

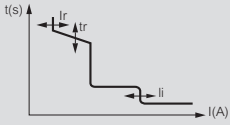
DMX³

electronic protection units

Settings of the electronic protection units

MP4 LI

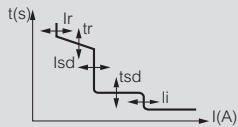
I_r, t_r, I_i, adjustment on front panel



- **Long time delay protection against overloads**
I_r from 0.4 to 1 x I_n (6 + 6 steps) on two selectors (0.4 ÷ 0.9, by steps of 0.1 and 0.0 ÷ 0.1, by steps of 0.02)
- **Long delay protection operation time**
t_r - at 6 x I_r (4 + 4 steps)
t_r = 5-10-20-30 s (MEM ON) 30-20-10-5 s (MEM OFF)
- **Short delay protection against short-circuits**
Fixed threshold:
I_{sd} = 10 x I_r
t_{sd} = 1s
- **Instantaneous protection against very high short circuits**
I_i from 2 to 15 x I_n or I_{cw} (9 steps) I_i = 2-3-4-5-6-8-10-12-15 x I_n or I_{cw}
- **Neutral protection:** I_n = OFF - 50% - 100% - 100%

MP4 LSI

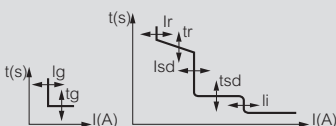
I_r, t_r, I_{sd}, t_{sd}, I_i adjustment on front panel



- **Long time delay protection against overloads**
I_r from 0.4 to 1 x I_n (6 + 6 steps) on two selectors (0.4 ÷ 0.9, by steps of 0.1 and 0.0 ÷ 0.1, by steps of 0.02)
- **Long delay protection operation time**
t_r - at 6 x I_r (4 + 4 steps) t_r = 5-10-20-30 s (MEM ON) 30-20-10-5 s (MEM OFF)
- **Short time delay protection against short circuits**
I_{sd} from 1.5 to 10 x I_r (9 steps) I_{sd} = 1.5-2-2.5-3-4-5-6-8-10 x I_r
- **Short time delay protection operation time**
t_{sd} from 0 to 0.3 s (4 + 4 steps) t_{sd} = 0-0.1-0.2-0.3 s (t=const), 0.3-0.2-0.1-0.01 s (I²t=const)
- **Instantaneous protection against very high short circuits**
I_i from 2 to 15 x I_n or I_{cw} (9 steps) I_i=off-2-3-4-6-8-10-12-15 x I_n or I_{cw}
- **Neutral protection:** I_n = OFF - 50% - 100% - 100%

MP4 LSIg

I_r, t_r, I_i, I_g, t_g, I_{sd}, t_{sd}, adjustment on front panel



- **Long time delay protection against overloads**
I_r from 0.4 to 1 x I_n (6 + 6 steps) on two selectors (0.4 ÷ 0.9, by steps of 0.1 and 0.0 ÷ 0.1, by steps of 0.02)
- **Long delay protection operation time**
t_r - at 6 x I_r (4 + 4 steps) t_r = 5-10-20-30 s (MEM ON) 30-20-10-5 s (MEM OFF)
- **Short time delay protection against short circuits**
I_{sd} from 1.5 to 10 x I_r (9 steps) I_{sd} = 1.5-2-2.5-3-4-5-6-8-10 x I_r
- **Short time delay protection operation time**
t_{sd} from 0 to 0.3 s (4 + 4 steps) t_{sd} = 0-0.1-0.2-0.3 s (t=const), 0.3-0.2-0.1-0.001 s (I²t=const)
- **Instantaneous protection against very high short circuits**
I_i from 2 to 15 x I_n or I_{cw} (9 steps) I_i = 2-3-4-6-8-10-12-15 x I_n or I_{cw}
- **Earth fault current**
I_g from 0.2 to 1 x I_n (9 steps) I_g = 0.2-0.3-0.5-0.6-0.7-0.8-1 x I_n : OFF
t_g from 0.1 + 1 s (4 steps) t_g = 0.1-0.2-0.5-1 s (both t = const and I²t = const)
- **Neutral protection:** I_n = OFF - 50% - 100% - 100%

Selectivity in three-phase network 415 V~

DMX³/DPX³

Downstream	Upstream	DMX ³ 2500				DMX ³ 4000	DMX ³ 6300
		800 A	1000 A	1250 A	1600 A	2000 & 2500 A	3200 & 4000 A
DPX ³ 160 ⁽¹⁾		T	T	T	T	T	T
DPX ³ 250 ⁽¹⁾		T	T	T	T	T	T
DPX ³ 630 ⁽¹⁾ TM and elec.		T	T	T	T	T	T
DPX ³ 1600 ⁽¹⁾ thermal magnetic	630 A	T	T	T	T	T	T
	800 A		T	T	T	T	T
	1000 A			T	T	T	T
	1250 A				T	T	T
DPX ³ 1600 ⁽¹⁾ electronic	630 A			T	T	T	T
	800 A			T	T	T	T
	1000 A				T	T	T
	1250 A				T	T	T
1600 A					T	T	

1: All breaking capacities

T: total selectivity, up to downstream circuit breaker breaking capacity according to IEC 60947-2

DMX³/DMX³

Downstream	Upstream	DMX ³									
		800 A	1000 A	1250 A	1600 A	2000 A	2500 A	3200 A	4000 A	5000 A	6300 A
DMX ³	800 A		T	T	T	T	T	T	T	T	T
	1000 A			T	T	T	T	T	T	T	T
	1250 A				T	T	T	T	T	T	T
	1600 A					T	T	T	T	T	T
	2000 A						T	T	T	T	T
	2500 A							T	T	T	T
	3200 A								T	T	T
4000 A									T	T	
5000 A										T	
6300 A											

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

DMX³/DX³

	DMX ³ 2500						DMX ³ 4000		DMX ³ 6300		
	630 A	800 A	1000 A	1250 A	1600 A	2000 A	2500 A	3200 A	4000 A	5000 A	6300 A
DX ³ 6000 - 10 kA	T	T	T	T	T	T	T	T	T	T	T
DX ³ 10000 - 16 kA	T	T	T	T	T	T	T	T	T	T	T
DX ³ 25 kA	T	T	T	T	T	T	T	T	T	T	T
DX ³ 36 kA	T	T	T	T	T	T	T	T	T	T	T
DX ³ 50 kA	T	T	T	T	T	T	T	T	T	T	T

T: total selectivity, up to downstream circuit breaker breaking capacity according to IEC 60947-2

DMX³ tripping curves, see technical sheet

For the settings of MP6 protection units Please, consult us

DMX³

technical characteristics (continued)

Technical characteristics

DMX³ 2500

DMX ³ according to IEC 60947-2	DMX ³ 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	2500		4000	2500		4000	2500		4000	2500		4000	2500		4000	2500		4000	
Ultimate breaking capacity Icu (kA)	230 V~	50	65	100	50	65	100	50	65	100	50	65	100	50	65	100	50	65	100
	415 V~	50	65	100	50	65	100	50	65	100	50	65	100	50	65	100	50	65	100
	500 V~	50	65	100	50	65	100	50	65	100	50	65	100	50	65	100	50	65	100
	600 V~	50	60	75	50	60	75	50	60	75	50	60	75	50	60	75	50	60	75
	690 V~	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 V~	105	143	220	105	143	220	105	143	220	105	143	220	105	143	220	105	143	220
	415 V~	105	143	220	105	143	220	105	143	220	105	143	220	105	143	220	105	143	220
	500 V~	105	143	220	105	143	220	105	143	220	105	143	220	105	143	220	105	143	220
	600 V~	105	132	165	105	132	165	105	132	165	105	132	165	105	132	165	105	132	165
	690 V~	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 V~	50	65	85	50	65	85	50	65	85	50	65	85	50	65	85	50	65	85
	415 V~	50	65	85	50	65	85	50	65	85	50	65	85	50	65	85	50	65	85
	500 V~	50	65	85	50	65	85	50	65	85	50	65	85	50	65	85	50	65	85
	600 V~	50	60	75	50	60	75	50	60	75	50	60	75	50	60	75	50	60	75
	690 V~	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) without maintenance	mechanical	10000			10000			10000			10000			10000			10000		
	electrical	5000			5000			5000			5000			5000			5000		

DMX³ 4000

DMX ³ according to IEC 60947-2	DMX ³ 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	4000			4000			
Ultimate breaking capacity Icu (kA)	230 V~	50	65	100	50	65	100
	415 V~	50	65	100	50	65	100
	500 V~	50	65	100	50	65	100
	600 V~	50	60	75	50	60	75
	690 V~	50	55	65	50	55	65
Service breaking capacity Ics (% Icu)	100	100	100	100	100	100	
Short-circuit making capacity Icm (kA)	230 V~	105	143	220	105	143	220
	415 V~	105	143	220	105	143	220
	500 V~	105	143	220	105	143	220
	600 V~	105	132	165	105	132	165
	690 V~	105	121	143	105	121	143
Short time withstand current Icw (kA) for t = 1s	230 V~	50	65	85	50	65	85
	415 V~	50	65	85	50	65	85
	500 V~	50	65	85	50	65	85
	600 V~	50	60	75	50	60	75
	690 V~	50	55	65	50	55	65
Category of use	B			B			
Isolation behavior	Yes			Yes			
Endurance (cycles) without maintenance	mechanical	10000			10000		
	electrical	5000			5000		

DMX³ 6300

DMX ³ according to IEC 60947-2	DMX ³ 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	6300	6300	
Ultimate breaking capacity Icu (kA)	230 V~	100	100
	415 V~	100	100
	500 V~	100	100
	600 V~	75	75
	690 V~	65	65
Service breaking capacity Ics (% Icu)	100	100	
Short-circuit making capacity Icm (kA)	230 V~	220	220
	415 V~	220	220
	500 V~	220	220
	600 V~	165	165
	690 V~	143	143
Short time withstand current Icw (kA) for t = 1s	230 V~	100	100
	415 V~	100	100
	500 V~	100	100
	600 V~	75	75
	690 V~	65	65
Category of use	B	B	
Isolation behavior	Yes	Yes	
Endurance (cycles) without maintenance	mechanical	5000	5000
	electrical	2500	2500

Temperature derating

Fixed version

Temperature	40°C		50°C		60°C		65°C		70°C	
	I _{max} (A)	I _r / I _n	I _{max} (A)	I _r / I _n	I _{max} (A)	I _r / I _n	I _{max} (A)	I _r / I _n	I _{max} (A)	I _r / I _n
DMX ³ 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
DMX ³ 4000	3200	1	3200	1	3200	1	3136	0.98	3008	0.94
	4000	1	4000	1	3680	0.92	3440	0.86	3120	0.78
DMX ³ 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

Temperature	40°C		50°C		60°C		65°C		70°C	
	I _{max} (A)	I _r / I _n	I _{max} (A)	I _r / I _n	I _{max} (A)	I _r / I _n	I _{max} (A)	I _r / I _n	I _{max} (A)	I _r / I _n
DMX ³ 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
DMX ³ 4000	3200	1	3200	1	3200	1	3072	0.96	2880	0.9
	4000	1	4000	1	3440	0.86	3200	0.8	2960	0.74
DMX ³ 6300	5000	1	5000	1	5000	1	5000	1	5000	1
	6300	1	6300	1	5985	0.95	5796	0.92	5292	0.84

Derating at different altitudes

Air circuit breaker	DMX ³ 2500, DMX ³ 4000 and DMX ³ 6300			
Altitude H (m)	< 2000	3000	4000	5000
Rated current (at 40°C) I _n (A)	I _n	0.98 x I _n	0.94 x I _n	0.90 x I _n
Rated voltage U _e (V)	690	600	500	440
Rated insulation voltage U _i (V)	1000	900	750	600

Minimum recommended dimension of copper busbars per pole

Frame 2500 - fixed and draw-out versions

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

Frame 6300 - fixed and draw-out versions

In (A)	Vertical bars (mm)	Horizontal bars (mm)
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

Frame 4000 - fixed and draw-out versions

In (A)	Vertical bars (mm)	Horizontal bars (mm)
630	1 x 40 x 10 or 2 x 40 x 5	2 x 40 x 5
800	1 x 50 x 10 or 2 x 50 x 5	2 x 50 x 5
1000	1 x 50 x 10 or 2 x 50 x 5	2 x 50 x 5
1250	2 x 50 x 5	1 x 50 x 10 + 1 x 50 x 5
1600	1 x 50 x 10 + 1 x 50 x 5	2 x 50 x 10
2000	2 x 50 x 10	2 x 60 x 10
2500	3 x 50 x 10	3 x 60 x 10
3200	3 x 100 x 10	3 x 100 x 10
4000	4 x 100 x 10	5 x 100 x 10

For minimum recommended dimensions of aluminium busbars
Please, consult us