Analog Signal Isolated Averaging Transmitter

2-channel Analog Signal Collection & Output Average of the 2-channel Inputs
Signal Isolated Controller

DIN2X1 C-P-O Series

Features	Applications
● 2-channel analog signal input directly, get the sum of the inputs and output the average of the inputs. ● Isolation between 2-ch input, quick in response. ● 3KV isolation among input, output and auxiliary power. ● Auxiliary power: 5V, 12V, 15V , 24VDC,etc. ● Low cost, small size, adjustment is not required, easy to use and high reliability. ● Accuracy and linearity error grade: 0.2. Standard DIN35 rail-mounted type. ● Industrial temperature range:- 20 ~ + 70℃	● Get sum of the 2-channel analog inputs and output the average with 3KV isolation. ●Industrial automatic equipments signal averaging process control. ● Electric automation and industrial controlling system monitoring. ● Signal long-distance transmission. ● Analog averaging control, display and alarm. ● Analog signal GND interference inhibition and data isolated collection.

Introduction

Sunyuan **DIN2X1 ISOC-P-O** series analog signal averaging isolated transmitter is a kind of isolated transmitters which gets the sum of the 2-channel inputs and outputs the average of the inputs after the amplification and conversion process, and there is 3KV isolation among 2-ch inputs, output and auxiliary power. That product is made of multi-channel DC-DC Converter, signal adder, averaging circuits, signal amplification and conversion circuits. It specially applied in automatic controlling system with 2-channel analog signal input and averaging output control. It is widely used in the process control, electric automatic and automatic safety controlling system in industrial sites. **DIN2X1 ISOC-P-O** has integrated high deficiency isolated DC-DC converter which supplies power to the amplification circuit, adding circuit, averaging circuit, demodulation circuit and isolated conversion circuit. The advanced technique used enables 3KV isolation among 2-channel inputs, output and auxiliary power, and it can be used in industrial temperature -20 ~ + 70℃.

Model Selection & Definition

DIN2X1 ISO C□ - P□ - O□

Signal input
- C1: 2-channel 4-20mA input
- C2: 2-channel 0-20mA input
- C3: 2-channel 1-5V input
- C4: 2-channel 0-5V input
- C5: 2-channel 0-10V input
- C8: Customized

Auxiliary power
- P1: DC24V P2: DC12V
- P3: DC5V P4: DC15V P8: Customized

Output signal
- O1: output 4-20mA O2: output 0-20mA O4: output 0-5V
- O5: output 0-10V O6: output 1-5V O8: Customized

Note: DIN2X1: standard DIN35 rail-mounted installation, 2-channel inputs, 1-channel output; **ISO:** 3KV isolation among auxiliary power, signal input1, signal input2 and output. User-defined input, output and auxiliary are available.

Model Selection Examples

E.g.1: Signal input: 2-channel 4-20mA input, signal output: 4-20mA, output the average of the 2-channel inputs, auxiliary power 24VDC.

Model No.: DIN2X1 ISO C1-P1-O1 (Isolated standard DIN 35 rail-mounted)

E.g.2: Signal input: 2-channel 1-5V input, signal output: 1-5VDC, output the average of the 2-channel inputs, auxiliary power 12VDC.

Model No.: DIN2X1 ISOC3-P2-O6 (Isolated standard DIN 35 rail-mounted)

General Parameters

Accuracy---------- 0.2, 0.5 %	Temp. index---------- ≤100PPM/℃
Auxiliary power---------- DC5V,12V,15V,24V, ±10 %	Isolation---------2-channel inputs/output/auxiliary power
Operating temp. ---------- -20~ +70℃	Insulation resistance --------- ≥20MΩ
Operating humidity----------10 ~ 90% (no-condensation)	Withstand volt. ---------- input 1/input2/output/auxiliary power 3KVDC, 50Hz, 1 minute, leakage current 1mA
Storage temp. ---------- -45 ~ +105℃	
Storage humidity---------- 10 ~ 95% (no-condensation)	Impact volt.---------- 3KV, 1.2/50us(peak value)

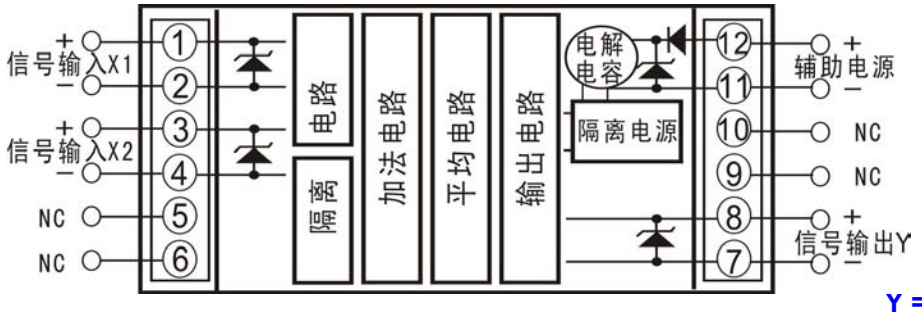
Input Parameters					Output Parameters		
Input	**Input impedance**	**Power consumption**	**Output over-load**		**Output**	**Output over-load**	**Response time**
0-5V	≥300KΩ	Volt. out < 1.5W	2.0 times@ rated:Continuous		4-20mA	Load resistance ≤350Ω	≤2.5mS
0-10V					0-20mA		
0-1mA	1KΩ		1.5 times@rated: continuous 3.0 times@ rated:1S				
0-10mA	TYP: 250Ω User-defined value is available	Current out <2W			0 -5V	≥2KΩ	
0-20mA					0-10V		
4-20mA					1-5V		

*__Note__: For the product with current output which requires 650Ω load resistance, please notify us when placing orders.

Functional Block Diagram

Signal input X1

Signal input X2



Auxiliary power

Output Y

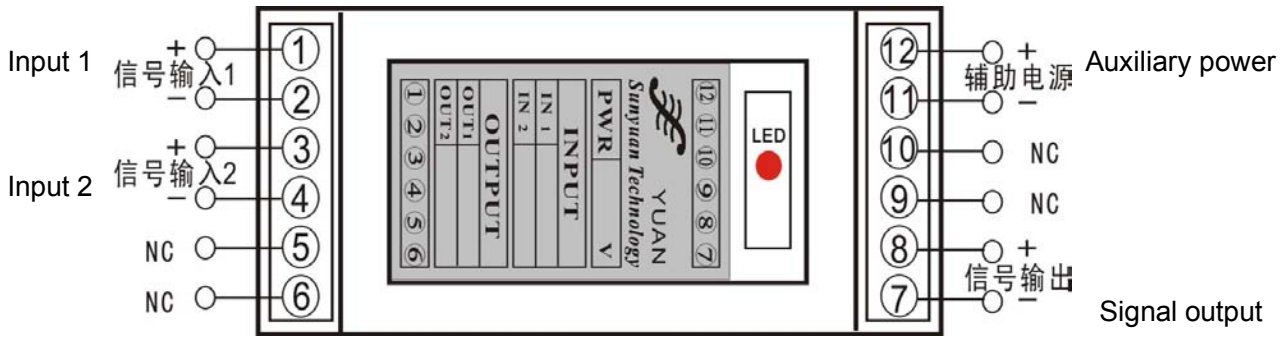
Y = (X1 + X2) ÷ 2

Explanation:

1. Output value Y equals the sum of input value X1and input value X2, then get average. E.g.: X1=12mA, X2＝8mA, Y＝10mA.

Current Isolated Transmitter Averaging Output Example		
Product Model No: DIN2X1 ISO C1-P1-O1		
First channel input	Second channel input	Get sum then output the average
Iin1=6mA	Iin2=12mA	Iout =（6mA+12mA）÷2= 9mA
Iin1=20mA	Iin2=16mA	Iout =(20mA+16mA) ÷2=18mA
Voltage Isolated Transmitter Averaging Output Example		
Product Model No: DIN2X1 ISO C4-P1-O4		
First channel input	Second channel input	Get sum then output the average
Vin1=5V	Vin2=5V	Vout =（5V+5V）÷2= 5V
Vin1=3V	Vin2=5V	Vout =（3V+5V) ÷2= 4V

Dimension and PIN Definition



Input terminal **Output terminal**

Pin	PIN Definition	
1	**IN1+**	Channel-1 input **+**
2	**IN1-**	Channel-1 input **-**
3	**IN2+**	Channel-2 input **+**
4	**IN2 -**	Channel-2 input **-**
5	**NC**	NC
6	**NC**	NC
7	**OUT -**	Signal output **-**
8	**OUT +**	Signal output +
9	**NC**	NC
10	**NC**	NC
11	**GND**	Auxiliary power **-**
12	**PWR**	Auxiliary power **+**