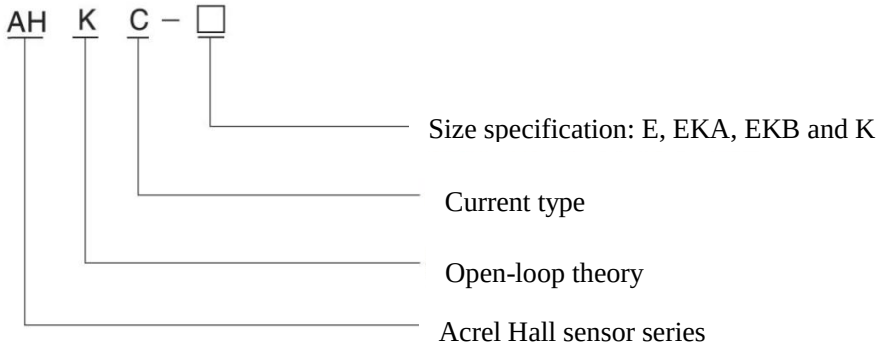
1.Hall sensor

Hall current sensors are mainly used to isolate and convert AC, DC, pulse and other complex signals. After signacontrol of current signalsls are converted according to the Hall Effect Theory, they can be directly acquired by AD, DSP, PLC, secondary instruments and other devices. Hall current sensors are widely applicable for acquisition and feedback in the current monitoring, battery application, inverter, solar power management, direct current cabinet, DC motor drive, electroplating, welding, frequency converter, UPS servo control systems. They feature the quick response, wide range of measurement, high precision, strong overload capacity, good linearity and excellent anti-interference performance.

1.1 Open-loop Hall current sensor

1.1.1 Explanation for type



1.1.2 Technical data

Technical parameters		Data	
		Split/closed open-loop	Hall (true RMS)
Output	Nominal value	Voltage: ±5V/±4V	Current: 4-20mA
	Zero offset voltage (current)	Voltage: ±20mV	Current: ±0.05mA
	Offset voltage (current) drift	Voltage: ≤±1.0mV/℃	Current: ±0.04mA/℃
	Linearity	≤0.2%FS	
Power voltage		DC±15V	DC 24V
Bandwidth		0-20kHz	
Response time		≤5us	≤1ms
Dielectric strength		Permissible 2500VAC between input/ output and power supply at the power frequency	
Accuracy class		1.0	
Ambient conditions	Temperature	Operating temperature:-25℃-+70℃; storage temperature: -40℃-+85℃	
	Humidity	≤95%RH, no dew, no aggressive gas	
	Altitude	≤3500m	

1.1.3 Split open-loop hall current sensor

1.1.3.1 Spec. and size (unit： mm)

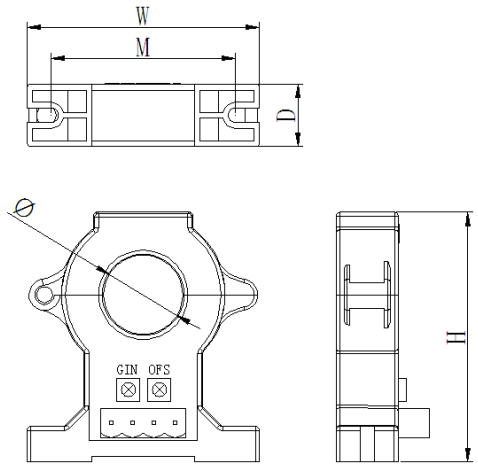


Fig.1

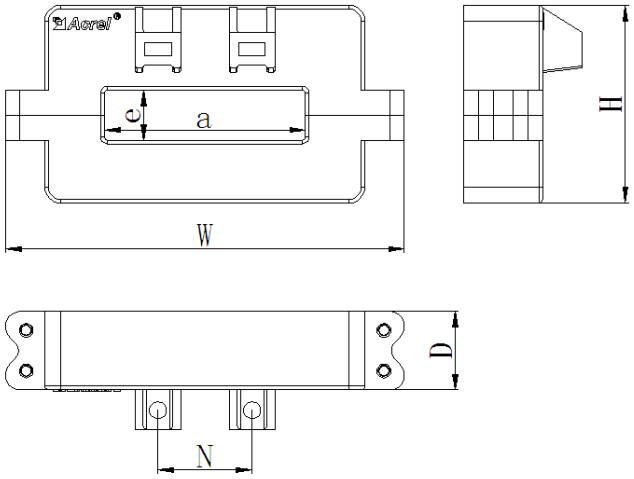


Fig.2

Size / Specification	Outline size			Through size			Mounting size		Figure
	W	H	D	a	e	Φ	M	N	
AHKC-EKA	60	64	16	/	/	20	47	/	Fig.1
AHKC-EKAA	60	64	16	/	/	20	47	/	Fig.1
AHKC-EKDA	60	64	16	/	/	20	47	/	Fig.1
AHKC-EKB	100	102	24	/	/	40	80	/	Fig.1
AHKC-EKBA	100	102	24	/	/	40	80	/	Fig.1
AHKC-EKBDA	100	102	24	/	/	40	80	/	Fig.1
AHKC-K	127	63	25	64	16	/	/	30	Fig.2
AHKC-KAA	127	63	25	64	16	/	/	30	Fig.2
AHKC-KDA	127	63	25	64	16	/	/	30	Fig.2
AHKC-H	149	79	25	82	32	/	/	46	Fig.2
AHKC-KA	176	95.5	29	104	36	/	/	60	Fig.2
AHKC-HB	204	111.5	29	132	52	/	/	48 × 2	Fig.2

1.1.3.2 Cross-reference tables of spec. -parameter

Specification	Rated current	Power supply	Rated output	Measuring aperture (mm)	Precision degree
AHKC-EKA	0～(20-500)A	±15V	5V	φ 20	1
AHKC-EKAA	DC 0～(50-500)A	12V/24V	4～20mA	φ 20	1
AHKC-EKDA	AC 0～(50-500)A	12V/24V	4～20mA	φ 20	1
AHKC-EKB	0～(200-1000)A	±15V	5V	φ 40	1
AHKC-EKBA	DC 0～(200-1000)A	12V/24V	4～20mA	φ 40	1

AHKC-EKBDA	AC 0～(200～1000)A	12V/24V	4～20mA	φ 40	1
AHKC-K	0～(400-2000)A	±15V	5V	64×16	1
AHKC-KAA	DC 0～(400-2000)A	12V/24V	4～20mA	64×16	1
AHKC-KDA	AC 0～(400-2000)A	12V/24V	4～20mA	64×16	1
AHKC-H	0～(500-3000)A	±15V	5V	82×32	1
AHKC-KA	0～(500-5000)A	±15V	5V	104×36	1
AHKC-HB	0～(2000-20000)A	±15V	5V	132×52	1

Note: Rated current unlabeled indicates that AC and DC input current can be measured, please specify when ordering.

1.1.4 Closed hall current sensor

1.1.4.1 Spec. and size (unit：mm)

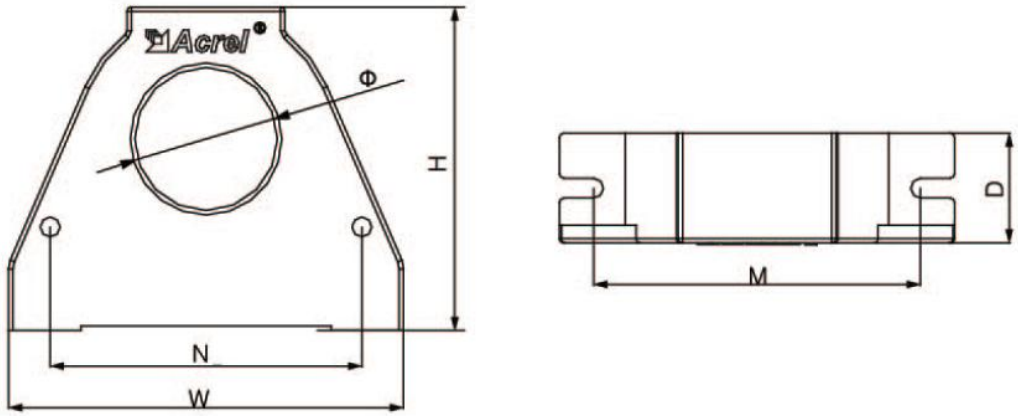


Fig.1

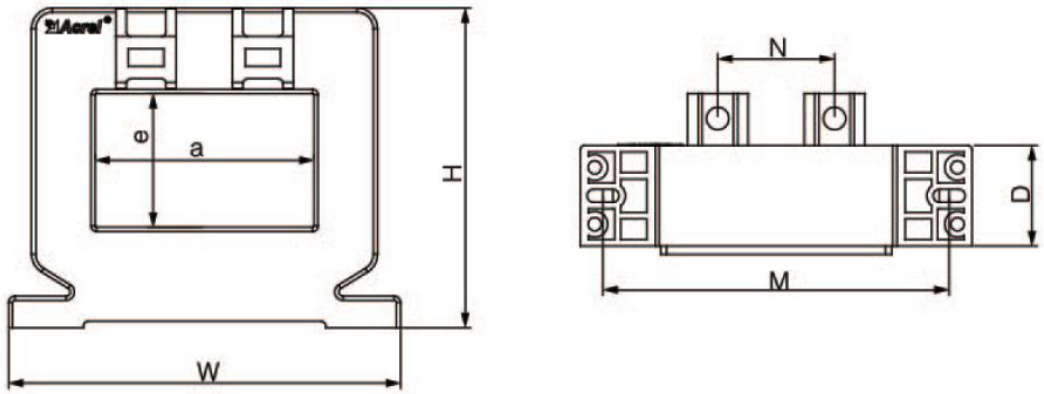


Fig.2

Size / Specification	Outline size(mm)			Through size(mm)			Mounting size(mm)		Figure
	W	H	D	a	e	Φ	M	N	
AHKC-E	53	72	16	/	/	21	47	/	Fig.1
AHKC-LT	90	73.5	25	/	/	32.5	74.5	71	Fig.1
AHKC-BS	43	32.5	19	20.5	10.5	/	/	/	Fig.2
AHKC-BSA	43	32.5	19	20.5	10.5	/	/	/	Fig.2
AHKC-F	74	57	22	43	13	/	/	22	Fig.2
AHKC-FA	94	60.5	26.5	52	15	/	83	28	Fig.2
AHKC-HAT	94	76.5	24	52.5	32	/	83	28	Fig.2

1.1.4.2 Cross-reference tables of spec. -parameter

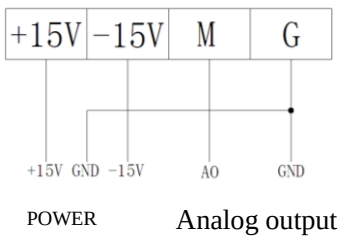
Specification	Rated current	Power supply	Rated output	Measuring aperture (mm)	Precision degree
AHKC-E	0～(20-500)A	±15V	5V	φ 20	1
AHKC-LT	0～(100-800)A	±15V	5V	φ 32.5	1
AHKC-BS	0～(20-500)A	±15V	5V	20.5*10.5	1
AHKC-BSA	DC 0～(50-500)A	12V/15V/24V	4～20mA	20.5*10.5	1
AHKC-F	0～(200-1000)A	±15V	5V	43*13	1
AHKC-FA	0～(200-1500)A	±15V	5V	52*15	1
AHKC-HAT	0～(400-2000)A	±15V	5V	52*32	1

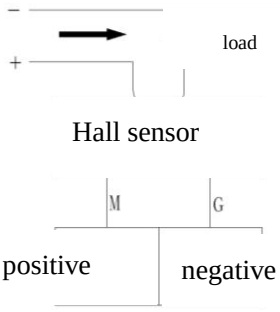
Note: Rated current unlabeled indicates that AC and DC input current can be measured, please specify when ordering.

1.1.5 Wiring Method

1.1.5.1 Split/closed open-loop hall current sensor

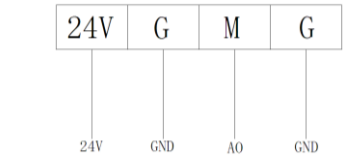
- **Definition of wiring terminals**



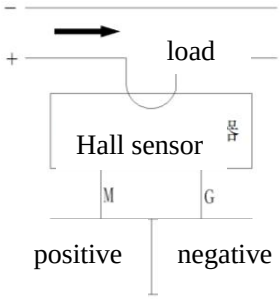


1.1.5.2 Hall current sensor (true RMS)

- Definition of wiring terminals



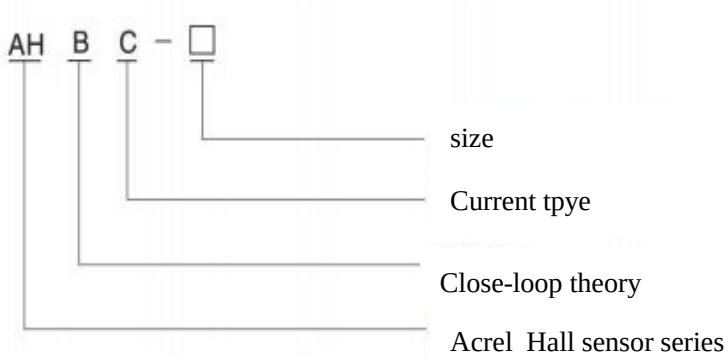
Power supply Analog output



2 Closed-loop Hall current sensor

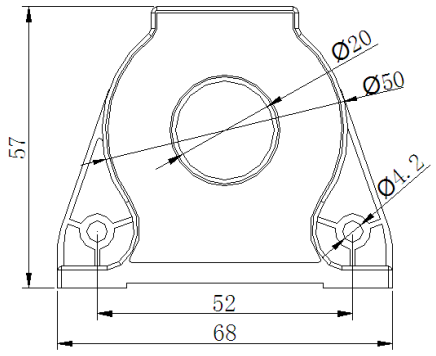
Closed-loop Hall current sensor is also called Hall magnetic balancing current sensor. It incorporates the mentioned theory with magnetic balancing theory. In other words, the ferromagnetic field concentrator concentrates the magnetic field generated by primary current and applies it to the Hall component. Then the voltage signal output from Hall component is amplified and becomes the input of power amplifier. The offset current output flows through the secondary compensating coil. The magnetic field generated by secondary coil is opposite to the field generated by primary current. In such way, the primary field is compensated and the Hall output is reduced gradually. When the primary field is equivalent to the secondary one and the offset current keeps stable, it is the magnetic balancing.This circuit mainly consists of electromagnetism conversion component, circuit amplifier and drive compensating circuit.

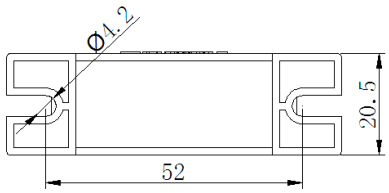
2.1 Explanation for type



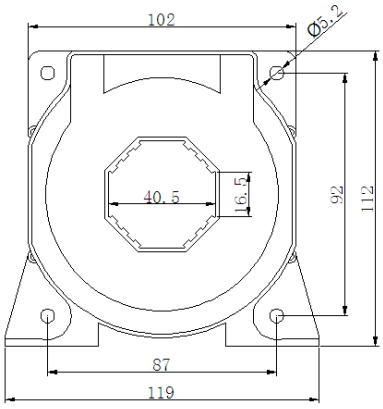
2.2 Spec. and size (unit： mm)

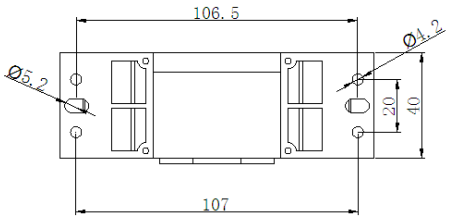
2.2.1 Outline size of AHBC-LTA



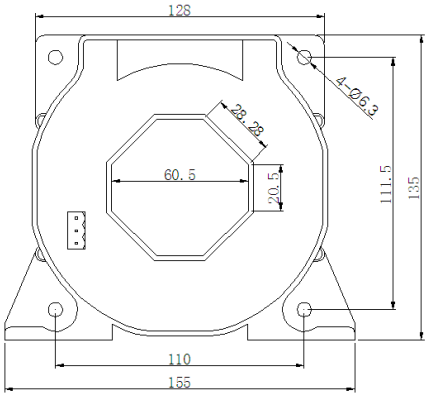


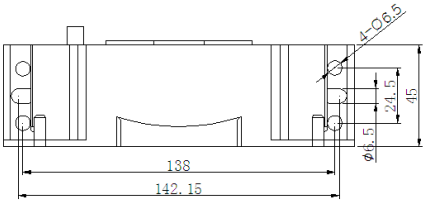
2.2.2 Outline size of AHBC-LT1005





2.2.3 Outline size of AHBC-LF





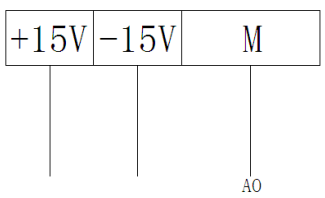
2.3 Cross-reference tables of spec. -parameter

Specification	Rated current	Power supply	Rated output	Measuring aperture (mm)	Precision degree
AHBC-LTA	100～300A	±15V	50mA /100mA	φ 20	0.5
AHBC-LT1005	1000A	±15V	200mA	/	0.5
AHBC-LF	2000A	±15V	400mA	/	0.5

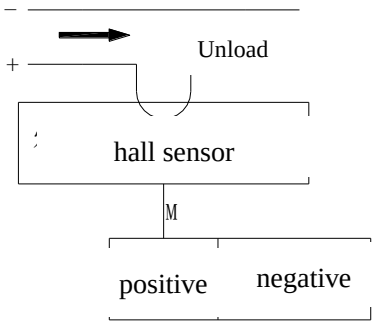
Note: AC and DC input current can be measured, please specify when ordering.

2.4 Wiring method

- Definition of wiring terminals



power supply Analog output



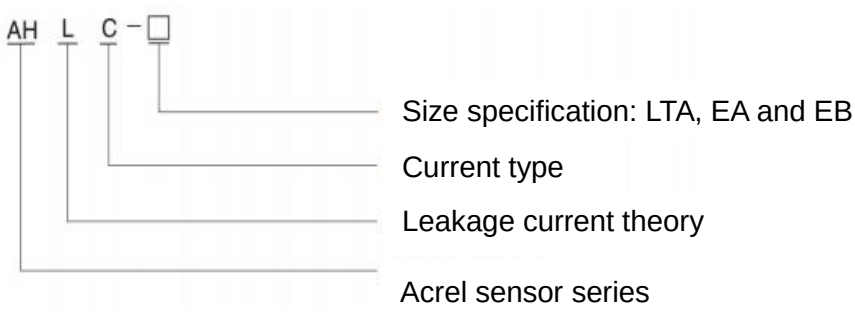
Note: 1. Analog output GND must be connected with Power Ground.

2. Please select the correct current flow direction.

2.5 DC leakage current sensor

DC leakage current sensor is a measuring module that converts the measured direct current into the proportional direct current or voltage signal according to the flux gate theory and the input side is highly insulated from the output side. Typical outputs include 4-20mA, DC0-5V and DC0-10V signals. These standard signals can be acquired by various devices such as PLC, RTU and DAS card and used for different current monitoring applications. leakage current transformerS surround the outlet + and – of DC circuit. It detects output signals of sensors in circuit branches. If the insulation in circuit branches is normal, the current passing the sensor must be equal in the opposite direction. The output signal is zero. If a circuit branch is grounded, the differential current passes the leakage current transformer and the output of sensor is not zero.Therefore, it is possible to identify the grounded branch in the DC system by detecting output signals from circuit branches.The theory guarantees the accurate line identification and prevents the influence of distributed capacitance.

2.5.1 Explanation for type



2.5.2 Spec. and size (unit：mm)

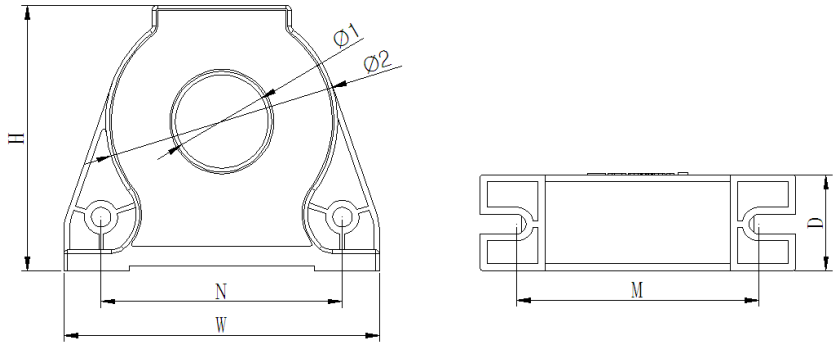


Fig.1

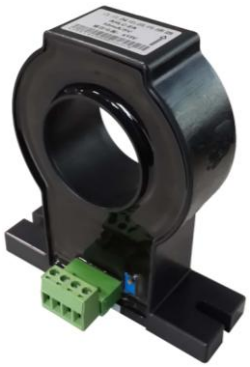


Fig.2

Fig.3

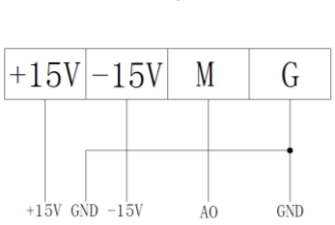
Size / specification	Outline size(mm)				Through size(mm)	Mounting size(mm)		Figure
	W	H	D	Φ2	Φ1	M	N	
AHLC-LTA	68	57	20	50	20	52	52	Fig.1
AHLC-EA	100	108	30	75	40	78	/	Fig.2
AHLC-EB	120	112	30	94	60	98	/	Fig.3

2.5.3 Cross-reference tables of spec. -parameter

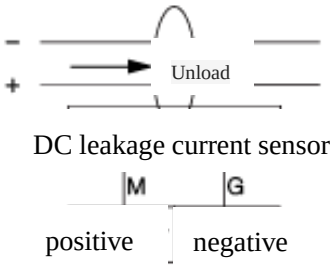
Specification	Rated current	Power supply	Rated output	Measuring aperture (mm)	Precision degree
AHLC-LTA	DC 10mA～2A	±15V	5V	φ 20	1
AHLC-EA	DC 10mA～2A	±15V	5V	φ 40	1
AHLC-EB	DC 10mA～2A	±15V	5V	φ 60	1

2.5.4 Wiring method

Definition of wiring terminals



power supply Analog output



DC leakage current sensor

positive negative

2.6 DC voltage sensor

ACTDS series DC voltage sensors are the measuring module that converts the measured DC voltage into the proportional DC current or DC voltage signal according to the optical isolation theory. The input side is highly insulated from the output side. They feature the high accuracy, linearity and integration, small size, simple structure, long-term stability and adaptability to various working conditions.They are widely used for system control and detection of electrical equipment in the power, petroleum, mine, chemical, railway, communication, building automation sectors. <0}

★ Measurement of DC voltage

★ Quick response

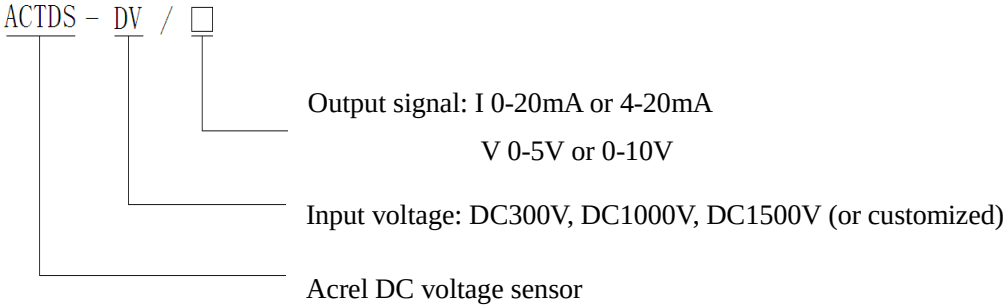
★ Large overload capacity

★ High accuracy

★ DIN rail mounting

★ 3.5kV insulation between the input side and the output side

2.6.1 Explanation for type

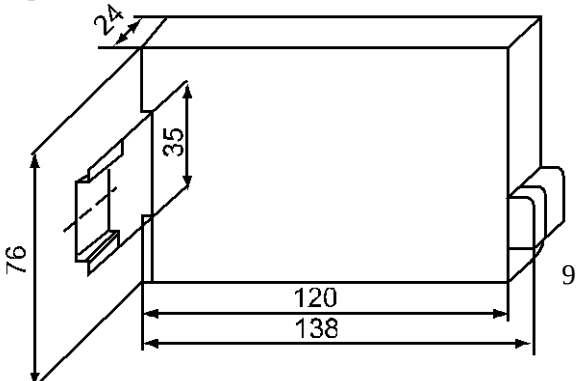


Customized power supply: DC12V, DC15V, DC24V or DC48V

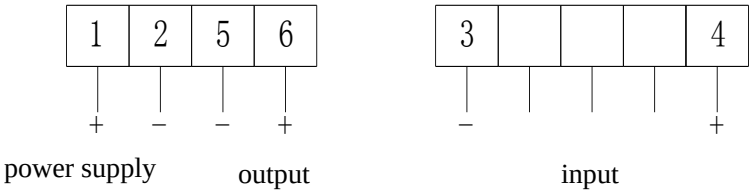
2.6.2 Technical data

Technical parameters		Index
Input		Rated voltage DC300～1500V
		Measuring voltage range 120% * Vpn
Output	Nominal value	voltage：DC 0-5V、DC0-10V； current：DC 4-20mA、DC 0-20mA
	Overload protection	Max. output≤ 150% of full scale
	Load resistance	>5000Ω(voltage output)/<450Ω(current output)
Power supply		DC12V / DC15V / DC24V / DC48V（Optional）
Precision degree		0.5
withstand voltage		Power frequency withstans voltage 3500VAC between input/ output and power supply
Linearity error		0.2%
Offset voltage / Offset Current（Ta =+25℃）		50mV(correspond to the voltage output)/80uA（correspond to the current output）
Response time		≤ 30mS
Insulation resistance		＞20MΩ@DC500V
Installation method		With guide rail TS35
Ambient conditions	Temperature	Operating temperature:-10℃-+55℃; storage temperature: -40℃-+85℃
	Humidity	≤93%RH, no dew, no aggressive gas
	Altitude	≤2500m

2.6.3 Spec. and size (unit：mm)



2.6 .4wiring method



Terminal	1	2	5	6	3	4
Idetificatio n	power+	Power GND （G）	output-	output+	input -	input -

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