

**ADJUSTABLE POT CORE**  
for high quality inductors  
to BS4061—range 1—ref 1

**10mm VINKOR**  
**LA1421**  
 $\mu_e$  100

Frequency range for which the Q-factor  
is normally greater than 100 .. .. . 20 to 800kHz

Material .. .. . Ferroxcube grade A13

Standard adjuster .. .. . LA1383

ELECTRICAL AND MAGNETIC DESIGN DATA FOR CORE ASSEMBLY

Parameter	Symbol	Measuring frequency (kHz)	Value without adjuster	Derived value with standard adjuster (note 1)
Effective permeability	$\mu_e$	<10	91.47	100
Turns factor (turns for 1mH)	$\alpha$	<10	94.20 $\pm$ 1.5%	90.09
Inductance factor (nH for 1 turn)	$A_L$	<10	112.7 $\pm$ 3%	123.2
Residual plus eddy current core loss tangent	$\tan \delta_{r+F}$	30	$<0.31 \times 10^{-3}$	$<0.32 \times 10^{-3}$
		100	$<0.57 \times 10^{-3}$	$<0.60 \times 10^{-3}$
Hysteresis loss tangent at $\hat{B}_e = 1\text{mT}$ (note 5)	$\tan \delta_h$	4	$<0.11 \times 10^{-3}$	$<0.12 \times 10^{-3}$
Temperature coefficient (ppm per deg C)	5 to 25°C	$\alpha_L$	<100	0 to 142
	25 to 55°C			

NOTES:

1. These derived values, which are not guaranteed, apply to the core assembly with the standard adjuster in the nominal mid-range position.
2. Except for hysteresis loss tangent, the above parameters are measured at an effective flux density of  $\hat{B}_e < 0.1\text{mT}$ .
3. Except for temperature coefficient, the above parameters apply at a temperature of 25°C.

4. Hysteresis factor 
$$F_h = \frac{2\pi \tan \delta_h}{I\sqrt{L}}$$

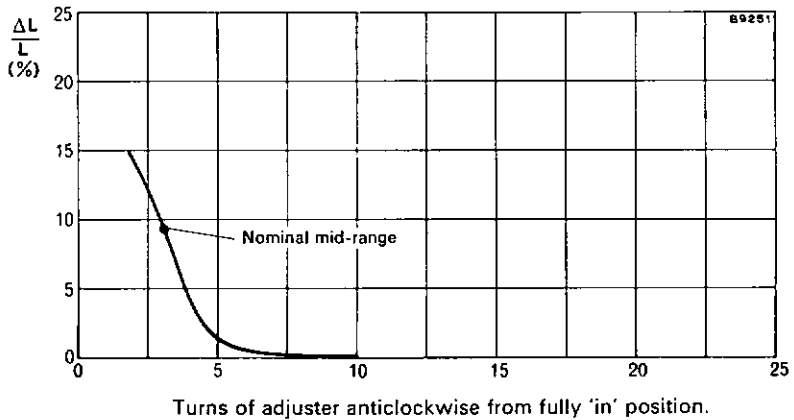
where I = r.m.s. current in amperes, and L = inductance in henrys.

5.  $\tan \delta_h$  is determined from measurements at  $\hat{B}_e = 0.1$  and 1mT.
6. For material properties see data sheet LINEAR FERRITE MATERIALS.

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**C1**

## TYPICAL ADJUSTMENT CURVE



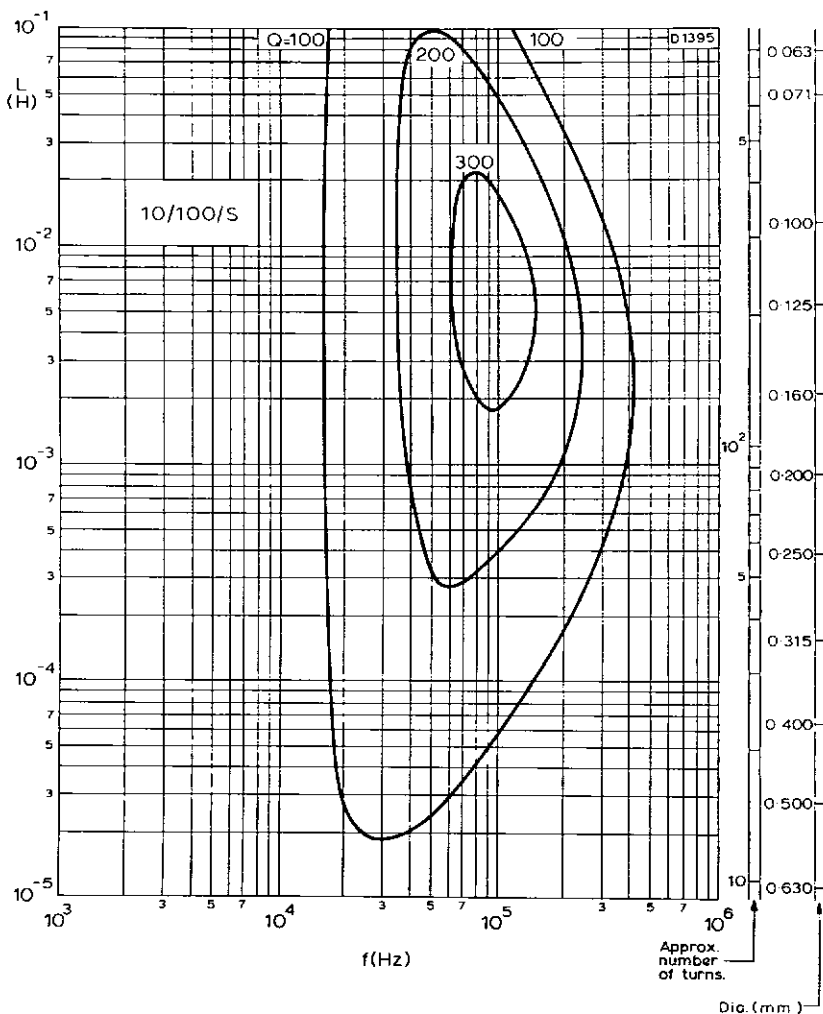
STANDARD ADJUSTER LA1383

L is the inductance of the assembly without adjuster

Adjusters are not included in the LA1421 core type number, and they must therefore be ordered separately.

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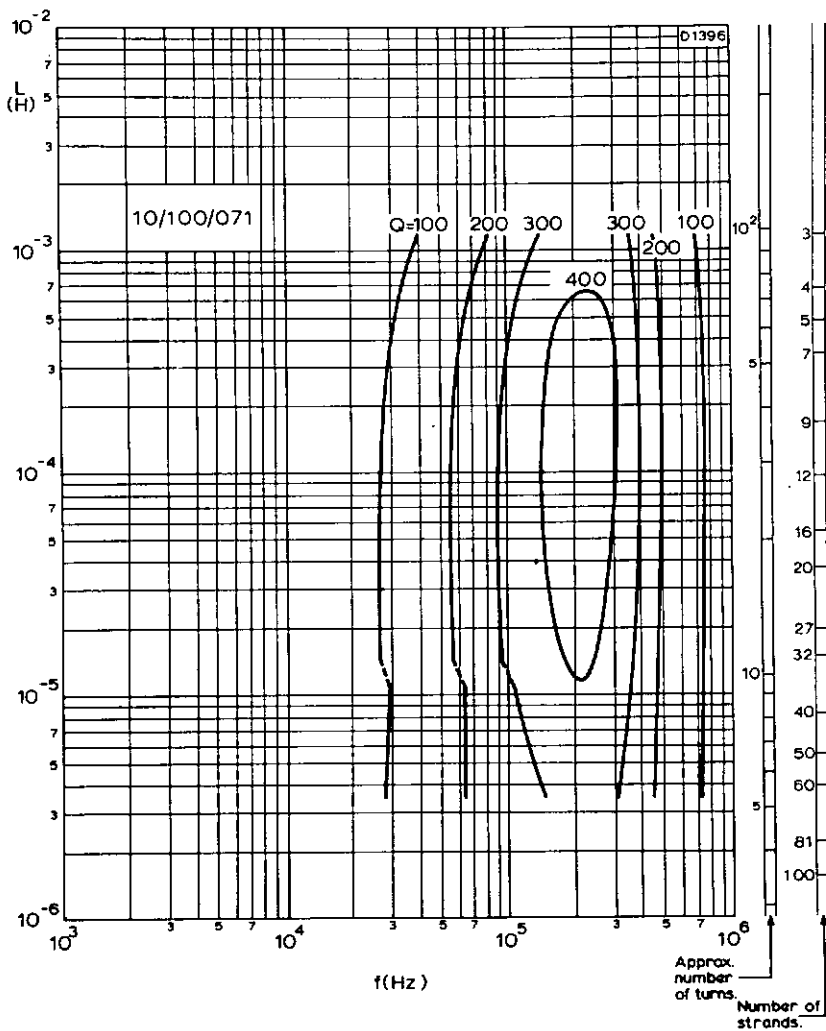


**ISO-Q CURVES**

These curves show typical Q-factors obtainable with full windings of enamelled copper wire on coil former type DT2169 (see winding tables in 'white' 10mm Vinkor Series sheets).

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**C3**

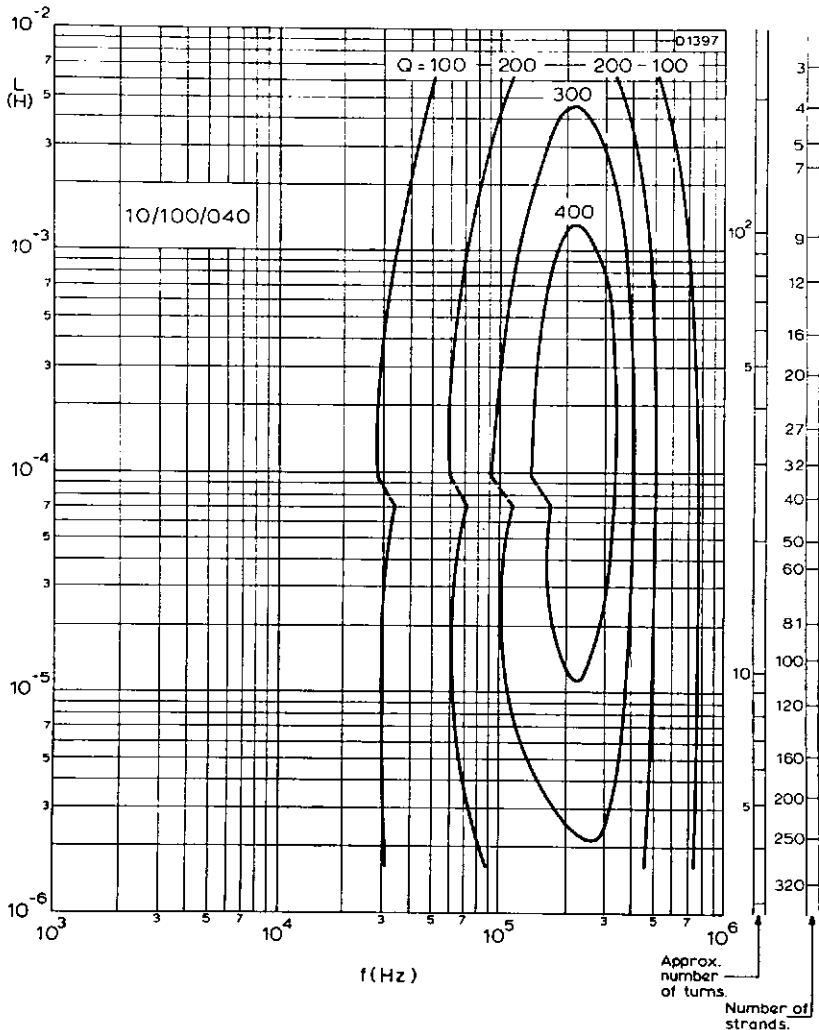


ISO-Q CURVES

These curves show typical Q-factors obtainable with full windings of 0.071mm diameter bunched conductors on coil former type DT2169 (see winding tables in 'white' 10mm Vinkor Series sheets).

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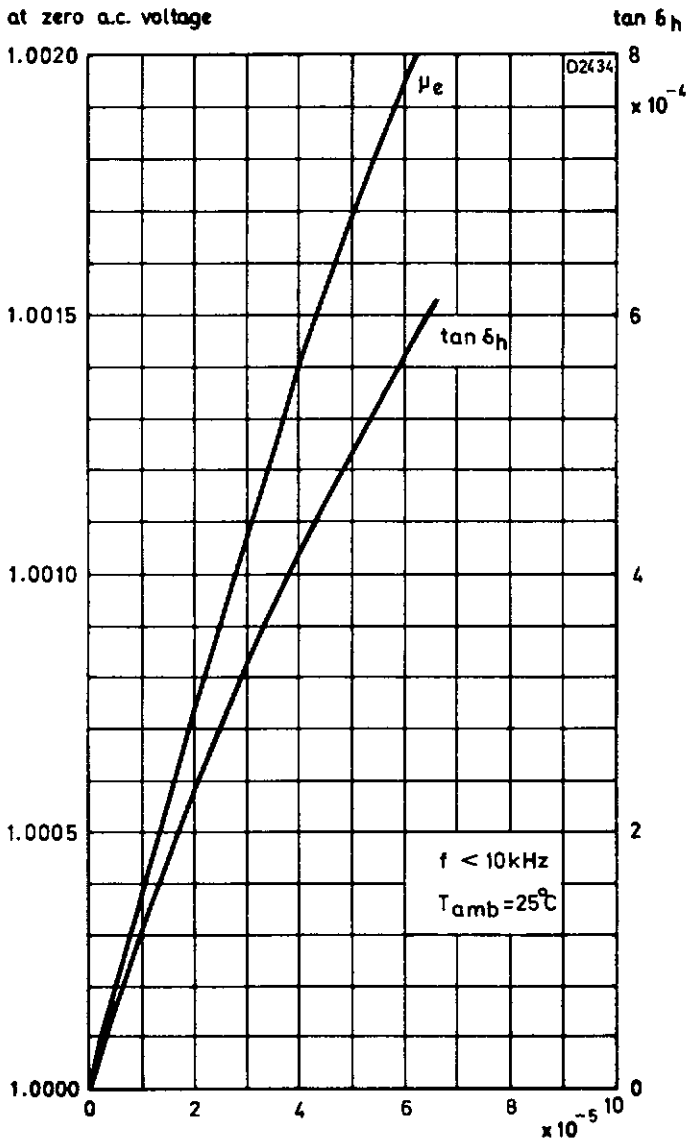
#### ISO-Q CURVES

These curves show typical Q-factors obtainable with full windings of 0.040mm diameter bunched conductors on coil former type DT2169 (see winding tables in 'white' 10mm Vinkor Series sheets).

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**C5**

$\mu_e$  relative to value  
at zero a.c. voltage

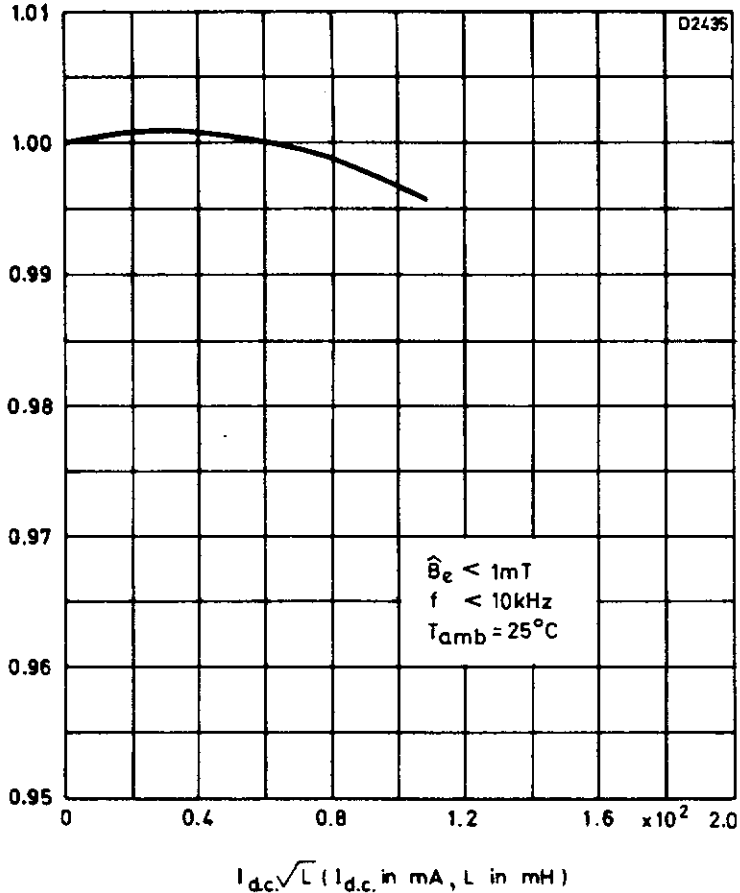


$\frac{E}{\sqrt{L}}$  (E in V.r.m.s., f in Hz, L in mH)  
TYPICAL VARIATION  
OF  $\mu_e$  AND  $\tan \delta_h$  WITH A. C. SIGNAL LEVEL

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Inductance relative to value  
at zero d.c. polarisation



TYPICAL D. C. POLARISATION CURVE

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**C7**