

# DATA SHEET

## Hall Effect Current Sensor

**PN : HCS-LA**

**IPN = 25A - 50A - 75A - 100A**

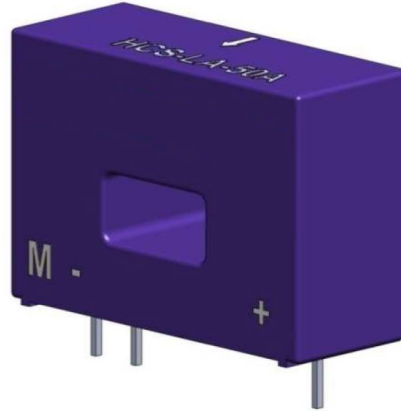
### Features

- Closed loop
- High accuracy
- Supply voltage :  $\pm 12$  to  $\pm 15V$  DC
- Current output
- Through hole primary
- Can be customized

Good linearity  
Fast response time  
Low temperature drift  
High anti-jamming capability  
Strong current overload

### Applications

AC/DC variable speed motor driver  
Battery applications  
Uninterruptible power supplies (UPS)  
Power supplies for welding applications  
Switching power supplies (SMPS)



## ELECTRICAL DATA

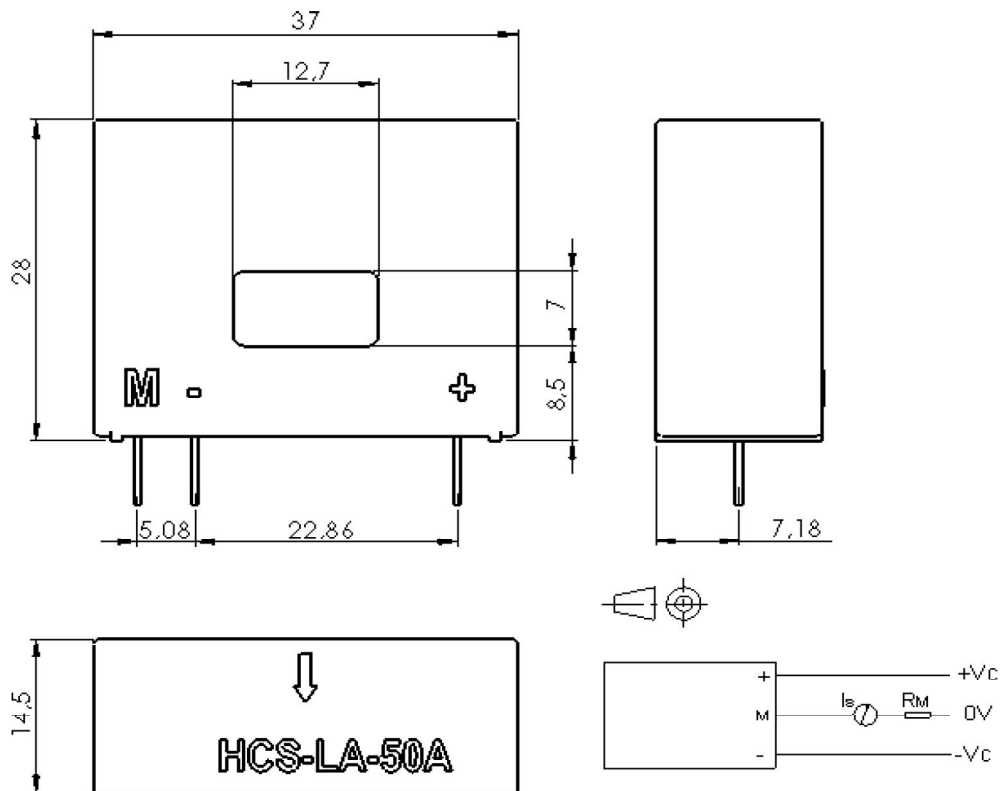
HCS-LA-...		25A	50A	75A	100A
Nominal rms current $I_{PN}$ (A)		25	50	75	100
Sensed current range $I_{PM}$ (A)		$\pm 55$	$\pm 70$	$\pm 105$	$\pm 150$
Measuring Resistance with $V_C = \pm 15V @ T_A = +75^\circ C$	and @ $I_P$ (A)	$\pm 25$	$\pm 50$	$\pm 75$	$\pm 100$
	$R_M \max(\Omega) =$	312	169	80	80
	and @ $I_P \max$ (A)	$\pm 55$	$\pm 70$	$\pm 105$	$\pm 150$
	$R_M \max(\Omega) =$	205	154	65	53
Coil turns ratio K (Pry:Sry)		1:1000	1:1000	1:1500	1:2000
Secondary resistance $R_S$ ( $\Omega$ ) @ $T_A = 75^\circ C$		31	31	120	120
Rated output current $I_{SN}$ (mA)		25	50	50	50
Supply voltage $V_C$ (Vdc)		$\pm 12^{\pm 0,5\%}$ to $\pm 15^{\pm 0,5\%}$			
Current consumption $I_C$ (mA)		$10 + I_S$			

### ACCURACY DYNAMIC PERFORMANCE

### GENERAL & ISOLATION CHARACTERISTICS

Accuracy $X_G @ I_{PN}, T=25^\circ C$	$\pm 0,5$	%	Operating temperature range	-40 to +85	$^\circ C$
Offset current $I_0 @ I_P=0, T=25^\circ C$	@ $I_{PN}=25A, 50A$	$\leq \pm 0,2$	Storage temperature	-40 to +125	$^\circ C$
	@ $I_{PN}=75A, 100A$	$\leq \pm 0,15$			
Hysteresis offset Current $I_0 @ I_P=0$	$\pm 0,3$	mA	Weight	19	g
Drift of $I_0$	@ $I_{PN}=25A, 50A$	$\leq \pm 0,5$	Insulation voltage (50Hz, 1mn)	2,5	KV
	@ $I_{PN}=75A, 100A$	$\leq \pm 0,25$			
Linearity error $\epsilon_L$	$\leq 0,15$	% FS	Impulse withstand voltage (1,2/50 $\mu s$ )	4,5	KV
Response time $t_r$	< 1	$\mu s$			
di/dt accurately followed	>200	A/ $\mu s$			
Bandwidth (-1db)	DC to 200	Khz			

## DIMENSIONS (mm)



## MECHANICAL CHARACTERISTICS

General tolerance	$\pm 0,2$ mm
Primary square through hole size	12,7 x 7 mm
Terminal connection	3 pins 0,63 X 0,56 mm

### Cautions :

- $I_S$  is positive when  $I_p$  flows in accordance with the arrow direction (see the top of the sensor);
- Primary conductor temperature should not exceed 100 °C;
- Best dynamic performances (di/dt and response time) are achieved with a single electrical conductor completely filling the through hole;
- To achieve the best magnetic coupling, the primary winding must be wound around the top edge of the sensor.

### Required connection circuit :

See the drawing above.

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