

DATASHEET

SE Series Electrical Safety Analyzer

All-in-one enhanced simplicity, safety, and reliability



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The new EEC SE series compact 4-in-1 safety analyzers brings together the enhanced safety of a true negative voltage tester with the convenience of maximum output capacity. The result is a line of testers that is ideally suited to the demanding environment of today's industrial settings. The series features a maximum 500VA output to meet the high-capacity source standards for electric motors across a wide range of sectors.

The SE series protects test operators from potentially harmful, even lethal, accidents through true negative voltage testing. Not only does this create safer testing environment, it also improves test reliability, which is particularly important in settings where moisture can impact test results. True negative voltage testers help manufacturers meet IEEE Std. 43 standards and streamline QA/QC processes. Other safety-minded features include ARC detection to prevent dielectric breakdowns and fast discharge to quickly dissipate excess electrical build-up.

The upgraded SE series is incredibly compact at 2U (89mm) height for optimal adaptability. Operators can automate multi-point testing with a single click, allowing easy DUT scanning for potential electrical problems, ensuring user safety while performing a multi-point tests for automotive controllers and a multitude of household appliances. User-friendliness receives a further boost from the tester's large touch panel display and handy USB interface for storage media.

Features

- Intuitive and user-friendly touch panel operation combined with highly flexible and programmable testing parameters to enhance testing efficiency.
- Compact 2U (89mm) height enables system integrators and maximizes space for testing.
- EEC exclusive patent on fast discharge function helps the DUT rapidly discharge excess electricity within 50ms to maximize operator safety, especially when testing large capacitance DUTs.
- Peak quality assurance for products with ARC detection capability eliminates poor gap spacing that may be damaged during shipping and cause dielectric breakdowns.
- Built-in barcode interface supports a multitude of vendors and allows users to scan and capture data directly without connecting to a computer.
- 500VA maximum output provides the ability to handle large electric motors in a wide range of industries requiring high-capacity sources to drive and test.
- One-click scanning checks several points for potential weaknesses using up to 16 channels on multi-functional products, increasing testing efficiency.
- Electric motor manufacturing sector benefits from EEC's True Negative Voltage technology in insulation resistance (IR), which meets stator winding insulation standards IEEE Std. 43.

Model	SE 7430	SE 7440	SE 7441	SE 7451 ¹	SE 7452 ¹
INPUT					
Voltage (AC)	200-240V				
Apparent Power	600VA	600VA	600VA	1.3kVA	1.3kVA
Frequency	50/60Hz ±5%				
AC WITHSTAND VOLTAGE					
Output Rating (AC) ²	5kV/40mA	5kV/40mA	5kV/40mA	5kV/100mA	5kV/100mA
Output Voltage Range	0-5.00kV				
Voltage Resolution	0.01kV				
Voltage Accuracy	±(1% of setting + 0.5% of Range)				
Current Measurement Range (Total)	0.000-40.00mA			0.000-99.99mA	
Current Resolution (Total)	0.001/0.01/0.1mA				
Current Accuracy (Total)	0.000-4.000mA	±(2% of reading + 3 counts)			
	3.50-100.0mA	±(2% of reading + 6 counts)			
Current Measurement Range (Real)	0.000-99.99mA				
Current Resolution (Real)	0.001/0.01mA				
Current Accuracy (Real)	0.000-9.999mA	±(3% of reading + 50uA), All Ranges PF > 0.1, V > 250Vac			
	10.00-99.99mA				

Model	SE 7430	SE 7440	SE 7441	SE 7451 ¹	SE 7452 ¹
Output Frequency	50/60Hz ± 0.1%				
Ramp Up Timer	0.1-999.9s				
Ramp Down Timer	0.0-999.9s				
Dwell Timer	Auto Range	0, 0.2-999.9s (0=continuous)			
	Fixed Range	0, 0.1-999.9s (0=continuous)			
Timer Resolution	0.1s				
Timer Accuracy	±(0.1% of setting + 0.05s)				
Output Waveform	Sine Wave, Crest Factor = 1.3-1.5				
Output Regulation	±(1% of output + 5V), From no load to full load				
Current Offset	0.000-40.00mA (Total current + current offset ≤ 40mA)			0.000-100.0mA (Total current + current offset ≤ 100mA)	
Arc Detection	The range is from 1-9 (9 is the most sensitive)				
DC WITHSTAND VOLTAGE					
Output Rating (DC)	6kV/10mA	6kV/10mA	6kV/10mA	6kV/10mA	6kV/10mA
Output Voltage Range	0-6.00kV				
Voltage Resolution	0.01kV				
Voltage Accuracy	±(1% of setting + 0.5% of Range)				
Current Measurement Range	0.0nA-10mA				
Current Resolution	0.1nA/0.001uA/0.01uA/0.1uA/0.001mA/0.01mA				
Current Accuracy	0.0-400.0nA	±(2% of reading + 10 counts) Low Range is ON.			
	0.350-4.000uA				
	3.50-40.00uA				
	35.0-400.0uA				
	0.300-4.000mA				
3.50-10.00mA	±(2% of reading + 2 counts)				
Output Ripple	< 4% (6kV/10mA at Resistive Load)				
Ramp Up Timer	Low range = OFF	0.4-999.9s			
	Low range = ON	0.5-999.9s			
Ramp Down Timer	0.0, 1.0-999.9s				
Dwell Timer	0, 0.4-999.9s (0=continuous) ³				
Timer Resolution	0.1s				
Timer Accuracy	±(0.1% of setting + 0.05s)				
Charge Low Current	0.0-350.0uA				
Discharge Timer	< 50ms for no load, < 100ms for capacitor load (all capacitance values in max load spec)				
Maximum Capacitive Load	1uF < 1kV, 0.75uF < 2kV, 0.5uF < 3kV, 0.08uF < 4kV, 0.04uF < 5kV, 0.015uF < 6kV				
Current Offset	0.0-10mA (Total current + current offset ≤10mA)				
Arc Detection	The range is from 1-9 (9 is the most sensitive)				
INSULATION RESISTANCE					
Output Rating (DC)	6kV/50GΩ				
Output Voltage Range	10-6000V				
Voltage Resolution	1V				
Voltage Accuracy	±(1% of setting + 0.5% of Range)				
Resistance Measurement Range	0.100MΩ-50GΩ				
Resistance Resolution	0.001/0.01/0.1/1MΩ				
Resistance Accuracy ⁴	0.05-999.9MΩ under 10-29V	±(15% of reading + 2 counts)			
	0.05-999MΩ under 30-499V	±(7% of reading + 2 counts)			
	0.100-999.9MΩ under 500-6kV	±(2% of reading + 2 counts)			
	1G-9.999GΩ under 500-6kV	±(5% of reading + 2 counts)			
	10G-50GΩ under 500-6kV	±(15% of reading + 2 counts)			
Ramp Up Timer	0.1-999.9s				
Ramp Down Timer	0.0, 1.0-999.9s				
Dwell Timer	0, 0.5-999.9s (0 = continuous)				
Delay Timer	0.5-999.9s				
Timer Resolution	0.1s				
Timer Accuracy	±(0.1% of setting + 0.05s)				
Charge Low Current	0.000-3.500uA				

Model	SE 7430	SE 7440	SE 7441	SE 7451 ¹	SE 7452 ¹
GROUND BOND (SE 7440, SE 7441 & SE 7452)					
Output Rating (AC)	32A/600mΩ/8V				
Output Current	1.00-32.00A				
Current Resolution	0.01A				
Current Accuracy	±(2% of setting + 0.5% of range)				
Output Voltage	3.00-8.00V				
Voltage Resolution	0.01V				
Voltage Accuracy	±(2 % of setting + 3 counts) O.C.				
Lead Resistance Offset	0-200mΩ				
Resistance Measurement Range	0-600mΩ				
Resistance Resolution	1mΩ				
Resistance Accuracy	±(2 % of reading + 2 counts)				
Dwell Timer	0, 0.5-999.9s (0 = continuous)				
Timer Resolution	0.1s				
Timer Accuracy	±(0.1% of setting + 0.05s)				
CONTINUITY (Optional)					
Output Rating (DC)	1A for 1.000Ω, 0.1A for 10.00Ω, 0.01A for 100.0Ω, 0.001A for 1kΩ, 0.0001A for 10kΩ				
Resistance Offset	0.000-10.00Ω				
Resistance Measurement Range	0.000-10kΩ				
Resistance Resolution	0.001/0.01/0.1/1/1Ω				
Resistance Accuracy	0.000-1.000Ω	±(1% of reading + 3 counts)			
	1.01-10.00Ω				
	10.1-100.0Ω				
	101-1kΩ				
	1.001k-10kΩ				
Dwell Timer	0.0, 0.4-999.9s (0 = continuous)				
Timer Resolution	0.1s				
Timer Accuracy	±(0.1% of setting + 0.05s)				
GENERAL					
Remote Input Signal	Test, Reset, Interlock, Recall File 1 through 15				
Remote Output Signal	Pass, Fail, Test-in-Process				
Memory	2000 steps, Allow the user create different memories and steps. But each memory limit max. 200 steps and results				
Display	4.3" Color Display (Touch Panel)				
Interface ⁵	Standard USB & RS232, Optional Ethernet, GPIB				
Voltage Resolution	0.01V				
Built-in Scanner Module	Optional	-	Yes	-	-
External Scanner port	Yes				
Language	English/Traditional Chinese/Simplified Chinese				
Op./Non-Op. Temp./Humidity	0 to 40°C/-40 to 75°C/20 to 80%RH				
Dimension (WxHxD),mm	430x88.1x400	430x88.1x400	430x133x400	430x88.1x400	430x88.1x400
Weight	12kg	15kg	20kg	21kg	23.4kg

1. SE 7451 and SE 7452 short circuit current > 200mA.

2. OPT.7015, AC Withstand Output change to 5kV/30mA (SE 7430, SE 7440 and SE 7441) and 5kV/80mA (SE 7451, SE 7452).

3. 0, 1.0-999.9s when it is selected low current range.

4. Environment requirement: humidity < 60% RH (no condensation, no scanner), When I <

150mA.

5. Only one interface can be selected among RS232 & USB, GPIB & Ethernet interface card.

Models

- SE 7430 Electrical Safety Analyzer (ACW, DCW, IR)
- SE 7440 Electrical Safety Analyzer (ACW, DCW, IR, GB)
- SE 7441 Electrical Safety Analyzer with build-in 8 Channels Scanner (ACW, DCW, IR, GB)
- SE 7451 500VA Electrical Safety Analyzer (ACW, DCW, IR)
- SE 7452 500VA Electrical Safety Analyzer (ACW, DCW, IR, GB)

Options

- OPT.109 Replace RS232 Interface by GPIB Interface
- OPT.798 True Negative Voltage for DCW and IR
- OPT.799 GB Output 40Aac for SE 7440, SE 7441 & SE 7452
- OPT.7002 DC Continuity Test Function
- OPT.7004 Built-in Scanner 8W for SE 7430
- OPT.7006 Built-in Scanner 8W + 8 Cont. for SE 7430 with OPT.7002
- OPT.7009 JigA/JigB
- OPT.7015 6kVac/7.5kVdc Output
- OPT.7033 Input Voltage 100-120/200-240Vac

Note: Only one Option can be selected among OPT.7004, OPT.7006 & OPT.7015

