



Product Specification

Magnetic Field Transducer – EQ 2430

EQ 2430 is a single axis, high accuracy, high linearity, high stability magnetic field to analog voltage transducer. It is well suited for on-line magnetic field measurement in large turbogenerators, hydrogenerators and electrical motors, and provides effective diagnostic of generator magnetic fields as well as detection of shorted pole coils.

Description

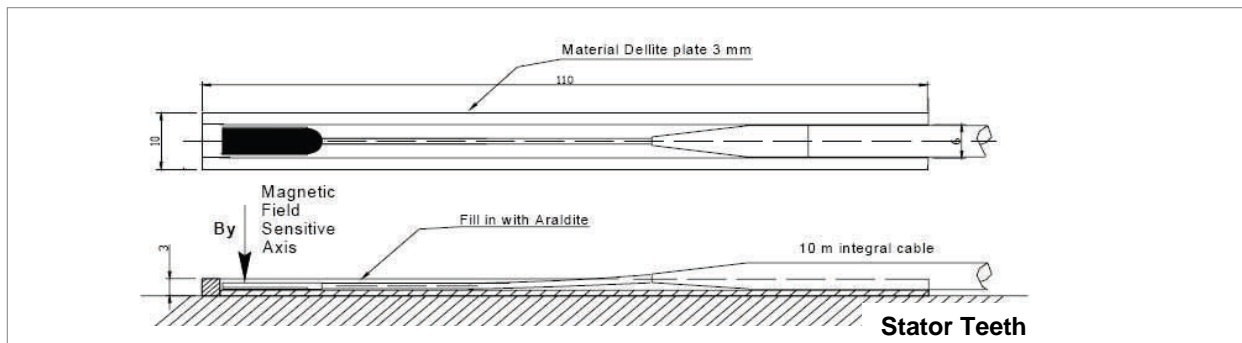
The single-axis, high accuracy, high linearity, high stability magnetic field to analog voltage transducer is particularly appropriate for mapping the magnetic field in the range to 2 Tesla. The magnetic field sensor's head contains a high quality Hall element. The very thin sensor's head design allows mounting in the air gap of generators and electrical motors.

A novel sensor chip in the probe entirely eliminates influences from DC magnetic field components other than the one measured (Y-axis), so that even for strong non-uniform fields no planar Hall effect leads to errors in the output voltage. The transducer consists of a sensor's head with integral flexible cable of 10 meters connected to a conditioning unit.



- Single axis measurement
- Excellent accuracy
- Up to +/-2 Tesla linear, max +/-3 Tesla
- Easy to install on stator wall without removing the rotor poles
- Temperature compensated
- EMC tested to IEC and ENV norms
- Immune to deposits and vibrations
- Small size and flat design for electrical machines air gap installation

Physical Dimensions



Mounting instructions

The magnetic Field Sensor mounting plate shall be glue by means of Loctite 330 glue on stator teeth. Gluing surface preparation please refer to instruction manual.

Technical Information - Magnetic Field Transducer - EQ 2430

Electrical:

Output signal for channel Y.....	Maximum magnetic field ± 3 T
Linear magnetic field range.....	± 2 T (full scale)
Output voltage at full-scale (VB)	± 10 V, single ended
Sensitivity to magnetic field.....	5 V/T
Tolerances of sensitivity (B = 1 T d.c.)	$\pm 0,5$ %
Non Linearity of output (B $\leq \pm 1$ T)	$< 0,2$ %
(B $\leq \pm 2$ T)	< 1 %
Long term instability	< 1 % over 10 years
Temp. coefficient of sensitivity (T= 23 $\pm 10^\circ$ C)	$< \pm 100$ ppm/ $^\circ$ C
Offset at B = 0T	$< \pm 3$ mV
Temp. coefficient of offset.....	$< \pm 0,25$ mV/ $^\circ$ C
Output noise and ripple (peak) 0.01-100Hz ...	$< 0,5$ mV
Output resistance.....	$< 10 \Omega$, s. c. proof
Max. frequency response of the magnetic field	2.5 kHz

Environmental:

Temperature	
<i>Probe and cable:</i>	+5 $^\circ$ C to +90 $^\circ$ C (operating) -20 $^\circ$ C to +85 $^\circ$ C (storage)
<i>Electronics:</i>	+5 $^\circ$ C to +45 $^\circ$ C (operating) -20 $^\circ$ C to +70 $^\circ$ C (storage)
Electromagnetic RF conducted disturbances..	IEC 801-6
Draft	ENV 50141
Radiated electromagnetic field.....	ENV 50140
Pulse modulated electromagnetic field	ENV 50140
Electrical fast transient burst.....	IEC 1000-4-4, EN 61000-4-4
Surge.....	EC 1000-4-5

Mechanical:

Coordinates:	X	Y	Z
Field sensitive volume (FSV)	0.15 x	0.01 x	0.15 mm ³
Angular accuracy of the axes.....	$\pm 0,5^\circ$ to the reference surface		
Probe only outside dimensions	4	x 2	x 16.5 mm
Dim. of sensor mounting plate	10 W x 110 L x 3 H mm thickness		
Probe-to-Electronics cable.....	Permanently connected, length 10 m		
Conditioning electronics.....	High mechanical strength, electrically shielded aluminum case		
aluminum case dim.	95 W x 120 L x 37 H mm,		
mounting plate dim.	95.5 W x 150 L x 3.5 H mm		
Output Connector CoS.....	DIN KfV81, 8 poles, (Mating Plug, SV81)		
field signal Y.....	Pins 4		
signal common.....	Pin 8 and 5		
Power Supply Connector CoP	DIN SFV50, 5 pole. (Mating Plug, KV50)		
power, +12V.....	Pin 3		
power, -12V.....	Pin 1		
power common	Pin 2		

Power:

Voltage: 12V, -12V nominal, $\pm 10\%$
Current ca. 50mA
consumption:

Recommended accessories:

Power supply S12-5 (± 12 V) 110/220 V
Zero Gauss chamber ZG 12

Subject to changes in specifications and accessories without prior notice