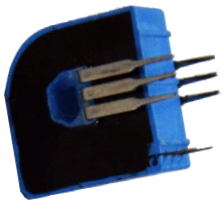
THB_DS3S6



Product introduction:

- Single power supply: +3.3v DC
- Customized according to requirements;
- Both perforation and PCB measurement;
- Hall effect principle — closed loop current sensor;
- The output is a voltage signal with polarity and no negative value;
- It can measure the current of DC, AC, pulse and various irregular waveforms under the condition of electrical isolation;

Application:

- Application on Inverter
- Standard battery monitoring
- Variable speed drive applications
- UPS uninterruptible power supply
- Solar power management system
- Drive control of variable frequency household appliances

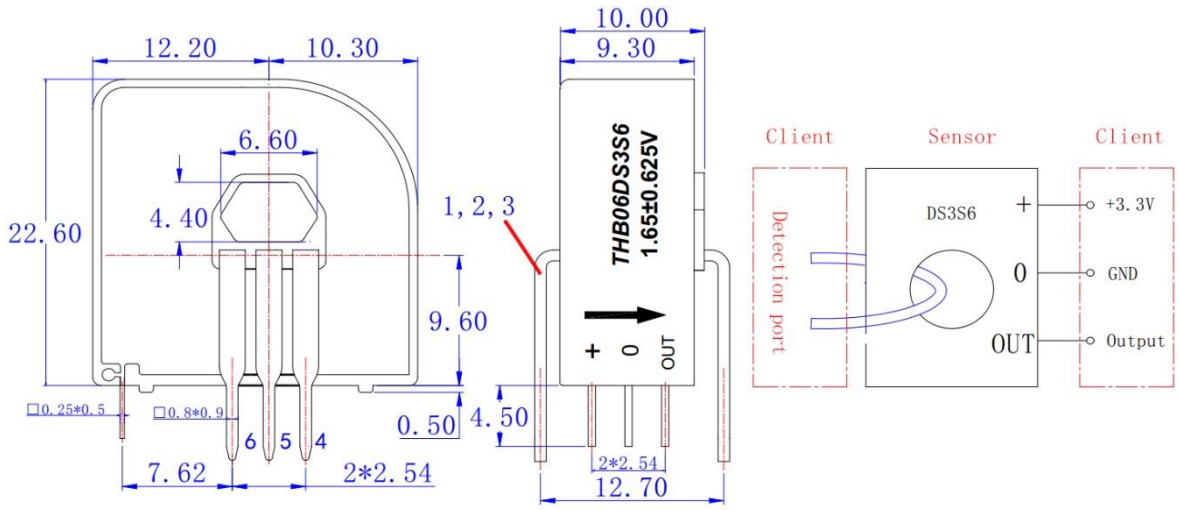
Electrical characteristics:

Parameter	Symbol	THB06DS3S6	THB15DS3S6	THB25DS3S6	THB50DS3S6
Rated current	I_{PN}(A)	06	15	25	50
Measuring range	I_P(A)	0～±12	0～±30	0～±50	0～±100
Measure resistance	R_M(Ω)	100±0.1%	50±0.1%	25±0.1%	25±0.1%
Sensitivity	G(mA/A)	104.16	41.67	25	12.5
Output voltage	V_O(V)	1.65±0.625*(I_P/I_{PN})			
Working power supply	V_C(V)	+3.3V DC±5%			
Insulation voltage	V_D(V)	50/60Hz, 1min, 4kV; RMS			
lightning surge	V_W(V)	@ at1.2/50μs,>8.0kV			
Output load capacitance	C_L(nF)	<10nF @Vo～GND			

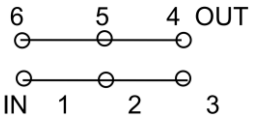
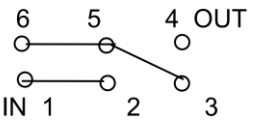
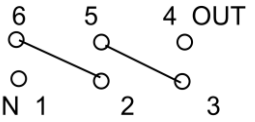
General parameters:

Project	Condition	Date	Unit
Accuracy X_G	@ I_{PN},T=25℃	<±0.7	%
Zero offset voltage V_{OE}	@ I_P=0,T=25℃	<±20	mV
Current offset temperature drift V_{OT}	@ I_P=0,−40～+85℃	<±0.5	mV/℃
Linearity εr		≤0.1	%FS
Follow accuracy di/dt		>50	A/μs
Response time tra	@ 90% of I_{PN}	<1.0	μs
Operating bandwidth B_W	−1dB	DC−200	kHZ
Creepage distance dcp	Shell surface	15.4	mm
Working temperature T_A		−40～+85	℃
Storage temperature T_S		−55～+125	℃
Static power consumption I_C		10+Is	mA
Secondary pin mounting hole size	(+,0,OUT)	>1.1	mm
Primary pin mounting hole size	1,2,3,4,5,6	>1.5	mm
Product weight m		10	g
Shell material	PBT material containing 30% glass fiber, Flame retardant grade: UL94— V0;		
Standard	IEC60950—1:2001 EN50178:1998 SJ20790—2000		

Structural drawing: (mm)



Connection diagram:

Primary wire turn	Primary rated current (A)	Output voltage (V)	Primary resistance (mΩ)	Primary inductance (μH)	Enter PIN connection
1	±6 (±15, ±25, ±50)	1.65±0.625	0.18	0.013	
2	±3 (±7.5, ±12.5, ±25)	1.65±0.625	0.81	0.05	
3	±2(±5, ±8.3, ±16.6)	1.65±0.625	1.62	0.12	

This product has two input methods:

1) Cable perforation input; 2) PCB input mode;

Suitable current input mode can be selected according to needs;

A: For the cable current input mode, the cable should pass through the hole of the Hall current sensor;

Take thb06ds3s6 as an example. If the perforation of the cable is 1 turn, the rated current is 6A; if the perforation of the cable is 2 or 3 turns, the rated current is 3A or 2A; If you follow this input method, please do not use PCB input method at the same time;

B: For PCB input mode, the input turns and rated input current parameters are determined according to the connection mode of the input pin.

There are three ways to input pin: 1t, 2T, 3T; The corresponding input rated current is: 6a, 3a, 2A; See wiring diagram for specific connection mode; When using this method, do not use the perforation input method at the same time;

Relationship between input current and output voltage:

Taking THB25DS3S6 as an example, the relationship between input current and output voltage is shown in Table 1 and Fig.1 below

Table 1:

Input current(A)	—50	—25	0	25	50
Output voltage (V)	0.4	1.025	1.65	2.275	2.9

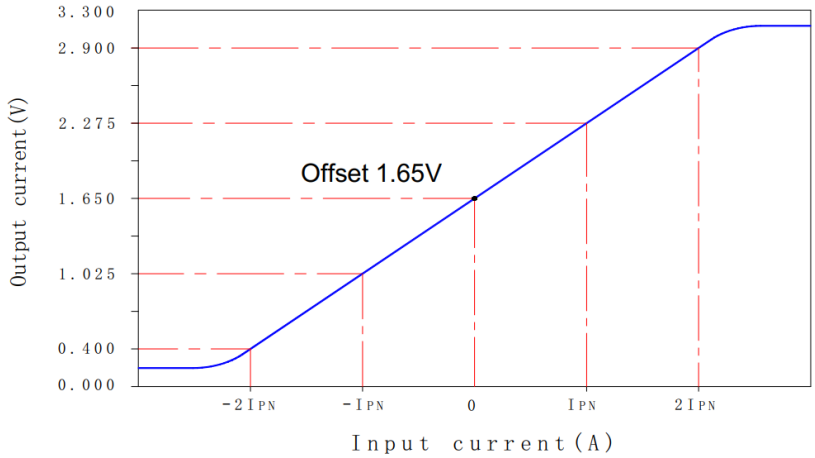


Fig. 1 Relation between the input current (DC) and output voltage (DC)

Remarks:

1. Connect the current according to the calibrated direction of the wiring diagram; Pay attention to the positive and negative current;

2. Wiring according to the definition of the calibrated functional pin in the structure diagram;

3. The temperature of primary conductor shall not exceed 100 ℃;

4. When the busbar should be fully filled with primary perforation, the dynamic response and di/dt follow—up accuracy are the best;

5. The above specifications are calibration specifications, and our company can customize products according to customers' requirements.

6. If there are new changes in our products, please do not notice, and the actual product parameters shall prevail;