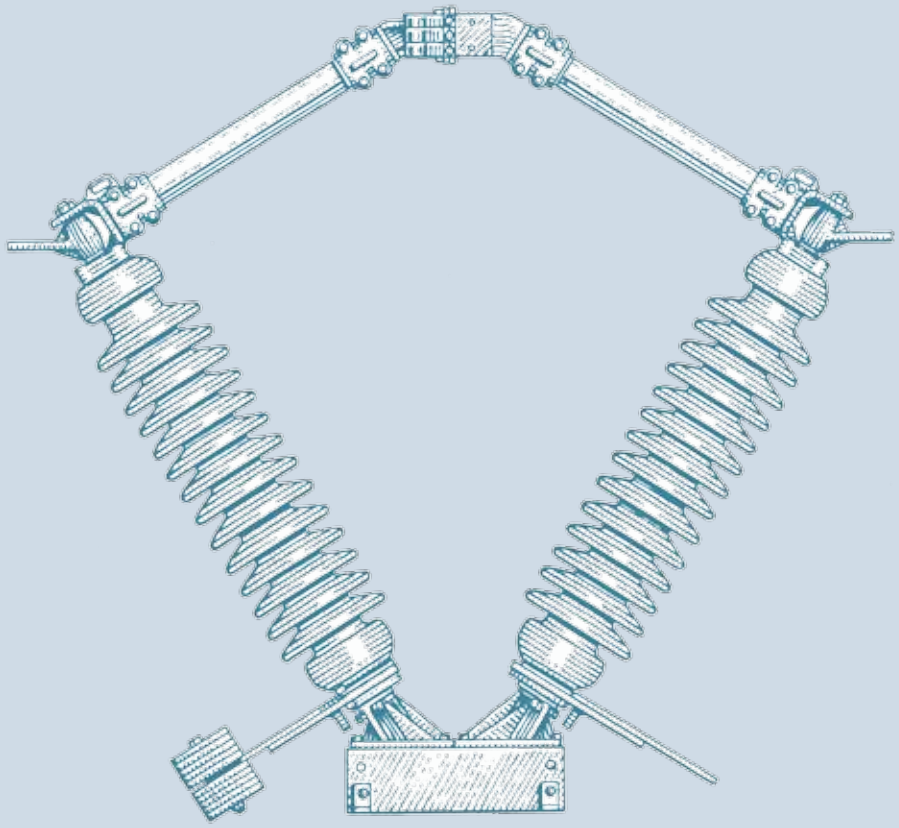
DRV



INTRODUCTION & TYPE TEST DATE : 1980	ANNUAL UNITS PRODUCED : 55
UNITS IN SERVICE : > 16000	CONTINUOUS CURRENT : 1200 -3000 AMPS
SHORT CIRCUIT : 99-164 kA PEAK (38-63 kA 3 SECOND)	VOLTAGE : 27-170 kV
BIL : 200-650 kV	INSULATOR : LAPP

The DRV switch is a two insulator center break ”vee” design. Operation of the switch is accomplished through rotation of both insulators mounted to maintenance free rotor bearings and meshed with precision gears. Aluminum components are utilized throughout the design except in critical current transfer areas where copper and copper alloy castings are employed. Sealed high pressure current transfer joints in the blade hinge assure trouble free operation. Switch bases are constructed from galvanized structural steel channel. The DRV’s small footprint can be supported by fewer columns which reduces associated steel and foundation costs. The DRV requires minimum overhead clearance but requires additional clearance between phases and allows for increased phase to ground clearance for cable drops.

DRV VALUE-ADDED FEATURES

Pascor Atlantic's DRV switch is the result of 100 years' experience in developing and supplying power equipment to the electric utility industry. Pascor Atlantic has continuously pioneered the research, design, testing and the manufacture of outdoor disconnect switches. We maintain this leadership because of our continued innovative efforts to provide maximum value in acquisition, installation, maintenance and operating reliability.

Procurement:

Local sales representatives and expertise
Pre-engineered controls available for quick delivery
ISO 9002 certified
ISO 14000 compliant
On-time shipment

Engineering:

Standard base and control fit most structures
Adaptability to meet special requirements
Availability of AutoCAD format drawings
Manual and motor operation

Installation:

Interphase and vertical operating pipes in pre-engineered or customized lengths
Adjustable threaded clevis for ease of fine adjustment of three-pole switches
Open-close stops on each switch pole
Service technicians available for assistance
On-time deliveries

Maintenance:

Greaseless rotor bearings with stainless steel ball bearings on switch bases
Weather-sealed, grease-filled enclosed switch hinge contacts
Corrosion-free gears in all operators
No threaded couplings applied in torsion
Replaceable copper moving contacts

Accessories:

The following accessories can be provided for the DRV:

Arcing Horns
Arc Restrictors thru 145 kV (Quick Whips)
Auxiliary Switches
Cable Guides (Outriggers)
Spill Gaps
Position Indicators
Silver-to-Silver Open Air Contacts

OPERATORS

The DRV can be operated either manually or by a motor mechanism. Below is a list of operators which can be supplied:

Swing Handle
Worm Gear
MO-10 Motor Operator

GROUNDING SWITCH

For grounding during inspection, maintenance, or repair, a three-pole grounding switch can be mounted on the hinge and/or jaw end of the DRV (48.3 to 169 kV). Interlocking to prevent the main and ground switches from being closed at the same time can be accomplished via Kirk key interlocks, mechanical interlocks, or electrical interlocks (where electrical operators are used).

ORDERING INFORMATION:

The following information is the minimum required when ordering DRV center-break switches:

Voltage, BIL rating, continuous current, momentary rating
Mounting positions (upright, vertical, or inverted)
If grounding switches are specified:
- momentary rating
- location and position

Operators required (main and ground switches)
Insulator specification including:
- BIL rating
- technical reference (TR #)
- bolt circle diameter

Mounting information
Structure and detail drawings
Fixed terminal pad height if applicable

Pascor Atlantic
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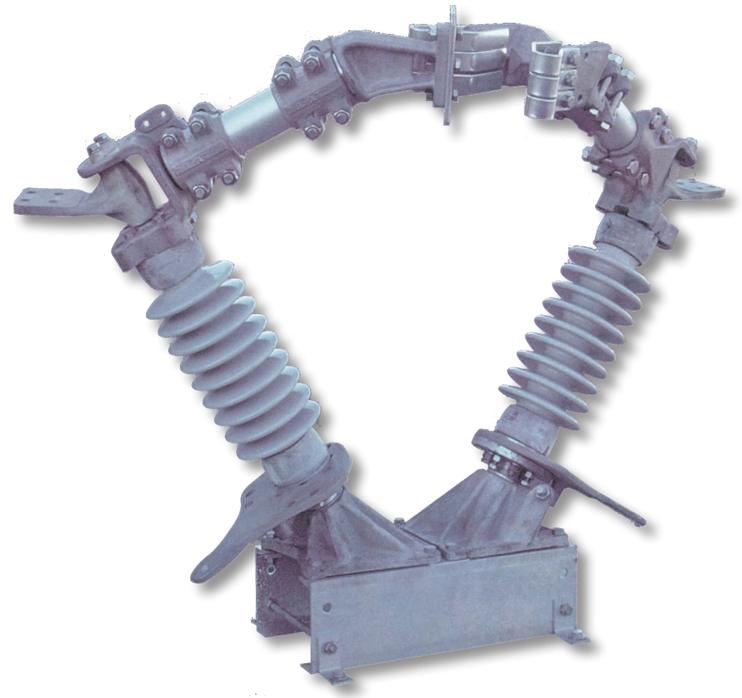
254 Industry Dr. • Bland, Virginia 24315-9709
Phone: 276-688-3328 • Fax:276-688-2228 or 2229
www.pascoratlantic.com

PASCOR ATLANTIC

Type DRV

25.8 THRU 169 kV
600-2000A
40-80 KA Momentary

PASCOR ATLANTIC
Delivering More. Delivering Service.



Center-Break, Gang-Operated Outdoor Air Disconnect Switch

Description

The DRV switch is a modern and reliable two-insulator, center-break, outdoor air switch using a variety of materials in its design selected to do a specific job according to the function required.

Optimum mechanical and electrical characteristics of the current carrying parts are assured through the use of high-conductivity, high-strength aluminum alloys combined with transfer contacts utilizing the time proven high-pressure, silver-to-copper construction. Sealed high pressure current transfer at the swivel terminals eliminates the need for flexible shunts.

Throughout the current path all bolts, nuts, and pins are stainless steel, minimizing the possibility of corrosion. A galvanized structural steel channel base supports the insulators and live parts. The switch is designed to enhance the electrical and mechanical characteristics of current carrying parts. The mechanical parts and rotor bearings are designed for durability to withstand cantilever stresses, ensuring long-lasting service in all types of environments. All parts have been designed to be uniform across the product line. As a result, parts are easier to stock and are more readily available from the factory.

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APPLICATION

Type DRV center-break switches meet or exceed ANSI C37 standards and are adaptable to substation and line applications. They may be applied for any conventional requirements such as main line disconnecting, bus sectionalizing, breaker isolating and by-passing, or transformer disconnecting. They are also capable of interrupting linecharging and transformer-magnetizing current when equipped with interrupting attachments.

MOUNTING

Type DRV switches can be mounted in upright, inverted or vertical positions.

DRV DESIGN FEATURES

The DRV switch design is backed by years of a solid reputation and proven, dependable service life in all type of climates and conditions.

Jaw Contacts

The jaw consists of tinned, hard drawn reverse loop copper jaw fingers backed by stainless steel springs to provide excellent current carrying capability and resistance to corrosion. The stainless steel springs are insulated at one end to eliminate current flow through the spring and thus prevent annealing. This design prolongs the life of the spring and ensures consistent contact pressure.

The reverse loop finger design of the jaw contact assures that the contacts will stay engaged under fault conditions. Magnetic forces from the fault current tend to increase contact pressure in the contact assembly. Consequently, the blade will not be driven from the jaw due to magnetic forces from fault conditions, preventing damage to the switch and any adjacent construction.

The blade contact end consists of a replaceable silver plated copper bar bolted directly to the blade end casting. The contact end is easily replaced in the field by removing a few bolts thereby reducing the amount of downtime.

Operation of the DRV is accomplished through the use of bevel gears at the base of both insulator rotor bearings. Due to close tolerance of the parts field adjustment for timing of the blades is virtually eliminated. All other dynamic contact joints are permanently lubricated and sealed by O-rings. This design assures reliable operation over the course of many years in all types of weather conditions and environments.

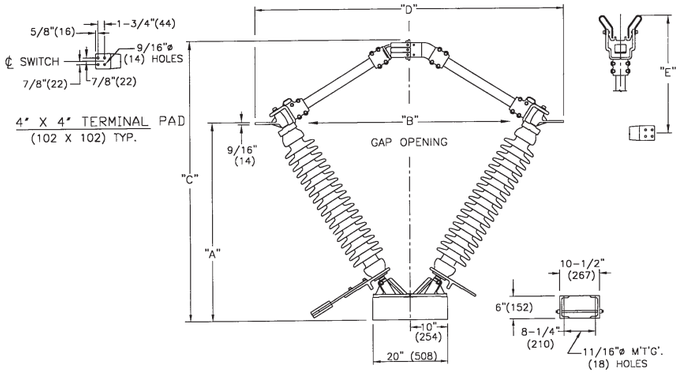
Blade Counterbalance

Where required, blade counterbalances are provided to assure ease of operation. The counterbalance consists of a galvanized steel lever arm and plates attached to the switch drive crank.

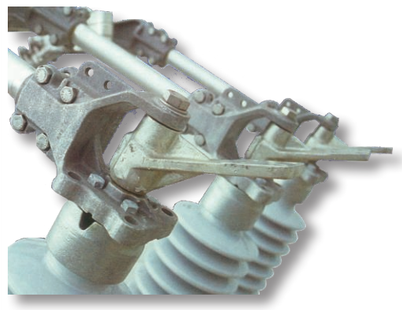
Rotor Bearings

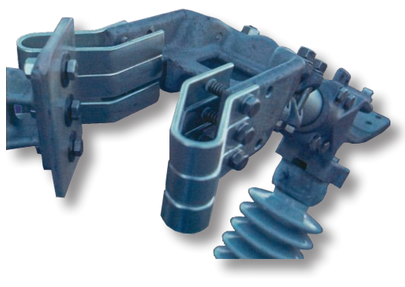
The drive insulator stack rotates on a greaseless rotor bearing that contains two sets of stainless steel ball bearings. Weather seals prevent moisture and foreign matter from entering the rotor bearing. The ball bearing sets are spaced far enough apart to provide sufficient support to withstand cantilever stresses and to allow the ball races to take thrust loading as well as radial loading. This design assures smooth operation and minimized operating effort. Because of this design, no maintenance is required, ever.

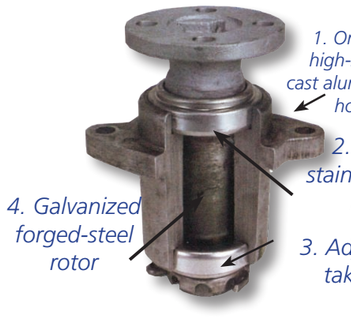
DRV SPECIFICATIONS



	"DRV" SWITCHES Ratings /kV			Dimensions A		B		C		D		CENTER OF TERM. PAD END OF BLADE (E)		TR No.	Approx. Single Pole Weight (lb/kg)
	Max. Design	BIL	AMPHERE CURRENT	TERMINAL PAD HGT. in.	mm	OPEN GAP in.	mm	TOTAL HEIGHT in.	mm	TERM. TO TERM. in.	mm	in.	mm		
A33	25.8	150	600–2000	26 3/4"	679	27"	686	38 1/4"	972	49 3/8"	1254	24"	610	208	190/86
	38	200	600–2000	30 1/4"	768	28 3/4"	730	41 7/16"	1053	54 1/4"	1378	25 5/8"	651	210	210/96
	48.3	250	600–2000	33 5/8"	854	33 1/8"	841	47 5/8"	1210	57 7/8"	1470	29"	737	214	230/105
	72.5	350	600–2000	40 3/8"	1026	41 5/8"	1057	57"	1448	66 3/8"	1686	34"	864	216	280/127
A55	121	550	600–2000	53 1/8"	1349	55"	1397	74 3/4"	1899	82 1/4"	2089	43 1/2"	1105	286	435/200
	145	650	600–2000	60 3/4"	1543	64 1/2"	1638	85 5/16"	2166	91 3/4"	2330	249"	1245	288	480/218
	169	750	600–2000	67 1/2"	1715	73"	1854	94 3/4"	2406	100 1/4"	2546	54 1/4"	1378	291	605/275







ROTOR BEARINGS