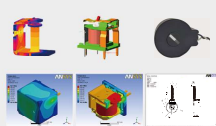


CURRENT SENSOR



R&D Innovation



Mold design & manufacturing



Detection & Analysis



Dust free workshop
production line

Quality assurance



Precision parts



Zhoushan Industrial Park

INTRODUCTION

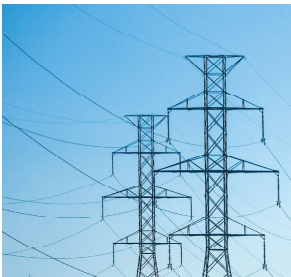
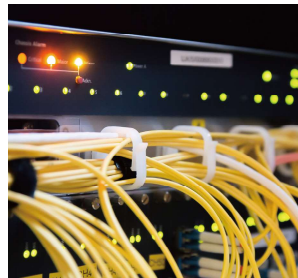
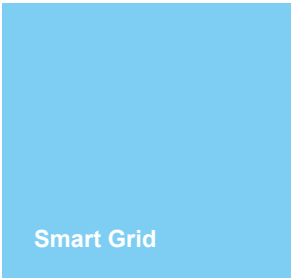
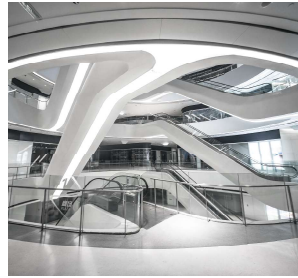
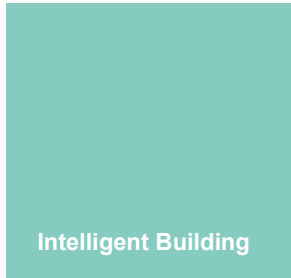
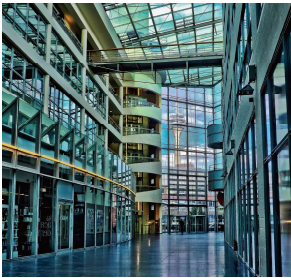
Hongfa (Shanghai Stock Exchange: 600885) is one of the leading relay manufacturers in the world. Founded in 1984, Hongfa is currently a top relay R&D and production center globally. Our products include relays, high and low voltage devices, precision parts, and automatic production. Relays are our main business; we produce more than 160 different series and more than 40,000 part numbers, with an annual production capacity of 2.7 billion pieces. Hongfa products are widely used in a range of applications, including industrial, energy, transportation, telecommunication, home appliance, medical. The establishment of local marketing and service centers has allowed us to conduct business and provide technical support to our customers in over 120 countries and regions.

Hongfa's test center has the largest relay test and analysis laboratory in China. Our fully-equipped facility maintains the most advanced technology, which has allowed us to obtain certifications from VDE, UL, and CNAS. Our products bear the agency markings of UL, CUL, VDE, TÜV, and CQC. Our engineers and scientists continuously drive the relay industry and influence professional and national standards.

Hongfa believes that the key to sustainability and success is the pursuit of exceptional and consistent quality. Through the continuous improvement of the Hongfa quality management system, Hongfa has won global acknowledgements from our customers.

Data Source: Internal Statistics of Hongfa

APPLICATIONS



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NOTE:

The contents and data in this catalogue are not binding. We reserve the right to modify the contents of this document on the basis of technical development of the products, without prior notice. The real order requirements and technical agreements shall prevail.

HFCT- M02

MINI CURRENT TRANSFORMER



Applications

Electric meter, AC frequency conversion speed regulation, servo motor, Uninterruptible Power Supplies (UPS) Switching power supply, Power supplies for welding

Features

- Compact and beautiful appearance, small size and light weight
- Strong insulation isolation
- High precision, good linearity
- Protect against moisture and shock

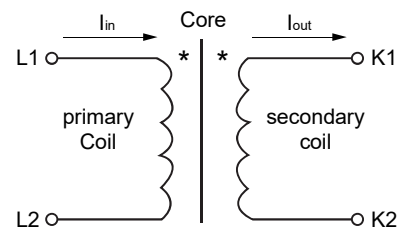
Electrical data (Ta=25°C)

Turns	2000:1
Rated primary current (Ib)	30A
Maximum current (Imax)	200A
Rated secondary current	15mA
Load resistance (Rb)	10Ω
IEC61869 Accuracy class	0.1
Insulation strength	2.5kVa.c, 50/60Hz, 1min
Insulation resistance	≥500MΩ (500V.DC)
Operating temperature	-40°C ~ +85°C
Storage temperature	-40°C ~ +90°C

SCOPE OF APPLICATION

The HFCT- M02 series current transformer can measure AC current at 50/60Hz under electrically isolated conditions.

ELECTRICAL SCHEMATIC DIAGRAM



ORDERING INFORMATION

Product Part NO.	HFCT-□	/□	(□)A	□□	-□C	(□□□)
Primary Current						
Maximum current						
Secondary Output						
Accuracy Class						
Special code						

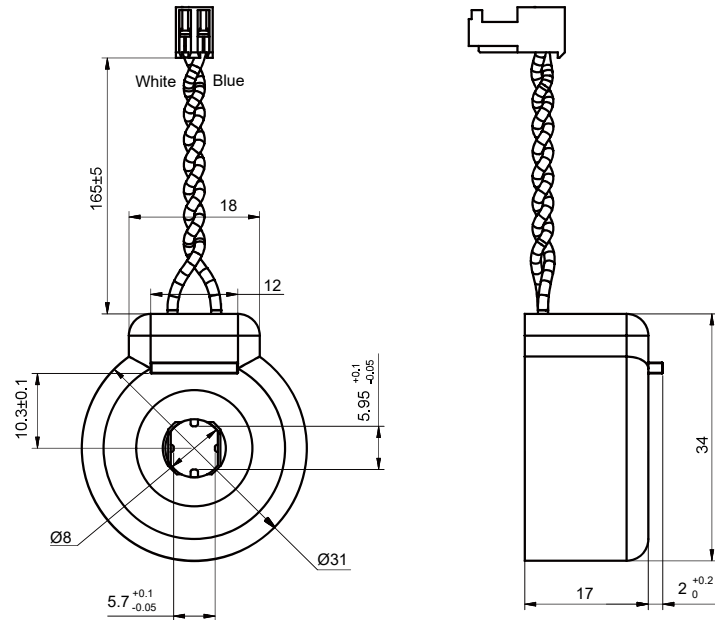


HONGFA CURRENT TRANSFORMER
ISO9001 CERTIFIED

2024 Rev. 1.00

OUTLINE DIMENSIONS

Unit: mm



NOTES:

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- 3) Operating temperature range in this specification refers to the maximum tolerable temperature range under specific load conditions.
- 4) To maintain the performances of current transformers, please do not make the current transformer drop or be shocked strongly.
- 5) All the performance data listed in the datasheet are the initial values tested under standard testing condition.
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HFCT- M03

MINI CURRENT TRANSFORMER



Features

- Compact and beautiful appearance, small size and light weight
- Strong insulation isolation
- High precision, good linearity
- Protect against moisture and shock

Applications

Electric meter, AC frequency conversion speed regulation, servo motor, Uninterruptible Power Supplies (UPS) Switching power supply, Power supplies for welding

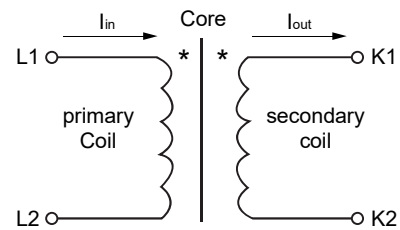
Electrical data (Ta=25°C)

Turns	3000:1
Rated primary current (Ib)	30A
Maximum current (Imax)	320A
Rated secondary current	10mA
Load resistance (Rb)	10Ω
IEC61869 Accuracy class	0.1
Insulation strength	2.5kVa.c, 50/60Hz, 1min
Insulation resistance	≥500MΩ (500V.DC)
Operating temperature	-40°C ~ +85°C
Storage temperature	-40°C ~ +90°C

SCOPE OF APPLICATION

The HFCT- M03 series current transformer can measure AC current at 50/60Hz under electrically isolated conditions.

ELECTRICAL SCHEMATIC DIAGRAM



ORDERING INFORMATION

Product Part NO.	HFCT-□	/□	(□)A	□□	-□C	(□□□)
Primary Current						
Maximum current						
Secondary Output						
Accuracy Class						
Special code						

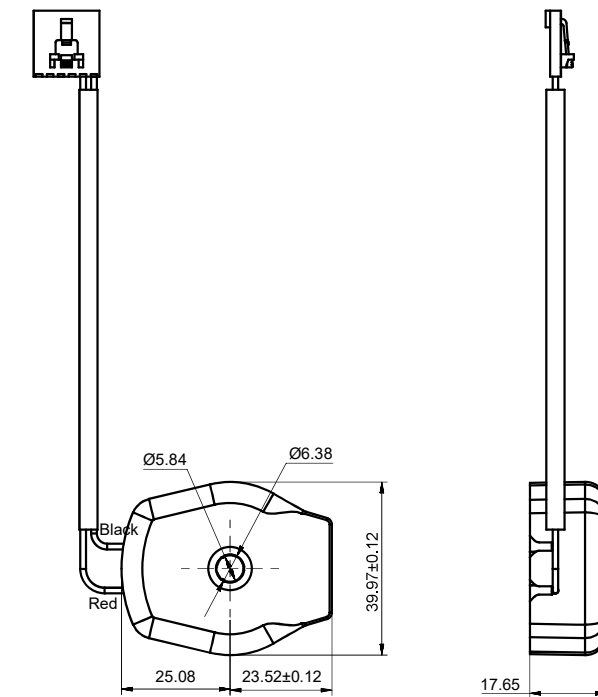


HONGFA CURRENT TRANSFORMER
ISO9001 CERTIFIED

2024 Rev. 1.00

OUTLINE DIMENSIONS

Unit: mm



NOTES:

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HFCT-M061

MINI CURRENT TRANSFORMER



Features

- Compact and beautiful appearance, small size and light weight
- Strong insulation isolation
- High precision, good linearity
- Protect against moisture and shock

Applications

Electric meter, AC frequency conversion speed regulation, servo motor, Uninterruptible Power Supplies (UPS) Switching power supply, Power supplies for welding

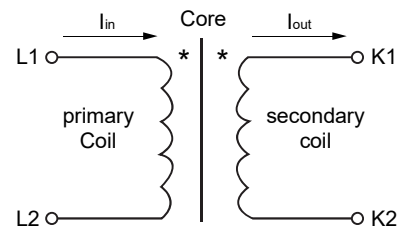
Electrical data (Ta=25°C)

Turns	2000:1
Rated primary current (Ib)	60A
Maximum current (Imax)	400A
Rated secondary current	30mA
Load resistance (Rb)	1.64Ω
IEC61869 Accuracy class	0.1
Insulation strength	2.5kVa.c, 50/60Hz, 1min
Insulation resistance	≥500MΩ (500V.DC)
Operating temperature	-40°C ~ +85°C
Storage temperature	-40°C ~ +90°C

SCOPE OF APPLICATION

The HFCT-M061 series current transformer can measure AC current at 50/60Hz under electrically isolated conditions.

ELECTRICAL SCHEMATIC DIAGRAM



ORDERING INFORMATION

Product Part NO.	HFCT-□	/□	(□)A	□□	-□C	(□□□)
Primary Current						
Maximum current						
Secondary Output						
Accuracy Class						
Special code						

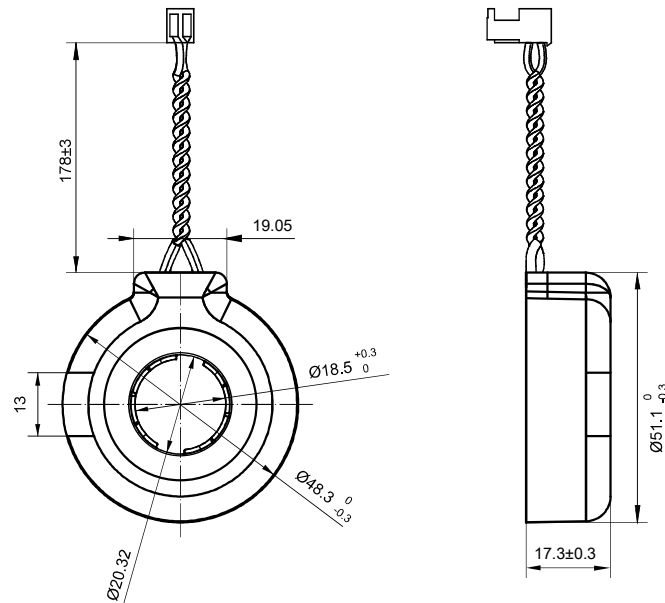


HONGFA CURRENT TRANSFORMER
ISO9001 CERTIFIED

2024 Rev. 1.00

OUTLINE DIMENSIONS

Unit: mm

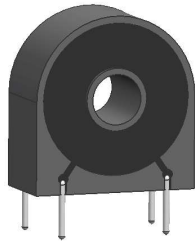


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HFCT- M406

MINI CURRENT TRANSFORMER



Applications

Electric meter, AC frequency conversion speed regulation, servo motor, Uninterruptible Power Supplies (UPS) Switching power supply, Power supplies for welding

Features

- Compact and beautiful appearance, small size and light weight
- Strong insulation isolation
- High precision, good linearity
- Protect against moisture and shock

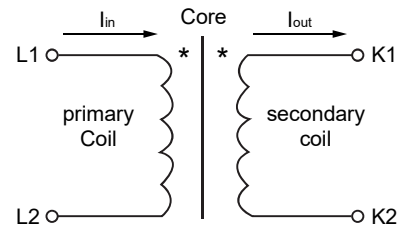
Electrical data (Ta=25°C)

Turns	2000:1
Rated primary current (Ib)	5A
Maximum current (Imax)	60A
Rated secondary current	2.5mA
Load resistance (Rb)	10Ω
IEC61869 Accuracy class	0.2
Insulation strength	2.5kV.a.c, 50/60Hz, 1min
Insulation resistance	≥500MΩ (500V.DC)
Operating temperature	-40°C ~ +85°C
Storage temperature	-40°C ~ +90°C

SCOPE OF APPLICATION

The HFCT- M406 series current transformer can measure AC current at 50/60Hz under electrically isolated conditions.

ELECTRICAL SCHEMATIC DIAGRAM



ORDERING INFORMATION

Product Part NO.	HFCT-□	/□	(□)A	□□	-□C	(□□□)
Primary Current						
Maximum current						
Secondary Output						
Accuracy Class						
Special code						

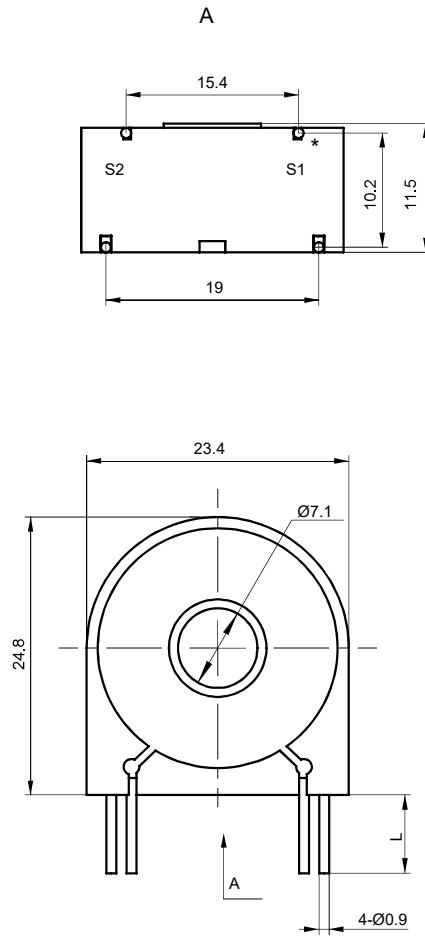


HONGFA CURRENT SENSOR
ISO9001 CERTIFIED

2024 Rev. 1.00

OUTLINE DIMENSIONS

Unit: mm



NOTES:

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HFCT-K10

SPLIT-CORE CURRENT TRANSFORMER



Applications

Electric meter, AC frequency conversion speed regulation, servo motor, Uninterruptible Power Supplies (UPS) Switching power supply, Power supplies for welding

Features

- Compact and beautiful appearance, small size and light weight
- Strong insulation isolation
- High precision, good linearity
- Protect against moisture and shock

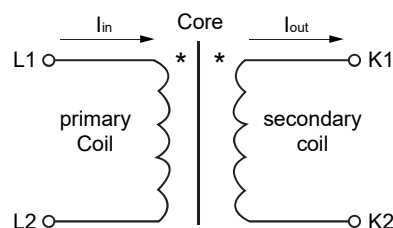
Electrical data (Ta=25°C)

Turns	3000:1
Rated primary current (Ib)	60A
Maximum current (Imax)	80A
Rated secondary current	20mA
Load resistance (Rb)	10Ω
IEC61869 Accuracy class	1.0
Insulation strength	2.5kVa.c, 50/60Hz, 1min
Insulation resistance	≥500MΩ (500V.DC)
Operating temperature	-10°C ~ +50°C
Storage temperature	-40°C ~ +90°C

SCOPE OF APPLICATION

The HFCT-K10 series current transformer can measure AC current at 50/60Hz under electrically isolated conditions.

ELECTRICAL SCHEMATIC DIAGRAM



ORDERING INFORMATION

Product Part NO.	HFCT-□	/□	(□)A	□□	-□C	(□□□)
Primary Current						
Maximum current						
Secondary Output						
Accuracy Class						
Special code						

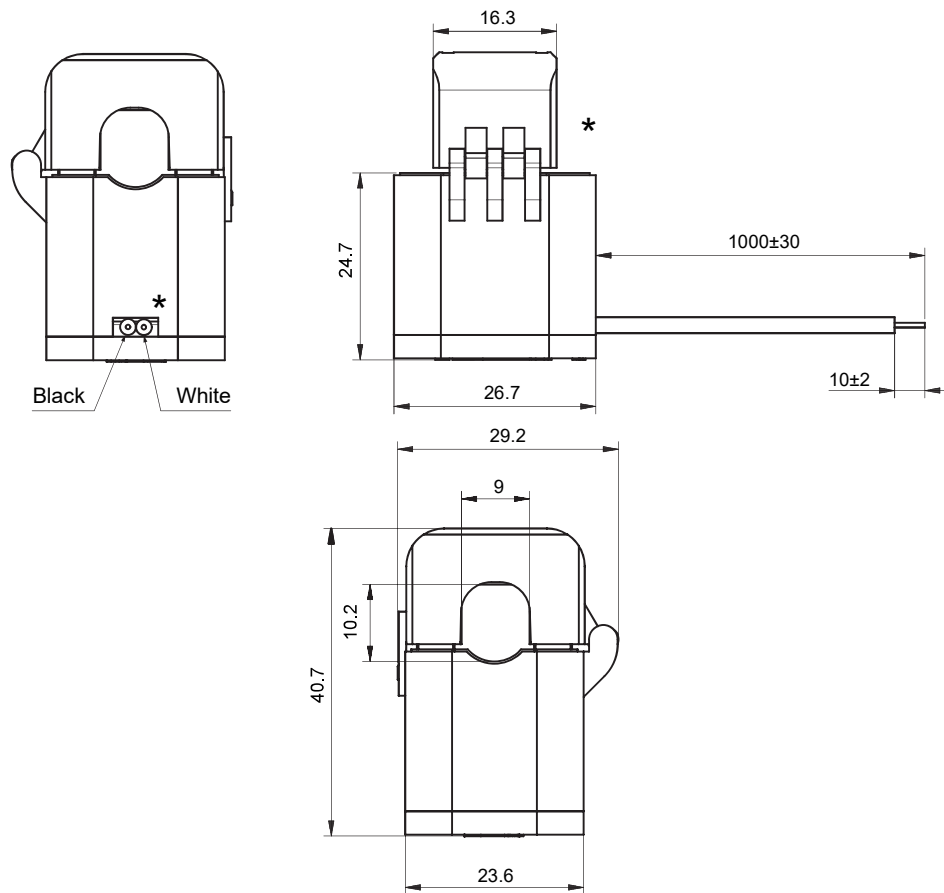


HONGFA CURRENT TRANSFORMER
ISO9001 CERTIFIED

2024 Rev. 1.00

OUTLINE DIMENSIONS

Unit: mm



Notes: 1) * is the end of the same name.

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HFCT-K16

SPLIT-CORE CURRENT TRANSFORMER



Applications

Electric meter, AC frequency conversion speed regulation, servo motor, Uninterruptible Power Supplies (UPS) Switching power supply, Power supplies for welding

Features

- Compact and beautiful appearance, small size and light weight
- Strong insulation isolation
- High precision, good linearity
- Protect against moisture and shock

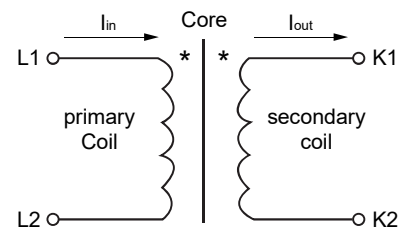
Electrical data (Ta=25°C)

Turns	3000:1
Rated primary current (Ib)	100A
Maximum current (Imax)	120A
Rated secondary current	33.3mA
Load resistance (Rb)	10Ω
IEC61869 Accuracy class	1.0
Insulation strength	2.5kVa.c, 50/60Hz, 1min
Insulation resistance	≥500MΩ (500V.DC)
Operating temperature	-10°C ~ +50°C
Storage temperature	-40°C ~ +90°C

SCOPE OF APPLICATION

The HFCT-K16 series current transformer can measure AC current at 50/60Hz under electrically isolated conditions.

ELECTRICAL SCHEMATIC DIAGRAM



ORDERING INFORMATION

Product Part NO.	HFCT-□	/□	(□)A	□□	-□C	(□□□)
Primary Current						
Maximum current						
Secondary Output						
Accuracy Class						
Special code						

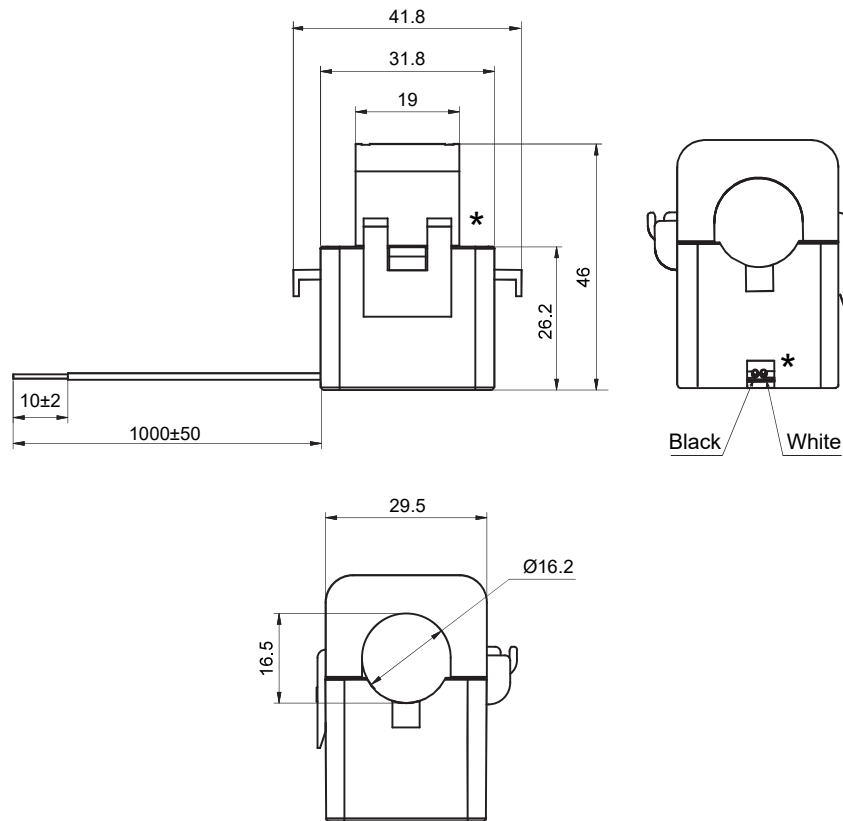


HONGFA CURRENT TRANSFORMER
ISO9001 CERTIFIED

2024 Rev. 1.00

OUTLINE DIMENSIONS

Unit: mm



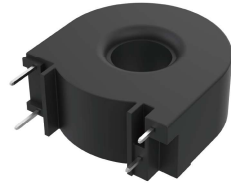
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HFCT-D02

DC IMMUNE CURRENT TRANSFORMER



Applications

Electric meter, AC frequency conversion speed regulation, servo motor, Uninterruptible Power Supplies (UPS) Switching power supply, Power supplies for welding

Features

- Compact and beautiful appearance, small size and light weight
- Strong insulation isolation
- High precision, good linearity
- Protect against moisture and shock

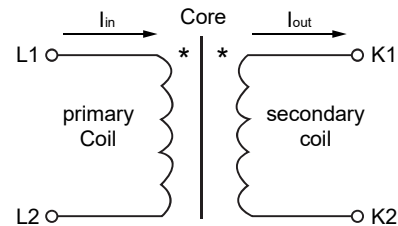
Electrical data (Ta=25°C)

Turns	2500:1
Rated primary current (Ib)	5A
Maximum current (Imax)	100A
Rated secondary current	2mA
Load resistance (Rb)	10Ω
IEC62053 Accuracy class	0.2
Insulation strength	2.5kV.a.c, 50/60Hz, 1min
Insulation resistance	≥500MΩ (500V.DC)
Operating temperature	-40°C ~ +85°C
Storage temperature	-40°C ~ +90°C
DC resistance	$I_{max}/\sqrt{2}$ (acc.to IEC62053-21)

SCOPE OF APPLICATION

The HFCT-D02 series current transformer can measure AC current at 50/60Hz under electrically isolated conditions.

ELECTRICAL SCHEMATIC DIAGRAM



ORDERING INFORMATION

Product Part NO.	HFCT-□	/□	(□)A	□□	-□C	(□□□)
Primary Current						
Maximum current						
Secondary Output						
Accuracy Class						
Special code						

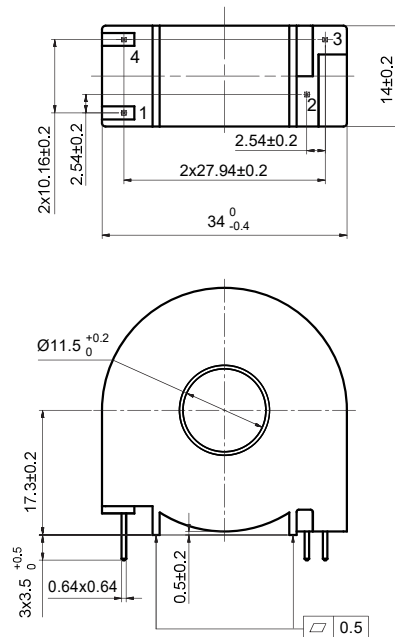


HONGFA CURRENT TRANSFORMER
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OUTLINE DIMENSIONS

Unit: mm

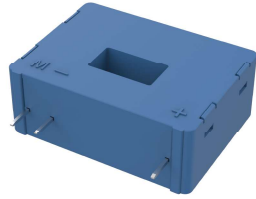


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HFCH-L01

CLOSED LOOP HALL-EFFECT CURRENT SENSOR



Features

- Excellent accuracy and very good linearity
- Optimized response time, wide frequency bandwidth
- High immunity to external interference

Applications

Uninterruptible Power Supplies (UPS), Static converters for DC motor drives, AC variable speed drives and servo motor drives, Power supplies for welding

SCOPE OF APPLICATION

HFCH-L01A family is suited for the electronic measurement of currents:
DC, AC, pulsed, with galvanic separation between the primary circuit and the secondary circuit.

ELECTRICAL DATA (Ta=25°C)

Parameter	Sym	HFCH-L01/25	HFCH-L01/50	HFCH-L01/75	HFCH-L01/100
Primary nominal rms current	I_{PN}	25A	50A	75A	100A
Primary current, measuring range	I_P	$\pm 37.5A$	$\pm 75A$	$\pm 100A$	$\pm 150A$
Secondary nominal rms current	I_{SN}	25mA	50mA	50mA	50mA
Turns ratio	N	1:1000	1:1000	1:1500	1:2000
Measuring resistance@ I_{PN}	R_M	0-75 Ω	0-75 Ω	0-75 Ω	0-75 Ω
Measuring resistance@ I_{PM}	R_M	0-50 Ω	0-50 Ω	0-50 Ω	0-50 Ω
Electrical offset current	I_o	$\leq \pm 0.2mA @ I_P=0$			
Linearity error	ϵ_L	$< \pm 0.1\% @ I_{PN}$			
Error	X	$\leq \pm 0.4\% @ I_{PN}$			
Response time	Tr	1 μs max			
Temperature coefficient of I_o	I_{OT}	$\leq \pm 0.4mA (-40^\circ C \sim 85^\circ C)$			
Supply voltage	V_c	$\pm 15V DC \pm 5\%$			
Current consumption	I_c	$< 10mA + I_{SN}$			
Frequency bandwidth (-3dB)	BW	DC---100kHz			
Operating temperature	T_A	$-40^\circ C \sim +85^\circ C$			
Storage temperature	T_s	$-40^\circ C \sim +90^\circ C$			

INSULATION COORDINATION

Insulation resistance	R_{INS}	DC500V, >1000M Ω
Insulation strength	U_d	2.5kVa.c., 50/60Hz, 1min
Impulse withstand voltage 1.2/50 μs	V_{NI}	8 KV
Clearance	d_{CI}	7.9 mm
Creepage distance	d_{CP}	11.4 mm

- Notes:** 1) Connected according to the connection requirements.
2) Temperature of the primary conductor should not exceed 100°C.
3) I_{OUT} is positive when I_P flows in the direction of the arrow.



HONGFA CURRENT TRANSFORMER
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ORDERING INFORMATION

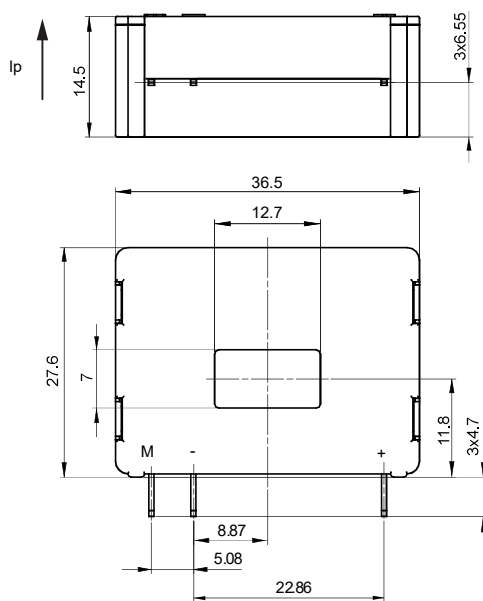
	HFCH	-L	01	□□□	-C	□□□	-D	15	(XXX)
Product Part NO.	CH: Hall effect sensor								
Working Principle	L: Closed Loop Sensor								
Sequence number	01: 01								
Nominal current	25: 25A 50: 50A 75: 75A 100: 100A								
Output method	C: Current signal								
Typical output value	25: 25mA 50: 50mA								
Operating Voltage Mode	D: Dual power supplies								
Typical operating voltage	15: 15VDC								
Special code ¹⁾	XXX: Customer special requirement								

Notes: 1) The customer special requirement express as special code after evaluating by Hongfa.

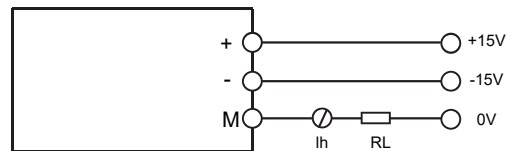
OUTLINE DIMENSIONS, WIRING DIAGRAM

Unit: mm

Outline Dimensions



Wiring Diagram



Notes:

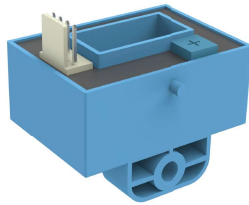
+	(+15V)
-	(-15V)
M	I_0

NOTES:

- 1) To avoid using current transformer under strong magnetic field, the external magnetic field will cause the accuracy of current transformer to change.
- 2) We could not evaluate all the performance and all the parameters for every possible application field and environment. Thus the user should be in a right position to choose the suitable produce for their own application. If there is any query, please contact HKG for the technical service. However, it is the user's responsibility to determine which product should be used only.
- 3) Operating temperature range in this specification refers to the maximum tolerable temperature range under specific load conditions.
- 4) To maintain the performances of current transformers, please do not make the current transformer drop or be shocked strongly.
- 5) All the performance data listed in the datasheet are the initial values tested under standard testing condition.
- 6) HKG reserves the right to change the product, the customer should confirm this specification before placing the order for the first time, may request us to provide the new specification if necessary.

HFCH-L02

CLOSED LOOP HALL-EFFECT CURRENT SENSOR



Features

- Excellent accuracy and very good linearity
- Optimized response time, wide frequency bandwidth
- High immunity to external interference

Applications

Uninterruptible Power Supplies (UPS), Static converters for DC motor drives, AC variable speed drives and servo motor drives, Power supplies for welding, Inverter

SCOPE OF APPLICATION

HFCH-L02 family is suited for the electronic measurement of currents:
DC, AC, pulsed, with galvanic separation between the primary circuit and the secondary circuit.

ELECTRICAL DATA (Ta=25°C)

Parameter	Sym	HFCH-L02/25	HFCH-L02/50	HFCH-L02/100	HFCH-L02/200	HFCH-L02/300
Primary nominal rms current	I_{PN}	25A	50A	100A	200A	300A
Primary current, measuring range	I_P	±50A	±100A	±200A	±400A	±600A
Secondary nominal rms current	I_{SN}	25mA	50mA	50mA	100mA	100mA
Turns ratio	N	1:1000	1:1000	1:2000	1:2000	1:3000
Measuring resistance@ I_{PN}	R_M	0-200Ω	0-100Ω	0-100Ω	0-50Ω	0-50Ω
Measuring resistance@ I_{PM}	R_M	0-100Ω	0-50Ω	0-50Ω	0-20Ω	0-20Ω
Electrical offset current	I_o	≤±0.2mA@ $I_P=0$				
Linearity error	ϵ_L	<±0.1%@ I_{PN}				
Error	X	≤±0.4% @ I_{PN}				
Response time	Tr	1μs max				
Temperature coefficient of I_o	I_{OT}	≤±0.4mA (-40°C ~ 85°C)				
Supply voltage	V_C	±15V DC±5%				
Current consumption	I_C	< 10mA+ I_{SN}				
Frequency bandwidth (-3dB)	BW	DC---100kHz				
Operating temperature	T_A	-40°C ~ +85°C				
Storage temperature	T_S	-40°C ~ +85°C				

INSULATION COORDINATION

Insulation resistance	R_{INS}	DC500V, >1000MΩ
Insulation strength	U_d	2.5kVa.c., 50/60Hz, 1min
Impulse withstand voltage 1.2/50 μs	V_{NI}	8 KV
Clearance	d_{CI}	4.4 mm
Creepage distance	d_{CP}	7.3 mm

- Notes:**
- 1) Connected according to the connection requirements.
 - 2) Temperature of the primary conductor should not exceed 100°C.
 - 3) I_{OUT} is positive when I_P flows in the direction of the arrow.



HONGFA CURRENT TRANSFORMER
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2024 Rev. 1.00

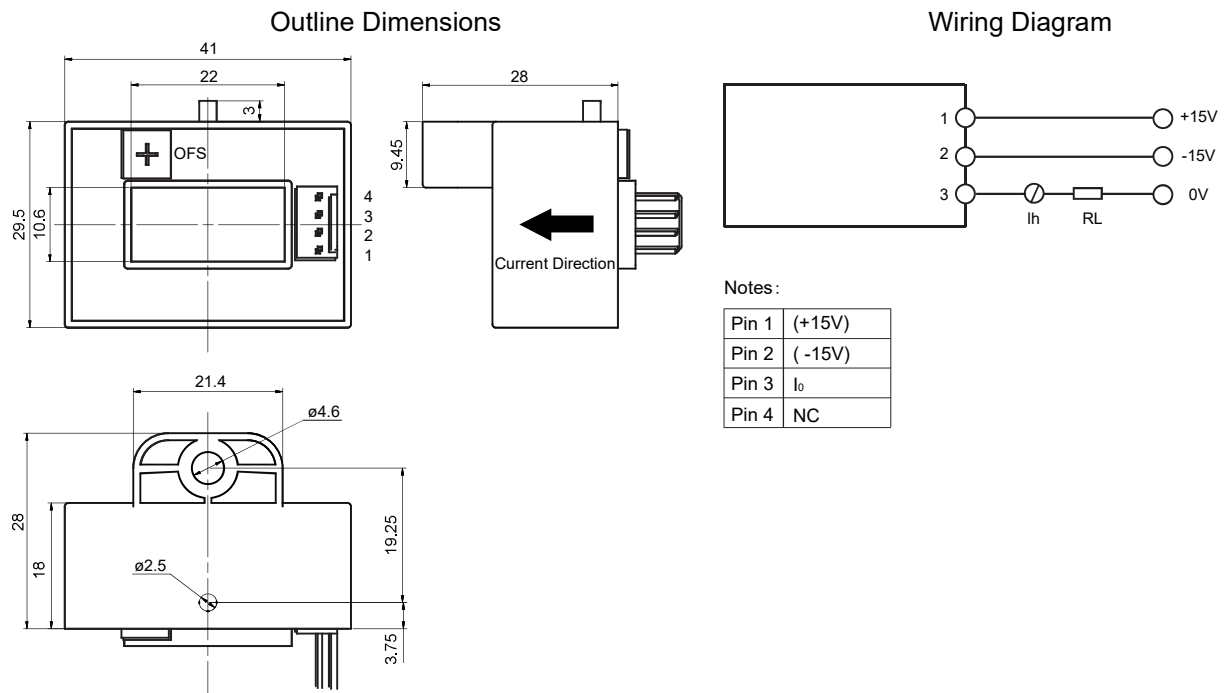
ORDERING INFORMATION

	HFCH	-L	02	/□□□	-C	□□□	-D	15	(XXX)
Product Part NO.	CH: Hall effect sensor								
Working Principle	L: Closed Loop Sensor								
Sequence number	02: 02								
Nominal current	25: 25A 50: 50A 100: 100A 200: 200A 300: 300A								
Output method	C: Current signal								
Typical output value	25: 25mA 50: 50mA 100: 100mA								
Operating Voltage Mode	D: Dual power supplies								
Typical operating voltage	15: 15VDC								
Special code ¹⁾	XXX: Customer special requirement								

Notes: 1) The customer special requirement express as special code after evaluating by Hongfa.

OUTLINE DIMENSIONS, WIRING DIAGRAM

Unit: mm

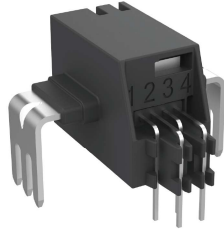


NOTES:

- 1) To avoid using current transformer under strong magnetic field, the external magnetic field will cause the accuracy of current transformer to change.
- 2) We could not evaluate all the performance and all the parameters for every possible application field and environment. Thus the user should be in a right position to choose the suitable produce for their own application. If there is any query, please contact HKG for the technical service. However, it is the user's responsibility to determine which product should be used only.
- 3) Operating temperature range in this specification refers to the maximum tolerable temperature range under specific load conditions.
- 4) To maintain the performances of current transformers, please do not make the current transformer drop or be shocked strongly.
- 5) All the performance data listed in the datasheet are the initial values tested under standard testing condition.
- 6) HKG reserves the right to change the product, the customer should confirm this specification before placing the order for the first time, may request us to provide the new specification if necessary.

HFCH-C09

OPEN LOOP HALL-EFFECT CURRENT SENSOR



Features

- Low insertion losses
- Easy installation
- Low power consumption
- High immunity to external interference

Applications

Uninterruptible Power Supplies (UPS), Static converters for DC motor drives, AC variable speed drives and servo motor drives, Solar inverters

SCOPE OF APPLICATION

HFCH-C09 family is suited for the electronic measurement of currents:
DC, AC, pulsed, with galvanic separation between the primary circuit and the secondary circuit.

ELECTRICAL DATA (Ta=25°C)

Parameter	Sym	HFCH-C09/10	HFCH-C09/16	HFCH-C09/20	HFCH-C09/32	HFCH-C09/40	HFCH-C09/50
Primary nominal rms current	I_{PN}	10A	16A	20A	32A	40A	50A
Primary current, measuring range	I_{PM}	±25A	±40A	±50A	±80A	±100A	±125A
Rated output voltage	V_{OUT}	0.8V@ I_{PN} , T=25°C					
Electrical offset voltage	V_{OE}	≤10mV($V_{OUT}-V_{ref}$)@ $I_P=0$, T=25°C					
Reference voltage	V_{ref}	2.5±0.02V@ I_{PN}					
Error	X	≤±0.8%@ I_{PN} , T=25°C					
Error	X	≤±1.5%@ I_{PN} (-40°C~105°C)					
Linearity error	ϵ_L	≤±0.5%@ I_{PN}					
Linearity error	ϵ_L	≤±0.5%@ I_{PM}					
Temperature coefficient of V_{ref}	TCV_{ref}	≤±8mV(-40°C~105°C)@ $I_P=0A$					
Temperature coefficient of V_{OUT}	TCV_{out}	≤±170ppm/K(-40°C~105°C)					
Response time	T_r	≤2.5 μs					
Frequency bandwidth (-3 dB)	BW	DC---240kHz					
Supply voltage (±5 %)	V_c	+5V					
Current consumption@ +5 V	I_c	<20mA					
Operating temperature	T_A	-40°C ~ +105°C					
Storage temperature	T_S	-40°C ~ +105°C					

INSULATION COORDINATION

Insulation resistance	R_{INS}	DC500V, >1000MΩ
Insulation strength	U_d	4.5kV a.c., 50/60Hz, 1min
Impulse withstand voltage 1.2/50 μs	V_{NI}	8 KV
Clearance	d_{CI}	8 mm
Creepage distance	d_{CP}	8 mm

Notes: 1) If the V_c is less than the minimum value, the measurement will be inaccurate; if the V_c is more than the maximum value, the measurement device may fail permanently.

2) Wave soldering profile: maximum 260°C for 10s.

3) V_{OUT} is positive when I_P flows in the direction of the arrow.

4) Primary conductor temperature < 120 °C.

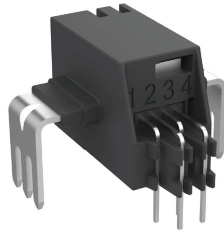


HONGFA CURRENT TRANSFORMER
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HFCH-C09(120A)

OPEN LOOP HALL-EFFECT CURRENT SENSOR



Features

- Low insertion losses
- Easy installation
- Low power consumption
- High immunity to external interference

Applications

Uninterruptible Power Supplies (UPS), Static converters for DC motor drives, AC variable speed drives and servo motor drives, Solar inverters

SCOPE OF APPLICATION

HFCH-C09 family is suited for the electronic measurement of currents:
DC, AC, pulsed, with galvanic separation between the primary circuit and the secondary circuit.

ELECTRICAL DATA (Ta=25°C)

Parameter	Sym	HFCH-C09/80	HFCH-C09/100	HFCH-C09/120
Primary nominal rms current	I_{PN}	80A	100A	120A
Primary current, measuring range	I_{PM}	±200A	±250A	±300A
Rated output voltage	V_{OUT}	0.8V@ I_{PN} , T=25°C		
Electrical offset voltage	V_{OE}	≤10mV($V_{OUT}-V_{ref}$)@ $I_P=0$, T=25°C		
Reference voltage	V_{ref}	2.5±0.02V@ I_{PN}		
Error	X	≤±0.8%@ I_{PN} , T=25°C		
Error	X	≤±1.5%@ I_{PN} (-40°C~105°C)		
Linearity error	ϵ_L	≤±0.5%@ I_{PN}		
Linearity error	ϵ_L	≤±0.5%@ I_{PM} , T=25°C		
Temperature coefficient of V_{ref}	TCV_{ref}	≤±8mV(-40°C~105°C)@ $I_P=0A$		
Temperature coefficient of V_{OUT}	TCV_{out}	≤±170ppm/K(-40°C~105°C)		
Response time	T_r	≤2.5 μs		
Frequency bandwidth (-3 dB)	BW	DC---90kHz		
Supply voltage (±5 %)	V_C	+5V		
Current consumption@ +5 V	I_C	<20mA		
Operating temperature	T_A	-40°C ~ +105°C		
Storage temperature	T_S	-40°C ~ +105°C		

INSULATION COORDINATION

Insulation resistance	R_{INS}	DC500V, >1000MΩ
Insulation strength	U_d	4.5kV a.c., 50/60Hz, 1min
Impulse withstand voltage 1.2/50 μs	V_{NI}	8 KV
Clearance	d_{CI}	8 mm
Creepage distance	d_{CP}	8 mm

- Notes:**
- 1) If the V_C is less than the minimum value, the measurement will be inaccurate; if the V_C is more than the maximum value, the measurement device may fail permanently
 - 2) Wave soldering profile: maximum 260°C for 10s
 - 3) V_{OUT} is positive when I_P flows in the direction of the arrow
 - 4) Primary conductor temperature < 120 °C



HONGFA CURRENT TRANSFORMER
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ORDERING INFORMATION

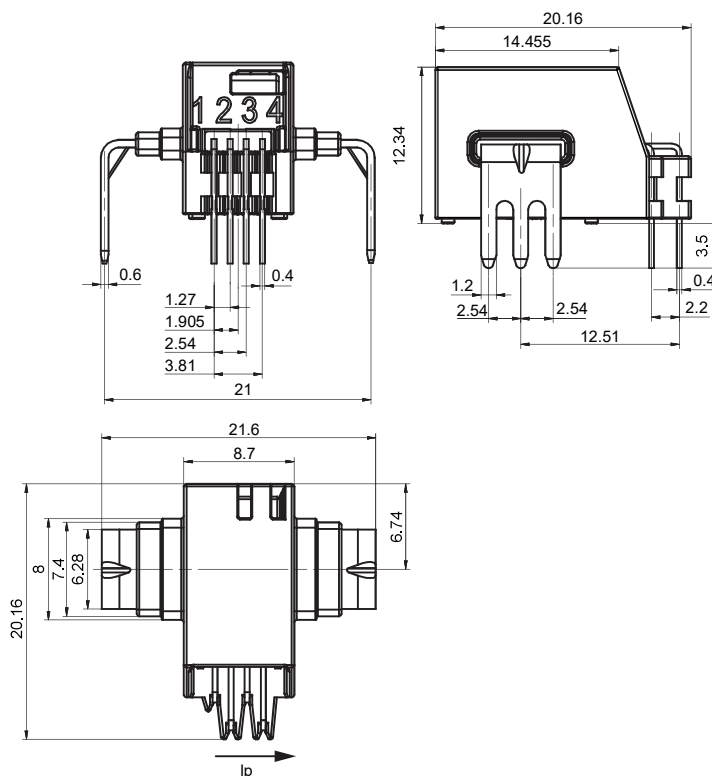
	HFCH	-C	09	□□□	-V	0.8	-S	5	(XXX)
Product Part NO.	CH:Hall effect sensor								
Working Principle	C: Programmable Sensor								
Sequence number	09: 09								
Nominal current	80:80A 100:100A 120:120A								
Output method	V: Voltage output								
Typical output value	0.8: 0.8V								
Operating Voltage Mode	S:Single power supply								
Typical operating voltage	5: 5VDC								
Special code ¹⁾	XXX: Customer special requirement								

Notes: 1) The customer special requirement express as special code after evaluating by Hongfa.

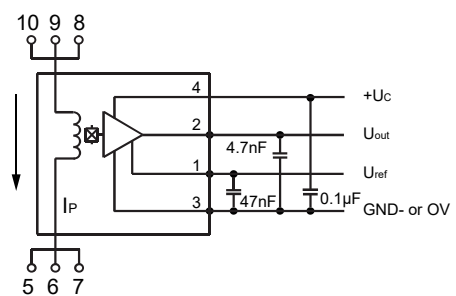
OUTLINE DIMENSIONS, WIRING DIAGRAM

Unit: mm

Outline Dimensions



Wiring Diagram



Notes:

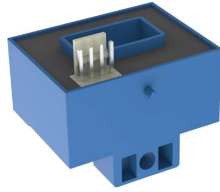
Pin 1	V _{ref}
Pin 2	V _{out}
Pin 3	GND
Pin 4	(+5V)

NOTES:

- 1) To avoid using current transformer under strong magnetic field, the external magnetic field will cause the accuracy of current transformer to change.
- 2) We could not evaluate all the performance and all the parameters for every possible application field and environment. Thus the user should be in a right position to choose the suitable produce for their own application. If there is any query, please contact HKG for the technical service. However, it is the use's responsibility to determine which product should be used only.
- 3) Operating temperature range in this specification refers to the maximum tolerable temperature range under specific load conditions.
- 4) To maintain the performances of current transformers, please do not make the current transformer drop or be shocked strongly.
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HFCH-C18(0.625V)

OPEN LOOP HALL-EFFECT CURRENT SENSOR



Features

- Low insertion losses
- Easy installation
- Low power consumption
- High immunity to external interference

Applications

Uninterruptible Power Supplies (UPS), Static converters for DC motor drives, AC variable speed drives and servo motor drives, Power supplies for welding

SCOPE OF APPLICATION

HFCH-C18 family is suited for the electronic measurement of currents:
DC, AC, pulsed, with galvanic separation between the primary circuit and the secondary circuit.

ELECTRICAL DATA (Ta=25°C)

Parameter	Sym	HFCH-C18 / 50	HFCH-C18 / 100	HFCH-C18 / 150	HFCH-C18 / 200	HFCH-C18 / 300	HFCH-C18 / 400	HFCH-C18 / 500	HFCH-C18 / 600
Primary nominal rms current	I_{PN}	50A	100A	150A	200A	300A	400A	500A	600A
Primary current, measuring range	I_{PM}	±150A	±300A	±450A	±600A	±900A	±1100A	±1100A	±1100A
Rated output voltage	V_{OUT}	$V_{ref} \pm 0.625V @ I_{PN}, T=25^{\circ}C$							
Electrical offset voltage	V_{OE}	$2.5V \pm 0.02V @ I_P=0, T=25^{\circ}C$							
Reference voltage	V_{ref}	$2.5V \pm 0.02V$							
Error	X	$\leq \pm 1\% @ I_{PN}$							
Linearity error	ϵ_L	$< \pm 0.8\% @ I_{PN}$							
Temperature coefficient of V_{OE}	TCV_{OE}	$\leq \pm 0.1 mV/^{\circ}C$							
Temperature coefficient of V_{ref}	TCV_{ref}	$\leq \pm 8mV(-40^{\circ}C \sim 105^{\circ}C) @ I_P=0A$							
Temperature coefficient of V_{OUT}	TCV_{out}	$\leq \pm 170ppm/K(-40^{\circ}C \sim 105^{\circ}C)$							
Response time	T_r	$\leq 5 \mu s$							
Frequency bandwidth (-3 dB)	BW	DC---200kHz							
Supply voltage ($\pm 5\%$)	V_C	+5V							
Current consumption@ +5 V	I_C	$< 25mA$							
Operating temperature	T_A	$-40^{\circ}C \sim +105^{\circ}C$							
Storage temperature	T_S	$-40^{\circ}C \sim +105^{\circ}C$							

INSULATION COORDINATION

Insulation resistance	R_{INS}	DC500V, >1000MΩ
Insulation strength	U_d	4.5kV a.c., 50/60Hz, 1min
Impulse withstand voltage 1.2/50 μs	V_{NI}	8 KV
Clearance	d_{CI}	8 mm
Creepage distance	d_{CP}	8 mm

- Notes:**
- 1) If the V_C is less than the minimum value, the measurement will be inaccurate; if the V_C is more than the maximum value, the measurement device may fail permanently.
 - 2) Recommended fastening torque 1.5 N·m.
 - 3) V_{OUT} is positive when I_P flows in the direction of the arrow.
 - 4) Primary conductor temperature $< 100^{\circ}C$.
 - 5) The primary busbar fixed in the center of aperture is recommended. The position of busbar has impact on the accuracy of transducer.



HONGFA CURRENT TRANSFORMER
ISO9001 CERTIFIED

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ORDERING INFORMATION

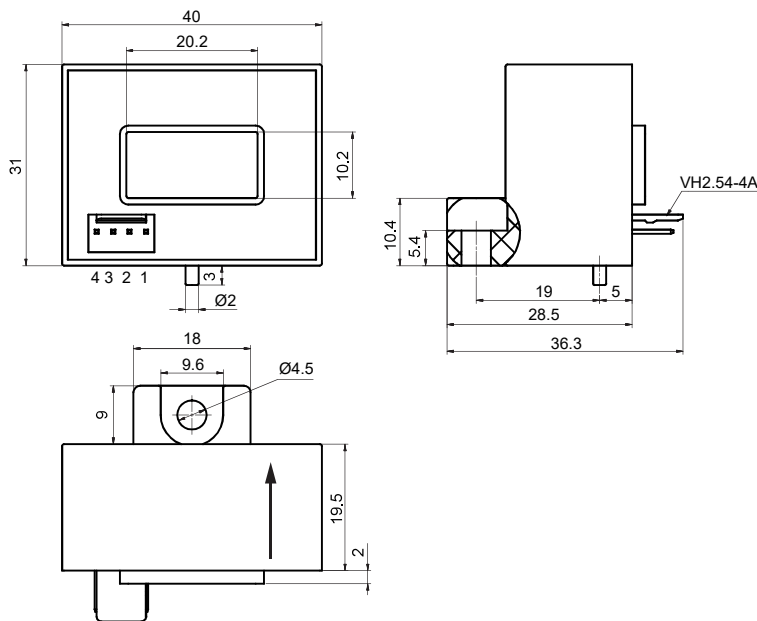
	HFCH	-C	18	□□□	-V	0.625	-S	5	(XXX)
Product Part NO.	CH:Hall effect sensor								
Working Principle	C: Programmable Sensor								
Sequence number	18: 18								
Nominal current	50:50A 100:100A 150:150A 200:200A 300:300A 400:400A 500:500A 600:600A								
Output method	V: Voltage output								
Typical output value	0.625: 0.625V								
Operating Voltage Mode	S:Single power supply								
Typical operating voltage	5: 5VDC								
Special code ¹⁾	XXX: Customer special requirement								

Notes: 1) The customer special requirement express as special code after evaluating by Hongfa.

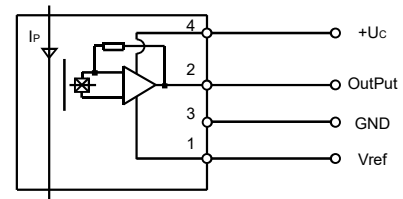
OUTLINE DIMENSIONS, WIRING DIAGRAM

Unit: mm

Outline Dimensions



Wiring Diagram



Notes:

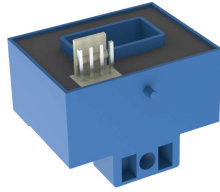
Pin 1	Vref
Pin 2	Vout
Pin 3	GND
Pin 4	(+5V)

NOTES:

- 1) To avoid using current transformer under strong magnetic field, the external magnetic field will cause the accuracy of current transformer to change.
- 2) We could not evaluate all the performance and all the parameters for every possible application field and environment. Thus the user should be in a right position to choose the suitable produce for their own application. If there is any query, please contact HKG for the technical service. However, it is the user's responsibility to determine which product should be used only.
- 3) Operating temperature range in this specification refers to the maximum tolerable temperature range under specific load conditions.
- 4) To maintain the performances of current transformers, please do not make the current transformer drop or be shocked strongly.
- 5) All the performance data listed in the datasheet are the initial values tested under standard testing condition.
- 6) HKG reserves the right to change the product, the customer should confirm this specification before placing the order for the first time, may request us to provide the new specification if necessary.

HFCH-C18(2V)

OPEN LOOP HALL-EFFECT CURRENT SENSOR



Features

- Low insertion losses
- Easy installation
- Low power consumption
- High immunity to external interference

Applications

Uninterruptible Power Supplies (UPS), Static converters for DC motor drives, AC variable speed drives and servo motor drives, Power supplies for welding

SCOPE OF APPLICATION

HFCH-C18 family is suited for the electronic measurement of currents:
DC, AC, pulsed, with galvanic separation between the primary circuit and the secondary circuit.

ELECTRICAL DATA (Ta=25°C)

Parameter	Sym	HFCH-C18 / 50	HFCH-C18 / 100	HFCH-C18 / 150	HFCH-C18 / 200	HFCH-C18 / 300	HFCH-C18 / 400	HFCH-C18 / 500	HFCH-C18 / 600
Primary nominal rms current	I_{PN}	50A	100A	150A	200A	300A	400A	500A	600A
Rated output voltage	V_{OUT}	$V_{ref} \pm 2V @ I_{PN}, T=25^{\circ}C$							
Electrical offset voltage	V_{OE}	$2.5V \pm 0.02 V @ I_F=0, T=25^{\circ}C$							
Reference voltage	V_{ref}	$2.5V \pm 0.02V$							
Error	X	$\leq \pm 1\% @ I_{PN}$							
Linearity error	ϵ_L	$< \pm 0.8\% @ I_{PN}$							
Temperature coefficient of V_{OE}	TCV_{OE}	$\leq \pm 0.1 mV/^{\circ}C$							
Temperature coefficient of V_{ref}	TCV_{ref}	$\leq \pm 8mV(-40^{\circ}C \sim 105^{\circ}C) @ I_F=0A$							
Temperature coefficient of V_{OUT}	TCV_{out}	$\leq \pm 170ppm/K(-40^{\circ}C \sim 105^{\circ}C)$							
Response time	T_r	$\leq 5 \mu s$							
Frequency bandwidth (-3 dB)	BW	DC---50kHz							
Supply voltage ($\pm 5\%$)	V_C	+5V							
Current consumption@ +5 V	I_C	$< 25mA$							
Operating temperature	T_A	$-40^{\circ}C \sim +105^{\circ}C$							
Storage temperature	T_S	$-40^{\circ}C \sim +105^{\circ}C$							

INSULATION COORDINATION

Insulation resistance	R_{INS}	DC500V, >1000M Ω
Insulation strength	U_d	4.5kVa.c., 50/60Hz, 1min
Impulse withstand voltage 1.2/50 μs	V_{NI}	8 KV
Clearance	d_{CI}	8 mm
Creepage distance	d_{CP}	8 mm

- Notes:**
- 1) If the V_C is less than the minimum value, the measurement will be inaccurate; if the V_C is more than the maximum value, the measurement device may fail permanently.
 - 2) Recommended fastening torque 1.5 N·m.
 - 3) V_{OUT} is positive when I_F flows in the direction of the arrow.
 - 4) Primary conductor temperature $< 100^{\circ}C$.
 - 5) The primary busbar fixed in the center of aperture is recommended. The position of busbar has impact on the accuracy of transducer.



HONGFA CURRENT TRANSFORMER
ISO9001 CERTIFIED

2025 Rev. 1.00

ORDERING INFORMATION

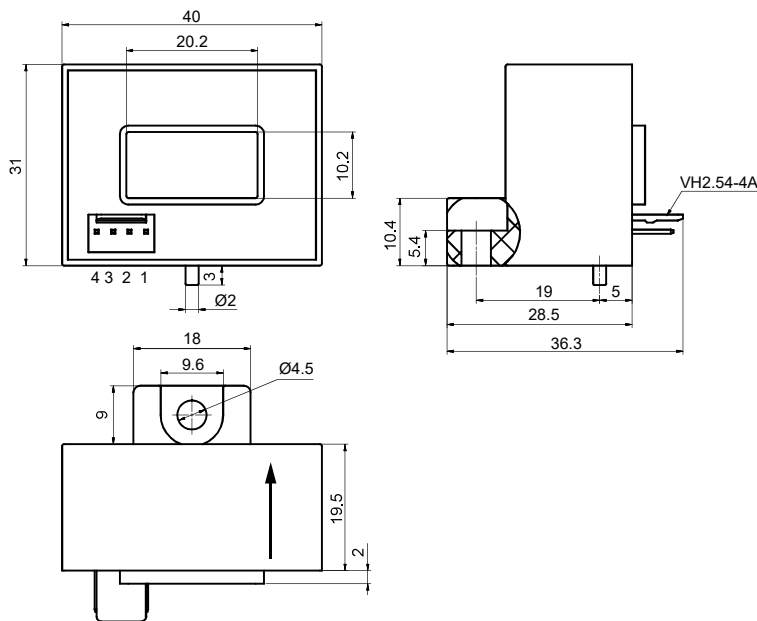
	HFCH	-C	18	□□□	-V	2	-S	5	(XXX)
Product Part NO.	CH:Hall effect sensor								
Working Principle	C: Programmable Sensor								
Sequence number	18: 18								
Nominal current	50:50A 100:100A 150:150A 200:200A 300:300A 400:400A 500:500A 600:600A								
Output method	V: Voltage output								
Typical output value	2: 2V								
Operating Voltage Mode	S:Single power supply								
Typical operating voltage	5: 5VDC								
Special code ¹⁾	XXX: Customer special requirement								

Notes: 1) The customer special requirement express as special code after evaluating by Hongfa.

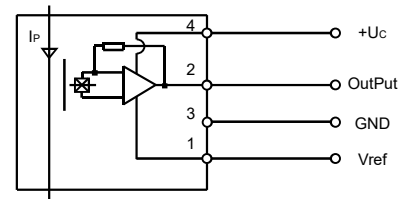
OUTLINE DIMENSIONS, WIRING DIAGRAM

Unit: mm

Outline Dimensions



Wiring Diagram



Notes:

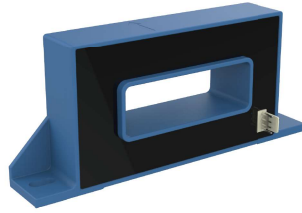
Pin 1	Vref
Pin 2	Vout
Pin 3	GND
Pin 4	(+5V)

NOTES:

- 1) To avoid using current transformer under strong magnetic field, the external magnetic field will cause the accuracy of current transformer to change.
- 2) We could not evaluate all the performance and all the parameters for every possible application field and environment. Thus the user should be in a right position to choose the suitable produce for their own application. If there is any query, please contact HKG for the technical service. However, it is the user's responsibility to determine which product should be used only.
- 3) Operating temperature range in this specification refers to the maximum tolerable temperature range under specific load conditions.
- 4) To maintain the performances of current transformers, please do not make the current transformer drop or be shocked strongly.
- 5) All the performance data listed in the datasheet are the initial values tested under standard testing condition.
- 6) HKG reserves the right to change the product, the customer should confirm this specification before placing the order for the first time, may request us to provide the new specification if necessary.

HFCH-P19

OPEN LOOP HALL-EFFECT CURRENT SENSOR



Features

- Low insertion losses
- Easy installation
- Low power consumption
- High immunity to external interference

Applications

Uninterruptible Power Supplies (UPS), Static converters for DC motor drives, AC variable speed drives and servo motor drives, Power supplies for welding

SCOPE OF APPLICATION

HFCH-P19 family is suited for the electronic measurement of currents:
DC, AC, pulsed, with galvanic separation between the primary circuit and the secondary circuit.

ELECTRICAL DATA (Ta=25°C)

Parameter	Sym	HFCH-P19 /500	HFCH-P19 /600	HFCH-P19 /850	HFCH-P19 /1000	HFCH-P19 /1500	HFCH-P19 /2000	HFCH-P19 /2500
Primary nominal rms current	I_{PN}	500A	600A	850A	1000A	1500A	2000A	2500A
Primary current, measuring range	I_{PM}	±1500A	±1800A	±2550A	±3000A	±4500A	±5500A	±5500A
Rated output voltage	V_{OUT}	±4V(RL=10kΩ)@ I_{PN} , T=25°C						
Electrical offset voltage	V_{OE}	≤±20 mV@ $I_P=0$, T=25°C						
Error	X	≤±1% @ I_{PN}						
Linearity error	εL	≤±1% @ I_{PN}						
Temperature coefficient of V_{OE}	TCV_{OE}	≤±1 mV/°C						
Temperature coefficient of V_{OUT}	TCV_{out}	≤±0.1%/°C(-40°C~85°C)						
Response time	T_r	≤5 μs						
Frequency bandwidth (-3 dB)	BW	DC---25kHz						
Load resistance	V_C	≥4.7 kΩ						
Supply voltage (±5 %)	V_C	±15V						
Current consumption@ ±15 V	I_C	<25mA						
Operating temperature	T_A	-40°C ~ +85°C						
Storage temperature	T_S	-40°C ~ +85°C						

INSULATION COORDINATION

Insulation resistance	R_{INS}	DC500V, >1000MΩ
Insulation strength	U_d	5kV a.c., 50/60Hz, 1min
Impulse withstand voltage 1.2/50 μs	V_{NI}	8 KV
Clearance	d_{CI}	13 mm
Creepage distance	d_{CP}	16 mm

- Notes:** 1) Recommended fastening torque 1.5 N·m.
2) V_{OUT} is positive when I_P flows in the direction of the arrow.
3) Primary conductor temperature < 100 °C.
4) The primary busbar fixed in the center of aperture is recommended. The position of busbar has impact on the accuracy of transducer.



HONGFA CURRENT TRANSFORMER
ISO9001 CERTIFIED

2024 Rev. 1.00

ORDERING INFORMATION

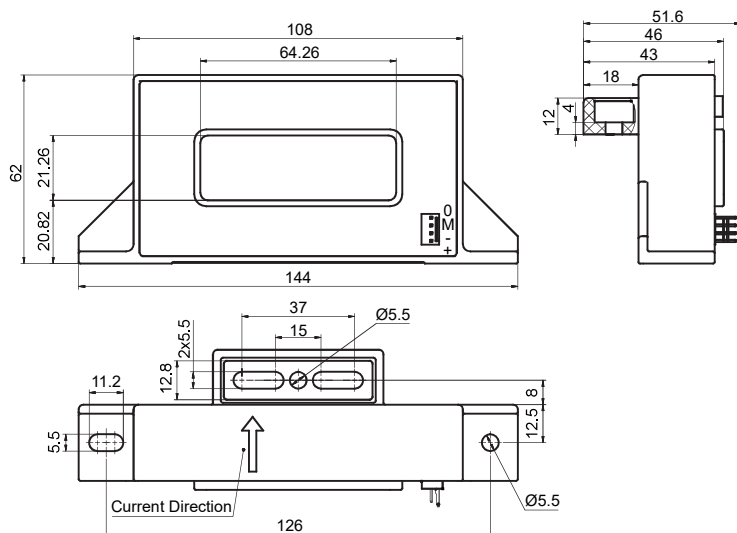
	HFCH	-P	19	□□□	-V	4	-D	15	(XXX)
Product Part NO.	CH:Hall effect sensor								
Working Principle	P: Open Loop Sensor								
Sequence number	19: 19								
Nominal current	500:500A 600:600A 850:850A 1000:1000A 1500:1500A 2000:2000A 2500:2500A								
Output method	V: Voltage output								
Typical output value	4: 4V								
Operating Voltage Mode	D: Dual power supplies								
Typical operating voltage	15: 15VDC								
Special code ¹⁾	XXX: Customer special requirement								

Notes: 1) The customer special requirement express as special code after evaluating by Hongfa.

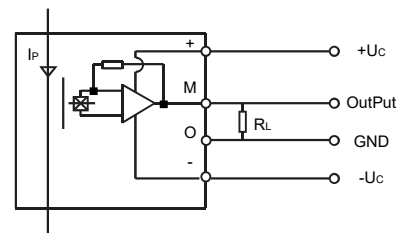
OUTLINE DIMENSIONS, WIRING DIAGRAM

Unit: mm

Outline Dimensions



Wiring Diagram



Notes:

+	(+15V)
-	(-15V)
M	V _{out}
O	GND

NOTES:

- 1) To avoid using current transformer under strong magnetic field, the external magnetic field will cause the accuracy of current transformer to change.
- 2) We could not evaluate all the performance and all the parameters for every possible application field and environment. Thus the user should be in a right position to choose the suitable produce for their own application. If there is any query, please contact HKG for the technical service. However, it is the use's responsibility to determine which product should be used only.
- 3) Operating temperature range in this specification refers to the maximum tolerable temperature range under specific load conditions.
- 4) To maintain the performances of current transformers, please do not make the current transformer drop or be shocked strongly.
- 5) All the performance data listed in the datasheet are the initial values tested under standard testing condition.
- 6) HKG reserves the right to change the product, the customer should confirm this specification before placing the order for the first time, may request us to provide the new specification if necessary.



File No.: 508

**Features**

- Total error 0.5% at(-40°C to 85°C)
- Total error 0.3% at(25°C)
- Offset below 10mA
- Fluxgate current sensor
- Unipolar +12V battery power
- Support for CAN 2.0B protocol

SCOPE OF APPLICATION

HFCF-M08 The family if for battery monitoring applications where high accuracy and very low offset are required. It offers galvanic separation primary circuit and the secondary circuit.

ELECTRICAL DATA (Ta=25°C)

Type	Sym	Min	Typ	Max
Supply voltage	U _c	8V	13.5V	16V
Current consumption @I _p =0A	I _c		30mA	40mA
Current consumption @I _p =500A	I _c			160mA
Ambient operating temperature	T _A	-40°C		85°C
Primary nominal DC or current rms	I _{PN}	-500A		500A
Current clamping value	I _{PM}	-530A		530A
Linearity error	ε _L		0.1%	
Output noise			±10mA	
Start-up time	t _{start}		150ms	
Seting time after over Load	t _{start}		20ms	

INSULATION COORDINATION

Parameter	Sym	Value
Insulation resistance	R _{INS}	>500MΩ
Insulation strength	V _d	2.5 kV(50HZ, 1minute)
Creepage distance	d _{cp}	7.2 mm
Clearance	d _{ci}	6.75 mm

RESIDUAL CURRENT RELATED CHARACTERISTICS

Parameter	Sym	Value	Conditions
Load-dump over-voltage	U _c	32	400ms
Over-voltage	U _c	24	1 minute
Reverse polarity	U _c	-16	1 minute
Minimum supply voltage	U _{cmin}	8	Continuous not operating
Maximum supply voltage	U _{cmax}	16	Continuous not operating



HONGFA CURRENT TRANSFORMER
ISO9001 CERTIFIED

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CHARACTERISTICS

CAN Output specification

Parameter	Bit order	sleep mode	Termination resistor	CAN ID	CAN Speed	Data Length	Type of frame	Message launch type
CAN protocol 2.0 B	big endian (Motorola)	No sleep mode capability	120 ohms termination resistor to be added externally	0x3C2	500Kbps	8 bytes	Standard	Cyclic message period 10±1ms

CAN Output Message Frame

Message Description	Signal description	Start bit	End bit
IP Value: 80000000H=0mA 7FFFFFFFH=-1mA 80000001H=1mA	IP_VALUE	0	31
Error Info (1bit) 0=Normal; 1=Failure	ERROR_INDICATION	32	32
CSM-FAIL (7bits)	ERROR_INFO	33	39
(16bits) 0x4D08	SENSOR_NAME	40	55
(8bits)Software Revision	SW_Revision	56	63

CAN Diagnostic Trouble code

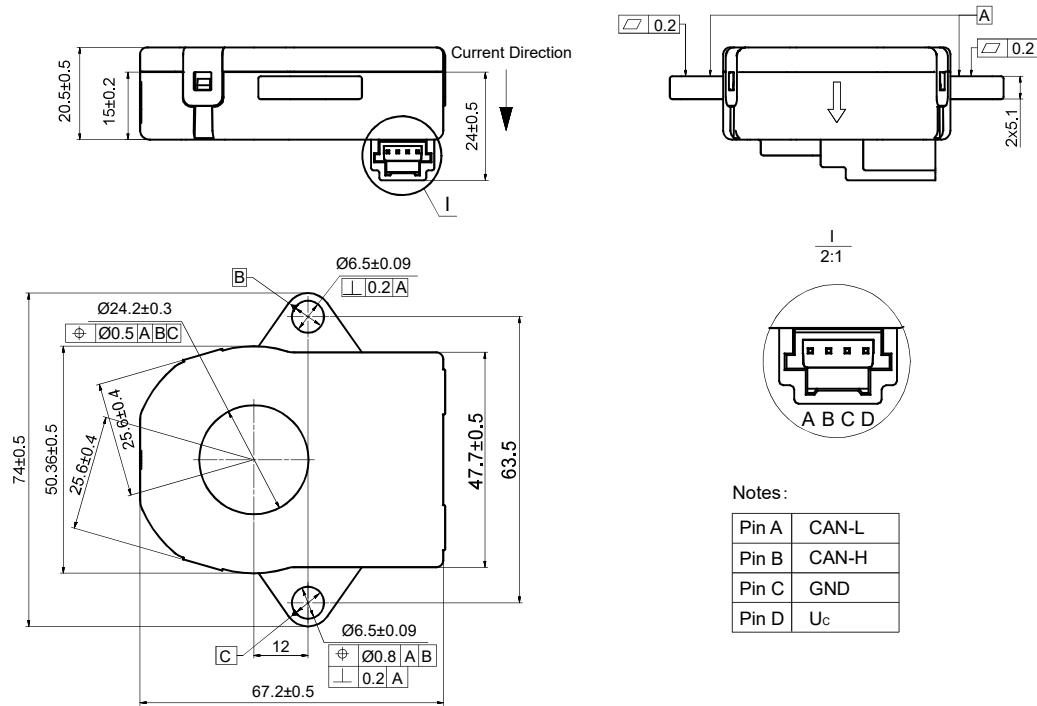
Memory Error	Ip Value	Error Indication	Error Information
Memory Error	0x FFFF FFFF	1	0X40
Supply voltage out of range	0x FFFF FFFF	1	0X46
Fluxgate has no oscillation for more than 20 ms	0x FFFF FFFF	1	0X42
Hardware default ADC channel	0x FFFF FFFF	1	0X47

ORDERING INFORMATION

Product Part NO.	HFCF CF:Fluxgate current sensor	-M	08/	500	-T	S	<input type="checkbox"/>	(XXX)
Working Principle	M: Fluxgate sensor (for measurement)							
Sequence number	08: 08							
Nominal current	500: 500							
Output method	T: Communication signal							
Operating Voltage Mode	S: Single power supply							
Typical operating voltage	12: 12V 24: 24V							
Special code¹⁾	XXX: Customer special requirement							

Notes: 1) The customer special requirement express as special code after evaluating by Hongfa.

Outline Dimensions



Notes:

Pin A	CAN-L
Pin B	CAN-H
Pin C	GND
Pin D	U _c

NOTES:

- 1) To avoid using current transformer under strong magnetic field, the external magnetic field will cause the accuracy of current transformer to change.
- 2) We could not evaluate all the performance and all the parameters for every possible application field and environment. Thus the user should be in a right position to choose the suitable produce for their own application. If there is any query, please contact HKG for the technical service. However, it is the use's responsibility to determine which product should be used only.
- 3) Operating temperature range in this specification refers to the maximum tolerable temperature range under specific load conditions.
- 4) To maintain the performances of current transformers, please do not make the current transformer drop or be shocked strongly.
- 5) All the performance data listed in the datasheet are the initial values tested under standard testing condition.
- 6) HKG reserves the right to change the product, the customer should confirm this specification before placing the order for the first time, may request us to provide the new specification if necessary.

HFCF-F09

FLUXGATE CURRENT SENSOR

CF US

File No.: 2231



File No.: IEC 62955



Features

- Fluxgate current sensor
- All-in-One highly integrated digital residual current action indicator
- On-board residual current protection modules for charging piles
- Meets IEC62752 residual current operating characteristics

SCOPE OF APPLICATION

HFCF-F09 Inspection modules are integrated with instrument transformers.
Measurement of various irregular waveform current under electrically isolated conditions.

ELECTRICAL DATA (Ta=25°C)

Type	Sym	Min	Typ	Max
Supply voltage	V _{DD}	4.85V	5V	5.15V
Power Consumption	P _C			110mW
Voltage input/output, low level	V _L	0V		0.6V
Voltage input/output, high level	V _H	4.2V		5V
Ambient operation temperature	T _A	-40°C		+105°C
Ambient storage temperature	T _S	-40°C		+105°C
Theoretical design life ¹	—		20Yr	
Operating altitude ²	—			4000m

RESIDUAL CURRENT RELATED CHARACTERISTICS

Parameter	Sym	HFCF-F09/ D-S5-1	HFCF-F09/ D-S5-2	HFCF-F09/ D-S5-3
Rated residual operating current (DC)	I _{AN1}	6mA DC	6mA DC	56mA DC
Rated residual operating current (rms)	I _{AN2}	30mA rms	—	20mA rms

ORDERING INFORMATION

Product Part NO.	HFCF	-F	09	D	-S	5	-□	(XXX)
	CF:Fluxgate current sensor							
Working Principle	F: For leakage							
Sequence number	09: 09							
Output method	D: Digital signal							
Operating Voltage Mode	S: Single power supply							
Typical operating voltage	5: 5V							
Programming Code	1: RDC-PD 2: RDC-MD 3: CCID20							
Special code ¹⁾	XXX: Customer special requirement							

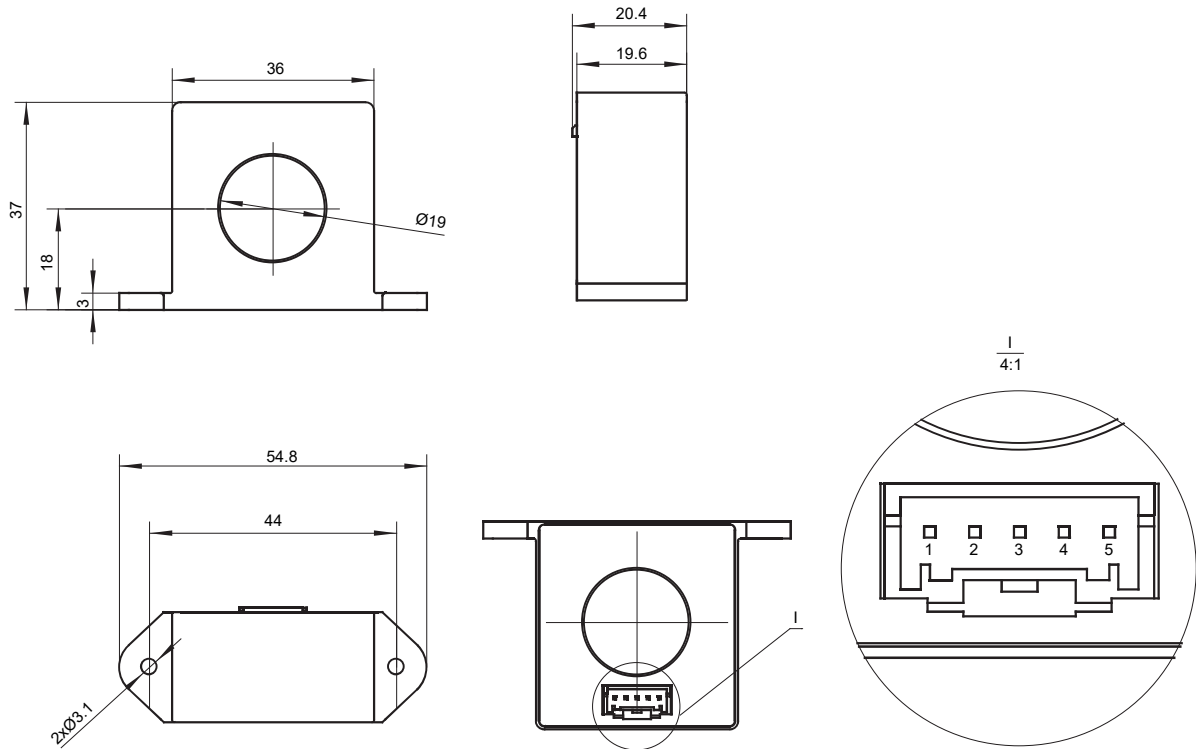
Notes: 1) The customer special requirement express as special code after evaluating by Hongfa.



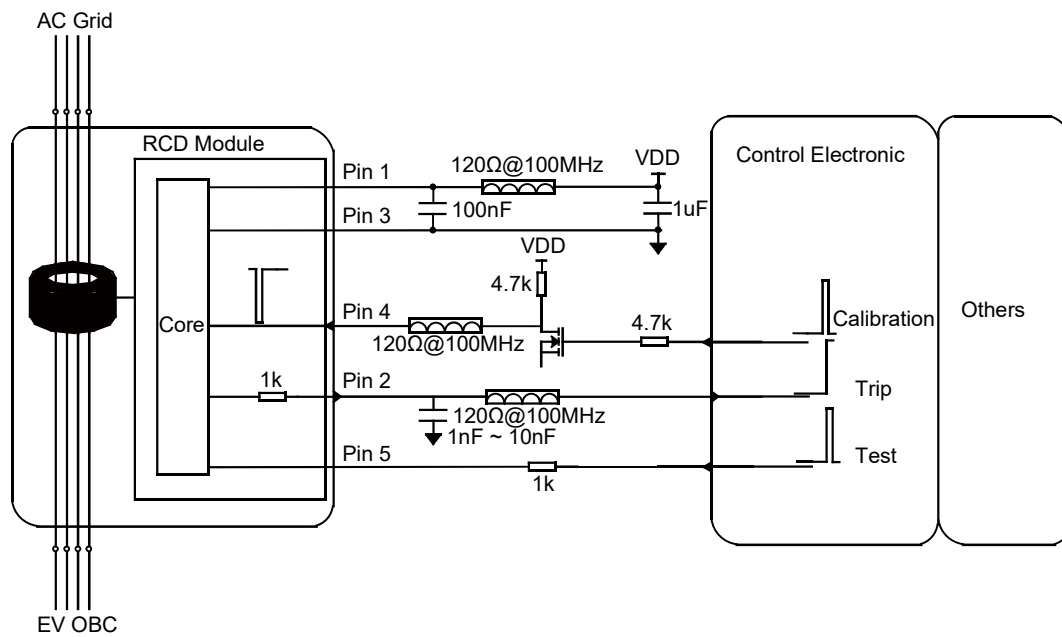
HONGFA CURRENT TRANSFORMER
ISO9001 CERTIFIED

2024 Rev. 1.00

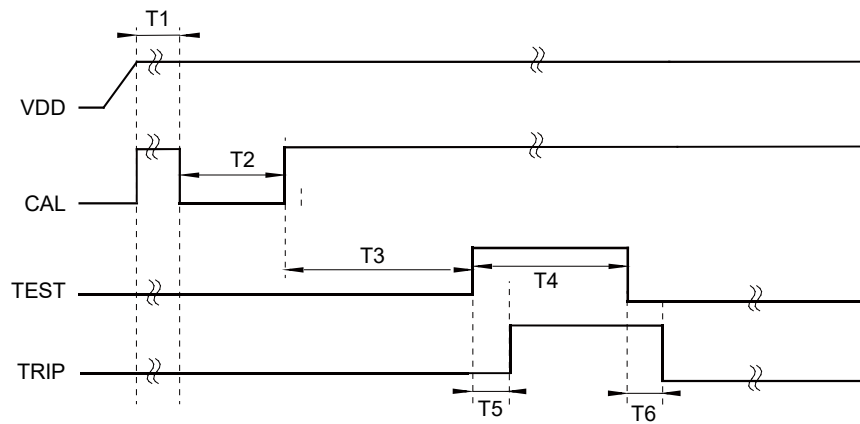
Outline Dimensions



Wiring Diagram



Timing Diagram



- Notes:**
- 1) VDD building up time should be $\leq 15\text{ms}$.
 - 2) T1 as the waiting time, it is suggested $T1 \geq 100\text{ms}$.
 - 3) T2 is the internal calibration command of the system, it is recommended that $50\text{ms} \leq T2 \leq 100\text{ms}$, when the pin low level is greater than 50ms, the product begins to enter the internal calibration.
 - 4) T3 Indicates the time for the system to complete the internal self-check. It is recommended that $T3 \approx 250\text{ms}$.
 - 5) T4 is the output period of TRIP indicating pin after the simulated residual current self-test in the system, and the high level duration is $\approx 1.3\text{s}$. Please start the normal residual current detection workflow after the TRIP signal is identified and turned over again.
 - 6) When VDD drops below VMT, the heartbeat signal switches from a 1KHz 50% duty cycle PWM waveform to a high level, and when VDD rises above VRT, the heartbeat signal reverts to a 1KHz 50% duty cycle PWM waveform.
 - 7) Do not close the main circuit switch during the self-test calibration process ($T1+T2+T3+T4$) to prevent residual current in the line from affecting the self-test calibration process. When the TRIP pin group is finally flipped, you can judge whether the RCD module is working properly for subsequent operations.

NOTES:

- 1) To avoid using current transformer under strong magnetic field, the external magnetic field will cause the accuracy of current transformer to change.
- 2) We could not evaluate all the performance and all the parameters for every possible application field and environment. Thus the user should be in a right position to choose the suitable produce for their own application. If there is any query, please contact HKG for the technical service. However, it is the user's responsibility to determine which product should be used only.
- 3) Operating temperature range in this specification refers to the maximum tolerable temperature range under specific load conditions.
- 4) To maintain the performances of current transformers, please do not make the current transformer drop or be shocked strongly.
- 5) All the performance data listed in the datasheet are the initial values tested under standard testing condition.
- 6) HKG reserves the right to change the product, the customer should confirm this specification before placing the order for the first time, may request us to provide the new specification if necessary.

HFCF-F12

FLUXGATE CURRENT SENSOR



File No.: IEC 62955



Features

- Fluxgate current sensor
- Digital open-drain output and PWM output
- Error output for system fault indication
- All-in-One highly integrated digital residual current action indicator
- On-board residual current protection modules for charging piles
- Meets UL 2231, IEC62752 requirements for residual current operating characteristics

SCOPE OF APPLICATION

HFCF-F12 Inspection modules are integrated with instrument transformers.
Measurement of various irregular waveform current under electrically isolated conditions.

ELECTRICAL DATA (Ta=25°C)

Type	Sym	Min	Typ	Max
Primary nominal RMS current (1phase / 3phase)	I _P		32A	40A
Supply voltage	V _{DD}	4.85V	5V	5.15V
Power Consumption	P _C			110mW
Voltage input/output, low level	V _L	0V		0.6V
Voltage input/output, high level	V _H	4.2V		5V
Ambient operation temperature	T _A	-40°C		+105°C
Ambient storage temperature	T _S	-40°C		+105°C
Theoretical design life ¹	—		20Yr	
Operating altitude ²	—			4000m

INSULATION COORDINATION

Parameter	Sym	HFCF-F12/ D-S5-1
Electrical clearance;Primary-Primary	E _C	≥6.5mm
Electrical clearance;Primary-Secondary	E _C	≥10mm
Creepage distance;Primary-Primary	C _D	≥8mm
Creepage distance;Primary-Secondary	C _D	≥10mm

RESIDUAL CURRENT RELATED CHARACTERISTICS

Parameter	Sym	HFCF-F12/ D-S5-1	HFCF-F12/ D-S5-2	HFCF-F12/ D-S5-3
Rated residual operating current (DC)	I _{AN1}	6mA DC	6mA DC	56mA DC
Rated residual operating current (rms)	I _{AN2}	30mA rms	—	20mA rms



HONGFA CURRENT TRANSFORMER
ISO9001 CERTIFIED

2024 Rev. 1.00

ORDERING INFORMATION

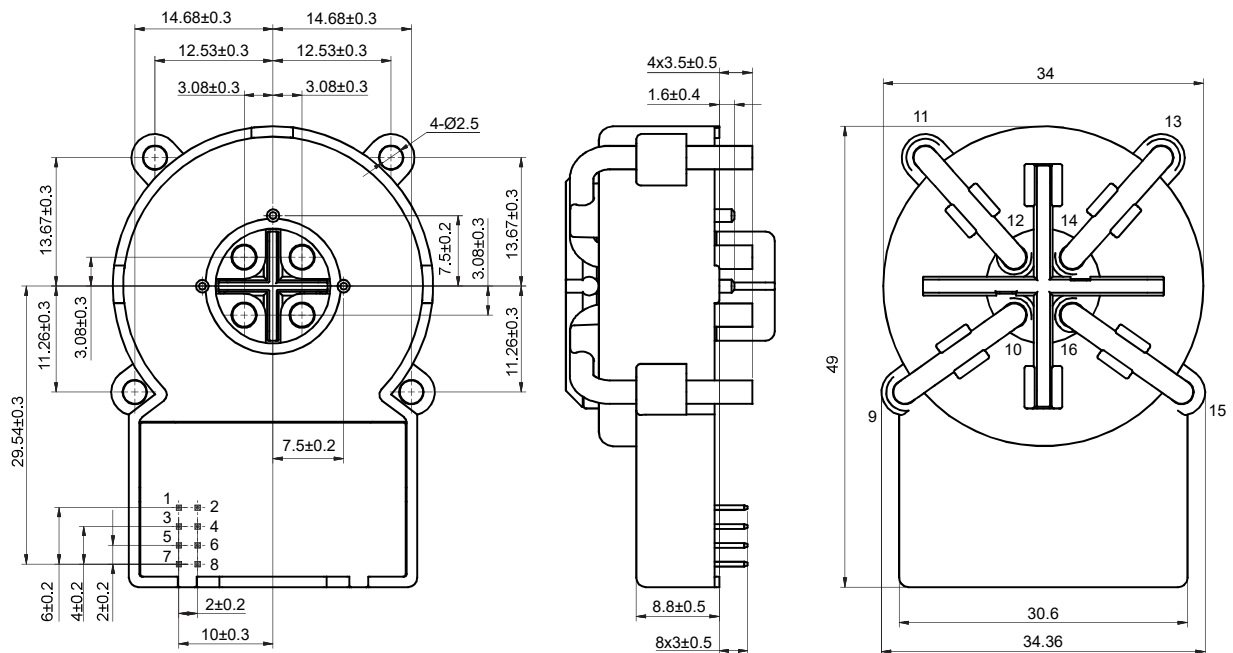
Product Part NO.	HFCF CF: Fluxgate current sensor	-F	12	D	-S	5	-□	(XXX)
Working Principle	F: For leakage							
Sequence number	12: 12							
Output method	D: Digital signal							
Operating Voltage Mode	S: Single power supply							
Typical operating voltage	5: 5V							
Programming Code	1: RDC-PD 2: RDC-MD 3: CCID20							
Special code¹⁾	XXX: Customer special requirement							

Notes: 1) The customer special requirement express as special code after evaluating by Hongfa.

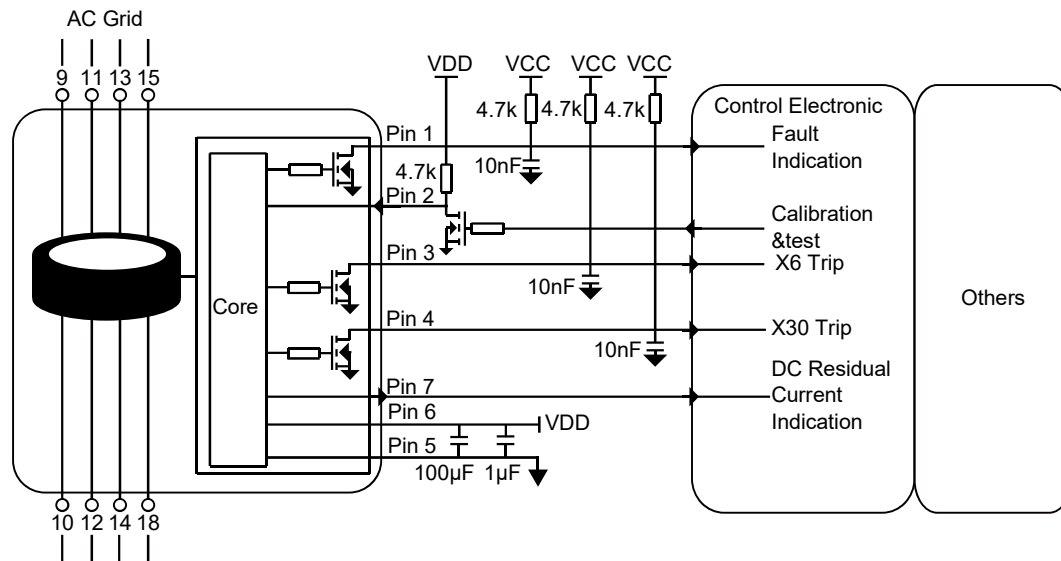
OUTLINE DIMENSIONS, WIRING DIAGRAM, TIMING DIAGRAM

Unit: mm

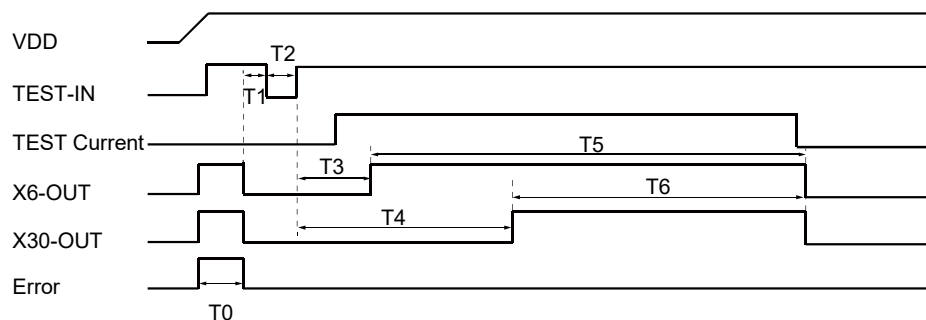
Outline Dimensions



Wiring Diagram



Timing Diagram



- Notes:**
- 1) VDD building up time should be $\leq 15\text{ms}$.
 - 2) T0 as the waiting time for system stabilization, $T0 \approx 270\text{ms}$.
 - 3) T1 as the waiting time, it is suggested $T1 \geq 100\text{ms}$.
 - 4) T2 as the calibration and self-test order time, it is suggested $50\text{ms} \leq T2 \leq 100\text{ms}$.
 - 5) T3 as the waiting time for the self-test DC, $T3 \approx 200\text{ms}$, it is suggested to read X6-OUT after 300ms.
 - 6) T4 as the waiting time for the self-test AC, $T4 \approx 690\text{ms}$, it is suggested to read X30-OUT after 300ms.
 - 7) T5 as the DC self-test indication duration time, $T5 \approx 1580\text{ms}$.
 - 8) T6 as the AC self-test indication duration time, $T6 \approx 1090\text{ms}$.
 - 9) During the self-test procedure, the main circuit must be cut-off to ensure no residual current flowing. After X6-OUT and X30-OUT self-test finished, normal residual current tripping logic can be started.

NOTES:

- 1) To avoid using current transformer under strong magnetic field, the external magnetic field will cause the accuracy of current transformer to change.
- 2) We could not evaluate all the performance and all the parameters for every possible application field and environment. Thus the user should be in a right position to choose the suitable produce for their own application. If there is any query, please contact HKG for the technical service. However, it is the user's responsibility to determine which product should be used only.
- 3) Operating temperature range in this specification refers to the maximum tolerable temperature range under specific load conditions.
- 4) To maintain the performances of current transformers, please do not make the current transformer drop or be shocked strongly.
- 5) All the performance data listed in the datasheet are the initial values tested under standard testing condition.
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HFCF-F22(104)

FLUXGATE CURRENT SENSOR



Features

- Fluxgate current sensor
- All-in-One highly integrated digital residual current action indicator
- On-board residual current protection modules for charging piles
- Meets IEC62955, IEC62752, UL 2231 requirements for residual current operating characteristics

SCOPE OF APPLICATION

HFCF-F22 Inspection modules are integrated with instrument transformers.
Measurement of various irregular waveform current under electrically isolated conditions.

ELECTRICAL DATA (Ta=25°C)

Type	Sym	Min	Typ	Max
Supply voltage	V _{DD}	4.85V	5V	5.15V
Power Consumption	P _c			110mW
Voltage input/output, low level	V _L	0V		0.6V
Voltage input/output, high level	V _H	4.2V		5V
Ambient operation temperature	T _A	-40°C		+105°C
Ambient storage temperature	T _S	-40°C		+105°C
Theoretical design life ¹	—		20Yr	
Operating altitude ²	—			4000m

RESIDUAL CURRENT RELATED CHARACTERISTICS

Parameter	Sym	HFCF-F22/D-S5-1(104)	HFCF-F22/D-S5-3(104)
Rated residual operating current (DC)	I _{AN1}	6mA DC	56mA DC
Rated residual operating current (rms)	I _{AN2}	30mA rms	20mA rms

ORDERING INFORMATION

Product Part NO.	HFCF	-F	22	D	-S	5	-□	(104)
	CF: Fluxgate current sensor							
Working Principle	F: For leakage							
Sequence number	22: 22							
Output method	D: Digital signal							
Operating Voltage Mode	S: Single power supply							
Typical operating voltage	5: 5V							
Programming Code	1: RDC-PD 3: CCID20							
Special code ¹⁾	XXX: Customer special requirement							

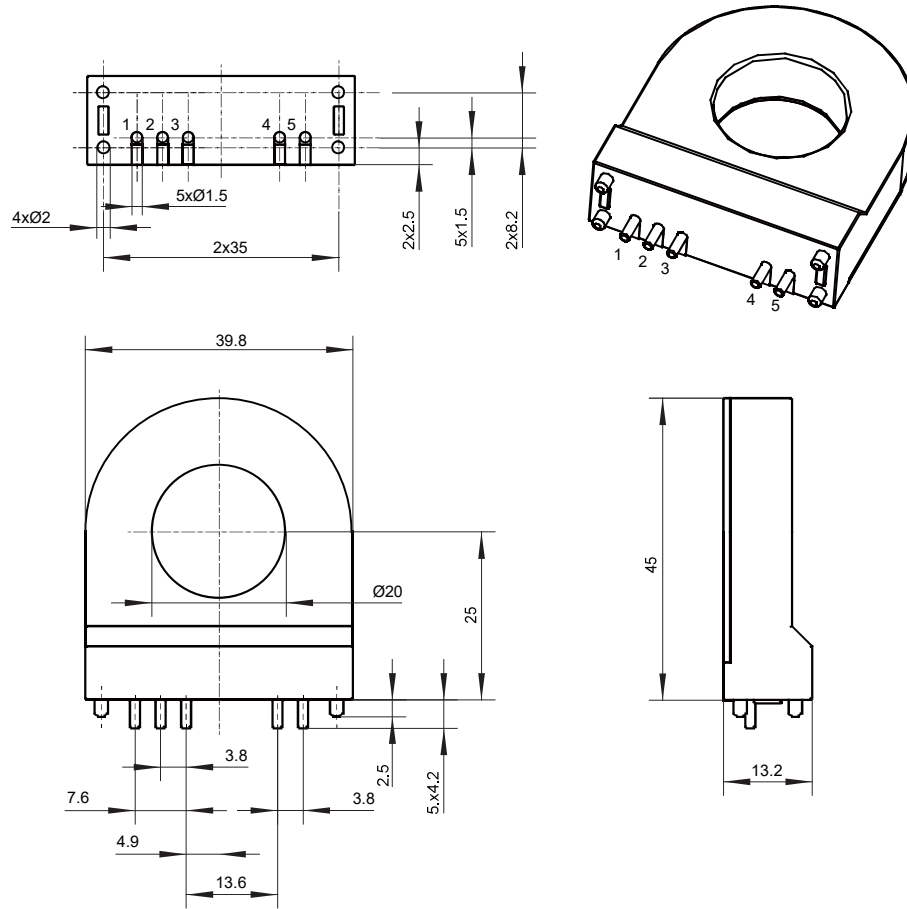
Notes: 1) The customer special requirement express as special code after evaluating by Hongfa.



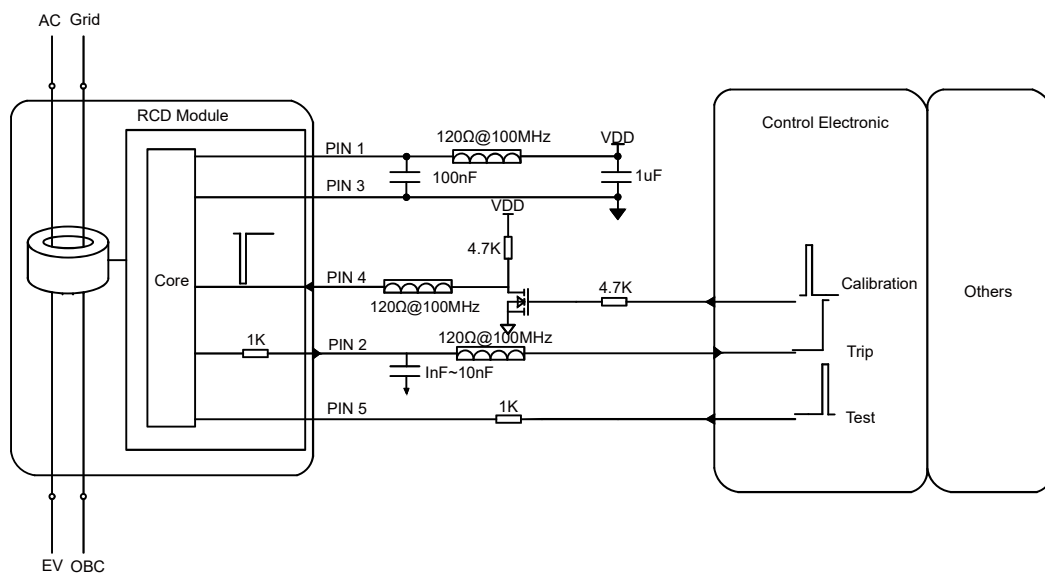
HONGFA CURRENT TRANSFORMER
ISO9001 CERTIFIED

2024 Rev. 1.00

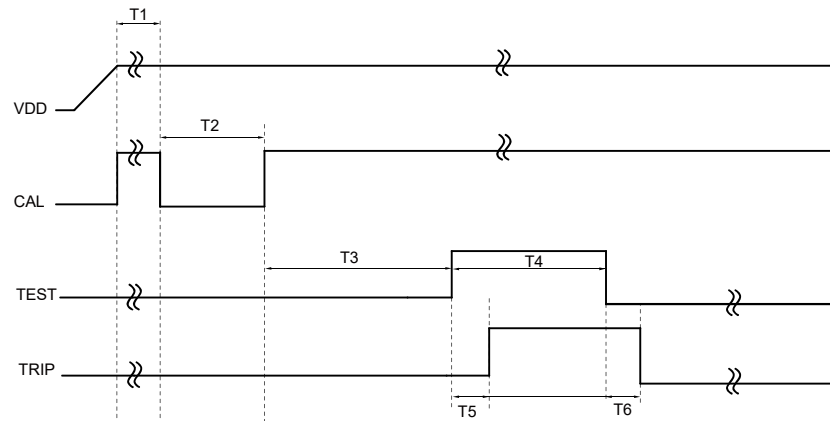
Outline Dimensions



Wiring Diagram



Timing Diagram



- Notes:**
- 1) VDD building up time should be $\leq 15\text{ms}$.
 - 2) T1 as the waiting time, it is suggested $T1 \geq 100\text{ms}$.
 - 3) T2 as the calibration and self-test order time, it is suggested $50\text{ms} \leq T2 \leq 100\text{ms}$.
 - 4) T3 indicates the time to wait for the completion of calibration, $T3 \geq 500\text{ms}$.
 - 5) T4 indicates the time for enabling the self-test signal, $T4 \approx 400\text{ms}$.
 - 6) T5 indicates the delay time of the action signal, and $T5 \approx 40\text{ms}$. It is recommended to wait 100ms after the end of T5 to detect the action signal.
 - 7) T6 indicates the maintenance time of the action signal after the self-test, and $T6 \approx 50\text{ms}$. It is recommended that the action signal be detected after another 100ms after the end of T6.
 - 8) Do not close the main loop switch in the process of self-check calibration, namely $(T1+T2+T3+T4)$, so as to prevent the residual current in the line from affecting the self-check calibration Quasi-procedure. When you finally receive the TRIP pin group flip, you can determine whether the RCD module is working properly for subsequent operations.

NOTES:

- 1) To avoid using current transformer under strong magnetic field, the external magnetic field will cause the accuracy of current transformer to change.
- 2) We could not evaluate all the performance and all the parameters for every possible application field and environment. Thus the user should be in a right position to choose the suitable produce for their own application. If there is any query, please contact HKG for the technical service. However, it is the use's responsibility to determine which product should be used only.
- 3) Operating temperature range in this specification refers to the maximum tolerable temperature range under specific load conditions.
- 4) To maintain the performances of current transformers, please do not make the current transformer drop or be shocked strongly.
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HFCE-F22

FLUXGATE CURRENT SENSOR



File No.: IEC 62955



Features

- Fluxgate current sensor
- All-in-One highly integrated digital residual current action indicator
- On-board residual current protection modules for charging piles
- Meets IEC62752 residual current operating characteristics

SCOPE OF APPLICATION

HFCE-F22 Inspection modules are integrated with instrument transformers.
Measurement of various irregular waveform current under electrically isolated conditions.

ELECTRICAL DATA (Ta=25°C)

Type	Sym	Min	Typ	Max
Supply voltage	V _{DD}	4.85V	5V	5.15V
Power Consumption	P _c			110mW
Voltage input/output, low level	V _L	0V		0.6V
Voltage input/output, high level	V _H	4.2V		5V
Ambient operation temperature	T _A	-40°C		+105°C
Ambient storage temperature	T _S	-40°C		+105°C
Theoretical design life ¹	—		20Yr	
Operating altitude ²	—			4000m

RESIDUAL CURRENT RELATED CHARACTERISTICS

Parameter	Sym	HFCE-F22/ D-S5-1
Rated residual operating current (DC)	I _{AN1}	6mA DC
Rated residual operating current (rms)	I _{AN2}	30mA rms

ORDERING INFORMATION

Product Part NO.	HFCE	-F	22	D	-S	5	-□	(XXX)
	CF:Fluxgate current sensor							
Working Principle	F: For leakage							
Sequence number	22: 22							
Output method	D: Digital signal							
Operating Voltage Mode	S: Single power supply							
Typical operating voltage	5: 5V							
Programming Code	1: RDC-PD 3: CCID20							
Special code ¹⁾	XXX: Customer special requirement							

Notes: 1) The customer special requirement express as special code after evaluating by Hongfa.



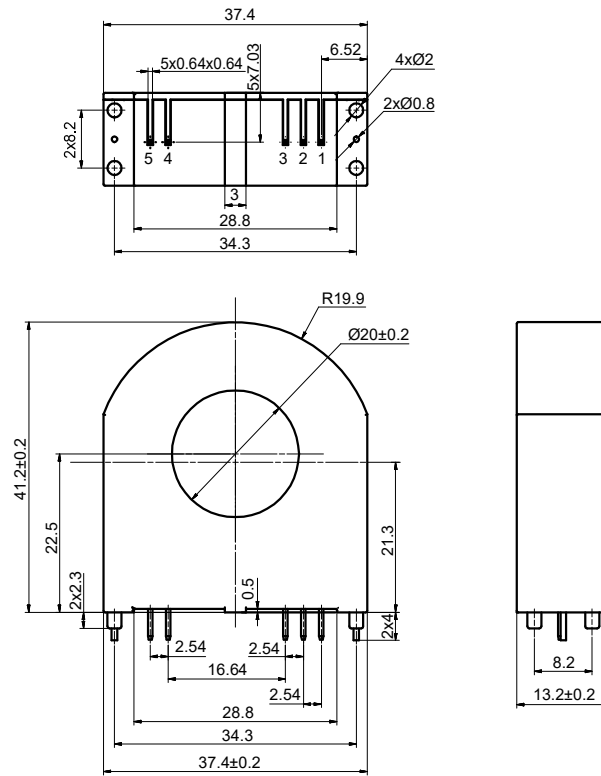
HONGFA CURRENT TRANSFORMER
ISO9001 CERTIFIED

2024 Rev. 1.00

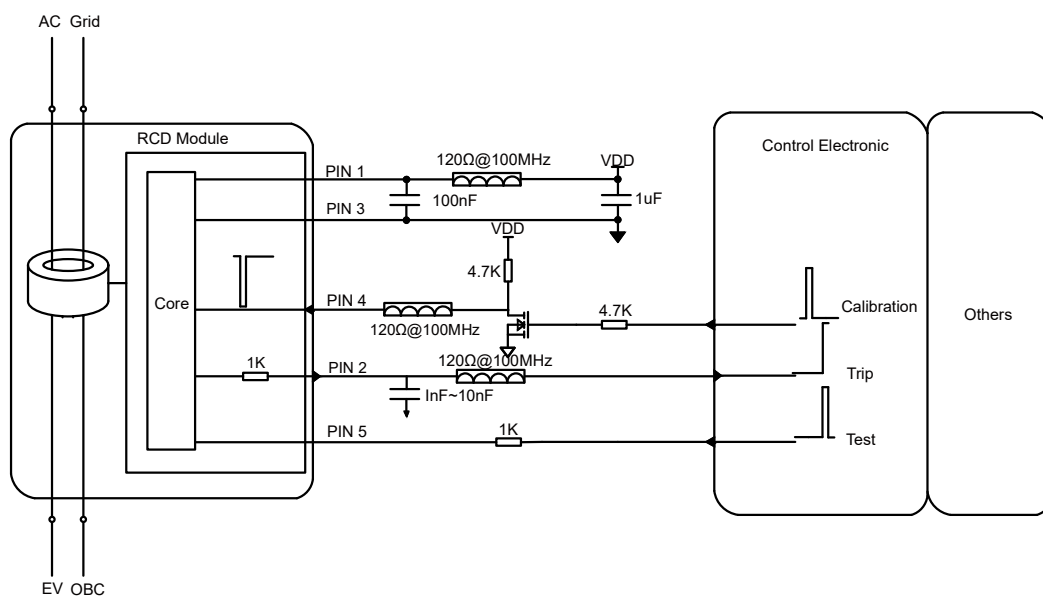
OUTLINE DIMENSIONS, WIRING DIAGRAM, TIMING DIAGRAM

Unit: mm

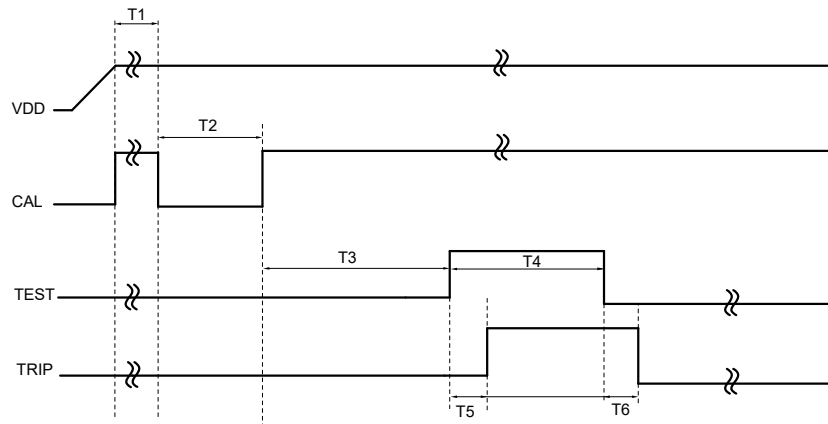
Outline Dimensions



Wiring Diagram



Timing Diagram



- Notes:**
- 1) VDD building up time should be $\leq 15\text{ms}$.
 - 2) T1 as the waiting time, it is suggested $T1 \geq 100\text{ms}$.
 - 3) T2 as the calibration and self-test order time, it is suggested $50\text{ms} \leq T2 \leq 100\text{ms}$.
 - 4) T3 indicates the time to wait for the completion of calibration, $T3 \geq 500\text{ms}$.
 - 5) T4 indicates the time for enabling the self-test signal, $T4 \approx 400\text{ms}$.
 - 6) T5 indicates the delay time of the action signal, and $T5 \approx 40\text{ms}$. It is recommended to wait 100ms after the end of T5 to detect the action signal.
 - 7) T6 indicates the maintenance time of the action signal after the self-test, and $T6 \approx 50\text{ms}$. It is recommended that the action signal be detected after another 100ms after the end of T6.
 - 8) Do not close the main loop switch in the process of self-check calibration, namely $(T1+T2+T3+T4)$, so as to prevent the residual current in the line from affecting the self-check calibration Quasi-procedure. When you finally receive the TRIP pin group flip, you can determine whether the RCD module is working properly for subsequent operations.

NOTES:

- 1) To avoid using current transformer under strong magnetic field, the external magnetic field will cause the accuracy of current transformer to change.
- 2) We could not evaluate all the performance and all the parameters for every possible application field and environment. Thus the user should be in a right position to choose the suitable produce for their own application. If there is any query, please contact HKG for the technical service. However, it is the use's responsibility to determine which product should be used only.
- 3) Operating temperature range in this specification refers to the maximum tolerable temperature range under specific load conditions.
- 4) To maintain the performances of current transformers, please do not make the current transformer drop or be shocked strongly.
- 5) All the performance data listed in the datasheet are the initial values tested under standard testing condition.
- 6) HKG reserves the right to change the product, the customer should confirm this specification before placing the order for the first time, may request us to provide the new specification if necessary.

Packing list

Type	Packing Method	Tube Size L x W x H cm	Carton Size L x W x H cm	QTY/CTN pcs	Approx. N.W. kg	Approx. G.W. kg	Stacking Layers Limit n
HFCT-M02	6 pcs/box	21.5 x 15 x 7	49 x 31.7 x 28.2	96	26.88	28.24	4
HFCT-M03	24 pcs/reel	340 x 250 x 50	36.5 x 27.5 x 24.5	120	5.94	7.21	5
HFCT-M061	24 pcs/reel	25 x 340 x 52	36 x 27.5 x 25	120	7.80	8.15	5
HFCT-M406	60 pcs/reel	35 x 27 x 1.9	36.5 x 27.5 x 24.5	490	6.62	8.75	6
HFCT-K10	4 pcs/box	13 x 9.3 x 3.5	47.5 x 26 x 20.5	200	10.10	11.30	5
HFCT-K16	3 pcs/box	13 x 9.3 x 3.5	47.5 x 26 x 20.5	150	11.70	13.40	5
HFCT-D02	28 pcs/reel	35 x 27 x 4.5	36.5 x 27.5 x 24.5	308	10.62	11.81	11
HFCH-L01	30 pcs/reel	34 x 25 x 2.2	37.5 x 28.5 x 29	40	1.52	3.32	14
HFCH-L02	30 pcs/reel	35.5 x 25.5 x 4.2	37.5 x 28.5 x 29	180	6.16	7.96	6
HFCH-C09	70 pcs/reel	29 x 23 x 2.5	32 x 26 x 29	700	3.54	5.34	10
HFCH-C09(120A)	70 pcs/reel	29 x 23 x 2.5	32 x 26 x 29	700	3.89	5.69	10
HFCH-C18(0.625V)	30 pcs/reel	35.5 x 25.5 x 4.2	37.5 x 28.5 x 29	180	11.20	13.00	6
HFCH-C18(2V)	30 pcs/reel	35.5 x 25.5 x 4.2	37.5 x 28.5 x 29	180	10.94	12.74	6
HFCH-P19	3 pcs/tray	35 x 26 x 6.5	36 x 27 x 24.5	18	7.61	8.50	6
HFCH-F08	12 pcs/reel	35.5 x 25.5 x 3.1	37.5 x 28.5 x 29	96	6.07	7.87	8
HFCH-F09	25 pcs/reel	35.5 x 25.5 x 2.7	37.5 x 28.5 x 29	275	5.34	7.14	11
HFCA-F12	28 pcs/reel	35.5 x 25.5 x 2.7	37.5 x 28.5 x 29	252	7.90	9.70	9
HFCH-F22(104)	18 pcs/reel	34 x 25 x 2.2	37.5 x 28.5 x 29	252	5.19	6.99	14
HFCH-F22	28 pcs/reel	34 x 25 x 2.05	37.5 x 28.5 x 29	420	8.65	10.45	15

Notes:1)This above list is the typical packing specification. Specifications and dimensions in this catalog are subject to change without notice.



HONGFA CURRENT TRANSFORMER
ISO9001 CERTIFIED

2025 Rev. 1.00

CURRENT SENSOR PRECAUTIONS

To ensure proper use of the product, it is essential to select the appropriate product, understand its characteristics, and adhere to the following precautions to guarantee reliability during operation.

I. ENVIRONMENTAL CONDITIONS FOR USE, STORAGE, AND TRANSPORTATION:

1. Storage Conditions:
 - Storage Temperature: Room temperature
 - Relative Humidity: 10% RH to 80% RH
 - Atmospheric Pressure: 86 kPa to 106 kPa
2. Avoid Using the Product Near:
 - Strong magnetic fields (e.g., transformers, magnets)
 - Heat sources
 - Ultrasonic vibrations or other vibrational conditions, as these may degrade performance.

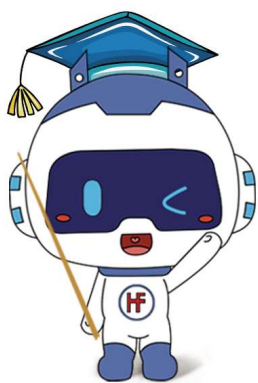
II. SAFETY PRECAUTIONS:

1. Installation and Maintenance: Always disconnect the power supply before installing, maintaining, or troubleshooting sensors (including connectors, sockets, etc.).
2. Electrical Connections: Refer to the wiring diagram in the datasheet before connecting load terminals. Incorrect wiring may damage the product.
3. Damaged Products: Do not reuse the product if it has been accidentally dropped.
4. Compliance: All products comply with RoHS requirements.

III. APPLICATION GUIDELINES

1. Avoid using current sensors near strong magnetic fields, as this may affect measurement accuracy.
2. Performance Variability:
 - We cannot evaluate all potential applications or environmental impacts. Performance may vary depending on usage conditions, external factors, or electromagnetic interference.
 - Customers must verify suitability for their specific applications.
 - Ensure the product is not subjected to drops, excessive shock, or vibration to maintain accuracy and reliability.
3. All performance data in the datasheet reflect initial values obtained under standard testing conditions.
4. HPT reserves the right to modify product specifications without prior notice. Confirm specifications before placing orders.
5. Contact HPT for technical queries or any other requirement.





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