Shenzhen vkinging Electronics Co., Ltd

PVR1-10 reference voltage source

PVR1-10 precision voltage reference

——Precision Accuracy Reliability

Introduction:

PVR1-10v is a precision voltage reference. This product adopts low-noise reference power supply unit, constant temperature insulation unit, optimized power supply of low-noise power supply and high-precision low-temperature drift device, which makes this product have the advantages of high precision, ultra-low noise, high suppression ratio, wide measurement range and low-temperature drift. It is suitable for various occasions of weak signal measurement.

PVR1-10v amplifier adopts all metal shielding, internal core unit thermal insulation treatment, and the power supply unit adopts the design of wide input range and high reliability. This product can be used in occasions with strong industrial interference, and has the advantages of moisture-proof and shockproof.

Characteristic:

- **High precision, low noise and small frequency response error**
- **Constant temperature and heat preservation, greatly improving accuracy and stability**
- **Industrial grade temperature range**
- **Metal shielding shell, strong anti-interference ability**
- **Multiple voltage regulation**
- **Extremely wide voltage input range**
- **BNC output, which can be easily connected to various instruments**

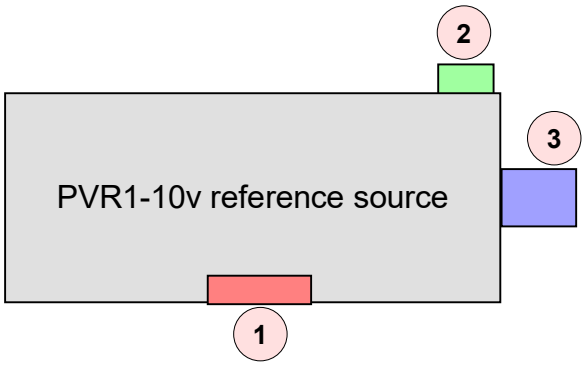
Application:

- Precision reference voltage source
- Voltage source for calibration

Basic parameters

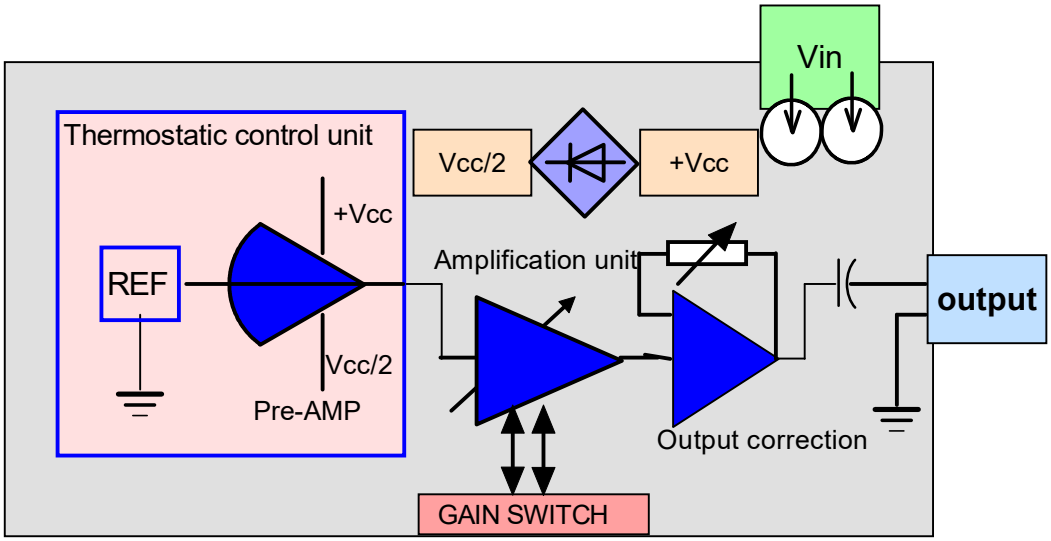
Output voltage optional	1.000V 3.000V 5.000V 10.00V Four voltage outputs are switchable
Supply voltage	DC 15~30V
Long time stability	< 10ppm / year
Output accuracy	< ± 0.02% (@25°C)
Output impedance	1Ω
Output noise	<30uV (@3.000V)

Diagram of reference source port

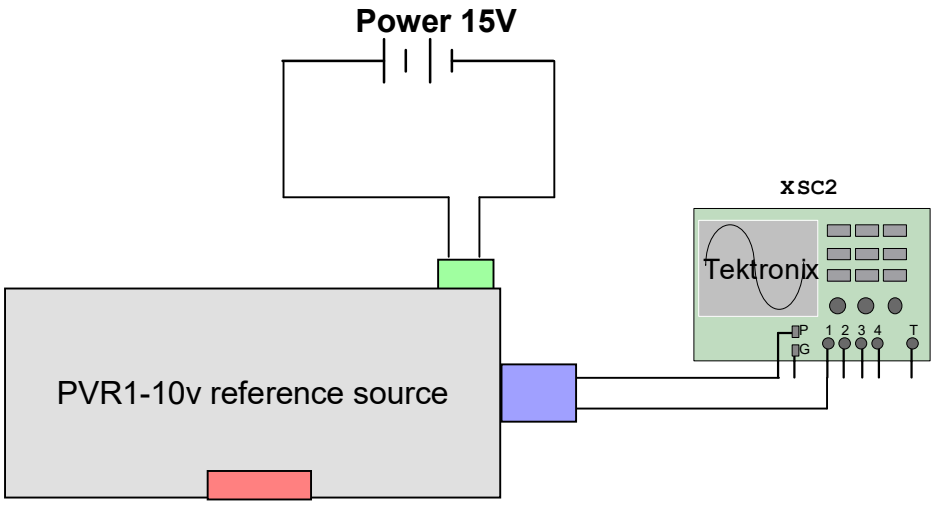


1. **Voltage selection toggle switch**
2. **DC power input port**
3. **Reference voltage output**

System block diagram



Typical wiring application diagram



PVR1-10 reference voltage source

PPVR1-10 reference voltage source

PVR1-10 reference voltage source

Comprehensive electrical parameters

Item	Unit	Typical	Range
Supply voltage	V	15~30	13~40
Power on supply current in cooling state (@ 25 ° C)	mA	350	300~600
Steady state power supply current (@ 25 ° C room temperature, 1 minute after power on)	mA	10	5~20
Time required to achieve + / - 0.05% stability(@ 25 ° C)	s	30	
Time required to achieve + / - 0.02% stability(@ 25 ° C)	s	90	
Output mode		BNC single ended output	
Output impedance	Ω	1	
Maximum output current	mA	10	
Output voltage range	V	1~10	
Output voltage noise	uV	20uV@1.000V 30uV@3.000V 40uV@5.000V 70uV@10.000V	
Accuracy (@ 25 ° C)		< ± 0.02%	
Temperature drift		5 ppm/°C	
Adjustable voltage output		+1.000V +3.000V +5.000V +10.00V	
Operating temperature:	Centigrade		-40~ 85
Storage temperature:	Centigrade		-60~ 105

Absolute maximum value for safe use

Item	Unit		
Supply voltage	V	-1 ~ +40	*If the absolute maximum value is exceeded, the device may be damaged and irreparable damage may be caused
Output port	V	-1 ~ + 35V (internal protection circuit)	
All ports electrostatic input (ESD)	V	4000	

Gear selection

There are four kinds of voltage output options for this reference source, and the user can select the required output voltage gear according to the actual needs.
The output is realized according to the toggle switch. Refer to the following table for operation:

The toggle switch corresponds to different output vo

Output voltage	1V gear	3V gear	5V gear	10V gear
1.000 V	**ON**	OFF	OFF	OFF
3.000 V	OFF	**ON**	OFF	OFF
5.000 V	OFF	OFF	**ON**	OFF
10.00 V	OFF	OFF	OFF	**ON**

Turn the required output gear to on and others to off

Precautions for use

Reference voltage output

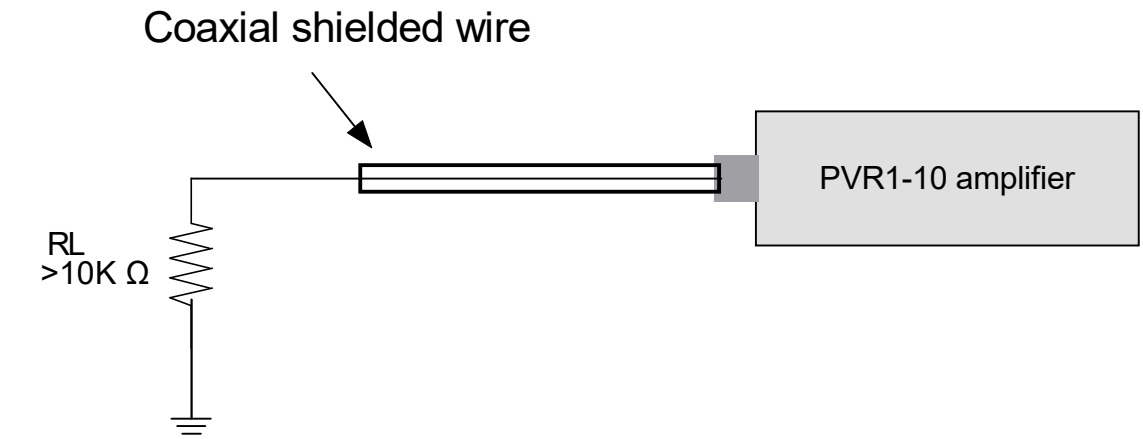
The output impedance of **PVR1-10** is 1Ω. If there is interference or voltage drop in signal transmission, the overall performance will be degraded, and even the accuracy will not be achieved.

1. Try to use wires with low impedance for output If the output wire is too long, the internal resistance of the wire will be introduced, and the corresponding voltage drop will be generated at the receiving end.

2. Too small load resistance will affect the output accuracy. For example, if the load resistance is 10K Ω, it will form a partial voltage with the output resistance of 1 Ω of the reference voltage source, which will reduce the accuracy of output by 1 / 10K.

3. Do not inject other voltages into the output, otherwise the internal output buffer will be damaged.

4. If the output is relatively long or the environmental interference is relatively large, the output wire shall be coaxial shielded wire The internal resistance of coaxial shielded wire is usually 0.2 Ω / m, so pay attention to the influence of load resistance when the wire is too long



*When the load is less than 10k, the output accuracy will be affected

Adapter selection

To minimize noise, switching power adapters cannot be used. You must use our matching adapter or other linear power adapter

Loud noise

Low noise