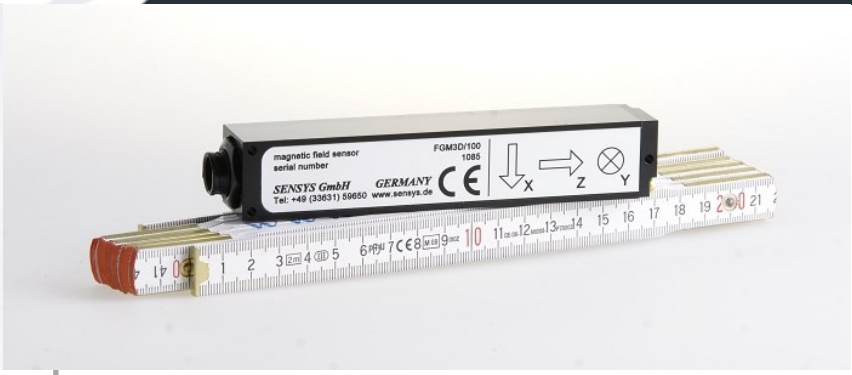
GEOREVA
L'INSTRUMENTATION GÉOPHYSIQUE **SUR MESURE**

MAGNÉTOMÈTRE FLUXGATE TRIAXIAL

FGM3D



Le FGM3D est un magnétomètre fluxgate triaxial très compact. Il est disponible selon plusieurs gammes de mesure , niveau de bruit, bandes passantes, et sous différentes finitions pour s'adapter à tous les besoins .

PLUSIEURS VERSIONS DISPONIBLES

Le FGM3D existe en version r**ectangulaire** ou **cylindrique**. Une **version submersible** est également disponible.

GAMME DE MESURE

Le FGM3D est disponible selon plusieurs gammes de mesure, **de +/-4000 nT à +/- 1000000 nT.**

NIVEAU DE BRUIT

Le FGM3D est disponible selon **deux niveaux de bruit** :

- Version standard : < 15 pTrms/√Hz @ 0,1 ...10Hz et une erreur sur l'orthogonalité de 1°.
- Version « Low Noise » : < 8 pTrms/√Hz @ 0,1 ...10Hz et une erreur sur l'orthogonalité de 0.12°.

VERSION CALIBRÉE

En fonction de l'environnement d'utilisation, le FGM3D peut être amélioré en ajoutant une bobine de correction appliquant un signal de calibration.

BANDE PASSANTE

La bande passante de la version standard du FGM3D est de 2 kHz, mais peut être augmentée jusqu'à 3 kHz et 4kHz.

Caractéristiques techniques

- Gamme de mesure : +-4000 nT à *-1000000 nT.
- Résolution : < 150pT.
- Dérive température : < +-0.3 nT/K
- Erreur relative de mesure : +-0.1%
- Stabilité : < 5 nT
- Alimentation : +-12V à +-15V
- Consommation / +-26mA
- Impédance de sortie : < 1 Ohm
- Poids : 112 g
- Dimensions : fonction de la version (voir pages suivantes).

Acquisition (option)

- Unité d'acquisition FGM3D TD.
- 24 bits.
- Échantillonnage Jusqu'à 6.3 kHz.
- 3 à 16 voies de 15 voies de mesures.
- Filtre : 50/60 Hz.
- Connexion à un PC avec un câble USB isolé.

Logiciel d'acquisition

- FGM3D TD App
- Affichage, enregistrement et visualisation en temps réel des données mesurées.
- Traitement de données : filtres, moyenne, etc.
- Analyse spectrale.
- Fonction Oscilloscope.

Fabricant : Sensys (Allemagne).

SENSYS®
Magnetometers & Survey Solutions

SENSYS FGM3D Matrix of Technical Parameters

	Standard version							Calibration version	Submersible version
Parameters	**FGM3D/4**	**FGM3D/75**	**FGM3D/100**	**FGM3D/125**	**FGM3D/250**	**FGM3D/500**	**FGM3D/1000**	**FGM3D/125-C3T**	**FGM3D UW**
Measurement range	±4,000 nT	±75,000 nT	±100,000 nT	±125,000 nT	±250,000 nT	±500,000 nT	±1,000,000 nT	± 125,000 nT	See standard version
Point of reference single axes	See figure 1 or 4 next pages (14.5/34.5/54.5mm from edge)							See figure 2 next page (14.5/34.5/54.5mm from edge)	See figure 3 next page (34/54/74mm from edge)
Point of reference total intensity	34.5 mm from edge								54mm from edge
Declination between axes	≤ ±0.5°								
Declination total	≤ ±1°								
Resolution	< 150 pT								
Noise [0.1 … 10 Hz]	< 15 $pT_{rms}/\sqrt{Hz}$ @0.1…10Hz								
Cut off frequency (bandwidth)	2 kHz (DC…2 kHz)								
Temperature drift	≤ ± 0.3 nT/K								
Zero error	≤ ±5 nT								
Relative error of measurement	±0.1 %					±0.5 %		±0.1 %	See standard version
Stability	< 5 nT								
Linearity	< 20 ppm								
Sensitivity	2.5 V/µT	0.1$\bar{3}$... V/µT	0.1 V/µT	0.08V/µT	0.04V/µT	0.02V/µT	0.01V/µT	0.08 V/µT	See standard version
Additional winding (compensation)	n.a.							6.3 mA / 70 µT (max. 10mA) incl. calibration protocol	n.a.
Calibration jump	n.a.							-10 µT (per axis)	n.a.
Supply voltage	±12 V … ±15 V								
Current consumption	±26 mA							max. ±40 mA; typ. ±30 mA	See standard version
Output	±10 V @FS								
Output impedance	< 1 Ω								
Operating temperature	-20 °C to +75 °C								
Storage temperature	-40 °C to +80 °C								
Dimensions	See housing types next pages								cylindrical, Ø45mm x 259mm
Weight w/o cable / Volume	112g							130g	430g / 0.28 l
Ingress protection	IP65								IP68K down to 100m
Vibration stability	BV044 (in parts)								
Options									
Low noise / improved resolution	≤ 8 $pT_{rms}/\sqrt{Hz}$ / < 70 pT					n.a.		≤ 8 $pT_{rms}/\sqrt{Hz}$ / < 70 pT	See standard version
Improved orthogonality	Declination between axes: ≤ ±0.1° / declination total: ≤ ±0.12°								
Extended bandwidth	n.a.	3 kHz / 4 kHz			n.a.			n.a.	See standard version
Customized housing	Possible features: square, cylindrical, additional mounting points, specific material, color, etc.								Dependent on required depth rating
Cabling									
Digitizer / Recorder									

FAQs	
Scope of supply	Standard pricing includes analogue sensor **without** options, specific housing or any cabling
Dual use	The low noise options might improve sensor characteristics towards a dual use rated device (military/threatening application), please check with authorities about applicable categories
Packaging & Shipment	All sensors are packed for save transport at no additional costs and pick up from SENSYS premises is free of charge, whereas shipping to customers premises is at extra cost
Customs	Custom process might vary depended on final customer destination and might require additional guarantees and efforts to be charged on top

Information

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Internet www.sensys.de

SENSYS FGM3D Matrix of Housing types and Pin Layout (I)

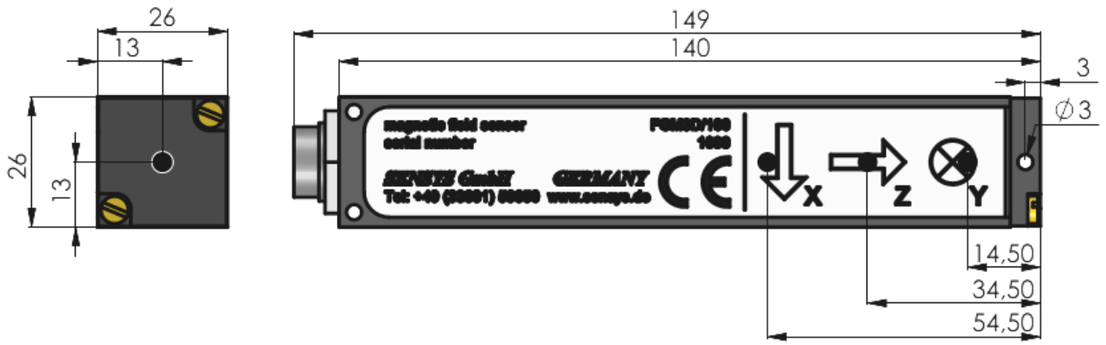
<table>
<tr><th>Sensor</th><th>Schematic view of sensor
Side view with dimension, reference edge and centre of sensing elements (●)</th><th>Connector layout
Number of pins</th><th>Pin layout version
Assignment of pins</th></tr>
<tr><td>FGM3D</td><td> 

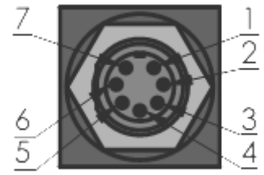
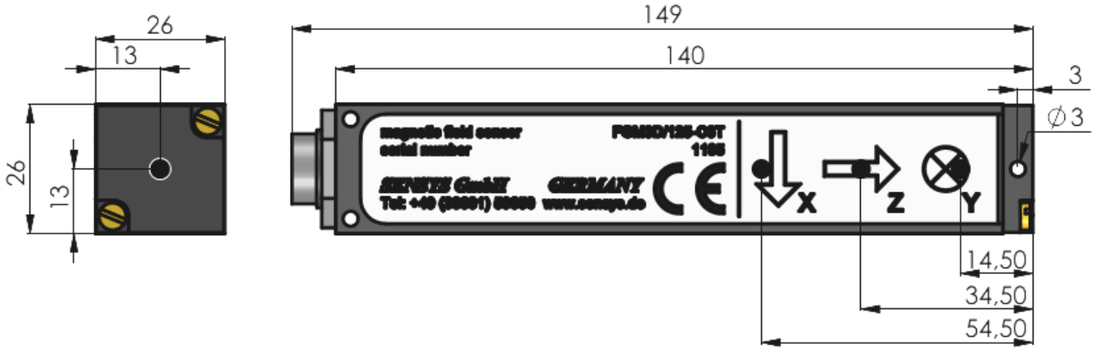
Figure 1</td><td> 
</td><td>
<table>
<tr><th>Pin</th><th>Signal</th><th>Color</th></tr>
<tr><td>1</td><td>0V</td><td>Black</td></tr>
<tr><td>2</td><td>-15V</td><td>Brown</td></tr>
<tr><td>3</td><td>+15V</td><td>Red</td></tr>
<tr><td>4</td><td>B_{COM}</td><td>Orange</td></tr>
<tr><td>5</td><td>B_X</td><td>Yellow</td></tr>
<tr><td>6</td><td>B_Y</td><td>Green</td></tr>
<tr><td>7</td><td>B_Z</td><td>Blue</td></tr>
</table>
Weight: 112g
</td></tr>
<tr><td></td><td></td><td></td><td></td></tr>
<tr><td>FGM3D/125-C3T</td><td> 

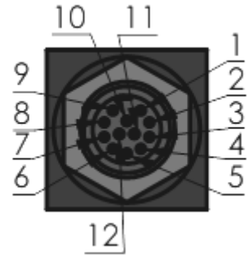
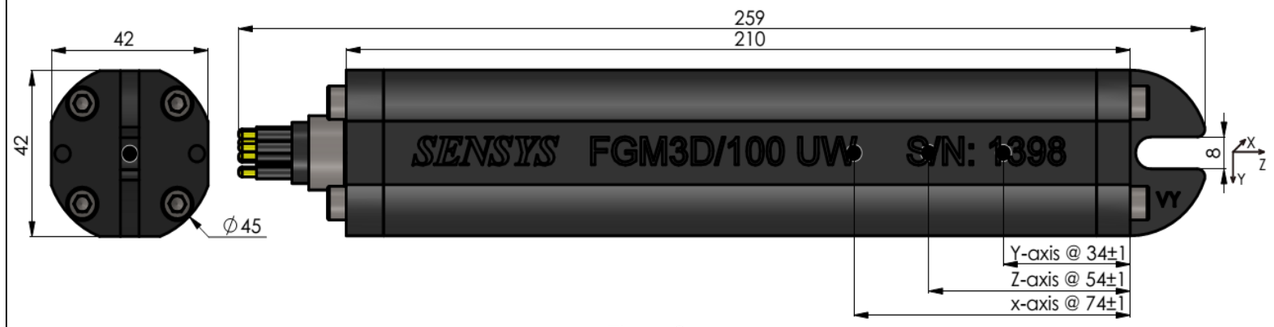
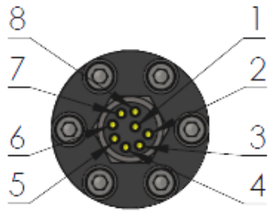
Figure 2</td><td> 
</td><td>
<table>
<tr><th>Pin</th><th>Signal</th><th>Color</th></tr>
<tr><td>1</td><td>Z_{TEST}</td><td>White</td></tr>
<tr><td>2</td><td>Y_{TEST}</td><td>Grey</td></tr>
<tr><td>3</td><td>Z_{OUT}</td><td>Blue</td></tr>
<tr><td>4</td><td>Y_{OUT}</td><td>Green</td></tr>
<tr><td>5</td><td>X_{OUT}</td><td>Yellow</td></tr>
<tr><td>6</td><td>OUT</td><td>Orange</td></tr>
<tr><td>7</td><td>+15V</td><td>Red</td></tr>
<tr><td>8</td><td>-15V</td><td>Brown</td></tr>
<tr><td>9</td><td>0V</td><td>Black</td></tr>
<tr><td>10</td><td>X_{TEST}</td><td>Purple</td></tr>
<tr><td>11</td><td>CAL_{TEST}</td><td>Brown/white</td></tr>
<tr><td>12</td><td>TEST</td><td>White/black</td></tr>
</table>
Weight: 130 g
</td></tr>
<tr><td></td><td></td><td></td><td></td></tr>
<tr><td>FGM3D UW II</td><td> 

Figure 3</td><td> 
</td><td>
<table>
<tr><th>Pin</th><th>Signal</th><th>Color</th></tr>
<tr><td>1</td><td>Shield</td><td>Shield</td></tr>
<tr><td>2</td><td>GND</td><td>White</td></tr>
<tr><td>3</td><td>-15V</td><td>Red</td></tr>
<tr><td>4</td><td>+15V</td><td>Green</td></tr>
<tr><td>5</td><td>Return GND</td><td>Grey</td></tr>
<tr><td>6</td><td>B_X</td><td>Blue</td></tr>
<tr><td>7</td><td>B_Y</td><td>White/black</td></tr>
<tr><td>8</td><td>B_Z</td><td>Black</td></tr>
</table>
Weight: 430 g
Volume: 0.28 L
</td></tr>
</table>

Information

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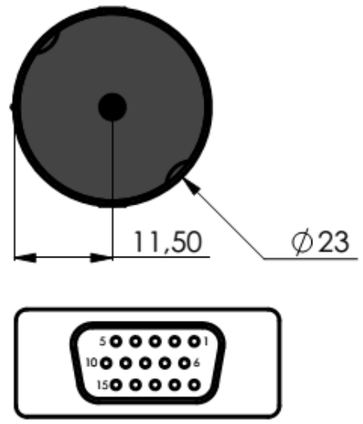
SENSYS FGM3D Matrix of Housing types and Pin Layout (II)

	Schematic view of sensor	Connector layout	Pin layout version		
Sensor	Side view with dimension, reference edge and centre of sensing elements (●)	Number of pins	Assignment of pins		
FGM3D „Slim“	 Figure 4		Pin / Signal / Color 1 / B_{COM} / Grey 2 / B_X / Yellow 3 / B_Y / Green 4 / B_Z / Blue 11 / 0V / Black 12 / -15V / Brown 13 / +15V / Red 14 / Shield /		
			Weight: 110g		

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