Magnetic susceptibility is a physical parameter that can provide useful information in a number of mining-related contexts. These include uranium and iron ore (BIF) exploration and cases where high-susceptibility minerals such as magnetite are associated with a primary target mineral. The Electromind MAG42 probe incorporates the industry-leading BSS02 detector from Bartington Instruments. This low-frequency electromagnetic device was developed specifically for the mining sector and ensures a stable response over a wide range of temperature and pressure conditions.

As an option, the probe can be supplied with a natural gamma detector to provide additional lithological information or for horizon correlation purposes.

**SPECIFICATIONS**
- Tool diameter : 43 mm
- Body diameter : 38 mm
- Length : 1900 mm
- Weight : 6 kg
- Max. Temp / Pressure : 70°C / 200 bar

**DATA / SENSOR PARAMETERS**
- Operating frequency : 1.439 kHz
- Vertical resolution : 25 mm
- Measuring range : 10-5 to 10-1 cgs

**ACCESSORIES / OPTIONS**
- Natural gamma detector : 25 x 50 mm NaI(Tl) crystal

**BOREHOLE CONDITIONS**
- Dry or fluid-filled borehole
Examples

Banded iron formation. Magnetite gives rise to a very strong magnetic susceptibility response.

Comparison between magnetic susceptibility results from a MAG42 geophysical logging probe and a hand-held device used on core samples. Using the geophysical logging method, production rates of up to 300 meters per hour can be achieved.

Magnetic susceptibility log recorded in the iron-bearing formations underlying the « Minette » region of Luxembourg.