

# DATA SHEET

## Hall Effect Current Sensor



**PN: CHB\_TBH15D**

**IPN=12~500A**

### Feature

- Closed- loop (compensated) current transducer
- Capable measurement of currents: DC, AC, pulse with galvanic isolation between primary circuit and secondary circuit.
- Supply voltage:  $\pm 15 \sim \pm 24$

### Advantages

- High accuracy
- Easy installation
- Low temperature drift
- Optimized response time
- High immunity to external interference

### Applications

- Variable speed drives
- Welding machine
- Battery supplied applications
- Uninterruptible Power Supplies (UPS)
- Electrochemical



RoHS



### Electrical data $T_a=25^{\circ}\text{C}$ $V_c= \pm 15\text{VDC}$

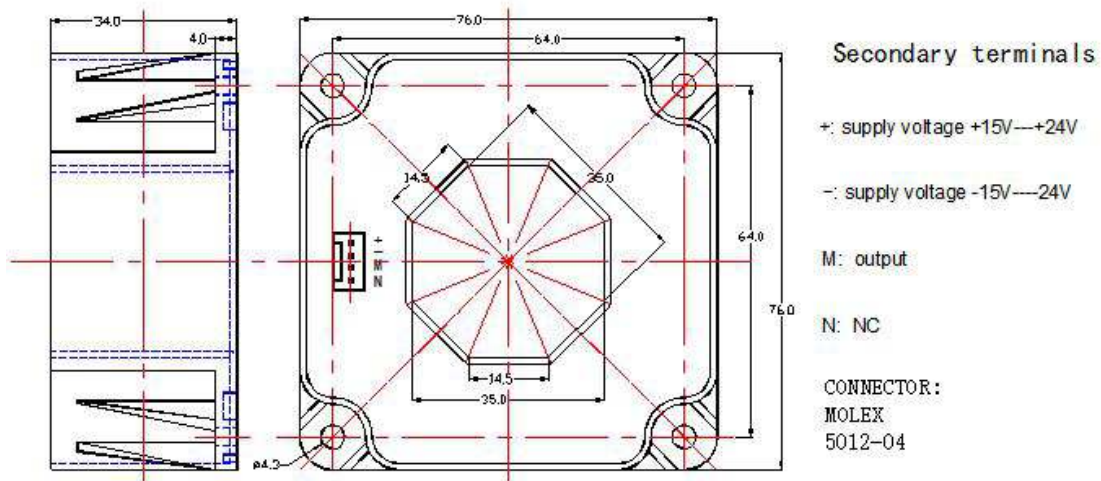
Parameter \ Ref	CHB300 TBH15D	CHB400 TBH15D	CHB500 TBH15D
Rated input $I_{pn}(A)$	12-300	16-400	20-500
Measuring range $I_p(A)$	900( $\pm 24V, 33\Omega$ )	1200( $\pm 24V, 24\Omega$ )	1500( $\pm 24V, 12\Omega$ )
Turns ratio $N_p/N_S$ (T)	1:3000	1:4000	1:5000
Output current rms $I_S(mA)$	@ $I_p=\pm I_{pn}$ $\pm 100 \pm 0.2\%FS$		
Secondary coil resistance $R_S$ ( $\Omega$ )	40	50	60
Measure resistor with $\pm 15V$ RM ( $\Omega$ )	@ $\pm 300A_{max}$ 100(max)	@ $\pm 400A_{max}$ 82(max)	@ $\pm 500A_{max}$ 75(max)
	@ $\pm 600A_{max}$ 27(max)	@ $\pm 800A_{max}$ 15(max)	@ $\pm 1000A_{max}$ 8.2(max)
Measure resistor with $\pm 18V$ RM ( $\Omega$ )	@ $\pm 300A_{max}$ 120(max)	@ $\pm 400A_{max}$ 110(max)	@ $\pm 500A_{max}$ 100(max)
	@ $\pm 900A_{max}$ 10(max)	@ $\pm 1200A_{max}$ 5.0(max)	@ $\pm 1200A_{max}$ 8.2(max)
Supply voltage $V_C(V)$	$\pm 15 \sim \pm 24$		
Offset current $IOE(mA)$	@ $I_p=0$	$\leq \pm 0.2$	
Offset current drift(mA)	@ $-40^{\circ}\text{C} \sim 85^{\circ}\text{C}$	$\leq \pm 0.5$	

Accuracy XG(%)	@IPN,T=25°C	< ±0.1
Linearity error $\epsilon_r$ (%FS)	@Ip=0-±Ipn	≤0.1
Di/dt accurately followed A/μs		> 100
Response time $\tau_{ra}$ (μs)	@100A/μS,10%-90%	< 1
Power consumption IC(mA)		20+IpX(Np/Ns)
Bandwidth BW(KHZ)	@ -3dB	DC...100
Insulation voltage Vd(KV)	@ 50HZ,AC,1min	6

## General data

Parameter	Value
Operating temperature TA(°C)	-40 ~ +85
Storage temperature TS(°C)	-40~ +125
Mass M(g)	329
Plastic material	UL94-V0.
Standards	EN60947-1:2004
	IEC60950-1:2001
	EN50178:1998
	SJ 20790-2000

## Dimensions(mm):

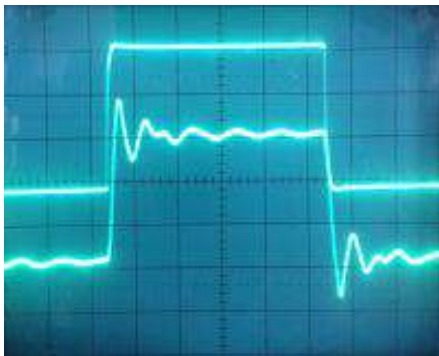


## Remarks

1. All dimensions are in mm.
2. General tolerance ±1mm.

## Characteristics chart:

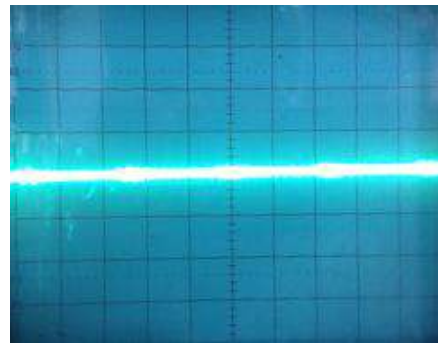
Pulse current signal response characteristic



← input signal

← output signal

Effects of impulse noise



← Output voltage

## Directions for use

- When the current goes through the primary pin of a sensor, the voltage will be measured at the output end.
- $I_s$  will be in a forward direction when the  $I_p$  flows according to the direction of arrowhead.
- Custom design is available for the different rated input current and the output voltage.
- The dynamic performance is the best when the primary hole is fully filled with.
- The primary conductor should be  $\leq 120^\circ\text{C}$ .

**WARNING : Incorrect wiring may cause damage to the sensor.**