

DATA SHEET

Hall Effect Current Sensor

PN : HCS-LT205M/S

IPN = 50A - 100A - 200A - 300A

Features

- Closed loop
- High accuracy
- Supply voltage : ± 12 to $\pm 18V$ 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

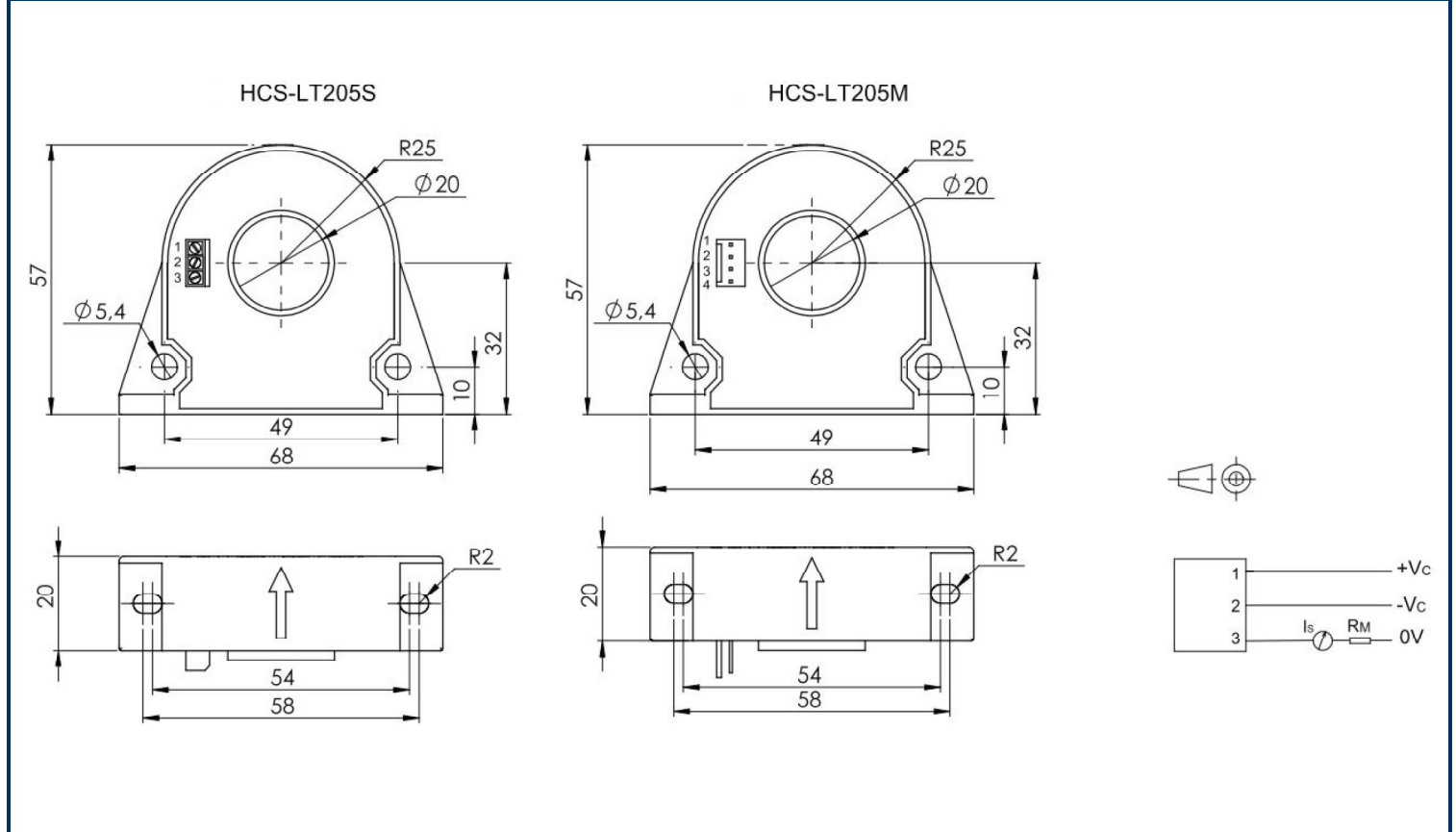
- AC/DC variable speed motor driver
- Battery applications
- Uninterruptible power supplies (UPS)
- Power supplies for welding applications
- Switching power supplies (SMPS)

ELECTRICAL DATA

HCS-LT205M/S-...		50A	100A	200A	300A1	300A2	
Nominal rms current I_{PN} (A)		50	100	200	300	300	
Sensed current range I_{PM} (A)		± 150	± 300	± 600	± 600	± 900	
with $V_C = \pm 18V$ and $R_M (\Omega) =$		100	90	35	35	20	
Measuring resistance with $V_C =$	$\pm 12 V$	@ $\pm I_P$ (A)	50	100	200	300	300
		$R_M \max(\Omega) =$	210	200	90	53	75
		@ $\pm I_P$ (A)	100	200	500	500	600
		$R_M \max(\Omega) =$	100	90	22	22	20
	$\pm 15 V$	@ $\pm I_P$ (A)	50	100	200	300	300
		$R_M \max(\Omega) =$	250	250	120	72	100
		@ $\pm I_P$ (A)	100	200	500	500	600
		$R_M \max(\Omega) =$	130	120	36	36	36
Coil turns ratio K ($P^Y:S^Y$)		1:1000	1:2000	1:2000	1:2000	1:3000	
Secondary coil resistance $R_S (\Omega)$		10	20	20	20	34	
Rated output current I_{SN} (mA)		50	50	100	150	100	
Supply voltage V_C (Vdc)		$\pm 12^{\pm 5\%}$ to $\pm 18^{\pm 5\%}$					
Static current consumption I_{CO} (mA)		≤ 20					
Current consumption I_C (mA)		$20 + I_S$					

ACCURACY DYNAMIC PERFORMANCE			GENERAL & ISOLATION CHARACTERISTICS		
Accuracy $X_G @ I_{PN}, T=25^\circ\text{C}$	$\pm 0,5$	%	Operating temperature	-40 to +85	$^\circ\text{C}$
Zero offset Current $I_O @ I_P=0, T=25^\circ\text{C}$	$\pm 0,2$	mA	Storage temperature	-40 to +125	$^\circ\text{C}$
Current offset drift $I_O @ -40^\circ\text{C}$ to 85°C	$\leq \pm 0,5$	mA	Weight	70	g
Linearity error ϵ_L	$\leq 0,1$	% FS	Insulation voltage (50Hz, 1mn)	6	KV
di/dt accurately followed	> 200	A/ μs			
Response time t_r	< 1	μs			
Bandwidth (-1db)	DC to 100	kHz			

DIMENSIONS



MECHANICAL CHARACTERISTICS

General tolerance	$\pm 0,5$ mm	
Through hole dimension	$\varnothing 20$ mm	
Transducer fastening	2 holes $\varnothing 5,4$ mm	
Terminal connection	HCS-LT205M	Molex 5045-04A
	HCS-LT205S	Terminal block 3 screw, 5mm pitch

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;
- For the required connection circuit, see the drawing above.

WARNING : Incorrect wiring may cause damage to the sensor.