



ELECTRICAL TRANSDUCER

CE-T Series

Introduction

Shenzhen Sensor Electronic Technology Co., Ltd specializes in researching, developing and manufacturing of electrical transducers. Our advanced test instrumentation and engineering capabilities provide a most favorable environment for transducer manufacturing. Our quality and inspection departments are among the most advanced in China. The output of our production facility is over one hundred thousand units annually.

The most important aspect of our production is “Quality”. Our products are manufactured and certified to the 2000 quality standards of ISO 9001. The transducers have been approved UL, CUL, CMC, CE, REACH and ROHS. The US Council of International Quality Authentication has recommended us for our high quality standards. Shenzhen Sensor Electronic Technology Co., Ltd. is the only manufacturer of electrical transducers in China to have obtained all of these certifications.

Our corporate psychology of Research & Development and efficient manufacturing has made us predominant worldwide in the electrical transducer market. Our diverse lines of products are used for signal isolation and modulation, analog and digital communication in standard and smart instrumentation networks. The complete line consists of nearly one hundred sub-categories with numerous standard and custom versions available in each of these sub-categories.

The CE Series of products is used for monitoring electrical parameters of current, voltage, power and frequency. Technologies such as electrical induction, Hall Effect and magnetic modulation are used in our product line for monitoring alternating and direct current systems.

The CE Series of products consists of three main categories.

- CE-T series for providing analog output signal such as 0-5 Vdc and 4-20mA

- CE-A series for providing digital output signal such as RS485/232

- CE-H series for Hall Effect transducer.

The principal characteristics of our products are:

- Micro miniaturization, utilizing surface Mounting technology.

- Modularization, each function provided by a unique PCB.

- High reliability, all components are high-reliable, precision grade.

- Low power consumption, high efficiency regulators and dc-dc power supplies.

- High dielectrics withstand voltage, designed into each product.

- Single sided input power requirement, for easy installation.

High quality, reliability and low price have made our transducers most efficient for application in the areas of communication, electric power, automotive energy production, and industrial control. We have received high praise from thousands of customers. We currently provide our products to numerous countries.

OUR MANAGEMENT CONCEPT:

Green is the symbol of life;

CE is a pledge of reliability.

OUR MISSION STATEMENT: Research, develop and manufacture a complete line of electrical monitoring products. Quality, Reliability and Customer satisfaction are our utmost concern.

CONTENTS

Chapter 1 Selection Guide

1.1	Part Number	1
1.2	Main Series List	2

Chapter 2 Product Overview

2.1	Output Function Codes	3
2.2	Typical Operating Specifications	4
2.3	Input / Output Graphs	4

Chapter 3 Details of the Electrical Transducer

3.1	Current Transducer	5
3.2	Voltage Transducer	14
3.3	Frequency Transducer	20
3.4	Power Transducer:	22
3.5	Power Supply	24

Chapter 4 Case style and Mounting Diagram

4.1	Case Styles and Outline Dimension	25
4.2	Mounting Dimensions (mm)	26

Chapter 5 Notes for Ordering

5.1	Ordering Instructions	27
5.2	Installation Notes	27
5.3	Warranty service	28

Chapter 1 Part Number Selection Guide

1.1 Part Number

Please follow the instruction below to fix the full part number, one square one code, from left to right.

	Series					Options					
	C	E	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Series CE											
Input parameter											
I: current V: voltage F: frequency P: active power											
Q: reactive power											
Input characteristics											
J: AC; Z: DC; H: AC/DC; M: pulsating DC; B: bi-directional DC (Leave blank for power and frequency)											
Function codes											
01-09: 1-element 22: 2-element/2 Way;											
31: 3-phase 3-wire or 3-element 41: 3-phase 4-wire											
For New Function											
A: True RMS											
Output functions											
1: tracking voltage output (Vg); 2: tracking current output(Ig); 3: 0~5V(Vz);											
4: 0~20mA(Iz); 5: 4~20mA(Iy); 6: 1~5V(Vy); 7: 4~20mA loop power(Id); 8: 0~10V(Vd);											
T: special output J: relay output; F: OC frequency signal output											
Power source											
0: self powered; 1: +5V; 2: +12V; 3: +15V; 4: +24V; 5: ±12V;											
6: ±15V; 7: +48V; 8: 110V(AC/DC); 9: 220V(AC/DC)											
Window / Input Waveform											
B: Φ6.5mm; E: Φ20mm; L: Φ36mm; F: Φ29mm (split core); G: Φ31mm (split core); M: none;											
Only for frequency products: F: square wave O: OC frequency signal; R: arbitrary zero crossover waveform;											
T: TTL level Z: sine wave											
Case Style and Mounting Styles											
S1/ S2/ S3/S4/S5/S6/SK: DIN rail Mounting H1 / H2: PCB Mounting H7: Screw Mounting											
Accuracy											
0.2; 0.5; 1.0; 2.0											
Input Range:											
*A; *V; *Hz											
“*” Stands for the input range											

Typical Example

CE-IJ03-32BS2-0.5/0-5A: 1 element AC Current Transducer, Output: 0-5V, Power Supply: +12V, Window: Φ6.5mm, Case Style: S2, Accuracy: 0.5, Input Range: 0-5 A

1.2 Main Series List

MAIN SERIES LIST FOR CE-T ANALOG ELECTRICAL PARAMETER TRANSDUCER				
FUNCTION TYPE			SERIES	Page
Current	AC	1 element	CE-IJ03	5
			CE-IJ03A (RMS)	
		3 elements	CE-IJ31	8
			CE-IJ31A (RMS)	
	DC	1 element	CE-IZ01	10
			CE-IZ02	
			CE-IZ04	
			CE-IZ06	
	AC&DC	1 element	CE-IH03	12
Voltage	AC	1 phase	CE-VJ03	13
			CE-VJ03A (RMS)	
		3-phase 3-wire	CE-VJ31	15
			CE-VJ31A (RMS)	
		3-phase 4-wire	CE-VJ41	
			CE-VJ41A (RMS)	
	DC	1-phase	CE-VZ01	17
			CE-VZ02	
Frequency	AC	1-element	CE-F01	19
			CE-F03	
Power	AC	1 element	CE-P02	21
			CE-Q02	
		3-phase 3-wire	CE-P31	
			CE-Q31	
		3-phase 4-wire	CE-P41	
			CE-Q41	
Power supply			CE-WYS	23

Chapter 2 Product Overview

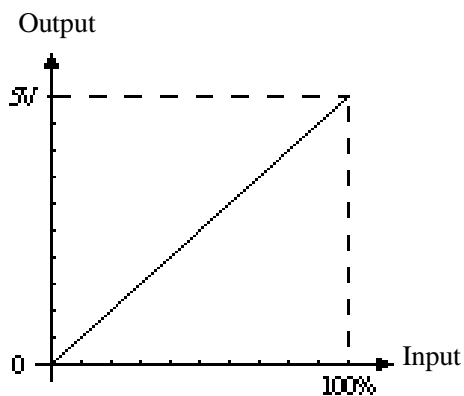
2.1 Output Function Codes

Code	Symbol	Definition	Applications
1	Vg	Tracking Voltage Output	0-5Vrms, suitable for AC or peak value sampling system, quick response, and high precision.
2	Ig	Tracking Current Output	AC tracking current output, suitable for AC or peak value sampling system, high precision, and quick response.
3	Vz	DC Voltage Output	0-5VDC, can be connected directly to A/D converter, digit panel, indicator, PLC
4	Iz	DC Current Output	0-20mADC, suitable for long distance signal transmission, resistance to interference.
5	Iy	DC Current Output	4-20mADC, suitable for long distance signal transmission, resistance to interference.
6	Vy	DC Voltage Output	1-5VDC, can be connected directly to A/D converter, digit panel, indicator,
7	Id	2-wire DC Current	4-20mADC, 2-wire, loop powered connection, resistance to interference.
8	Vd	DC Voltage Output	0-10VDC, can be connected direct to digit panel, indicator etc. (auxiliary Power supply $\geq 15V$).
J	J	Relay contact	Apply to offside alarm for AC/DC current and voltage
F	F	OC frequency signal output	0~5kHz, 0~10kHz frequency signal, photoelectric isolation OC output
T	T	Special Output	Reserved for special output configurations.

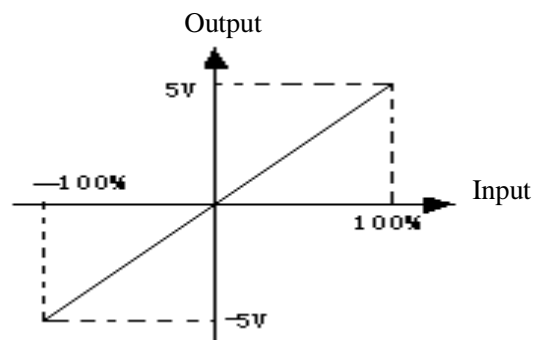
2.2 Typical Operating Specifications

Item	Test Condition	Data	
		Accuracy 0.2	Accuracy 0.5
Thermal Drift	+12V, 25℃	$\leq 200\text{ppm}/^{\circ}\text{C}$	$\leq 500\text{ppm}/^{\circ}\text{C}$
Output Ripple	+12V, 25℃	10mV	15mV
Output Load	+12V, 25℃ Vz (3) output	$\geq 2\text{K}\Omega$	
	+12V, 25℃ Iz (4) and Iy (5) output	$\leq 250\Omega$	
Operating Temperature	+12V	0~50 ℃	
Humidity	+12V	$\leq 95\%$ (no dew)	
Isolation With standing Voltage	0.5mA, 1 min.	$\leq 2500\text{ V dc}$	
Power Consumption (mW)	+24V	See specifications	

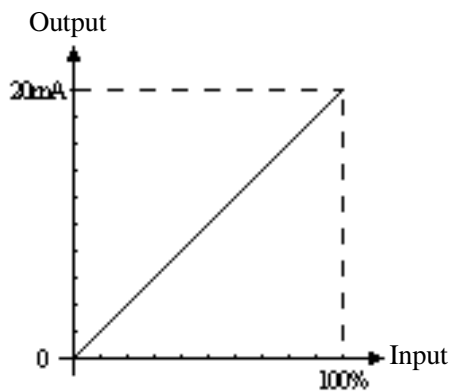
2.3 Input / Output Graphs.



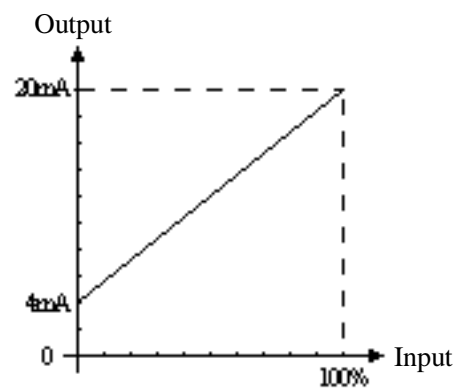
Uni-direction input vs 0-5V output



Bi-direction input vs bi-directional output



Uni-direction input vs 0-20 mA output



Uni-direction input vs 4~20 mA output

Chapter 3 Details of the Electrical Transducer

3.1 Current Transducer

3.1.1 1-element AC Current Transducer

Specifications:

Series	Operating Principle	Isolation Voltage	Response Time	Overload Capacity	Power Consumption (mW)		Mounting
					Vz, Vd, Vg, Iz Output	Iy Output	
CE-IJ03 CE-IJ03A	Electro-Magnetic	2500 VDC	≤250mS ≤15uS(Vg,Ig) ≤3S(self-powered & split core)	20 times or <5/sec at 500A	360	450	PCB Din Rail Screw

Part Numbers:

Average values solid core series

Solid core series	Output	Power Supply	Window (mm)	Case Style	Accuracy %	Rated Input
CE-IJ03	3:0~5V DC (Vz)	2:12V	B: Φ6.5	H1	0.5	0.5A, 1A, 5A, 10A, 15A, 25A
	3:0~5V DC (Vz) 4:0~20mA (Iz) 5:4~20mA (Iy) 8:0~10V DC (Vd)**	2:12V 3:15V 4:24V	L: Φ36	H7	1.0	50A~1000A
	1:0~5V RMS (Vg) 3:0~5V DC (Vz) 4:0~20mA (Iz) 5:4~20mA (Iy) 6:1~5Vdc (Vy) 7:4~20mA (Id)* 8:0~10V DC (Vd)**	2:12V 3:15V 4:24V 5:±12V 6:±15V	M: none	S2 S3	0.5	0.5A, 1A, 5A
			B: Φ6.5			5A, 10A, 15A, 25A
			E: Φ20	S3***		30A, 50A, 75A, 100A 120A, 150A, 200A, 250A, 300A
		8:110V 9:220V	M: none	SK		1A, 2A,5A
			B: Φ6.5			5A, 10A, 15A, 25A
			E: Φ20			30A, 50A, 75A, 100A 120A, 150A, 200A, 250A, 300A

* Loop resistance from 0 to 250Ω. Contact factory for loop resistance above 250 Ω; Select 24V Power supply for output of 4~20mA Id

** 12V Power supply is not available for 0-10V(Vd) output;

***For ES3 case solution, the min. rated input could be low to 20mA, please contact us for details

True RMS series

True RMS series	Output	Power Supply	Window (mm)	Case Style	Accuracy %	Rated Input
CE-IJ03A	3:0~5V DC (Vz) 4:0~20mA (Iz) 5:4~20mA (Iy) 8:0~10V DC (Vd)	2:12V 3:15V 4:24V 5:±12V 6:±15V	M: none	S2	0.5	0.5A, 1A, 5A
			B: Φ6.5			S3
				E: Φ20		
		8:110V 9:220V	SK			1.0
				2:12V 3:15V 4:24V	G: Φ31	
			F: Φ29		S6	

Split core series

Split core series	Output	Power Supply	Window (mm)	Case Style	Accuracy %	Rated Input
CE-IJ03 (average value)	3:0~5V DC (Vz) 8:0~10V DC (Vd)	0:self powered	G: Φ31	S4	1.0	20A, 50A, 75A, 100A, 150A, 200A
CE-IJ03A (true RMS)	3:0~5V DC (Vz) 4:0~20mA (Iz) 5:4~20mA (Iy) 8:0~10V DC (Vd)	2:12V 3:15V 4:24V		S6		5A, 10A, 15A, 25A, 30A, 50A, 75A, 100A 120A, 150A, 200A, 250A, 300A

Self powered series

Self-powered series	Output	Power Supply	Window (mm)	Case Style	Accuracy	Rated Input
CE-IJ03	1: tracking voltage(Vg) 2: tracking current(Ig)	0: none	M: none	S2	1.0	1A, 2A, 5A
	J: relay output*		B: Φ 6.5			1A, 2A, 5A, 10A, 15A, 25A
	3:0~5VDC (Vz) 8:0~10VDC(Vd)		E: Φ 20	S3		2A, 5A, 10A, 20A, 50A, 70A, 100A, 150A, 200A
	3:0~5V DC (Vz) 8:0~10V DC (Vd)			S4		20A, 50A, 75A, 100A, 150A, 200A
			G: Φ31			

*It can connect with AC/DC current/voltage load directly.

Part Number Example: CE-IJ03-54ES3-0.5/0~50A

Description: 1-element AC Current Transducer, average value, Output: 4~20mA, Power supply: +24V DC, Aperture: Φ20mm, Case style: S3, Accuracy: 0.5%, Input: 0~50A AC.

Connections Diagrams (See Chapter4 for mounting dimensions)

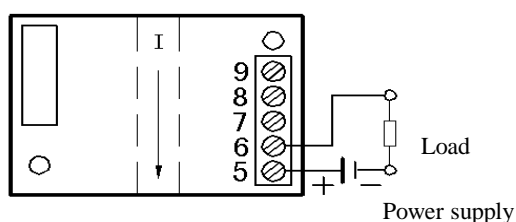
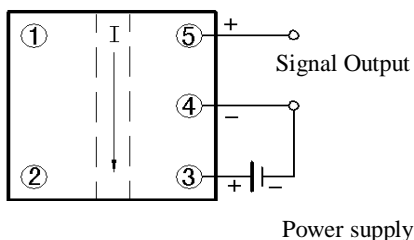


Fig. 3.1.1 for CE-IJ03 Case-H1

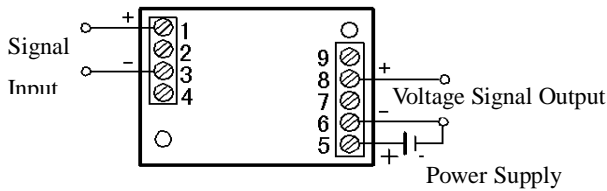


Fig. 3.1.2 for CE-IJ03 with loop power Case-S

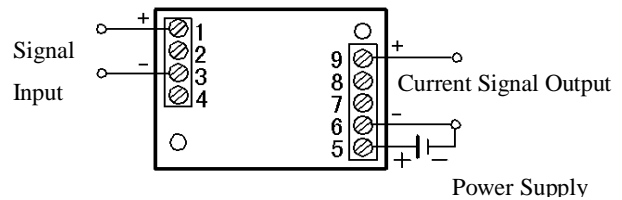


Fig. 3.1.3 for CE-IJ03, CE-IJ03A
Terminal Input, Voltage Output, Case-S

Fig. 3.1.4 for CE-IJ03, CE-IJ03A
Terminal Input, Current Output, Case-S,

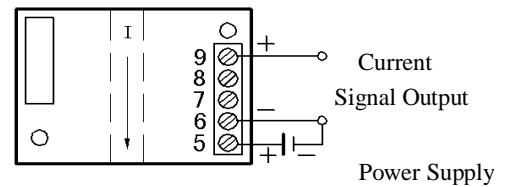
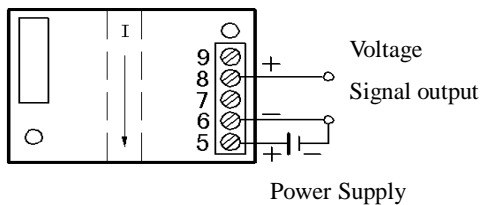


Fig. 3.1.5 for CE-IJ03, CE-IJ03A
Window Input, Voltage Output, Case style S

Fig. 3.1.6 for CE-IJ03, CE-IJ03A
Window Input, Current Output, Case style S

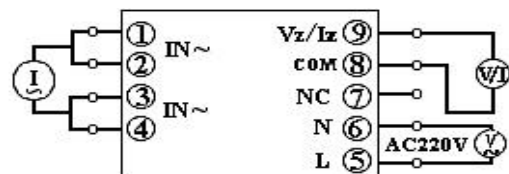
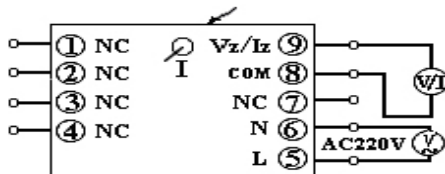


Fig. 3.1.7 for CE-IJ03, Power Supply 220V/110V
Window Input, Case style S

Fig. 3.1.8 for CE-IJ03, Power Supply 220V/110V
terminal Input, Current Output, Case style S

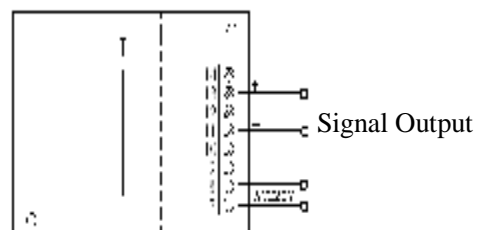
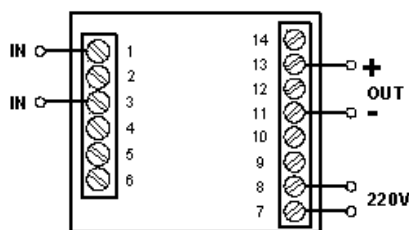


Fig. 3.1.9 for CE-IJ03, Power supply 220/110V
Terminal Input, Case style SK

Fig. 3.1.10 for CE-IJ03, Power supply 220/110V
Window Input, Case style SK

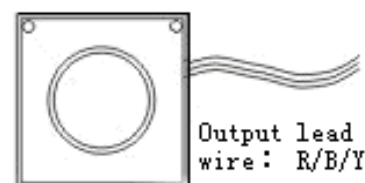
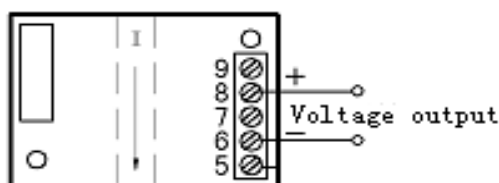


Fig.3.1.11 CE-IJ03-x0GS4 with voltage output

Fig. 3.1.12 for CE-IJ03 Window Input, Case style H7

Typical Application:

1. Multi-point current sensing and control panels
2. Monitor lighting elements
3. Monitor heating elements
4. Remote current sensing
5. Monitor motor faults

Notice:

1. The size of window must be fit for the conducting wire to pass through. When the rated current $\leq 5A$, terminal input is available
2. All connections of the positive and negative polarities must be correct. The output signal and the power supply must be grounded in common at terminal 6.
3. If other meter is used to read the value of the output, please make sure its accuracy is higher.

3.1.2 3-elements AC Current Transducer

Specifications:

Series	Operating Principle	Isolation Voltage	Response Time	Overload Capacity	Power Consumption (mW)		Mounting
					Vz,Vd,Vg, Iz Output	Iy Output	
CE-IJ31 CE-IJ31A	Electro-magnetic	2500VDC	≤250mS	20 times or <5/sec at 500A	350	480	Din Rail/ Screw

Part Numbers:

Series	Output	Power Supply	Window (mm)	Case Style	Accuracy %	Rated Input
CE-IJ31	1: tracking voltage(Vg)	0:self powered	B: Φ6.5	S3	0.5	1A, 2A, 5A, 10A, 15A, 25A
	2: tracking current(Ig)				1.0	
CE-IJ31 CE-IJ31A*	1: 0~5V RMS (Vg) 3: 0~5V DC (Vz) 4: 0~20 mA (Iz) 5: 4~20 mA (Iy) 8: 0~10V DC (Vd)	2:12V 3:15V 4:24V	D: Φ11	S5	0.5	
	3: 0~5V DC (Vz) 4: 0~20 mA (Iz) 5: 4~20 mA (Iy)** 6: 1~5V (Vy) 8: 0~10V DC (Vd)	8: 110V 9: 220V	M: None	SK		1A, 2A, 5A,
			B: Φ6.5			1A, 2A, 5A, 10A, 15A, 20A,25A

*Tracking output (Vg,Iz,Vd) type not available in series CE-IJ31A

** Loop resistance from 0 to 250Ω. Contact factory for loop resistance above 250 Ω

Part Number Example: CE-IJ31-32BS3-0.5/0~5A

Description: 3 elements AC Current Transducer, average values, Output: 0-5Vdc, Power supply: +12Vdc, Aperture: Φ6.5mm, Case style: S3, Accuracy: 0.5 %, Input: 0-5A AC.

Connections Diagram (See Chapter4 for mounting dimensions)

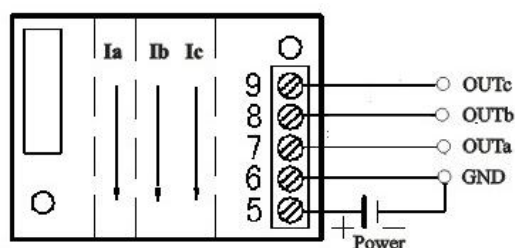


Fig. 3.1.13 CE-IJ31, CE-IJ31A Case style S

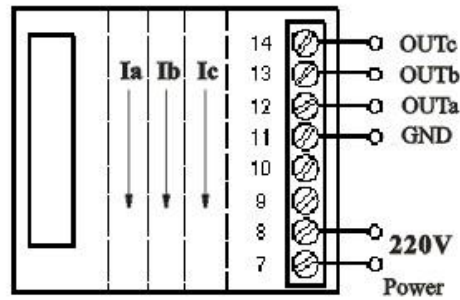


Fig. 3.1.14 CE-IJ31, CE-IJ31A Case style SK, window input

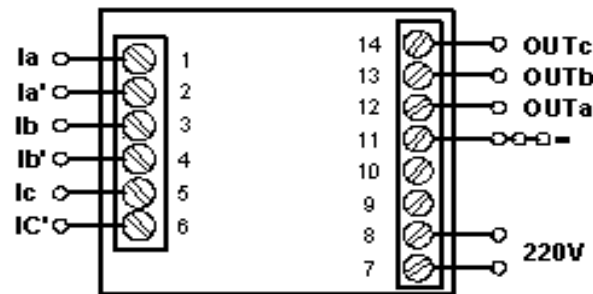


Fig. 3.1.15 CE-IJ31, CE-IJ31A Case style SK, terminal connection

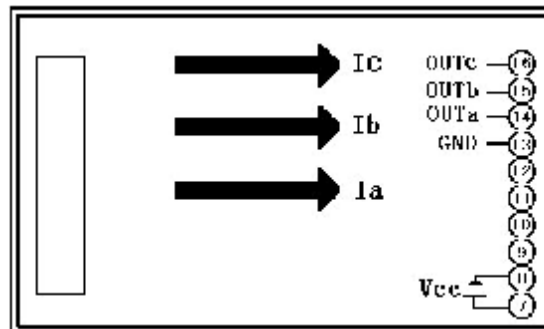


Fig. 3.1.16 CE-IJ31 Case style S5

Typical Application:

1. Phase fired controlled heaters
2. Quickly varying motor loads
3. Chopped wave form drivers
4. Harmonic currents

Notice:

1. The output signal and the power supply must be grounded in common at terminal 6.
2. For application above 25 Amp, It is suggested to use an external current transformer. Connect the secondary output of the current transformer to the input of the transducers.
3. There is no polarity requirement for the input signal connection.

3.1.3 1-element DC Current Transducer

Specifications:

Series	Operating Principle	Isolation Voltage	Response Time	Overload Capacity	Power Consumption (mW)		Mounting
					Vz,Vd,Vg Iz Output	Iy Output	
CE-IZ01	Photoelectric Isolation/Treble Isolation*	2500VDC	≤300mS	2 Times 10/sec	800	1000	PCB /Din Rail / Screw
CE-IZ02	Modulation Isolation		≤300mS		200	300	
CE-IZ04	Hall Effect Isolation		≤100mS(solid core) ≤200mS(split core)	20 times or <5/sec at 500A	350 550	550 600	
CE-IZ06	Modulation Isolation		≤100mS		600	700	

*Treble Isolation: the input, output and power supply are isolated from each other.

Part Numbers:

Series	Output	Power supply	Window (mm)	Case style	Accuracy	Rated input range		
CE-IZ01	3---0~5VDC (Vz) 4---0~20mA (Iz) 5---4~20mA (Iy)* 6---1~5VDC (Vy) 8---0~10V DC (Vd) F---OC frequency	2:12V 3:15V 4:24V	M: none	H2	0.2	5mA,20mA,50mA		
				S1		100mA,200mA,500mA		
				S2		1A, 2A, 5A		
CE-IZ02		2:12V 3:15V 4:24V 5:±12V 6:±15V		E: φ 20	H2	0.5	5mA, 20mA, 50mA	
					S1		0.1A,0.2A,0.5A,1A	
					S2		1A, 2A, 5A	
CE-IZ04			5:±12V 6:±15V		E: φ 20	S3	1.0	25A, 50A, 80A, 100A, 120A,150A,200A,300A
CE-IZ06								2A,5A,10A,20A

*Loop resistance from 0 to 250Ω. Contact factory for loop resistance above 250 Ω

Split core series

Split core Series	Output	Power Supply	Window (mm)	Case Style	Accuracy	Rated Input
CE-IZ04	3: 0~5VDC (Vz) 4:0~20mA (Iz) 5:4~20mA (Iy) 8:0~10V DC (Vd)	2:12V 3:15V 4:24V 5:±12V	G: φ 31	S4	1.0	30A, 50A, 80A, 100A, 120A,150A, 200A, 300A

Part Number Example: CE-IZ01-32MS2-0.2/0-1A

Description: 1- Element DC Current Transducer, average RMS, Output: 0~5V DC, Power supply: +12V DC, No window (Terminal input), Accuracy: 0.2%, Case style: S2, Input: 0-1A.

Connections Diagram (see Chapter 4 for mounting dimensions)

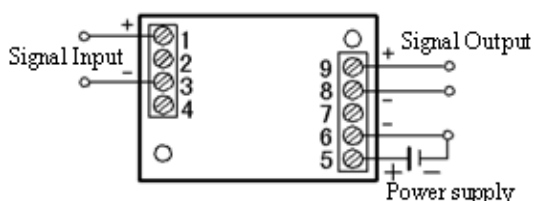


Fig. 3.1.17 CE-IZ01 Case style S1

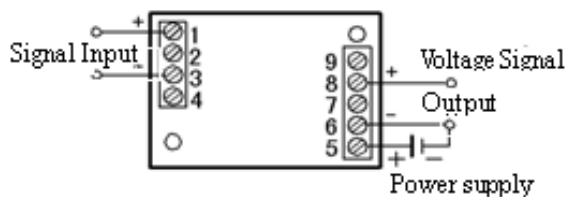


Fig.3.1.18 CE-IZ02, Voltage output, Cast style S

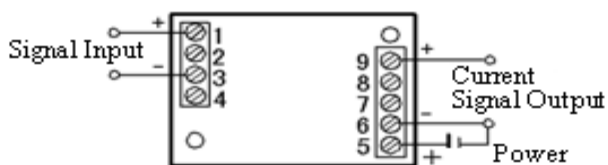


Fig. 3.1.19 CE-IZ02
Current output, Case style S2

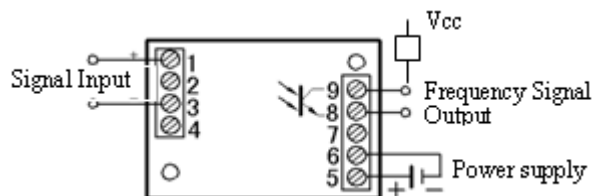


Fig 3.1.20 CE-IZ02
Frequency output, S2 case

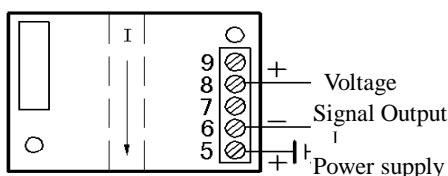


Fig. 3.1.21 CE-IZ04, CE-IZ06
Voltage Output, Case style S

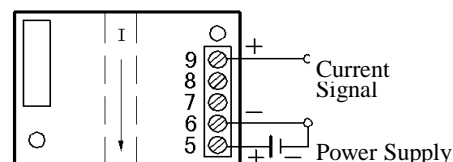


Fig. 3.1.22 CE-IZ04, CE-IZ06
Window Input, Current Output, Case style S

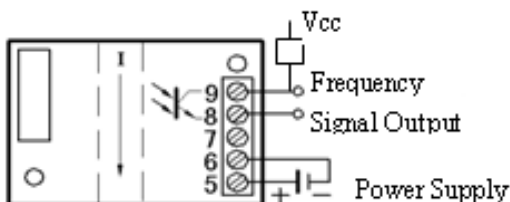


Fig. 3.1.23 CE-IZ04, CE-IZ06
Frequency Output, Case style S

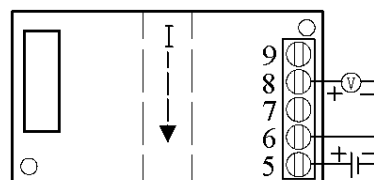


Fig. 3.1.24 CE-IZ04, CE-IZ06
Window input, bi-directional power supply

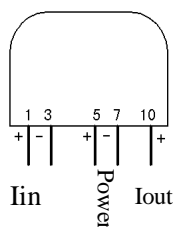


Fig. 3.1.25 CE-IZ02
Current output, case style H2

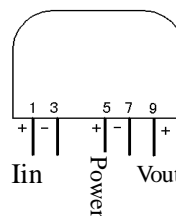


Fig. 3.1.26 CE-IZ02
Voltage Output, Case style H2

Typical Applications:

1. Power supply management
2. DC motor drives
3. Battery chargers and systems
4. Mobile applications

Notice:

1. If the input signal is bi-directional DC or pulse DC, please indicate in your order.
2. In case a current (>1A) is input through the terminals, it is advisable to connect terminals 1&2 in parallel, and terminals 3&4 in parallel respectively in order to reduce the input resistance at the terminals.
3. CE-IZ01 works on Treble isolation Principle, the output signal and the Power supply may not be grounded in common. (While that of other part numbers must be grounded in common)

3.1.4 AC/DC Current Transducer

Specifications:

Series	Operating Principle	Isolation Voltage	Response Time	Overload Capacity	Power Consumption (mW)	Mounting
CE-IH03	Hall effect	2500VDC	$\leq 30\text{ms}$	20 times or $< 5/\text{sec}$ at 500A	360	Din Rail/ Screw

Part Numbers:

Series	Output	Power Supply	Window (mm)	Case Style	Accuracy %	Rated Input
CE-IH03	I: 0~5VDC(Vz)&0-5Vrms* T: 0~3VDC(Vz)&0-3Vrms	2: 12V 3: 15V 4: 24V	E: $\Phi 20$	S3	1.0	50A,75A,100A, 150A,200A, 250A,300A
			G: $\Phi 31$	S4		

*It outputs AC with AC input, and outputs DC with DC input

Part Number Example: CE-IH03-32ES3-0.5/0~100A

Description: 1 element AC/DC Current Transducer, Output: 0-5Vdc&0-5Vrms, Power supply: +12Vdc, Aperture: $\Phi 20\text{mm}$, Case style: S3, Accuracy: 1.0 %, Input: 0-100A AC/DC.

Connections Diagram (See Chapter 4 for mounting dimensions)

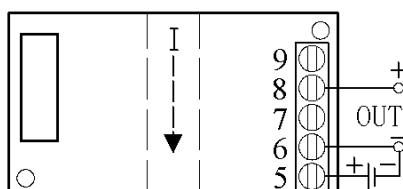


Fig. 3.1.27 CE-IH03
Voltage output, case style S

Typical Application:

1. Inverter and multi-frequency drives
2. Multi-mode ground paths carrying both AC and DC signals
3. Feed back loop building block

3.2 Voltage Transducer

3.2.1 1-phase AC Voltage Transducer

Specifications:

Series	Operating Principle	Isolation Voltage	Response Time	Overload Capacity	Power Consumption (mW)		Mounting
					Vz,Vd, Vg,,Iz Output	Iy Output	
CE-VJ03 CE-VJ03A	Electromagnetic Isolation	2500 VDC	400mS 15uS(Ig,Vg)	2 Times 10/sec	50(H1) 200(S)	250	PCB/ Din rail/Screw

Part Numbers:

Series	Output	Power Supply	Window(mm)	Case Style	Accuracy %	Rated Input
CE-VJ03	3:0~5VDC(Vz)	2:12V 3:15V	M: none	H1****	0.5	10V, 50V, 100V, 110V, 220V,250V, 380V,400V, 500V,1000V
	1: tracking voltage(Vg)	0:self powered		H1/H2/ S1/S2		
	2: tracking current(Ig)					
CE-VJ03 CE-VJ03A	1:0~5VRMS(Vg)* 3:0~5VDC(Vz) 4:0~20mA(Iz) 5:4~20mA(Iy)** 6:1~5VDC(Vy)*	2:12V 3:15V 4:24V 5:±12V 6:±15V		S2 S3	0.2 0.5	
	7:4~20mA(Id)*** 8: 0~10V DC (Vd)*	8:110V 9: 220V		S3		

* Output types (Vg,Vy,Vd,) and accuracy 0.2 are not available in series CE-IJ03A.

** Loop resistance from 0 to 250Ω. Contact factory for loop resistance above 250 Ω

*** Select 24V Power supply for output of 4~20mA Id;

**** This case style needs an extra voltage divider

Part Number Example: CE-VJ03-52MS2-0.2/0~250V

Description: 1-phase AC Voltage Transducer, Output: 4~20mA, Power supply: +12V, Without Window (terminal input), Accuracy: 0.2, Case style: S2 Input: 0~250V.

Connections Diagram (see Chapter 4 for mounting dimensions)

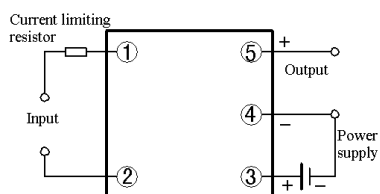


Fig. 3.2.1 CE-VJ03, case style H1

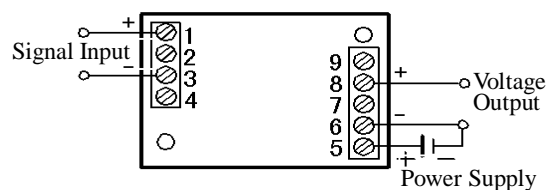


Fig. 3.2.2 CE-VJ03, CE-VJ03A
Voltage Output, Case style S

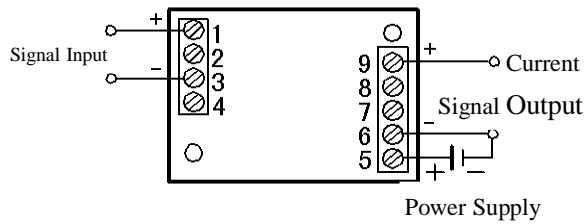


Fig. 3.2.3 CE-VJ03, CE-VJ03A
Current Output, Case style S

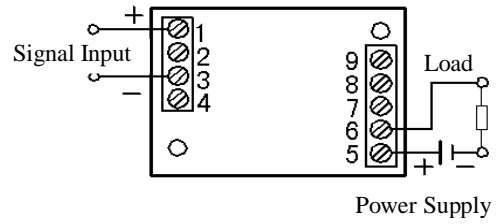


Fig. 3.2.4 CE-VJ03
Loop power, Case style S

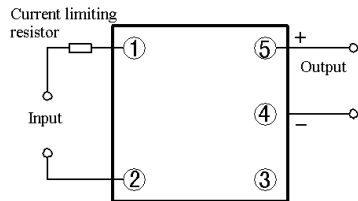


Fig. 3.2.5 CE-VJ03, self powered
Tracking output, case style H1



Fig. 3.2.6 CE-VJ03, self powered
Tracking output, case style S

Typical Application:

1. Monitor for over/under voltage
2. Power monitoring
3. Multi-point instrumentation needs
4. Sense phase loss

Notice:

1. Selection of output signal: Please select Power supply >15V when you need 0~10V output.
2. The H1 type must be used with corresponding current limiting resistor. The current limiting resistance should not be near the output terminal (to avoid larger voltage drop).
3. The output signal and the Power supply must be grounded in common. Please keep right polarity connection, don't in error set.

3.2.2 3-phase AC Voltage Transducer

Specifications:

Series	Operating Principle	Isolation Voltage	Response Time	Overload Capacity	Power Consumption (mW)		Mounting
					Vz, Vd, Vg, Iz Output	Iy Output	
CE-VJ31 CE-VJ31A	Electromagnetic	2500 V DC	$\leq 250\text{ms}$ 15 μS (Ig, Vg)	2 Times 10/sec	400	500	Screw/ Din rail
CE-VJ41 CE-VJ41A	Isolation						

Part Numbers:

3 phase 3 wire series

3 phase 3 wire Series	Output	Power Supply	Window (mm)	Case Style	Accuracy %	Rated Input
CE-VJ31 CE-VJ31A	1: 0~5V RMS (Vg)* 3: 0~5V DC (Vz) 4: 0~20 mA (Iz) 5: 4~20 mA (Iy)** 8: 0~10V DC (Vd)	2: 12V 3: 15V 4: 24V	M: none	S3 SK S5	0.5	10V, 50V, 100V, 110V, 220V, 250V, 380V, 400V, 500V, 600V
CE-VJ31	3: 0~5V DC (Vz) 4: 0~20 mA (Iz) 5: 4~20 mA (Iy)** 6: 1~5V (Vy) 8: 0~10V DC (Vd)	8: 110V 9: 220V		SK		

3 phase 4 wire series

3 phase 4 wire Series	Output	Power Supply	Window (mm)	Case Style	Accuracy %	Rated Input
CE-VJ41 CE-VJ41A	1: 0~5V RMS (Vg)* 3: 0~5V DC (Vz) 4: 0~20 mA (Iz) 5: 4~20 mA (Iy)** 8: 0~10V DC (Vd)	2: 12V 3: 15V 4: 24V	M: none	S3 SK S5	0.5 1.0	10V, 50V, 100V, 110V, 220V, 250V, 380V, 400V, 500V, 600V
CE-VJ41	1: tracking voltage (Vg) 2: tracking current (Ig)	0: self powered		S3		
	3: 0~5V DC (Vz) 4: 0~20 mA (Iz) 5: 4~20 mA (Iy)** 6: 1~5V (Vy) 8: 0~10V DC (Vd)	8: 110V 9: 220V		SK		

* Tracking output (Vg) type not available in CE-VJ31A&VJ41A,

** Loop resistance from 0 to 250 Ω . Contact factory for loop resistance above 250 Ω .

Part Number Example: CE-VJ41-32MS3-0.5/0~250V

Description: 3-phase 4-wire AC Voltage Transducer, Output: 0-5V, Power supply: +12V, no window, Case style: S3, Accuracy: 0.5, Input: 0-250V.

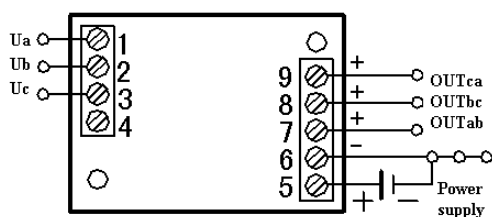


Fig. 3.2.7 CE-VJ31, CE-VJ31A Case style S3

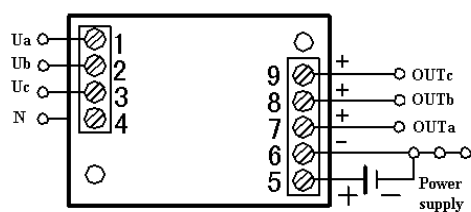


Fig. 3.2.8 CE-VJ41, CE-VJ41A Case style S3

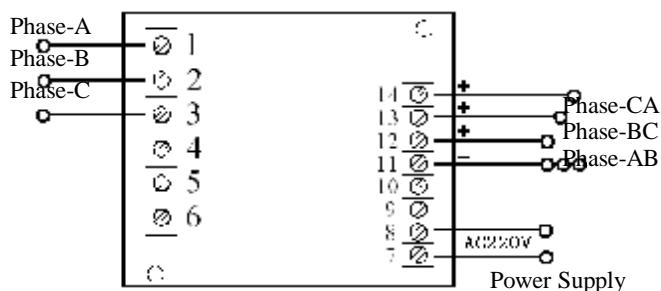


Fig. 3.2.9 CE-VJ31, CE-VJ31A
Case style SK

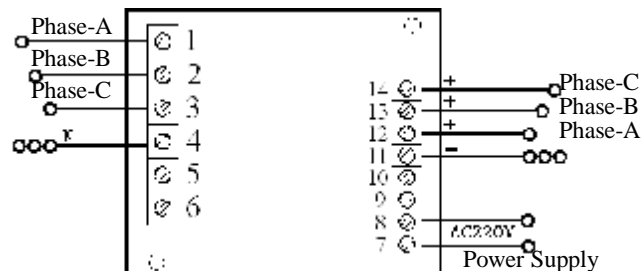


Fig. 3.2.10 CE-VJ41, CE-VJ41A
Case style SK

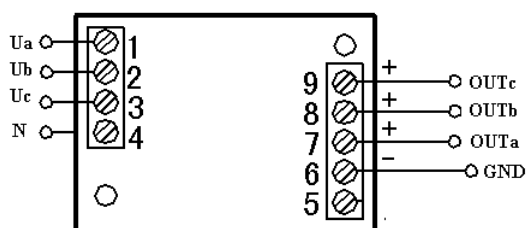


Fig. 3.2.11 CE-VJ41, self powered, Case style S3

Typical Application:

1. Harmonic voltages
2. Chopped waveform drivers
3. Quickly varying voltage supplies
4. Phase fired controlled devices

Notice:

1. In case the input is 3-phase-3-wire system, the first output corresponds to the line voltage between Vab, the second output corresponds to line voltage between Vbc, and the third output corresponds to line voltage between Vca. In case the input is 3-phase-4-wire, three outputs correspond respectively to phase voltage of A, B and C phases.
2. The output signal and the power supply must be grounded in common. Please keep right polarity connection, don't in error set.

3.2.3 1-phase DC Voltage Transducer

Specifications:

Series	Operating Principle	Isolation Voltage	Response Time	Overload Capacity	Power Consumption (mW)		Mounting
					Vz, Vd, Vg, Iz Output	Iy Output	
CE-VZ01	Linear Photoelectric Isolation Treble Isolation*	2500 VDC	\leq 200mS	2 Times 10 /sec	800	1000	PCB / Din rail/ Screw
CE-VZ02	Electromagnetic Isolation				200	300	

* Treble Isolation: the input, output and power supply is isolated from each other.

Part Numbers:

Series	Output	Power Supply	Window (mm)	Case Style	Accuracy (%)	Rated Input
CE-VZ02	3: 0~5V DC (Vz)	2: 12V 3: 15V 4: 24V	M: none	H2	0.2** 0.5	\leq 300V
CE-VZ01	4: 0~20mA (Iz)* 5: 4~20mA (Iy)*			S1 S2		10mV, 50mV, 75mV,
CE-VZ02	6: 1~5V DC (Vy) 8: 0~10V DC (Vd) F: OC frequency 1 output	8: 110V 9: 220V		S3		0.5V, 1V, 5V, 10V, 50V, 75V, 100V, 200V, 500V, 1000V

* Loop resistance from 0 to 250 Ω . Contact factory for loop resistance above 250 Ω .

**0.2 accuracy only be available while the input is more than 500mV.

Part Number Example: CE-VZ02-52MS1-0.2/0-75mV

Description: DC voltage Transducer, Output: 4-20mA, Power supply: +12V, No window, Case Style: S1, Accuracy: 0.2, Input Voltage: 0-75mV.

Connections Diagram (see Chapter 4 for mounting dimensions)

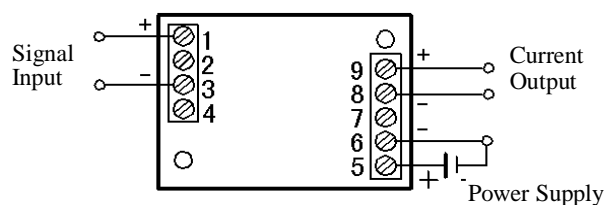


Fig. 3.2.12 CE-VZ01
Current output, Case style S

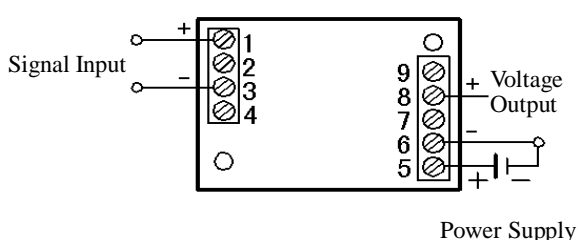


Fig. 3.2.13 CE-VZ02
Voltage Output, Case style S

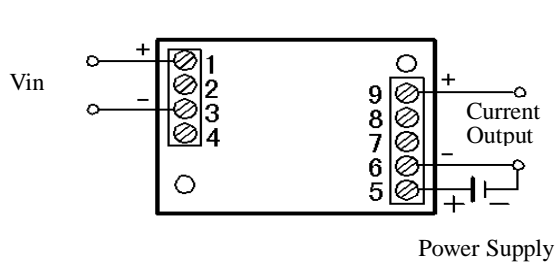


Fig. 3.2.14 CE-VZ02
Current Output, Case style S

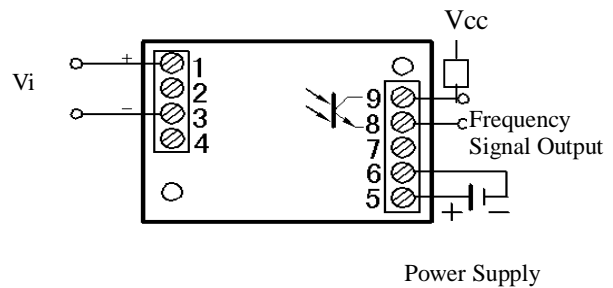


Fig.3.2.15 CE-VZ01, CE-VZ02
Frequency Output

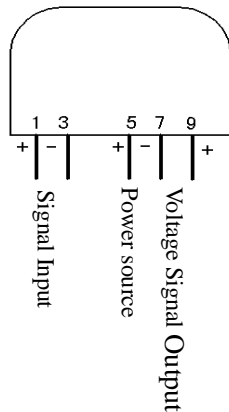


Fig. 3.2.16 CE-VZ02
Voltage Output, Case style H2,

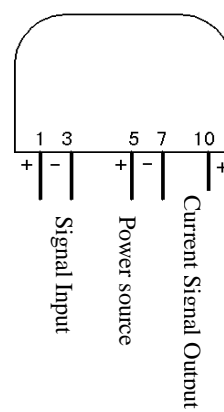


Fig. 3.2.17 CE-VZ02
Current Output, Case style H2,

Typical Application:

1. Mobile applications
2. Power Supply over/under sensing
3. Power sensing
4. Battery chargers and systems

Notice:

1. In case the input signal is bi-directional DC or pulsed DC, please give clear indication in your order.
2. Since CE-VZ01 is provided with treble isolations, the output signal and power supply may not be grounded in common. (While that of other series must be grounded in common.)

3.3 Frequency Transducer

Specifications:

Series	Operating Principle	Isolation Voltage	Response Time	Overload Capacity	Power Consumption (mW)		Mounting
					Vz, Vd, Vg, Iz Output	Iy Output	
CE-F01	Photoelectric Isolation	2500V DC	200~600 mS	2 Times 10/sec	200	250	PCB/ Din rail/ Screw
CE-F03					400	450	

Part Numbers:

Series	Output	Power Supply	Input Waveform	Case Style	Accuracy (%)	Rated Input	
						Frequency	Voltage
CE-F01	3: 0~5VDC (Vz) 4: 0~20mA (Iz)* 5: 4~20mA (Iy)*	2: 12V 3: 15V 4: 24V	R: Arbitrary wave pass zero F: Square Wave. Z: Sine curve wave. O: OC frequency signal T: TTL electricity level	S2 S3	0.5	45Hz, 100Hz, 1KHz, 2KHz, 5KHz.	50V, 110V, 250V,
CE-F03	8: 0~10VDC (Vd)	8: 110V 9: 220V	Z: Sine curve wave.			40~60Hz 45~55Hz 45~65Hz 50~70Hz	400V, 500V.

* Loop resistance from 0 to 250Ω. Contact factory for loop resistance above 250Ω.

Part Number Example: CE-F01-32FS3-0.5/0~55Hz (250V)

Description: Frequency Transducer, Square Wave Signal (250V), Output: 0~5V, Power supply: +12V, Case style: S3, Accuracy: 0.5, Input: 0~55Hz.

Connections Diagram (see Chapter 4 for mounting dimensions)

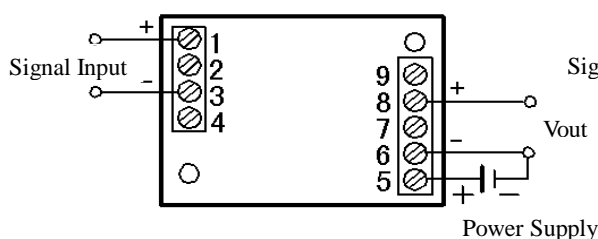


Fig 3.3.1 CE-F01/F03
Voltage Output, Case style S

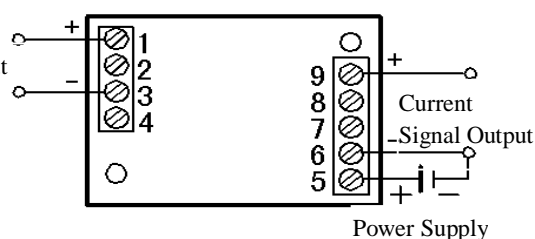


Fig. 3.3.2 CE-F01/F03
Current Output, Case style S,

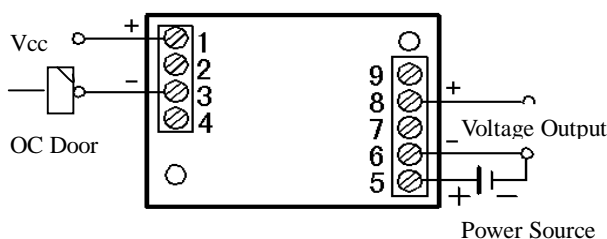


Fig. 3.3.3 CE-F01
OC Frequency Input, Voltage Output

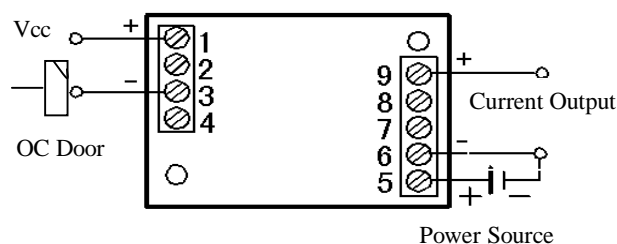


Fig. 3.3.4 CE-F01
OC Frequency Input, Current Output

Typical Application:

1. Power quality monitoring
2. Applications monitor generator sets
3. Multi-frequency control and monitoring
4. Inverter drives and systems

Notice:

1. Response of amplitude of frequency signal must not be lower than 20% of rated voltage.
2. There is no polarity requirement for the input signal connection.
3. The output signal and the Power supply must be grounded in common. Please ensure all connections right.

3.4 Power Transducer:

Specifications

Series	Operating Principle	Isolation Voltage	Response Time	Overload Capacity	Power Consumption (mW)		Mounting
					Vz, Vd, Vg, Iz Output	Iy Output	
CE-P02 CE-Q02	Electro-magnetic Isolation	2500V DC	$\leq 700\text{ms}$	Current: 20Times 5/sec Voltage: 2 Times 10/sec	300	420	Screw/ Din rail
CE-P31 CE-Q31 CE-P41 CE-Q41					840	960	
CE-C02							

Part Numbers

Power series

Series	Output	Power Supply	Window (mm)	Case Style	Accuracy %	Rated Input	
						Voltage	Current
CE-P02 CE-Q02	3: 0~5V DC (Vz) 4: 0~20mA (Iz)*	2: 12V 3: 15V 4: 24V 8: 110V 9: 220V	E: $\Phi 20$	SK	0.5	75V, 110V, 220V, 250V, 380V, 400V, 500V.	5A-300A
CE-P02 CE-Q02 CE-P31 CE-Q31 CE-P41 CE-Q41	5: 4~20mA (Iy)*	2: 12V 3: 15V 4: 24V	B: $\Phi 6.5$	S3			5A, 10A, 15A, 20A, 25A.
		8: 110V		SK			
		9: 220V					

* Loop resistance from 0 to 250 Ω . Contact factory for loop resistance above 250 Ω .

Power Factor series

Series	Output	Power Supply	Window (mm)	Case Style	Accuracy %	Rated Input	
						Voltage	Current
CE-C02	3: 0~5V DC (Vz) 4: 0~20mA (Iz)* 5: 4~20mA (Iy)*	2: 12V 3: 15V 4: 24V 8: 110V 9: 220V	E: $\Phi 20$	S3	0.5	75V, 110V, 220V, 250V, 380V, 400V, 500V.	5A-300A
			B: $\Phi 6.5$				5A, 10A, 15A, 20A, 25A.

Part Number Example: CE-P41-52BS3-0.5/0~250V*0~5A

Description: 3-phase 4-wire Active Power Transducer, Output: 4~20mA, Power supply: +12V, Window: $\Phi 6.5\text{mm}$, Accuracy: 0.5, Case style: S3, Input voltage: 0~250V, Current: 0~5A,

Connections Diagram (see Chapter 4 for mounting dimensions)

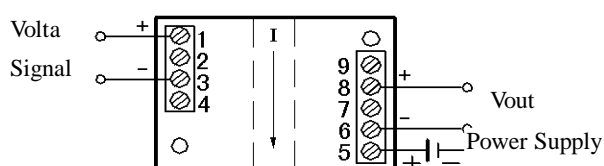


Fig. 3.4.1 CE-P02, CE-Q02

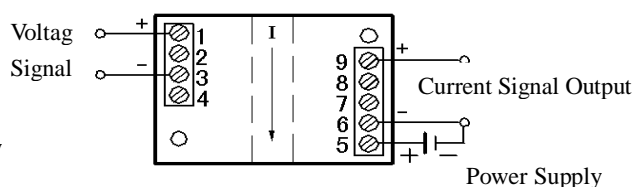


Fig. 3.4.2 CE-P02, CE-Q02

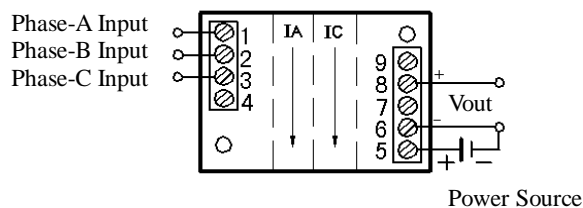


Fig. 3.4.3 CE-P31, CE-Q31

Voltage Output, Case style S

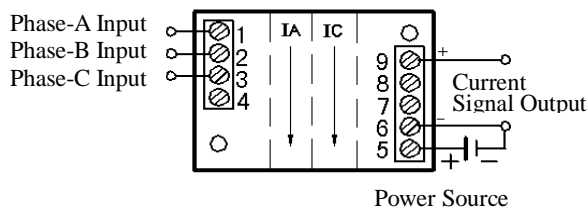


Fig. 3.4.4 CE-P31, CE-Q31

Current Output, Case style S,

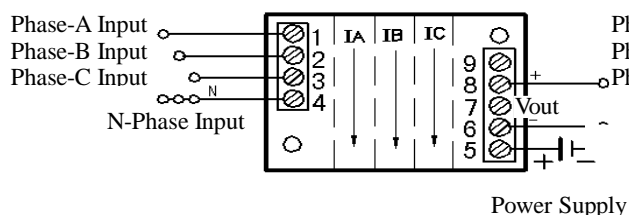


Fig. 3.4.5 CE-P41, CE-Q41

Voltage Output, Case style S

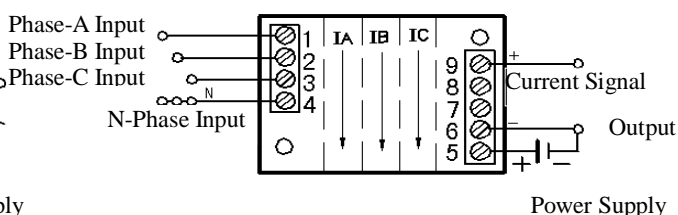


Fig. 3.4.6 CE-P41, CE-Q41

Current Output, Case style S

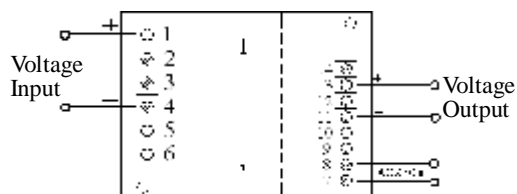


Fig. 3.4.7 CE-P02, CE-Q02

Voltage Output, Case style SK

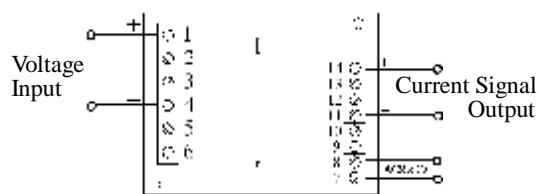


Fig. 3.4.8 CE-P02, CE-Q02

Current Output, Case style SK

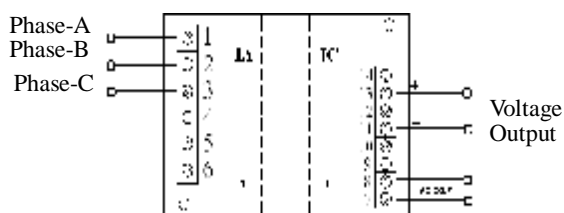


Fig. 3.4.9 CE-P31, CE-Q31

Voltage Output, Case style SK

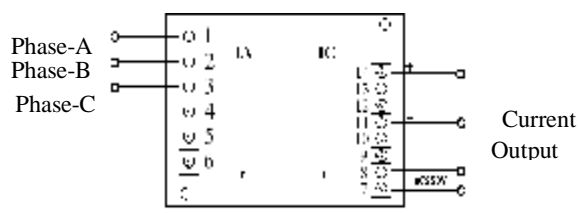


Fig. 3.4.10 CE-P31, CE-Q31

Current Output, Case style SK

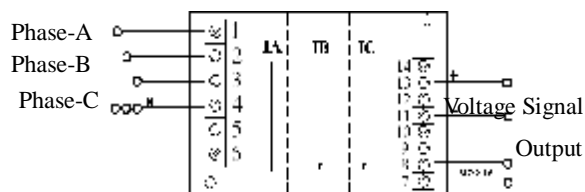


Fig. 3.4.11 CE-P41, CE-Q41

Voltage Output, Case style SK

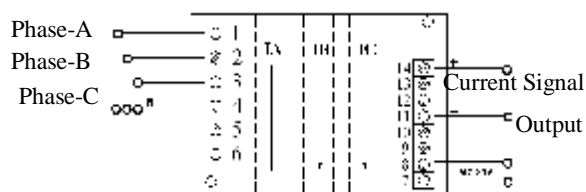


Fig. 3.4.12 CE-P41, CE-Q41

Current Output, Case style SK

Typical Application:

1. Motor Efficiency
2. Multi-point power sensing
3. Energy Management
4. Remote power sensing over long distances

Notice:

1. The input current must pass through the window in the direction shown in reference diagram of connections.
2. The output signal of 3-phase power transducer corresponds to total power of three phases.
3. In case the current to be measured is larger than 25A, it would be advisable to add AC current mutual inductor (CT) to each phase and take the secondary signal as input signal.

3.5 Power Supply

Power supply and dimensions (mm) : CE-WYS-1, CE-WYS-2

CE-WYS-1

Model	CE-WYS-1/1A/1B
Input Voltage	220V±10%, 50Hz
Rated Current Output	500mA
Output Voltage	DC ±12V, ±15V, +24V
Output Ripple	≤10mV

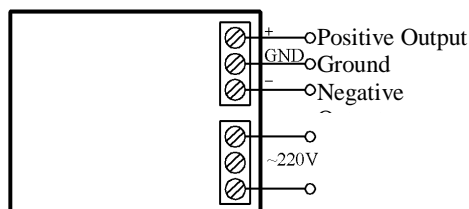
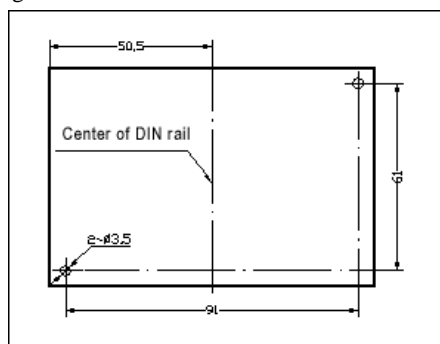


Fig.3.5.1 Connections of CE-WYS-1



Unit: mm

CE-WYS-2

Model	CE-WYS-2
Input Voltage	220V±10%, 50Hz
Rated Current Output	200mA
Output Voltage	DC +12V, +15V, +24V
Output Ripple	≤10mV

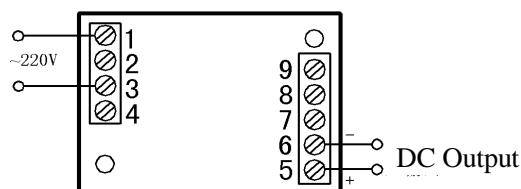
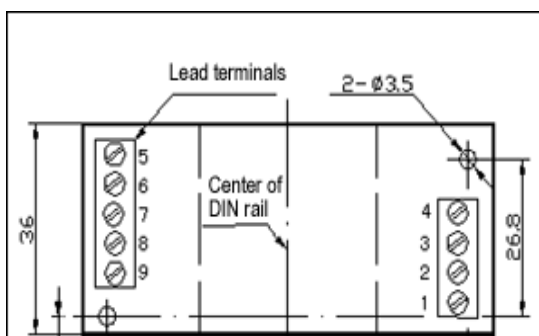


Fig. 3.5.2 Connections of CE-WYS-2

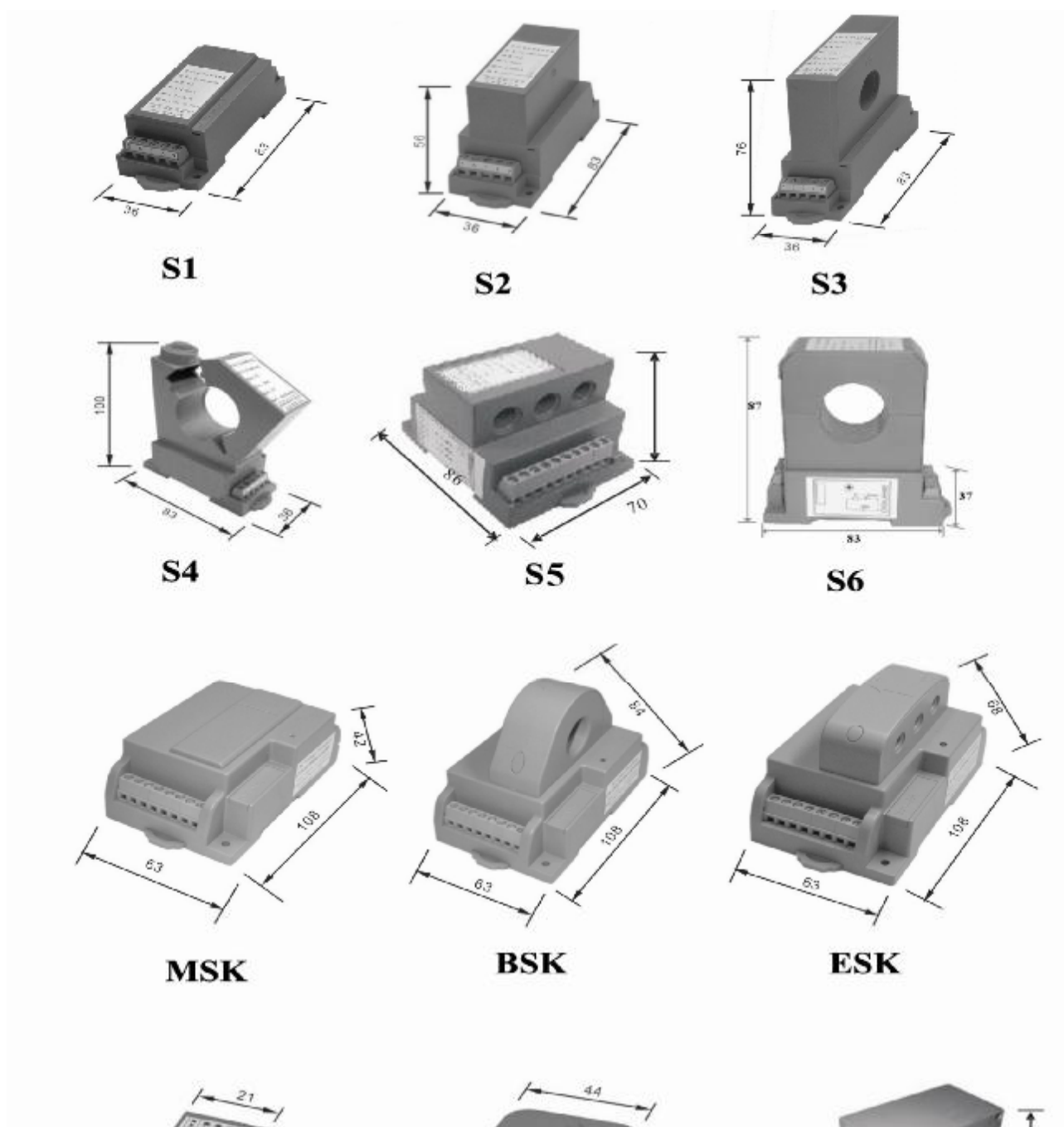


Unit: mm

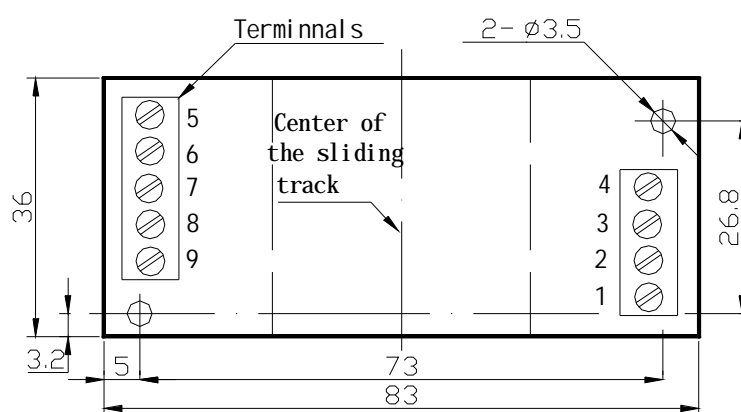
Note: CE-WYS-1 and CE-WYS-2 are switching mode regulated power supply with positive voltage output. The voltage output of CE-WYS-1A is not adjustable. The voltage output of CE-WYS-1B linear regulated power supply is adjustable. CE-WYS-2 is of S3 case style.

Chapter 4 Case style and Mounting Diagram

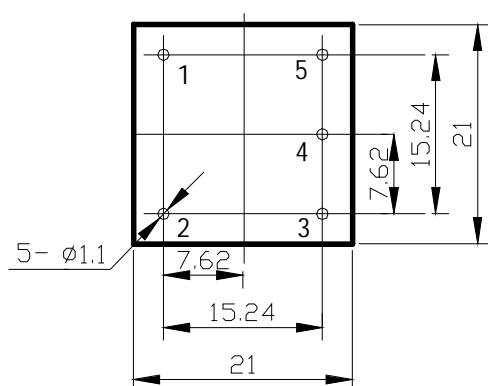
4.1 Case Styles and Outline Dimension



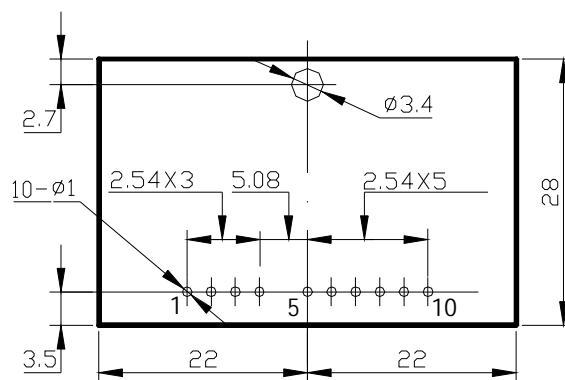
4.2 Mounting Dimensions (mm)



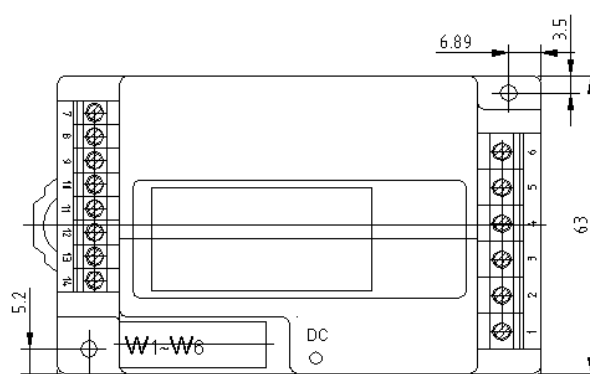
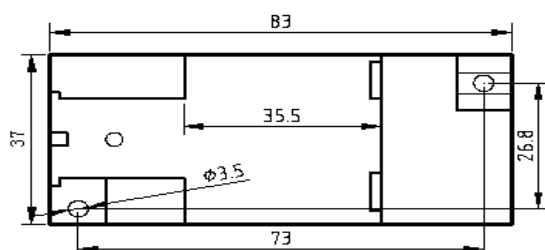
For Case style S1, S2, S3 and S4



For Case style H1 (Top view)



For Case style H2 (Top view)



Chapter 5 Notes for Ordering

5.1 Ordering Instructions

1. Ensure a complete correct part number and product descriptions are used according to instructions in Chapter 1. The ordering information must include the complete description including input and output parameters such as rated value, output functions, power supply and case style etc. Included with your order must be quantity, delivery and shipping requirements. Provide complete company name, address, fax number, and email address. Be sure to provide the name of the contact person that we can contact with any questions.
2. The complete order must be signed by both the seller and buyer.
3. Payment is by irrevocably L/C at sight for large quantities or 50% in advance and the remaining to be paid before shipment for small quantity.

5.2 Installation Notes

1. Verify the part number and description are correct according to the packing list and product labels.
2. Apply power to the transducers only after a thorough checking of the input signal, power supply according to connections diagram.
3. The power supply voltage must be within $\pm 2\%$ with noise less than 0.4%. V_{pp}
4. The transducers with current output may only be used with load resistance of less than 250 Ω . The voltage output transducers must be connected to a load of greater than 2K Ω
5. The transducers should only be used in environments having no static electricity, excessive dust, corrosive or explosive gases.
6. Please ensure the terminal screws are tightened securely and reliably before the electrical testing with a multi-meter directly on the terminals
7. Calibration of the units with equipment that has accuracy ratings greater than the rating of the transducers. Ensure that the equipment and transducers have been operating for a minimum of 15 minutes before calibration.
8. The transducers should not be used in environments with strong electromagnetic interference. Standard precautions such as shielding the input and/or output lines should be observed. All lines should be kept as short as possible. If a group of transducers are mounted together, keep a space more than 10 mm between adjacent units. A 35mm (width) track is to be used for DIN rail mounting with $\Phi 3$ screw for PCB surface mounting.
9. The transducers have been calibrated before delivery. Please contact the company if readjustments

are required.

10. Do not remove or destroy the product labels.

5.3 Warranty service

1. SHENZHEN SENSOR ELECTRONIC TECHNOLOGY CO., LTD. guarantees the original purchaser of our products a 24-month warranty from date of purchase. Repairs or other modifications made by unauthorized persons to the transducer will make all warranties, express or implied, null and void. Warranty does not include any component replacement if damages caused by improper use.



S1



S2



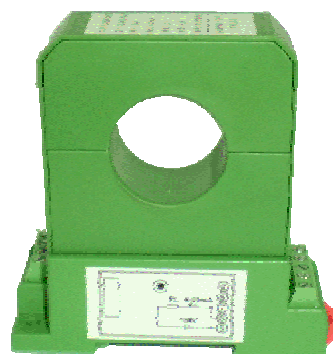
S3



S4



H1



S6



