

# HALL EFFECT DIECRT-CURRENT TRANSDUCERS

Feedback controlled

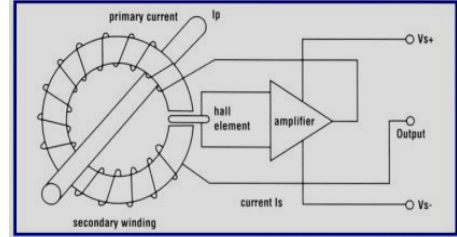
MHDCCT-Series

## Introduction:

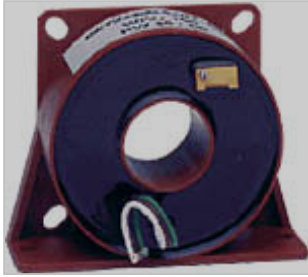
MHDCCT series of high precision HALL effect based direct current sensor are available in more than 20 different regular model apart from tailor made modules. These sensors offer same galvanic isolation as offered by an alternating current transformer. These hall sensors senses current {direct/alternating} irrespective of frequency with same accuracy and precision and are the first choice for telecom, airlines, railways, electrical utilities, battery operated vehicles, electrochemical, corrosion, petrochemical industry, organic/inorganic chemical, heavy electrical/mechanical industries, machine tools, non-conventional energy, solids state physics application and many uncountable defense/nuclear applications. These are being successfully acknowledged in power sector at distribution/transmission level and generation for measurement/control /protection applications.

## Operating Principle:

Hall sensors like A.C. current transformers sense DC currents. A circular core of soft Magnetic material is placed around the conductor to concentrate the field. The Hall element, which is placed in a small air gap, delivers a voltage that is proportional to the measured current. This sensor also offers a galvanic isolation. The small output voltage of the Hall element is amplified. There is an inevitable offset, i.e., a small DC voltage at zero current; the offset amplitude and temperature coefficient is subject to significant fluctuations. The smaller the current to be measured the higher the offset-induced relative error. These sensors are sensitivity to Short current peaks in the circuit: according to the hysteresis properties of the core material, these peaks can cause a static magnetization in the core that results in a permanent remanence, and finally to an offset alteration of the Hall element.



Fabrication view of sensor



MHDCCT-0080001



MHDCCT-1000001



MHDCCT-200001

Model	Current m.a.	Step-down ratio	Accuracy % reading	k.hz	Model	Current m.a.	Step-down ratio	Accuracy % reading	k.hz
MHDCCT-0012001	120.0	0.1:100	99.9	0-50	MHDCCT-2000001	20000.0	0.1:100	99.9	0-50
MHDCCT-0020001	200.0	0.1:100	99.9	0-50	MHDCCT-4000001	40000.0	0.1:100	99.9	0-50
MHDCCT-0040001	400.0	0.1:100	99.9	0-50	MHDCCT-5000001	50000.0	0.1:100	99.9	0-50
MHDCCT-0080001	800.0	0.1:100	99.9	0-50	MHDCCT-8000001	80000.0	0.1:100	99.9	0-50
MHDCCT-0160001	1600.0	0.1:100	99.9	0-50	MHDCCT-1000001	100000.0	0.1:100	99.9	0-50
MHDCCT-0400001	4000.0	0.1:100	99.9	0-50	MHDCCT-1200001	120000.0	0.1:100	99.9	0-50
MHDCCT-0800001	8000.0	0.1:100	99.9	0-50	MHDCCT-1500001	150000.0	0.1:100	99.9	0-50
MHDCCT-1000001	10000.0	0.1:100	99.9	0-50	MHDCCT-2000001	200000.0	0.1:100	99.9	0-50

## Hall Effect signal conditioner Specification:

Operating voltage 12 volts, D.C.  
 Output current/voltage 0.0-12.0 Volts D.C. proportional to current.  
 Operating frequency 0.0-100,000 Hz  
 Voltage/Current control accuracy 99.9% of set point  
 Repeatability 100 percent  
 Response time 0.5 -1.1 micro seconds  
 Interface Signal 0.0-12.0 volts D.C. proportional to current (AC/DC)  
 Current measurement range  $10^{-3}$  milli-100x10<sup>8</sup> amps [steady/transient]  
 Protection over voltage/short ckt.

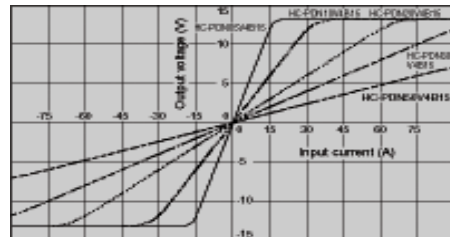
## Hall Effect current transformer dimension;

MHDCCT-00012001	08X06X06	MHDCCT-02000001	14X12X12
MHDCCT-00020001	08X07X07	MHDCCT-04000001	14X14X14
MHDCCT-00040001	08X09X09	MHDCCT-08000001	16X16X16
MHDCCT-00080001	09X08X08	MHDCCT-10000001	16X16X46
MHDCCT-00160001	09X09X09	MHDCCT-20000001	16X12X12
MHDCCT-00400001	10X08X08	MHDCCT-40000001	16X14X24
MHDCCT-00800200	12X09X09	MHDCCT-80000001	18X16X36
MHDCCT-01000001	12X10X10	MHDCCT-99999901	20X18X48

1. Five numerals after MHDCCT indicates voltage of Hall Effect current Transformer and two numerals Indicates o/p voltage. 2. All dimensions are in centimeter and may be altered to suit convenience.



MHDCCT-0040001



Input/output characteristic of sensor

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