

Instructions

FC40 Fluxgate Compass (P/N 22090245)

RC42 Rate Compass (P/N 22090237)

GENERAL

The FC40 and RC42 compasses are designed for connection to the SimNet network. They are equipped with 5,5 m (18 feet) of SimNet cable with connector. The compasses transmit the heading even if the autopilot is switched off.

INSTALLATION

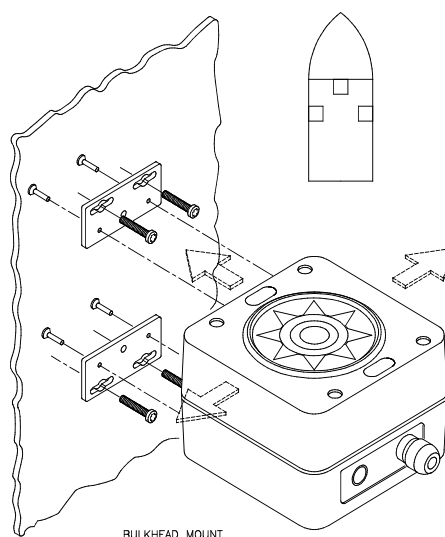
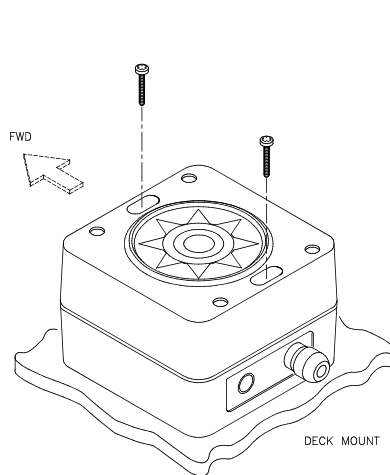
The compass can be mounted on deck or bulkhead, athwart ship or along ship. Some of the products connected to the SimNet network may have a heading offset feature. This will compensate for the mechanical offsets resulting from the selected location and orientation of the compass.

If the connected products have no offset feature, the compass must be deck or bulkhead mounted athwart ship with the cable gland pointing aft.

Select a location that provides a solid mounting place free from vibration, and as close to the vessel's centre of roll and pitch as possible, i.e. close to the water line. It should be as far as possible from disturbing magnetic interference e.g. engines (min. 2 meters), ignition cables, other large metal objects and particularly the autopilot drive unit. On steel hull boats it should be mounted 0.75-1 m above the wheel house on a non magnetic stand.

The compass face plate is the TOP. Never mount it upside down! Level the sensor as close to horizontal as possible.

Use the supplied mounting kit and drill holes through the centre of the slots.

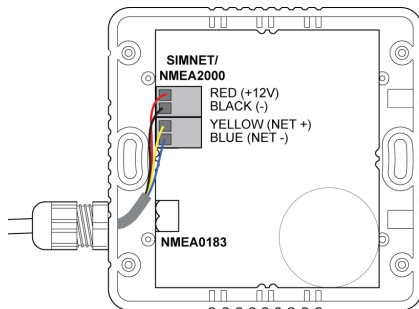


ELECTRICAL CONNECTION

SimNet/NMEA2000 output

This is default connection from factory.

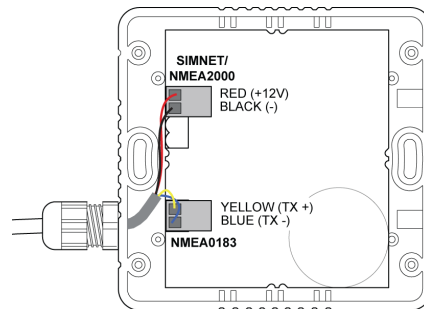
Connect the SimNet connector to an available SimNet socket in the SimNet backbone.



NMEA0183 output only

When used as stand-alone with only NMEA0183 output, the cable is connected as shown on the illustration.

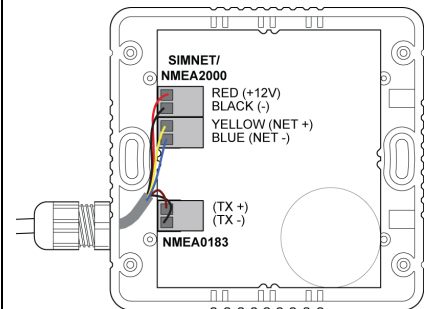
Prepare the other end of the cable for hard wiring by cutting off the SimNet connector and stripping the cable.



SimNet/NMEA2000 and NMEA0183 output

If both SimNet/NMEA2000 and NMEA0183 outputs are required, an additional 2-wire cable must be used (not included). Alternatively a 6 wire cable can be used.

Connect the cable as illustrated.



COMPASS CALIBRATION AND OFFSET ADJUSTMENT

There are two ways of calibrating the compass depending on type of equipment to be connected.

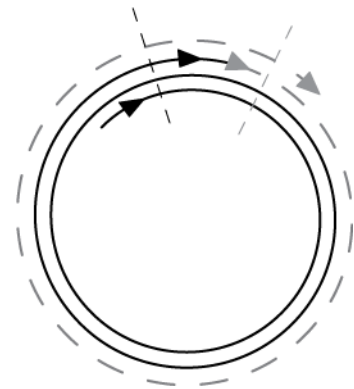
If connected to SimNet, the calibration and offset is carried out using the autopilot or instrument calibration menu. Refer to the autopilot or instrument manual.

Calibration data is stored in the compass and is presented on the autopilot and instrument display.

If connected for NMEA0183 output only, use the following procedure:

1. Make 2 consecutive turns of 360° within 5 minutes after power is applied
 - The calibration procedure will now start automatically

2. Continue with a third 360° turn to complete the calibration



TECHNICAL SPECIFICATIONS

Dimensions:See figure.

Weight:0.4 kg (0.9 lbs)

Supply and interface:8-16V via SimNet

Power consumption1,4 W

Calibration:Automatic

Repeatability: ± 1.5 degrees

Roll/Pitch: ± 35 degrees

Accuracy: ± 3 degrees after calibration

SimNet Network load factor (NL): 3

SimNet ports (input/output): 1

Dynamic performance:

With random excitation

of $\pm 10^\circ$ at max. 1 Hz:FC40: Heading error $< 5^\circ$

RC42: Heading error $< 2^\circ$

With heading step input of

90° at a rate of $10^\circ/\text{s}$:FC40: Heading error 10 sec after turn $< 5^\circ$

RC42: Heading error 10 sec after turn $< 2^\circ$

Environmental Protection: IP56

Compass safe distance: .0.5 m (1.7')

Temperature range:

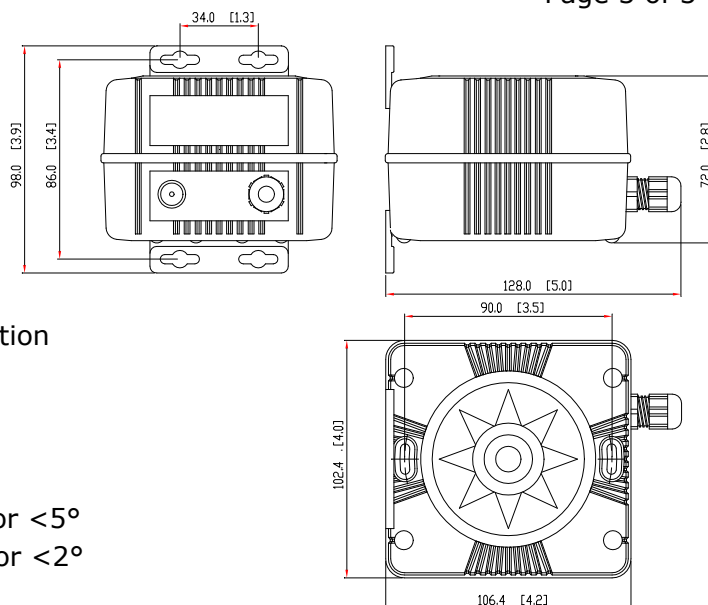
Operation:0 to $+55^\circ\text{C}$ ($+32$ to $+130^\circ\text{F}$)

Storage: -30 to $+70^\circ\text{C}$ (-22 to $+158^\circ\text{F}$)

Cable supplied:.....5.5 m (18') SimNet cable with connector

Mounting:Deck or bulkhead

Material:FC40: Black ABS, RC42: Off white ABS



Output on SimNet/NMEA2000 format

- Messages:.... FC40: PGN127250, RC42: PGN127250, 127251
- Calibrated heading, transmission rate of 20 Hz when selected as heading source on SimNet, otherwise 1 Hz.
- Magnetic field data
- Error messages and status information

Input from SimNet

- Heading offset
- Calibration start
- Software upload

Interface on NMEA0183 format (RC42 only)

- Output: \$HCHDG,x.x,,,,*hh<CR><LF> (x.x = heading, hh = checksum). Variation and deviation are null fields because unknown
- Supply: 9-16V DV

SPARE PARTS

22090187	FC40 Fluxgate Compass w/accessories	22081442	Installation accessories
			Consisting of:
22090195	RC42 Rate Compass w/accessories	20104972	Mounting plate (2)
		44140762	Screw 3.5x25 (2)
24006363	SimNet Cable, 5.5 m (18') with Plug	44140770	Screw 30x9 (4)
		22081376	Plug (2)