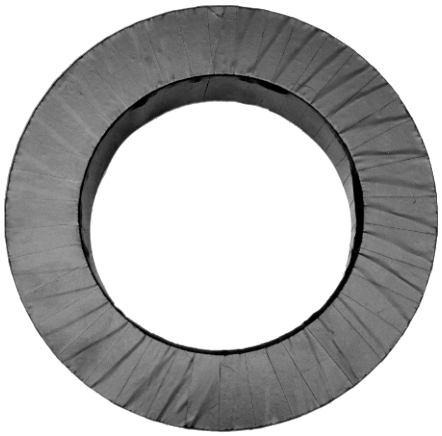
DRONA MAGNETICS

High Precision Current Transformer Cores

High Precision Current Transformer Cores are manufactured with Iron based Nanocrystalline material. These cores have an unique combination of moderate saturation induction, high permeability, good temperature stability and low cost.



APPLICATIONS

Measuring current & Voltage Transformer in Power Plant and Substation (.2, .2S & .1 accuracy class.)

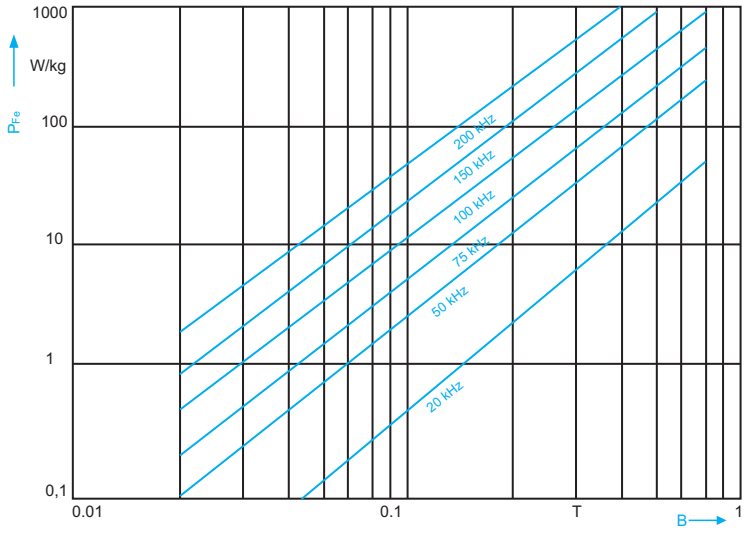
BENEFITS

- High Permeability
- Very Low Loss
- Moderate Saturation flux density
- Low Cost
- Small Size
- Good Thermal Stability

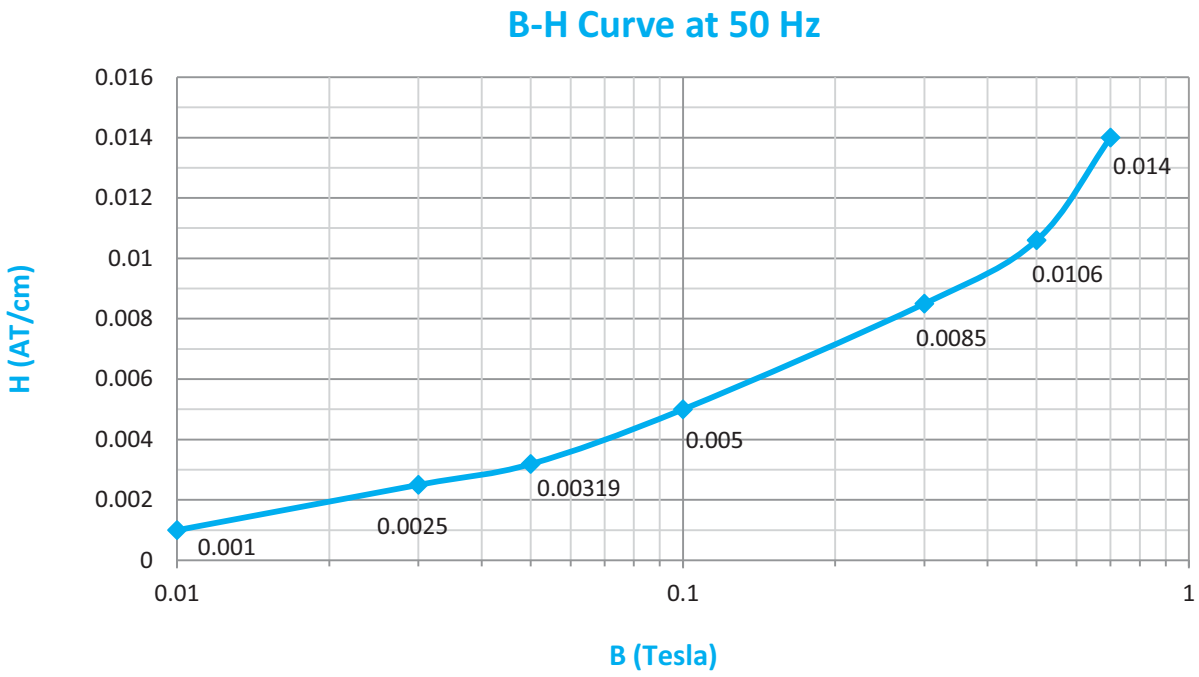
PHYSICAL AND MAGNETIC PROPERTIES

Saturation Flux Density (Tesla)	1.25
Saturation Magnetostriction (ppm)	2.7
Electrical Resistivity (μ-ohm-cm)	130
Ribbon Thickness (μm)	25-30
Density (g/cm3)	7.25
Crystallization Temperature (°C)	510
Curie Temperature (°C)	570
Continuous Service Temperature (°C)	120-150
Initial Permeability	$>1x10^4$
Maximum Permeability	$>6x10^4$
Coercivity	<1.6A/m

CORE LOSS vs. FLUX DENSITY



B/H Curve



Comparison of Iron Based Nanocrystalline, Silicon Steel Core & Perm Alloy Core

BASIC PARAMETER	NANO CORE	PERM ALLOY CORE	SILICON STEEL CORE
Saturation Flux Density (T)	1.25	0.76	2.03
Initial Permeability	40,000 - 80,000	50,000 - 80,000	1,000
Maximum Permeability	>2,00,000	>2,00,000	40,000
Density (g/cm2)	7.25	8.75	7.65
Curie Temperature	570	400	740
Ribbon Thickness (mm)	0.025 - 0.030	0.15	0.3
Occupation Stack factor	0.80	0.9	0.95

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