

Dorland Industrial Intrinsically Safe Smart Multimeter Multimeter 87v EX

Developed by Beijing Dorland System Control Tech Co. Ltd., the industrial intrinsically safe smart multimeter Multimeter 87v EX adopts advanced technology. a newly designed, developed, and produced industrial grade 6000 bit true RMS digital multimeter. It is sturdy and durable, with 6000 bit counting, VFD testing function, LoZ function, full model automatic range, and true RMS testing, ensuring easy application in the industrial and maintenance fields. In addition, it is also suitable for outdoor construction, pipeline inspection, etc. It can be used in conjunction with various applications such as OA office systems, inspection positioning systems, data collection systems, etc. This model is especially suitably used in dangerous environment such as petroleum, chemical, pharmaceutical, oil depot, tank farm as well as the dangerous sites with combustibile and explosive gas. It is convenient for users' timely production dispatching and communication.

Ex-marking: Ex ib IIC T4 Gb / Ex ib IIIC T130°C Db

Certificate NO.: CLEx25.7859X

IP Grade: IP67

6000 bit count

Shell: Double injection molding

Impact (drop test): 2 meters

TRMS true effective value measurement

Super bright large screen display

Fully automatic range

LoZ: Low impedance input to prevent erroneous
data readings caused by stray voltages



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Explosion proof certificate parameters			
Ex-Marking	Ex ib IIC T4 Gb / Ex ib IIIC T130°C Db		
Certificate NO.	CLeX25.7859X		
IP grade	IP67		
Specification parameters			
Shell	Double injection molding, waterproof		
Impact (drop test)	2 meters		
Diode testing	The maximum test current is 0.9mA, and the typical open circuit voltage is 3.2VDC		
Continuity check	When the resistance is less than 50 Ω, the buzzer sounds and the test current is less than 0.35mA		
Input impedance	>10M Ω VDC, >10M Ω VAC		
Communication response	True effective value		
ACV bandwidth	45Hz~1KHz		
display	6.000 digit counting LCD display		
Over range indication	Display 'OL'		
Automatic shutdown	About 15 minutes, this feature can be disabled		
Polarity	Automatic; The negative sign (-) indicates negative polarity		
Measurement rate	2 times per second, nominal value		
Low battery level indicator	If the battery voltage drops below the operating voltage, it will display "  "		
Battery	9-volt (GP SUPERCELL 6F22)		
Fuse	MA, μ A range: 0.8A/1000V ceramic fast melting A range; 10A/1000V ceramic rapid melting		
Operating environment	0°C~55°C		
Storage environment	'-20°C~60°C(-40°F~140°F)		
Working humidity	The maximum humidity reaches 80% at 31 °C (87 °F) and decreases linearly to 50% at 40 °C (104°F)		
Storage humidity	<80%		
Working altitude	Within 2000 meters		
Function	Range	Resolution ratio	Accuracy
DC voltage	60.00mV	0.01mV	±(0.9%+9 digits)

	600.0mV	0.1mV	±(0.5%+5 digits)
	6.000V	0.001V	
	45.00V	0.01V	
AC voltage 45Hz~1KHz	60.00mV	0.01mV	±(0.9%+9 digits)
	600.0mV	0.1mV	±(0.8%+3 digits)
	6.000V	0.001V	
	45.00V	0.01V	
All AC voltage ranges are from 5% to 100% of the specified range. AC voltage bandwidth: 45Hz~1KHz (sine wave): 50/60HZ (all waveforms).			
DC current	600.0μA	0.1μA	(1.0%+3 digits)
	6000μA	1μA	
	60.00μA	0.01μA	
	600.0μA	0.1μA	±(1.5%+3 digits)
	6.000μA	0.001A	
	500.00mA	0.01A	
AC current 45Hz~1KHz	600.0μA	0.1μA	±(1.5%+3 digits)
	6000μA	1μA	
	60.00μA	0.01mA	
	600.0μA	0.1mA	±(2.0%+3 digits)
	6.000μA	0.001A	
	10.00A	0.01A	
All AC current ranges are from 5% to 100% of the specified range. AC current bandwidth: 45Hz~1KHz (sine wave): 50/60Hz (all waveforms).			
Resistance	600.0Ω	0.1Ω	±(1.0%+2 digits)
	6.000KΩ	0.001KΩ	±(0.8%+2 digits)
	60.00KΩ	0.01KΩ	
	600.0KΩ	0.1KΩ	
	6.000MΩ	0.001MΩ	±(1.2%+2 digits)
	60.00MΩ	0.01MΩ	±(1.0%+5 digits)
Capacitance	99.99nF*	0.01nF	±(5.0%+20 digits)
	999.9nF	0.1nF	±(4.0%+5 digits)
	9.999μF	0.001μF	
	99.99μF	0.01μF	
	999.9μF	0.1μF	
	9.999mF	0.001mF	±10% reading
	99.99mF	0.01mF	

Frequency(electronic)	9.999Hz	0.001Hz	±(0.1%+4 digits)
	99.99Hz	0.01Hz	
	999.9Hz	0.1Hz	
	9.999KHz	0.001KHz	
	99.99KHz	0.01KHz	
	999.9KHz	0.1KHz	
	9.999MHz	0.001MHz	
Sensitivity: When the duty cycle is between 20% and 80% and <100kHz, the minimum is 0.8V RMS; Minimum 5Vrms at 20% to 80% duty cycle and >100kHz.			
Frequency (electronic)	10.00-1KHz	0.01Hz	±0.5% reading
Sensitivity: AC mV range (≥ 100mV), ACV range (≥ 6% range); 6000 μ A/500.0mA 600.0 μ A/60.00mA			
Duty cycle	0.1~99.9%	0.10%	±(1.2%+2 digits)
Pulse width: 100 μ s~100ms; Frequency: 5Hz~150KHz			
Temperature	'-40~1000°C	1°C	±(3.0%+3°C/5°F digits) (Excluding probe accuracy)
	'-40~1832°F	1°F	

Attention: Accuracy specifications include two elements:

1. (% reading) - This is the accuracy of the measurement circuit.
2. (+digits) - This is the accuracy of the analog-to-digital converter.

Attention: Accuracy is expressed under conditions of 18 °C~28 °C (65°F~83°F) and relative humidity less than 75%.



中国认可
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检测
TESTING
CNAS L0136

防 爆 电 气 设 备
Electrical Apparatus for Explosive Atmospheres

防 爆 合 格 证

CERTIFICATE OF CONFORMITY



沈 阳 产 品 质 量 监 督 检 验 院
Shenyang Product Quality Supervision And Inspection Institute

(国家低压防爆电器质量检验检测中心(辽宁))
(National quality inspection and testing center for low voltage explosion-proof electrical apparatus (Liaoning))



防爆电气设备
Electrical Apparatus for Explosive Atmospheres

防爆合格证
CERTIFICATE OF CONFORMITY

证书编号 No: **CLEx25.7859X**

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制 造 商
Manufacturer

产 品 名 称
Name of Product

型 号 规 格
Type Specification

防 爆 标 志
Ex-Marking

产 品 标 准
Product Standards

总 装 图 号
Drawing No

经对上述产品图样及技术文件的审查和样品检验, 确认符合下列标准:
The drawings, technical documents and the samples are verified and certified according to standard(s) for safety as below:
GB/T3836.1-2021 爆炸性环境 第1部分: 设备 通用要求
Explosive atmospheres-Part 1:Equipment-General requirements
GB/T3836.4-2021 爆炸性环境 第4部分: 由本质安全型“i”保护的
Explosive atmospheres-Part 4:Equipment protection by intrinsic safety “i”

说 明 事 项
Explanation

- 1.外壳防护等级 Enclosure Protection Rating: IP67;
 - 2.内含一节电池 GP SUPERCELL 6F22 9V; VContains one battery GP SUPERCEL 6F22 9V;
 - 3.严禁在危险场所对电池进行充电、更换和拆卸 Charging, replacing, or removing the battery in hazardous areas is strictly prohibited;
 - 4.在粉尘环境使用时, 应采取措施避免外壳表面粉尘覆盖 When used in dusty environments, measures should be taken to avoid dust accumulation on the enclosure surface;
 - 5.“X”: 使用的环境温度, -20℃~+60℃; 产品在危险场所仅能测量已取得防爆合格证的本质安全型产品; 测量电压不得高于45V, 测量电流不得高于2A; The ambient temperature used is -20℃~+60℃; The product can only measure intrinsically safe products that have obtained explosion-proof certification in hazardous areas; The measured voltage shall not exceed 45V, and the measured current shall not exceed 2A.
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批 准
Approved by

刘畅

发 证 日 期
Date of issue

2025-09-08

有 效 期 至
Valid date

2030-09-07



本证书仅对符合送检样品的产品有效, 证书持有人有责任保证产品符合标准规定。
This certificate is only valid for the products which identify with the sample(s) tested and verify certificate have the responsibility to ensure the products complying with relevant standard(s).

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信息页