

DATA SHEET

Hall Effect Current Sensor

PN : HCS-ES3A

IPN = 25A - 50A - 75A

Features

- Closed loop
- High accuracy
- Supply voltage : +3,3V DC
- Voltage output
- Small PCB mounting
- Can be customized

Good linearity
 Low power consumption
 Good over-current capability

Applications

- Frequency drive control home appliances
- Solar power management system
- Inverter applications
- Uninterruptible power supplies (UPS)
- Current monitoring



ELECTRICAL DATA

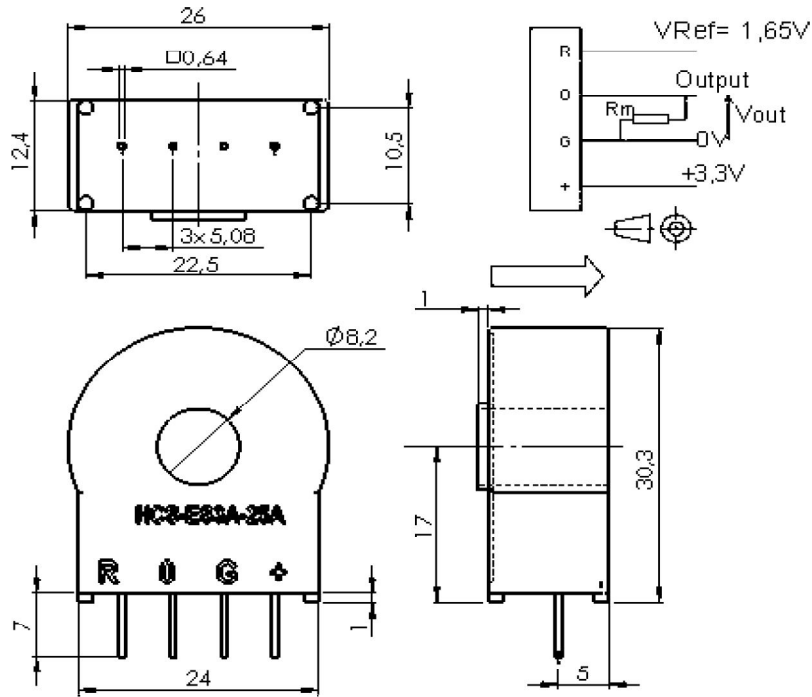
HCS-ES3A-...	25A	50A	75A
Nominal rms current I_{PN} (A)	25	50	75
Sensed current range I_{PM} (A)	±50	±100	±150
Measuring resistance R_M (Ω)	$50 \pm 0,1\%$ 25 PPM	$25 \pm 0,1\%$ 25 PPM	$16,5 \pm 0,1\%$ 25 PPM
Secondary coil turns (T_S)	2000 ± 2	2000 ± 2	2000 ± 2
Rated output voltage (V)	$V_{OE} \pm 0,625$		
Supply voltage V_C (Vdc)	$+3,3 \pm 5\%$		
Static current consumption I_C (mA)	≤ 10		

ACCURACY DYNAMIC PERFORMANCE

GENERAL & ISOLATION CHARACTERISTICS

Accuracy X_G @ I_{PN} , $T=25^\circ\text{C}$	± 0,5%	%	Operating temperature	-40 to +85	°C
Zero offset voltage V_{OE} @ $I_P=0$, $T=25^\circ\text{C}$	$1,65 \pm 0,5\%$	V	Storage temperature	-40 to +125	°C
Offset voltage drift V_{OE} @ - 40°C to 85°C	≤ ± 0,5	mV/°C	Weight	13	g
Linearity error ϵ_L	≤ 0,1	% FS	Insulation voltage (50 Hz, 1min)	3	KV
di/dt accurately followed	> 100	A/μs	Impulse withstand voltage (1,2/50μs)	> 8	KV
Response time t_r	≤ 1	μs			
Bandwidth (- 3db)	DC to 200	kHz			

DIMENSIONS

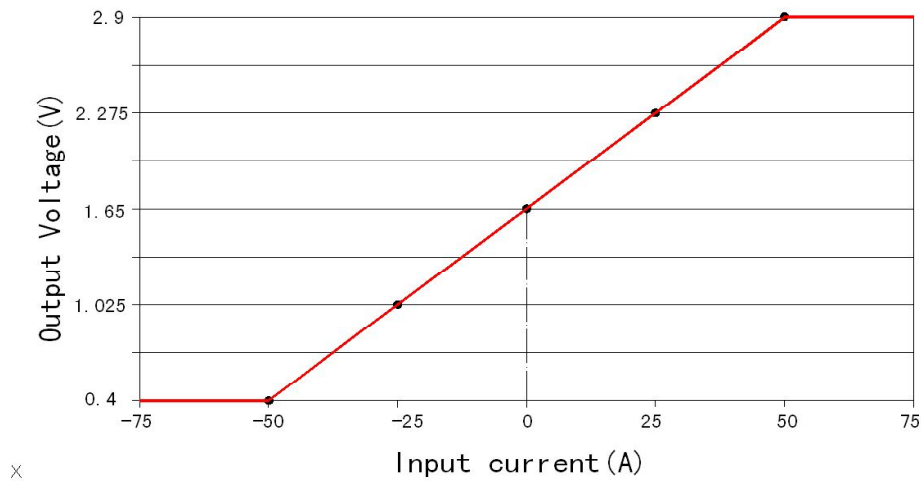


MECHANICAL CHARACTERISTICS

Primary through hole	Ø 8,2 mm
Terminal connection	4 pins, size 0,64 mm x 0,64 mm
General tolerance	± 0,2 mm

HCS-ES3A-25A : Relation between Input Current and Output voltage :

Input current (A)	- 50	- 25	0	25	50
Output voltage (V)	0,4	1,025	1,65	2,275	2,9



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.

WARNING : Incorrect wiring may cause damage to the sensor.