilot. The Universal Digital Repeater is available as a console version and in a watertight housing with bracket attachment. Type approved in accordance with the EC Council Directive 96/98/EC.



Environmental

Temperature range	-25°C to +70°C
Vibration	2 Hz to 100 Hz to IEC 60945
Protection grade	front IP 65 to DIN 40050
	rear IP 23 to DIN 40050
Power Requirements	18 to 36 VDC
Power Consumption	7 W

Dimensions and Weight

Console Version	Watertight Housing with Bracket Attachment
Front plate 96 mm x 96 mm to DIN Standard	Width 158 mm
Depth 140 mm	Height 155 mm
Weight 0.5 kg	Depth 154 mm
	Weight 1.0 kg

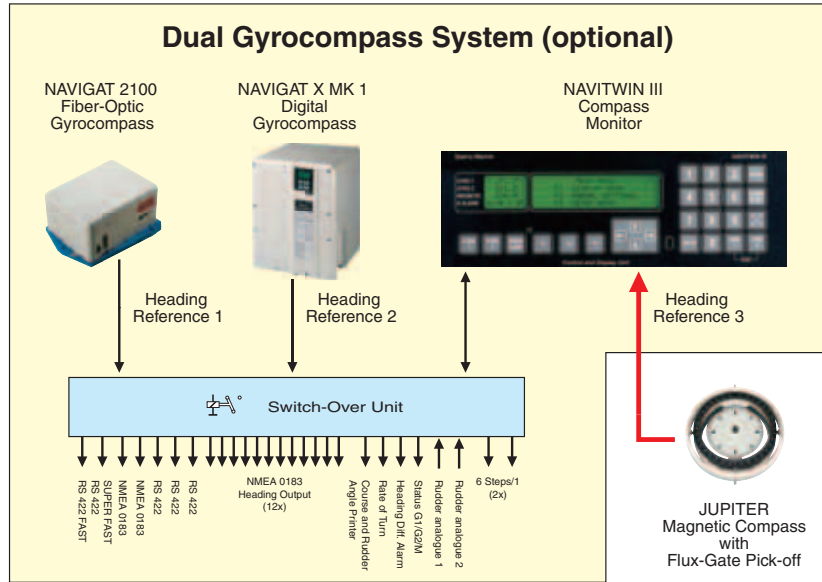
Signal Input

Protocols	NMEA 0183	one RS 422 input
		heading gyro, heading magnetic, roll, pitch, rate of turn, X-rate, Y-rate, water speed, ground speed, transverse water speed, transverse ground speed, total/daily miles, wind speed, wind angle, rudder angle, depth, air temperature, water temperature, time, revolutions per minute, heave.
	C. Plath	heading gyro, heading magnetic, rate of turn, roll, pitch.
	Lehmkuhl	heading.
	NAVIPILOT	heading gyro, heading magnetic, set heading, speed.

Course to Steer Indicator

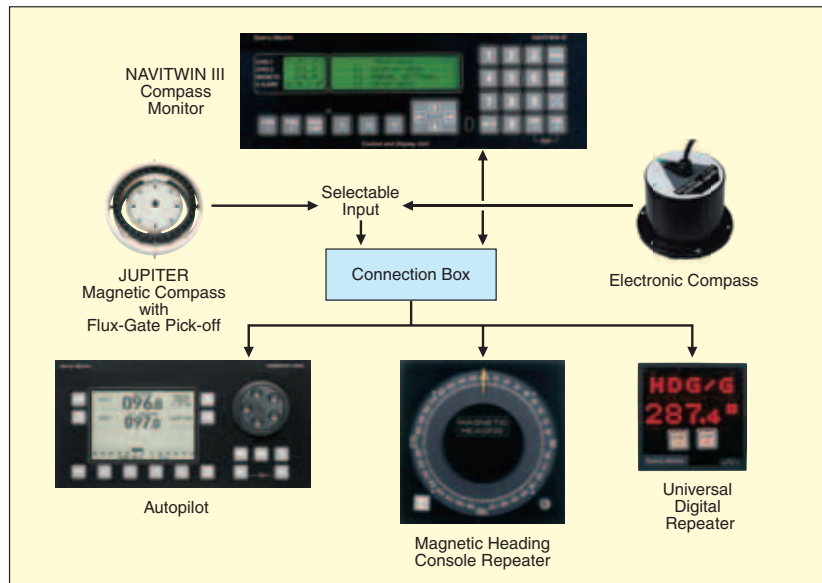
Status Input	steer
Signal Output	opto-coupler, rating 24 V / 10 mA freeze mode, 180° heading change mode.
Protocols VDR	one RS 422 specified for the Sperry Marine Voyage Data Printer.
Status Output	open collector, rating 50 V / 500 mA. Status change according to speed input (threshold can be set in the setup menu).

Back-Up Heading Function



A **Jupiter** magnetic compass with a flux-gate pick-off, combined with a NAVITWIN III Compass Monitor, provides an ideal independent back-up heading source in gyrocompass systems for distribution to autopilots, repeaters, radars and other peripheral appliances.

Single Heading Reference Source (TMC)



Configured with a NAVITWIN III Compass Monitor, a **Jupiter** magnetic compass with a flux-gate pick-off will provide an accurate heading source for autopilots and repeaters for the smaller vessel.

Sperry Marine

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Sperry Marine, with worldwide headquarters in Charlottesville, VA, and major engineering and support offices in Melville, NY, New Malden, England, and Hamburg, Germany, is part of the Northrop Grumman **Electronic Systems** sector.

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