HS20-A-C SERIES CURRENT SENSOR/TRANDUCER

DESCRIPTION:

For the electronic measurement of current: DC, AC, pulsed ..., with galvanic separation between the primary and the secondary circuit.

FEATURES:

- Closed loop using the Hall effect
- The primary side and the secondary side are isolated
- Low power consumption
- Wide range
- No insertion loss
- Raw materials recognized according to UL 94-V0

APPLICATIONS:

- Inverter
- Uninterruptible Power Supplies (UPS)
- Static converters for DC motor drives
- Switched Mode Power Supplies (SMPS)
- Power supplies for welding applications
- Battery management

MODEL LIST:

PRODUCT MODEL		
Model	**Rated input current I_{PN} (A)**	**Measuring range I_{PM} (A)**
HS20- 25A-C	25	0~ ± 50
HS20- 50A-C	50	0~ ± 100
HS20-100A-C	100	0~ ± 2 00
HS20-200A-C	200	0 ~ ± 400
HS20-300A-C	300	0 ~ ± 600

HS20-25A-C SPECIFICATION

Parameter	Symbol	Unit	Value	Test Conditions
Electrical Data				
Supply voltage (±5%) (1)	V_C	V	±15	
Current consumption	I_C	mA	10+ output current	
Output current ISN	I_{SN}	mA	25	
Overcurrent capability (1ms)	I_{PC}	At	-	
Insulation resistance	R_{IS}	MΩ	> 2000	@500VDC
Internal impedance	R_S	Ω	-	approximation
Load Resistor (2)	R_M	Ω	0~500	
Performance Data				
Linearity (3) (0…±I_{PN})	ε_L	%of I_{PN}	<±0.2%	@T_A = 25°C
Precision	X	%	<±0.5%	@ I_{PN} , T_A= 25°C (remove zero offset current)
Zero offset current	I_{OE}	mA	<±0.2	@ $I_{P=}$ 0 , T_A=25°C
Magnetic offset current	I_{OM}	mA	<±0.2	@ $I_{P=}$ 0; 1 times the rated current impact
Zero offset temperature drift	I_{OT}	mA	<±0.5	@ I_P =0 , @ -40 ~ +85 °C
Response time	t_r	μS	<1	@ 90% of I_{PN} step response
Current follows d $_i$ /d $_t$	d_i/d_t	A/μS	>100	
Bandwidth (4)	BW	kHz	DC~100	@-3dB
General Data				
Working ambient temperature	T_A	℃	-40….+85	
Storage ambient temperature	T_S	℃	-40….+100	
Weight	m	g	60	approximation

HS20-50A-C SPECIFICATION

Parameter	Symbol	Unit	Value	Test Conditions
Electrical Data				
Supply voltage (±5%) (1)	V_C	V	±15	
Current consumption	I_C	mA	10+ output current	
Output current ISN	I_{SN}	mA	50	
Overcurrent capability (1ms)	I_{PC}	At	-	
Insulation resistance	R_{IS}	MΩ	> 2000	@500VDC
Internal impedance	R_S	Ω	-	approximation
Load Resistor (2)	R_M	Ω	0~245	
Performance Data				
Linearity (3) (0…± I_{PN})	ε_L	%of I_{PN}	<±0.2%	@T_A = 25°C
Precision	X	%	<±0.5%	@ I_{PN} , T_A= 25°C (remove zero offset current)
Zero offset current	I_{OE}	mA	<±0.2	@ $I_{P=}$ 0 , T_A=25°C
Magnetic offset current	I_{OM}	mA	<±0.2	@ I_{P} = 0; 1 times the rated current impact
Zero offset temperature drift	I_{OT}	mA	<±0.5	@ I_{P} =0 , @ -40 ~ +85 °C
Response time	t_r	μS	<1	@ 90% of I_{PN} step response
Current follows d $_i$ /d $_t$	d_i/d_t	A/μS	>100	
Bandwidth (4)	BW	kHz	DC~100	@-3dB
General Data				
Working ambient temperature	T_A	℃	-40….+85	
Storage ambient temperature	T_S	℃	-40….+100	
Weight	m	g	60	approximation

HS20-100A-C SPECIFICATION

Parameter	Symbol	Unit	Value	Test Conditions
Electrical Data				
Supply voltage (±5%) (1)	V_C	V	±15	
Current consumption	I_C	mA	10+ output current	
Output current ISN	I_{SN}	mA	50	
Overcurrent capability (1m s)	I_{PC}	At	-	
Insulation resistance	R_{IS}	MΩ	> 2 0 00	@500VDC
Internal impedance	R_S	Ω	-	approximation
Load Resistor (2)	R_M	Ω	0~203	
Performance Data				
Linearity (3) (0…± IPN)	ε_L	%of I_{PN}	<±0.2%	@T_A = 25°C
Precision	X	%	<±0.5%	@ I_{PN} , T_A = 25°C (remove zero offset current)
Zero offset current	I_{OE}	mA	<±0.2	@ $I_{P=}$ 0 , TA=25°C
Magnetic offset current	I_{OM}	mA	<±0.2	@ I_P = 0; 1 times the rated current impact
Zero offset temperature drift	I_{OT}	mA	<±0.5	@ I_P =0 , @ -40 ~ +85 °C
Response time	t_r	μS	<1	@ 90% of I_{PN} step response
Current follows d i /d t	d_i/d_t	A/μS	>100	
Bandwidth (4)	BW	kHz	DC~100	@-3dB
General Data				
Working ambient temperature	T_A	℃	-40….+85	
Storage ambient temperature	T_S	℃	-40….+100	
Weight	m	g	60	approximation

HS20-200A-C SPECIFICATION

Parameter	Symbol	Unit	Value	Test Conditions
Electrical Data				
Supply voltage (±5%) (1)	V_C	V	±15	
Current consumption	I_C	mA	10+ output current	
Output current **I**SN	I_{SN}	mA	100	
Overcurrent capability (1m s)	I_{PC}	At	-	
Insulation resistance	R_{IS}	MΩ	> 2 0 00	@500VDC
Internal impedance	R_S	Ω	-	approximation
Load Resistor (2)	R_M	Ω	0~75	
Performance Data				
Linearity (3) (0…± IPN)	ε_L	%of I_{PN}	<±0.2%	@T_A = 25°C
Precision	X	%	<±0.5%	@ I_{PN} , T_A = 25°C (remove zero offset current)
Zero offset current	I_{OE}	mA	<±0.2	@ $I_{P=}$ 0 , T_A=25°C
Magnetic offset current	I_{OM}	mA	<±0.2	@ I_P = 0; 1 times the rated current impact
Zero offset temperature drift	I_{OT}	mA	<±0.5	@ I_P =0 , @ -40 ~ +85 °C
Response time	t_r	μS	<1	@ 90% of I_{PN} step response
Current follows d i /d t	d_i/d_t	A/μS	>100	
Bandwidth (4)	BW	kHz	DC~100	@-3dB
General Data				
Working ambient temperature	T_A	℃	-40….+85	
Storage ambient temperature	T_S	℃	-40….+100	
Weight	m	g	60	approximation

HS20-300A-C SPECIFICATION

Parameter	Symbol	Unit	Value	Test Conditions
Electrical Data				
Supply voltage (±5%) (1)	V_C	V	±15	
Current consumption	I_C	mA	10+ output current	
Output current **I**SN	I_{SN}	mA	100	
Overcurrent capability (1m s)	I_{PC}	At	-	
Insulation resistance	R_{IS}	MΩ	> 2 0 00	@500VDC
Internal impedance	R_S	Ω	-	approximation
Load Resistor (2)	R_M	Ω	0~60	
Performance Data				
Linearity (3) (0…± IPN)	ε_L	%of I_{PN}	<±0.2%	@T_A = 25°C
Precision	X	%	<±0.5%	@ I_{PN} , T_A= 25°C (remove zero offset current)
Zero offset current	I_{OE}	mA	<±0.2	@ $I_{P=}$ 0 , T_A=25°C
Magnetic offset current	I_{OM}	mA	<±0.2	@ I_P = 0; 1 times the rated current impact
Zero offset temperature drift	I_{OT}	mA	<±0.5	@ I_P =0 , @ -40 ~ +85 °C
Response time	t_r	μS	<1	@ 90% of I_{PN} step response
Current follows d i /d t	d_i/d_t	A/μS	>100	
Bandwidth (4)	BW	kHz	DC~100	@-3dB
General Data				
Working ambient temperature	T_A	℃	-40….+85	
Storage ambient temperature	T_S	℃	-40….+100	
Weight	m	g	60	approximation

Notice:

(1) Under the power supply condition of ±12V≤VC≤±15V, the measurement range of the sensor will be reduced;

(2) If the customer uses the rated load resistance, the current to be measured needs to be limited to the rated current. If the full-scale current is to be measured, the load resistance should be smaller than the rated resistance .

(3) Linearity data does not include zero offset.

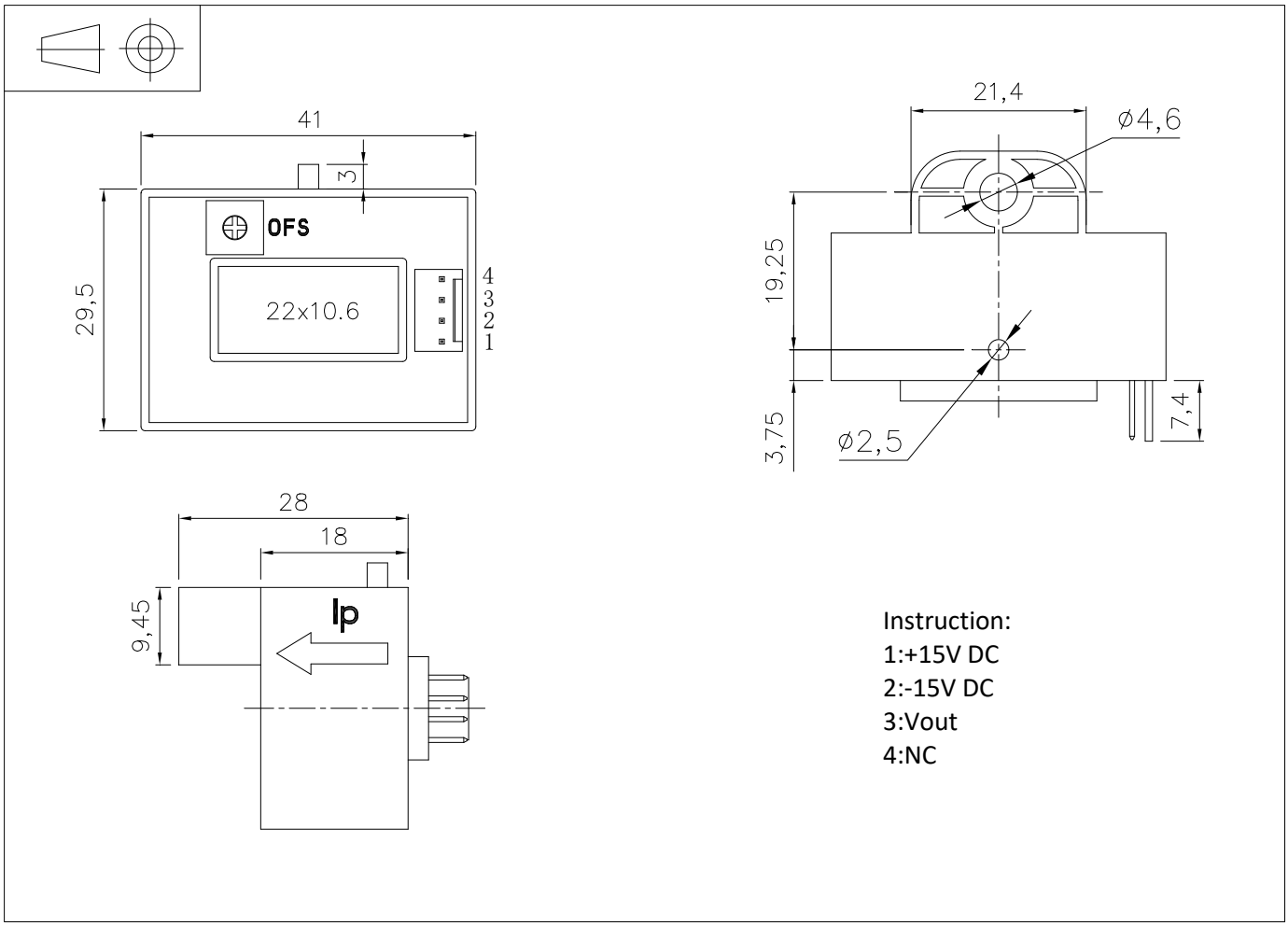
Insulation data:

Parameter	Symbol	Unit	Value	Remark
AC isolation withstand voltage test RMS @ 50Hz, 1min	U_D	KV	3	
Impulse withstand voltage 1.2/50uS	U_W	KV	6	
Shell material	-	-	UL94-V0	PPO
Relative tracking index	CTI	PLC	275	
Creepage distance	d_{CP}	mm	7	
Electrical clearance	d_{CI}	mm	6	

Maximum limit:

Parameter	Symbol	Unit	Value
Supply voltage	V_C	V	±18
Output current (output shorted to ground)	I_{out}	mA	-
Electrostatic discharge - contact discharge	V_{ESD}	V	-

Mechanical Dimensions:



Safety

This device must be used according to IEC610101.

This device must be used in electric/electronic equipment with respect to applicable standards and safety requirements in accordance with the operating instructions.

Caution, risk of electrical shock.

When operating the device, certain parts can carry hazardous voltage (eg. primary busbar, power supply).
Ignoring this warning can lead to injury and/or cause serious damage.
This is a builtin device, whose conducting parts must be inaccessible after installation.
A protective housing or additional shield can be used.
Main supply must be able to be disconnected.