

022



BA系列交流电流传感器

BA Series AC current transformer

安装使用说明书 V1.1

Installation and operation instruction V1.1

江苏安科瑞电器制造有限公司
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申 明

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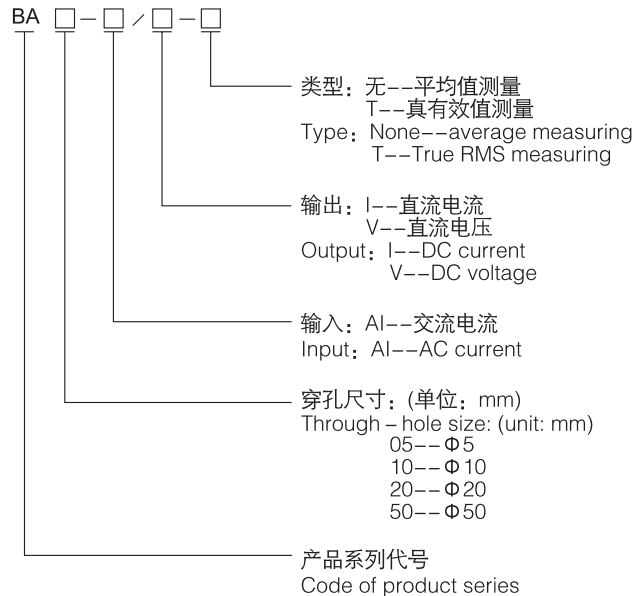
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1 产品概述 General

BA系列产品应用电磁感应原理，对电网中的交流电流进行实时测量，采用精密恒流和线性补偿技术，将其隔离变换为标准的直流信号输出。DC24V或DC12V 安全电压供电，具有过载能力强、高精度、高隔离、高安全性、低功耗等特点，可广泛用于工业自动化领域。BA50L 交流剩余电流传感器主要检测用电系统的漏电流，能随时掌握电气线路和设备的情况，防止因漏电而发生的火灾等事故。

BA Series products use electromagnet induction principle to real time measure AC current in grid, adopt precise constant current and linear compensation technology convert its isolation into standard DC signal output. With features of safe voltage of 24V or 12 V, high overload capacity, high precision, high isolation, high safety, low power consumption etc., so, it is widely used in industrial automation field. BA50L as a AC residual current transformer is mainly used for detecting leakage current in power system, real time understand situation of electrical line and equipment to prevent leakage result in fire or other accident.

2 型号说明 Explanation of type



3 通用技术条件 General specification

电源 Power	电压 Voltage	DC 12V 或 24V DC 12V or 24V
	功耗 Consumption	≤ 1W
绝缘电阻 Insulation resistance		> 100MΩ
耐压强度 Withstand strength		输入/输出、电源之间2.0kV/1min, 50Hz Between input/output, power supply 2.0kV/1min, 50Hz
温度系数 Temperature coefficient		-10℃~+55℃时, ≤200PPM/℃
环境 Environment	温度 Temperature	工作: -10℃~+55℃, 储存: -25℃~+70℃ Working: -10℃~+55℃, storage: -25℃~+70℃
	湿度 Humidity	≤95%RH, 不结露, 无腐蚀性气体场所 ≤95% RH, No condensation, without corrosive gas
	海拔 Altitude	≤2000m
安装方式 Installation mode		TS35导轨, 或用螺钉固定柜体上 TS35 guide rail, fix on cubicle with screws

4 产品规格 Product specification

- | | |
|-------------------------------------|---|
| 4.1 BA05-AI 交流电流传感器 | 4.1 BA05-AI AC current sensor |
| BA05-AI/I(V) 交流电流传感器
(平均值法测量) | BA05-AI/I(V) Single phase AC current
sensor (average measuring) |
| BA05-AI/I(V)-T 交流电流传感器
(真有效值法测量) | BA05-AI/I(V)-T Single phase AC current
sensor (True RMS measuring) |

技术参数 Technical Parameters		指标 Value
精度等级 Accuracy class		0.5级、0.2级 0.5 class、0.2 class
输入 Input	标称值 Nominal value	电流AC 0.5A、5A、10A等 AC 0~(0.5~10)A Current AC 0.5A、5A、10A etc. AC 0~(0.5~10)A
	过载 Overload	持续1.2倍, 瞬时电流10倍/1S Continuous 1.2times, instantaneous current 10 times/1second
	吸收功率 Absorbed power	≤ 1VA
	频响 Frequency response	25Hz~800Hz(平均值), 25~5kHz(真有效值), 特别适合工频场合 25Hz~800Hz(average), 25~5kHz(true RMS), specially suitable for power frequency application
输出 Output	标称值 Nominal value	DC4~20mA, 或0~20mA, 0~5V, 0~10V等 DC4~20mA, or 0~20mA, 0~5V, 0~10V etc.
	负载电阻 load resistance	电流输出时 ≤ 500Ω, 电压输出时 ≥ 1kΩ Current output ≤ 500Ω, Voltage output ≥ 1kΩ
响应时间 Response time		平均值 ≤ 350ms, 真有效值 ≤ 100ms

4.2 BA10-AI 交流电流传感器
BA10-AI/I(V) 交流电流传感器（平均值法测量）
BA10-AI/I(V)-T 交流电流传感器（真有效值法测量）

4.2 BA10-AI AC current sensor
BA10-AI/I(V) Single phase AC current sensor (average measuring)
BA10-AI/I(V)-T Single phase AC current sensor (True RMS measuring)

技术参数 Technical Parameters		指标 Value
精度等级 Accuracy class		0.5级、0.2级 0.5 class、0.2 class
输入 Input	标称值 Nominal value	电流AC 8A、25A、50A等 AC 0~(8~50)A Current AC 8A、25A、50A etc.AC 0~(8~50)A
	过载 Overload	持续1.2倍，瞬时电流10倍/1S Continuous 1.2times, instantaneous current 10 times/1second
	吸收功率 Absorbed power	≤1VA
	频响 Frequency response	25Hz~800Hz(平均值), 25~5kHz(真有效值), 特别适合工频场合 25Hz~800Hz(average), 25~5kHz(true RMS), specially suitable for power frequency application
输出 Output	标称值 Nominal value	DC4~20mA, 或0~20mA, 0~5V, 0~10V等 DC4~20mA, or 0~20mA, 0~5V, 0~10V etc.
	负载电阻 load resistance	电流输出时≤500Ω, 电压输出时≥1kΩ Current output ≤500Ω, Voltage output ≥1kΩ
响应时间 Response time		平均值≤350ms, 真有效值≤100ms

4.3 BA20-AI 交流电流传感器
BA20-AI/I(V) 交流电流传感器（平均值法测量）
BA20-AI/I(V)-T 交流电流传感器（真有效值法测量）

4.3 BA20-AI AC current sensor
BA20-AI/I(V) Single phase AC current sensor (average measuring)
BA20-AI/I(V)-T Single phase AC current sensor (True RMS measuring)

技术参数 Technical Parameters		指标 Value
精度等级 Accuracy class		0.5级、0.2级 0.5 class、0.2 class
输入 Input	标称值 Nominal value	电流AC 40A、100A、200A等 AC 0~(40~200)A Current AC 40A、100A、200A etc.AC 0~(40~200)A
	过载 Overload	持续1.2倍，瞬时电流10倍/1S Continuous 1.2times, instantaneous current 10 times/1second
	吸收功率 Absorbed power	≤1VA
	频响 Frequency response	25Hz~800Hz(平均值), 25~5kHz(真有效值), 特别适合工频场合 25Hz~800Hz(average), 25~5kHz(true RMS), specially suitable for power frequency application
输出 Output	标称值 Nominal value	DC4~20mA, 或0~20mA, 0~5V, 0~10V等 DC4~20mA, or 0~20mA, 0~5V, 0~10V etc.
	负载电阻 load resistance	电流输出时≤500Ω, 电压输出时≥1kΩ Current output ≤500Ω, Voltage output ≥1kΩ
响应时间 Response time		平均值≤350ms, 真有效值≤100ms

4.4 BA50-AI 交流电流传感器
BA50-AI/I(V) 交流电流传感器（平均值法测量）
BA50-AI/I(V)-T 交流电流传感器（真有效值法测量）

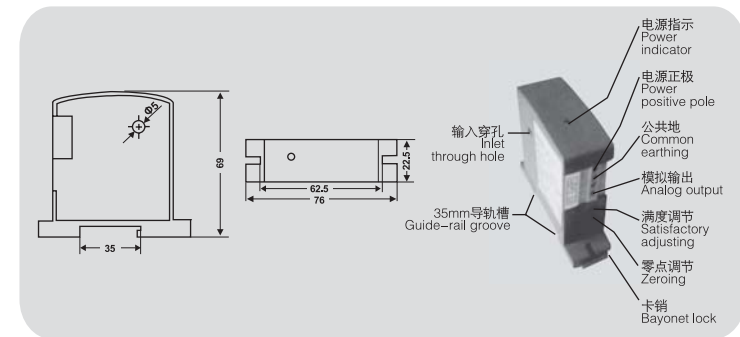
4.5 BA50-AI AC current sensor
BA50-AI/I(V) Single phase AC current sensor (average measuring)
BA50-AI/I(V)-T Single phase AC current sensor (True RMS measuring)

技术参数 Technical Parameters		指标 Value
精度等级 Accuracy class		0.5级、0.2级 0.5 class、0.2 class
输入 Input	标称值 Nominal value	电流AC 60A、300A、600A等 AC 0~(60~600)A Current AC 60A、300A、600A etc.AC 0~(60~600)A
	过载 Overload	持续1.2倍，瞬时电流10倍/1S Continuous 1.2times, instantaneous current 10 times/1second
	吸收功率 Absorbed power	≤1VA
	频响 Frequency response	25Hz~800Hz(平均值), 25~5kHz(真有效值), 特别适合工频场合 25Hz~800Hz(average), 25~5kHz(true RMS), specially suitable for power frequency application
输出 Output	标称值 Nominal value	DC4~20mA, 或0~20mA, 0~5V, 0~10V等 DC4~20mA, or 0~20mA, 0~5V, 0~10V etc.
	负载电阻 load resistance	电流输出时≤500Ω, 电压输出时≥1kΩ Current output ≤500Ω, Voltage output ≥1kΩ
响应时间 Response time		平均值≤350ms, 真有效值≤100ms

5 外型及安装 Outline and installation

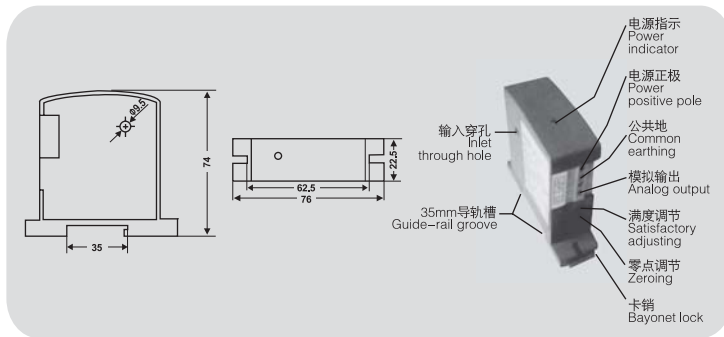
5.1 BA05-AI 交流电流传感器

5.1 BA05-AI AC current sensor



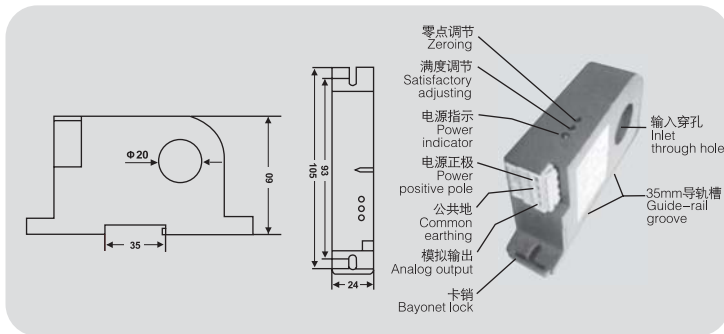
5.2 BA10-AI 交流电流传感器

5.2 BA10-AI AC current sensor



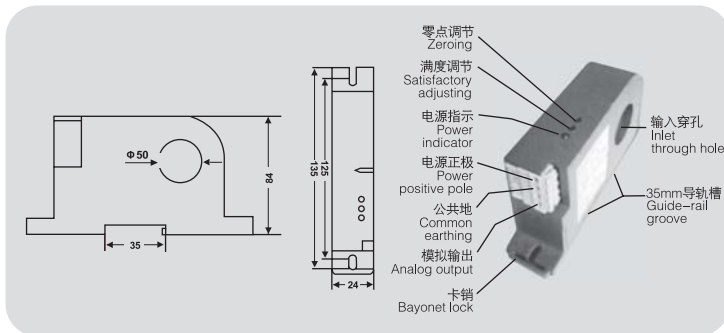
5.3 BA20-AI 交流电流传感器

5.3 BA20-AI AC current sensor



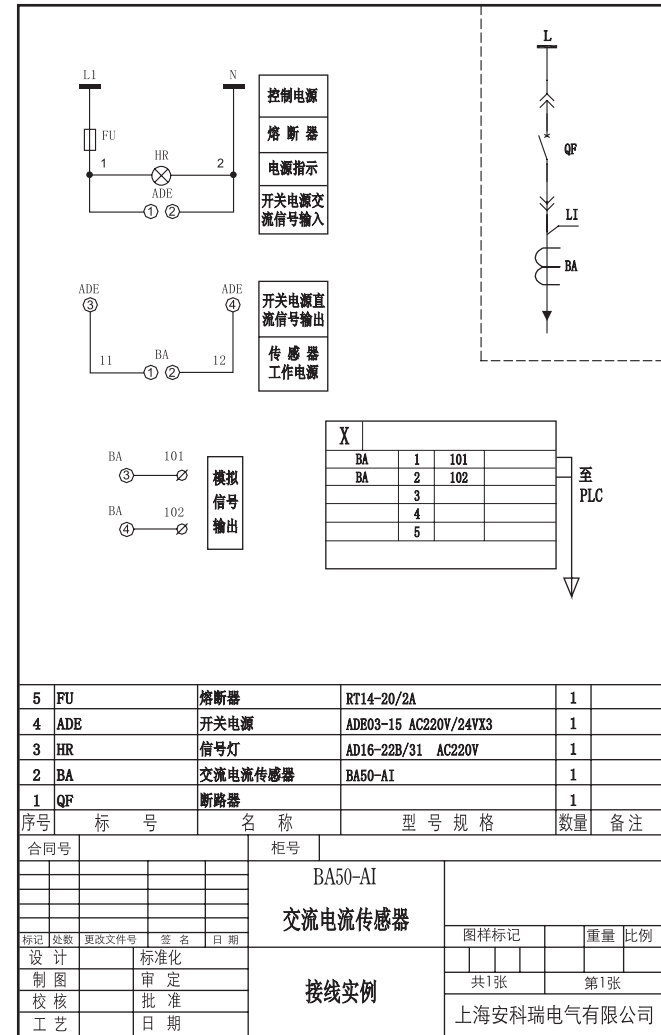
5.4 BA50-AI 交流电流传感器

5.4 BA50-AI AC current sensor



5.5 应用实例

5.5 Applied example



6 BA50L交流剩余电流传感器 AC residual current sensor

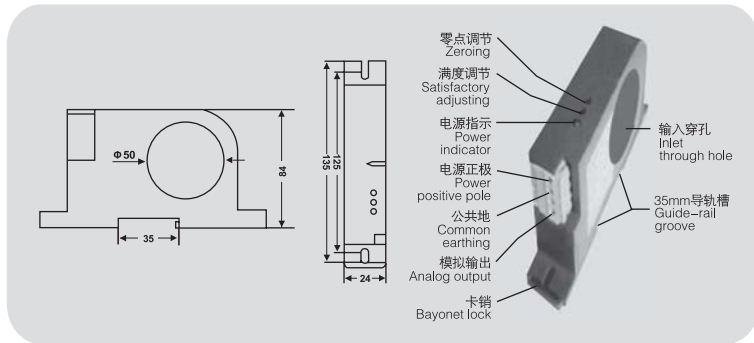
6.1 BA50L-AI/I(V)-T 交流剩余电流传感器
(真有效值测量)

6.1 BA50L-AI/I(V)-T AC residual current sensor
(True RMS measuring)

技术参数 Technical Parameters		指标 Value
精度等级 Accuracy class		0.5级、0.2级 0.5 class、0.2 class
输入 Input	标称值 Nominal value	电流AC 0.1A、1A等 AC 0~(0.1~1)A Current AC 0.1A、1A etc.AC 0~(0.1~1)A
	过载 Overload	持续1.2倍，瞬时电流10倍/1S Continuous 1.2times, instantaneous current 10 times/1second
	吸收功率 Absorbed power	≤1VA
	频响 Frequency response	25~5kHz(真有效值)，特别适合工频场合 25~5kHz(true RMS), specially suitable for power frequency application
输出 Output	标称值 Nominal value	DC4~20mA，或0~20mA，0~5V，0~10V等 DC4~20mA, or 0~20mA, 0~5V, 0~10V etc.
	负载电阻 load resistance	电流输出时≤500Ω，电压输出时≥1kΩ Current output ≤500Ω, Voltage output ≥1kΩ
响应时间 Response time		真有效值≤100ms
测量方法 Method measuring		真有效值测量法 True RMS measurement

6.2 BA50L-AI 交流剩余电流传感器外形及安装

6.2 BA50L-AI Outline and installation of AC residual current sensor

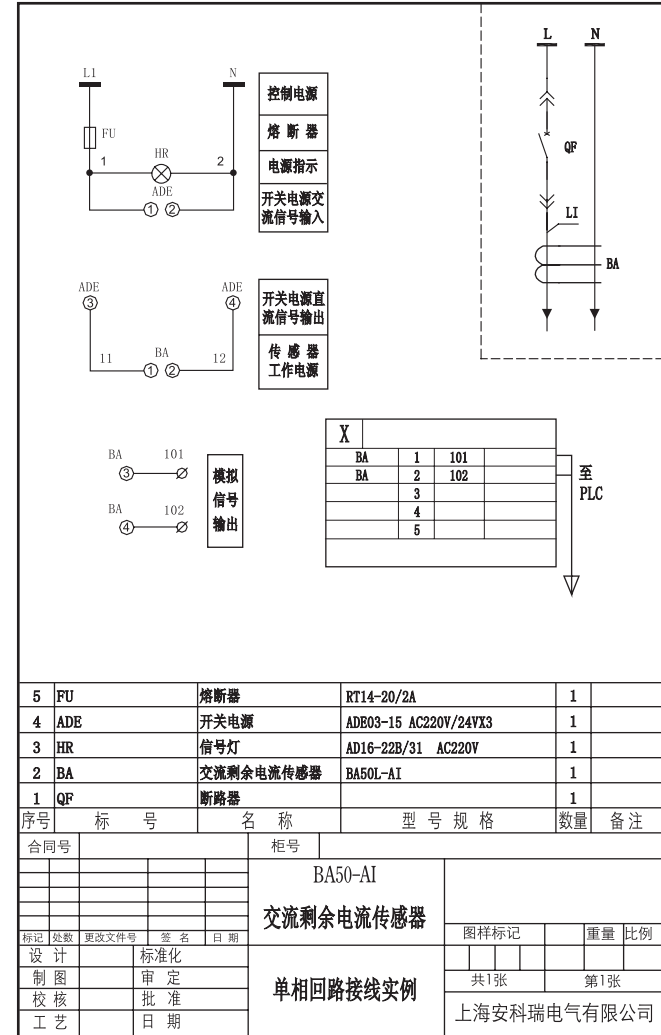


6.3 应用实例

6.3 Applied example

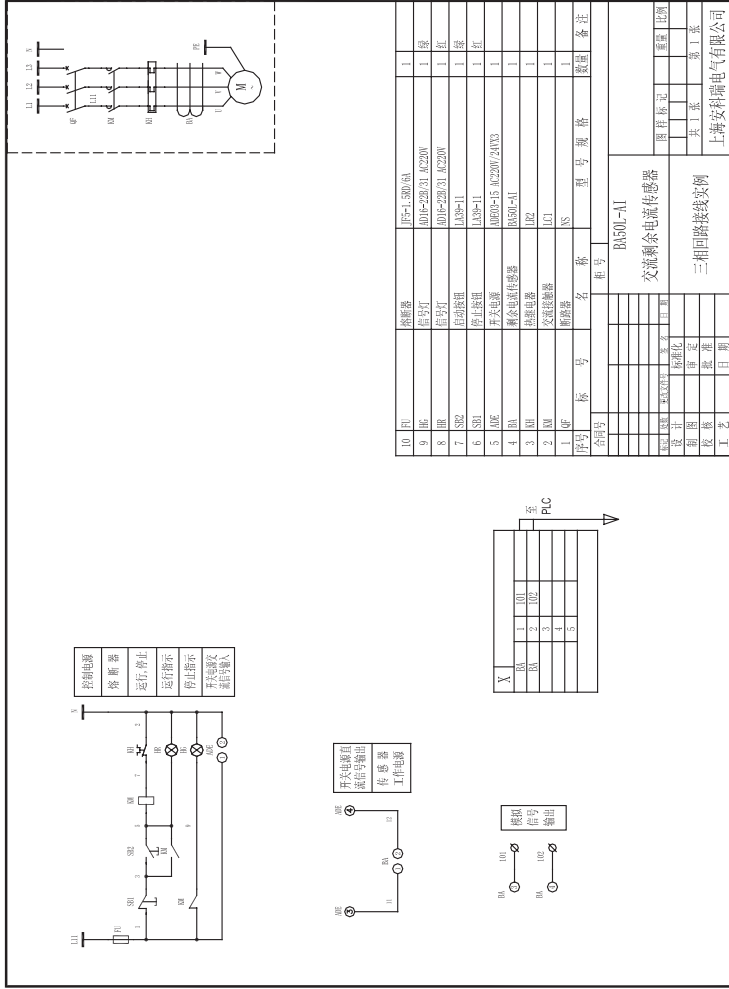
6.3.1 单相回路

6.3.1 Single phase circuit



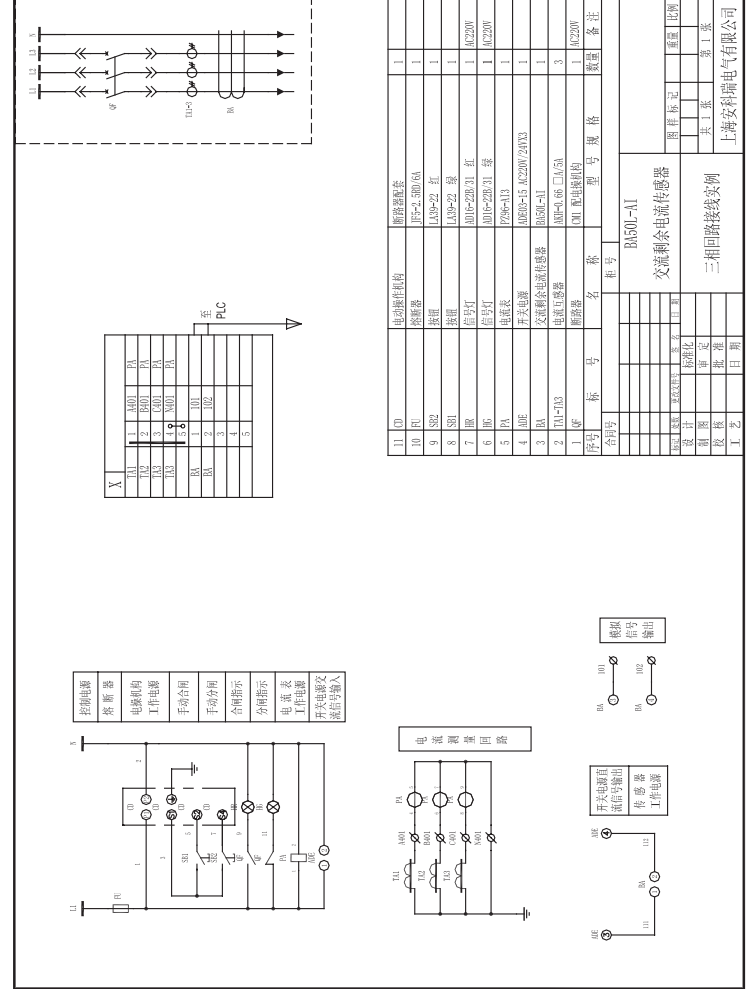
6.3.2 三相三线回路

6.3.2 Three - phase three - wire circuit

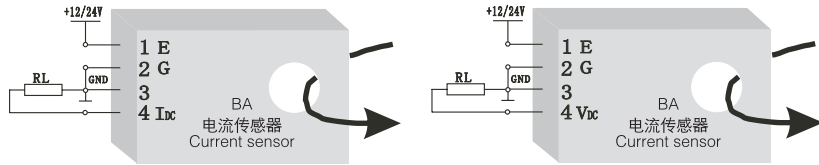


6.3.3 三相四线回路

6.3.3 Three - phase four - wire circuit



7 接线方式 Connection mode



- 1 - E电源正极 (注意电源正极与地不可接反)
- 2 - G 电源地
- 3 - 输出地 (可与电源共地, 适用于远距离变送)
- 4 - I_{dc}(电流输出正极), V_{dc}(电压输出正极)

- 1 - E power positive pole (inverse connection with earth is forbidden)
- 2 - G power earthing
- 3 - Output earthing (can share earthing with the power, applied to long distance transmitting)
- 4 - I_{dc} (current output positive pole), V_{dc} (voltage output positive pole)

注: 具体接线按实物外壳上的接线图为准

Note: The concrete connection as per the wiring diagram on the specific product case shell.

8 订货范例 Ordering example

例1 BA05-AI/I 平均值交流电流传感器

EXP1 BA05-AI/I Average AC current sensor

辅助电源: Auxiliary power supply:	DC24V
输入: Input:	AC5A
输出: Output:	DC4~20mA
精度: Precision:	0.5级

例2 BA05-AI/I - T 真有效值交流电流传感器

EXP2 BA05-AI/I - T True RMS AC current sensor

辅助电源: Auxiliary power supply:	DC24V
输入: Input:	AC5A
输出: Output:	DC4~20mA
精度: Precision:	0.5级

例3 BA50L-AI/I(V)交流剩余电流传感器

EXP3 BA50L-AI/I(V) AC residual current sensor

辅助电源: Auxiliary power supply:	DC24V
输入: Input:	AC1A
输出: Output:	DC4~20mA
精度: Precision:	0.5级