

DESCRIPTIVE BULLETIN

Single-phase overhead distribution switches

Types DCD, RBD, SID, LSID, and ITD

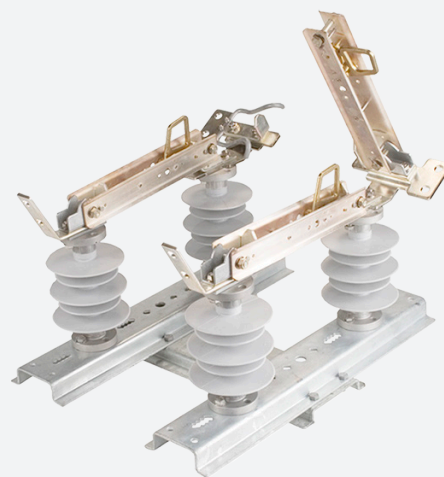
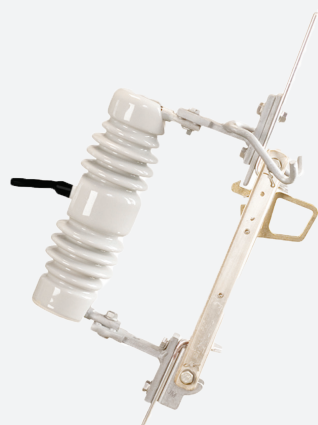
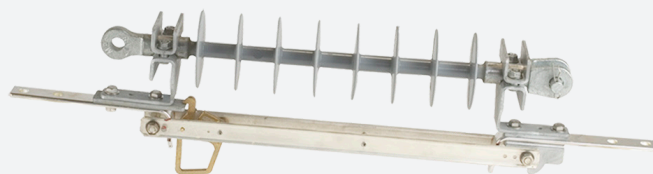
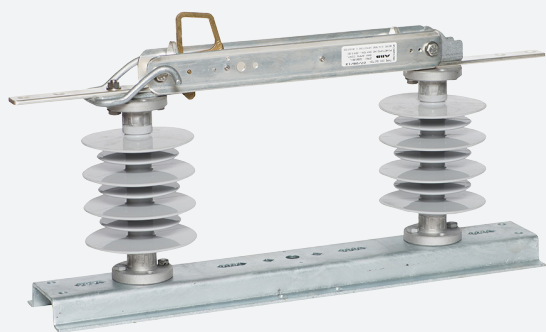
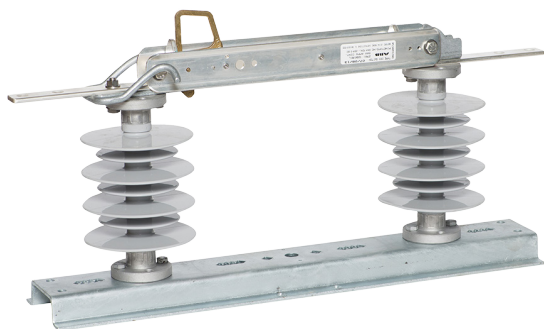


ABB single-phase overhead distribution switches are used on electrical distribution systems to sectionalize or isolate circuits, bypass equipment for maintenance, provide personnel protection, show visible indication of disconnect, and more.

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DCD distribution class disconnect switch



Product features

- Base and back strap: strengthened channel of galvanized steel for corrosion protection and solid operation
- Insulators available in silicone or porcelain
- Self-aligning silver to silver contacts help ensure long life
- Entire blade is silver-plated copper
- Loadbreak hooks made of galvanized steel for corrosion protection, to be used with loadbreak tool
- Standard two-hole NEMA plated pad or optional two-piece parallel groove
- All testing is in accordance with IEEE 37.34 (consolidated into IEEE 37.30.1)
- Hinges are not used to carry current leading to improved operation and reliability

Application

The DCD disconnect switch is a hookstick-operated switch used to sectionalize or isolate circuits on electrical distribution systems up to 38 kV. The distribution switch can be mounted on a single or double crossarm and is rated for 600 or 900 A continuous current and 65 kA peak withstand current (40 kA momentary).

Operation

ABB disconnect switches include loadbreak hooks for use with a portable loadbreak tool. Silver-plated contacts enhance efficient current transfers. The pull-ring activates the latch as a pry-out lever for easy opening and ice breaking.

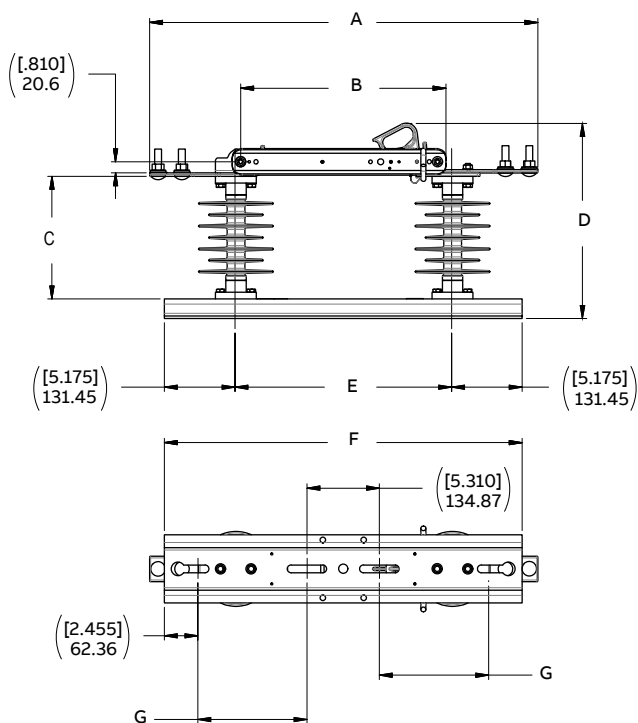
Blade operation

A blade stop limits the blade range of motion to either 90° or 160° positions, and a latch prevents the switch from opening under high momentary current.

Mounting

The DCD can be mounted in the following configurations:

- Vertical or underhung
- Polemount
- Single or double crossarm



BACK STRAP OPTION COMES WITH 8" OR 10" GALVANIZED CARRIAGE BOLTS, 2 BOLT OR 4 BOLT OPTIONS.

DCD unit dimensions

Voltage class (kV)	BIL (kV)	A		B		C		D		E		F		G		Porcelain weight		Silicone weight	
		(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)	(lb)	(kg)	(lb)	(kg)
15	110	25.17	639	12.29	312	8.00	203	13.32	338	12.35	313	22.85	580	4.63-6.77	118-172	33 (600 A)	15	19 (600 A)	8.7
27	125	28.56	725	15.08	383	9.00	229	14.31	364	15.90	404	26.00	660	6.38-8.47	162-215	40 (600 A)	18	22 (900 A)	10
38	150	28.86	725	15.08	383	10.0	254	15.32	389	15.90	404	26.00	660	6.38-8.47	162-215	42 (600 A)	19	24 (900 A)	11

DCD insulator details

Rated voltage BIL (kV) (kV)		Creep				Strike			
		Porcelain		Silicone		Porcelain		Silicone	
		(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)
15	110	17.60	441	19.53	496	7.71	196	7.79	198
27	125	22.95	583	28.30	719	8.55	217	9.26	234
38	150	23.87	606	39.52	1003	9.81	249	10.62	270

DCD ratings

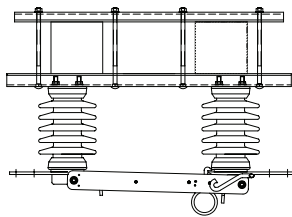
Maximum voltage (kV)	BIL (kV)	Continuous current (A)	Peak withstand current (kA Asym)
15	110	600/900	65
27	125	600/900	65
38	150	600/900	65

DCD selection guide

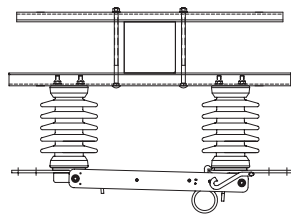
Description	Code	Definition
Switch type	S	Type DCD switch
Max kV, BIL	1	15 kV, 110 kV BIL
	2	27 kV, 125 kV BIL
	5	38 kV, 150 kV BIL
	N	No stop
Blade stop	A	90° stop
	B	160° stop
Insulators	P	Porcelain
	J	Silicone
Terminal connectors	A	NEMA 2-hole with captured 0.5" hardware (galvanized)
	C	NEMA 2-hole with two-piece clamshell #2-500MCM
	N	NEMA 2-hole pad – standard
	H	NEMA 2-hole with two-piece clamshell 4/0-500MCM
Base	S	Smooth slots in base for 0.5" carriage bolts
	C	Serrated slots in base for .375" carriage bolts
Mounting brackets	N	No back bracket
	8	Two 8" long, .375-16 carriage bolts with back bracket and hardware
	1	Two 10" long, .375-16 carriage bolts with back bracket and hardware
	A	Four 8" long, .375-16 carriage bolts with back bracket and hardware
Unused	B	Four 10" long, .375-16 carriage bolts with back bracket and hardware
Continuous current	N	Space holder for future options
	6	600 amperes
	9	900 amperes
Specials	0	None
	B	Stainless steel nameplate

Example: S2BJNC1N60 = DCD, 27 kV, 125 kV BIL, 160° stop, silicone insulators, standard NEMA 2-hole pads, base with serrated slots, back bracket with two 10" carriage bolts and hardware, 600 A, no specials DCD mounting configuration

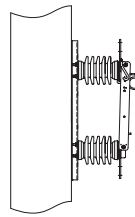
DCD mounting configurations



Vertical or underhung

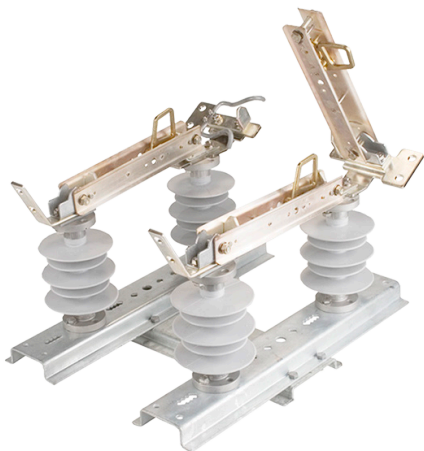


Single crossarm



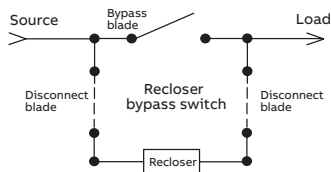
Polemount

RBD distribution class bypass disconnect switch

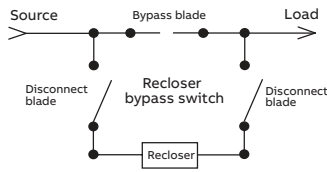


Product features

- Base and back strap: strengthened channel of galvanized steel for corrosion protection and solid operation
- Insulators available in silicone or porcelain
- Self-aligning silver to silver contacts help ensure long life
- Entire blade is silver-plated copper
- Loadbreak hooks made of galvanized steel for corrosion protection, to be used with loadbreak tool
- Bypass blade is left-hand or right-hand operation
- Standard two-hole NEMA plated pad or optional two-piece parallel groove
- All testing is in accordance with IEEE 37.34 (consolidated into IEEE 37.30.1)
- Hinges are not used to carry current leading to improved operation and reliability
- Available in three-phase configuration (3 RBDs mounted on a crossarm)



RBD normal operating positions



RBD bypass operating positions

Application

The RBD distribution bypass disconnect switch provides an economical means for bypassing and disconnecting reclosers or other equipment, allowing quick system reconfigurations to perform maintenance or bypass any device without interrupting service.

Operation

In normal operation, the bypass blade is open and the two disconnect blades are closed, allowing the unit to be energized. When maintenance, testing, repair, or removal is required, first close the bypass blade to provide a parallel current path; then open both disconnect blades of the bypass switch. Service continuity is maintained and the unit is isolated from the line. Reverse the process to put the unit back in service.

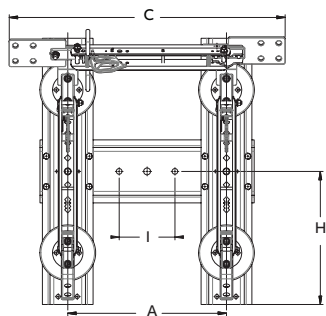
Blade operation

A blade stop limits the blade range of motion to either 90° or 160° positions, and a latch prevents the switch from opening under high momentary current.

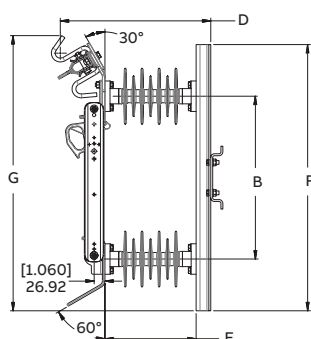
Mounting

The RBD can be mounted in the following configurations:

- Vertical or underhung
- Polemount
- Single or double crossarm



RBD unit dimensions



Voltage class	BIL	A		B		C		D		E		F		G		H			I		Porcelain weight		Silicone weight	
		(kV)	(kV)	(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)	(lb)	(kg)	(lb)
15	110	12.22	310	12.50	317	20.86	530	14.03	356	8.0	203	22.6	574	22.49	571	11.43	290	5.50	140	91	41	54	24	
27	125	15.63	397	15.90	404	23.43 - 27.21	595 - 691	14.83	377	9.0	229	26.25	667	26.79 - 27.13	682 - 689	13.13	333	5.50	140	99	45	60	27	
38	150	15.63	397	15.90	404	23.43 - 27.21	595 - 691	15.83	402	10.0	254	26.25	667	26.79 - 27.13	682 - 689	13.13	333	5.50	140	103	47	65	29	

RBD insulator details

Rated voltage (kV)	BIL (kV)	Creep		Strike					
		Porcelain		Silicone		Porcelain		Silicone	
		(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)
15	110	17.60	441	19.53	496	7.71	196	7.79	198
27	125	22.95	583	28.30	719	8.55	217	9.26	234
38	150	23.87	606	39.52	1003	9.81	249	10.62	270

RBD ratings

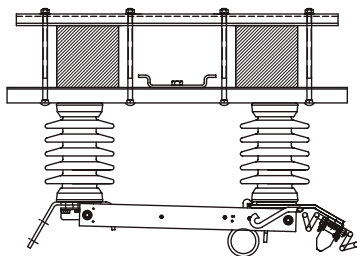
Maximum voltage (kV)	BIL (kV)	Continuous current (A)	Peak withstand current (kA Asym)
15	110	600/900	65
27	125	600/900	65
38	150	600/900	65

RBD selection guide

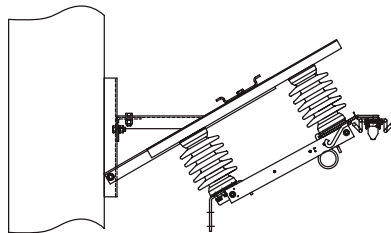
Description	Code	Definition
Switch type	R	Type RBD bypass switch
	1	15 kV, 110 kV BIL
	2	27 kV, 125 kV BIL
Max kV, BIL	5	38 kV, 150 kV BIL
	N	No stop
Blade stop for parallel disconnect blades	A	90° stop
	N	No stop (not available on crossarm mounting)
	A	90° stop (required on crossarm mounting)
Blade stop for bypass disconnect blade	B	160° stop (not available on crossarm mounting)
	P	Porcelain
Insulators	J	Silicone
	C	NEMA 2-hole with two-piece clamshell #2-500MCM
	N	NEMA 2-hole pad – standard
Terminal connectors	H	NEMA 2-hole with two-piece clamshell 4/0-500MCM
	N	No back bracket
	8	Four 8" long, .375-16 carriage bolts with two back brackets and hardware
Mounting brackets	1	Four 10" long, .375-16 carriage bolts with two back brackets and hardware
	P	Pole mount frame 30° from horizontal
	Q	Same as "P", but accommodates 3/4" hardware
	Y	Galvanized 8' steel crossarm combo (3 RBDs on crossarm)
	F	Galvanized 10' steel crossarm combo (3 RBDs on crossarm)
	Z	Non-metal 8' crossarm combo (3 RBDs on crossarm)
	T	Non-metal 10' crossarm combo (3 RBDs on crossarm)
	L	Left-hand operation of bypass blade (operates to the left)
Bypass blade	R	Right-hand operation of bypass blade (operates to the right)
	6	600 amperes
Continuous current	9	900 amperes
Specials	0	None

Example: R1NAPNPL60 = RBD, 15 kV, 110 kV BIL, no stops on parallel blades, 90° stop on bypass blade, porcelain insulators, 2-hole NEMA pads, polemount frame, left hand operation of bypass blade, 600 A, no specials

RBD mounting configurations



Vertical or underhung



Polemount

SID disconnect switch



Product features

- Light weight alternative to double insulator disconnect switch
- Reduces the need of double crossarm for mounting when using cutout bracket
- Insulators available in silicone, porcelain, and polymer concrete
- Self aligning silver-to-silver contacts to help ensure long life
- Entire blade is silver-plated copper
- Loadbreak hooks made of galvanized steel for corrosion protection, to be used with loadbreak tool
- Standard two-hole NEMA plated pad or optional terminal connectors
- All testing is in accordance with IEEE 37.34 (consolidated into IEEE 37.30.1)

Description

The SID disconnect switch is a single insulator disconnect with a double-bar switch blade and two, 2-hole extended NEMA pad terminals. It is a lightweight, flexible alternative to the commonly used double insulator design, while still being rated for 600 or 900 A. In addition, the SID disconnect incorporates the ABB quality approach to cutout design.

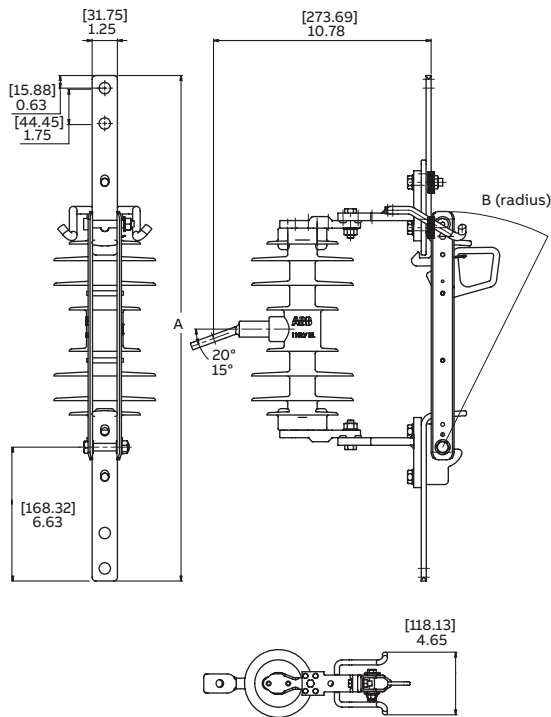
Application

The SID is used as a disconnect on overhead distribution feeders and in outdoor distribution substations. It is used to provide a visible break point for maintenance personnel, as a sectionalizing point, or as a loadbreak switch when used in conjunction with a portable loadbreak tool.

Mounting

The SID can be mounted like a standard cutout, directly on a pole for use as a disconnect between overhead and underground lines, or as a visible disconnect for maintenance of line equipment. This standard cutout type design allows for ease of installation with a clear indication of its position. The SID can be mounted in the following scenarios:

- Single or double crossarm underhung
- Crossarm similar to a cutout
- Crossarm vertically
- Riser pole application
- Pole mount extended angle



SID unit dimensions

Type	Voltage rating		A		B		Creep		Strike	
	(kV)	BIL (kV)	(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)
Porcelain	15	110	24.6	625	13.5	342	9.1	231	6.75	170
Silicone	15	110	24.6	625	13.5	342	15.0	380	5.25	133
Polymer concrete	15	110	24.6	625	13.5	342	9.1	231	7.00	178
Porcelain	27	125	28.0	711	16.9	429	12.8	325	8.50	216
Silicone	27	125 or 150	28.0	711	16.9	429	18.9	480	7.50	190
Polymer concrete	27	125	28.0	711	16.9	429	12.8	325	8.50	216
Porcelain	27 or 38	150	28.0	711	16.9	429	17.0	432	10.75	273

SID weights

Voltage class (kV)	BIL (kV)	Continuous current (A)	Porcelain		Polymer concrete		Silicone	
			(lbs)	(kg)	(lbs)	(kg)	(lbs)	(kg)
15.5	110	600	14.7	6.7	14.1	6.4	10.9	4.9
15.5	110	900	15.6	7.1	15.0	6.8	12.0	5.4
27	125	600	18.4	8.3	17.6	8.0	13.1	5.9
27	125	900	19.3	8.8	18.5	8.4	14.0	6.4
38	150	600	25.2	11.4	—	—	—	—
38	150	900	26.1	11.8	—	—	—	—

SID ratings

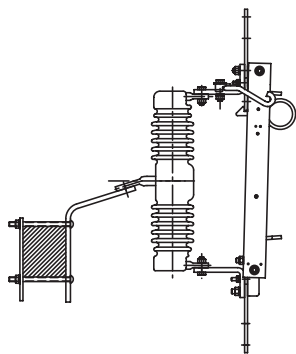
Maximum voltage (kV)	BIL (kV)	Continuous current (A)	Peak withstand current (kA Asym)
15.5	110	600	65
27	125	600	65
38	150	600	65
15.5	110	900	65
27	125	900	65
38	150	900	65

SID selection guide

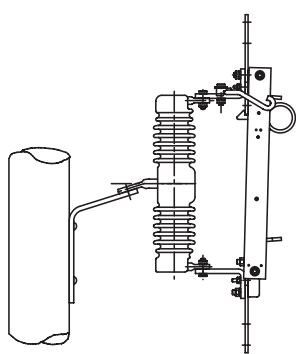
Description	Code	Definition
Switch type	D	Type SID Switch
Max kV, BIL	1	15 kV, 110 kV BIL
	2	27 kV, 125 kV BIL
	4	27 kV, 150 kV BIL
	5	38 kV, 150 kV BIL
	7	38 kV, 170 kV BIL (26" creep, porcelain only)
	9	38 kV, 170 kV BIL (30" creep, porcelain only)
Blade stop	N	No stop
	R	90° stop
	B	160° stop
Terminal connectors	A	NEMA 2-hole with captured 0.5" hardware (galvanized)
	C	NEMA 2-hole with two-piece clamshell #2-500MCM
	D	NEMA 2-hole with double eyebolt terminal #2-350MCM
	H	NEMA 2-hole with two-piece clamshell 4/0-500MCM
	T	NEMA 2-hole pad – standard
	B	NEMA B bracket only
Brackets	E	Extended bracket
	U	U pole mounting bracket
	A	NEMA B, angled extended, strap and hardware
	K	Extended bracket with 6" bolts
	N	No bracket
	L	Galvanized steel hooks
Continuous current	6	600 amperes
	9	900 amperes
Unused	0	Space holder for future options
Unused	0	Space holder for future options
Insulator	A	Porcelain
	J	Silicone
	Z	Polymer concrete

Example: D1RHNL600A = SID, 15 kV, 110 kV BIL, 90° stop, NEMA 2-hole pads with clamshell 4/0-500MCM, no bracket, galvanized hooks, 600 A, no special options

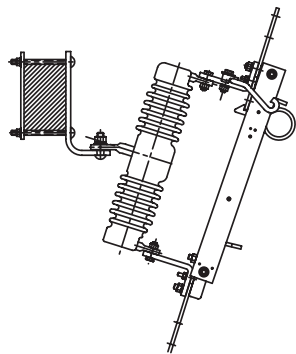
SID mounting configurations



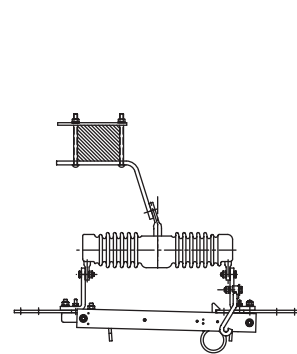
Crossarm, extended angle



Pole mount extended angle



Standard pole mount



Underhung

LSID disconnect switch



Product features

- Light weight alternative to double insulator disconnect switch
- Reduces the need of double crossarm for mounting when using cutout bracket
- Insulators available in silicone, porcelain, and polymer concrete
- Self aligning silver-to-silver contacts to help ensure long life
- Entire blade is silver-plated copper
- Loadbreak interruption is accomplished by a self-contained loadbreak arc chute which confines the arc and provides a deionizing action
- Standard two-pole NEMA plated pad or optional terminal connectors
- All testing is in accordance with IEEE 37.34 (consolidated into IEEE 37.30.1)

Description

The LSID disconnect switch is a single insulator disconnect with self-contained loadbreak capabilities, a double-blade door, and two 2-hole extended NEMA pad terminals. The LSID is a lightweight, flexible alternative to the commonly used double insulator design, while still being rated to 600 or 900 A. In addition, the LSID disconnect incorporates the ABB quality approach to cutout design.

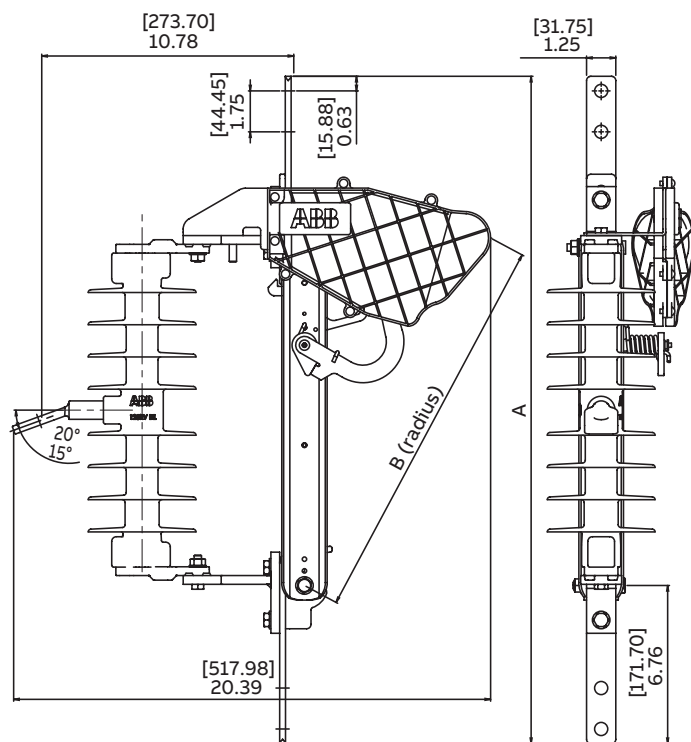
Application

The LSID is used as a disconnect on overhead distribution feeders and in outdoor distribution substations. It is also used to provide a visible break point for maintenance personnel. The self-contained loadbreak capability enables the utility to interrupt load current by operating the switch with a simple hookstick.

Mounting

The LSID can be mounted like a standard cutout, directly on a pole for use as a disconnect between overhead and underground lines, or as a visible disconnect for maintenance of line equipment. This standard cutout design provides a clear indication of its position and allows for easy installation. An optional mounting kit is available that allows for a variety of mounting scenarios:

- Single or double crossarm underhung
- Crossarm similar to a cutout
- Crossarm vertically
- Riser pole application



LSID unit dimensions

Type	Voltage rating (kV)	BIL (kV)	A		B		Creep		Strike	
			(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)
Porcelain	15	110	24.6	625	13.5	342	9.1	231	6.75	170
Silicone	15	110	24.6	625	13.5	342	15.0	380	5.25	133
Polymer concrete	15	110	24.6	625	13.5	342	9.1	231	7.00	178
Porcelain	15/27	125	28.0	711	16.9	429	12.8	325	8.50	216
Silicone	15/27	125 or 150	28.0	711	16.9	429	18.9	480	7.50	190
Polymer concrete	15/27	125	28.0	711	16.9	429	12.8	325	8.50	216
Porcelain	15/27	150	28.0	711	16.9	429	17.0	432	10.75	273

LSID weights

Voltage class (kV)	BIL (kV)	Continuous current (A)	Porcelain		Polymer concrete		Silicone	
			(lbs)	(kg)	(lbs)	(kg)	(lbs)	(kg)
15	110	600	16.7	7.6	15.8	7.2	12.8	5.8
15/27	125	600	20.4	9.3	19.6	8.9	15.1	6.8
15/27	150	600	27.2	12.3	–	–	21.9	9.9
15	110	900	17.6	8.0	16.7	7.6	13.7	6.2
15/27	125	900	21.3	9.7	20.5	9.3	16.0	7.3
15/27	150	900	28.1	12.7	–	–	22.8	10.3

LSID ratings

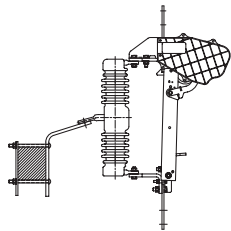
Maximum voltage (kV)	BIL (kV)	Continuous current (A)	Loadbreak current (A)	Peak withstand current (kA Asym)
15	110	600	600	65
15/27	125	600	600	65
15/27	150	600	600	65
15	110	900	600	65
15/27	125	900	600	65
15/27	150	900	600	65

LSID selection guide

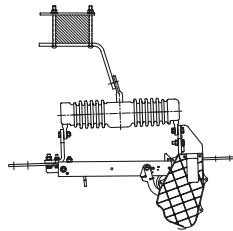
Description	Code	Definition
Switch type	B	Type LSID loadbreak switch
	1	15 kV, 110 kV BIL
	2	15/27 kV, 125 kV BIL
	4	15/27 kV, 150 kV BIL
Max kV, BIL	7	15/27 kV, 170 kV BIL (26" creep, porcelain only)
	N	No stop
	R	90° stop
Blade stop	B	160° stop
	A	NEMA 2-hole with captured 0.5" hardware (galvanized)
	C	NEMA 2-hole with two-piece clamshell #2-500MCM
	D	NEMA 2-hole with double eyebolt terminal #2-350MCM
	H	NEMA 2-hole with two-piece clamshell 4/0-500MCM
Terminal connectors	T	NEMA 2-hole pad – standard
	B	NEMA B bracket only
	E	Extended bracket
	U	U pole mounting bracket
	A	NEMA B, angled extended, strap and hardware
Brackets	N	No bracket
Unused	N	Space holder for future options
	6	600 ampere continuous/600 amperes MAX loadbreak
Continuous current/loadbreak	9	900 ampere continuous/600 amperes MAX loadbreak
Unused	0	Space holder for future options
Unused	O	Space holder for future options
	A	Porcelain
	J	Silicone
Insulators	Z	Polymer concrete

Example: B2NCBN600J = LSID, 27 kV, 125 kV BIL, no stop, NEMA 2-hole pads with clamshell 2-500MCM, NEMA B bracket, 600 A, silicone insulator

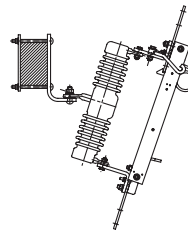
LSID mounting configurations



Extended angle

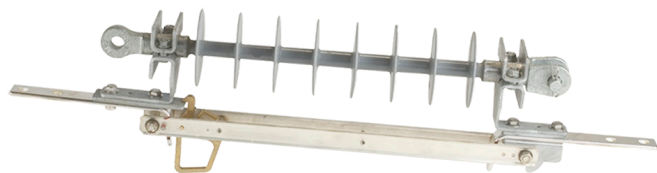


Standard pole mount



Underhung

ITD inline tension disconnect switch



Product features

- Lightweight silicone insulator provides extra leakage distance and BIL ratings to help ensure inline switches are not the flashover point
- Self aligning silver-to-silver contacts to help ensure long life
- Entire blade is silver-plated copper
- Loadbreak hooks made of galvanized steel for corrosion protection, to be used with loadbreak tool
- Standard two-pole NEMA plated pad or optional terminal connectors
- All testing is in accordance with IEEE 37.34 (consolidated into IEEE 37.30.1)

Description

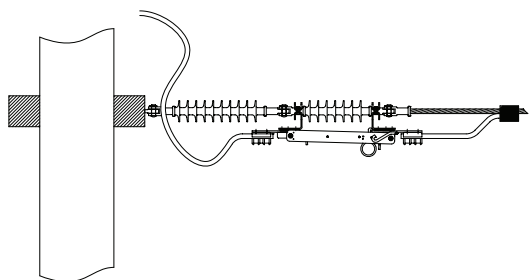
The ITD inline tension disconnect is a hookstick-operated switch used to manually switch de-energized or parallel circuits of overhead distribution lines rated 15 through 38 kV, 150 and 200 kV BIL. The ITD is installed directly in the line and is used to sectionalize the circuit. Switches are selected by continuous current and voltage ratings. The ITD is rated for 600 and 900 A continuous current and 65 kA peak withstand current (40 kA momentary).

Operation

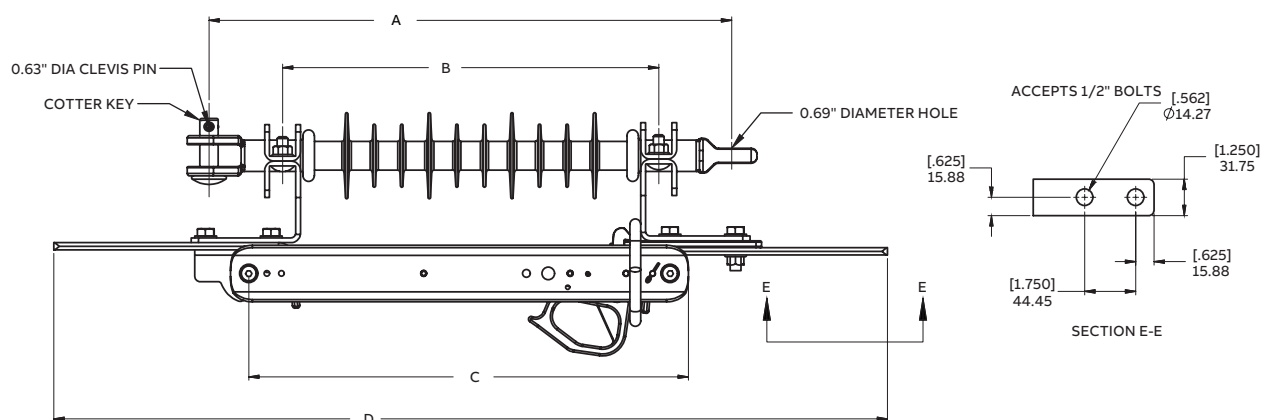
All ITD disconnect switches include loadbreak hooks. Use the appropriate loadbreak device to open the switch under load. The pull-ring can be utilized for easy opening and ice breaking. The hook portion of the contact-casting matches the blade latch for positive closure.

Blade operation

A blade stop limits the blade range of motion to either 90° or 160° positions, and a latch prevents the switch from opening under high momentary current.



ITD mounting configuration



ITD unit dimensions

Voltage class (kV)	BIL (kV)	A		B		C		D		Silicone weight	
		(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)	(lb)	(kg)
15 & 27	150	17.92	455	12.90	328	15.08	383	28.59	726	11.1	5.1
27 & 38	200	21.38	543	17.52	445	19.67	500	33.21	843	11.4	5.2

ITD insulator details

Voltage class (kV)	BIL (kV)	Creep (silicone)	
		(in)	(mm)
15 & 27	150	23.23	590
27 & 38	200	39.00	991

ITD ratings

Maximum voltage (kV)	BIL (kV)	Continuous current (A)	Peak withstand current (kA Asym)
15 & 27	150	600/900	65
27 & 38	200	600/900	65

ITD selection guide

Description	Code	Definition
Switch type	T	Type ITD switch
	3	38 kV, 200 kV BIL
	5	27 kV, 150 kV BIL
Blade stop	N	No stop
	A	90° stop
	B	160° stop
Terminal connectors	A	NEMA 2-hole with captured 0.5" hardware (galvanized)
	C	NEMA 2-hole with two-piece clamshell #2-500MCM
	D	NEMA 2-hole with double eyebolt terminal (#2-350 MCM)
	N	NEMA 2-hole pad – standard
	H	NEMA 2-hole with two-piece clamshell 4/0-500MCM
Insulator	A	Tongue/tongue (TT), silicone
	B	Clevis/clevis (CC), silicone
	M	Tongue/clevis (TC), tongue at hinge end of switch, silicone
Unused	N	Tongue/clevis (TC), clevis at hinge end of switch, silicone
Continuous current	N	Space holder for future options
	6	600 amperes
	9	900 amperes
Specials	0	None
Unused	0	Space holder for future options
Unused	O	Space holder for future options

Example: T5NCNN9000 = ITD, 27 kV, 150 kV BIL, no stop, two-piece clamshell #2-500MCM, tongue/clevis silicone insulator, 900 A, no specials

Additional information

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