

DATA SHEET

Hall Effect Current Sensor

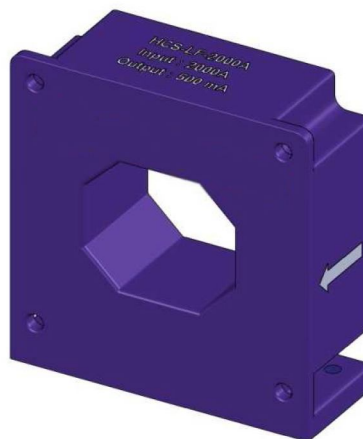
PN : HCS-LF

IPN = 500A - 1000A

Features

- Closed loop
- High accuracy
- Supply voltage : ± 15 to ± 24 V 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

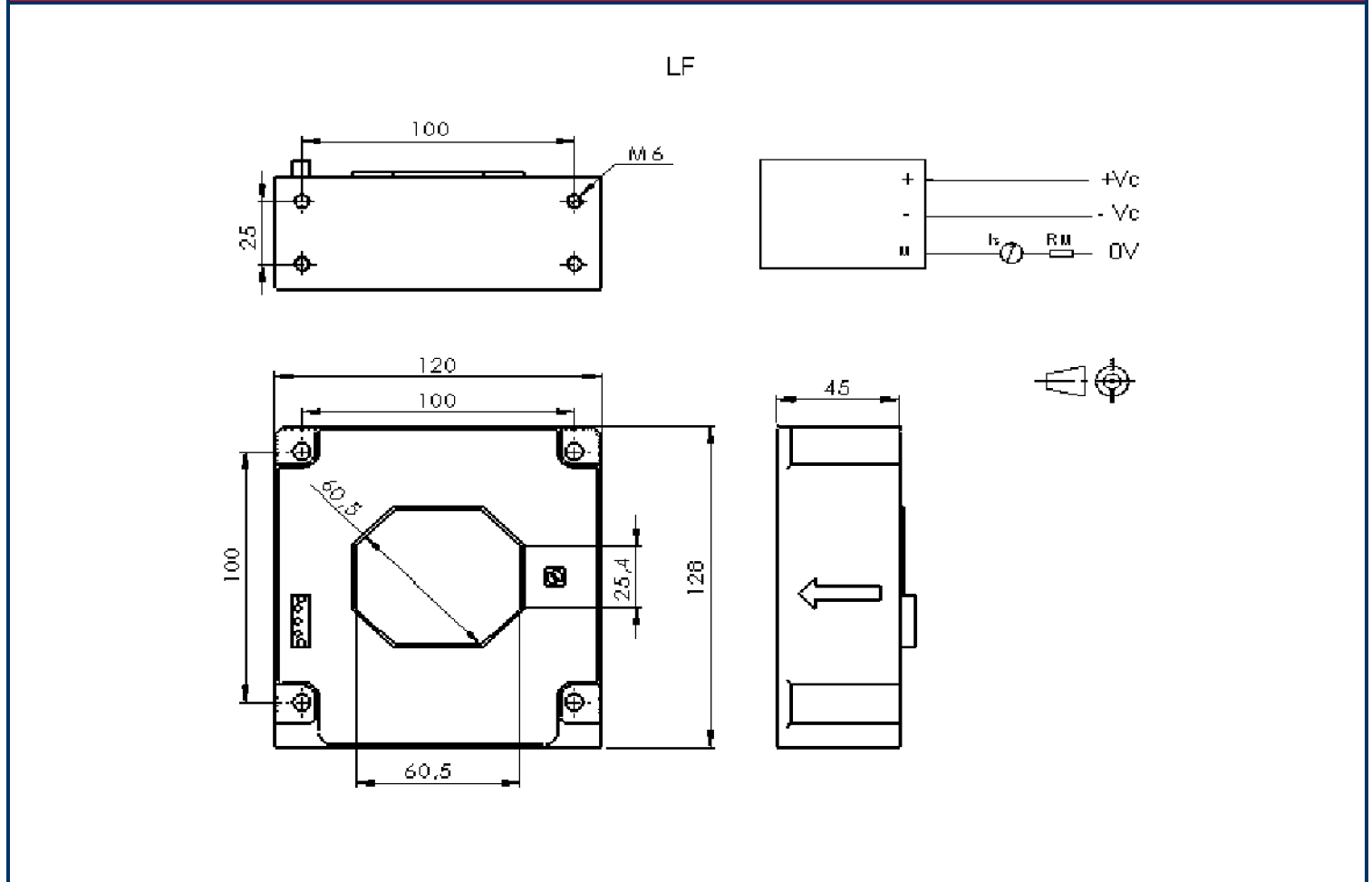
- AC/DC variable speed motor driver
- Battery applications
- Uninterruptible power supplies (UPS)
- Power supplies for welding applications
- Switching power supplies (SMPS)

ELECTRICAL DATA

HCS-LF-...		1000A	2000A
Nominal rms current I_{PN} (A)		1000	2000
Sensed current range I_{PM} (A)		± 1800	± 3800
Measuring resistance with $V_C =$	± 15 V	@ $\pm I_P$ (A)	1000
		$R_M \max(\Omega) =$	5
		@ $\pm I_P \max$ (A)	1500
	± 24 V	$R_M \max(\Omega) =$	1
		@ $\pm I_P \max$ (A)	1000
		$R_M \max(\Omega) =$	25
Coil turns ratio K ($P^N:S^N$)		1:5000	1:4000
Secondary coil resistance Ω		32	24
Rated output current I_{SN} (mA)		200	500
Supply voltage V_C (Vdc)		$\pm 12^{\pm 5\%}$ to $\pm 24^{\pm 5\%}$	
Static current consumption I_{C0} (mA)		≤ 28	
Current consumption I_C (mA)		$28 + I_S$	

ACCURACY DYNAMIC PERFORMANCE			GENERAL & ISOLATION CHARACTERISTICS		
Accuracy $X_G @ I_{PN}, T=25^{\circ}\text{C}$	$\pm 0,2$	%	Operating temperature	-40 to +85	$^{\circ}\text{C}$
Zero offset Current $I_O @ I_P=0, T=25^{\circ}\text{C}$	$\leq \pm 0,2$	mA	Storage temperature	-40 to +125	$^{\circ}\text{C}$
Current offset drift @ -40°C to 85°C	$\leq \pm 0,5$	mA	Weight	HCS-LF-1000A	1000 g
				HCS-LF-2000A	1100 g
Linearity error ϵ_L	$\leq 0,1$	% FS	Insulation voltage (50Hz, 1mn)		
di/dt accurately followed	> 100	A/ μs		6	KV
Response time t_r	< 1	μs			
Bandwidth (-1db)	DC to 150	KHz			

DIMENSIONS



MECHANICAL CHARACTERISTICS

General tolerance		$\pm 0,5$ mm
Octagonal through hole size		max 60,5 mm
Transducer fastening	vertical position	4 holes metric M6
	horizontal position	4 holes \varnothing 6,5 mm
Terminal connection		

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.