

Programmable Analog AD Conversion Isolation Transmitter IC

Analog signal to PWM Pulse Width Signal Programmable Isolated Transmitter
ISO U(A)-P-D-Q

Features

- 4-20mA/0-10V to PWM signal conversion, high sensitive, fast response.
- High-linearity in full-measuring range (non-linearity<0.5%).
- 2500VAC triple isolation among input, output and power.
- Power supply 5V, 12V, 15V or 24VDC single power supply.
- Low cost, small size, SIP 12 pin, UL94V-0 flame-retardant.
- Strong anti-interference ability on EMC
- Industrial temperature range: - 40 ~ + 85 °C

Applications

- Analog signal conversion, isolation and long distance transmission.
- Industrial site PLC and frequency converter control.
- Motor and light control in industrial site.
- Ground wire interference elimination.
- Boiler temperature automatic control.
- AD Converter build one the basis of PWM.

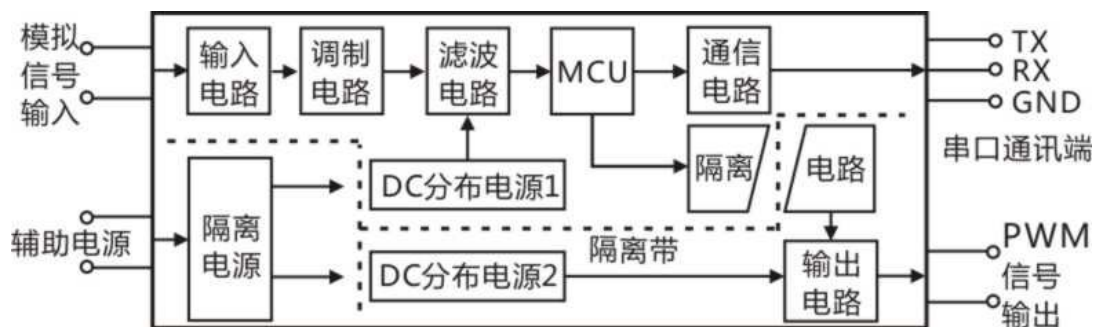
General Parameters

Accuracy ----- 0.5%	Back flash ----- < 0.5%
Aux. Power supply----- DC 5V, 12V, 24V, ±5%	Isolation-----among signal input/output /power supply
Operating Temperature. ----- -40 ~ +85°C	Insulation resistance ----- ≥20MΩ
Operating Humidity-----10~90% (Non-condensation)	Isolation volt. ----- Signal input, output and power supply
Storage temperature----- -55 ~ +105°C	2500VAC, 50Hz, 1min, leakage current 1mA
Storage Humidity----- 10 ~ 95% (Non-condensation)	Withstand impact volt.----- 1KV, 1.2/50us (Peak value)

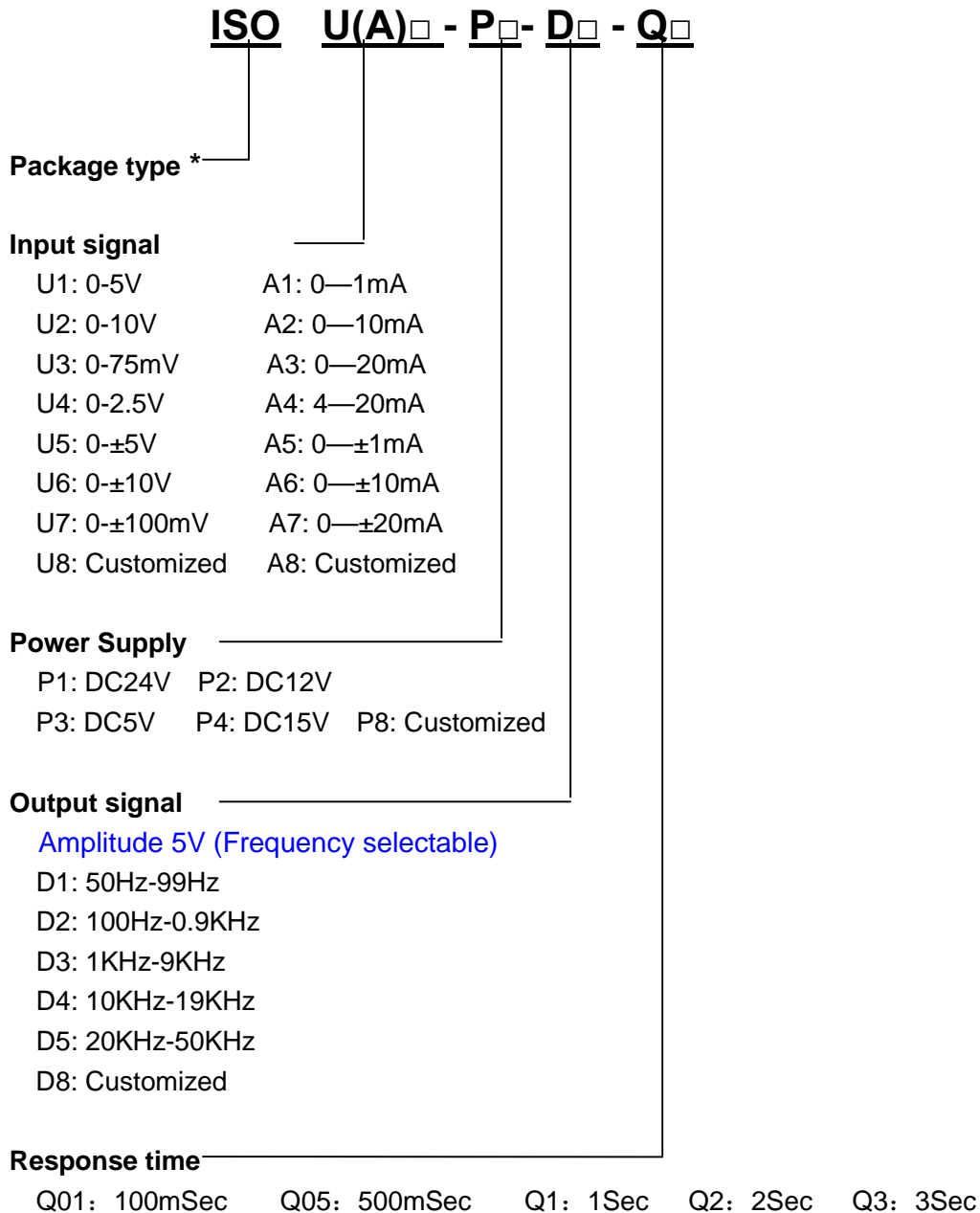
Max. Rated Value (Use it in max. rated conditions long time affect life time of the transmitter, exceed the max. Rated value many case unrepaired damage.)

Continuous Isolation Voltage	2500VAC /rms
PW (Power supply volt. input range)	±10%Vdd
Junction Temperature	- 40°C ~ + 85°C
Lead Temperature (<10S)	+260°C

Functional Block



Model selection & definition



*Package type:

Omitted: IC Package PCB-mounting.

DIN: Standard DIN35 rail-mounting type. Single channel: DIN 1X1.

Model selection examples:

E.g.1: Signal input 0-5V, signal output 5KHz square wave, 100mSec response time. Power supply 24VDC,

Model No.: ISO U1-P1-D3-Q01

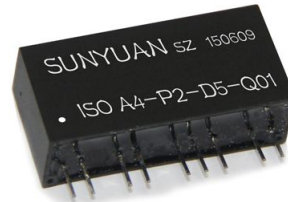
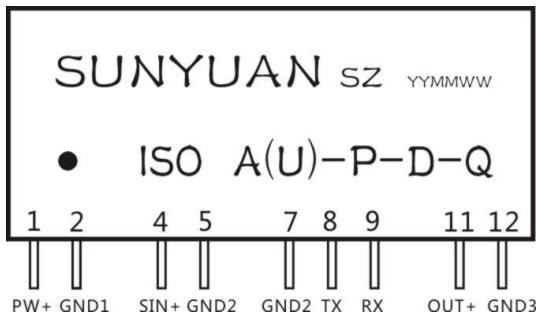
E.g. 2: Signal input 0-20mA, signal output, 25KHz square wave, 500mSec response time. Power supply 12VDC;

Model No.: ISO A3-P2-D5-Q05

Technical Parameters

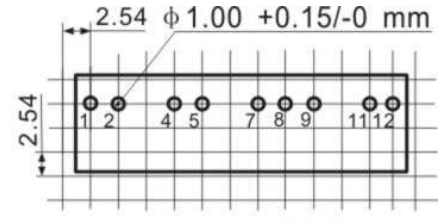
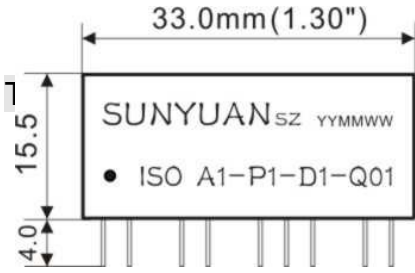
Parameters		Testing conditions	Min.	Typical	Max.	Unit
Isolation voltage.		AC,50Hz,1min		2500VAC		V(rms)
Temperature drift.		- 40 ~ + 85 °C		100		ppm/°C
None-linearity				0.5	0.5	%FSR
Signal input	Voltage		0		15	V
	Current		0		30	mA
Input offset voltage				2	5	mV
Input impedance	Voltage			1		M
	Current			250		Ω
Signal output	Frequency		50		50K	Hz
	Ratio		0		100	%
	Out high level		3.6	5	6	V
	Out low level		0	0.5	1.2	V
Signal output ripple		No filtering		10	20	mVRM
Signal volt. Temperature drift					0.2	mV/°C
Power supply	Voltage	User defined	3.3	12	24	VDC
	Power			0.5	1	W
Operating temperature range			-40		85	°C
Storage temperature			-55		105	°C

IC Type External Dimension & Pin Definition

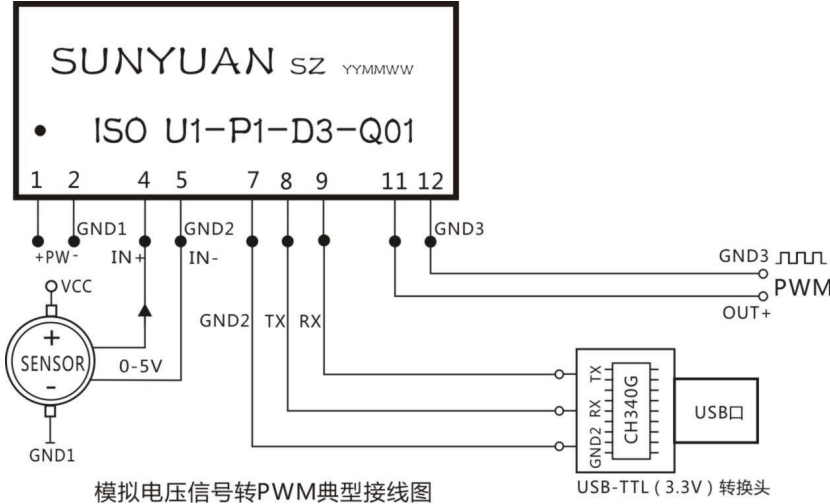


Note: 2.5kV isolation among input, output and power supply, input and communication serial port are in common ground.

1	2	3	4	5	6	7	8	9	10	11	12
Power PW +	Power GND 1	NC	Input SIN +	Out GND 2	NC	Commni cation GND2	Serial port sending TX	Serial port receiving RX	NC	PWM OUT+	PWM GND3

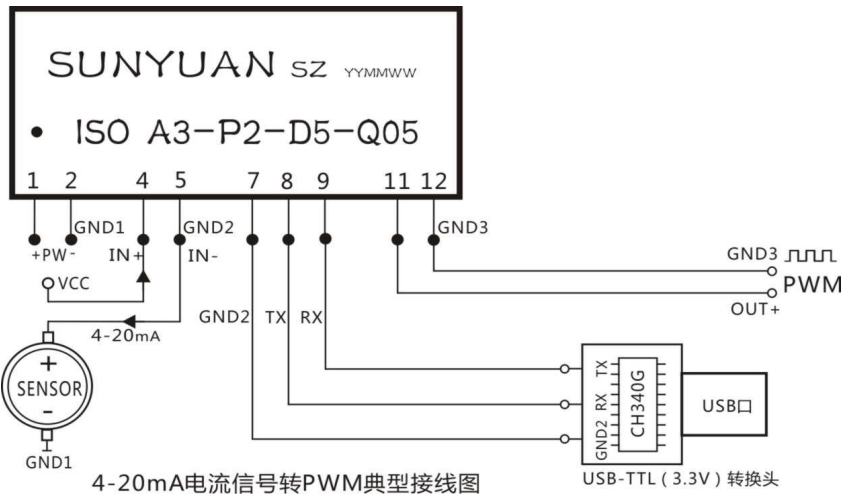


SIP12PinPCB布板参考



模拟电压信号转PWM典型接线图

USB-TTL (3.3V) 转换头

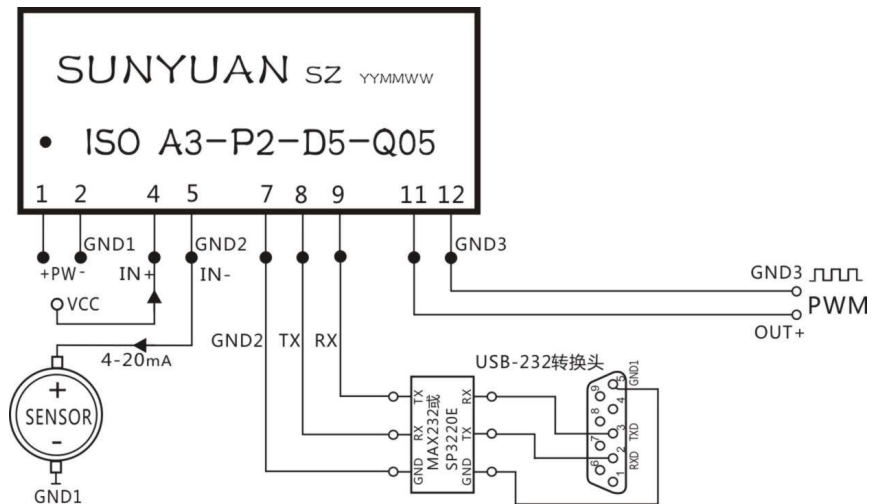


4-20mA电流信号转PWM典型接线图

USB-TTL (3.3V) 转换头

Note: The level of communication ic is 3.3V, user should use it with USB to TTL(3.3V) converter. Or user can used usb to rs232 or rs232 to rs232 cable by adding MAX232 or SP3220E ic chip to convert 3.3V level into RS232 (15V) level in application.

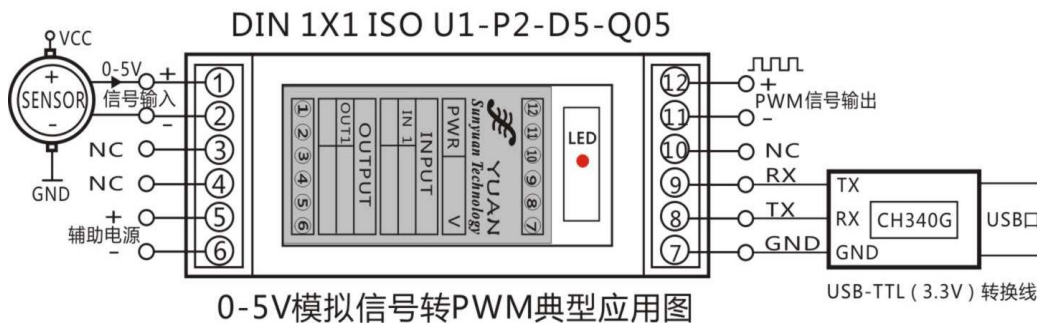
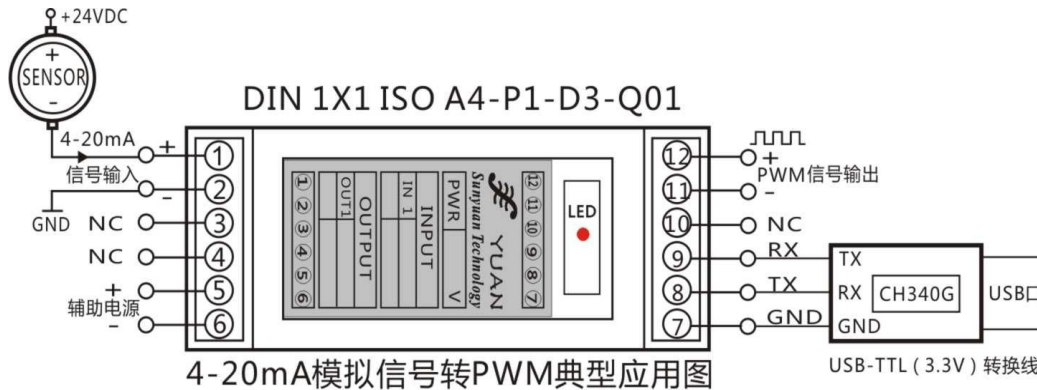
Referential circuit:



Host machine function

ISO U(A)-P-D-Q Series have host machine communication function. User should use it with USB to TTL(3.3V) conversion cable by connecting the TX,RX,GND2 pins of IC to RX,TX,GND pins of USB cable. User can get the duty ratio value and binary value after conversion by serial port communication tools software, the baud rate:19200bps, no check byte, 8-bit data byte, 1-bit stop byte.

DIN35 Rail Mounted Typical Wiring Applications



DIN35 Rail-mounted Type Dimension & Pin Definition

Pin	Pin function	
1	IN1(+)	Signal input +
2	IN1(-)	Signal input -
3	NC	No pin
4	NC	No pin
5	PWR(+)	Power supply +
6	GND1	Power supply GND
7	GND2	Communication GND
8	TX	Sending
9	RX	Receiving
10	NC	No pin
11	OUT1(-)	Signal output -
12	OUT1(+)	Signal output +

