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E-Magnets UK Ltd

A dedicated and specialist supplier of Magnets

Mission Statement –

“Through operational excellence, we will provide our customers with a superior service experience and the highest quality magnet components and assemblies.”

Magnetic Units Conversion

There are occasions where manufacturers of magnets and devices such as Reed Switches and Hall Effect Devices, etc state magnetic units in units that are unfamiliar. It is useful to know how to convert between units.

There are two types of unit used in magnetics – the cgs system (centimeter, gram, second) and the SI (formerly known as the Metre, Kilogram, Second system; now known as Systeme International d’unites or the International System of Units). The cgs system is used in the USA and UK and is still used in the aerospace industries. The SI system is used in mainland Europe and UK and is generally the most commonly used system.

In magnetics, the cgs system is used more because calculations such as field strengths in air and demagnetisation effects are much quicker to perform. Pc, Pci and permeability calculations are quicker using cgs. If SI units are used, the calculation involves a 4π term, which quickly complicates the mathematics. There are occasions where the units need to be converted from cgs to SI and vice versa. The conversion table in *Figure 1* can be used.

Quantity	To Convert		Multiply By
	From (CGS)	To (SI)	
Magnetic Flux Density (B)	Gauss	Tesla	10^{-4}
Magnetizing Force (H)	Oersteds	Amperes per Meter	$1000/4\pi$
Energy Product (BH)	MGOe	KJ/m^3	$100/4\pi$
Flux (Φ)	Maxwell	Weber	10^{-8}

Figure 1:- Conversion Table

How to contact us:

We believe in listening to, understanding and working with our customers. We have a dedicated, expert sales team who are available Monday to Friday from 8.30am to 5.30 pm (GMT). If you have any queries or would like us to visit you, please get in touch.



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