LIT0.1 Residual Current Transducer

The multi-point zero-flux technology system applied in this high-precision DC transducer combines closed-loop excitation flux control technology, self-excited flux gate technology, and multiple closed loop control technology. The combination of technologies enables zero-flux closed-loop control of excitation flux, DC flux and AC flux, and can detect high-frequency ripple by constructing a high-frequency ripple sensing channel, so that the transducer can achieve high gains and measuring accuracy over the full bandwidth.

Product photo

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Key Technologies

◇ Excitation closed-loop control technology
◇ Self-exciting demagnetization technology
◇ Multi-point zero-flux technology
◇ Temperature control compensation technology
◇ Multi-range automatic switching technology

Features

◇ Insulation measurement at primary and secondary side
◇ Excellent linearity and accuracy
◇ Extremely low temperature drift
◇ Extremely low zero drift
◇ Broad band and low response time
◇ Strong anti-electromagnetic interference

Application Domain

◇ Industry Control
◇ Railway
◇ Test instrumentation
◇ Medical Equipment
◇ Power and power grid
◇ New Energy

Electrical Performance

Parameter	Symbol	Measuring Conditions	Min	Typ	Max	Unit
Primary nominal current	I_{PN}	—	0	0.1	—	A
Primary overload current	I_P	—	—	200% I_{PN}	—	A
Operating voltage	V_C	—	±14.2	±15	±15.8	V
Power consumption current	I_{PWR}	—	±30			mA
Output voltage	V_{SN}		0	±2	—	V

Accuracy Measurement

Parameter	Symbol	Measuring Conditions	Min	Typ	Max	Unit
Accuracy	X_G	Input direct current，rated range	—	—	0.2	%
Linearity	ε_L	Full range	—	—	0.2	%
Zero offset voltage	I_{OT}	Full temperature range	—	—	±10	mV
Dynamic response time	t_r	Rised to 90%I_{PN}	—	—	2	ms
Frequency bandwidth（-3dB）	F	—	0	—	100	kHz

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Safety Characteristics

Parameter	Symbol	Measuring Condition	Value	Unit
Insulation voltage / Between primary and secondary sides	Vd	50Hz,1min	5	KV
Transient isolation withstand voltage / Between primary and secondary sides	Vw	50us	10	KV
Creepage distance / Between the primary and the outer shell	dCp	—	11	mm
Clearance distance / Between the primary and the outer shell	dCi	—	11	mm
Comparative tracking index	CTI	IEC-60112	275	V

General Characteristics

Parameter	Symbol	Measuring Condition	Min	Typ	Max	Unit
Ambient operating temperature	T_A	—	-40	—	+85	ºC
Ambient storage temperature	T_S	—	-55	—	+95	ºC
Relative humidity	RH	—	20	—	80	%
Mass	M	—	—	350±10	—	g

Operating Status Instructions

◇ The green indicator is on when the device is running normally:

After the device is powered on, the green indicator is on when the device is running normally, and the 3rd pin and 8th pin of D-Sub9 interface are connected together.

◇ The green light is off when the current overload or power supply is abnormal:

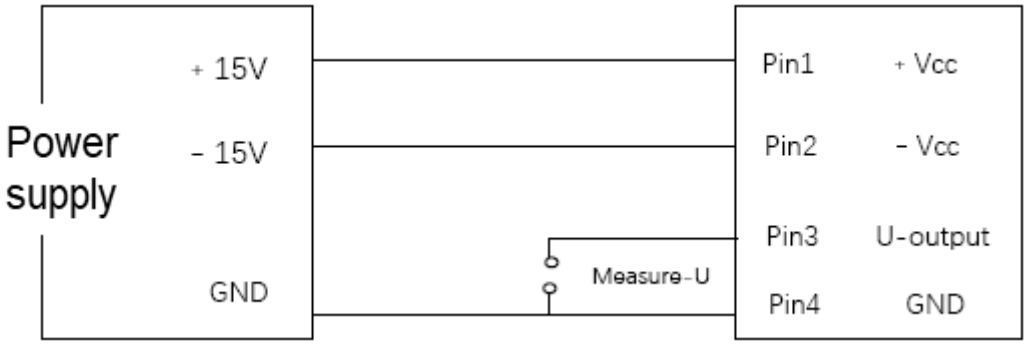
When the green light is off, you should check whether the power supply of the transducer is normal. When the power supply is normal, if the green light is off, the current transducer is in a non-zero flux state. At this time, the input current amplitude of the bus exceeds the specified range, and the transducer enters the overload state. The output current is no longer proportional to the input current signal. In overload mode, the output current of the transducer remains at the maximum output state and the green indicator light goes out. When the input current recovers within the specified current range, the transducer output current will return to normal and the green indicator will light up.

Connection system

1. Phoenix terminal pin function definition

Pin No.	1	2	3	4
Definition	**+15V Supply**	**-15V Supply**	**U_Output**	**GND**

LIT Transducer



Test instruction:

After the current flows through the primary hole of the transducer, a voltage is directly outputted from the interface. The primary current I_P can be obtained by measuring the output voltage U_{OUTPUT}:

$$I_P = K_N * U_{OUTPUT}$$

Dimensions

Unit：mm