Cronomaster

HIPOT TESTER mod. CR19052

THREE INSTRUMENTS IN ONE

- Withstanding Voltage Test (AC Hipot), 0-5KV-30mA
  Insulation Test (DC Hipot), 0-6KV –10mA
  Insulation Resistance Test (IR) 1 MΩ ~ 50 GΩ.
- Meet UL, CSA, TUV, VDE, CE …etc. safety test requirements.
- Provide reliable and stable test results (digital).
- Fast cut-off time: 0.4 ms,
  fast discharge time: within 0.2 sec..
- Real current measurement (RMS) and ARC micro discharges detection function.
- Ground Fault Interrupt (GFI): grounding detection function.
- Standard RS-232 interface.
- Optional GPIB interface, instead of RS-232.
- Optional possibility of starting the test after reading of a bar code.
- Optional connection for printer in order to print every test data and/or the entered parameters.

SPECIFICATIONS

Model	**19051 ***	**19052 STD**	**19053 ***
Possible tests	AC / DC	AC / DC / IR	AC / DC / IR
Scanner Unit *	--	--	8 ports + phase *
Withstanding Voltage Test (AC) / Insulation Test (DC)			
Output Voltage	AC: 0.05 ~5KV, DC: 0.05 ~6KV		
Voltage Regulation	1% +5V at the nominal load		
Voltage Resolution	2 V		
Voltage Accuracy	1% +5 counts		
Cut off Current	AC: 30 mA, DC: 10 mA		
Current Resolution	The current resolution depends on the entered tolerance higher limit.		
	Entered limit: < 300µA — Resolution: 0.1µA (for DC only)		
	Entered limit: < 3mA — Resolution: 1 µA		
	Entered limit: < 30mA for AC or < 10mA for DC — Resolution: 10µA		
Current Accuracy	1% +5 counts (5% +20 counts for real current)		
Output Voltage Frequency	50 Hz. / 60 Hz.		
Test Time	0.3 ~ 999 sec., continue (For LCD off, the minimum operating time falls under 0.2 Sec)		
Ramp up Time	0.1 ~ 999 Sec., off		
Fall Time	0.1 ~ 999 Sec., off		
Waveform	Sine wave		
Micro discharges (ARC) Detection (This function is carried out along with the AC & DC Tests)			
Setting Mode	Programmable setting		
Detection Current	AC: 1 mA ~ 15 mA, DC: 1 mA ~ 10 mA		
Minimum Pulse Width	10µS approx.		
Insulation Resistance Test (IR)			
Output Voltage	--	DC: 0.05 ~ 1KV	DC: 0.05 ~ 1KV
Voltage Regulation		5% +5V	5% +5V
Voltage Resolution	--	2 V	2 V
Voltage Accuracy	--	1.5% + 5 counts	1.5% + 5 counts
Insulation Resistance Range	--	1 MΩ ~ 50 GΩ	1 MΩ ~ 10 GΩ
Resistance Resolution	--	0.1 MΩ	0.1 MΩ

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Resistance Accuracy	--	The resistance accuracy depends on the test voltage and on the resistance value.		
		Voltage	Resistance	Accuracy
		< 500V	0.1M ~1G	10% + 5 counts
		> 500V	1M ~1G	5% + 5 counts
			1G ~10G	10% + 5 counts
			10G ~50G (for CR19052 only)	15% + 5 counts
Security Protection Function				
Fast Output Voltage Cut-off	0.4 ms after NG happens			
Fast DC Discharge	0.2 sec			
Ground Fault Interrupt (GFI) (It detects the absence of connection between the instrument earth and the ground) and, at same time, it has an IMPORTANT SAFETY RULE for the operator protection.	0.5mA ±0.25mA ac This function may be selected or not			
Operation block on the front panel	By password			
GO/NG Judgement Window				
Indication, Alarm	GO: short sound /Green LED, NG: long sound /Red LED			
Data Hold	Last tests data memories			
Memory Storage	99 steps of 99 groups for total 500 memory locations			
Connector for remote command by PLC or others				
Rear panel 9 pin D-type connector	Input: Start, Stop, Security Interlock Output: Under test, Pass, Fail			
General Specifications				
Operation Environment	Temperature: 0 ~ 40°C, Relative Humidity: ≤80% RH			
Power Consumption	No load: <100W. With rated load: 500W			
Power requirements	100 V / 120 V / 220 V/ 240 V, 50 / 60 Hz.			
Weight	14 kg.	14 kg.		15 kg.
Dimensions (W x H x D)	320 x 105 x 400 mm.			

* By request only

Note.

All CR19XXX instruments can be interfaced with a P.C.

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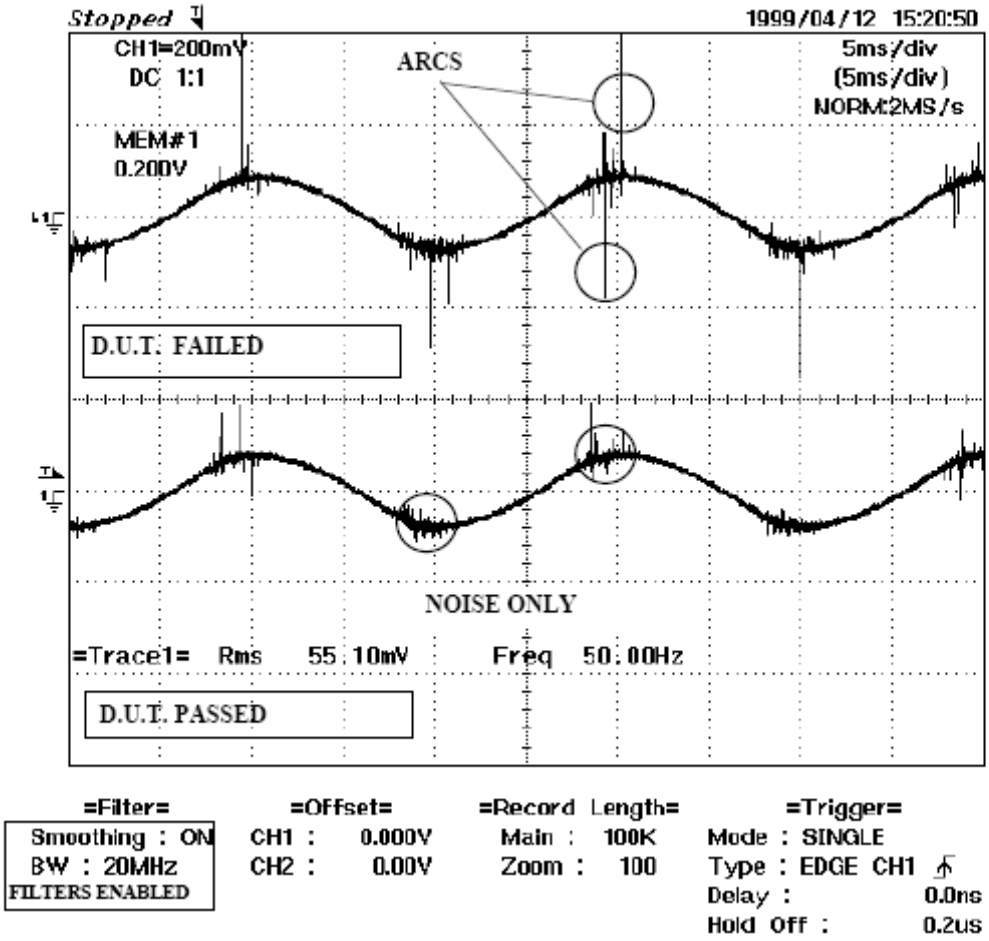

ARC DETECTION.

THE ARCS ARE HIGH FREQUENCY MICRO-DISCHARGES (OVER MANY KILO HERTZ). NOT ALWAYS ARCS' EFFECTS ARE EVIDENT, BUT THEY CAN CAUSE A FAST PRODUCT DETERIORATION REDUCING THE EXPECTED PRODUCT'S LIFE-TIME (MTBFE).

THE ABOVE WAVEFORMS SHOW THAT THE 50 Hz LEAKAGE CURRENT DOESN'T CHANGE IN AMPLITUDE WHEN ARCS ARE PRESENT (TOP WAVEFORM).

INSTRUMENTS WITHOUT THE ARC DETECTION FUNCTION CAN'T DETECT THESE SITUATIONS.

FOR EXAMPLE, IN A WOUND STATOR HAVING A WIRE OUT OF THE INSULATION SLOTS CLOSE TO THE LAMINATION, BUT NOT IN CONTACT TO THE PACK, THE CURRENT VALUE IS NOT LARGER THAN IN A GOOD ONE, DUE TO THE GOOD INSULATION OF THE ENAMEL.

ARC DETECTION FUNCTION CAN KEEP IT SUCCESSFULLY WITHOUT INCREASING THE H.V.

THE FILTERING FUNCTION IS AUTOMATICALLY CARRIED ON, SO THE USER MUST ONLY SET THE DESIRED REJECT LEVEL.

CRONOMASTER CAN OFFER MANY DIFFERENT MODELS OF SAFETY TESTERS WITH ARC DETECTION STARTING FROM THE CHEAPEST CR 19052 UP TO CR19055C THAT CAN ALSO MEASURE AND DISPLAY THE CORONA EFFECT (HIGH FREQUENCY) DISCHARGES.

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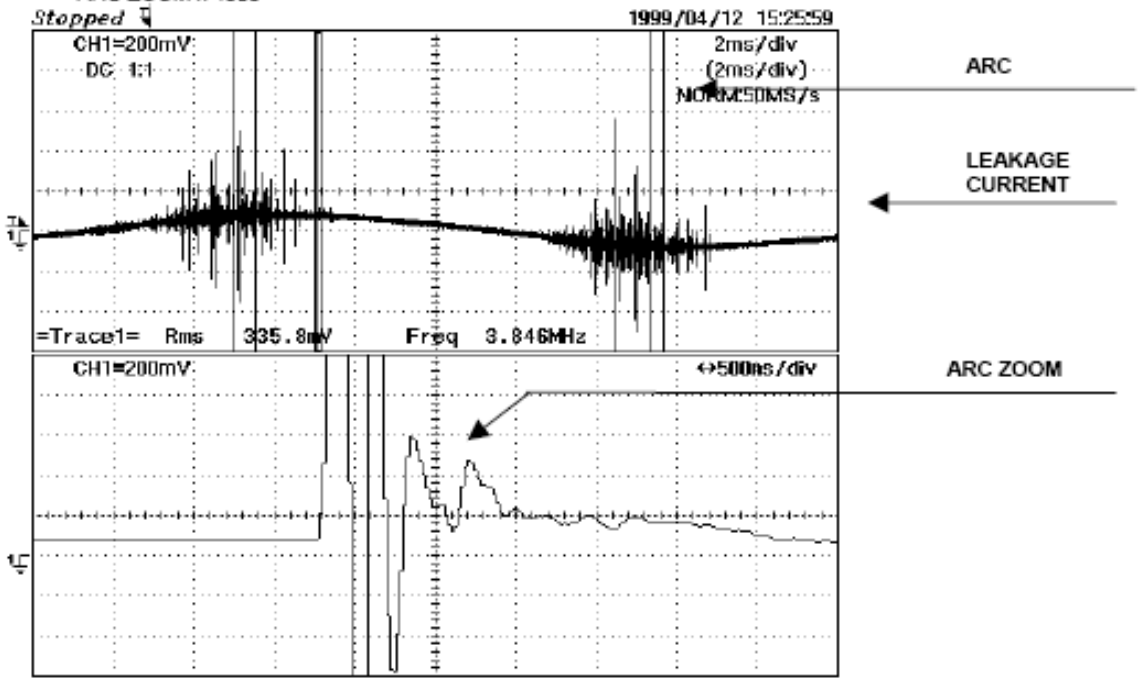
AC H.V. TEST - 2 kV - CURRENT WAVEFORM (25R)

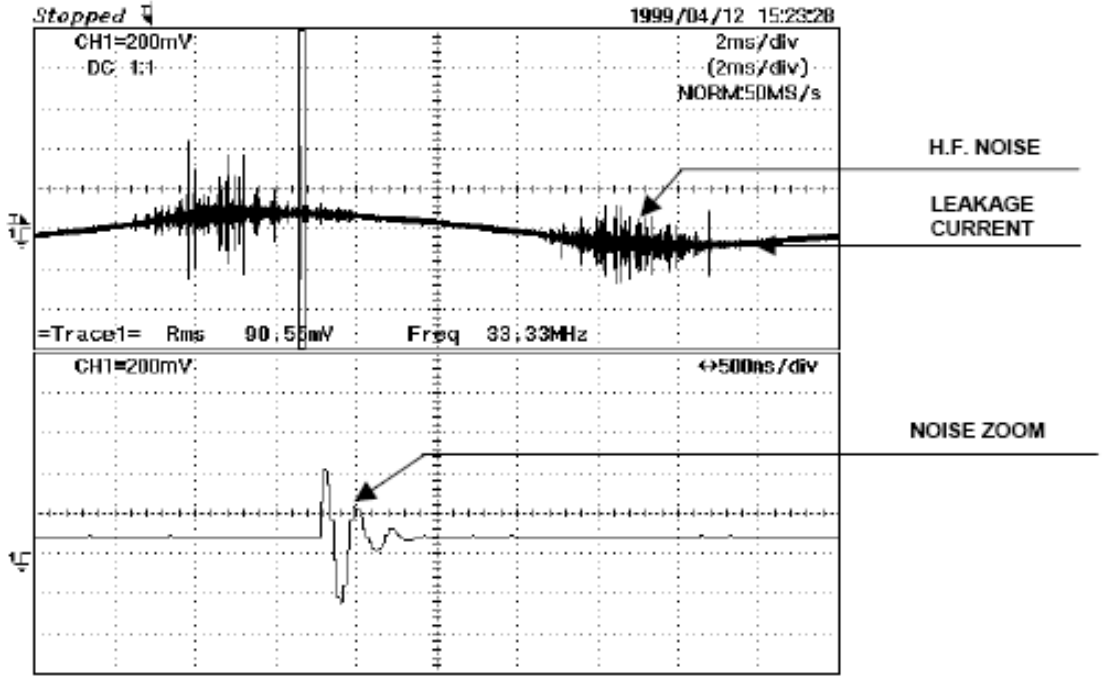
TOP = LEAKAGE CURRENT WITH ARCS
BOTTOM = ARC ZOOM x 4000



=Filter=	=Offset=	=Record Length=	=Trigger=
Smoothing : OFF	CH1 : 0.000V	Main : 1M	Mode : SINGLE
BW : FULL	CH2 : 0.00V	Zoom : 250	Type : EDGE CH1
FILTERS ENABLED			Delay : 0.0ns
			Hold Off : 0.2us

AC H.V. TEST - 2 kV - CURRENT WAVEFORM (25R)

TOP = CURRENT LEAKAGE WITHOUT ARCS
BOTTOM = NOISE ZOOM x 4000



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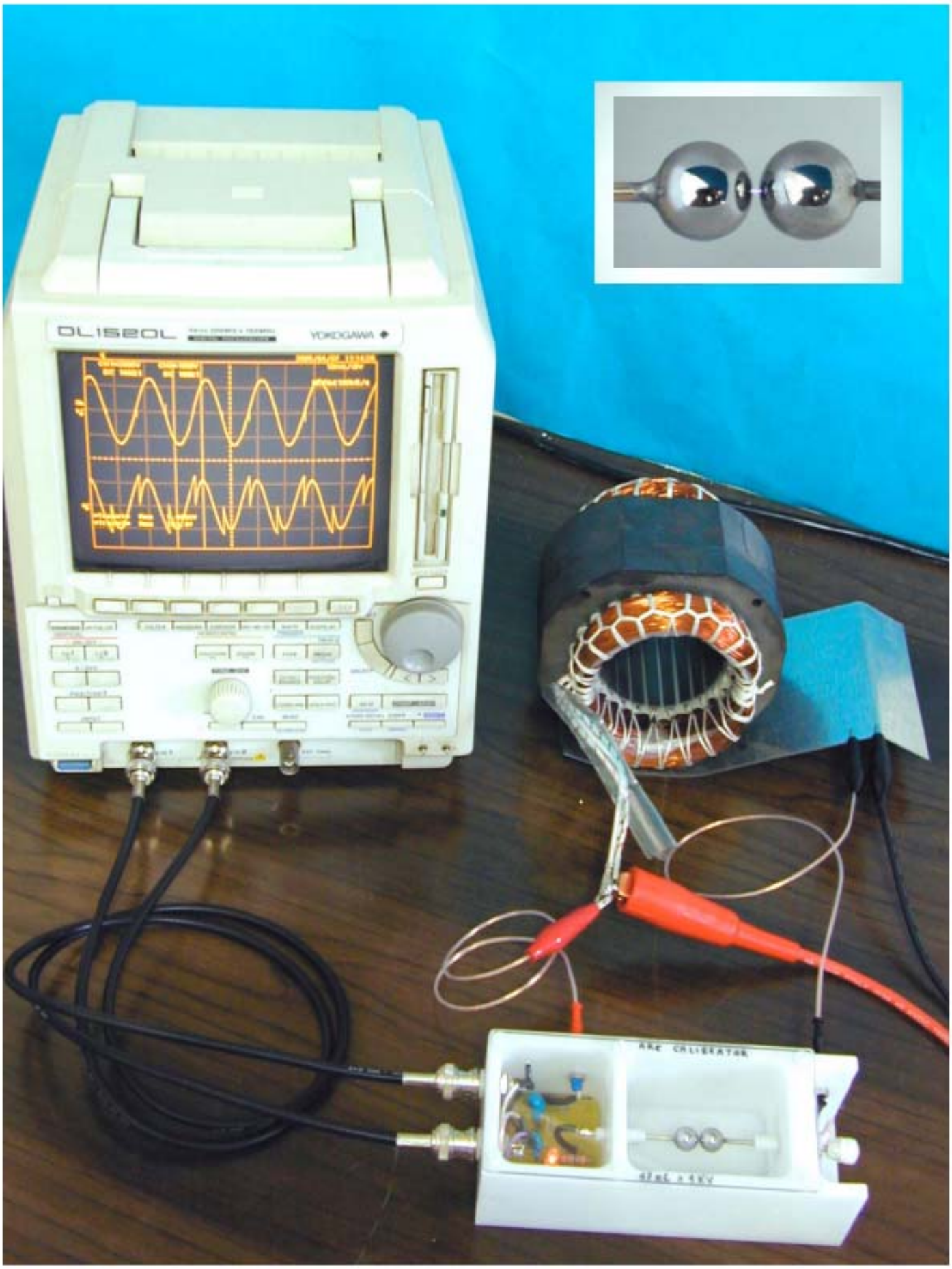

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