

Magnetometer System (Magnetics)

**Attention:**

Please note that the Magnetometer System can only be operated upon request. Request operations with the Magnetometer System to AWI-Logistics in sufficient time prior to the cruise.

Summary

Magnetometers are used to measure the earth magnetic field. The magnetometer on board of Polarstern is a vector magnetometer that measures the vector components of the magnetic field. It consists of an upper and a lower sensor.

Manufacturer	MAGSON GmbH
Model	MFG-2S
Serial No.	n/a
Type	magnetometer
REGISTRY-Link	REGISTRY (1407)



Contacts

Name	Institution	Role
Thorsten Eggers	Alfred Wegener Institute, Helmholtz Centre for Polar and Marine Research	Engineer In Charge
Alfred Wegener Institute for Polar and Marine Research	Alfred Wegener Institute, Helmholtz Centre for Polar and Marine Research	Owner
Graeme Eagles	Alfred Wegener Institute, Helmholtz Centre for Polar and Marine Research	Principal Investigator, Data Scientist

Components

Subdevices

Name	Model	Serial Number	REGISTRY-Link
Magnetometer down	MFG-2S	2000.03	REGISTRY (1436)
Magnetometer up	MFG-2S	2000.02	REGISTRY (1435)

Position

Info	xyz-position calculated from Alignment Survey Report (2016), located on mast platform
X	62.76 m (X-0 is at the center of der rudder (ref. design drawing of the vessel), positive X-axis is forward and along vessel centerline)
Y	-0.067 m (Y-0 at centerline, positive Y-axis is portside)
Z	38.323 m (Z-0 is set to the lowest point of the keel, positive Z-axis is upwards)

Data logging, storage and archiving

Logged parameters

Parameter	O2ARegistry Output Type	Unit
electronics temperature port	temperature	°C
electronics temperature starbord	temperature	°C
geomagnetic total field intensity portside	magnetic field	nT
geomagnetic total field intensity starbord side	magnetic field	nT
sensor temperature portside	temperature	°C
sensor temperature starbord side	temperature	°C
geomagnetic x-component starbord side	magnetic field	nT
geomagnetic x-component port side	magnetic field	nT
geomagnetic y-component starbord side	magnetic field	nT
geomagnetic y-component port side	magnetic field	nT
geomagnetic z-component starbord side	magnetic field	nT
geomagnetic z-component port side	magnetic field	nT
gyro heading	attitude	deg
gyro pitch	attitude	deg
gyro roll	attitude	deg

Central geographical ship's position and time standard

Rawdata storage on board

Dship

Data archiving on land

Documentation

- König, M. (2006): Processing of shipborne magnetometer data and revision of the timing and geometry of the Mesozoic break-up of Gondwana = Auswertung schiffsfester Magnetometerdaten und die Neubestimmung des Zeitpunktes und der Geometrie des Mesozoischen Aufbruchs von Gondwana , Berichte zur Polar- und Meeresforschung (Reports on Polar and Marine Research), Bremerhaven, Alfred Wegener Institute for Polar and Marine Research, 525 , 137 p. .