

SFGP series signal isolator

Operation instruction



SFGP series signal isolator

Operation instruction

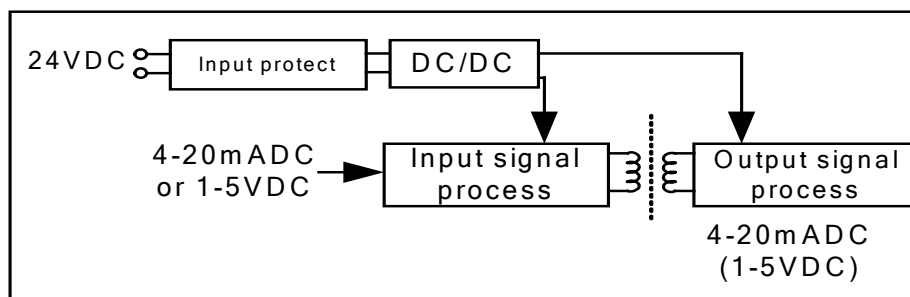
1. Overview

SFGP series signal isolator is the improved type of DFP type in DDZ-III electric combined unit instruments. The SFGP series can provide isolating signal for 2-wire transmitter mounted in the field and transform the transmitter's 4~20mA signal to 1~5V/4~20mA signal isolated from it, which realizes the isolation of input、output and power supply between each other.

2. Specification

2.1.Input signal	4~20mA/1-5V
2.2.Output signal	4~20mA/1~5V
2.3.Output resistance	250Ω (when 1~5V output) ; >500KΩ(when 4~20mA output)
2.4.Load resistance	≤350Ω(when 4~20mA output)
2.5.Accuracy	±0.25%F.S
2.6.Response time	<1s
2.7.Insulation resistance	≥100MΩ
2.8.Insulation strength	1000V(AC)*1 min between input/output/power each other
2.9.Power voltage	24V.DC±10%
2.10.Power dissipation	≤1.5W
2.11.Operating condition	Temperature 0~50℃; Relative humidity≤85%
2.12.Outline dimension	24×104×110mm(W*H*D)

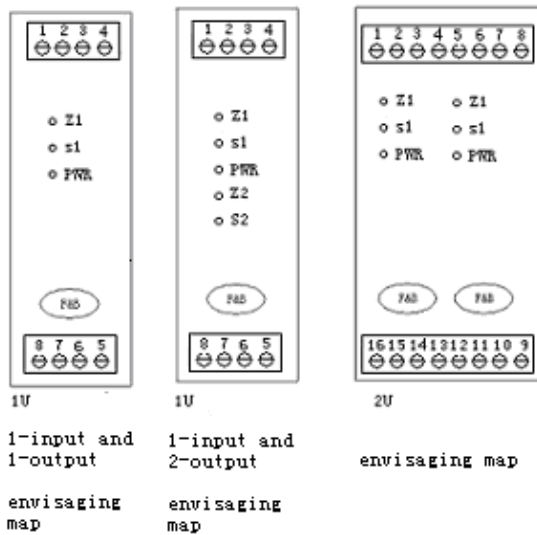
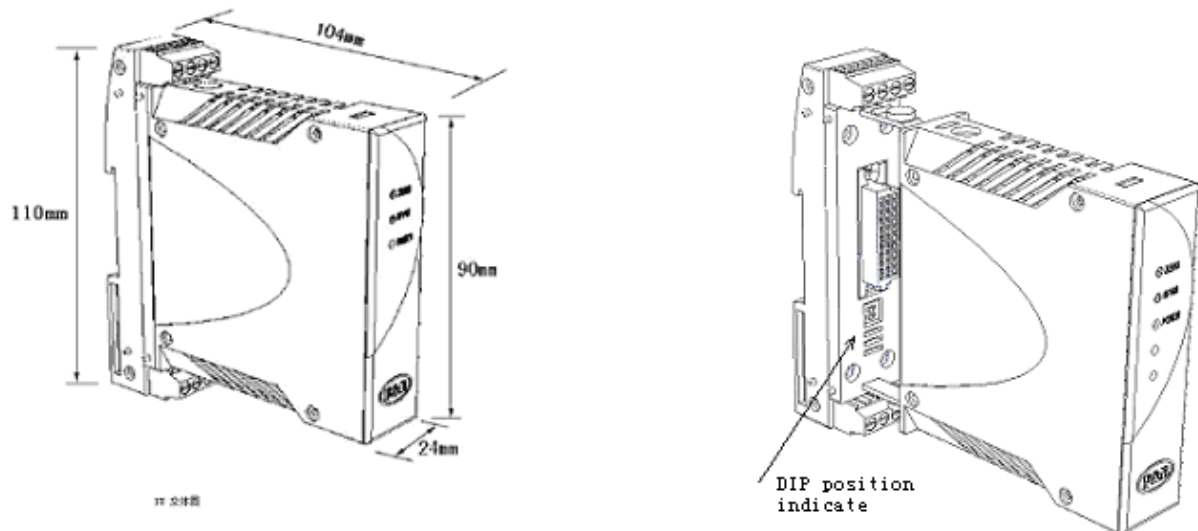
3. Operation principle diagram



4. Order number

Type number			Description			
SFGP			Power-distributor/isolator with rail mount			
Input signal type IN1/IN2	0	0	Has no use for this channel			
	4	4	Power-distributor with 4~20mA(DC) input and 18.5~28.5V(DC) output			
	6	6	Isolator with 4~20mA(DC) input			
	8	8	Isolator with 1~5V(DC) input			
	9	9	Special input signal, such as 0-10VAC			
Output signal type OUT1/OUT2			0	0	No transmitter output	See the DIP map of output signal type description
			6	6	4~20mA(DC) output	
			8	8	1~5V(DC) output	
			9	9	Special output signal	
Power supply			D	24VDC power supply		
			A	220VAC power supply(only for 1-input and 1-output)		

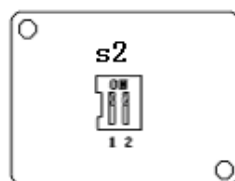
4.1 Figure sketch map



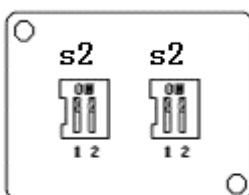
4.2 Mount type: TS35 rail

Note: DIP map of output signal type

DIP sketch map (envisaging)

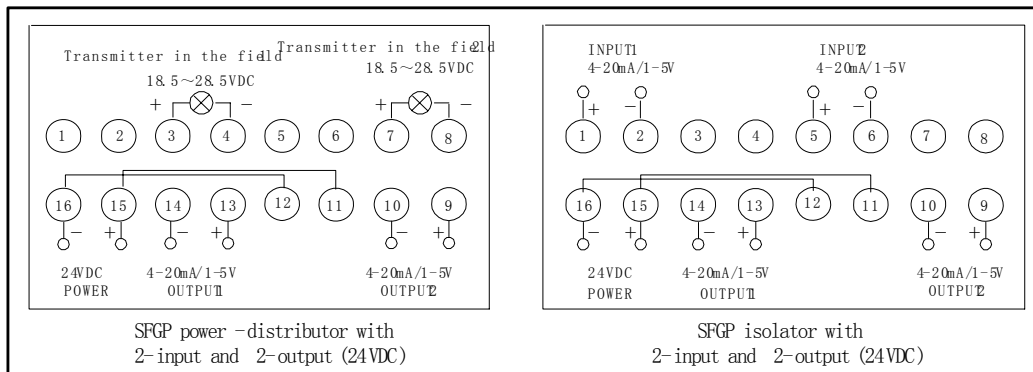
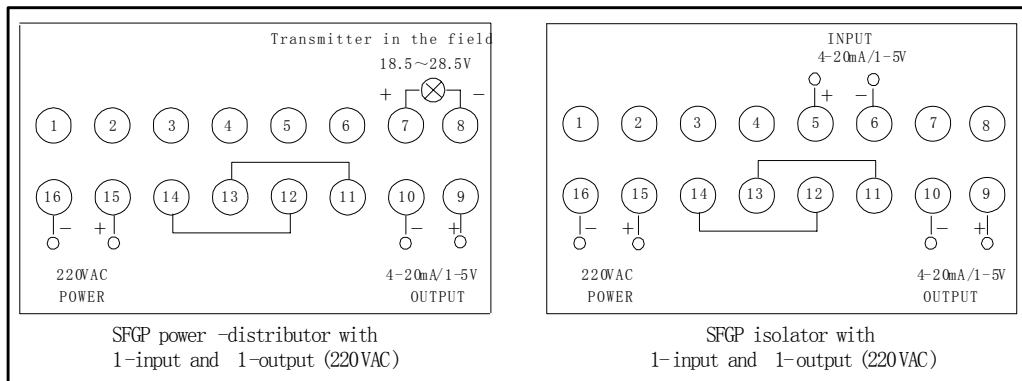
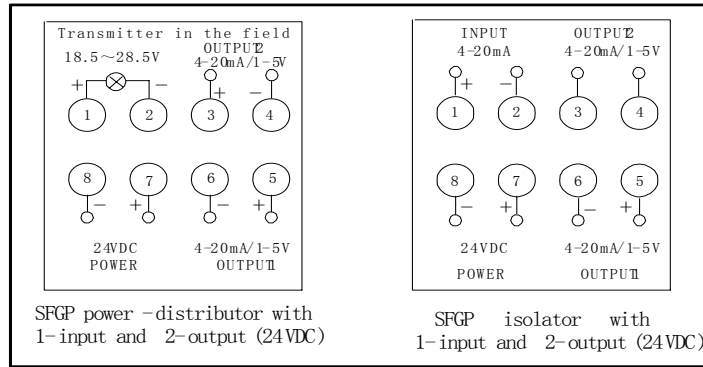
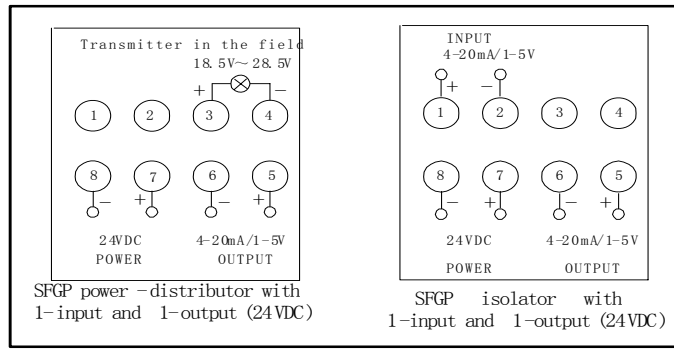


1-input and 1-output		1-input and 2-output	
4-20mA	1-5V	4-20mA	1-5V
S2-1 OFF	S2-1 ON	S2-1 OFF	S2-1 ON
S2-2 OFF	S2-2 OFF	S2-2 OFF	S2-2 ON



2-input and 2-output			
4-20mA		1-5V	
S2-1 OFF	S2-1 OFF	S2-1 ON	S2-1 OFF
S2-2 OFF	S2-2 OFF	S2-2 OFF	S2-2 ON

5. Wiring diagram of SFGP series signal isolator:



Note: The default load resistance is $\leq 350 \Omega$ when user choose 4-20mAADC output; It should be indicated specially in the order if user want to connect a load resistance of 500Ω .

Attachment: Calibration

The power-distributor/isolator has been calibrated already when leaving the factory, generally it is unnecessary to be calibrated again by user. If user do need to calibrate again, follow the below steps for calibrating voltage and current please.

1). Connect according to wiring diagram correctly and preheat for 10 minutes to 30 minutes before calibrating;

2). Calibration

2.1) Power-distributor

Connect the power-distributor with resistance box firstly, and then

- 2.1.1)** Adjust the resistance to set the input current for 4mADC, then adjust the zero potentiometer(Z1) to set output current (1) for $4.00 \pm 0.03\text{mA}$. Adjust the resistance to set the input current for 20mADC, then adjust the span potentiometer(S1) to set output current (1) for $20.00 \pm 0.03\text{mA}$. Repeat the steps above if necessary to confirm the least error;
- 2.1.2)** Adjust the span potentiometer(S2) to set output current(2) for $20.00 \pm 0.03\text{mA}$; Adjust the resistance to set input current for 4mADC, and adjust zero potentiometer(Z2) to set output current(2) for $4.00 \pm 0.03\text{mA}$. Repeat the steps above if necessary to confirm the least error.

2.2) Isolator

- 2.2.1)** Input 4mADC into isolator, and adjust zero potentiometer(Z1) to set output current for $4.00 \pm 0.03\text{mA}$. Input 20mADC into isolator, and adjust span potentiometer(S1) to set output current for $20.00 \pm 0.03\text{mA}$. Repeat the steps above if necessary to confirm the least error;
- 2.2.2)** Adjust the span potentiometer(S2) to set output current(2) for $20.00 \pm 0.03\text{mA}$. Input 4mADC, and adjust zero potentiometer(Z2) to set output current(2) for $4.00 \pm 0.03\text{mA}$. Repeat the steps above if necessary to confirm the least error.