



# WOUND COMPONENT EST ANALYZER MODEL 19036

Chroma 19036 is the industry's first Wound Component Electrical Safety Test (EST) Analyzer that combines the functions of impulse test, hipot, insulation resistance and DC resistance measurements. It has 5kVac/ 6kVdc high voltage output, 5kV insulation resistance, 6kV layer short impulse voltage and 4-wire DC resistance measurement that can comply with the wound components test demands by providing maximum 10 channels output for multichannel scanning tests to save time and labor costs.

The test items for wound components include AC/ DC hipot test, IR test, IWT (Impulse Winding Test) and DCR (DC Resistance). Chroma integrates the above tests into 19036 Wound Component EST Analyzer that can perform safety tests on wound components like motors, transformers and solenoid valves to verify their quality.

Poor insulation of coil often causes layer short, cross-line short or pin short during usage, and the reason could be initial design error, poor fabrication process or bad insulation material. Thus, to add layer short test in the electrical safety test manufacturing process can complete the scanning test for multiple windings at once to increase the quality of wound components. Combining the layer short testing function, the 19036 has 6kV impulse voltage with area, differential area, Flutter and Laplacian judgments to supply effective measures for inspecting poor coil insulation.

The 19036 is equipped with a patented 4-wire DC resistance test that has both Drive and Sense in compliance with withstanding specification to provide 10 channels of 4-wire DC resistance test functions. Up to 40ch of scanning test can be conducted when the 19036 is configured with 16ch scan boxs.

The 19036 also has HSCC functions to scan multiple windings rapidly for normal connection. It can solve the test fail problems caused by bad contact of cabling or test fixture.

The motor standard such as UL 1004-1 requires high power safety tester. Chroma 19036 with the capability of outputting & measuring AC100mA/DC 20mA is suitable for testing large leakage current or big electrical safety equipment. Chroma 19036 as a comprehensive tester integrated with high power hipot test and other safety tests can bring the maximum benefit to the production line as well as to quality assurance. Its 500VA design is also compliant with the output power requirements of EC/UL.

# Wound Component EST Analyzer

# **MODEL 19036**

# Key Features :

- 5 in 1 (10 channels) composite analyzer (ACWV / DCWV/ IR / Impulse / DCR)
  - Hi-pot test
  - 5kVac / 6kVdc
  - HSCC( High Speed Contact Check)
  - 500 VA output
  - Insulation Resistance test
  - 5kV Max.
  - Impulse Winding Test (IWT)
  - 6kV impulse voltage
  - High sampling rate (200MHz)
  - DCR measurement
  - 4-wire DCR measurement
  - riangle / Y motor winding calculation
- Support max. 40 channels scanning test
- English, Traditional Chinese and Simplified Chinese User Interface
- USB waveform storage& Hard copy function
- Graphic color display
- Standard LAN, USB, RS232 interface
- GFI (Ground Fault Interrupt) for body protection



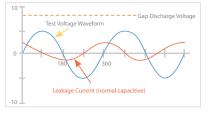




# **MEASUREMENT TECHNOLOGY**

#### **HI-POT TEST FLASHOVER DETECTION(ARC)**

Fast transient on detected leakage current is defined as flashover in hi-pot test. The 19036 has Flashover Detection as other Chroma safety test series. Flashover is nonsequential discharge generated by the inner or surface of insulation component which cause DUTs to lose original insulation feature, generated carbonation electrically conductive path and damages the product. As flashover cannot be detected by leakage current rms value, Flashover Detection is one of the inevitable inspection items in HV test.





#### **IMPULSE TESTING OVERVIEW**

The impulse winding test is to impose a non-destructive, high speed and low energy voltage impulse on the DUT (Device Under Test) to analyze/compare the equivalent waveform of yield and defect products for good and no good judgement. The main function of impulse winding test is to discover the potential defects such as layer short, corona or partial discharge that is difficult to find in wound components in the early phase.

# FOUR KINDS OF WAVEFORM JUDGEMENT FOR TESTING

- Area size
- Differential area
- Flutter value
- Laplacian value

Use Laplancian for calculation can detect the waveform discontinuity caused by electrical discharge effectively.

#### **DCR MEASUREMENT**

#### DCR Measurement (two-wire/four-wire)

Chroma 19036 can choose to use 2-wire or 4-wire DCR measurements. The

new patented port design provides maximum 10 channels 4-wire DCR measurements for high accuracy tests on multiple wound samples like motors and transformers. The measurement range is from  $0.1 \text{ m} \Omega$  to  $500 \text{ K} \Omega$ .

#### DCR Balance

When the DCR of the motor with 3 windings is unbalanced, the rotation will not be balanced as well and it could cause bad quality for long term use. The judgement of DCR balance is to subtract the maximum and the minimum value of winding and the product is no good if the value exceeds the set range. It is a reliable assistant tool for testing motor products.

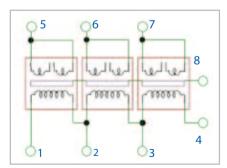
#### Temp Compensation

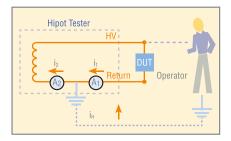
When measuring a smaller DCR, it often encounters the problem of temperature difference. The measured resistance is varied with the temperature. Thus, the temp compensation function is included in the 19036. Through the conversion of temperature coefficient, it changes the DCR to the measured value under standard temperature to reduce the influence caused by temperature difference.

### **HIGH SPEED CONTACT CHECK (HSCC)**

If an open occurs to electrical safety testing circuit it may cause a defected product to be judged as a good one. The contact check can detect and screen the products when short circuit occurs to reduce the damage of fixture device and save the test cost.

The HSCC function can scan rapidly if the DUT circuit contact is correct. This new technology allows the contact check before hipot test to be done faster than ever. The 19036 also has High Frequency Contact Check (HFCC) and Open Short Check (OSC, Patent no. 254135) functions that can detect if there is Open (bad contact) or Short (DUT short circuit) between the winding and the iron core.





#### SUB-STEP FOR TESTING MULTIPLE WOUND COMPONENTS

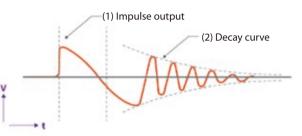
Parallel hipot test is often used to improve the manufacturing inspection speed; however, it is unable to set the current high/low limit correctly when doing a parallel test and it causes the leakage of defected products or misjudging the good to no good. It also adds workstations for testing the defected products and increases the cost. The 19036 offers the sub-step function to solve the trouble caused by the parallel test. When the parallel test is required for production, it programs fail as the sub-step launch condition which means only when the main test item (parallel) fails the sub-step test item (single) will be performed to judge the defect DUT. The implementation of this function can optimize the productivity and quality inspection.

#### 例: Step 1: AC Hipot / pin1 to pin5, 6, 7

Sub step 1.1 : AC Hipot / pin1 to pin5 Sub step 1.2 : AC Hipot / pin1 to pin6 Sub step 1.3 : AC Hipot / pin1 to pin7

### **GFI HUMAN PROTECTION**

The ultimate purpose of safety testing is to protect users from electrical hazard.The19036 also has GFI function to protect the operator. The GFI function can cut off the power output immediately while the human body is suffering electric shock. The GFI function detects the current from earth GND (loperator) and LOW terminal (ldevice). The voltage output will be cut off if the current is over 0.5mA



# APPLICATIONS

#### **PRODUCT APPLICATIONS**

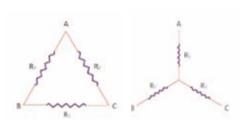
From EV motors, servomotors, ascension motors to fans all rotary motor products need to perform impulse test, hipot test and DCR measurements to ensure the product quality also refer to JB/T 7080 GB Machinery Industry Standard for testing.

The DCR measurement of the 19036 is in 4-wire type and each terminal has Drive and Sense total 10 independent channels for scanning test 3 DUTs at once to increase productivity. Each channel can be set to Hi/Lo/Open respectively.



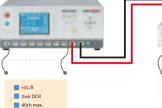
# Y-type motor for example, the test items are:

- •HSCC/OSC
- •DCR Test
- Impulse Test
- •Hi-pot –Sub step test



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To solve the problem of unable to do DCR measurement on the  $\triangle$ -type and Y-type motor winding (no center-tapped) directly, Chroma 19036 has added  $\triangle$ -type and Y-type motor winding DCR calculation functions to obtain the value of R1,R2 and R3.

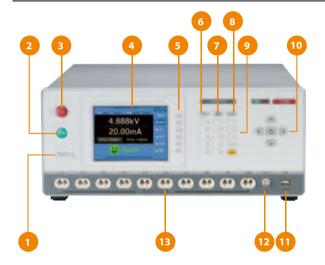




### 40 Channels scanning test

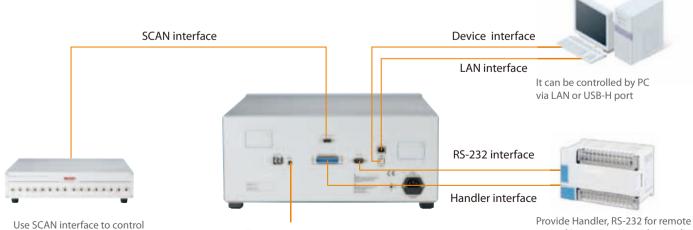
A190359/A190362(4-wire) scanner has 16 test channels and each of them can be set to H (High voltage, Hi), L (High voltage, Lo) or X (Open). The combination of 19036 and A190359/A190362(4-wire) can apply to multiple PINs or small amount but diversified DUTs as well as cell type production line to complete all tests within one station.

# PANEL DESCRIPTION





8.System key 9.Data entry keys/Program keys 10.Arrow and Enter key 11.USB storage interface 12.RTN/LOW terminal 13.Test terminal



an external 16ch scan box

Temp compensation

control in automatic production line

Output Frequency         Staff / Mark Michael 1 - 599 sec, and o           Output Frequency         Sine wave (for AC)           Waveform         Sine wave (for AC)           Sine wave (for AC)         Sine wave (for AC)           Unput Voltage         DC (0.050 - 5.000/L) Steps : 0.002/V           Load Regulation         ± (1% of stept - 0.1% of full scale)           Load Regulation         ± (1% of stept - 0.1% of full ange)           IR Range         0.1M O = 160, ± (1% of stept - 0.1% of freading + 0.1% of full ange)           Resistance Accuracy         0.1M O = 160, ± (1% of stept - 2% of full ange)           ≥ 0.5KV and ≤ 1KV         160 - 100, ± (1% of stept - 2% of full ange)           Mode = 160, ± (1% of stept - 2% of full ange)         ± 0.5KV           Impulse Winding Test         -0.5KV           Mapled Voltage, Step, and Energy         0.5 ~ 6KV, 10V Step, Max 0.21 Joules           Inductance Test Range         0.1M O = 160, ± (1% of reading + 0.2% of full ange)           Inductance Test Range         0.5 ~ 6KV, 10V Step, Max 0.21 Joules           Measurement Range         0.5 ~ 6KV, 10V Step, Max 0.21 Joules           Inductance Test Range         0.1M Ω = 506.Ω           DC Resistance Measurement         -0.1 M Ω = 506.Ω           Co Co LOV, <dc 200ma<="" td="">         10.0 Ω           1.0 Ω         ± 0.5% of reading +</dc>	SPECIFICATIONS		
ACIOC Whitshanding Test Load Regulation ACIO 00:5-5.0kV / DC: 0.05-6.0kV ACIO 00:pto Volage Could of Support 0.1% of full scale) ACIO 00:pto Volage ACIO 00:pto 10:1% of full scale) ACIO 00:pto 10:1% of full scale) ACIO 00:pto 10:0% of full scale) ACIO 00:pto 10:0	Model		10026
Output Voltage         A.C. 0.05 - S.AV / JC: 0.05			19050
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Voltage Accuracy       ± (1% of setting -0.1% of full scale)         2V       AC 0001mA-120mA (Voltage S44V)         Current Accuracy       0 C 00001mA-120mA (Voltage S44V)         Current Accuracy       0 Site / 6004 (for AC)         Waveform       Site / 6004 (for AC)         Insulation Resistance Test       DC 00001/ 5000 (For AC)         Output Voltage Accuracy       C (1% of output - 0 % of full cale)         Voltage Accuracy       1 (% of output - 0 % of full cale)         Range       MO - 160 : 1 (% of or caling + 1% of full cale)         Voltage Accuracy       1 (% of output - 0 % of full cale)         Range       MO - 160 : 1 (% of or caling + 1% of full cale)         Voltage Accuracy       1 (% of output - 0 % of full cale)         Accuracy       1 (% of output - 0 % of full cale)         Voltage Accuracy       1 (% of output - 0 % of full cale)         Accuracy       1 (% of output - 0 % of full cale)         Accuracy       1 (% of output - 0 % of full cale) </th <th></th> <th></th> <th></th>			
Voltage Resolution         >V           Current         -2.000 (Molage 2-4K/)           Current Accuracy         -1.000 (Molage 2-4K/)           Output Frequency         Sole (Molage 2-4K/)           Sole (Molage 2-4K/)         Sole (Molage 2-4K/)           Maveform         Sole (Molage 2-4K/)           Insulation Resistance Test         DC (00050 - 5000K/ Steps : 0002K/           Voltage Accuracy         -1.0106 : ± (% of reading + 0.0106 (Holage 2-4K/)           Voltage Accuracy         -1.0106 : ± (% of reading + 0.0106 (Holage 2-4K/)           Colos - 5000K/ Steps : 0.002K/         -1.0106 : ± (% of reading + 0.0106 (Holage 2-4K/)           Voltage Accuracy         -1.0106 : ± (% of reading + 0.0106 (Holage 2-4K/)           Colos - 5000K/ Steps : 0.002K/         -1.010 (Holage 2-4K/)           Colos - 5000K/ Steps : 0.002K/         -1.010 (Holage 2-4K/)           Steps : 0.002K/         -1.010 (Holage 2-4K/)           Steps : 0.002K/         -0.010 (Ho			
Current Accuracy         AC: 0.001mA-100mA, Notlage, 54.49.           Current Accuracy         0.0001mA-100mA, Notlage, 54.49.           Current Accuracy         0.0001mA-100mA, Notlage, 54.49.           Current Accuracy         1.1% of reading, 10.3% of range)           Test Time?         1.2% of reading, 10.3% of range)           Distuit Frequency.         Sine wave, for AC.           Waveform         Sine wave, for AC.           Insulation Resistance Test         DC: 0.050 - 5.0004X           Outgot Voltage         3.1% of study is 1.0% of reading + 0.1% of full scale)           Voltage Accuracy         1.1% of study + 0.1% of full scale)           Notad Regulation         1.1% of reading + 0.1% of full range)           Voltage Accuracy         1.1% Of reading + 1% of full range)           All Range         0.1MQ - 1.60.2; 1.2% of reading + 1% of full range)           2.1KV         1.0G - 1.60.2; 1.2% of reading + 1% of full range)           All Singling Singlingling Singling Singling Singlingling Singling Si			
Curo Current         AC:0001mA-200mA           Current Accuracy         ⊥ (1% of reading + 0.5% of range)           Test Time         1 (1% of reading + 0.5% of range)           Test Time         Ramp / Fail / Owell time (3 - 999 sec, and o 0           Output Frequency         Sine Ware (1% of roll and - 998 sec, and o 0           Wareform         Sine Ware (1% of Conting - 998 sec, and o 0           Insulation Resistance Test         DC:0.050 > 5000kV, Steps : 0.002kV           Uotput Voltage         DC:0.050 > 5000kV, Steps : 0.002kV           Load Regulation         5 (1% of output + 1% of full ange)           Voltage Accuracy         110 (1 GG: 1 (1% of reading + 1% of full ange)           IR Range         0.1MQ - 1GG: 1 (1% of reading + 1% of full ange)           21kV         1GG - 10GG: 1 (1% of reading + 1% of full ange)           20.5kV and ≤ 1 kV         1GG - 1GG: 1 (1% of reading + 1% of full ange)           inductance Test Range         0.1MQ - 1GG: 1 (1% of reading + 1% of full ange)           inductance Test Range         0.1MQ - 1GG: 1 (1% of reading + 1% of full ange)           inductance Test Range         0.1MQ - 1GG: 1 (1% of reading + 1% of full ange)           inductance Test Range         0.1MQ - 1GG: 1 (1% of reading + 1% of full ange)           Sampling Range         1 1 Ranges           Votage Accuracy         0.5 - 6V/ 10 V Step Acc)<	Voltage Resolution		
CC 0001 mAcuracy         CC 0001 mAcuracy           1(% of reading + 0.5% of range)           Test Time?         Test time 0.1 ~ 99 sec, and continue           Output Frequency         Solt / OVEL           Waveform         Solt / OVEL           Insulation Resistance Test         DC 1005 m 5.0002 M/           Output Visitage         CC 1005 m 5.0002 M/           Waveform         CO 100 m CO C ± (2% of reading + 1% of full range)           CO 100 m CO C ± (2% of reading + 1% of full range)         CO 100 m CO C ± (2% of reading + 1% of full range)           Inductance Test Range         0.00 m C ± (2% of reading + 1% of full range)           Applied Voltage, Step, and Energy         0.5 - 6(V, 10% Step, Max 0.21 loues)           Mavet			
Current Accuracy         ± (1% of reading - 0.5% of range)           Test Timer         Test Timer           Test Timer         Ramp. / Fail / Dwell timed: 3 - 999 sec, and o double / Fail / Sub /	Cuto Current		
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Inter         Ramp / Fall / Deel Inter0.1 = 999 sec, and o           Waveform         Softz / 60hz (for AC)           Sine wave (for AC)         Sine wave (for AC)           Insulation Resistance Test         DC : 0.050 - 5.000K/ Steps : 0.002kV           Code Regulation         ≦ (1% of output + 0.1% of full scale)           X01age Accuracy         ± (1% of setting + 0.1% of full scale)           If Range         0.1M Ω - 160 ± ± (3% of reading + 0.1% of full range)           If Range         0.1M Ω - 160 ± ± (3% of reading + 0.1% of full range)           If Q = 106 ± ± (3% of reading + 0.1% of full range)         0.1M Ω - 160 ± ± (3% of reading + 0.2% of full range)           Resistance Accuracy         0.1M Ω - 160 ± ± (3% of reading + 0.2% of full range)           X01age Accuracy         0.1M Ω - 160 ± ± (3% of reading + 0.2% of full range)           Impulse Winding Test         0.5kV         1M Ω - 160 ± ± (3% of reading + 0.2% of full range)           Inductance Test Range         0.1M Ω - 160 ± ± (3% of reading + 0.2% of full range)           Inductance Test Range         0.5kV         1M Ω - 160 ± ± (3% of reading + 0.2% of full range)           Inductance Test Range         0.1M Ω - 160 ± ± (3% of reading + 0.2% of full range)           Inductance Test Range         0.1M Ω - 160 ± ± (3% of reading + 0.2% of full range)           Inductance Test Range         0.1M Ω - 160 ± ± (3% of reading + 0.2% of fu	Current Accuracy		
Output Frequency     SOH2 (for AC)       Maveform     Sine wave (for AC)       Insulation Resistance Test     DC: 0.059 ~ 5.000W, Steps : 0.002kV       Load Regulation     ≤ 1(% of output \ 0.1% of full scale)       Voltage Accuracy     ± 1 (% of setting + 0.1% of full scale)       IR Range     0.1M Ω ~ 1G Ω : ± (3% of reading + 0.1% of full range)       Resistance Accuracy     2.1 (% of output \ 0.1% of reading + 0.1% of full range)       Resistance Accuracy     0.1M Ω ~ 1G Ω : ± (3% of reading + 0.1% of full range)       No C (0.2 ) ± (3% of reading + 0.1% of full range)     0.1M Ω ~ 1G Ω : ± (3% of reading + 1.1% of full range)       Resistance Accuracy     0.1M Ω ~ 1G Ω : ± (3% of reading + 0.2% of full range)       Impulse Winding Test     0.5 ~ 6KV, 10V Step, Max 0.21 Joules       More than 100H     100 · 1 (0 · 1 (5% of reading + 0.2% of full range)       Inductance Test Range     0.5 ~ 6KV, 10V Step, Max 0.21 Joules       Inductance Test Range     0.5 ~ 6KV, 10V Step, Max 0.21 Joules       More than 100H     100 · 1 (0 · 1 (5% of reading + 0.2% of full range)       Tobe Steps and Energy     0.5 ~ 6KV, 10V Step, 10.20 Outp       Nore than 100H     0.1 M ~ 10 · 1 (0 · 1 (5% of reading + 0.2% of full range)       Inductance Test Range     0.5 ~ 6KV, 10V Step, Max 0.21 Joules       More than 100H     0.5 ~ 6KV, 10V Step, Max 0.21 Joules       Sampling Speed     1 O · · · · · · · · · · · · · · · · · ·	Test Timer		
Waveform         Sine wave (for AC) <sup>-</sup> Insulation Resistance Test         DC (0.050 - 5000K), Steps : 0.002kV           Code Regulation         ≤ (1% of output - 0.1% of full scale)           Voltage Accuracy         ± (1% of setting + 0.1% of full scale)           Note Accuracy         ± (1% of setting + 0.1% of full scale)           Note Accuracy         ± (1% of setting + 0.1% of full range)           Sine wave (for AC) <sup>-</sup> 1MΩ - 1GC : ± (3% of reading + 0.1% of full range)           Resistance Accuracy         >1KV         1GΩ - 1GC : ± (3% of reading + 0.1% of full range)           Resistance Accuracy         ≤ 0.5KV and ≤ 1KV         1GΩ - 1GC : ± (3% of reading + 1% of full range)           Impulse Winding Test         0.0 < 1GΩ : ± (3% of reading + 1% of full range)			
Insulation Resistance Test         DC: 0.050 – 5.000K/, Step: 0.002kV           Load Regulation         ≤ (1% of output) + 0.1% of full scale)           Voltage Accuracy         ± (1% of setting + 0.1% of full scale)           IR Range         0.1M Ω ~ 1G0; ± (3% of reading + 0.3% of full range)           Resistance Accuracy         ≥1kV         1GΩ ~ 10GΩ; ± (3% of reading + 0.3% of full range)           Resistance Accuracy         ≥1kV         1GΩ ~ 10GΩ; ± (3% of reading + 0.3% of full range)           Resistance Accuracy         ≥0.5kV and ≦1kV         1GΩ ~ 10GΩ; ± (3% of reading + 1.9% of full range)           Applied Voltage, Step, and Energy         0.5 ~ 6kV, 10V Step, Max 0.21 Joules           Inductance Test Range         0.5 ~ 6kV, 10V Step, Max 0.21 Joules           Inductance Test Range         0.5 ~ 6kV, 10V Step, Max 0.21 Joules           Inductance Test Range         0.5 ~ 6kV, 10V Step, Max 0.21 Joules           Sampling Speed         10bt / 5m (200MHz)           Sampling Speed         0.5 ~ 6kV, 10V Step, Max 0.21 Joules           Inductance Test Range         0.5 ~ 6kV, 10V Step, Max 0.21 Joules           More than 10H1         Sampling Speed         10bt / 5m (200MHz)           Sampling Speed         10bt / 5m (200MHz)         10bt / 5m (200MHz)           Sampling Speed         0.5 % of full range)         10bt / 5m (200MHz)			
Output Voltage         DC (: 00.00 - SUOKV) Steps 7: 00.02/W           Load Regulation         ≤ (1% of oruppt 4.01% of full scale)           Voltage Accuracy         ± (1% of oruppt 4.01% of full scale)           IR Range         0.1MQ ~ 15G 2: ± (3% of reading + 10% of full range)           IMQ ~ 15G 2: ± (3% of reading + 10% of full range)         0.1MQ ~ 15G 2: ± (3% of reading + 10% of full range)           Resistance Accuracy         0.1MQ ~ 15G 2: ± (3% of reading + 10% of full range)           IMQ ~ 15G 2: ± (3% of reading + 10% of full range)         0.1MQ ~ 15G 2: ± (3% of reading + 10% of full range)           Impulse Winding Test         0.5 ~ 6K / 10% of reading + 10% of full range)           Applied Voltage, Step, and Energy         0.5 ~ 6K / 10% Step, 3Kao 221 Joules           Inductance Test Range         0.5 ~ 6K / 10% Step, 3Kao 221 Joules           Sampling Range         11 Ranges           Pulse Number         Pulse Number.0 ~ 9           Detection Mode         CD 10V, CD 200mA           Test Signal         0.1M ~ 20% of reading + 10% of full range)           100m Ω         ± (0.5% of reading + 10% Step Step Step Step Step Step Step Step			Sille wave (IOFAC)
Load Regulation Uotage Accuracy Uotage Accuracy IR Range Uotage Accuracy IR Range Uotage Accuracy IR Range UND ~ 106 C ± (1% of setting + 1% of full scale) UND ~ 106 C ± (1% of setting + 1% of full ange) UND ~ 106 C ± (1% of reading + 1% of full ange) UND ~ 106 C ± (1% of reading + 1% of full ange) UND ~ 106 C ± (1% of reading + 1% of full ange) UND ~ 106 C ± (1% of reading + 1% of full ange) UND ~ 106 C ± (1% of reading + 1% of full ange) UND ~ 106 C ± (1% of reading + 1% of full ange) UND ~ 106 C ± (1% of reading + 1% of full ange) UND ~ 106 C ± (1% of reading + 1% of full ange) UND ~ 106 C ± (1% of reading + 1% of full ange) UND ~ 106 C ± (1% of reading + 1% of full ange) UND ~ 106 C ± (1% of reading + 1% of full ange) UND ~ 106 C ± (1% of reading + 1% of full ange) UND ~ 106 C ± (1% of reading + 1% of full ange) UND ~ 106 C ± (1% of reading + 1% of full ange) UND ~ 106 C ± (1% of reading + 1% of full ange) UND ~ 106 C ± (1% of reading + 1% of full ange) UND ~ 106 C ± (1% of reading + 1% of full ange) UND ~ 106 C ± (1% of reading + 1% of full ange) UND ~ 100 C ± (1% of reading + 1% of full ange) UND ~ 100 C ± (1% of reading + 1% of full ange) UND ~ 100 C ± (1% of reading + 1% of full ange) UND ~ 100 C ± (1% of reading + 1% of full ange) UND ~ 100 C ± (1% of reading + 1% of full ange) UND ~ 100 C ± (1% of reading + 1% of full ange) UND ~ 100 C ± (1% of reading + 10% % of full ange) UND ~ 100 C ± (1% of reading + 10% % of full ange) UND ~ 100 C ± (1% of reading + 10% % of full ange) UND ~ 100 C ± (1% of reading + 10% % of full ange) UND ~ 100 C ± (1% word ange) M M M = 00% Word W M M = 00% W			
Voltage Accuracy       ± (1% of still scale)         IR Range       0.1MO - SOG Ω         IR Range       1MO ~ 1G Ω : ± (1% of reading + 0.1% of full range)         IM Ω ~ 1G Ω : ± (1% of reading + 0.1% of full range)       0.0G Ω : ± (1% of reading + 0.1% of full range)         NOG Ω - SOG Ω : ± (1% of reading + 0.1% of full range)       0.0M Ω - 1G Ω : ± (1% of reading + 1% of full range)         Induct Actor Cos Q : ± (1% of reading + 1% of full range)       0.0M Ω - 1G Ω : ± (1% of reading + 1% of full range)         Inductance Test Range       0.5 ~ 6 kV 10% Step, Max 0.21 Joules         Applied Voltage, Step, and Energy       0.5 ~ 6 kV 10% Step, Max 0.21 Joules         Applied Notage, Step, and Energy       0.5 ~ 6 kV 10% Step, Max 0.21 Joules         Sampling Speed       1 tobit / sns (200/Hz)         Sampling Speed       1 tobit / sns (200/Hz)         Sampling Speed       1 tobit / sns (200/Hz)         Consistance Measurement          Consistance Measurement          Reasurement Range       0 tom Ω ± (0.5% of reading + 10.0% of toll range)         10Ω Ω       ± (0.5% of reading + 10.0% of toll range)         10Ω Ω       ± (0.5% of reading + 10.0% of toll range)         10Ω Ω       ± (0.5% of reading + 10.0% of toll range)         10Ω Ω       ± (0.5% of reading + 0.05 % of full range)         10Ω Ω			
IR Range         0.0.0.0.2 → 50.0.0           MMO - 1GΩ : ± (3% of reading + 0.3% of full range)           AMO - 1GΩ : ± (3% of reading + 0.3% of full range)           Resistance Accuracy         0.0.1MQ - 1GΩ : ± (3% of reading + 0.3% of full range)           ≥ 0.5KV and ≤1KV         1GG - 50GΩ : ± (1% of reading + 2% of full range)           Impute Vinding Test         0.0.1MQ - 1GΩ : ± (3% of reading + 0.3% of full range)           Impute Kinding Test         0.5 - 6KV 10V Step.Max 0.21 JouleS           Inductance Test Range         0.5 - 6KV 10V Step.Max 0.21 JouleS           Inductance Test Range         0.5 - 6KV 10V Step.Max 0.21 JouleS           Sampling Steped         11 Ranges           Sampling Steped         Pluse Number 0-9           Detection Mode         Area / Di ernital Area : Flutter / Japalain Detection           DE Cresistance Measurement         -0.01M - 500K2           Reasurement Range         0.01M - 500K2           100         ± (0.5% of reading + 0.3% of full range)           100         ± (0.5% of reading + 0.05 % of full range)           100         ± (0.5% of reading + 0.05 % of full range)           100         ± (0.5% of reading + 0.05 % of full range)           100         ± (0.5% of reading + 0.05 % of full range)           100         ± (0.5% of reading + 0.05 % of full range)           <			
NMO - 1GΩ : ± (7% of reading + 0.1% of full range)         Resistance Accuracy         ≥ 0.5kV and ≤ 1kV         1GΩ - 1GΩ : ± (7% of reading + 2% of full range)         ≥ 0.5kV and ≤ 1kV         1GΩ - 1GΩ : ± (3% of reading + 2% of full range)         imputse Winding Test         Applied Voltage, Step, and Energy         0.5 ~ 6KV 100 Step, Max 0.21 Joules         Inductance Test Range         0.5 ~ 6KV 100 Step, Max 0.21 Joules         More than 10uH         Sampling Speed         10bit / 5n (200MHz)         CResistance Measurement         CResistance Measurement Range         10Ω       ± (0.5% of reading + 1% of full range)         10Ω       ± (0.5% of reading + 1% of full range)         10Ω       ± (0.5% of reading + 1% of full range)         10Ω       ± (0.5% of reading + 1% of full range)         10Ω       ± (0.5% of reading + 1% of full range)         10Ω       ± (0.5% of reading + 1% of full range)         10Ω       ± (0.5% of reading + 1% of full range)         10Ω       ± (0.5% of reading + 0.05% of full range)         10Ω       ± (0.5% of reading + 0.05% of full range)         10Ω       ± (0.5% of reading + 0.05% of full range)         10Ω       ± (0.5% of reading + 0.05% of full range) <t< td=""><td></td><td></td><td></td></t<>			
Part III CG ~ 10GC : 1 (1% of reading + 2% of full range)Resistance Accuracy $10GC ~ 10GC : 1 (1% of reading + 2% of full range)\geq 0.5kV and \leq 1kV10GC ~ 50GC : 1 (1% of reading + 2% of full range)Impulse Winding Test10GC ~ 50GC : 1 (2% of reading + 2% of full range)Applied Voltage, Step, and Energy0.5 - 6kV : 100 Step, Anax 0.21 JoulesInductance Test Range0.5 - 6kV : 100 Step, Anax 0.21 JoulesSampling Speed0.5 - 6kV : 100 Step, Anax 0.21 JoulesSampling Range0.5 - 6kV : 100 Step, Anax 0.21 JoulesPulse Number:Pulse Number:$	ік капде		
Resistance Accuracy $10G\Omega - 50G\Omega \pm 10\%$ of reading + 1% of full range) $\geq 0.5kV$ and $\leq 1kV$ $10G\Omega - 10G\Omega \pm 10\%$ of reading + 2% of full range) $\geq 0.5kV$ and $\leq 1kV$ Resistance Accuracy $\geq 0.5kV$ and $\leq 1kV$ $10G\Omega - 50G\Omega \pm 10\%$ of reading + 1% of full range) $= 0.5kV$ Impulse Winding Test Applied Voltage, Step, and Energy $0.5 \sim 6kV$ , 10V Step, Max 0.21 Joules More than 100HSampling Speed $0.5 \sim 6kV$ , 10V Step, Max 0.21 JoulesInductance Test Range $0.5 \sim 6kV$ , 10V Step, Max 0.21 JoulesSampling Range $0.5 \sim 6kV$ , 10V Step, Max 0.21 JoulesDelse Number11 RangesPulse Number11 RangesDetection ModePulse Number: 1-8.2, Dummy Pulse Number: 0-9Detection Mode $0.1 m\Omega \sim 500k\Omega$ C Resistance Measurement $0.1 m\Omega \sim 500k\Omega$ Test Signal $0.1 m\Omega \sim 500k\Omega$ Measurement Range $0.1 m\Omega \sim 500k\Omega$ $10\Omega \cap \Omega$ $\pm (0.5\%$ of reading + 0.2\% of full range) $10\Omega \cap \Omega$ $\pm (0.5\%$ of reading + 0.05\% of full range) $10\Omega \cap \Omega$ $\pm (0.5\%$ of reading + 0.05\% of full range) $10\Omega \cap \Omega$ $\pm (0.5\%$ of reading + 0.05\% of full range) $10\Omega \cap \Omega$ $\pm (0.5\%$ of reading + 0.05\% of full range) $10\Omega \cap \Omega$ $\pm (0.5\%$ of reading + 0.05\% of full range) $10\Omega \cap \Omega$ $\pm (0.5\%$ of reading + 0.05\% of full range) $10\Omega \cap \Omega$ $\pm (0.5\%$ of reading + 0.05\% of full range) $10\Omega \cap \Omega$ $\pm (0.5\%$ of reading + 0.05\% of full range) $10\Omega \cap \Omega$ $\pm (0.5\%$ of reading + 0.05\% of full range) $10\Omega \cap \Omega$ $\pm (0.5\%$ of reading + 0.05\% of full range) $10\Omega \cap \Omega$		>1kV	
Resistance Accuracy         0.1M Ω ~ 1GΩ. ± (2% of reading + 0.1% of full range)           ≥ 0.5 kV and ≦ 1 kV         1GΩ ~ 1GΩ. ± (1% of reading + 1% of full range)           mpulse Winding Test         0.5 ~ 6 kV 100 Sc ± (1% of reading + 1% of full range)           Applied Voltage, Step, and Energy         0.5 ~ 6 kV 100 Sc ± (1% of reading + 1% of full range)           Applied Voltage, Step, and Energy         0.5 ~ 6 kV 100 Sc p, Max 0.21 Joules           Sampling Range         0.5 ~ 6 kV 100 Sc p, Max 0.21 Joules           Sampling Speed         Nor than 10uH           Sampling Range         Nor than 10uH           Sampling Range         10 bit / 5 ns (200MHz)           Detection Mode         Pulse Number: 1~32, Dummy Pulse Number: 0~9           Detection Mode         0.1m Ω ~ 500 kQ           Detection Mode         0.1m Ω ~ 500 kQ           Test Signal            10         ± (0.5% of reading + 0.5% of full range)           10.0         ± (0.5% of reading + 0.5% of full range)           10.0         ± (0.5% of reading + 0.5% of full range)           10.0         ± (0.5% of reading + 0.5% of full range)           10.0         ± (0.5% of reading + 0.5% of full range)           10.0         ± (0.5% of reading + 0.5% of full range)           10.0         ± (0.5% of reading + 0.5% of full range)			
≥0.5kV and ≦1kV         1GΩ ~ 10GΩ : 1 (7% of reading + 2% of full range)           impulse Winding Test         0.5 ~ 6kV, 10V Step, Max 0.21 Joules           Applied Voltage, Step, and Energy         0.5 ~ 6kV, 10V Step, Max 0.21 Joules           Sampling Speed         More than 10uH           Sampling Range         0.5 ~ 6kV, 10V Step, Max 0.21 Joules           More than 10uH         More than 10uH           Sampling Range         11k Ranges           Pulse Number:         Pulse Number: 0-9           Detection Mode         Area / Di erential Area : Flutter/ Laplacian Detection           DC Resistance Measurement         0.1 mA2 × 500kΩ           Measurement Range         0.1 mA2 × 500kΩ           100 Ω         ± (0.5% of reading + 1% of full range)           10Ω         ± (0.5% of reading + 0.2% of full range)           10Ω         ± (0.5% of reading + 0.0% of full range)           10Ω         ± (0.5% of reading + 0.0% of full range)           10Ω         ± (0.5% of reading + 0.0% of full range)           10Ω         ± (0.5% of reading + 0.0% of full range)           10Ω         ± (0.5% of reading + 0.0% of full range)           10Ω         ± (0.5% of reading + 0.0% of full range)           10Ω         ± (0.5% of reading + 0.0% of full range)           10Ω         ± (0.5% of reading + 0.0			
Impulse Winding Test         IM Ω ~ 16 Ω : ± (5% of reading + 1% of full range)           Applied Voltage, Step, and Energy         0.5 - 6kV, 10V Step, Max 0.21 Joules           Inductance Test Range         0.5 - 6kV, 10V Step, Max 0.21 Joules           Sampling Speed         10bit / 5ns (200MHz)           Sampling Range         10bit / 5ns (200MHz)           Detection Mode         Pulse Number: 1-32, Dummy Pulse Number: 0-9           Detection Mode         Area / Di erential Area : Flutter/ Laplacian Detection           DC Resistance Measurement            Test Signal         0.1m Ω - 500kΩ           Measurement Range         0.1m Ω - 500kΩ           10Ω         ± (0.5% of reading + 0.2% of full range)           10Ω         ± (0.5% of reading + 0.0% of full range)           10Ω         ± (0.5% of reading + 0.0% of full range)           10Ω         ± (0.5% of reading + 0.0% of full range)           10Ω         ± (0.5% of reading + 0.0% of full range)           10Ω         ± (0.5% of reading + 0.0% of full range)           10Ω         ± (0.5% of reading + 0.0% of full range)           10Ω         ± (0.5% of reading + 0.0% of full range)           10Ω         ± (0.5% of reading + 0.0% of full range)           10Ω         ± (0.5% of reading + 0.0% of full range)           10Ω	Resistance Accuracy		
<0.5kV		$\geq$ 0.5kV and $\leq$ 1kV	
Impulse Winding Test         0.5 ~ 6 kV, 10V Step, Max 0.21 Joules           Applied Voltage, Step, and Energy         0.5 ~ 6 kV, 10V Step, Max 0.21 Joules           Sampling Apped         10 bit / 5ns (200MHz)           Sampling Range         11 Ranges           Pulse Number         Pulse Number: 0~9           Detection Mode         Area / Di erntial Area ÷ Flutter/ Laplacian Detection           DC Resistance Measurement            Test Signal            100m Ω         ± (0.5% of reading + 10% of full range)           10Ω         ± (0.5% of reading + 0.2% of full range)           10Ω         ± (0.5% of reading + 0.2% of full range)           10Ω         ± (0.5% of reading + 0.2% of full range)           10Ω         ± (0.5% of reading + 0.2% of full range)           10Ω         ± (0.5% of reading + 0.05% of full range)           10Q         ± (0.5% of reading + 0.05% of full range)           10kΩ         ± (0.5% of reading + 0.05% of full range)           10kΩ         ± (0.5% of reading + 0.05% of full range)           10kΩ         ± (0.5% of reading + 0.05% of full range)           10kΩ         ± (0.5% of reading + 0.05% of full range)           10kΩ         ± (0.5% of reading + 0.05% of full range)           10kΩ         ± (0.5% of reading + 0.05% of full range)     <			
Applied Voltage Step, and Energy         0.5 ~ 6KV, 10V Step, Max 0.21 Joules           Inductance Test Range         More than 10uH           Sampling Speed         10 Bht / Sns (200MHz)           Sampling Range         11 Ranges           Pulse Number: 1>32, Dummy Pulse Number: 0-9           Detection Mode         Area / Di erential Area : Flutter/ Laplacian Detection           DC Resistance Measurement         - COV , <dc 200ma<="" td="">           Test Signal         - OD (100, - COV), <dc 200ma<="" td="">           Measurement Range         100 Ω         ± (0.5% of reading + 0.2% of full range)           1Ω         ± (0.5% of reading + 0.2% of full range)         10Ω           10Ω         ± (0.5% of reading + 0.05% of full range)         10Ω           10Ω         ± (0.5% of reading + 0.05% of full range)         10Ω           10Ω         ± (0.5% of reading + 0.05% of full range)         10Ω           10Ω         ± (0.5% of reading + 0.05% of full range)         10Ω           100Ω         ± (0.5% of reading + 0.05% of full range)         10Ω           10Ω         ± (0.5% of reading + 0.05% of full range)         10Ω           10ΩΩ         ± (0.5% of reading + 0.05% of full range)         10Ω           Electrical Mazet         0.05% of reading + 0.05% of full range)         10Ω           Contact Check</dc></dc>		<0.5kV	$1M\Omega \sim 1G\Omega : \pm (5\% \text{ of reading} + (0.2*500/Vs)\% \text{ of full scale})$
Inductance Test Range         More than 10uH           Sampling Range         10bit / sn (200MHz)           Sampling Range         Pulse Number: 1-32, Dummy Pulse Number: 0-9           Pulse Number         Pulse Number: 1-32, Dummy Pulse Number: 0-9           Detection Mode         Area / Di erntial Area : Flutter/ Laplacian Detection           DC Resistance Measurement            Test Signal            Test Signal            Measurement Range         0.0 m Ω           1Ω         ± (0.5% of reading + 0.05% of full range)           1Ω         ± (0.5% of reading + 0.05% of full range)           1Ω         ± (0.5% of reading + 0.05% of full range)           1Ω         ± (0.5% of reading + 0.05% of full range)           1Ω         ± (0.5% of reading + 0.05% of full range)           10Ω         ± (0.5% of reading + 0.05% of full range)           10Ω         ± (0.5% of reading + 0.05% of full range)           10Ω         ± (0.5% of reading + 0.05% of full range)           10Ω         ± (0.5% of reading + 0.05% of full range)           10Ω         ± (0.5% of reading + 0.05% of full range)           10Ω         ± (0.5% of reading + 0.05% of full range)           10Ω         ± (0.5% of reading + 0.05% of full range)           10Ω         ± (0	Impulse Winding Test		
Inductance Test Range         More than 10uH           Sampling Range         10bit / sn (200MHz)           Sampling Range         Pulse Number: 1-32, Dummy Pulse Number: 0-9           Pulse Number         Pulse Number: 1-32, Dummy Pulse Number: 0-9           Detection Mode         Area / Di erntial Area : Flutter/ Laplacian Detection           DC Resistance Measurement            Test Signal            Test Signal            Measurement Range         0.0 m Ω           1Ω         ± (0.5% of reading + 0.05% of full range)           1Ω         ± (0.5% of reading + 0.05% of full range)           1Ω         ± (0.5% of reading + 0.05% of full range)           1Ω         ± (0.5% of reading + 0.05% of full range)           1Ω         ± (0.5% of reading + 0.05% of full range)           10Ω         ± (0.5% of reading + 0.05% of full range)           10Ω         ± (0.5% of reading + 0.05% of full range)           10Ω         ± (0.5% of reading + 0.05% of full range)           10Ω         ± (0.5% of reading + 0.05% of full range)           10Ω         ± (0.5% of reading + 0.05% of full range)           10Ω         ± (0.5% of reading + 0.05% of full range)           10Ω         ± (0.5% of reading + 0.05% of full range)           10Ω         ± (0	Applied Voltage, Step, and Energy		0.5 ~ 6kV ,10V Step ,Max 0.21 Joules
Sampling Range         11 Ranges           Pulse Number         Pulse Number: 1~32, Dummy Pulse Number: 0~9           Detection Mode         Area / Dirential Area : Flutter/ Laplacian Detection           DC Resistance Measurement            Test Signal            Measurement Range         0.1m Ω - 500k Ω           1Ω         ± (0.5% of reading + 0.2% of full range)           1Ω         ± (0.5% of reading + 0.05% of full range)           1Ω         ± (0.5% of reading + 0.05% of full range)           1Ω         ± (0.5% of reading + 0.05% of full range)           10Ω         ± (0.5% of reading + 0.05% of full range)           10Ω         ± (0.5% of reading + 0.05% of full range)           10kΩ         ± (0.5% of reading + 0.05% of full range)           10kΩ         ± (0.5% of reading + 0.05% of full range)           10kΩ         ± (0.5% of reading + 0.05% of full range)           10kΩ         ± (0.5% of reading + 0.05% of full range)           10kΩ         ± (0.5% of reading + 0.05% of full range)           10kΩ         ± (0.5% of reading + 0.05% of full range)           10kΩ         ± (0.5% of reading + 0.05% of full range)           10kΩ         ± (0.5% of reading + 0.05% of full range)           10kΩ         ± (0.5% of reading + 0.05% of full range)			More than 10uH
Sampling Range         11 Ranges           Pulse Number         Pulse Number: 1~32, Dummy Pulse Number: 0~9           Detection Mode         Area / Dirential Area : Flutter/ Laplacian Detection           DC Resistance Measurement            Test Signal            Measurement Range         0.1m Ω - 500k Ω           1Ω         ± (0.5% of reading + 0.2% of full range)           1Ω         ± (0.5% of reading + 0.05% of full range)           1Ω         ± (0.5% of reading + 0.05% of full range)           1Ω         ± (0.5% of reading + 0.05% of full range)           10Ω         ± (0.5% of reading + 0.05% of full range)           10Ω         ± (0.5% of reading + 0.05% of full range)           10kΩ         ± (0.5% of reading + 0.05% of full range)           10kΩ         ± (0.5% of reading + 0.05% of full range)           10kΩ         ± (0.5% of reading + 0.05% of full range)           10kΩ         ± (0.5% of reading + 0.05% of full range)           10kΩ         ± (0.5% of reading + 0.05% of full range)           10kΩ         ± (0.5% of reading + 0.05% of full range)           10kΩ         ± (0.5% of reading + 0.05% of full range)           10kΩ         ± (0.5% of reading + 0.05% of full range)           10kΩ         ± (0.5% of reading + 0.05% of full range)			10bit / 5ns (200MHz)
Pulse Number         Pulse Number: 1→32, Dum'my Pulse Number: 0~9           Detection Mode         Area / Di erential Area : Flutter/ Lapiacian Detection           DC Resistance Measurement            Test Signal          O. (Im Ω~ 500k Ω           Measurement Range         0.0 m Ω         ± (0.5% of reading + 1% of full range)           1Ω         ± (0.5% of reading + 0.05% of full range)           1ΩΩ         ± (0.5% of reading + 0.05% of full range)           10Ω         ± (0.5% of reading + 0.05% of full range)           10Ω         ± (0.5% of reading + 0.05% of full range)           10Ω         ± (0.5% of reading + 0.05% of full range)           10Ω         ± (0.5% of reading + 0.05% of full range)           10Ω         ± (0.5% of reading + 0.05% of full range)           10Ω         ± (0.5% of reading + 0.05% of full range)           10Ω         ± (0.5% of reading + 0.05% of full range)           10kΩ         ± (0.5% of reading + 0.05% of full range)           10kΩ         ± (0.5% of reading + 0.05% of full range)           10kΩ         ± (0.5% of reading + 0.05% of full range)           10kΩ         ± (0.5% of reading + 0.05% of full range)           10kΩ         ± (0.5% of reading + 0.05% of full range)           10kΩ         T of paradin b.05% of full range)			, , ,
Detection Mode Area / Di erential Area : Flutter/ Laplacian Detection DC Resistance Measurement Test Signal			
DC Resistance Measurement         Test Signal <dc 10v,="" 200ma<="" <dc="" td="">         Measurement Range       0,1m,Ω ~ 500k,Ω         1Ω       ±(0.5% of reading + 1% of full range)         1ΩΩ       ±(0.5% of reading + 0.05% of full range)         10Ω       ±(0.5% of reading + 0.05% of full range)         10Ω       ±(0.5% of reading + 0.05% of full range)         10Ω       ±(0.5% of reading + 0.05% of full range)         10Ω       ±(0.5% of reading + 0.05% of full range)         10Ω       ±(0.5% of reading + 0.05% of full range)         10Ω       ±(0.5% of reading + 0.05% of full range)         10Ω       ±(0.5% of reading + 0.05% of full range)         10R       0.05% of reading + 0.05% of full range)         Flashover Detection       ±(0.5% of reading + 0.05% of full range)         Flashover Detection       ±(0.5% of reading + 0.05% of full range)         Contact Check       Programmable setting AC: 20m A; DC: 10mA         Contact Check Function       OSC (open/short check)         Ground Fault Interrupt       0.5m Δ: 0.25mA AC; ON/OFF         Key Lock       HSCC (High Frequency Contact Check)         Interlock       YES         Indication, Alarm       GO: Short sound, Green LED; NG: Long sound, Red LED         Memory Storage       200 sets, max. 40 steps per set&lt;</dc>			
Test Signal <td colspan="2"></td> <td></td>			
Measurement Range       0.1m Ω ~ 50k Ω         Measurement Range       10m Ω       ± (0.5% of reading + 1.0% of full range)         10Ω       ± (0.5% of reading + 0.05% of full range)         10Ω       ± (0.5% of reading + 0.05% of full range)         10Ω       ± (0.5% of reading + 0.05% of full range)         1kΩ       ± (0.5% of reading + 0.05% of full range)         1kΩ       ± (0.5% of reading + 0.05% of full range)         10kΩ       ± (0.5% of reading + 0.05% of full range)         10kΩ       ± (0.5% of reading + 0.05% of full range)         10kΩ       ± (0.5% of reading + 0.05% of full range)         10kΩ       ± (0.5% of reading + 0.05% of full range)         10kΩ       ± (0.5% of reading + 0.05% of full range)         10kΩ       ± (0.5% of reading + 0.05% of full range)         10kΩ       ± (0.5% of reading + 0.05% of full range)         10kΩ       ± (0.5% of reading + 0.05% of full range)         10kΩ       ± (0.5% of reading + 0.05% of full range)         10kΩ       ± (0.5% of reading + 0.05% of full range)         10kΩ       ± (0.5% of reading + 0.05% of full range)         10kΩ       Post partition (0.5% of reading + 0.05% of full range)         Contact Check       HFCC (High Frequency Contact Check)         Electrical Hazard Protection Function       0.5m A ± 0			<dc 10v="" 200ma<="" <dc="" td=""></dc>
Measurement Accuracy100 $\Omega$ $\pm$ (0.5% of reading + 1% of full range)1 $\Omega$ $\pm$ (0.5% of reading + 0.2% of full range)10 $\Omega$ $\pm$ (0.5% of reading + 0.05% of full range)100 $\Omega$ $\pm$ (0.5% of reading + 0.05% of full range)1 $\Omega\Omega$ $\pm$ (0.5% of reading + 0.05% of full range)1 $\Omega\Omega$ $\pm$ (0.5% of reading + 0.05% of full range)1 $\Omega\Omega$ $\pm$ (0.5% of reading + 0.05% of full range)1 $\Omega\Omega$ $\pm$ (0.5% of reading + 0.05% of full range)100 $\Omega$ $\pm$ (0.5% of reading + 0.05% of full range)100 $\Omega$ $\pm$ (0.5% of reading + 0.05% of full range)Detection CurrentOSC (open/short check)Contact CheckOSC (open/short check)Contact CheckMECC (High Frequency Contact Check)HFCC (High Frequency Contact Check)Contact CheckMECC (High Speed Contact Check; winding DCR check)Electrical Hazard Protection FunctionGround Fault InterruptOSm $\pm$ 0.5m $\pm$ 0.25m AC, ON/OFFKey LockMemory StorageOStorage LockInterfaceGover ConsumptionOperation EnvironmentTemperature: 0°C ~ 45°C, Humidity: 15% to 95% R.H@ $\leq$ 40°CPower ConsumptionOs 0.264/ac, 47 ~ 63HzOperation EnvironmentCond X 428 × 177 × 500mm / 16.850 x 6.969 x 19.685 inch </td <td colspan="2"></td> <td>,</td>			,
Measurement Accuracy1 $\Omega$ $\pm$ (0.5% of reading + 0.2% of full range)Measurement Accuracy100 $\Omega$ $\pm$ (0.5% of reading + 0.05% of full range)Ik $\Omega$ $\pm$ (0.5% of reading + 0.05% of full range)Ik $\Omega$ $\pm$ (0.5% of reading + 0.05% of full range)Ib $\Omega$ $\pm$ (0.5% of reading + 0.05% of full range)Ib $\Omega$ $\pm$ (0.5% of reading + 0.05% of full range)Flashover Detection $\pm$ (0.5% of reading + 0.05% of full range)Flashover Detection Current $0$ (0.5% of reading + 0.05% of full range)Contact Check FunctionProgrammable setting AC : 20mA ; DC : 10mAContact Check $MFCC$ (High Frequency Contact Check)Contact Check $MFCC$ (High Frequency Contact Check)Electrical Hazard Protection Function $0$ 5mA $\pm$ 0.25mA AC, ON/OFFKey Lock $0$ SmA $\pm$ 0.25mA AC, ON/OFFKey Lock $0$ Yes (password control)InterlockYesMemory Storage $200$ sets, max. 40 steps per setInterlock $200$ sets, max. 40 steps per setInterlace $200$ sets, max. 40 steps per setGeneral $0^{\circ}C - 45^{\circ}C$ , Humidity: 15% to 95% R.H@ $\leq$ 40°CPower ConsumptionTemperature: 0°C ~ 45°C, Humidity: 15% to 95% R.H@ $\leq$ 40°CPower Requirements $90 \sim 264Vac, 47 \sim 63Hz$ Dimension (W × H × D) $428 × 177 × 500mm / 16.850 x 6.96 x 19.865 inchWeight26kg / 57.32 lbs$		100m Q	
Measurement Accuracy $10\Omega$ $\pm$ (0.5% of reading + 0.05% of full range)Measurement Accuracy $10\Omega$ $\pm$ (0.5% of reading + 0.05% of full range) $Ik\Omega$ $\pm$ (0.5% of reading + 0.05% of full range) $Ik\Omega$ $\pm$ (0.5% of reading + 0.05% of full range) $10k\Omega$ $\pm$ (0.5% of reading + 0.05% of full range) $10k\Omega$ $\pm$ (0.5% of reading + 0.05% of full range)Detection $00k\Omega$ $\pm$ (0.5% of reading + 0.05% of full range)Contact CheckProgrammable setting AC : 20mA ; DC : 10mAContact CheckOSC (open/short check)Contact CheckHFCC (High Frequency Contact Check)Contact CheckHFCC (High Frequency Contact Check)Contact CheckHFCC (High Speed Contact Check) winding DCR check)Contact CheckSigna AC, 0N/OFFKey Lock0.5mA $\pm$ 0.25mA AC, 0N/OFFKey LockYes (password control)InterlockYes (password control)InterlockGO : Short sound, Green LED, NG : Long sound, Red LEDMemory Storage0.200 sets, max. 40 steps per setInterfaceStandard : RS232, Handler, JUSB , LAN interfaceGeneralTemperature: 0°C ~ 45°C, Humidity: 15% to 95% R.H@ $\leq$ 40°CPower Requirements90 ~ 264Vac, 47 ~ 63HzPower Requirements90 ~ 264Vac, 47 ~ 63HzDimension (W × H × D)428 × 177 × 500mm / 16.850 x 6.969 x 19.685 inchWeight26kg / 57.32 lbs			
Measurement Accuracy       100 $\Omega$ ± (0.5% of reading + 0.05 % of full range)         1k $\Omega$ ± (0.5% of reading + 0.05 % of full range)         10k $\Omega$ ± (0.5% of reading + 0.05 % of full range)         10k $\Omega$ ± (0.5% of reading + 0.05 % of full range)         Flashover Detection       ± (0.5% of reading + 0.05 % of full range)         Flashover Detection Current       Programmable setting AC: 20mA ; DC: 10mA         Contact Check Function       OSC (open/short check)         Contact Check       HFCC (High Frequency Contact Check)         Electrical Hazard Protection Function       0.5mA ± 0.25mA AC, ON/OFF         Ground Fault Interrupt       0.5mA ± 0.25mA AC, ON/OFF         Key Lock       YES         Indication, Alarm       GO: Short sound, Green LED; NG: Long sound, Red LED         Memory Storage       200 sets, max. 40 steps per set         Interface       200 sets, max. 40 steps per set         Standard: R5232, Handler ,USB , LAN interface       Sourt sound, Green LED; NG: Long sound, Red LED         Power Consumption       Temperature: 0°C ~ 45°C, Humidity: 15% to 95% R.H@ ≤ 40°C         Power Requirements       90 ~ 264Vac, 47 ~ 63Hz         Dimension (W × H × D)       428 × 177 × 500m M - 63Hz         Weight       26kg / 57.32 lbs			
$\begin{tabular}{ c c c c } & & & & & & & & & & & & & & & & & & &$	Monsuramont Accuracy		
$ \begin{array}{ c c c c } & & & & & & & & & & & & & & & & & & &$	Measurement Accuracy		
100kΩ       ± (0.5% of reading + 0.05 % of full range)         Flashover Detection       Programmable setting AC : 20mA ; DC : 10mA         Contact Check Function       OSC (open/short check)         Contact Check       HFCC (High Frequency Contact Check)         Electrical Hazard Protection Function       HSCC (High Speed Contact Check)         Ground Fault Interrupt       0.5mA ± 0.25mA AC, ON/OFF         Key Lock       Yes (password control)         Interlock       Yes         Indication, Alarm       GO : Short sound, Green LED; NG : Long sound, Red LED         Memory Storage       200 sets, max. 40 steps per set         Interface       Standard : RS232, Handler ,USB , LAN interface         General       Temperature: 0°C ~ 45°C, Humidity: 15% to 95% R.H@≦ 40°C         Power Requirements       90 ~ 264Vac, 47 ~ 63Hz         Dimension (W × H × D)       428 × 177 × 500mm / 16.850 x 6.969 x 19.685 inch         Weight       26kg / 57.32 lbs			
Flashover Detection       Programmable setting AC : 20mA ; DC : 10mA         Contact Check Function       OSC (open/short check)         Contact Check       HFCC (High Frequency Contact Check)         Betection Function       0.5mA ± 0.25mA AC, ON/OFF         Ground Fault Interrupt       0.5mA ± 0.25mA AC, ON/OFF         Key Lock       Yes (password control)         Interlock       YES         Indication, Alarm       GO : Short sound, Green LED; NG : Long sound, Red LED         Memory Storage       200 sets, max. 40 steps per set         Interface       200 sets, max. 40 steps per set         General       OPered Consumption         Operation Environment       Temperature: 0°C ~ 45°C, Humidity: 15% to 95% R.H@ ≤ 40°C         Power Consumption       No Load: <150VA; Rated Load: <1000VA			
Detection Current       Programmable setting AC : 20mA ; DC : 10mA         Contact Check Function       OSC (open/short check)         MFCC (High Frequency Contact Check)       HFCC (High Frequency Contact Check)         Electrical Hazard Protection Function       HSCC (High Speed Contact Check; winding DCR check)         Electrical Hazard Protection Function       0.5mA ± 0.25mA AC, ON/OFF         Key Lock       0.5mA ± 0.25mA AC, ON/OFF         Interlock       YES         Indication, Alarm       GO : Short sound, Green LED; NG : Long sound, Red LED         Memory Storage       200 sets, max. 40 steps per set         Interface       Standard : R5232, Handler, USB , LAN interface         General       Temperature: 0°C ~ 45°C, Humidity: 15% to 95% R.H@ ≤ 40°C         Power Consumption       Temperature: 0°C ~ 45°C, Humidity: 15% to 95% R.H@ ≤ 40°C         Power Requirements       90 ~ 264Vac, 47 ~ 63Hz         Dimension (W × H × D)       428 × 177 × 500mm / 16.850 x 6.969 x 19.685 inch         Weight       26kg / 57.32 lbs		100k\2	$\pm$ (0.5% of reading + 0.05 % of full range)
Contact Check Function       OSC (open/short check)         Contact Check       HFCC (High Frequency Contact Check)         HFCC (High Speed Contact Check)       HSCC (High Speed Contact Check)         Beletrical Hazard Protection Function       0.5mA ± 0.25mA AC, ON/OFF         Ground Fault Interrupt       0.5mA ± 0.25mA AC, ON/OFF         Key Lock       Yes (password control)         Interlock       YES         Indication, Alarm       GO : Short sound, Green LED; NG : Long sound, Red LED         Memory Storage       200 sets, max. 40 steps per set         Interface       Standard : RS232, Handler ,USB , LAN interface         General       Temperature: 0°C ~ 45°C, Humidity: 15% to 95% R.H@≦ 40°C         Power Consumption       No Load: <150VA ; Rated Load: <1000VA			
Contact CheckOSC (open/short check)HFCC (High Frequency Contact Check)HFCC (High Speed Contact Check; winding DCR check)Electrical Hazard Protection FunctionGround Fault InterruptKey LockInterlockYes (password control)InterlockIndication, AlarmGO: Short sound, Green LED; NG : Long sound, Red LEDMemory Storage1nterfaceStandard : RS232, Handler, USB , LAN interfaceGeneralOperation EnvironmentPower ConsumptionPower ConsumptionPower Requirements90 ~ 264Vac, 47 ~ 63HzDimension (W × H × D)WeightContact CheckWeight			Programmable setting AC: 20mA; DC: 10mA
Contact Check       HFCC (High Frequency Contact Check)         HSCC (High Speed Contact Check; winding DCR check)         Electrical Hazard Protection Function         Ground Fault Interrupt       0.5mA ± 0.25mA AC, ON/OFF         Key Lock       Yes (password control)         Interlock       YES         Indication, Alarm       GO : Short sound, Green LED; NG : Long sound, Red LED         Memory Storage       200 sets, max. 40 steps per set         Interface       Standard : R5232, Handler ,USB , LAN interface         General       Operation Environment         Operation Environment       Temperature: 0°C ~ 45°C, Humidity: 15% to 95% R.H@ ≤ 40°C         Power Consumption       No Load: <150VA ; Rated Load: <1000VA	Contact Check Function		
HSCC (High Speed Contact Check; winding DCR check)Electrical Hazard Protection FunctionGround Fault Interrupt0.5mA ± 0.25mA AC, ON/OFFKey Lock0.5mA ± 0.25mA AC, ON/OFFKey LockYes (password control)InterlockYESIndication, AlarmGO : Short sound, Green LED; NG : Long sound, Red LEDMemory Storage200 sets, max. 40 steps per setInterfaceStandard : RS232, Handler, USB , LAN interfaceGeneralOperation EnvironmentTemperature: 0°C ~ 45°C, Humidity: 15% to 95% R.H@ ≤ 40°CPower ConsumptionNo Load: <150VA ; Rated Load: <1000VA			
Electrical Hazard Protection Function         Ground Fault Interrupt         0.5mA ±0.25mA AC, ON/OFF         Key Lock         Interlock         Indication, Alarm         GO : Short sound, Green LED; NG : Long sound, Red LED         Memory Storage         Interface         Standard : RS232, Handler ,USB , LAN interface         General         Operation Environment         Temperature: 0°C ~ 45°C, Humidity: 15% to 95% R.H@ ≤ 40°C         Power Consumption         Power Requirements         90 ~ 264Vac, 47 ~ 63Hz         Dimension (W × H × D)         Weight	Contact Check		
Ground Fault Interrupt0.5mA ±0.25mA AC, ON/OFFKey LockYes (password control)InterlockYesIndication, AlarmGO : Short sound, Green LED; NG : Long sound, Red LEDMemory Storage200 sets, max. 40 steps per setInterfaceStandard : RS232, Handler ,USB , LAN interfaceGeneralOperation EnvironmentTemperature: 0°C ~ 45°C, Humidity: 15% to 95% R.H@ ≤ 40°CPower ConsumptionNo Load: <150VA ; Rated Load: <1000VAPower Requirements90 ~ 264Vac, 47 ~ 63HzDimension (W × H × D)428 × 177 × 500mm / 16.850 x 6.969 x 19.685 inch 26kg / 57.32 lbs			HSCC (High Speed Contact Check; winding DCR check)
Key LockYes (password control)InterlockYESIndication, AlarmGO : Short sound, Green LED; NG : Long sound, Red LEDMemory Storage200 sets, max. 40 steps per setInterfaceStandard : RS232, Handler , USB , LAN interfaceGeneralOperation EnvironmentOperation EnvironmentTemperature: 0°C ~ 45°C, Humidity: 15% to 95% R.H@ ≤ 40°CPower ConsumptionNo Load: <150VA ; Rated Load: <1000VA		Inction	
InterlockYESIndication, AlarmGO : Short sound, Green LED; NG : Long sound, Red LEDMemory Storage200 sets, max. 40 steps per setInterfaceStandard : RS232, Handler, USB , LAN interfaceGeneralOperation EnvironmentPower ConsumptionPower Requirements90 ~ 264Vac, 47 ~ 63HzDimension (W × H × D)Weight26Kg / 57.32 lbs			
Indication, AlarmGO : Short sound, Green LED; NG : Long sound, Red LEDMemory Storage200 sets, max. 40 steps per setInterfaceStandard : RS232, Handler, USB , LAN interfaceGeneralOperation EnvironmentTemperature: 0°C ~ 45°C, Humidity: 15% to 95% R.H@≦ 40°CPower ConsumptionNo Load: <150VA ; Rated Load: <1000VAPower Requirements90 ~ 264Vac, 47 ~ 63HzDimension (W × H × D)428 × 177 × 500mm / 16.850 x 6.969 x 19.685 inch 26kg / 57.32 lbs			
Memory Storage200 sets, max. 40 steps per setInterfaceStandard : RS232, Handler, USB , LAN interfaceGeneralOperation EnvironmentPower ConsumptionPower Requirements00 ~ 264Vac, 47 ~ 63HzDimension (W × H × D)Weight26kg / 57.32 lbs			
Interface       Interface         Standard : RS232, Handler, USB , LAN interface         General         Operation Environment         Power Consumption         Power Requirements         Operation (W × H × D)         Weight         26kg / 57.32 lbs			
Standard : RS232, Handler ,USB , LAN interface         General         Operation Environment         Power Consumption         Power Requirements         Dimension (W × H × D)         Weight         26kg / 57.32 lbs	Memory Storage		200 sets, max. 40 steps per set
General           Operation Environment         Temperature: 0°C ~ 45°C, Humidity: 15% to 95% R.H@≦ 40°C           Power Consumption         No Load: <150VA ; Rated Load: <1000VA	Interface		
Operation Environment         Temperature: 0°C ~ 45°C, Humidity: 15% to 95% R.H@ ≤ 40°C           Power Consumption         No Load: <150VA ; Rated Load: <1000VA           Power Requirements         90 ~ 264Vac, 47 ~ 63Hz           Dimension (W × H × D)         428 × 177 × 500mm / 16.850 x 6.969 x 19.685 inch 26kg / 57.32 lbs	Standard : RS232, Handler , USB ,	LAN interface	
Power Consumption         No Load: <150VA ; Rated Load: <1000VA           Power Requirements         90 ~ 264Vac, 47 ~ 63Hz           Dimension (W × H × D)         428 × 177 × 500mm / 16.850 x 6.969 x 19.685 inch           Weight         26kg / 57.32 lbs	General		
Power Consumption         No Load: <150VA ; Rated Load: <1000VA           Power Requirements         90 ~ 264Vac, 47 ~ 63Hz           Dimension (W × H × D)         428 × 177 × 500mm / 16.850 x 6.969 x 19.685 inch           Weight         26kg / 57.32 lbs	Operation Environment		Temperature: $0^{\circ}$ C ~ 45 $^{\circ}$ C, Humidity: 15% to 95% R.H@ $\leq$ 40 $^{\circ}$ C
Power Requirements         90 ~ 264Vac, 47 ~ 63Hz           Dimension (W × H × D)         428 × 177 × 500mm / 16.850 x 6.969 x 19.685 inch           Weight         26kg / 57.32 lbs	Power Consumption		
Dimension (W × H × D)         428 × 177 × 500mm / 16.850 x 6.969 x 19.685 inch           Weight         26kg / 57.32 lbs			
<b>Weight</b> 26kg / 57.32 lbs			
	ORDERING INFORMATION		20kg / 37.32 lb3

# ORDERING INFORMATION

**19036:** Wound Component EST Analyzer **A190359 :** 16ch HV External Scanning BOX **A190360 :** 19' Rack Mount Kit A190362 : 16ch 4-wire HV External Scanning Box W25 000099 : 4-wire Test Cable with bare wire(3m) W25 000100 : 4-wire Test Cable with bare wire(1.5m) W25 000104: 4-wire Test Cable with Clip

Developed and Manufactured by : CHROMA ATE INC. 致茂電子股份有限公司

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