General Failure Analysis

Isolation barrier, Safety Barrier

Phenomenon	Possible Causes	Solutions
No output Signal	Circuit power supply malfunction 1. Power input terminal's circuitry is faulty connection 2. Power input terminal's circuitry is loose. 3. Input Voltage is too low, so it is no enough power for the circuit behind. 4. Power polar connection is in reserve 5. Power input end fuse is likely to be burn out by thunder, surge or voltage rush and so on. 6. Input voltage is overhigh, which damages the inner power transformer's circuit	1. To check if input terminal's circuitry is faulty 2. To check if power input terminal's connection is inserted right and firmly fixed. 3. to check if the power input voltage is too low. Check if it is less than the minimum value in the datasheet. 4. To check if polar connection is in reverse. 5. Contact us for repair. For the safety barrier of fuse burned out it needs to change into new one. Obey the following procedure: cut off non-essence safety connection →cut off essence safety →cut off earth wire →deal with the bareness wire connection →take off the safety barrier→ install the qualified product as the reverse operating order, (In addition, it is likely to add surge protection measure at the power input end(to choose thunder surge protection) 6. To check if power input voltage is overhigh, which surpasses 15% more than the requested value in the datasheet. To contact us to return for repair.
	Signal input loop is malfunction 1. Signal input terminal's circuitry is faulty connection 2. Signal input terminal's circuitry is loose. 3. the real input signal type is different from product's input signal type. 4. the product fuse is likely to be burned out by thunder, surge or voltage rush from signal input end	1. To check if signal input terminal's circuitry is faulty 2. To check if signal input terminal's connection is inserted right and firmly fixed. 3. To check if the real input signal type is the same to the product input signal type. 4. Contact us for repair. For the safety barrier to obey the same procedure above In addition, it may add surge protection measure at the signal input end (to choose thunder surge protection)

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Phenomenon	Possible Causes	Solutions
	Signal output loop is malfunction 1. Signal output terminal's circuitry is faulty connection 2. Signal output terminal's circuitry is loose. 3. The external output loop is open circuit or short cirtcuit.	1. To check if signal output terminal's circuitry is faulty 2. To check if signal out knocked-down terminal's connection is inserted right and firmly fixed. 3. To check if the external output loop is open circuit or short circuit
Large output signal deflection	1. Signal output polar is in reserve 2. Load is overhigh: For current output the product the external load total amount is more than the requested resistance Ω value, For power output product, external load resistance total amount will be less the standard resistance Ω value. 3. When thermocouple input, signal input terminal positive or negative lead is in reserve 4. The thermocouple input has no connection cold junction compensation thermal resistance. 5. When the thermal resistance is input, two wires/ three wires/ four wires connection is incorrect. 6. When power voltage is too low, driver strength is not enough, which lead signal distortion.	1. To check if polar connection is in reverse. 2. To check if load surpass the request value in the datasheet. To ensure when the current output the external total load is less than the requested resistance Ω value. While the power voltage output, the external total load is more than the requested Ω value 3. To check if the positive or negative lead of thermocouple temperature signal input is in reserve. 4. To check if cold junction compensation thermal resistance is correct connection as the datasheet request. 5. To check if the temperature signal's connection of the thermal resistance is correct. 6. To check if power voltage is too low.
Output signal instability	1. Connection is not firm. 2. Signal input is instability. 3. For voltage input type	1. To check if connection is firm. 2. To check if input signal is stability 3. Input and output wiring should be as short as

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	products, especially when it is the small signal input, because of the large input impedance, it is easier to introduce interference	possible; Pay attention to the system alignment of the PCB layout, strong power and weak alignment should be strictly separated; Product should be avoid interference from the strong radiation source, such as motors, inverter, magnetic field, controllable silicon and so on. If environmental conditions limited, it can not be away from radiation source , it need to set electromagnetic shielding;
Product damage after testing terminal’s Isolation resistance by megohmmeter	No cutting off connection leads to inner circuit damage before testing products	To contact us for repair. For checking terminal’s isolation strength, it need to cut off all the connection then disassemble and assemble the safety barrier. The procedure is obeyed the same as the dispose of fuse burned out.
Severe product heat	DIN35mm rail install method is incorrect	Install rail as uprightly as possible. A distance between products should be kept (such as 10mm). It is good for heat output.
Damage from programable Porducts are wroten	No cutting off connection leads to inner circuit damage before program the product.	To contact us for repair. For programming the products it need cut off all the connection then disassemble and assemble the safety barrier. The procedure is obeyed the same as the dispose of fuse burned out.

Note: Please contact our FAE department if above solutions did not solve your problems well.
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