osi1905 Series

Energy-pulse detection method; pulse voltage 35 kV



Product Introduction

Liquid-leak Detection

The OSIMAI osi1905 series uses energy-pulse detection when liquid conductivity exceeds 0.1 μS/cm and vial leak holes exceed 2 μm. An energy difference greater than tenfold between good and defective bottles enables accurate identification. Measured detection and missed-detection rates are better than one in ten thousand, with detection speed above 600 bottles/min.

Cap Inspection

The series was developed for quality-control lines mass-producing plastic parts, including cap defect inspection. It detects local molding discontinuities, insufficient film thickness and perforations, with a minimum detection range below 10 μm. High-voltage discharge measurement places the part between grounded plates and measures current between the charged probe and plate. Current above a set percentage is PASS; below is FAIL. Detection speed is at least 800 tests/min.

Product Features

- Energy-pulse detection method
- Very high signal-to-noise ratio avoids self-interference of AC detection
- Detection voltage up to 35 kV provides wider detection range
- Precise current sampling; signal difference between good and defective bottles can exceed tenfold
- Switching-signal output
- RS485 digital communication interface
- Accepts synchronization signals for additional special inspection scenarios

Cap Inspection Features

- Energy-pulse detection method
- Additional PASS limits reduce false rejection of acceptable products
- Detection voltage up to 35 kV provides wider detection range
- Precise current sampling; signal difference between good and defective bottles can exceed tenfold
- Switching-signal output
- RS485 digital communication interface
- Accepts synchronization signals for additional special inspection scenarios

Specifications

Parameter	Description
Input	220 VAC ±10%, 50/60 Hz.
Output	Liquid-leak detection: maximum pulse voltage 35 kV, four channels. Cap inspection: maximum pulse voltage 35 kV, two to four channels selectable.
Front-panel status indication	Output, preset and voltage indicator lamps; output, voltage setting and frequency display.
Voltage control	Integral rotary encoder sets output voltage from zero to rated value.
Remote control	Optional RS485 digital interface communicates with a host computer or other digital equipment. Test-only host software is provided. The equipment uses Modbus; refer to the Communication Protocol appendix for related information.
Ambient temperature	Operating: 0–50°C. Storage: −20–80°C.
Temperature coefficient	Voltage and current: better than 100 ppm/°C.
Stability	Less than 0.1% per 8 hours after 0.5-hour warm-up.
Humidity	10–90%, non-condensing.
Pulse-voltage display	Three-digit display; voltage accuracy ±(0.5%+1).
Dimensions	W 482.6 × H 89 × D 360 mm.
Weight	Approximately 3.8 kg.
High-voltage cable	Integral unshielded cable; standard length 2.0 m, outside diameter 5.5 mm. Other lengths available.

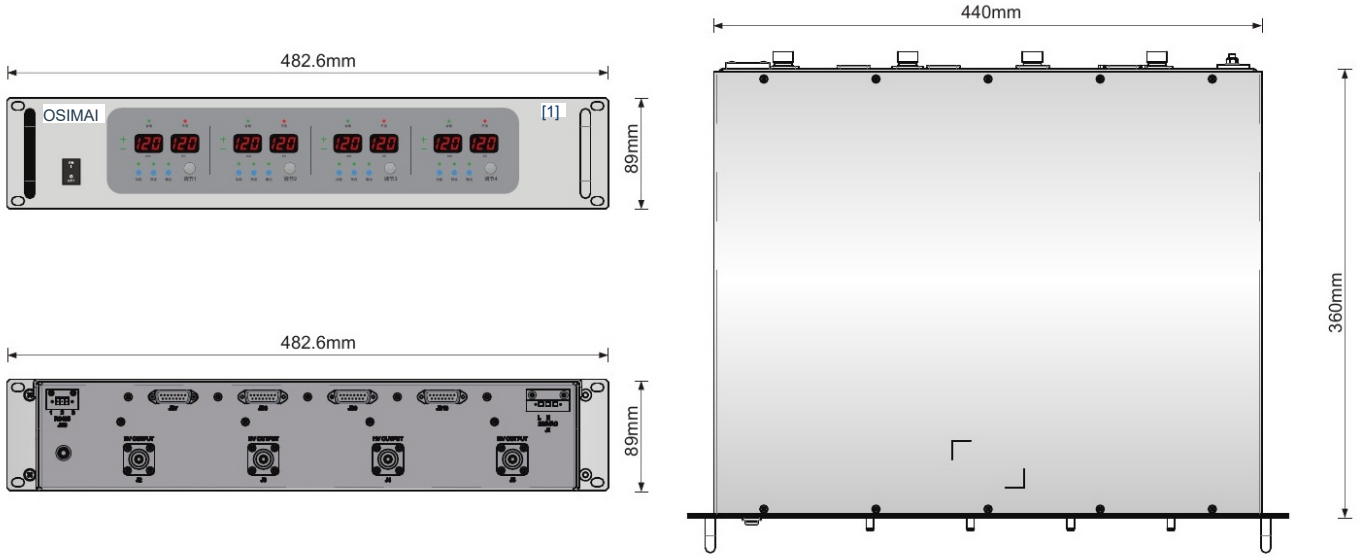
DB15 Connector Signal Definitions

Pin	Signal	Description
1	Voltage monitor output	0–10 VDC = 0–100% rated voltage; Zout = 10 kΩ
2	Current monitor output	0–10 VDC = 0–100% rated current; Zout = 10 kΩ
3	High-voltage enable	Ground to pin 4 = high voltage ON; open = disabled
4	GND	Signal ground
5	Difference analog output	0–10 VDC = 0–100% rated analog difference
6	Error alarm signal	Common terminal; dry contact; 30 VDC at 1 A maximum
7	Error alarm signal	Normally closed; supply fault = open
8	Voltage setting input	0–10 VDC = 0–100% rated voltage
9	PASS signal	Open collector; 24 VDC at maximum 10 mA
10	FAIL signal	Open collector; 24 VDC at maximum 10 mA
11	GND	Signal ground
12	Monitoring threshold setting input	0–10 VDC = 0–100% rated current
13	Synchronization +	Synchronization anode; 24 VDC at maximum 10 mA
14	Synchronization −	Synchronization cathode; 24 VDC at maximum 10 mA
15	Fault reset	Ground to pin 4 = supply reset; open = inactive

Typical Applications

Liquid-leak detection: ampoules, vials, BFS packaging, caps and nondestructive container-closure integrity inspection. Cap inspection: plastic parts, food-grade beverage-packaging caps and plastic-film thickness inspection.

Dimensions



[1] osi1905