Composite vacuum measuring instrument (ZDF series)
Double resistance single ionization composite vacuum gauge

Introduction

ZDF-X series resistance/ionization compound vacuum gauge can independently complete low vacuum (1×10^{5}~1×10^{-1}Pa) measurement based on the one resistance unit. Another resistance unit (ZJ-52T resistance gauge) and ionization unit (ZJ The -27 ionization gauge) work as a composite unit to complete continuous measurement and control of $1x10^{5}$~$1x10^{-5}$Pa. Therefore, this series vacuum gauge has all technical parameters and performance characteristics of resistance vacuum gauges and ionization vacuum gauges, at the same time, it has new functions.

The composite unit of this vacuum gauge has two operating modes: manual mode and automatic mode. When working in manual mode, it is equivalent to an independent thermocouple vacuum gauge and ionization vacuum gauge. When working in automatic mode, the resistance unit first begins the measurement, when the vacuum degree measured by resistance unit higher than vacuum degree that the ionization gauge can open, the ionization gauge filament is automatically illuminated (turned on) and begins high vacuum measurement, which enables automatic continuous measurement from low to high vacuum. The peripheral (PLC) opening and closing ionization gauge function has also been added to realize the ionization gauge working in the vacuum environment, so that the working life of the ionization gauge is extended.

Some models adopt switching power supply and switching DC power drive stabilized ionization gauge filament launching circuit, which realizes the design of highly integrated non-power frequency transformer, and the cold state preheating slow start of ionization gauge filament, it also overcomes the overshoot phenomenon of cold state initiates of ionization gauge filament, also prolongs the service life of gauge, and then realizes a wide AC power adaptability (AC/90V ~ 260V), as well as the wide cable length adaptive capability (3-30 meters). It is currently the novel ionization gauge filament drive stabilization technology. In order to adapt to vacuum equipment automation technology, it integrates powerful relay contact control, serial communication, vacuum analog and other extended functions. So, it is especially suitable for vacuum measurement from atmospheric pressure (normal pressure) to high vacuum of vacuum equipments whose ultimate vacuum is on the order of 10^{-3}~10^{-4}Pa with the working vacuum is on the order of 10^{-2}~10^{-3}Pa.

Specification

Gauge model:	2pcs ZJ-52T resistance gauge, 1pc ionization gauge
Measurement range:	Independent resistance unit 1×10^{5}~1×10^{-1} Pa Composite unit: Continuous measurement (automatic mode) 1×10^{5}~1×10^{-5}Pa Independent measurement (manual mode): Resistance unit: 1×10^{5}~1×10^{-1} Pa Ionization unit: 5~1×10^{-5} Pa
Control area:	Resistance unit: 2.5×10^{3}~1×100Pa Ionization unit:1×100 ~ 1×10^{-4}Pa
Control paths:	4 routes can be extended to 4 or 8 routes
Control precision:	± 1%
Control mode:	Relay contact output, load capacity AC220V/3A (or DC28V/3A), non-inductive load.
Degassing mode:	Joule
Sampling time:	1S
Power supply:	90-260V/50Hz 或 220V±10% 50Hz
Power:	55W
Weight:	6Kg/5Kg/4Kg (Depending on Dimensions)
Dimensions:	240×88×280 or 480×88×280 265×119×280 or 480×119×280 （W×H×D）

Performance Feature

1. LED green screen digital display
2. Wide measurement range
3. Quick response
4. The microprocessor repairs the non-linearity of gauge, which reduces the measurement error.
5. Precise vacuum signal amplification circuit ensures the stable zero point and full scale.
6. Wide and stable emission circuit helps adaptively adjust the emission current of the stable ionization gauge.
7. Automatic switching in full scale.
8. Automatic outrange protection function ensures that the gauge will not be damaged due to sudden exposure of air to the system.
9. Optoelectronic isolation, digital filtering, excellent anti-interference ability, stable and reliable vacuum measurement.
10. Functional, modular structure design.
11. Point control or area control, the upper and lower limits are set arbitrarily.
12. Control point power off protection with memory function.
13. Simplified function buttons and simple operation, the gauge will not be damaged by misoperation.
14. PVC color panel ensures beautiful appearance.