

HV RELAYS  
HV SWITCHES  
HV CONTACTORS  
HV MEASUREMENT  
HV ENERGY STORAGE  
HV SAFETY & ACCESSORIES

ISO 9001:2000  
QMS CERTIFIED



HV PROBES  
HV DIVIDERS  
HV VOLTMETERS  
HV HIGH CURRENT  
HV CALIBRATION LAB  
ELECTRONIC & HIGH POWER

# HIGH VOLTAGE DEVICES



10V to 1,000,000V DC to 10MHz

# ROSS ENGINEERING CORPORATION

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# HIGH VOLTAGE DEVICES

## HIGH VOLTAGE RELAYS

1KV TO 300KV  
1mA to 800 AMPS

3"



EE12  
12KV



ES12  
12KV



ET2-14  
14KV



EA25  
25KV



E40  
40KV



E60  
60KV



E70 - 70KV  
Gravity Return,  
Mount Base Up



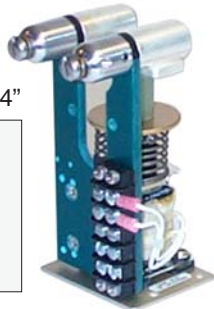
ED150 - 150KV  
Gravity Return,  
Mount Base Down

12"

ACTUATORS 12V TO 250V DC, 24V TO 480V 25-80Hz OR AIR PRESSURE 40-125 PSI

## HIGH VOLTAGE RELAYS

Air insulated types for isolating loads, tap selection, safety discharge & grounding to help meet OSHA & other safety regulations. Ratings from 1mA to 800 Amps continuous, to 100,000 Amps capacitor discharge. Peak 1 minute test voltages from 5 to 300KV. Single or Multi-pole. Auxiliary contacts optional on all types. Options include latching, extended life, and tungsten contacts available for high current closing. DC, 25-800Hz & air pressure actuation available. Also usable in oil or insulating gas with increased ratings.

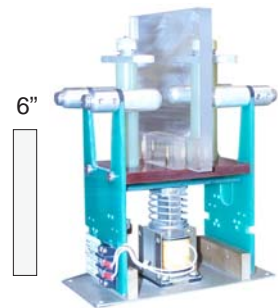


E25-NC-25-1-0  
25KV PK TEST

4"

## AIRPORT LIGHTING HV CONTROL RELAYS

Reliable single pole and 2-pole HV Relays developed for use for switching airport runway lighting with over 20 years of trouble-free use up to 2400V, 50/60Hz, up to 20 Amps maximum interrupt, has been now upgraded to also handle up to 5000V 50/60Hz, 12 Amps maximum interrupt. Unit is air insulated, does not require vacuum, oil or sulfurhexafluoride insulation or a leak tight container. Has 25 to 100 Amps maximum continuous capability, a peak 1 minute test of 10 to 28KV RMS and operates with 115V or 230V 50/60Hz actuator.



E40-2PNO  
40KV PK TEST

6"

## DELAYED OPEN OR CLOSE HV RELAYS

High Voltage Relays with automatic delay but positive closing or opening after turn on, turn-off, or loss of power. They are designed for safety shorting, or current flow which must not be initiated or interrupted accidentally before a prescribed time after actuation or shutdown.

E-40-NC-40-1-0-ZA,  
1-3 SECONDS DELAY TO CLOSE  
40KV PK TEST



6"

## HIGH VOLTAGE REED RELAYS

5,000V TO 15,000V PK TEST

3 Amps Continuous. 50 to 100 Volt Amps Max Interrupt. 6V DC to 115V 50/60 Hz coil. Choice of terminal type or HV leads.



RR1A07Q24  
SPNO  
7KV PK TEST  
QUICK DISCONNECT TERMINALS  
24V DC ACTUATOR

1"



RR1C07H24S  
SPNO  
7KV PK TEST  
HOOK, SOLDER TERMINALS  
24V DC ACTUATOR  
STUD MOUNTING

ISO 9001:2000  
QMS CERTIFIED



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# HIGH VOLTAGE DEVICES

## WIDEBAND HV VOLTAGE DIVIDERS

1KV to 1000KV  
DC-10 MHz

3"



VD5  
5KV

VD15  
15KV

VD60  
60KV

VD75  
75KV

VD120-Indoor  
120KV

VD120-Outdoor  
120KV

VD150  
150KV

27"



VD450  
450KV

Precision compensated resistive-capacitive Voltage Dividers for DC up to 10MHz or to 0.02 microsecond rise time pulse. 1000/1 ratio matched to 1 megohm 20 to 50pF display or recorder. Other ratios and loads as required. Accuracy and stability: 0.01% to 0.1% DC, 0.04% to 1% AC, 3% DC-1MHz, 3dB to 10MHz. For use in air, oil, or gas. Contact Ross Engineering Corp. for complete accuracy specifications.

## HIGH VOLTAGE MEGMETER®, HIPOT TO 42KV

HV Insulation Leakage Current & HV Resistance Measurement Meter. HV Vacuum Interrupter Tester. Portable, 12V battery or 115V AC operated. 0-15KV DC 0.001µA to 260µA or to 2000µA. 0-42KV DC 0.001µA to 130µA or to 750µA.

7"



VMT-15  
0-15KV DC

VMT-42  
0-42KV DC

FOR TESTING HV VACUUM INTERRUPTERS,  
HV CABLES & HV INSULATION

## HIGH VOLTAGE CALIBRATION LAB TO 450KV ISO/IEC 17025:2005 ACCREDITED

Calibration of HV Voltage Dividers, HV Voltmeters, HV Probes and HV Equipment to NIST standards. AC and DC includes multiple test points and certificate. 1KV up to 450KV PK AC & Impulse, 400KV DC.



FOR THE CALIBRATIONS TO WHICH A2LA ACCREDITATION APPLIES, PLEASE REFER TO THE LABORATORY'S CALIBRATION SCOPE OF ACCREDITATION.

## DIGITAL AC HIPOT

0-50KV RMS, 0-60KV RMS, 0-100KV RMS

Specifically designed for Calibrating High Voltage Measurement Devices or Testing High Voltage Equipment, Insulation and optionally HV Vacuum Interrupters or other HV Vacuum Devices. 115V or optional 230V AC operated, 50/60Hz.



12"



HV VACUUM DEVICE TESTER WITH X-RAY MONITOR & EMISSION AND BREAKDOWN INDICATOR. 115V or 230V DIGITAL VARIABLE CONTROL UNIT.



MOBILE HV  
TRANSFORMER  
60KV, 100KV RMS

36"



## PERSONAL GROUNDING RODS

Personal Grounding Rods temporarily ground or discharge (with current limiting if required) 50V-400KV electronic equipment that could present a safety problem. Rods are hooked on to HV terminals, or other points where contact will ground the device. Designs conform to OSHA clearance requirements and provide the correct handle and cable length to keep personnel away from hazardous high voltage

1"



NOT FOR HIGH  
CURRENT UTILITY  
POWER LINE USE



ISO 9001:2000  
QMS CERTIFIED



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## HIGH CURRENT SWITCHES

40"

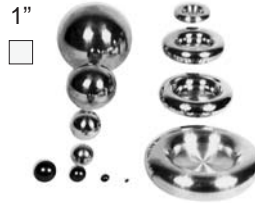


Models are available up to 20,000 Amps continuous, and over 1,700,000 Amps 20μsec pulse, with voltage ratings of 6 volts to 400KV peak test. Many are air cylinder or motor operated for high contact force. DC to 1MHz.

**GD27-P-40-8000**  
**27KV PK TEST**  
**8000A CONTINUOUS**

## TOROIDS, SPHERES, CORONA NUTS & SHIELDS

1"



Spheres Sizes	Toroids sizes
0.2" to 22" 0.5cm to 56cm	0.75" to 52" 1.9cm to 132cm

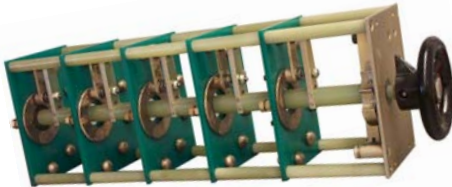
Geometrically designed to avoid excessive voltage gradients at connecting points and other areas needing shielding or balancing of electrostatic fields to increase withstand voltage and minimize corona. Many diameters are to international standard metric sizes.

***Non melting solid carbon  
spheres available for long  
life spark gaps***

## HIGH VOLTAGE ROTARY SWITCHES

Ratings from 5 to 150KV, 1 to 200 Amps. Either manual or electrical operators, depending upon requirements. Position detents and interlocks to prevent opening under load.

6"



**R30-**  
**5 POLES**  
**30KV PK TEST**

## MOTOR OPERATED RELAY / SWITCH 100 AMPS

To 120KV in SF<sub>6</sub>. High Shock and Vibration Resistance

**120KV PK TEST**  
**IN SF<sub>6</sub> GAS**  
**24V DC OPERATE**

8"



**R50-DTM-**

## HIGH POWER RF SWITCHES

High Voltage RF Switch designed and manufactured for high power communication transmitters. Up to 400KV PK test 6000 Amps RMS. Motor or air actuated. Single throw or double throw.

**6000 Amps Continuous 60Hz**  
**3000 Amps Continuous 13KHz**  
**1500 Amps Continuous 30KHz**

**GD250-DOUBLETHROW**  
**250KV PK TEST**  
**1500 AMPS,**  
**30KHz**



## HIGH SHOCK RELAYS

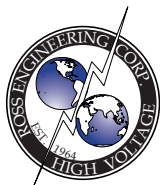
10"



**E30-DT-40-G**  
**30KV PK TEST**

Developed and manufactured for shipboard explosion resistance 250G shock, 27KV, double throw, DC-400Hz actuator. 100 Amps Continuous

**ISO 9001:2000**  
**QMS CERTIFIED**



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# HIGH VOLTAGE DEVICES

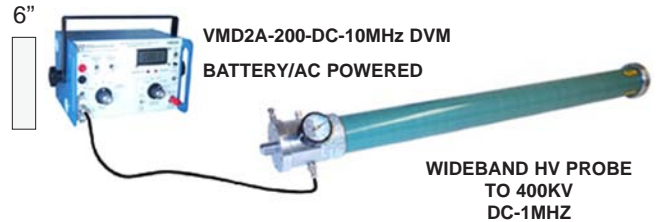
## POWER QUALITY AND LINE DISTURBANCE 1KV-1000KV MEASUREMENT & RECORDING

Power class sensors, Wideband Voltage Dividers for use with DRANETZ/BMI, RPM, FLUKE, TEKTRONIX, YOKOGAWA & other recorders.



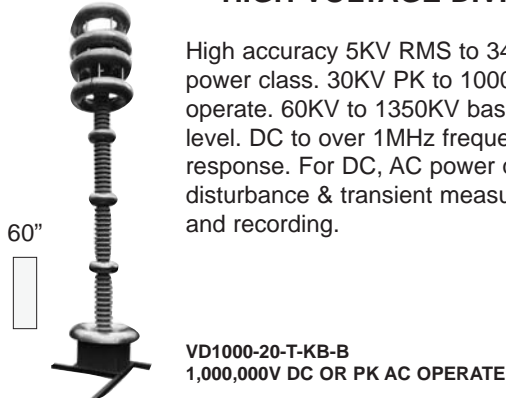
## HV PROBES & HV VOLTMETERS FOR OSCILLOSCOPES, DVMS, RECORDERS

HV DC, AC & Wideband DC-10MHz. Safety probes for any scope, digital display or recorder. Also available complete with large 4½ digit display 0.01% to 5% DC/AC accuracy digital voltmeter, with safety handles for OSHA recommended personnel clearances. With attached or separate digital display or multimeter 0.00001V to 400KV.



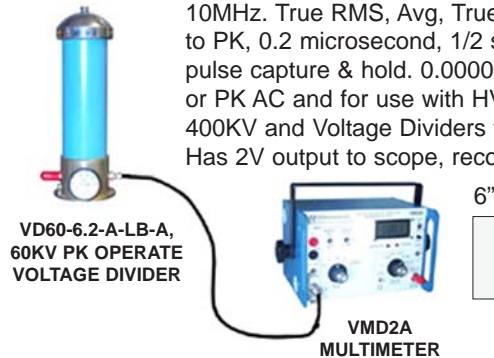
## WEATHERPROOF WIDEBAND HIGH VOLTAGE DIVIDERS

High accuracy 5KV RMS to 345KV RMS power class. 30KV PK to 1000KV PK operate. 60KV to 1350KV basic impulse level. DC to over 1MHz frequency response. For DC, AC power quality, line disturbance & transient measurement and recording.



## HV DIGITAL MULTIMETERS

Wideband DC-10MHz. VMD2A 4½ digit portable meter has accuracies to 0.01% DC, 0.1% 50/60Hz, 3% DC-1MHz, 3dB to 10MHz. True RMS, Avg, True +PK, -PK, PK to PK, 0.2 microsecond, 1/2 sine single pulse capture & hold. 0.00001V - 1000V DC or PK AC and for use with HV Probes to 400KV and Voltage Dividers to 1,000,000V. Has 2V output to scope, recorder.



## WIDEBAND FIBER OPTIC TRANSMISSION DC-1MHz & 50-75 OHM OUTPUT COAXIAL CABLE DRIVER DC-35MHz

AC or 12V DC rechargeable battery/AC operated. Systems have a maximum output of 10V PK (20V PK to PK) 10mA and a maximum signal input of 10V PK. Useful from 0.1V, and to over 1000KV when used with Ross HV Wideband Dividers. Single or multiple ranges.

### FIBER OPTIC TRANSMITTER AND RECEIVER

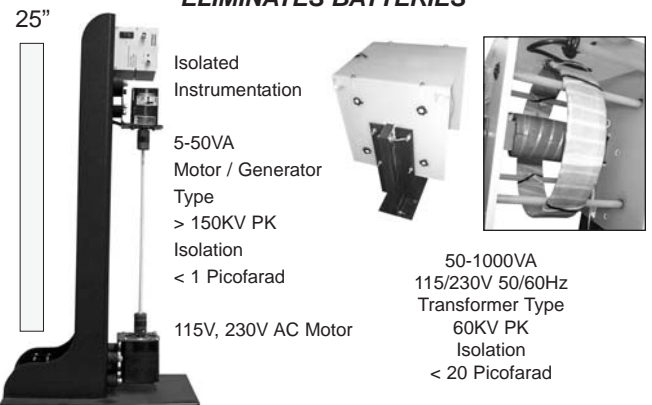


### COAXIAL CABLE DRIVER



4"

## INSTRUMENT POWER ISOLATOR TO 400KV ISOLATION, VERY LOW CAPACITANCE, ELIMINATES BATTERIES



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QMS CERTIFIED



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# HIGH VOLTAGE DEVICES

## LOW PROFILE VACUUM CONTACTOR

208V TO 15.5KV 50/60Hz

12"



HG3 Low Profile  
200, 400, 600, 1200 Amp  
2000 to 28000 Amp Interrupt

1½ to 2 cycle interrupt. Highly reliable vacuum interrupting capability of up to 750MVA at 15.5KV, with momentary current to 20,000 Amps RMS,

56,000 Amps PK-PK for 10 cycles, and 40,000 Amps RMS for one cycle fuse protected. Three SPDT form C, 15A, 480V AC auxiliary contacts are standard and up to four may be specified.

## HV VACUUM CONTACTORS & CIRCUIT BREAKERS

30"



HB-204-  
200KV  
PK TEST  
200-600 AMP



HA3-73-110-600-AMP  
5-15.5KV CLASS

208V TO 300KV AC OR DC, 50A TO 2000A CONTINUOUS,  
10A DC TO 28000A AC ½ TO 1 CYCLE INTERRUPT.

## Hi-Z® HIGH VOLTAGE VOLTMETERS

SAFE POWER LINE USE AC / DC TO 100KV

For phasing, capacitance tap or direct line measurement and hot line indication. Power class safe, portable all solid state, 0.5% to 5% accuracy. Shielded high voltage measurement with minimum circuit loading. 0.001V to 100KV AC or AC/DC. 125KV to 300KV BIL. Ideal for use with elbow capacitance tap voltage test points. For cable test points and direct line voltage and phasing, or differential measurement. Analog or Digital available.



4"

ALSO HOT LINE  
INDICATION

VM50D METER

Ranges: 0-200V, 2KV, 20KV,  
25KV, 50KV or 100KV RMS AC

FOR UTILITIES, CONTRACTORS & EMERGENCY SERVICES

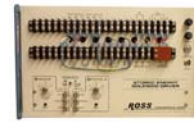
## VACUUM CONTACTORS WITH HIGH SPEED CONTACT OPENING AND ENERGY STORAGE DRIVERS

As low as 1 millisecond contact opening or closing, is available with ratings from 300V to 300KV and 50 to 1200 Amps continuous, 10 Amps DC to 12,000 Amps AC interrupt.

12"



HAF-73-



ENERGY STORAGE  
SCR CONTROL  
HCB-5-C-E-E

Energy Storage Driver,  
400 joules or more,  
115V or 240V AC  
powered, 50V to  
1000V 20 microsec-  
ond trigger.

## COLLAPSIBLE HOTSTICKS

18"



INSULATED HANDLES

Designed to maintain proper safety clearances from hazardous High Voltage while hand holding a test instrument. The 1½in or 1½in diameter sections of the Hotstick form a rigid handle from 1½ft to 18ft in length with 100KV/foot test voltage, depending on your specific needs.

## HIGH VOLTAGE SPHERICAL RELAYS

12"



DH-300-NC-40-2-0  
300KV PK TEST

Ultra high voltage, low corona, transfer, polarity reversing, and grounding relays of the air insulated type. Ratings up to 600KV PK at 100 Amps continuous. Solenoid, motor or air cylinder operated and spring or gravity return.

ISO 9001:2000  
QMS CERTIFIED



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ACCREDITED  
ISO/IEC 17025:2005



# HIGH VOLTAGE DEVICES

## SOLENOID-SAVER® 24V to 300V AC/DC

For high pull-in current, low holding current 25-800Hz AC or DC solenoid actuators to prevent coil burnout, lower coil temperature rise and increase pull-in and holding forces. Eliminates AC hum. Can provide optional low current, low voltage control with 5mA 4-10V or other signal, optional delayed activation or deactivation, or optional high speed energy storage activation. Will allow any DC or AC solenoid to be used at DC or 25-800Hz.



2"

## HV ADJUSTABLE SPARK GAPS



SG-40-H  
4-40KV PK

Non-melting carbon spheres, and heavy wall aluminum spheres, .2" to 22", 0.5cm to 56cm DIA. With dust tight transparent covers 2KV to 88KV. Open style to 670KV. Micrometer type calibrating devices.

## AC SOLENOIDS

3"



AC Quiet. DC to 800Hz. Class B or H Insulation. Extendable Stroke. Universal Mounting. Higher Holding Force. Environment resistant. Optional Electronic Controller. 24V, 120V, 208V, 240V, 480V coil voltages are standard. Other voltages and frequencies are also available.

## HIGH POWER, HIGH SPEED HIGH VOLTAGE CONTROL AND STEP-START SYSTEM

60"



HD3-79-110-  
5-15KV CLASS, 95-110KV BIL  
1200A CONTINUOUS, 28,000A INTERRUPT.

½ to 1 cycle sensing and interrupting vacuum circuit breakers. Metal enclosed for indoor or outdoor applications. 5KV-38KV. Step-Start systems to minimize inrush current. 200-1200 Amps Continuous, 2000-28000 Amps Interrupt.

## ESD TESTER

For static discharge testing 0-5KV, 0-30KV. It incorporates high voltage relays to safety ground, charge, and dump a 500PF, 25KV capacitor into the appropriate device under test. Portable system utilizing 120V AC power to operate.

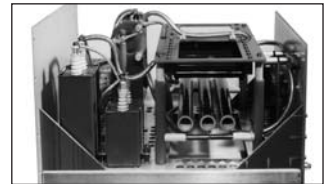
It is a high reliability device capable of many thousands of cycles.

24"



ESD-40

## HV LOADS 1KV TO 300KV 2 TO 200 KILOWATTS



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QMS CERTIFIED



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Fax: 81-3-3395-5666  
Email: info@comcraft.co.jp  
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Seoul 153-803  
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Email: info@kjdyna.com  
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Fax: 886-2-2537-6602  
Email: metrolo.gies@msa.hinet.net  
Website: www.metrologies.com.tw

Additional Product Photos Appear Courtesy Of:  
Dranetz/BMI Inc. & John Fluke Mfg. Co.

10/08-3000

**ISO 9001:2000  
QMS CERTIFIED**



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