Limits of selectivity DMX³ / DPX™ (three phase circuit at 400 VA)

Downstream MCCB		Upstream ACB									
	In	DMX³ 2500 (50 kA / 65 kA / 100 kA)						DMX³ 4000 (50 kA / 65 kA / 100 kA)		DMX³ 6300 (100 kA)	
		800	1000	1250	1600	2000	2500	3200	4000	5000	6300
DPX³ 160 T/M (16 kA / 25 kA / 36 kA / 50 kA)	16	T	T	T	T	T	T	T	T	T	T
	25	T	T	T	T	T	T	T	T	T	T
	40	T	T	T	T	T	T	T	T	T	T
	63	T	T	T	T	T	T	T	T	T	T
	80	T	T	T	T	T	T	T	T	T	T
	100	T	T	T	T	T	T	T	T	T	T
	125	T	T	T	T	T	T	T	T	T	T
	160	T	T	T	T	T	T	T	T	T	T
DPX³ 160 T/M with electronic earth leakage module (16kA / 25kA / 36kA / 50kA)	16	T	T	T	T	T	T	T	T	T	T
	25	T	T	T	T	T	T	T	T	T	T
	40	T	T	T	T	T	T	T	T	T	T
	63	T	T	T	T	T	T	T	T	T	T
	80	T	T	T	T	T	T	T	T	T	T
	100	T	T	T	T	T	T	T	T	T	T
	125	T	T	T	T	T	T	T	T	T	T
	160	T	T	T	T	T	T	T	T	T	T
DPX³ 250 T/M with electronic earth leakage (25kA / 36kA / 50kA / 70kA / 100 kA)	100	T	T	T	T	T	T	T	T	T	T
	160	T	T	T	T	T	T	T	T	T	T
	200	T	T	T	T	T	T	T	T	T	T
	250	T	T	T	T	T	T	T	T	T	T
DPX³ 250 T/M with electronic earth leakage/metering (25kA / 36kA / 50kA / 70kA / 100kA)	40	T	T	T	T	T	T	T	T	T	T
	100	T	T	T	T	T	T	T	T	T	T
	160	T	T	T	T	T	T	T	T	T	T
	250	T	T	T	T	T	T	T	T	T	T
DPX³ 250 T/M (25 kA / 36 kA / 50 kA / 70 kA / 100 kA)	40	T	T	T	T	T	T	T	T	T	T
	63	T	T	T	T	T	T	T	T	T	T
	100	T	T	T	T	T	T	T	T	T	T
	160	T	T	T	T	T	T	T	T	T	T
	250	T	T	T	T	T	T	T	T	T	T
DPX³ 250 S1 / S2 (36 kA / 70 kA / 100 kA)	40	T	T	T	T	T	T	T	T	T	T
	100	T	T	T	T	T	T	T	T	T	T
	160	T	T	T	T	T	T	T	T	T	T
	250	T	T	T	T	T	T	T	T	T	T
DPX³ 630 T/M (36 kA / 70 kA / 100 kA)	250	T	T	T	T	T	T	T	T	T	T
	320	T	T	T	T	T	T	T	T	T	T
	400	T	T	T	T	T	T	T	T	T	T
	500	T	T	T	T	T	T	T	T	T	T
	630	T	T	T	T	T	T	T	T	T	T
DPX³ 630 S1 / S2 (36 kA / 70 kA / 100 kA)	250	T	T	T	T	T	T	T	T	T	T
	400	T	T	T	T	T	T	T	T	T	T
	630	T	T	T	T	T	T	T	T	T	T
DPX³ 1250 T/M (50 kA / 70 kA)	800	-	T	T	T	T	T	T	T	T	T
	1000	-	-	T	T	T	T	T	T	T	T
	1250	-	-	-	T	T	T	T	T	T	T
DPX³ 1600 S1 / S2 (50 kA / 70 kA)	800	-	T	T	T	T	T	T	T	T	T
	1250	-	-	-	T	T	T	T	T	T	T
	1600	-	-	-	-	T	T	T	T	T	T

Limits of selectivity DMX³ / DMX³ (three phase circuit at 400 VA)

Upstream / Downstream		DMX³									
		800 A	1000 A	1250 A	1600 A	2000 A	2500 A	3200 A	4000 A	5000 A	6300 A
DMX³	800 A			T	T	T	T	T	T	T	T
	1000 A				T	T	T	T	T	T	T
	1250 A					T	T	T	T	T	T
	1600 A						T	T	T	T	T
	2000 A							T	T	T	T
	2500 A								T	T	T
	3200 A									T	T
	4000 A										T
	5000 A										
	6300 A										

T: total selectivity, up to downstream circuit breaker breaking capacity according to IEC 60947-2
Icu of downstream circuit breaker ≤ Icu of upstream circuit breaker
Selectivity values are intended with protection unit properly adjusted

Technical characteristics

DMX³ 2500

DMX³ according to IEC 60947-2		DMX³ 2500																		
		800			1000			1250			1600			2000			2500		
		N	H	L	N	H	L	N	H	L	N	H	L	N	H	L	N	H	L
Number of poles		3P - 4P			3P - 4P			3P - 4P			3P - 4P			3P - 4P			3P - 4P		
Rating In (A)		800			1000			1250			1600			2000			2500		
Rated insulation voltage Ui (V)		1000			1000			1000			1000			1000			1000		
Rated impulse withstand voltage Uimp (kV)		12			12			12			12			12			12		
Rated operational voltage (50/60Hz) Ue (V)		690			690			690			690			690			690		
Frame		1		2	1		2	1		2	1		2	1		2	1		2
Ultimate breaking capacity Icu (kA)	230 VA	50	65	100	50	65	100	50	65	100	50	65	100	50	65	100	50	65	100
	415 VA	50	65	100	50	65	100	50	65	100	50	65	100	50	65	100	50	65	100
	500 VA	50	65	100	50	65	100	50	65	100	50	65	100	50	65	100	50	65	100
	600 VA	50	60	75	50	60	75	50	60	75	50	60	75	50	60	75	50	60	75
	690 VA	50	55	65	50	55	65	50	55	65	50	55	65	50	55	65	50	55	65
Service breaking capacity Ics (% Icu)		100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Short-circuit making capacity Icm (kA)	230 VA	105	143	220	105	143	220	105	143	220	105	143	220	105	143	220	105	143	220
	415 VA	105	143	220	105	143	220	105	143	220	105	143	220	105	143	220	105	143	220
	500 VA	105	143	220	105	143	220	105	143	220	105	143	220	105	143	220	105	143	220
	600 VA	105	132	165	105	132	165	105	132	165	105	132	165	105	132	165	105	132	165
	690 VA	105	121	143	105	121	143	105	121	143	105	121	143	105	121	143	105	121	143
Short time withstand current Icw (kA) for t = 1s	230 VA	50	65	85	50	65	85	50	65	85	50	65	85	50	65	85	50	65	85
	415 VA	50	65	85	50	65	85	50	65	85	50	65	85	50	65	85	50	65	85
	500 VA	50	65	85	50	65	85	50	65	85	50	65	85	50	65	85	50	65	85
	600 VA	50	60	75	50	60	75	50	60	75	50	60	75	50	60	75	50	60	75
	690 VA	50	55	65	50	55	65	50	55	65	50	55	65	50	55	65	50	55	65
Category of use		B			B			B			B			B			B		
Isolation behavior		Yes			Yes			Yes			Yes			Yes			Yes		
Endurance (cycles)	mechanical	10000			10000			10000			10000			10000			10000		
	electrical	5000			5000			5000			5000			5000			5000		

DMX³ 4000

DMX³ according to IEC 60947-2		DMX³ 4000					
		3200			4000		
		N	H	L	N	H	L
Number of poles		3P - 4P			3P - 4P		
Rating In (A)		3200			4000		
Rated insulation voltage Ui (V)		1000			1000		
Rated impulse withstand voltage Uimp (kV)		12			12		
Rated operational voltage (50/60Hz) Ue (V)		690			690		
Frame		2			2		
Ultimate breaking capacity Icu (kA)	230 VA	50	65	100	50	65	100
	415 VA	50	65	100	50	65	100
	500 VA	50	65	100	50	65	100
	600 VA	50	60	75	50	60	75
	690 VA	50	55	65	50	55	65
Service breaking capacity Ics (% Icu)		100	100	100	100	100	100
Short-circuit making capacity Icm (kA)	230 VA	105	143	220	105	143	220
	415 VA	105	143	220	105	143	220
	500 VA	105	143	220	105	143	220
	600 VA	105	132	165	105	132	165
	690 VA	105	121	143	105	121	143
Short time withstand current Icw (kA) for t = 1s	230 VA	50	65	85	50	65	85
	415 VA	50	65	85	50	65	85
	500 VA	50	65	85	50	65	85
	600 VA	50	60	75	50	60	75
	690 VA	50	55	65	50	55	65
Category of use		B			B		
Isolation behavior		Yes			Yes		
Endurance (cycles)	mechanical	10000			10000		
	electrical	5000			5000		

DMX³ 6300

DMX³ according to IEC 60947-2		DMX³ 6300	
		5000	6300
		L	L
Number of poles		3P - 4P	3P - 4P
Rating In (A)		5000	5000
Rated insulation voltage Ui (V)		1000	1000
Rated impulse withstand voltage Uimp (kV)		12	12
Rated operational voltage (50/60Hz) Ue (V)		690	690
Frame		3	3
Ultimate breaking capacity Icu (kA)	230 VA	100	100
	415 VA	100	100
	500 VA	100	100
	600 VA	75	75
	690 VA	65	65
Service breaking capacity Ics (% Icu)		100	100
Short-circuit making capacity Icm (kA)	230 VA	220	220
	415 VA	220	220
	500 VA	220	220
	600 VA	165	165
	690 VA	143	143
Short time withstand current Icw (kA) for t = 1s	230 VA	100	100
	415 VA	100	100
	500 VA	100	100
	600 VA	75	75
	690 VA	65	65
Category of use		B	B
Isolation behavior		Yes	Yes
Endurance (cycles)	mechanical	5000	5000
	electrical	2500	2500

Technical characteristics

Trip free switch DMX³-I		2500	4000	6300
Frame		1	2	3
Rating In à 40 °C (A)		1250 1600 2000 2500	3200 4000	6300
Rated insulation voltage Ui (V)		1000	1000	1000
Rated impulse withstand voltage Uimp (kV)		12	12	12
Rated operational voltage (50/60Hz) Ue (V)		690	690	690
Isolation behaviour		Yes	Yes	Yes
Short-circuit making capacity Icm (kA)	230 VA	143	220	220
	415 VA	143	220	220
	500 VA	143	220	220
	600 VA	132	165	165
	690 VA	121	143	143
Short time withstand current Icw (kA) pour t = 1 s	230 VA	65	85	100
	415 VA	65	85	100
	500 VA	65	85	100
	600 VA	60	75	75
	690 VA	55	65	65
Endurance (cycles)	mechanical	10000	10000	5000
	electrical	5000	5000	2500
Temperature	operation	-5 °C to +70 °C	-5 °C to +70 °C	-5 °C to +70 °C
	storage	-25 °C to +85 °C	-25 °C to +85 °C	-25 °C to +85 °C

Temperature derating

Fixed version

	Temperature									
	40 °C		50 °C		60 °C		65 °C		70 °C	
	Imax (A)	Ir / In	Imax (A)	Ir / In	Imax (A)	Ir / In	Imax (A)	Ir / In	Imax (A)	Ir / In
DMX³-I 2500	1250	1	1250	1	1250	1	1250	1	1250	1
	1600	1	1600	1	1600	1	1600	1	1600	1
	2000	1	2000	1	1960	0.98	1920	0.96	1880	0.94
	2500	1	2450	0.98	2350	0.94	2250	0.9	2150	0.86
DMX³-I 4000	3200	1	3200	1	3200	1	3136	0.98	3008	0.94
	4000	1	3920	0.98	3680	0.92	3440	0.86	3120	0.78
DMX³-I 6300	6300	1	6300	1	6048	0.96	5796	0.92	5544	0.88

Draw-out version

	Temperature									
	40 °C		50 °C		60 °C		65 °C		70 °C	
	Imax (A)	Ir / In	Imax (A)	Ir / In	Imax (A)	Ir / In	Imax (A)	Ir / In	Imax (A)	Ir / In
DMX³-I 2500	1250	1	1250	1	1250	1	1250	1	1250	1
	1600	1	1600	1	1600	1	1600	1	1600	1
	2000	1	2000	1	1960	0.98	1920	0.96	1875	0.94
	2500	1	2400	0.96	2250	0.9	2100	0.84	1950	0.78
DMX³-I 4000	3200	1	3200	1	3200	1	3072	0.96	2880	0.9
	4000	1	3760	0.94	3440	0.86	3200	0.8	2960	0.74
DMX³-I 6300	6300	1	6174	0.98	5985	0.95	5796	0.92	5292	0.84

Temperature derating
Fixed version

Tempe-rature	40 °C		50 °C		60 °C		65 °C		70 °C	
	Imax (A)	Ir / In	Imax (A)	Ir / In	Imax (A)	Ir / In	Imax (A)	Ir / In	Imax (A)	Ir / In
DMX³ 2500	800	1	800	1	800	1	800	1	800	1
	1000	1	1000	1	1000	1	1000	1	1000	1
	1250	1	1250	1	1250	1	1250	1	1250	1
	1600	1	1600	1	1600	1	1600	1	1600	1
	2000	1	2000	1	1960	0.98	1920	0.96	1880	0.94
	2500	1	2450	0.98	2350	0.94	2250	0.9	2150	0.86
DMX³ 4000	3200	1	3200	1	3200	1	3136	0.98	3008	0.94
	4000	1	3920	0.98	3680	0.92	3440	0.86	3120	0.78
DMX³ 6300	5000	1	5000	1	5000	1	5000	1	5000	1
	6300	1	6300	1	6048	0.96	5796	0.92	5544	0.88

Draw-out Version

Tempe-rature	40 °C		50 °C		60 °C		65 °C		70 °C	
	Imax (A)	Ir / In	Imax (A)	Ir / In	Imax (A)	Ir / In	Imax (A)	Ir / In	Imax (A)	Ir / In
DMX³ 2500	800	1	800	1	800	1	800	1	800	1
	1000	1	1000	1	1000	1	1000	1	1000	1
	1250	1	1250	1	1250	1	1250	1	1250	1
	1600	1	1600	1	1600	1	1600	1	1600	1
	2000	1	2000	1	1960	0.98	1920	0.96	1875	0.94
	2500	1	2400	0.96	2250	0.9	2100	0.84	1950	0.78
DMX³ 4000	3200	1	3200	1	3200	1	3072	0.96	2880	0.9
	4000	1	3760	0.94	3440	0.86	3200	0.8	2960	0.74
DMX³ 6300	5000	1	5000	1	5000	1	5000	1	5000	1
	6300	1	6174	0.98	5985	0.95	5796	0.92	5292	0.84

Derating at different altitudes

Air circuit breaker	DMX³ 2500, DMX³ 4000 and DMX³ 6300			
Altitude H (m)	< 2000	3000	4000	5000
Rated current (at 40 °C) In (A)	In	0.98 x In	0.94 x In	0.90 x In
Rated voltage Ue (V)	690	600	500	440
Rated insulation voltage Ui (V)	1000	900	750	600

Connection bars minimum recommended dimension per pole (fix) for copper conductors

In (A)	Vertical bars (mm)	Horizontal bars (mm)
630	50 x 10	60 x 10
800	60 x 10	60 x 10
1000	80 x 10	80 x 10
1250	80 x 10	2 x 60 x 10
1600	2 x 60 x 10	2 x 80 x 10
2000	2 x 80 x 10	3 x 80 x 10
2500	3 x 80 x 10	3 x 80 x 10
3200	3 x 100 x 10	3 x 100 x 10
4000	4 x 100 x 10	5 x 100 x 10
5000	6 x 100 x 10	6 x 100 x 10
6300	7 x 100 x 10	7 x 100 x 10

Note: The tables presenting the minimum recommended dimensions of connection plates and bars per pole should be used solely as a general guideline for selecting products. Due to extensive variety of switchgear constructions shapes and conditions that can affect the behavior of the apparatus, the solution used must always be verified