

# Monitoring of HV Apparatus Insulation

## Active leakage current transducers

Yuanxing ALT series leakage current transducer is based on zero flux principle, used for high voltage electrical equipment on-line insulation monitoring devices of transformer substation, accurately measuring the mA and leakage current of equipment, output direct current standard signal, the primary measured current is electrical isolated from the secondary output signal. Nice appearance, waterproof paint surface treatment, directly suitable for outdoor installation. Yuanxing can design and produce various leakage current transducers according to customer's special demands, the devices showed on the right side are just several representative ones.



### Features

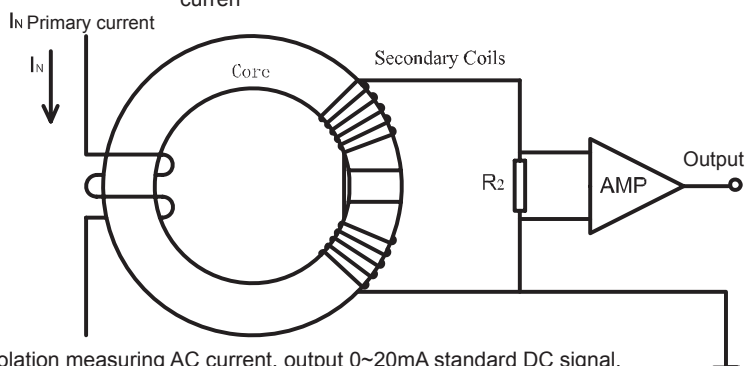
- Measuring frequency: DC, 50Hz (400Hz)
- responding time: 350ms
- Linearity: 0.5%
- No measurement insertion loss
- Measuring AC or DC current, output DC standard signal
- High isolation between the primary current and secondary output signal
- Nice appearance, waterproof paint surface treatment, directly suitable for outdoor installation
- Low consumption of power supply, single power supply is suitable and wider supply range.

### Application

- Used in high voltage electric power equipment insulation monitoring plant, which is stalled in transformers station. Provide exact measurement for mA leakage current of high voltage power equipment, such as transformers sleeve, current transformers

### Operating principle

When the measured current  $I_N$  passes the conductor, a magnetic field which is in direct proportion with  $I_N$  will be produced around the conductor. This magnetic field is measured by secondary coil, the output voltage  $V_n$  is in direct proportion with the measured current  $I_m$ , which is calibrated as standard signal via electronic circuit amplification and filtering, this signal will accurately reflect the effective value of primary current



## Representative Specification

### Performance parameter

AC leakage current transducer: Rated current 50mA(AC), isolation measuring AC current, output 0~20mA standard DC signal.

	Model No.	ALT12B-50mA/A0
IN	Rated input (AC)	50mA
Ip	Measuring range(AC)	0.01-100mA
RM	Measuring resistance	<300 $\Omega$
IM	Measuring current (output current)	When output rated value 0-20mA(DC), the corresponding primary rated current is 0-IN.
KN	Turn ratio	----
X	Accuracy ( $T_a=+25^{\circ}\text{C}$ )	$\pm 0.5\%$ of IN
Vc	power supply voltage	$\pm 12\text{VDC}/\pm 15\text{VDC}$
Vi	Isolation voltage	Between the primary and secondary circuit: 2.5KV rms/50HZ/1 min
Ioff	Offset current ( $T_a=+25^{\circ}\text{C}$ )	<10 $\mu\text{A}$ for primary current $I_N=0$
Td	Temperature drift ( $T_a=-40^{\circ}\text{C}\sim+85^{\circ}\text{C}$ )	0.05%/ $^{\circ}\text{C}$ of VM
L	Linearity	<0.5 %
$T_r$	Responding time	<0.35S

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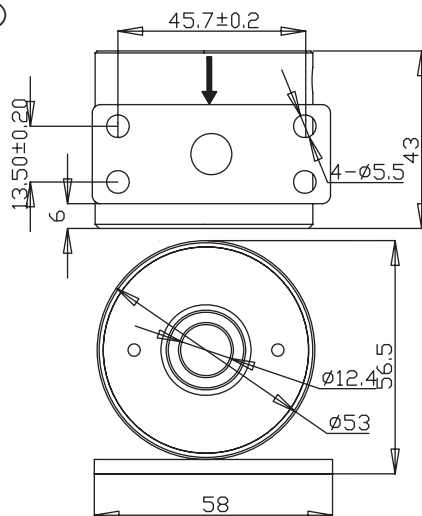
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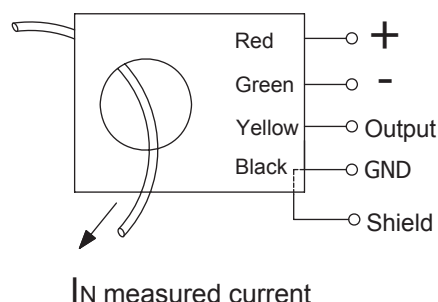
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	di/dt	----
f	Frequency range	50HZ(400HZ)
Ta	Operating temperature	-25℃~+85℃
Ts	Storage temperature	-40℃~+100℃
Ic	Consumption	0mA+IM (输出电流) 0mA+IM(Output current)
Rs	Secondary internal resistance (Ta=+25℃)	----
	Primary internal resistance (Ta=+25℃)	----
W	Weight	450g

#### Outline Dimension (mm)



#### Circuit connection diagram



#### Representative Specification

#### Performance parameter

AC leakage current transducer: Rated current 50mA(AC), isolation measuring AC current, output 0~20mA standard DC signal.

	Model No.	ALT25-50mA/A0
IN	Rated input	50mA
Ip	Measuring range (AC)	0.01-100mA
RM	Measuring resistance	<300 Ω
IM	Measuring current (output current)	When output rated value 0-20mA (DC), the corresponding primary rated current is 0-IN.
KN	Turn ratio	----
X	Accuracy (Ta=+25℃)	±0.5% of IN
Vc	power supply voltage	±12VDC/ ±15VDC
Vi	Isolation voltage	Between the primary and secondary circuit: 2.5KV rms/50HZ/1 min
Ioff	Offset current (Ta=+25℃)	<10 μ A for primary current IN=0
Td	Temperature drift (Ta=-40℃~+85℃)	0.05%/℃ of VM
L	Linearity	<0.5 %
T <sub>r</sub>	Responding time	<0.35S
	di/dt	----
f	Frequency range	50HZ(400HZ)
Ta	Operating temperature	-25℃~+85℃

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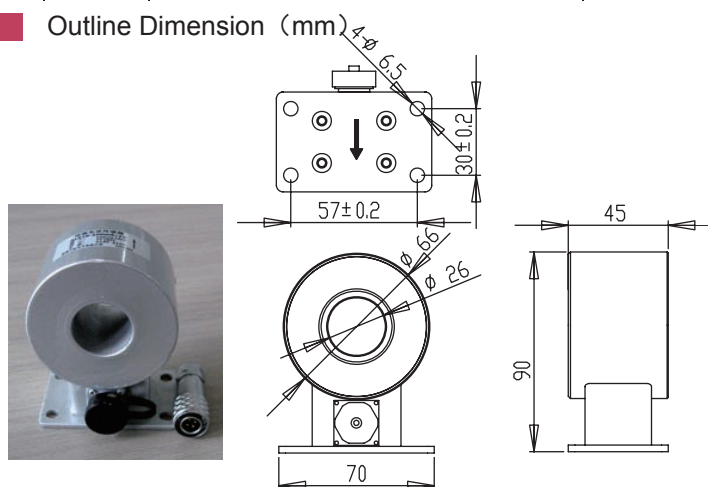
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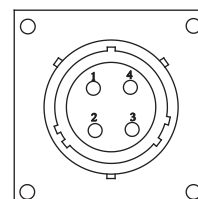


Ts	Storage temperature	-40℃~+100℃
Ic	Consumption	0mA+IM(Output current)
Rs	Secondary internal resistance (Ta=+25℃)	----
	Primary internal resistance (Ta=+25℃)	----
W	Weight	760g

## Outline Dimension (mm)



## Circuit connection diagram



pinhole explanation:

- 1: +
- 2: -
- 3: GND
- 4: M

## Representative Specification

## Performance parameter

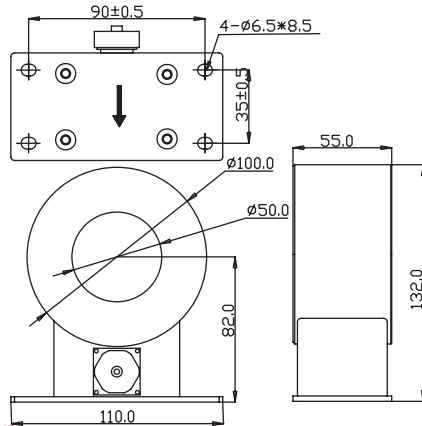
AC leakage current transducer: Rated current 50mA(AC), isolation measuring AC current, output 0~20mA standard DC signal.

	Model No.	ALT50-50mA/A0
IN	Rated input(AC)	50mA
I <sub>p</sub>	Measuring range (AC)	0.01-100mA
R <sub>M</sub>	Measuring resistance	<300 Ω
I <sub>M</sub>	Measuring current (output current)	When output rated value 0-20mA (DC), the corresponding primary rated current is 0-IN.
K <sub>N</sub>	Turn ratio	----
X	Accuracy (Ta=+25℃)	±0.5% of I <sub>N</sub>
V <sub>c</sub>	power supply voltage	±12VDC/±15VDC
V <sub>i</sub>	Isolation voltage	Between the primary and secondary circuit: 2.5KV rms/50HZ/1 min
I <sub>off</sub>	Offset current (Ta=+25℃)	<10 μA for primary current I <sub>N</sub> =0
T <sub>d</sub>	Temperature drift (Ta=-40℃~+85℃)	0.05%/℃ of V <sub>M</sub>
L	Linearity	<0.5 %
T <sub>r</sub>	Responding time	<0.35S
	di/dt	----
f	Frequency range	50HZ(400HZ)
T <sub>a</sub>	Operating temperature	-25℃~+85℃
T <sub>s</sub>	Storage temperature	-40℃~+100℃
I <sub>c</sub>	Consumption	0mA+I <sub>M</sub> (输出电流) 0mA+I <sub>M</sub> (Output current)
R <sub>s</sub>	Secondary internal resistance (Ta=+25℃)	----
	Primary internal resistance (Ta=+25℃)	----
W	Weight	2200g

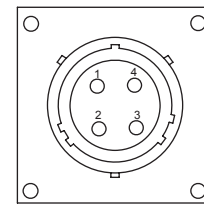
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### Outline Dimension (mm)



### Circuit connection diagram



pinhole explanation:

- 1: +
- 2: -
- 3: GND
- 4: M

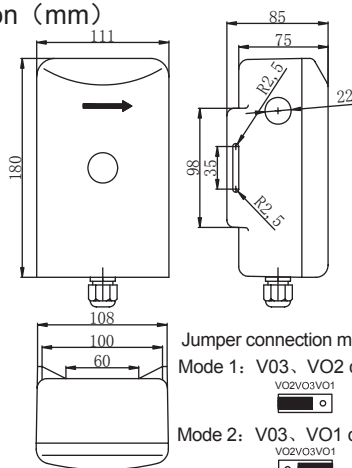
### Representative Specification

#### Performance parameter

AC leakage current transducer: Multi-switch selective rated current, isolation measuring AC current, output 0~20mA standard DC signal.

	Model No.	ALS20K- (2.5~800mA) /6.72V									
IN	Rated input (AC)/mA	Switch	S1	S2	S3	S4	S5	S6	S7	S8	S9
		Mode 1	2.5	5	10	15	20	25	30	35	40
		Mode 2	50	100	200	300	400	500	600	700	800
RM	Measuring resistance	<300 Ω									
IM	Output current	When output rated value 0-20mA(DC), the corresponding primary rated current is 0-IN.									
X	Accuracy	±0.5% of IN (@Ta=+25℃)									
Vc	power supply voltage	±12VDC/ ±15VDC/85V~220VAC									
Vi	Isolation voltage	Between the primary and secondary circuit: 2.5KV rms/50HZ/1 min									
Voff	Offset voltage	<1mV (@Ta=+25℃) for primary current IN=0									
Td	Temperature drift	0.05%/℃ of VM (@Ta=-40℃~+85℃)									
L	Linearity	<0.5%									
f	Frequency range	50HZ(400HZ)									
Ta	Operating temperature	-25℃~+85℃									
Ts	Storage temperature	-40℃~+100℃									
Ic	Consumption	10mA									
Rs	Secondary internal resistance	---- (@Ta=+25℃)									
W	Weight	1650g									

### Outline Dimension (mm)

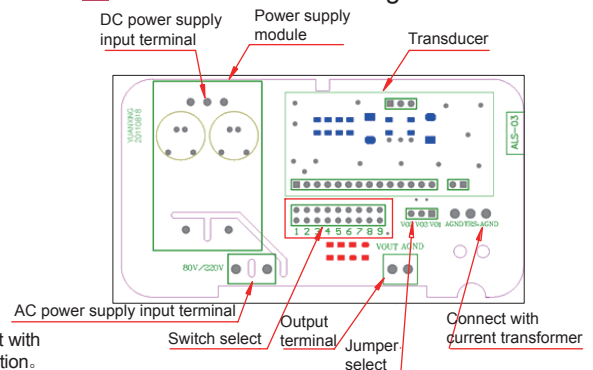


Jumper connection mode:

Mode 1: V03、VO2 connection, connect with 20 times amplification.

Mode 2: V03、VO1 connection, without 20 times amplification.

### Circuit connection diagram



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