



# Magnetometer meets Modularity

Innovative solutions for  
archaeological survey

*Searching with Excellence*



# High-end fluxgate magnetometers

Detection of magnetic anomalies  
of geological and archaeological origins



Vallon GmbH, a family-run company since 1965 and headquartered in southern Germany, manufactures state-of-the-art fluxgate magnetometers and active EM detectors for many applications. An extensive list of military customers can confirm VALLON detectors are built to perform under all conditions with outstanding ruggedness paired with a straightforward user interface.

For scientific applications VALLON's latest magnetometer systems offer a unique degree of modularity that allows flawless tailoring of components to various tasks.



# The heart: Sensor VSM4

A fully digitized 1-axis differential fluxgate magnetometer probe

The heart of the system is the VSM4 (VALLON Sensor Medium), a fully digitized 1-axis differential fluxgate magnetometer probe.

While VALLON offers probes of various sensor separation distances of up to 1.7 m, the term “medium” stands for 50 cm coil separation distance configuration within the VSM4 sensor tube. They are mechanically arranged along their common axis by a tension-band, which ensures highly precise lifetime adjustment.





## Magnetometer meets modularity

One-Channel Systems



Multi-Channel Systems



## Technical specifications sensor

in accordance with DIN 54145-1

Area of application	approx. $\pm 120 \mu\text{T}$ (thereof approx. $60 \mu\text{T}$ Earth's field)
Measuring range	$\pm 20 \mu\text{T}$
Sensor base distance	500 mm (19.69 in)
Reference point	83 mm (3.3 in) from end of probe tube and 3.25 mm (0.1 in) off center line
Declination	$\pm 2 \text{nT}$
Resolution	$< 0.1 \text{nT}$
Noise	$< 35 \text{ pT rms} / \text{sqrt Hz}$
Cutoff frequency (bandwidth)	20 Hz (DC – 20 Hz)
Temperature drift	$< 0.5 \text{ n T/K}$
Linearity	$< 0.1\%$
Compensation range	$\pm 7.5 \mu\text{T}$
Output signal	digital
Operating voltage	6 V to 7.8 V
Power consumption	approx. 100 mA
Operating temperature	$-38^\circ\text{C}$ to $71^\circ\text{C}$
Storage temperature	$-51^\circ\text{C}$ to $71^\circ\text{C}$
Dimensions (d x l)	$\varnothing 32 \text{ mm}$ (1.3 in) x 705 mm (27.8 in)
Weight*	0.55 kg (1.2 lbs)
Degree of protection	IP68, 60 m

\*Tolerance  $\pm 10\%$ . Subject to changes that serve technical progress.



Discover all VX1  
magnetometer kits and  
their options online

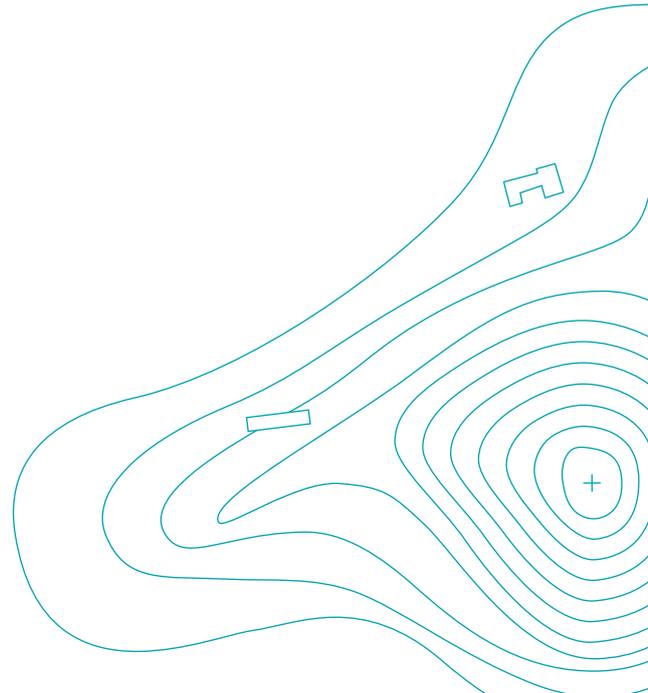
# VX1 – making one channel work

The modular magnetometer kit from VALLON

The easiest way to use a single probe is a VX1. The VX1 comes with a telescoping carrying bar for surface scans and/or with a cable drum, that allows the use of the probe inside boreholes or underwater.

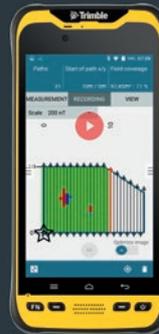
In real-time manual use, the electronic unit of the VX1 displays the readings on a simple LED-bar. Nevertheless: The VX1 electronics also provides a Bluetooth-Interface, so the system easily can be added to a field-computer and software for data collection.

The VX1 is frequently used as an entry-level system – its core components form the basis for various optional upgrades including multi-channel arrays.



# EVA – making use of every bit

Data acquisition  
and evaluation



For data collection, VALLON provides Android field computers (VFC4.1 and VFC4.1plus ) running the software **EVA4mobile®**. This software offers extensive features including connectivity to optional differential GNSS systems and covers a wide range of tasks including:

- Set-up of projects and fields
- Data collection on surface and in boreholes, with or without georeferenced
- Sophisticated navigation aids
- Real-time signal visualization on map
- Data import/export-function
- and many more...



**VALLON EVA4ALL®** is the Windows-based counterpart, that provides many tools allowing for data evaluation, project handling, and many additional aspects of post-processing and documentation.

The software solutions can be used with single channel (VX1) kits as well as with multi-channel arrays. Furthermore, the modularity does not end with the use of magnetometers – the software can handle data from active platforms (e.g. a VALLON VMX10 large loop detector or VMH4 hand-held detectors with 60 cm search heads).

Try out our innovative software solutions for data acquisition and evaluation





# Going multi-channel

For large area survey, a whole range of multi-channel carriers is available

This can be a lightweight VXP3 man-carried frame with optional wheels for flat surfaces. For dedicated push-cart operation VALLON offers heavy duty carriers type VXV and for vehicle-based operations, there is a trailer carrier VXVT.

All mentioned solutions available at different widths, depending on number of channels and distance between them.



Configure online your multi-channel system that fits all your needs



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