HIGH VOLTAGE RELAYS

1kV TO 300kV, 1mA TO 800 AMPS

EE Series
12kV

ES Series
12kV-25kV

EA Series
12kV-40kV

E Series
12kV-60kV

ET Series
Multipole
14kV-25kV

E Series
SPDT
40kV-150kV

E Series 70kV-300kV
Gravity Return
Mount Base Up

ED Series 70kV-300kV
Gravity Return
Mount Base Down

ACTUATORS 12V TO 250V DC, 24V TO 480V 25-800Hz OR AIR PRESSURE 40-125 PSI

- ***1kV TO 300kV PEAK TEST***
- ***SINGLE OR MULTI-POLE***
- ***HIGH CURRENT CLOSING***
- ***HIGH CURRENT CARRYING***
- ***RUGGED AND RELIABLE***
- ***LONG LIFE***
- ***ELECTRONIC APPLICATION***
- ***POWER APPLICATION***
- ***HIGH VOLTAGE TRANSFER***
- ***SAFETY GROUNDING***
- ***TAP OR LOAD SELECTION***
- ***CAPACITOR DISCHARGE***

ISO 9001:2015
QMS CERTIFIED

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CALIBRATION CERT #2746.01

ACTUATORS

115V, 60Hz actuators are standard for pull-in currents less than 10A. Higher actuator voltages are recommended for pull-in currents over 10A to minimize momentary voltage drop. It is recommended that source impedance allow no more than 6% drop at the coil terminals during pull-in. Most models can be supplied with actuators for 24V, 48V, 70V, 100V, 115V, 200V, 208V, 230V or 480V, and 60Hz or 50Hz power. 400Hz or 24V, 48V, 100V, 115V or 125V DC actuators are available at additional cost. Latching type actuators are also available requiring only momentary current. Special actuators and relay drivers are available for high speed operation of 0.5 to 10 milliseconds, or delayed operation upon loss of power. Air or hydraulic pressure actuated relays are available for applications requiring complete electrical isolation of the actuator, very high contact pressure for high current or very long strokes for higher withstand voltage ratings. Electric motor actuators are also available for special applications. A small PC board is available to be inserted at the coil input which will eliminate AC HUM and prevent coil burn-out on failure to pull in.

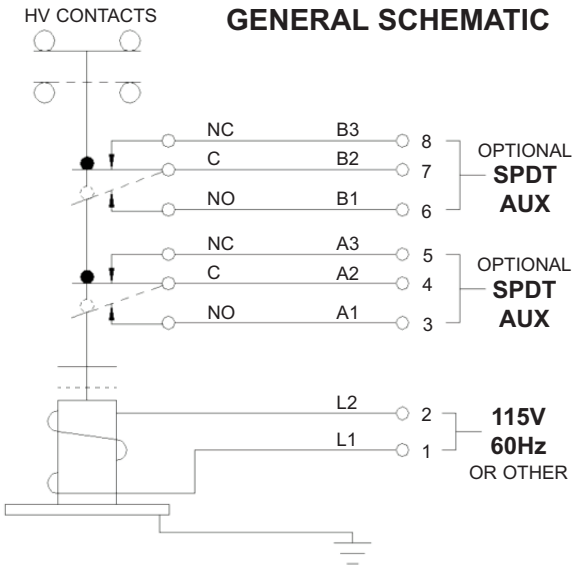
MOUNTING

Most of the Ross Engineering Corporation high voltage relays with ratings through 60kV can be adjusted to be mounted in any altitude unless otherwise indicated. Where maximum reliability, minimum noise (HUM), minimum contact resistance, or minimum pull-in voltage is required, consult the Applications Engineering Department for mounting recommendations. Please specify mounting position; base down is standard and will be optimum unless otherwise noted. Most of the Ross Engineering Corporation solenoid operated high voltage relays with ratings of 70kV or higher are designed to return to their normal position by gravity when the actuator is de-energized. These relays must be mounted in the recommended altitude. Ross Engineering Corporation switches operated by air or oil pressure, or by electric motors, generally may be mounted in any altitude.

HIGH CURRENT CLOSING AND CONTINUOUS HOLDING CAPABILITIES

High contact closing force enables high momentary current closing capabilities ranging from 10A to 50,000A. Special tungsten contacts are available to increase momentary discharge current ratings by many times, but with reduced continuous current ratings. Continuous current ratings drop and contact resistance may increase with standard copper alloy contacts when arcing occurs or in a dusty environment, therefore special silver contacts are available to maintain continuous current ratings when closing or opening under load.

GENERAL SCHEMATIC



CONTINUOUS CURRENT RATINGS

Continuous current ratings are as of new and clean condition for a maximum of 40°C ambient at sea level. Relays are suitable up to 70°C ambient with forced ventilation. Current ratings as specified are continuous for 60Hz RMS and DC, but should be derated 3% per 1,000ft above sea level. Continuous current ratings of standard copper alloy contacts are reduced after arcing. Special silver contacts must be used where continuous current is required after arcing if current ratings are to be maintained. Type of application should be considered when determining current rating required. In most cases, continuous currents for long time duty should not be more than 3/4 the current rating of the new relay. In open industrial or dusty atmosphere it may be necessary to derate by 50%, further if arcing occurs unless silver insets are used. Some units can be used in applications above 60Hz at reduced current and voltage ratings. All RF applications should be submitted to our Applications Engineering Department for review.

INTERRUPT AND CLOSE CURRENT RATINGS

These air insulated relays are not rated for current interrupting. Most are capable of interrupting 10 milliamps or more depending on type of wave, load, and recovery voltage. Much higher currents can be interrupted in insulating gas or oil and with certain other applications and models. High voltage air insulated relays can close on high short time capacitor discharge currents and are rated for safety grounding or high current capacitor dumping. They have long life and little or no maintenance in these applications. Tungsten contacts are available for longer life capacitor discharge use. Fail-safe grounding or shorting relays of this type with fully visible contacts are ideally suited for use in all types of power supplies. Relays, contactors and switches for higher interrupting capabilities are covered in other brochures.

HIGH VOLTAGE PEAK TEST

Ratings are for air at 760mmHg, 20°C. Derate 3% per 1,000ft above sea level. All peak test voltages are 1 minute 60Hz peak hold voltages, unless otherwise noted. The first figure in the model number is the peak test rating between open contacts. The number following the contact configuration designation is the rated peak test voltage to ground. On most non-spherical contacts, transient pulse withstand may be considerably higher than the 60Hz test level. Actual flashover values, for spherical types, are approximately 10% greater than rated peak test hold values for DC, 60Hz, and most transients.

HIGH VOLTAGE OPERATE

The peak test rating of high voltage relays should be 1.2 to 5 times the normal high voltage circuit operating voltage, depending upon the application. For lower power systems, where transients are unlikely or intermittent flashover is of no consequence, a safety factor of 1.2 to 1.5 may be suitable. For medium power systems, or where moderate transients are likely, a safety factor of 1.5 to 3 is desirable and 2 to 3 recommended. For higher power systems,or where transient over-voltages are expected, a safety factor of 2.5 to 5 should be considered and the factor should be based on the maximum probable transient. The peak test voltage to ground rating should be selected in the same way as is the contact to contact value. If a value other than the published rating is required, it can normally be supplied as an extra cost option. On most grounding relays, even though one contact is grounded, the insulation to ground should be 10kV to 40kV to prevent HV ground current from flowing in solenoid circuits during capacitor discharge, or transients.

INSULATION

Standard insulation used on Ross Engineering Corp. high voltage relays and switches is fire retardant FR-4, G-10 or G-11 Epoxy glass laminate. G-7 silicone glass insulation is recommended as an extra cost option for RF applications, particularly above 300kHz. It also may be necessary to increase insulation length for RF Applications.

OIL OR GAS INSULATION

The voltage withstand value is at least doubled or tripled and the interrupt capability is much greater when the relay is immersed in insulating oil, fluid, or gas. No modification is necessary for operation in an insulating gas atmosphere; however, oil or fluid immersion requires modifications and is an extra cost option. For maximum performance in an insulating medium, where high voltage is impressed directly across solid insulation, it may be necessary to increase insulation length to prevent puncture at levels above the test rating in air.

AUXILIARY CONTACTS SPDT

Auxiliary contacts are available on request on all relays. Most smaller relays are optionally available with at least two 10A, 250V AC or 3A, 24V DC auxiliaries. Larger units are available with at least two 15A, 480V AC auxiliaries, and some have provision for as many as eight. 10A, 115V DC auxiliaries are available interchangeably with the 15A, 480V AC units. Oil-immersed relays require special auxiliaries. Optional auxiliary contacts can indicate fully open or fully closed HV relay.

HELPS MEET REGULATIONS

OSHA and other safety regulations indicate safety grounding of all HV power supplies and systems for personnel protection. Ross Engineering helps meet these requirements with its line of high voltage grounding and discharge relays and accessories.

RUGGED AND RELIABLE

Thousands of trouble free high voltage applications in the past 42 plus years have established Ross Engineering Corporation's reputation for dependable, quality engineered products. Fire retardant high strength epoxy glass laminate insulation with a moisture resistant coating is standard on most units. Heavy duty contacts, which are specially designed to minimize corona, are made of highly conductive but weld resistant alloys. Ross Relays are noted for their ability to withstand high shock and vibration as well as other severe environmental conditions.

LONG LIFE

Simplicity of mechanical design and conservative stress levels result in long trouble-free life. Contacts on most relays may be rotated to renew the contact area, resulting in even longer service life.

COMPACT DESIGN

Ross Engineering Corporation manufactures some of the most compact air insulated high voltage relays available. The best qualities of mechanical and electrical design are combined to create these highly efficient and reliable relays with as many as six poles or more.

DANGER

These may have high voltage at the HV contact area. Safe high voltage procedures must be followed by personnel when close to any of these relays. Clearances and grounding rules must be observed.

For transfer, safety grounding, or tap selection at 12kV to 60kV peak test in air. Most HV contacts have full insulation above ground. A higher insulation level to ground is optional. Most units are spring return and are designed to mount base down (other mounting positions must be specified) or may also be used with gravity return by mounting in the proper position.

E series units are also available with replaceable tungsten alloy contacts for high current capacitor discharge applications. Large radiuses are used to minimize corona. For holding or indicating, one, two or more SPST 11A, 250V AC auxiliary contacts are available on the E12, E15, E25, E30 and E40. The E60 normally uses 15A, 250V AC and 1/2A, 125V DC auxiliary contacts. Other auxiliary contact ratings are available.

Available up to 300kV PK.

Typical E Series
Model E40-NC-40-

SPECIFICATIONS 760MMHg 20°C AMBIENT

RELAY MODEL	CONTACT FORM	1 MINUTE PK TEST RATING DC OR AC PK		* CURRENT RATINGS NEW & DUST FREE			MAX CONTACT RESISTANCE NEW & CLEAN	OPERATE TIME MAX MILLI-SEC	RELEASE TIME MAX MILLI-SEC	** STANDARD 115V, 60Hz COIL	
		HV CONTACTS	INSULATION TO GROUND	CONTINUOUS AMPS RMS	MOMENTARY 10 CYCLE AMPS RMS	MOMENTARY CAPACITOR DISCHARGE, 20 uSEC				MAX RMS INRUSH CURRENT	MAX RMS HOLD CURRENT
E12-NC	SPNC	12kV	12kV	50A	1,000A	2,500A	.001Ω	20	50/90	2A	0.4A
E12-NO	SPNO	12kV	12kV	50A	1,000A	2,500A	.001Ω	20/40	30	2A	0.4A
E12-DT	SPDT	12kV	12kV	50A	1,000A	2,500A	.001Ω	20/40	50/90	2A	0.4A
E15-NC	SPNC	15kV	15kV	125A	1,000A	2,500A	.0008Ω	20	50/90	2A	0.4A
E15-NO	SPNO	15kV	15kV	125A	1,000A	2,500A	.0008Ω	20/40	30	2A	0.4A
E15-DT	SPDT	15kV	15kV	125A	1,000A	2,500A	.0008Ω	20/40	50/90	4A	0.5A
E25-NC	SPNC	25kV	25kV	125A	1,000A	2,500A	.0008Ω	20	50/90	3A	0.4A
E25-NO	SPNO	25kV	25kV	125A	1,000A	2,500A	.0008Ω	20/40	30	3A	0.4A
E25-DT	SPDT	25kV	25kV	125A	1,000A	2,500A	.0008Ω	20/40	50/90	5A	0.5A
E30-DT-40	SPDT	30kV	40kV	125A	1,000A	2,500A	.0008Ω	30/50	100/140	5A	0.5A
E40-NC	SPNC	40kV	40kV	125A	1,000A	2,500A	.0008Ω	20	60/100	5A	0.5A
E40-NO	SPNO	40kV	40kV	125A	1,000A	2,500A	.0008Ω	20/40	30	5A	0.5A
E60-NC-80	SPNC	60kV	80kV	125A	1,000A	2,500A	.0008Ω	40	60/100	7A	0.7A
E60-NO-80	SPNO	60kV	80kV	125A	1,000A	2,500A	.0008Ω	40	60/100	7A	0.7A

* Silver alloy contacts are optional for maximum continuous closed current ratings. Tungsten alloy contacts are optional for high current capacitor discharge closing currents.

** DC, 50Hz, 400Hz, and other voltages available. Coil current is approximately inversely proportional to voltage, I.E. 230V AC is half of that at 115V. Auxiliary contacts available on all models. Additional insulation to ground and RF insulation available for frequencies to 30MHz. Recommend 208V or 230V AC operation for pull-in currents greater than 10A unless a low impedance source can maintain at least 94% rated voltage during pull-in.

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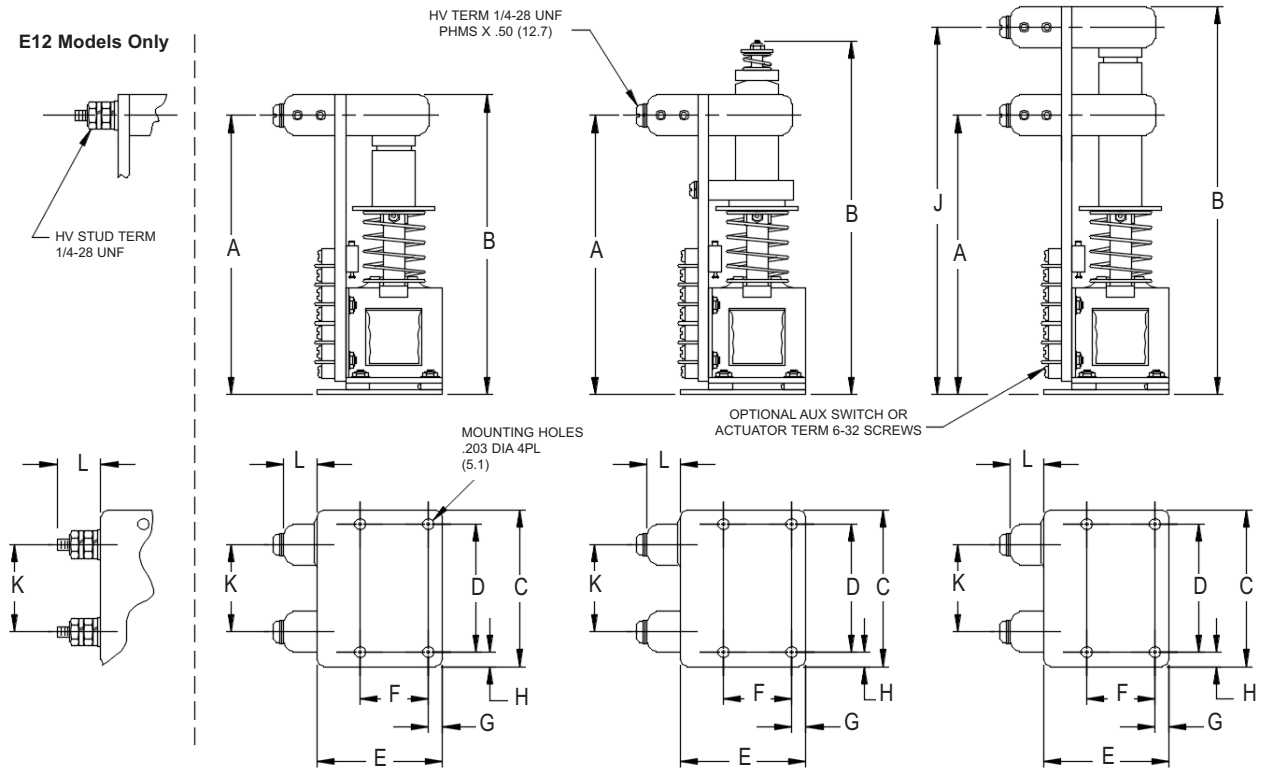

NC **NO** **DT**

DIMENSIONS

INCHES (MILLIMETERS)

RELAY MODEL	A	MAX B HEIGHT	MAX C WIDTH	D	BASE E DEPTH	F	G	H	J	K	L
E12-NC	4.41 (112.0)	4.72 (119.8)	2.50 (63.5)	2.125 (53.9)	1.88 (47.7)	1.187 (30.1)	.25 (6.3)	.19 (4.8)		1.12 (28.4)	.75 (19.0)
E12-NO	4.41 (112.0)	5.67 (144.0)	2.50 (63.5)	2.125 (53.9)	1.88 (47.7)	1.187 (30.1)	.25 (6.3)	.19 (4.8)		1.12 (28.4)	.75 (19.0)
E12-DT	4.41 (112.0)	5.97 (151.6)	2.75 (69.8)	2.250 (57.1)	2.19 (55.6)	1.187 (30.1)	.25 (6.3)	.25 (6.3)	5.65 (143.5)	1.12 (28.4)	.75 (19.0)
E15-NC	4.88 (123.9)	5.25 (133.3)	2.75 (69.8)	2.250 (57.1)	2.19 (55.6)	1.187 (30.1)	.25 (6.3)	.25 (6.3)		1.50 (38.1)	.56 (14.2)
E15-NO	4.88 (123.9)	6.25 (158.7)	2.75 (69.8)	2.250 (57.1)	2.19 (55.6)	1.187 (30.1)	.25 (6.3)	.25 (6.3)		1.50 (38.1)	.56 (14.2)
E15-DT	4.88 (123.9)	6.75 (171.4)	3.38 (85.8)	2.875 (73.0)	2.19 (55.6)	1.125 (28.5)	.25 (6.3)	.25 (6.3)	6.38 (162.0)	1.50 (38.1)	.56 (14.2)
E25-NC	5.48 (139.1)	5.85 (148.5)	2.75 (69.8)	2.250 (57.1)	2.19 (55.6)	1.187 (30.1)	.25 (6.3)	.25 (6.3)		1.50 (38.1)	.56 (14.2)
E25-NO	5.48 (139.1)	7.06 (179.3)	2.75 (69.8)	2.250 (57.1)	2.19 (55.6)	1.187 (30.1)	.25 (6.3)	.25 (6.3)		1.50 (38.1)	.56 (14.2)
E25-DT	5.48 (139.1)	7.67 (194.8)	3.38 (85.8)	2.875 (73.0)	2.19 (55.6)	1.125 (28.5)	.25 (6.3)	.25 (6.3)	7.31 (185.6)	1.50 (38.1)	.65 (16.5)
* E30-DT-40	6.72 (170.6)	9.03 (229.3)	4.38 (111.2)	3.875 (98.4)	3.50 (88.9)	1.562 (39.6)	.97 (24.6)	.25 (6.3)	8.65 (219.7)	2.62 (66.5)	
E40-NC	6.72 (170.6)	7.18 (182.3)	3.38 (85.8)	2.875 (73.0)	2.19 (55.6)	1.125 (28.5)	.25 (6.3)	.25 (6.3)		2.62 (66.5)	.56 (14.2)
E40-NO	6.72 (170.6)	8.79 (223.2)	3.38 (85.8)	2.875 (73.0)	2.19 (55.6)	1.125 (28.5)	.25 (6.3)	.25 (6.3)		2.62 (66.5)	.56 (14.2)
E60-NC-80	11.50 (292.1)	12.00 (304.8)	5.00 (127.0)	4.500 (114.3)	4.00 (101.6)	3.000 (76.2)	.50 (12.7)	.25 (6.3)		5.00 (127.0)	.06 (1.52)
E60-NO-80	11.50 (292.1)	14.25 (361.9)	5.00 (127.0)	4.500 (114.3)	4.00 (101.6)	3.000 (76.2)	.50 (12.7)	.25 (6.3)		5.00 (127.0)	.06 (1.52)

E60-DT see page 6

* For outline drawing see page 9, *DT

Specifications and Dimensions are for reference only and are subject to change. Contact Ross Engineering Corporation for specific application data.

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E SERIES - SPDT 40kV - 150kV

These highly reliable compact air insulated HV relays are used for HV transfer, safety grounding, tap selection and capacitor discharge at 40kV to 150kV PK test in air. They have fire-retardant epoxy glass laminate insulation with track resistant coating as well as heavy duty contacts to minimize corona and contact resistance. All models are also available with tungsten alloy contacts for high current capacitor discharge use. Basic units are designed to mount base down, other mounting positions must be specified. They can withstand high shock, vibration, and severe environmental conditions. One, two or more optional auxiliary SPDT contacts are also available for holding or indicating as follows: E40, 11A, 250V AC; E60, 15A, 250V AC and 1/2A, 125V DC; E100 and E150, 15A, 480V AC and 1/2A, 125V DC. Other auxiliary contact ratings are available.

Typical E Series
Model E60-DT-80-

SPECIFICATIONS 760MMHg 20°C AMBIENT

RELAY MODEL	CONTACT FORM	1 MINUTE PK TEST RATING DC OR AC PK		* CURRENT RATINGS NEW & DUST FREE			MAX CONTACT RESISTANCE NEW & CLEAN	OPERATE TIME MAX MILLI-SEC	RELEASE TIME MAX MILLI-SEC	** STANDARD 115V, 60Hz COIL	
		HV CONTACTS	INSULATION TO GROUND	CONTINUOUS AMPS RMS	MOMENTARY 10 CYCLE AMPS RMS	MOMENTARY CAPACITOR DISCHARGE, 20 uSEC				MAX RMS INRUSH CURRENT	MAX RMS HOLD CURRENT
E40-DT-40	SPDT	40kV	40kV	50A	1,000A	2,500A	.001Ω	20/40	30	5A	0.5A
E40-DT-60	SPDT	40kV	60kV	50A	1,000A	2,500A	.001Ω	20/40	30	5A	0.5A
E60-DT-80	SPDT	60kV	80kV	30A	500A	2,500A	.002Ω	25/50	30	6A	0.8A
ED100-DT-100	SPDT	100kV	100kV	30A	400A	2,500A	0.1Ω	40/60	60	6A	0.27A
ED120-DT-120	SPDT	120kV	120kV	30A	400A	2,500A	0.1Ω	40/60	60	12A	0.3A
ED150-DT-150	SPDT	150kV	150kV	30A	400A	2,500A	0.1Ω	60/100	60	30A	0.5A

* Silver alloy contacts are optional for maximum continuous closed current ratings. Tungsten alloy contacts are optional for high current capacitor discharge closing currents.
** DC, 50Hz, 400Hz, and other voltages available. Coil current is approximately inversely proportional to voltage, I.E. 230V AC is half of that at 115V. Auxiliary contacts available on all models. Additional insulation to ground and RF insulation available for frequencies to 30MHz. Recommend 208V or 230V AC operation for pull-in currents greater than 10A unless a low impedance source can maintain at least 94% rated voltage during pull-in.

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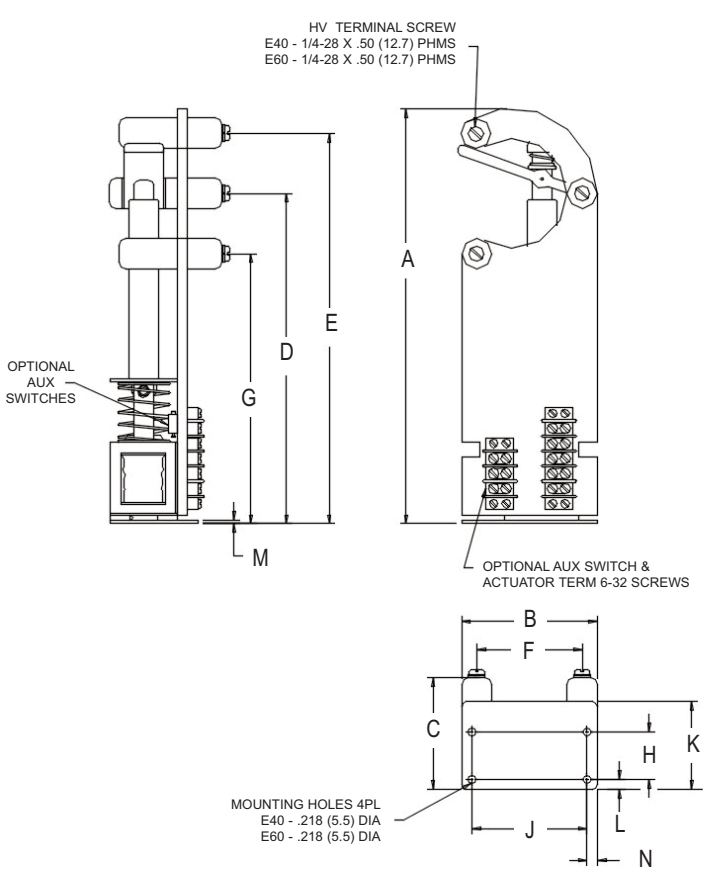
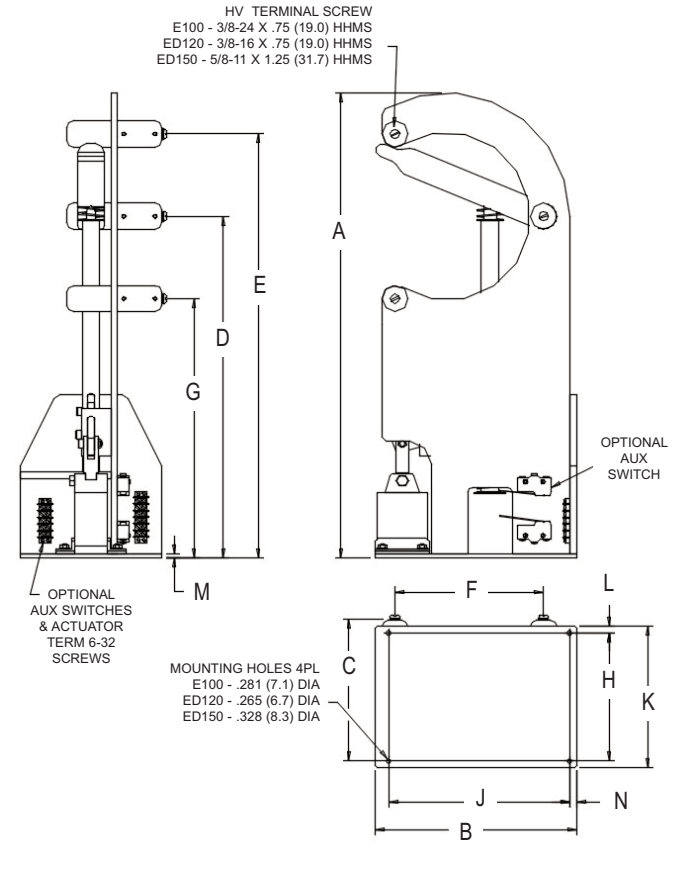


E40-DT-40
E60-DT-80



E100-DT-100
ED120-DT-120
ED150-DT-150

DIMENSIONS

INCHES
(MILLIMETERS)

RELAY MODEL	MAX A HEIGHT	MAX B WIDTH	MAX C DEPTH	D	E	F	G	H	J	BASE K DEPTH	L	M	N
E40-DT-40	10.35 (262.9)	3.38 (85.8)	2.87 (72.9)	8.22 (208.7)	9.72 (246.8)	2.62 (66.5)	6.72 (170.6)	1.188 (30.1)	2.875 (72.9)	2.19 (55.6)	.25 (6.35)	.09 (2.2)	.25 (6.3)
E40-DT-60	12.35 (313.6)	3.38 (85.8)	2.87 (72.9)	10.22 (259.5)	11.72 (297.6)	2.62 (66.5)	8.72 (221.4)	1.188 (30.1)	2.875 (72.9)	2.19 (55.6)	.25 (6.35)	.09 (2.2)	.25 (6.3)
E60-DT-80	17.12 (434.8)	6.50 (165.1)	3.88 (98.5)	12.81 (325.3)	15.75 (400.0)	5.06 (128.5)	9.88 (250.9)	3.000 (76.2)	5.750 (146.0)	3.75 (95.2)	.38 (9.6)	.18 (4.5)	.38 (9.6)
ED100-DT-100	27.25 (692.1)	11.40 (289.5)	7.25 (184.1)	19.35 (491.4)	24.01 (609.8)	8.41 (213.6)	14.69 (373.1)	7.250 (184.1)	10.250 (260.3)	8.00 (203.2)	.38 (9.6)	.25 (6.3)	.40 (10.16)
ED120-DT-120	38.50 (977.9)	24.00 (609.6)		27.75 (704.8)	35.17 (893.3)	13.39 (340.1)	20.33 (516.3)	8.315 (211.2)	22.750 (577.8)	10.00 (254.0)	1.00 (25.4)	.38 (9.6)	1.00 (25.4)
ED150-DT-150	55.25 (1,403.3)	25.75 (654.0)		40.13 (1,019.3)	51.25 (1,301.7)	20.08 (510.0)	24.00 (609.6)	14.250 (361.9)	23.750 (603.2)	15.00 (381.0)	.38 (9.6)	.38 (9.6)	1.00 (25.4)

Specifications and Dimensions are for reference only and are subject to change. Contact Ross Engineering Corporation for current information.

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CALIBRATION CERT #2746.01

HIGH VOLTAGE DEVICES

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

ISO 9001:2015 QMS CERTIFIED

ISO/IEC 17025:2017
CALIBRATION CERT #2746.01

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

HV MEGMETER® HIPOT

HV Insulation Leakage Current &
HV Resistance Measurement Meter.
Portable, battery operated, 12V DC or 115V AC.
0-15kV DC 0.001μA to 260μA or to 1000μA.
0-42kV DC 0.001μA to 100μA or to 400μA.

For testing HV Cables, HV Insulation & Vacuum Interrupters

VMT-15, 0-15kV DC
VMT-42, 0-42kV DC
VMT-50, 0-50kV DC

High Voltage AC/DC Digital Hipots also available.

HIGH CURRENT SWITCHES

Models are available up to 20,000A continuous, and over 1,700,000A 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.

HV RELAYS

HV relays of the air insulated type for both low and high current. This series has ratings from 1 to 800A continuous, 100 to 100,000A momentary and capacitor discharge. Peak test voltages from 1 to 300kV. Single or Multipole. NO, NC, DT or Latching. Auxiliary contacts optional on all types. Extended life, and tungsten contacts also available for high current closing. Also usable in oil or insulating gas.

Hi-Z® POWERCLASS™ HV VOLTMETERS

SAFE POWER LINE USE AC/DC FOR UTILITIES, CONTRACTORS & EMERGENCY SERVICES

Fully safe, portable, all solid state, 1% to 5% accuracy. Analog or digital shielded high voltage measurement with minimum circuit loading. 10V to 100kV AC and DC. Ideal for use with Elbow capacitance tap voltage test points. For cable test point or direct line voltage and phasing, or differential measurement.

HV DIGITAL MULTIMETERS

Wideband DC-10MHz. Portable meters have accuracies to 0.01% DC, 0.1% 50/60Hz, true RMS, Avg, True PK, ±PK, PK to PK. 3% to 1MHz,-3dB 10MHz. 0.2 microsecond ½ sine single pulse capture & hold. ±2V 50 ohm output. 0.00001V-1000V DC or PK AC and for use with HV Probes to 400kV and Voltage Dividers to 1,000,000V.

HV WIDEBAND VOLTAGE DIVIDERS

FOR POWER AND ELECTRONIC USES

DC-l0MHz 1kV-1000kV PK, to 20 nanosecond rise time, for oscilloscopes, digital meters, or recorders such as Dranetz/BMI, Fluke, etc. Ratios and load matching as required 0.01% to 0.3% DC, 0.5% to 3% wideband.

ISO/IEC 17025:2017
A2LA ACCREDITED
HIGH VOLTAGE CALIBRATION
1kV to 450kV DC & AC

HV ROTARY SWITCHES

Ratings from 2 to 450kV, 1mA to over 200A. Either manual or electrical operators, depending upon requirements. Position detents and optional interlocks to prevent opening under load.

HV PROBES & VOLTMETERS

HV DC, AC, & Wideband DC-10MHz Safety Probes for any scope or digital display. Also available complete with large 4½ digit display DMM 0.1% to 5% AC/DC accuracy, with safety handles for OSHA recommended personnel clearances. Battery/AC. Attached or separate digital display. DC-10MHz DVM 0.00001V to 400kV with HV Probe.

WIDEBAND FIBER OPTIC TRANSMISSION

ANALOG DC-1MHz SYSTEMS

AC or 12V DC rechargeable battery/AC operated. DC to 1MHz system has a maximum output of 10V PK (20V PK to PK) and a maximum input of 1V, 5V, or 10V PK into 1 gigohm, 30pF direct from signal source. Useful from 0.1V, and to 1000kV when used with Ross HV wideband dividers. Single or multiple ranges.

High Voltage Isolated 12V DC or 115/230V AC Power sources available.

VACUUM CONTACTORS WITH HIGH SPEED CONTACT OPENING AND ENERGY STORAGE DRIVERS

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

Energy Storage Driver, 400 joules or more, 115V or 240V AC powered, has 50V to 1000V 20 microsecond trigger.

HIGH VOLTAGE CALIBRATION LAB ISO/IEC 17025:2017, A2LA ACCREDITED

ISO/IEC 17025:2017
CALIBRATION CERT #2746.01

Calibration of HV Voltage Dividers, HV Voltmeters, HV Probes & HV Equipment up to 450kV. Calibration capabilities are up to 450kV PK 60Hz, 400kV DC & 400kV 1.2x50μs lightning impulse & other waveforms.

POWERCLASS™ VACUUM CIRCUIT BREAKERS & CONTACTORS ½ TO 2 CYCLE INTERRUPT

Vacuum switches, single-phase, three-phase, upright or low profile, for high reliability sealed arc interrupting or crobar shorting. 208V to 200kV RMS operate. 50 to 2,000A continuous, 2,000 to 28,000A AC, 10 to 20,000A (with counter pulse) DC interrupt, to 40,000A momentary, to 100kA capacitor discharge.

PERSONAL GROUNDING RODS

Temporarily ground or discharge (with optional current limiting) electronic equipment. Designs conform to OSHA clearance requirements and provide the correct insulated handle and insulated cable length to keep personnel away from hazardous high voltage.

SOLENOID-SAVER®

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.

TOROIDS, SPHERES, CORONA SHIELDS, NUTS

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. Diameters are to international standard metric sizes.

Specifications and Dimensions are for reference only and are subject to change. Contact Ross Engineering Corp. for current information.

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