

Medium Voltage Disconnectors

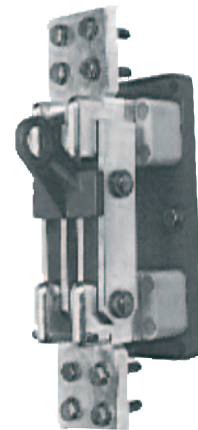
HAZS Range

3.6 kV

400 A to 4.0 kA – up to 175 Hz

One pole – Switch hook operation

- Large isolation air and creepage path
- Self-cleaning blade contacts
- True opening and visible distance
- Rugged anti-torsion construction
- Large customisation with :
 - Auxiliary switches, blocking magnets
- According to IEC 62271-102



Electrical Characteristics

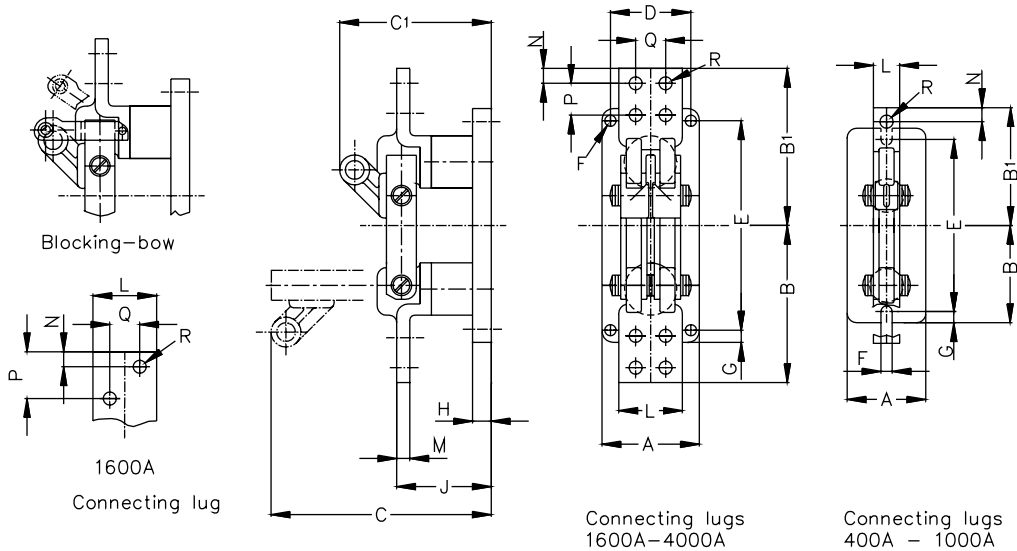
Rated thermal current		RMS 1 sec short-time withstand current (kA)	Rated peak current (kA)
AC (A)	DC (A)		
400	400	26	65
630	630	26	65
1000	1250	40	100
1600	1900	52	130
2000	2400	52	130
3150	3750	71	177
4000	5300	71	177

Dielectric withstand voltage 1 min/50 Hz		Rated impulse withstand voltage BIL	
Phase to earth (kV)	Across the isolating distance (kV)	Phase to earth (kV)	Across the isolating distance (kV)
10	12	40	46

- No-load operation
- Indoor type – only vertical mounting
- Mechanical endurance: $\leq 1\text{ kA} = 25\ 000$ cycles; $>1\text{ kA} = 50\ 000$ cycles (open / close)
- Maximum temperature withstand at 130° C without damages to the switch
- Electrical contact by contact knives with pressed on hard silver contact rivets and silver-plated electrolytic copper plates
- Small making / breaking capacity (on demand)
- Supporting insulators made of cast epoxy resin (fire classification according to UL94-V1)

Main dimensions

HAZS 400 – 4 000 A



** Enlargement Dimensions
C, J, H for Motor drive

Amp AC	A poles	B=B1	C	C1	D	E	FØ	G	H	J	L	M	N	P	Q	RØ	Weight (kg)
400		125	262	165						108	30	6	15			11	2.2
630	80	135			-	250	12	15	20		40		20	-	-		2.3
1000		144	270	185						116		10					4
1600	100	200	330	200						126	60	12	18	27	27	14	7.2
2000	110	225.5	335	220	60	320	14	20	25	137	80	18		40			11.5
3150	133		340	240						143	100		20	40	50		16
4000	140	224	330	230	65	300			24	149	120	20		60			20

Switch hooks

Construction : Hard paper with DIN-hooks according to VDE 0681, part 2. Only suitable for dry rooms

Reference number	Length (mm)	Dielectric Withstand voltage (kV)	Weight (kg)
1.021.04	1120	20	0.81
1.021.06	1520	45	0.99
1.021.07	2020	60	1.21

Ferraz Shawmut has it all for defining and offering customized solutions to meet your most specific

requirements :

- Adapted drives or control units
- Adapted technical performances (short-circuit current capability, endurance, small load make / break capacity)



Medium voltage disconnectors

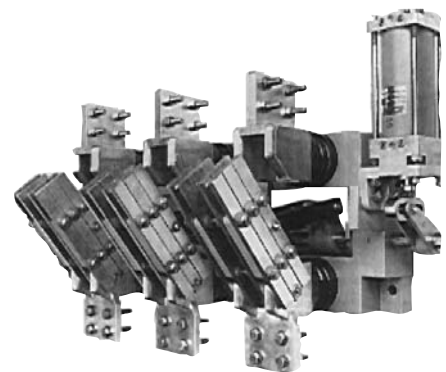
HAS Range

3.6 kV

400 A to 6.3 kA – up to 175 Hz

Number of poles : 1, 2, 3, ...

- Large isolation air and creepage path
- Self-cleaning blade contacts
- True opening and visible distance
- Rugged anti-torsion construction
- Large customisation with :
 - Auxiliary switches, blocking magnets
- According to IEC 62271

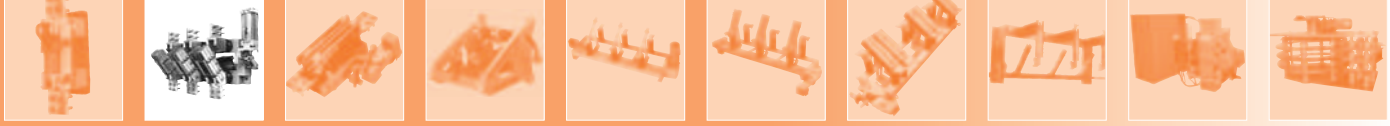


Electrical Characteristics

Rated thermal current		RMS 1 sec short-time withstand current (kA)	Rated peak current (kA)
AC (A)	DC (A)		
400	400	26	65
630	630	26	65
1000	1250	40	100
1600	1900	52	130
2000	2400	52	130
3150	3750	71	177
4000	5300	71	177
6300	7500	81	214

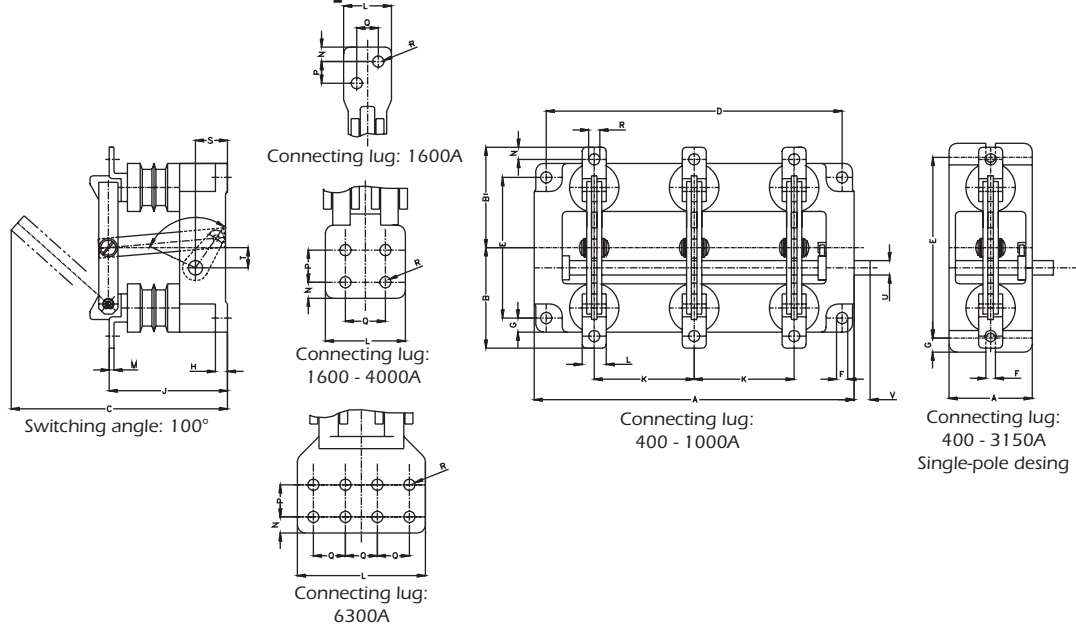
Dielectric withstand voltage 1 min/50 Hz		Rated impulse withstand voltage BIL	
Phase to earth (kV)	Across the isolating distance (kV)	Phase to earth (kV)	Across the isolating distance (kV)
10	12	40	46

- No-load operation
- Indoor type – only vertical mounting
- Mechanical endurance: $\leq 1\text{ kA} = 25\ 000$ cycles; $>1\text{ kA} = 50\ 000$ cycles (open / close)
- Maximum temperature withstand at 130° C without damages to the switch
- Electrical contact by contact knives with pressed on hard silver contact rivets and silver-plated electrolytic copper plates
- Small making / breaking capacity (on demand)
- Supporting insulators made of cast epoxy resin (fire classification according to UL94-V1)



Main dimensions

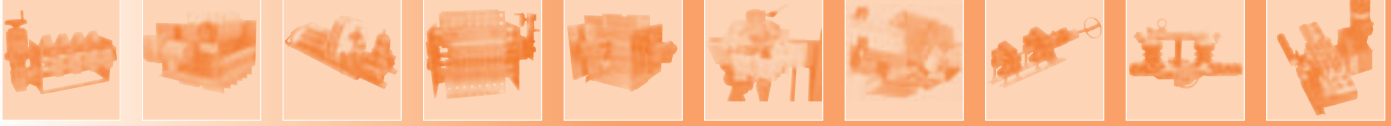
HAS 400 - 6300 Amp



Amp AC	No of poles	A	B =B1	C	D	E	Fø	G	H (**)	J (**)	K	L	M	N	P	Q	R	S	T	Uø	V	**	Drive	
400	1		125	270						148		30	6	15		11						-		
630		105	135			235	11	12.5	15			40		20	-	-		40	25	18	60		1A	
1 000			144	285							156		10											
1 600			200	365	-						181	-	60	12	18	27	27	14						
2 000			110	223	375		320		20		192		80	18			40			29	25			1B
3 150				385					20		198		100		20	40	50		48			80		
4 000			220	249	420	190	240	14	42.5		205		120				60			32	30			1C
6 300			269	480						225		160				40	18							
400	2		125	270						148		30	6	15		11								
630		275	135		245	175		17.5	15		125	40		20	-	-		40	25	18	60		1B	
1 000			144	285							156		10											
1 600			200	375							191		60	12	18	27	27	14			25			
2 000			465	223	385	415	220		27.5	30	202	200	80	18			40			29			15	
3 150				395				18			208		100		20	40	50		58			80		2
4 000			600	249	430	550	240		42.5	36	215	300	120	20			60			32	30		35	
6 300			269	465					60	235		160				40	18							
400	3		125	270						148		30	6	15		11								
630		400	135		370	175	14	17.5	15		125	40		20	-	-		40	25	18	60	-	1B	
1 000			144	285							156		10											
1 600			200	375							191		60	12	18	27	27	14			25			
2 000			665	223	385	615	220		27.5	30	202	200	80	18			40			29			15	2
3 150				395				18			208		100		20	40	50		58		30	80		
4 000			800	249	430	750	240		42.5	36	215	250	120	20			60			32			35	4
6 300		904	269	465	850				60	235	300	160				40	18							

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- Adapted drives or control units
- Adapted technical performances (short-circuit current capability, endurance ,small load make / break capacity)



Medium voltage disconnectors

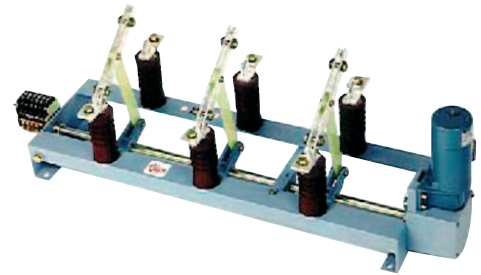
HAS Range

12 kV, 24 kV, 36 kV

400 A to 1 000 A - up to 175 Hz

Number of poles : 1, 2, 3, ...

- Large isolation air and creepage path
- Self-cleaning blade contacts
- True opening and visible distance
- Rugged anti-torsion construction
- Large customisation with :
 - Manual, motor, pneumatic drives
 - Auxiliary switches, blocking magnets
- According to IEC 62271-102
- Dimensions Fitting

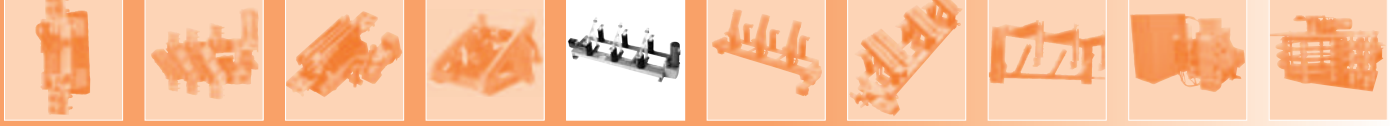


Electrical Characteristics

Rated thermal current	Rated insulation voltage			
	12 kV		24 & 36 kV	
	RMS 1 sec short-time withstand current	Rated peak current	RMS 1 sec short-time withstand current	Rated peak current
A	kA	kA	kA	kA
400	20	50	26	65
630	20	50	26	65
1000	40	100	30	75

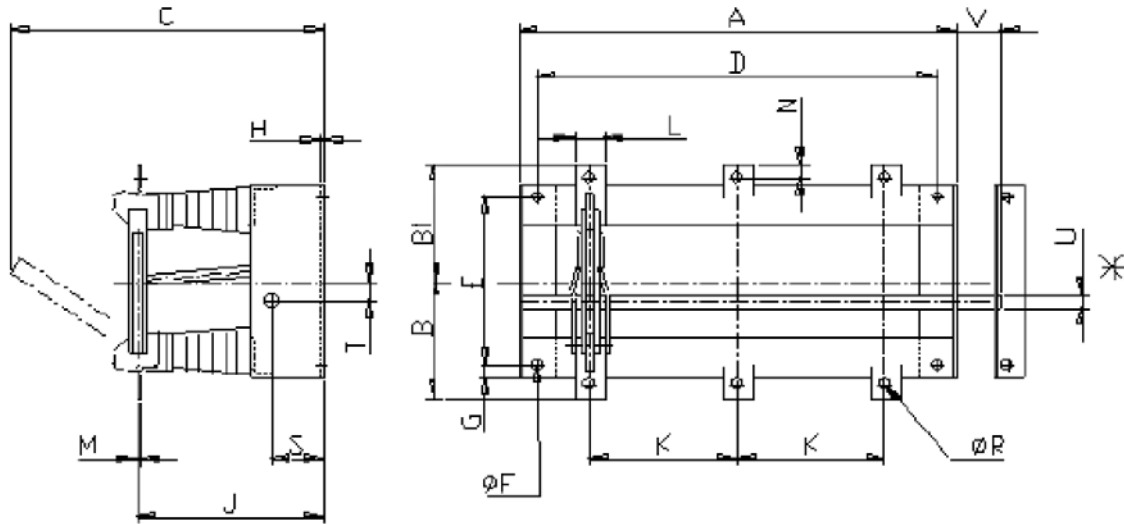
(kV)	Dielectric withstand Voltage 1 min/50Hz (KV)		Rated impulse withstand voltage BIL (KV)	
	Phase to earth and between poles (kV)	Across the isolating distance (kV)	Phase to earth and between poles (kV)	Phase to earth and distance (kV)
12	28	32	75	85
24	50	60	125	145
36	70	80	170	195

- No-load operation
- Indoor type - only vertical mounting
- Mechanical endurance: 50 000 cycles for I>1kA; 25 000 cycles for I<kA; 1 cycle = open + close
- Maximum temperature withstand at 130° C without damages to the switch
- Electrical contact by contact knives with pressed on hard silver contact rivets and silver-plated electrolytic copper plates
- Small making / breaking capacity (on demand)
- Supporting insulators made of cast epoxy resin (fire classification according to UL94-V1)



Medium voltage disconnectors

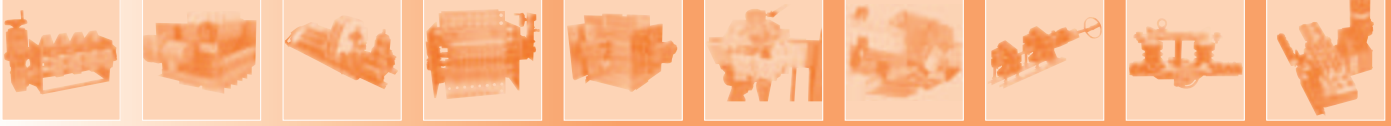
HAS 400 A to 1000 A



kV	Amp	No of poles	A	B =B1	C	D	E	F ϕ	G	H	J	K	L	M	N	R ϕ	S	T	U ϕ	V	Drive
12	400	1	142	320	450	92				5	253	-	30	6	15	11	70	29	18	180	16
	630			340								40	20	14							
	1000			358								465	10	20	14						
	400	2	590	320	450	540	245			5	253	200	30	6	15	11	70	29	18	60	2
	630			340									40	20	14						
	1000			358									465	10	20	14					
	400	3	790	320	450	740				6	253	200	30	6	15	11	70	29	18	60	2
	630			340									40	20	14						
	1000			358									465	10	20	14					
24	400	1	142	420	685	92		14		40	383	320	30	6	15	11	90	80	25	230	1b
	630			440									40	20	14						
	1000			458									700	10	20	14					
	400	2	570	420	685	520	320			40	383	320	30	6	15	11	90	80	25	185	2
	630			440									40	20	14						
	1000			458									700	10	20	14					
	400	3	890	420	685	840				6	383	320	30	6	15	11	90	80	25	185	2
	630			440									40	20	14						
	1000			458									700	10	20	14					
36	400	1	142	500	885	92				41	503	450	30	6	15	11	110	60	30	340	1b
	630			520									40	20	14						
	1000			538									900	10	20	14					
	400	2	870	500	885	810	414			41	503	450	30	6	15	11	110	60	30	200	2
	630			520									40	20	14						
	1000			538									900	10	20	14					
	400	3	1320	500	885	1260		24		50	503	450	30	6	15	11	110	60	30	200	2
	630			520									40	20	14						
	1000			538									900	10	20	14					

Ferraz Shawmut offers customized solutions to meet your most specific requirements:

- Adapted drives or control units
- Technical performance specifications (short-circuit current capability, endurance, small load
- make / break capacity)



Medium Voltage Disconnectors

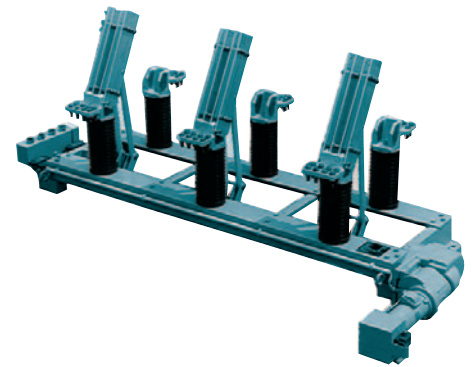
HAS Range

12 kV, 24 kV, 36 kV

1.6 kA to 6.3 kA - up to 175 Hz

Number of poles: 1, 2, 3, ...

- Large isolation air and creepage path
- Self-cleaning blade contacts
- True opening and visible distance
- Rugged anti-torsion construction
- Large customisation with :
 - Manual, motor, pneumatic drives
 - Auxiliary switches, blocking magnets
- According to IEC 62271-102
- Dimensions Fitting

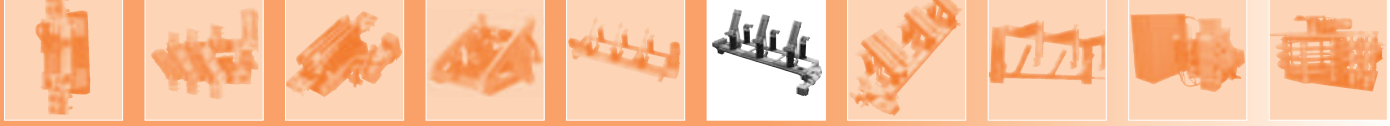


Electrical Characteristics

Rated thermal current	Rated insulation voltage			
	12 kV		24 & 36 kV	
	RMS 1 sec short-time withstand current	Rated peak current	RMS 1 sec short-time withstand current	Rated peak current
kA	kA	kA	kA	kA
1.6	52	130	37	91
2	63	160	58	144
3.15	71	177	64	159
4	71	177	64	159
6.3	81	214	77	193

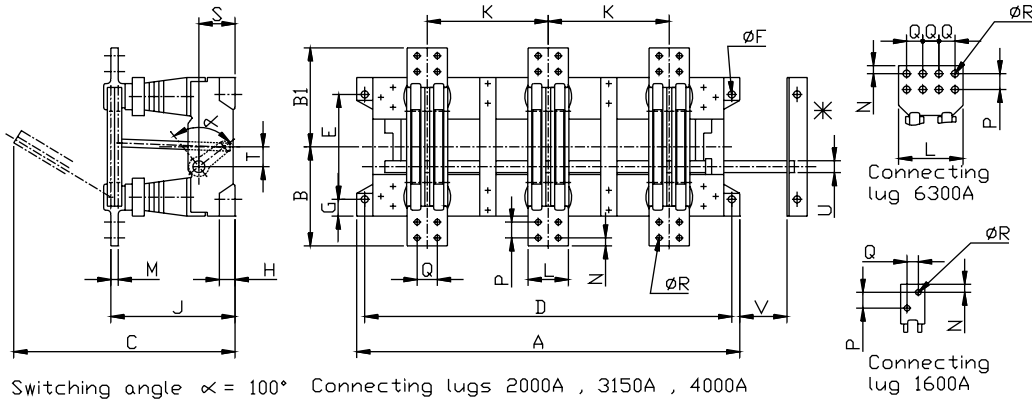
	Dielectric withstand Voltage 1 min/50Hz (kV)		Rated impulse withstand voltage BIL (kV)	
	Phase to earth and between poles (kV)	Across the isolating distance (kV)	Phase to earth and between poles (kV)	Phase to earth and distance (kV)
12	28	32	75	85
24	50	60	125	145
36	70	80	170	195

- No-load operation
- Indoor type - Vertical mounting only
- Mechanical endurance: 50 000 cycles for I>1kA; 25 000 cycles for I<kA; 1 cycle = open + close
- Maximum temperature withstand at 130° C without damage to switch
- Electrical contact by contact knives with pressed on hard silver contact rivets and silver-plated electrolytic copper plates
- Small making / breaking capacity (on demand)
- Supporting insulators made of cast epoxy resin (fire classification as per UL94-V1)



Main dimensions

HAS 1.6 kA - 6.3 kA



kV	kA	No of poles	A	B =B1	C	D	E	F ϕ	G	H	J	K	L	M	N	P	Q	R ϕ	S	T	U ϕ	V	Drive			
12	1.6	1	142	227	538	130	265	14	42.5	6	291	-	60	12	18	27	27	93	50	14	40	40	200	2		
	2			250	543						92	302	-	80	40	40										
	3.15			274.5	600						31	308	-	100	18	50	50								14	60
	4			294	645						31	347	-	120	20	40	40								18	85
	6.3			294	645						31	367	-	160	20	40	40								18	85
12	1.6	2	650	227	538	610	265	18	42.5	30	291	-	60	12	18	27	27	93	50	14	40	135	3			
	2			250	543						610	302	300	80	18	50	14							60		
	3.15			274.5	614						610	308	100	18	20	40	40							14	122	
	4			294	654						610	347	400	120	20	20	40							60	30	
	6.3			294	654						610	367	400	160	20	40	40							18	122	
12	1.6	3	950	227	538	910	265	18	42.5	30	291	-	60	12	18	27	27	93	50	14	40	135	3			
	2			250	543						910	302	300	80	18	50	14							60		
	3.15			274.5	614						910	308	100	18	20	40	40							14	122	
	4			294	654						910	347	400	120	20	20	40							60	30	
	6.3			294	654						910	367	400	160	20	40	40							18	122	
24	1.6	1	142	267	740	130	414	14	38	6	406	-	60	12	18	27	27	110	60	35	290	2				
	2			290	745						92	417	-	80	40	75	300									
	3.15			336.5	820						92	423	-	100	18	50	14						60			
	4			356	855						92	450	-	120	20	40	40						18	110		
	6.3			356	855						92	470	-	160	20	40	40						18	110		
24	1.6	2	720	267	740	660	344	18	38	50	406	-	60	12	18	27	27	110	60	35	180	4				
	2			290	745						660	417	350	80	18	40	122						75	30	245	
	3.15			336.5	820						660	423	100	18	50	14	60						35	180		
	4			356	855						660	450	120	10	20	40	60						35	180		
	6.3			356	855						660	470	160	10	20	40	40						18	110		
24	1.6	3	1070	267	740	1010	344	18	38	50	406	-	60	12	18	27	27	110	60	35	180	3				
	2			290	745						1010	417	350	80	18	40	122						75	30	245	
	3.15			336.5	820						1010	423	100	18	50	14	60						35	180		
	4			356	855						1010	450	120	20	40	60	35						180			
	6.3			356	855						1010	470	160	20	40	40	18						110			
36	1.6	1	142	302	880	130	520	18	55	6	516	-	60	12	18	27	27	110	60	30	410	2				
	2			325	910						92	527	-	80	40	30	410									
	3.15			376.5	994						92	533	-	100	18	50	14						60			
	4			396	1040						130	550	-	120	20	40	60						35	400		
	6.3			396	1040						130	570	-	160	20	40	40						18	120		
36	1.6	2	960	302	880	900	414	41	55	50	516	-	60	12	18	27	27	110	60	30	285	3				
	2			325	910						900	527	450	80	18	40	110						60	30	285	
	3.15			376.5	994						900	533	100	18	50	14	60						35	290		
	4			396	1040						900	550	120	20	40	60	35						290			
	6.3			396	1040						900	570	160	20	40	40	18						120			
36	1.6	3	1410	302	880	1350	414	41	55	50	516	-	60	12	18	27	27	110	60	30	285	3				
	2			325	910						1350	527	450	80	18	40	14						110	60	30	285
	3.15			376.5	994						1350	533	100	18	20	40	50						35	290		
	4			396	1040						1350	550	120	20	40	60	35						290			
	6.3			396	1040						1350	570	160	20	40	40	18						120			



Medium Voltage Disconnectors

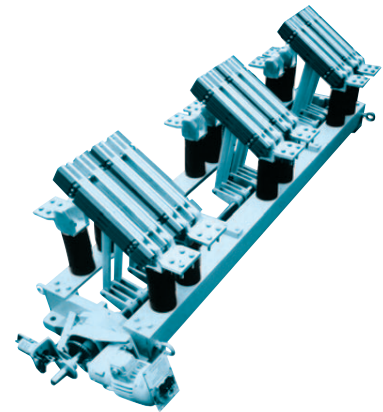
HAS Range

12 kV, 24 kV, 36 kV

8 kA to 12 kA - up to 175 Hz

Number of poles: 1, 2, 3, ...

- Large isolation air and creepage path
- Self-cleaning blade contacts
- True opening and visible distance
- Rugged anti-torsion construction
- Large customisation with :
 - Manual, motor, pneumatic drives
 - Auxiliary switches, blocking magnets
- According to IEC 62271-102
- Dimensions Fitting

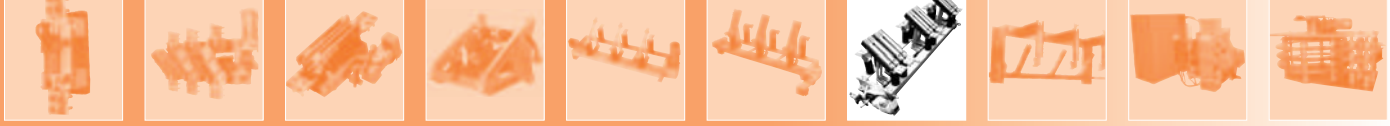


Electrical Characteristics

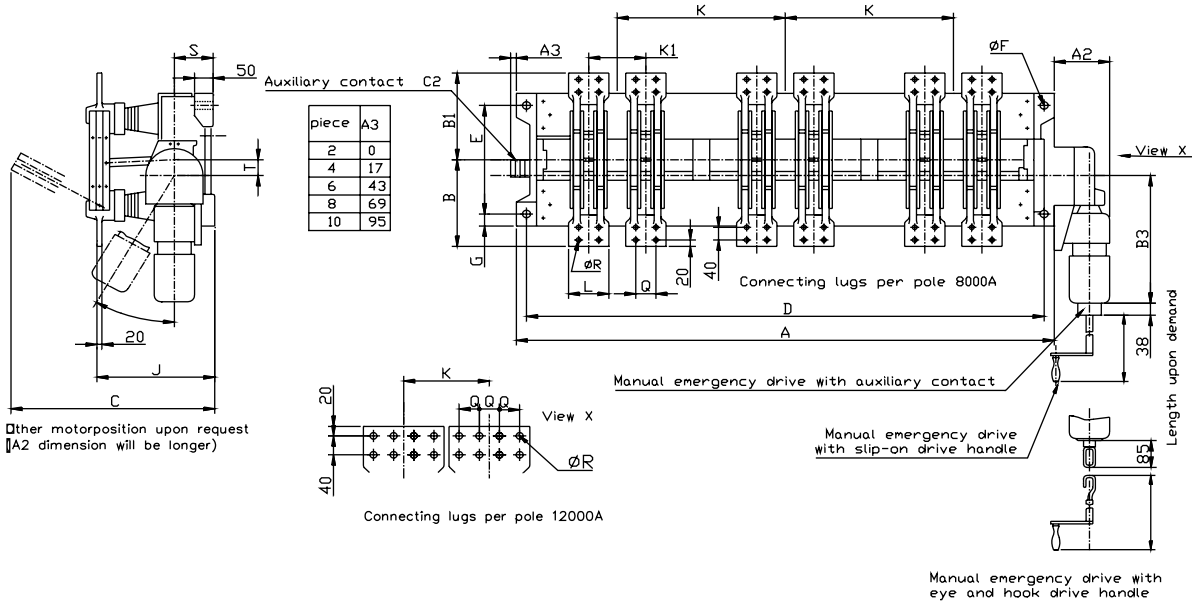
Rated thermal current	Rated insulation voltage			
	12 kV		24 & 36 kV	
	RMS 1 sec short-time withstand current	Rated peak current	RMS 1 sec short-time withstand current	Rated peak current
kA	kA	kA	kA	kA
8	110	275	100	250
12	121	300	110	275

	Dielectric withstand Voltage 1 min/50Hz (kV)		Rated impulse withstand voltage BIL (kV)	
	Phase to earth and between poles (kV)	Across the isolating distance (kV)	Phase to earth and between poles (kV)	Phase to earth and distance (kV)
12	28	32	75	85
24	50	60	125	145
36	70	80	170	195

- No-load operation
- Indoor type - Vertical mounting only
- Mechanical endurance: 50 000 cycles for I>1kA; 25 000 cycles for I<kA; 1 cycle = open + close
- Maximum temperature withstand at 130° C without damage to switch
- Electrical contact by contact knives with pressed on hard silver contact rivets and silver-plated electrolytic copper plates
- Small making / breaking capacity (on demand)
- Supporting insulators made of cast epoxy resin (fire classification as per UL94-V1)



Main dimensions HAS 8-12 kA



kV	kA	No of poles	A	A ₂	B =B ₁	B ₃	C	D	E	G	J	K	K ₁	L	Q	RØ	S	T	
12	8	1	700	189	274.5	390	614	640	344	38	347	-	170	120	60	14	122	50	
			730		294		654	670			367	-	185	160	40	18			
	12	2	1200		274.5		614	1140			347	170	120	60	14				
			1230		294		654	1170			367	185	160	40	18				
	12	3	3		1700		274.5	614			1640	347	500	170	120	60			14
					1730		294	654			1670	367	185	160	40	18			
24	8	1	700	189	336.5	390	820	640	414	41	450	-	170	120	60	14	110	60	
			730		356		855	670			470	-	185	160	40	18			
	12	2	1300		336.5		820	1240			450	170	120	60	14				
			1330		356		855	1270			470	185	160	40	18				
	12	3	3		1900		336.5	820			1840	450	600	170	120	60			14
					1930		356	855			1870	470	185	160	40	18			
36	8	1	700	189	376.5	390	994	640	520	55	550	-	170	120	60	14	120	110	
			730		396		1040	670			570	-	185	160	40	18			
	12	2	1400		376.5		994	1340			550	170	120	60	14				
			1430		396		1040	1370			570	185	160	40	18				
	12	3	3		2100		376.5	994			2040	550	700	170	120	60			14
					2130		396	1040			2070	570	185	160	40	18			

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- Adapted drives or control units
- Technical performance specifications (short-circuit current capability, endurance, small load - make / break capacity)



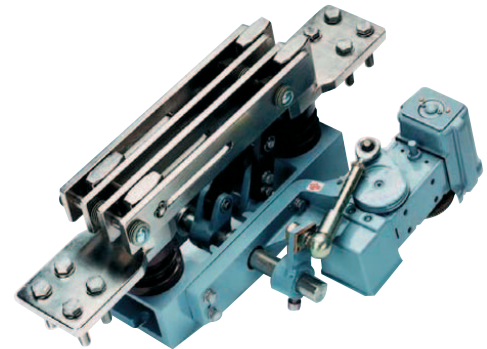
Medium Voltage Disconnectors

SAS Range

3.6 kV

4.0 kA DC

- Large isolation air and creepage path
- Self-cleaning blade contacts
- True opening and visible distance
- Rugged anti-torsion construction
- Large customisation with :
 - Manual, motor, pneumatic drives
 - Auxiliary switches, blocking magnets
- According to IEC 62271-102
- Dimensions Fitting

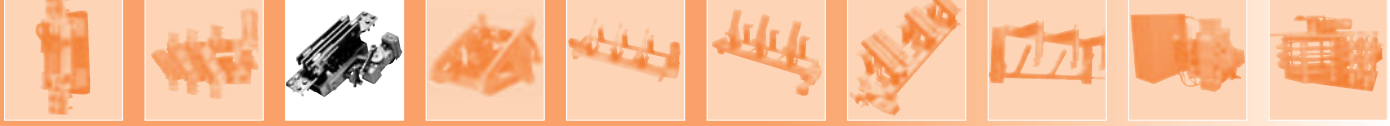


Electrical Characteristics

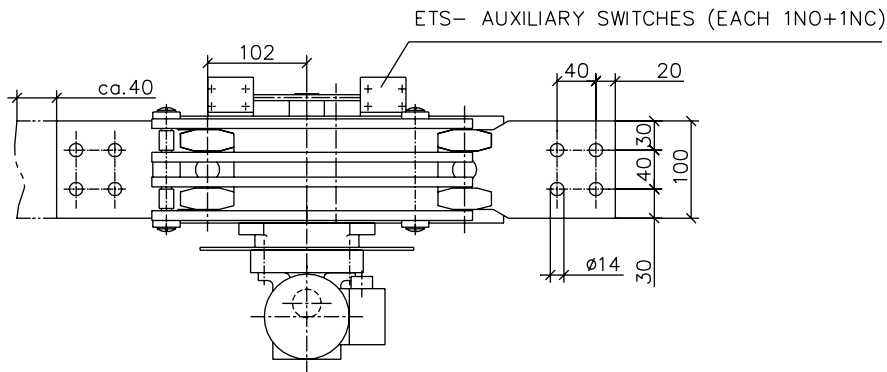
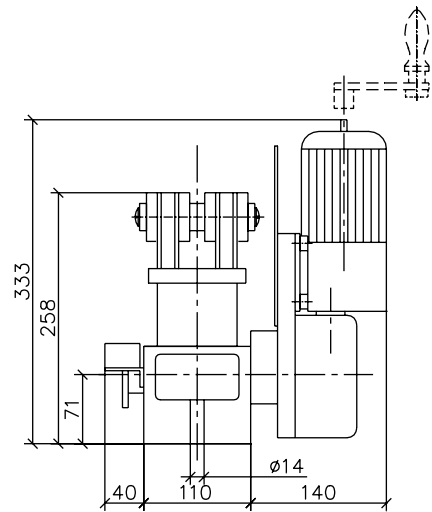
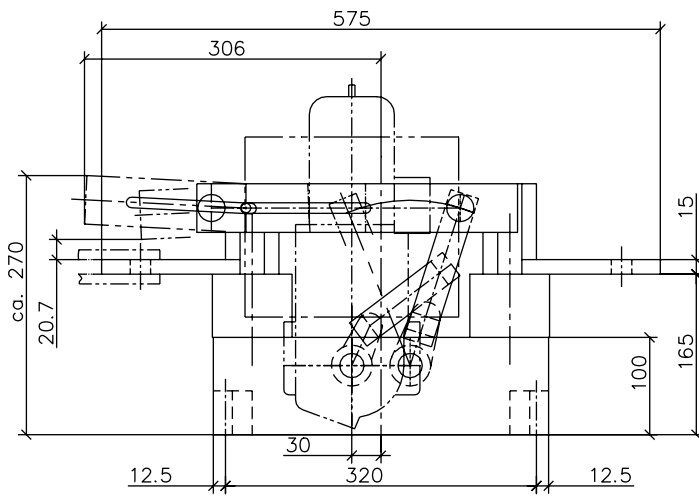
Rated thermal current DC (kA)	RMS 1 sec short-time withstand current (kA)	Rated peak current (kA)
4	71	177

Dielectric withstand voltage 1 min/50 Hz		Rated impulse withstand voltage BIL	
Phase to earth (kV)	Across the isolating distance (kV)	Phase to earth (kV)	Across the isolating distance (kV)
10	12	40	46

- No-load operation
- Indoor type – only vertical mounting
- Mechanical endurance: $\leq 1\text{ kA} = 25\ 000$ cycles; $>1\text{ kA} = 50\ 000$ cycles (open / close)
- Maximum temperature withstand at 130° C without damages to the switch
- Electrical contact by contact knives with pressed on hard silver contact rivets and silver-plated electrolytic copper plates
- Small making / breaking capacity (on demand)
- Supporting insulators made of cast epoxy resin (fire classification according to UL94-V1)



Main dimensions
SAS 3.6 kV 4.0 kAmp (DC)



Ferraz Shawmut has it all for defining and offering customized solutions to meet your most specific requirements :

- Adapted drives or control units
- Adapted technical performances (short-circuit current capability, endurance ,small load make / break capacity)