Moulded Case Circuit Breakers Ex9M DC TM

- **Thermo-magnetic tripping unit for power distribution**
- **Frame sizes M1-M5**
- **Rated operating current up to 800 A**
- **2-pole 3 and 4-pole versions**
- **Rated ultimate short circuit breaking capacity I_{cu}=I_{cs} up to 100 kA**
- **Rated voltage 500 V DC (2-pole) 750 V DC (3-pole) and 1000 V DC (4-pole)**

DC Moulded Case Circuit Breakers Ex9MD Thermo-magnetic (TM) are intended mainly for photovoltaic applications. Testing according to IEC / EN 60947-2 standards ensures functionalities and reliability for wide variety of applications including isolation.

These breakers are offered with breaking capacities from 25 kA up to extreme 100 kA. High rated impulse withstand voltage makes it possible to use them even in system with occurences of transient overvoltage waves of high intensity, e.g. in heavy industry.

Utilization category A circuit breakers.

Type Key

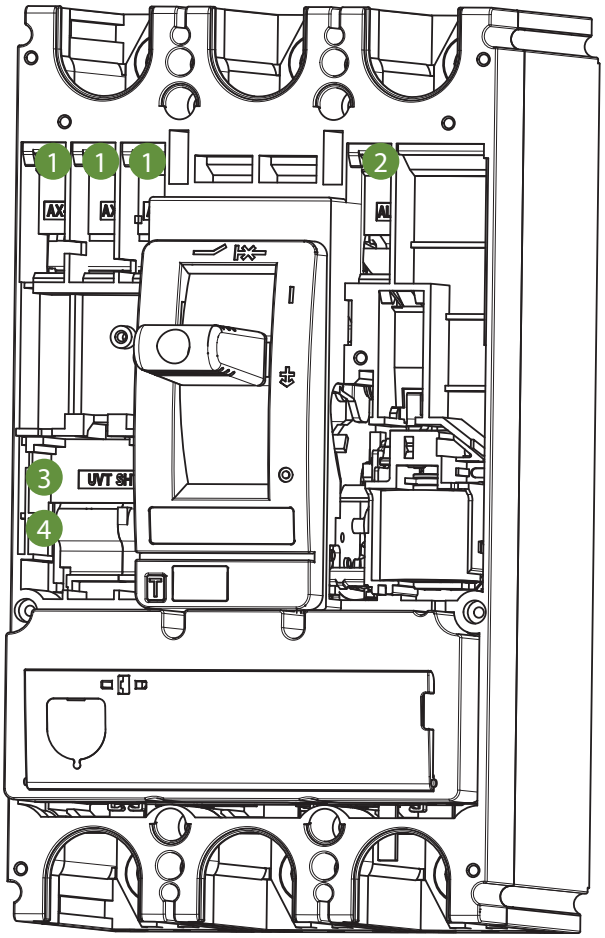
Ex9	MD	3	S	TM	250	4P
Product family	Product series	Frame size	Breaking capacity	Release technology	Rated current	Poles
Ex9	MD: DC MCCB	1: to 160 A 2: to 250 A 3: to 500 A 4: to 630 A 5: to 800 A	B: 25 kA S: 36 kA N: 50 kA Q: 70 kA H: 100 kA	TM: Thermo Magnetic type for power distribution	M1: 16—160 A M2: 125—250 A M3: 250—400 A M4: 400—630 A M5: 630—800 A	2P: 2-pole 3P: 3-pole 4P4T: 4-pole with protected N-pole

Certification marks

CE

Moulded Case Circuit Breakers Ex9M DC TM

Internal accessories



1	2	3	4
Auxiliary contact **AX21M**	Signal contact **AL21M**	Shunt trip release **SHT2*i*** 1 unit or UVT2*i*	Undervoltage release **UVT2*i*** 1 unit or SHT2*i*

Auxiliary contact AX21M	see Moulded Case Circuit Breakers catalogue
Signal contact AL21M	see Moulded Case Circuit Breakers catalogue
Shunt trip releases SHT2*i*	see Moulded Case Circuit Breakers catalogue
Undervoltage releases UVT2*i*	see Moulded Case Circuit Breakers catalogue

All internal accessories for the frame sizes M2+M3 and M4+M5 are identical.

Moulded Case Circuit Breakers Ex9M DC TM

External accessories Ex9M1-M5 DC TM

Phase barriers
PHS2*i*

Terminal cover, short
TCV2*i*

Terminal cover, long
TCE2*i*

Remote operator
MOD2*i*

Direct rotary handle
RHD2*i*

Extended rotary handle
ERH2*i*

Phase barriers PHS2*i*	see Moulded Case Circuit Breakers catalogue
Terminal cover, short TCV2*i*	see Moulded Case Circuit Breakers catalogue
Terminal cover, long TCE2*i*	see Moulded Case Circuit Breakers catalogue
Remote operators MOD2*i*	see Moulded Case Circuit Breakers catalogue
Direct rotary handles RHD2*i*	see Moulded Case Circuit Breakers catalogue
Extended rotary handles ERH2*i*	see Moulded Case Circuit Breakers catalogue

Moulded Case Circuit Breakers Ex9M DC TM

External accessories Ex9M1-M5 DC TM

Tunnel terminals
MC2*i* W

Mounting depth spacers
WG *i*

Screw type terminals
MC2*i*

Screw terminals
MCS2*i*

Din rail adapter
DRA2*i*

Tunnel terminals MC2*i* W	see Installation devices catalogue
Mounting depth spacers WG *i*	see Installation devices catalogue
Screw type terminals MC2*i*	see Installation devices catalogue
Screw terminals MCS2*i*	see Installation devices catalogue
Din rail DRA2*i*	see Installation devices catalogue

Moulded Case Circuit Breakers Ex9M DC TM

Version Ex9MD1B up to 160 A, I_{cu} = 25 kA

- 2 (up to 500V DC) 3 (up to 750 V DC) and 4-pole (up to 1 000 V DC) Moulded Case Circuit Breakers
- $I_{cs} = I_{cu}$ = 25 kA at 1000 V DC
- I_r can be set in range (0.7 — 1.0) × I_n
- I_i can be set in range (5 — 10) × I_n for 125 A and 160 A types, otherwise is fixed at 10 × I_n
- Mounting screws, screw type terminals as well as phase barriers in the scope of delivery

Poles	Rated current i_n	Part no.	Model	Packing
2	50A	852892	Ex9MD1B TM 50 2P IEC	1/12
2	63A	852893	Ex9MD1B TM 63 2P IEC	1/12
2	80A	852894	Ex9MD1B TM 80 2P IEC	1/12
2	100A	852895	Ex9MD1B TM 100 2P IEC	1/12
2	125A	852896	Ex9MD1B TM 125 2P IEC	1/12
2	160A	850906	Ex9MD1B TM 160 2P IEC	1/12
3	50A	852556	Ex9MD1B TM 50 3P IEC	1/12
3	63A	852557	Ex9MD1B TM 63 3P IEC	1/12
3	80A	852558	Ex9MD1B TM 80 3P IEC	1/12
3	100A	852559	Ex9MD1B TM 100 3P IEC	1/12
3	125A	852560	Ex9MD1B TM 125 3P IEC	1/12
3	160A	852561	Ex9MD1B TM 160 3P IEC	1/12
4	50A	852567	Ex9MD1B TM 50 4P4T IEC	1/12
4	63A	852568	Ex9MD1B TM 63 4P4T IEC	1/12
4	80A	852569	Ex9MD1B TM 80 4P4T IEC	1/12
4	100A	852570	Ex9MD1B TM 100 4P4T IEC	1/12
4	125A	852571	Ex9MD1B TM 125 4P4T IEC	1/12
4	160A	852572	Ex9MD1B TM 160 4P4T IEC	1/12

Version Ex9MD1S up to 160 A, I_{cu} = 36 kA

- 2 (up to 500V DC), 3 (up to 750 V DC) and 4-pole (up to 1 000 V DC) Moulded Case Circuit Breakers
- $I_{cs} = I_{cu}$ = 36 kA at 1000 V DC
- I_r can be set in range (0.7 — 1.0) × I_n
- I_i can be set in range (5 — 10) × I_n for 125 A and 160 A types, otherwise is fixed at 10 × I_n
- Mounting screws, screw type terminals as well as phase barriers in the scope of delivery

Poles	Rated current i_n	Part no.	Model	Packing
3	50A	852578	Ex9MD1S TM 50 3P IEC	1/12
3	63A	852579	Ex9MD1S TM 63 3P IEC	1/12
3	80A	852580	Ex9MD1S TM 80 3P IEC	1/12
3	100A	852581	Ex9MD1S TM 100 3P IEC	1/12
3	125A	852582	Ex9MD1S TM 125 3P IEC	1/12
3	160A	852583	Ex9MD1S TM 160 3P IEC	1/12
4	50A	852589	Ex9MD1S TM 50 4P4T IEC	1/12
4	63A	852590	Ex9MD1S TM 63 4P4T IEC	1/12
4	80A	852591	Ex9MD1S TM 80 4P4T IEC	1/12
4	100A	852592	Ex9MD1S TM 100 4P4T IEC	1/12
4	125A	852593	Ex9MD1S TM 125 4P4T IEC	1/12
4	160A	852594	Ex9MD1S TM 160 4P4T IEC	1/12

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Moulded Case Circuit Breakers Ex9M DC TM

Version Ex9MD1N up to 160 A, I_{cu} = 50 kA

- 2 (up to 500V C) 3 (up to 750 V DC) and 4-pole (up to 1 000 V DC) Moulded Case Circuit Breakers
- $I_{cs} = I_{cu}$ = 50 kA at 1000 V DC
- I_r can be set in range (0.7 — 1.0) × I_n
- I_i can be set in range (5 — 10) × I_n for 125 A and 160 A types, otherwise is fixed at 10 × I_n
- Mounting screws, screw type terminals as well as phase barriers in the scope of delivery

Poles	Rated current i_n	Part no.	Model	Packing
3	50A	852600	Ex9MD1N TM 50 3P IEC	1/12
3	63A	852601	Ex9MD1N TM 63 3P IEC	1/12
3	80A	852602	Ex9MD1N TM 80 3P IEC	1/12
3	100A	852603	Ex9MD1N TM 100 3P IEC	1/12
3	125A	852604	Ex9MD1N TM 125 3P IEC	1/12
3	160A	852605	Ex9MD1N TM 160 3P IEC	1/12
4	50A	852611	Ex9MD1N TM 50 4P4T IEC	1/12
4	63A	852612	Ex9MD1N TM 63 4P4T IEC	1/12
4	80A	852613	Ex9MD1N TM 80 4P4T IEC	1/12
4	100A	852614	Ex9MD1N TM 100 4P4T IEC	1/12
4	125A	852615	Ex9MD1N TM 125 4P4T IEC	1/12
4	160A	852616	Ex9MD1N TM 160 4P4T IEC	1/12

Version Ex9MD1Q up to 160 A, I_{cu} = 70 kA

- 2 (up to 500V C) 3 (up to 750 V DC) and 4-pole (up to 1 000 V DC) Moulded Case Circuit Breakers
- $I_{cs} = I_{cu}$ = 70 kA at 1000 V DC
- I_r can be set in range (0.7 — 1.0) × I_n
- I_i can be set in range (5 — 10) × I_n for 125 A and 160 A types, otherwise is fixed at 10 × I_n
- Mounting screws, screw type terminals as well as phase barriers in the scope of delivery

Poles	Rated current i_n	Part no.	Model	Packing
3	50A	852622	Ex9MD1Q TM 50 3P IEC	1/12
3	63A	852623	Ex9MD1Q TM 63 3P IEC	1/12
3	80A	852624	Ex9MD1Q TM 80 3P IEC	1/12
3	100A	852625	Ex9MD1Q TM 100 3P IEC	1/12
3	125A	852626	Ex9MD1Q TM 125 3P IEC	1/12
3	160A	852627	Ex9MD1Q TM 160 3P IEC	1/12
4	50A	852633	Ex9MD1Q TM 50 4P4T IEC	1/12
4	63A	852634	Ex9MD1Q TM 63 4P4T IEC	1/12
4	80A	852635	Ex9MD1Q TM 80 4P4T IEC	1/12
4	100A	852636	Ex9MD1Q TM 100 4P4T IEC	1/12
4	125A	852637	Ex9MD1Q TM 125 4P4T IEC	1/12
4	160A	852638	Ex9MD1Q TM 160 4P4T IEC	1/12

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Moulded Case Circuit Breakers Ex9M DC TM

Version Ex9MD1H up to 160 A, I_{cu} = 100 kA

- 2 (up to 500V DC) 3 (up to 750 V DC) and 4-pole (up to 1 000 V DC) Moulded Case Circuit Breakers
- $I_{cs} = I_{cu}$ = 100 kA at 1000 V DC
- I_r can be set in range (0.7 — 1.0) × I_n
- I_i can be set in range (5 — 10) × I_n for 125 A and 160 A types, otherwise is fixed at 10 × I_n
- Mounting screws, screw type terminals as well as phase barriers in the scope of delivery

Poles	Rated current i_n	Part no.	Model	Packing
3	50A	852644	Ex9MD1H TM 50 3P IEC	1/12
3	63A	852645	Ex9MD1H TM 63 3P IEC	1/12
3	80A	852646	Ex9MD1H TM 80 3P IEC	1/12
3	100A	852647	Ex9MD1H TM 100 3P IEC	1/12
3	125A	852648	Ex9MD1H TM 125 3P IEC	1/12
3	160A	852649	Ex9MD1H TM 160 3P IEC	1/12
4	50A	852655	Ex9MD1H TM 50 4P4T IEC	1/12
4	63A	852656	Ex9MD1H TM 63 4P4T IEC	1/12
4	80A	852657	Ex9MD1H TM 80 4P4T IEC	1/12
4	100A	852658	Ex9MD1H TM 100 4P4T IEC	1/12
4	125A	852659	Ex9MD1H TM 125 4P4T IEC	1/12
4	160A	852660	Ex9MD1H TM 160 4P4T IEC	1/12

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Moulded Case Circuit Breakers Ex9M DC TM

Version Ex9MD2B up to 250 A, I_{cu} = 25 kA

- 2 (up to 500V DC) 3 (up to 750 V DC) and 4-pole (up to 1 000 V DC) Moulded Case Circuit Breakers
- $I_{cs} = I_{cu}$ = 25 kA at 1000 V DC
- I_r can be set in range (0.7 — 1.0) × I_n
- I_i can be set in range (7 — 12) × I_n for 125 A and (5 — 10) × I_n for other devices up to 250 A
- Mounting screws, screw type terminals as well as phase barriers in the scope of delivery

Poles	Rated current i_n	Part no.	Model	Packing
2	125A	852898	Ex9MD2B TM 125 2P IEC	1/8
2	160A	852899	Ex9MD2B TM 160 2P IEC	1/8
2	180A	852900	Ex9MD2B TM 180 2P IEC	1/8
2	200A	852901	Ex9MD2B TM 200 2P IEC	1/8
2	225A		Ex9MD2B TM 225 2P IEC	1/8
2	250A	852902	Ex9MD2B TM 250 2P IEC	1/8
3	125A	852661	Ex9MD2B TM 125 3P IEC	1/8
3	160A	852662	Ex9MD2B TM 160 3P IEC	1/8
3	180A	852663	Ex9MD2B TM 180 3P IEC	1/8
3	200A	852664	Ex9MD2B TM 200 3P IEC	1/8
3	225A	852665	Ex9MD2B TM 225 3P IEC	1/8
3	250A	852666	Ex9MD2B TM 250 3P IEC	1/8
4	125A	852667	Ex9MD2B TM 125 4P4T IEC	1/8
4	160A	852668	Ex9MD2B TM 160 4P4T IEC	1/8
4	180A	852669	Ex9MD2B TM 180 4P4T IEC	1/8
4	200A	852670	Ex9MD2B TM 200 4P4T IEC	1/8
4	225A	852671	Ex9MD2B TM 225 4P4T IEC	1/8
4	250A	852672	Ex9MD2B TM 250 4P4T IEC	1/8

Version Ex9MD2S up to 250 A, I_{cu} = 36 kA

- 2 (up to 500V DC) 3 (up to 750 V DC) and 4-pole (up to 1 000 V DC) Moulded Case Circuit Breakers
- $I_{cs} = I_{cu}$ = 36 kA at 1000 V DC
- I_r can be set in range (0.7 — 1.0) × I_n
- I_i can be set in range (7 — 12) × I_n for 125 A and (5 — 10) × I_n for other devices up to 250 A
- Mounting screws, screw type terminals as well as phase barriers in the scope of delivery

Poles	Rated current i_n	Part no.	Model	Packing
3	125A	852673	Ex9MD2S TM 125 3P IEC	1/8
3	160A	852674	Ex9MD2S TM 160 3P IEC	1/8
3	180A	852675	Ex9MD2S TM 180 3P IEC	1/8
3	200A	852676	Ex9MD2S TM 200 3P IEC	1/8
3	225A	852677	Ex9MD2S TM 225 3P IEC	1/8
3	250A	852678	Ex9MD2S TM 250 3P IEC	1/8
4	125A	852679	Ex9MD2S TM 125 4P4T IEC	1/8
4	160A	852680	Ex9MD2S TM 160 4P4T IEC	1/8
4	180A	852681	Ex9MD2S TM 180 4P4T IEC	1/8
4	200A	852682	Ex9MD2S TM 200 4P4T IEC	1/8
4	225A	852683	Ex9MD2S TM 225 4P4T IEC	1/8
4	250A	852684	Ex9MD2S TM 250 4P4T IEC	1/8

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Moulded Case Circuit Breakers Ex9M DC TM

Version Ex9MD2N up to 250 A, I_{cu} = 50 kA

- 2 (up to 500V DC) 3 (up to 750 V DC) and 4-pole (up to 1 000 V DC) Moulded Case Circuit Breakers
- $I_{cs} = I_{cu}$ = 50 kA at 1000 V DC
- I_r can be set in range (0.7 — 1.0) × I_n
- I_i can be set in range (7 — 12) × I_n for 125 A and (5 — 10) × I_n for other devices up to 250 A
- Mounting screws, screw type terminals as well as phase barriers in the scope of delivery

Poles	Rated current i_n	Part no.	Model	Packing
3	125A	852685	Ex9MD2N TM 125 3P IEC	1/8
3	160A	852686	Ex9MD2N TM 160 3P IEC	1/8
3	180A	852687	Ex9MD2N TM 180 3P IEC	1/8
3	200A	852688	Ex9MD2N TM 200 3P IEC	1/8
3	225A	852689	Ex9MD2N TM 225 3P IEC	1/8
3	250A	852690	Ex9MD2N TM 250 3P IEC	1/8
4	125A	852691	Ex9MD2N TM 125 4P4T IEC	1/8
4	160A	852692	Ex9MD2N TM 160 4P4T IEC	1/8
4	180A	852693	Ex9MD2N TM 180 4P4T IEC	1/8
4	200A	852694	Ex9MD2N TM 200 4P4T IEC	1/8
4	225A	852695	Ex9MD2N TM 225 4P4T IEC	1/8
4	250A	852696	Ex9MD2N TM 250 4P4T IEC	1/8

Version Ex9MD2Q up to 250 A, I_{cu} = 70 kA

- 2 (up to 500V DC) 3 (up to 750 V DC) and 4-pole (up to 1 000 V DC) Moulded Case Circuit Breakers
- $I_{cs} = I_{cu}$ = 70 kA at 1000 V DC
- I_r can be set in range (0.7 — 1.0) × I_n
- I_i can be set in range (7 — 12) × I_n for 125 A and (5 — 10) × I_n for other devices up to 250 A
- Mounting screws, screw type terminals as well as phase barriers in the scope of delivery

Poles	Rated current i_n	Part no.	Model	Packing
3	125A	852697	Ex9MD2Q TM 125 3P IEC	1/8
3	160A	852698	Ex9MD2Q TM 160 3P IEC	1/8
3	180A	852699	Ex9MD2Q TM 180 3P IEC	1/8
3	200A	852700	Ex9MD2Q TM 200 3P IEC	1/8
3	225A	852701	Ex9MD2Q TM 225 3P IEC	1/8
3	250A	852702	Ex9MD2Q TM 250 3P IEC	1/8
4	125A	852703	Ex9MD2Q TM 125 4P4T IEC	1/8
4	160A	852704	Ex9MD2Q TM 160 4P4T IEC	1/8
4	180A	852705	Ex9MD2Q TM 180 4P4T IEC	1/8
4	200A	852706	Ex9MD2Q TM 200 4P4T IEC	1/8
4	225A	852707	Ex9MD2Q TM 225 4P4T IEC	1/8
4	250A	852708	Ex9MD2Q TM 250 4P4T IEC	1/8

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Moulded Case Circuit Breakers Ex9M DC TM

Version Ex9MD2H up to 250 A, I_{cu} = 100 kA

- 2 (up to 500V DC) 3 (up to 750 V DC) and 4-pole (up to 1 000 V DC) Moulded Case Circuit Breakers
- $I_{cs} = I_{cu}$ = 100 kA at 1000 V DC
- I_r can be set in range (0.7 — 1.0) × I_n
- I_i can be set in range (7 — 12) × I_n for 125 A and (5 — 10) × I_n for other devices up to 250 A
- Mounting screws, screw type terminals as well as phase barriers in the scope of delivery

Poles	Rated current i_n	Part no.	Model	Packing
3	125A	852709	Ex9MD2H TM 125 3P IEC	1/8
3	160A	852710	Ex9MD2H TM 160 3P IEC	1/8
3	180A	852711	Ex9MD2H TM 180 3P IEC	1/8
3	200A	852712	Ex9MD2H TM 200 3P IEC	1/8
3	225A	852713	Ex9MD2H TM 225 3P IEC	1/8
3	250A	852714	Ex9MD2H TM 250 3P IEC	1/8
4	125A	852715	Ex9MD2H TM 125 4P4T IEC	1/8
4	160A	852716	Ex9MD2H TM 160 4P4T IEC	1/8
4	180A	852717	Ex9MD2H TM 180 4P4T IEC	1/8
4	200A	852718	Ex9MD2H TM 200 4P4T IEC	1/8
4	225A	852719	Ex9MD2H TM 225 4P4T IEC	1/8
4	250A	852720	Ex9MD2H TM 250 4P4T IEC	1/8

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Moulded Case Circuit Breakers Ex9M DC TM

Version Ex9MD3B up to 400 A, I_{cu} = 25 kA

- 3 (up to 750 V DC) and 4-pole (up to 1 000 V DC) Moulded Case Circuit Breakers
- $I_{cs} = I_{cu}$ = 25 kA at 1000 V DC
- I_r can be set in range (0.7 — 1.0) × I_n
- I_i can be set in range (5 — 10) × I_n
- Mounting screws, screw type terminals as well as phase barriers in the scope of delivery

Poles	Rated current i_n	Part no.	Model	Packing
3	250A	852721	Ex9MD3B TM 250 3P IEC	1/2
3	315A	852722	Ex9MD3B TM 315 3P IEC	1/2
3	350A	852723	Ex9MD3B TM 350 3P IEC	1/2
3	400A	852724	Ex9MD3B TM 400 3P IEC	1/2
4	250A	852725	Ex9MD3B TM 250 4P4T IEC	1/2
4	315A	852726	Ex9MD3B TM 315 4P4T IEC	1/2
4	350A	852727	Ex9MD3B TM 350 4P4T IEC	1/2
4	400A	852728	Ex9MD3B TM 400 4P4T IEC	1/2

Version Ex9MD3S up to 400 A, I_{cu} = 35 kA

- 3 (up to 750 V DC) and 4-pole (up to 1 000 V DC) Moulded Case Circuit Breakers
- $I_{cs} = I_{cu}$ = 35 kA at 1000 V DC
- I_r can be set in range (0.7 — 1.0) × I_n
- I_i can be set in range (5 — 10) × I_n
- Mounting screws, screw type terminals as well as phase barriers in the scope of delivery

Poles	Rated current i_n	Part no.		Model	Packing
3	250A	852729	DC MCCB	Ex9MD3B TM 250 3P IEC	1/2
3	315A	852730	DC MCCB	Ex9MD3B TM 315 3P IEC	1/2
3	350A	852731	DC MCCB	Ex9MD3B TM 350 3P IEC	1/2
3	400A	852732	DC MCCB	Ex9MD3B TM 400 3P IEC	1/2
4	250A	852733	DC MCCB	Ex9MD3B TM 250 4P4T IEC	1/2
4	315A	852734	DC MCCB	Ex9MD3B TM 315 4P4T IEC	1/2
4	350A	852735	DC MCCB	Ex9MD3B TM 350 4P4T IEC	1/2
4	400A	852736	DC MCCB	Ex9MD3B TM 400 4P4T IEC	1/2

Version Ex9MD3N up to 400 A, I_{cu} = 50 kA

- 3 (up to 750 V DC) and 4-pole (up to 1 000 V DC) Moulded Case Circuit Breakers
- $I_{cs} = I_{cu}$ = 50 kA at 1000 V DC
- I_r can be set in range (0.7 — 1.0) × I_n
- I_i can be set in range (5 — 10) × I_n
- Mounting screws, screw type terminals as well as phase barriers in the scope of delivery

Poles	Rated current i_n	Part no.		Model	Packing
3	250A	852737	DC MCCB	Ex9MD3N TM 250 3P IEC	1/2
3	315A	852738	DC MCCB	Ex9MD3N TM 315 3P IEC	1/2
3	350A	852739	DC MCCB	Ex9MD3N TM 350 3P IEC	1/2
3	400A	852740	DC MCCB	Ex9MD3N TM 400 3P IEC	1/2
4	250A	852741	DC MCCB	Ex9MD3N TM 250 4P4T IEC	1/2
4	315A	852742	DC MCCB	Ex9MD3N TM 315 4P4T IEC	1/2
4	350A	852743	DC MCCB	Ex9MD3N TM 350 4P4T IEC	1/2
4	400A	852744	DC MCCB	Ex9MD3N TM 400 4P4T IEC	1/2

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Moulded Case Circuit Breakers Ex9M DC TM

Version Ex9MD3Q up to 400 A, I_{cu} = 70 kA

- 3 (up to 750 V DC) and 4-pole (up to 1 000 V DC) Moulded Case Circuit Breakers
- $I_{cs} = I_{cu}$ = 70 kA at 1000 V DC
- I_r can be set in range (0.7 — 1.0) × I_n
- I_i can be set in range (5 — 10) × I_n
- Mounting screws, screw type terminals as well as phase barriers in the scope of delivery

Poles	Rated current i_n	Part no.		Model	Packing
3	250A	852745	DC MCCB	Ex9MD3Q TM 250 3P IEC	1/2
3	315A	852746	DC MCCB	Ex9MD3Q TM 315 3P IEC	1/2
3	350A	852747	DC MCCB	Ex9MD3Q TM 350 3P IEC	1/2
3	400A	852748	DC MCCB	Ex9MD3Q TM 400 3P IEC	1/2
4	250A	852749	DC MCCB	Ex9MD3Q TM 250 4P4T IEC	1/2
4	315A	852750	DC MCCB	Ex9MD3Q TM 315 4P4T IEC	1/2
4	350A	852751	DC MCCB	Ex9MD3Q TM 350 4P4T IEC	1/2
4	400A	852752	DC MCCB	Ex9MD3Q TM 400 4P4T IEC	1/2

Version Ex9MD3H up to 400 A, I_{cu} = 100 kA

- 3 (up to 750 V DC) and 4-pole (up to 1 000 V DC) Moulded Case Circuit Breakers
- $I_{cs} = I_{cu}$ = 100 kA at 1000 V DC
- I_r can be set in range (0.7 — 1.0) × I_n
- I_i can be set in range (5 — 10) × I_n
- Mounting screws, screw type terminals as well as phase barriers in the scope of delivery

Poles	Rated current i_n	Part no.		Model	Packing
3	250A	852753	DC MCCB	Ex9MD3H TM 250 3P IEC	1/2
3	315A	852754	DC MCCB	Ex9MD3H TM 315 3P IEC	1/2
3	350A	852755	DC MCCB	Ex9MD3H TM 350 3P IEC	1/2
3	400A	852756	DC MCCB	Ex9MD3H TM 400 3P IEC	1/2
4	250A	852757	DC MCCB	Ex9MD3H TM 250 4P4T IEC	1/2
4	315A	852758	DC MCCB	Ex9MD3H TM 315 4P4T IEC	1/2
4	350A	852759	DC MCCB	Ex9MD3H TM 350 4P4T IEC	1/2
4	400A	852760	DC MCCB	Ex9MD3H TM 400 4P4T IEC	1/2

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Moulded Case Circuit Breakers Ex9M DC TM

Version Ex9MD4B up to 630 A, I_{cu} = 25 kA

- 3 (up to 750 V DC) and 4-pole (up to 1 000 V DC) Moulded Case Circuit Breakers
- $I_{cs} = I_{cu}$ = 25 kA at 1000 V DC
- I_r can be set in range (0.7 — 1.0) × I_n
- I_i can be set in range (5 — 10) × I_n
- Mounting screws, screw type terminals as well as phase barriers in the scope of delivery

Poles	Rated current i_n	Part no.	Model	Packing
3	400A	852761	Ex9MD4B TM 400 3P IEC	1/1
3	500A	852762	Ex9MD4B TM 500 3P IEC	1/1
3	630A	852763	Ex9MD4B TM 630 3P IEC	1/1
4	400A	852764	Ex9MD4B TM 400 4P4T IEC	1/1
4	500A	852765	Ex9MD4B TM 500 4P4T IEC	1/1
4	630A	852766	Ex9MD4B TM 630 4P4T IEC	1/1

Version Ex9MD4S up to 630 A, I_{cu} = 36 kA

- 3 (up to 750 V DC) and 4-pole (up to 1 000 V DC) Moulded Case Circuit Breakers
- $I_{cs} = I_{cu}$ = 36 kA at 1000 V DC
- I_r can be set in range (0.7 — 1.0) × I_n
- I_i can be set in range (5 — 10) × I_n
- Mounting screws, screw type terminals as well as phase barriers in the scope of delivery

Poles	Rated current i_n	Part no.	Model	Packing
3	400A	852767	Ex9MD4S TM 400 3P IEC	1/1
3	500A	852768	Ex9MD4S TM 500 3P IEC	1/1
3	630A	852769	Ex9MD4S TM 630 3P IEC	1/1
4	400A	852770	Ex9MD4S TM 400 4P4T IEC	1/1
4	500A	852771	Ex9MD4S TM 500 4P4T IEC	1/1
4	630A	852772	Ex9MD4S TM 630 4P4T IEC	1/1

Version Ex9MD4N up to 630 A, I_{cu} = 50 kA

- 3 (up to 750 V DC) and 4-pole (up to 1 000 V DC) Moulded Case Circuit Breakers
- $I_{cs} = I_{cu}$ = 50 kA at 1000 V DC
- I_r can be set in range (0.7 — 1.0) × I_n
- I_i can be set in range (5 — 10) × I_n
- Mounting screws, screw type terminals as well as phase barriers in the scope of delivery

Poles	Rated current i_n	Part no.	Model	Packing
3	400A	852773	Ex9MD4N TM 400 3P IEC	1/1
3	500A	852774	Ex9MD4N TM 500 3P IEC	1/1
3	630A	852775	Ex9MD4N TM 630 3P IEC	1/1
4	400A	852776	Ex9MD4N TM 400 4P4T IEC	1/1
4	500A	852777	Ex9MD4N TM 500 4P4T IEC	1/1
4	630A	852778	Ex9MD4N TM 630 4P4T IEC	1/1

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Moulded Case Circuit Breakers Ex9M DC TM

Version Ex9MD4Q up to 630 A, I_{cu} = 70 kA

- 3 (up to 750 V DC) and 4-pole (up to 1 000 V DC) Moulded Case Circuit Breakers
- $I_{cs} = I_{cu}$ = 70 kA at 1000 V DC
- I_r can be set in range (0.7 — 1.0) × I_n
- I_i can be set in range (5 — 10) × I_n
- Mounting screws, screw type terminals as well as phase barriers in the scope of delivery

Poles	Rated current i_n	Part no.	Model	Packing
3	400A	852779	Ex9MD4Q TM 400 3P IEC	1/1
3	500A	852780	Ex9MD4Q TM 500 3P IEC	1/1
3	630A	852781	Ex9MD4Q TM 630 3P IEC	1/1
4	400A	852782	Ex9MD4Q TM 400 4P4T IEC	1/1
4	500A	852783	Ex9MD4Q TM 500 4P4T IEC	1/1
4	630A	852784	Ex9MD4Q TM 630 4P4T IEC	1/1

Version Ex9MD4H up to 630 A, I_{cu} = 100 kA

- 3 (up to 750 V DC) and 4-pole (up to 1 000 V DC) Moulded Case Circuit Breakers
- $I_{cs} = I_{cu}$ = 100 kA at 1000 V DC
- I_r can be set in range (0.7 — 1.0) × I_n
- I_i can be set in range (5 — 10) × I_n
- Mounting screws, screw type terminals as well as phase barriers in the scope of delivery

Poles	Rated current i_n	Part no.	Model	Packing
3	400A	852785	Ex9MD4H TM 400 3P IEC	1/1
3	500A	852786	Ex9MD4H TM 500 3P IEC	1/1
3	630A	852787	Ex9MD4H TM 630 3P IEC	1/1
4	400A	852788	Ex9MD4H TM 400 4P4T IEC	1/1
4	500A	852789	Ex9MD4H TM 500 4P4T IEC	1/1
4	630A	852790	Ex9MD4H TM 630 4P4T IEC	1/1

Technical data p. 118

Moulded Case Circuit Breakers Ex9M DC TM

Version Ex9MD5B up to 800 A, I_{cu} = 25 kA

- 3 (up to 750 V DC) and 4-pole (up to 1 000 V DC) Moulded Case Circuit Breakers
- $I_{cs} = I_{cu}$ = 25 kA at 1000 V DC
- I_r can be set in range (0.7 — 1.0) × I_n
- I_i can be set in range (5 — 10) × I_n
- Mounting screws, screw type terminals as well as phase barriers in the scope of delivery

Poles	Rated current i_n	Part no.	Model	Packing
3	630A	852791	Ex9MD5B TM 630 3P IEC	1/1
3	700A	852792	Ex9MD5B TM 700 3P IEC	1/1
3	800A	852793	Ex9MD5B TM 800 3P IEC	1/1
4	630A	852794	Ex9MD5B TM 630 4P4T IEC	1/1
4	700A	852795	Ex9MD5B TM 700 4P4T IEC	1/1
4	800A	852796	Ex9MD5B TM 800 4P4T IEC	1/1

Version Ex9MD5S up to 800 A, I_{cu} = 36 kA

- 3 (up to 750 V DC) and 4-pole (up to 1 000 V DC) Moulded Case Circuit Breakers
- $I_{cs} = I_{cu}$ = 36 kA at 1000 V DC
- I_r can be set in range (0.7 — 1.0) × I_n
- I_i can be set in range (5 — 10) × I_n
- Mounting screws, screw type terminals as well as phase barriers in the scope of delivery

Poles	Rated current i_n	Part no.	Model	Packing
3	630A	852797	Ex9MD5S TM 630 3P IEC	1/1
3	700A	852798	Ex9MD5S TM 700 3P IEC	1/1
3	800A	852799	Ex9MD5S TM 800 3P IEC	1/1
4	630A	852800	Ex9MD5S TM 630 4P4T IEC	1/1
4	700A	852801	Ex9MD5S TM 700 4P4T IEC	1/1
4	800A	852802	Ex9MD5S TM 800 4P4T IEC	1/1

Version Ex9MD5N up to 800 A, I_{cu} = 50 kA

- 3 (up to 750 V DC) and 4-pole (up to 1 000 V DC) Moulded Case Circuit Breakers
- $I_{cs} = I_{cu}$ = 50 kA at 1000 V DC
- I_r can be set in range (0.7 — 1.0) × I_n
- I_i can be set in range (5 — 10) × I_n
- Mounting screws, screw type terminals as well as phase barriers in the scope of delivery

Poles	Rated current i_n	Part no.	Model	Packing
3	630A	852803	Ex9MD5N TM 630 3P IEC	1/1
3	700A	852804	Ex9MD5N TM 700 3P IEC	1/1
3	800A	852805	Ex9MD5N TM 800 3P IEC	1/1
4	630A	852806	Ex9MD5N TM 630 4P4T IEC	1/1
4	700A	852807	Ex9MD5N TM 700 4P4T IEC	1/1
4	800A	852808	Ex9MD5N TM 800 4P4T IEC	1/1

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Moulded Case Circuit Breakers Ex9M DC TM

Version Ex9MD5Q up to 800 A, I_{cu} = 70 kA

- 3 (up to 750 V DC) and 4-pole (up to 1 000 V DC) Moulded Case Circuit Breakers
- $I_{cs} = I_{cu}$ = 70 kA at 1000 V DC
- I_r can be set in range (0.7 — 1.0) × I_n
- I_i can be set in range (5 — 10) × I_n
- Mounting screws, screw type terminals as well as phase barriers in the scope of delivery

Poles	Rated current i_n	Part no.	Model	Packing
3	630A	852809	Ex9MD5Q TM 630 3P IEC	1/1
3	700A	852810	Ex9MD5Q TM 700 3P IEC	1/1
3	800A	852811	Ex9MD5Q TM 800 3P IEC	1/1
4	630A	852812	Ex9MD5Q TM 630 4P4T IEC	1/1
4	700A	852813	Ex9MD5Q TM 700 4P4T IEC	1/1
4	800A	852814	Ex9MD5Q TM 800 4P4T IEC	1/1

Version Ex9MD5H up to 800 A, I_{cu} = 100 kA

- 3 (up to 750 V DC) and 4-pole (up to 1 000 V DC) Moulded Case Circuit Breakers
- $I_{cs} = I_{cu}$ = 100 kA at 1000 V DC
- I_r can be set in range (0.7 — 1.0) × I_n
- I_i can be set in range (5 — 10) × I_n
- Mounting screws, screw type terminals as well as phase barriers in the scope of delivery

Poles	Rated current i_n	Part no.	Model	Packing
3	630A	852815	Ex9MD5H TM 630 3P IEC	1/1
3	700A	852816	Ex9MD5H TM 700 3P IEC	1/1
3	800A	852817	Ex9MD5H TM 800 3P IEC	1/1
4	630A	852818	Ex9MD5H TM 630 4P4T IEC	1/1
4	700A	852819	Ex9MD5H TM 700 4P4T IEC	1/1
4	800A	852820	Ex9MD5H TM 800 4P4T IEC	1/1

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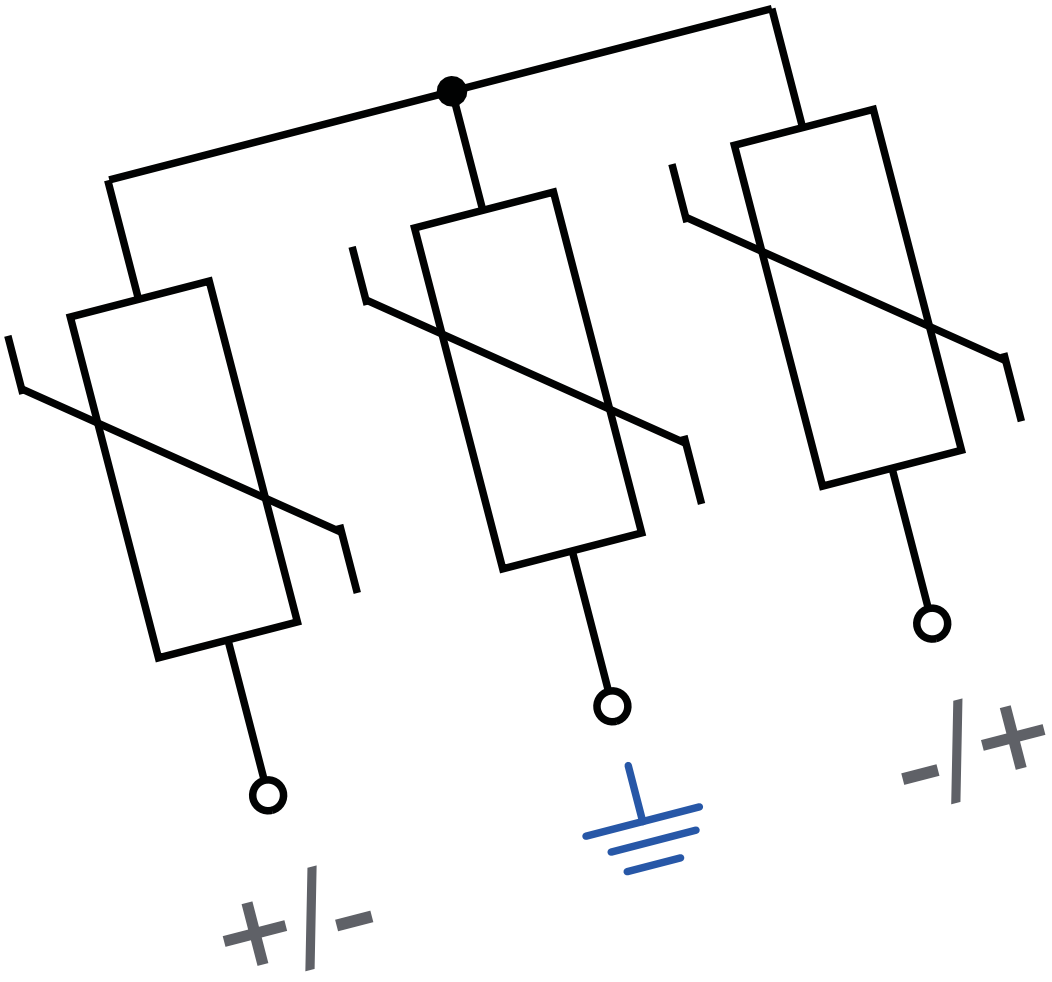
Technical Data



Technical Data Ex9M1 DC TM

DC TM Moulded Case Circuit Breakers up to 160 A

General parameters

Suitable for commercial as well as industrial applications		
I_r can be set in range (0.7 — 1.0) × I_n		
I_i can be set in range (5 — 10) × I_n for 125 A and 160 A types, otherwise is fixed at 10 × I_n		
I_{iN} fixed at 10 × I_n		
Internal accessories		
Auxiliary contact unit	AX21M	852508
Alarm contact unit	AL21M	852509
Shunt trip releases	SHT21	
Undervoltage releases	UVT21	
Max. number of installed internal accessories is 2 pcs of AX21M, 1 pc of AL21M and 1 pc of a release (SHT21 or UVT21)		
External accessories		
Direct rotary handle	RHD21	20303
Extended rotary handle	ERH21	20302
Remote motor operators	MOD21	
Terminal cover, short	TCV21 3P, 4P	20304, 20305
Terminal cover, long	TCE21 3P, 4P	20306, 20307
Phase barrier	PHS21	
Connection terminals	MC21	
DIN-rail adapter	DRA21	
Plug-in base	PIA 21	
Mounting screws, screw type terminals as well as phase barriers in the scope of delivery		

Derating coefficient of Tripping Characteristics on accessories combination

Combined accessory	I_n (T) [A]					
	16 — 50 A	63 A	80 A	100 A	125 A	160
PIA 21	1	1	1	1	0.95	0.95

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Technical Data Ex9M1 DC TM

DC TM Moulded Case Circuit Breakers up to 160 A

Electrical parameters

	Ex9M1B	Ex9M1S	Ex9M1N	Ex9M1Q	Ex9M1H
Tested according to	IEC/EN 60947-2				
Rated op. voltage U_e	500 / 750 / 1000 V DC				
Rated insulation voltage U_i	1 000 V				
Rated impulse withstand voltage U_{imp}	8 kV				
Rated frequency	DC				
Rated ultimate short-circuit breaking capacity I_{cu}	25 kA / 1000V	36 kA / 1000V	50 kA / 1000V	70 kA / 1000V	100 kA / 1000V
Rated service short-circuit breaking capacity I_{cs}	25 kA / 1000V	36 kA / 1000V	50 kA / 1000V	70 kA / 1000V	100 kA / 1000V
Rated current	16 / 20 / 25 / 32 / 40 / 50 / 63 / 80 / 100 / 125 / 160 A				
Utilization category	A				
Mechanical service life	15 000 operation cycles				
Electrical service life	2 000 operation cycles / 1000 V				
Total disconnection time at short circuit	< 2 ms				
Line voltage connection	arbitrary above or below				

Dependence of Tripping Characteristics on Ambient Temperature

T [°C]	I_n (T) [A]										
	16 A	**20 A**	**25 A**	**32 A**	**40 A**	**50 A**	**63 A**	**80 A**	**100 A**	**125 A**	**160 A**
-40	22.5	28	35	45	56	70	88	112	140	175	224
-35	22	27.5	34	44	55	68.5	86.5	110	137	172	220
-25	20.5	26.5	33	42	53	66	83	106	132	165	212
-15	20	25.5	32	41	51	64	80	102	127	159	204
-5	19.5	24.5	30.5	39	49	61	77	98	122	153	196
0	19	24	30	38	48	60	75	96	120	150	192
10	18.5	23	28	37	46	57.5	72	92	115	144	184
20	17.5	22	27	35	44	55	69	88	110	137	176
30	17	21	26	33	42	52.5	66	84	105	131	168
40	16	20	25	32	40	50	63	80	100	125	160
50	15	19.5	24	30.5	37	47.5	58.5	74.5	93	116	149
60	14.5	18.5	22.5	29	33.5	45	53	67	84	105	135
70	14	18	22	28	29	40	46	56	80	91	117

Power dissipation characteristics

I_n	**16 A**	**20 A**	**25 A**	**32 A**	**40 A**	**50 A**	**63 A**	**80 A**	**100 A**	**125 A**	**160 A**
Pole resistance (mΩ)	8.8	8.8	5.2	4.5	2.6	1.8	1.7	1.3	0.88	0.8	0.8
Pole power dissipation (W)	2.3	3.5	3.3	4.6	4.2	4.5	6.7	8.3	8.8	12.5	20.5

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Technical Data Ex9M1 DC TM

DC TM Moulded Case Circuit Breakers up to 160 A

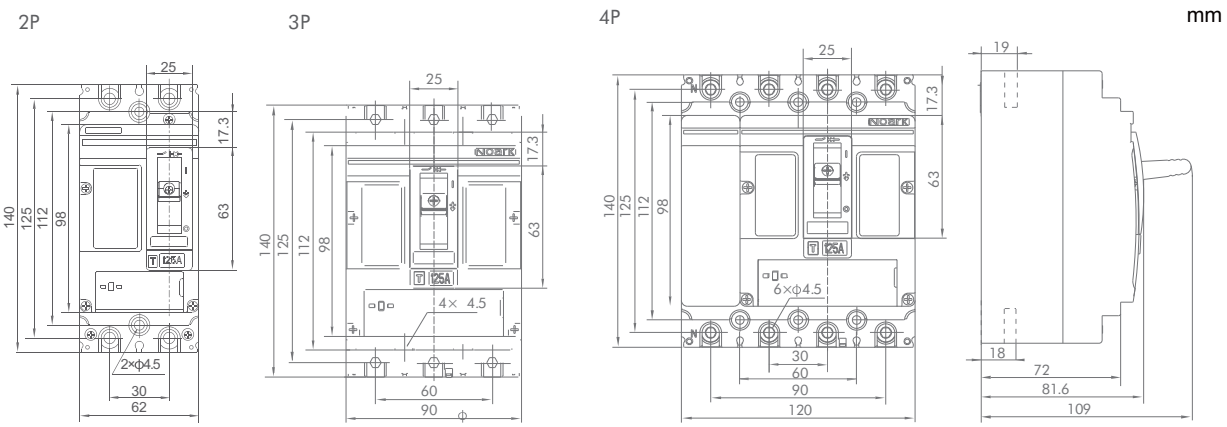
Mechanical parameters

Device width 3P / 4P	90 mm / 120 mm
Device height	140 mm
Device depth	81.6 mm
Mounting	onto panel
Degree of protection	IP40, IP20 terminals
Terminals	box
Terminal capacity	4 — 95 mm^2
Fastening torque of terminals	8 Nm
Ambient temperature	-40 — +70 °C
Relative humidity	≤ 50 % at 40 °C, ≤ 90 % monthly average
Pollution degree	3
Weight 3P / 4P	1.2 kg / 1.7 kg
Mounting position	vertical, can be rotated by 90° in each axis

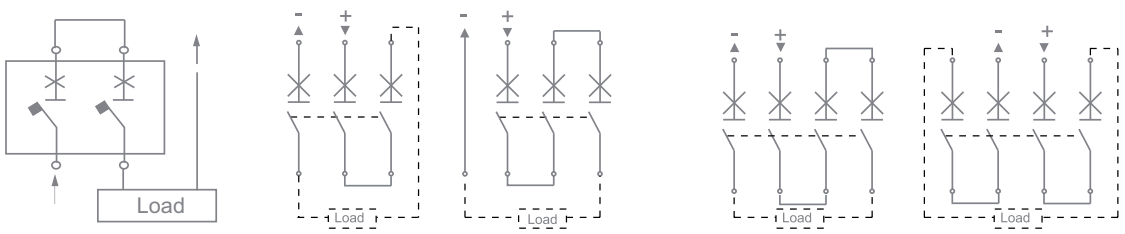
Derating coefficient of technical parameters based on altitude

Altitude	**≤ 2 000 m**	**3 000 m**	**4 000 m**	**5 000 m**
Derrating op. current I_n coefficient	1	0.96	0.93	0.9
Maximum rated op. voltage U_e	1 000 V DC	900 V DC	850 V DC	800 V DC
Rated insulation voltage U_i	1 000 V DC	930 V DC	870 V DC	800 V DC
Rated impulse withstand voltage U_{imp}	8 kV	8 kV	8 kV	8 kV
Dielectric properties (U_{imp}=8 kV)	3 110 V DC	2 892 V DC	2 705 V DC	2 488 V DC

Dimensions



Wiring diagram



2P / 500 V DC | 3P / 750 V DC | 4P / 1 000 V DC

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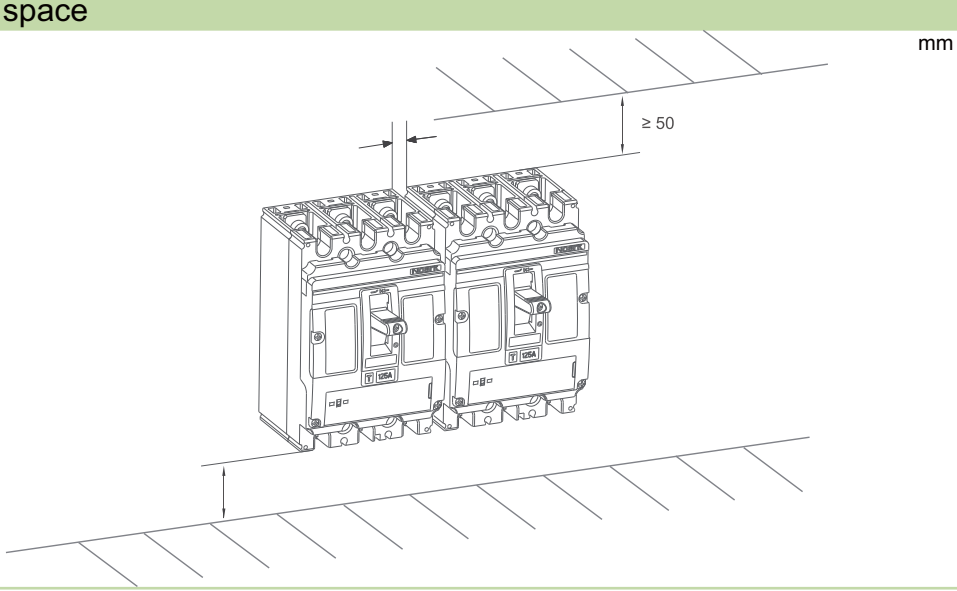
Technical Data Ex9M1 DC TM

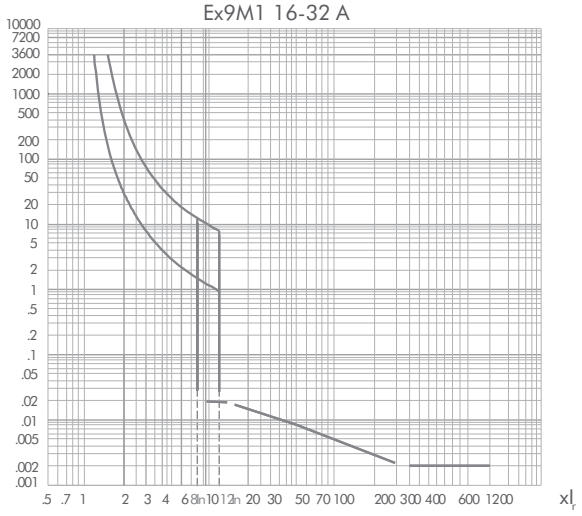
DC TM Moulded Case Circuit Breakers up to 160 A

Installation space

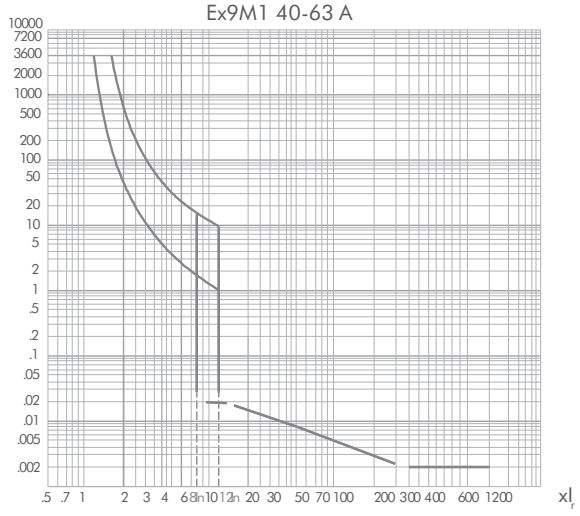


Tripping characteristics

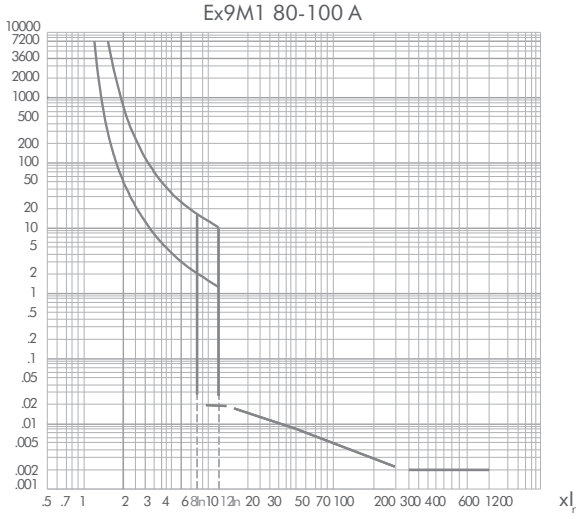
Ex9M1 16-32 A



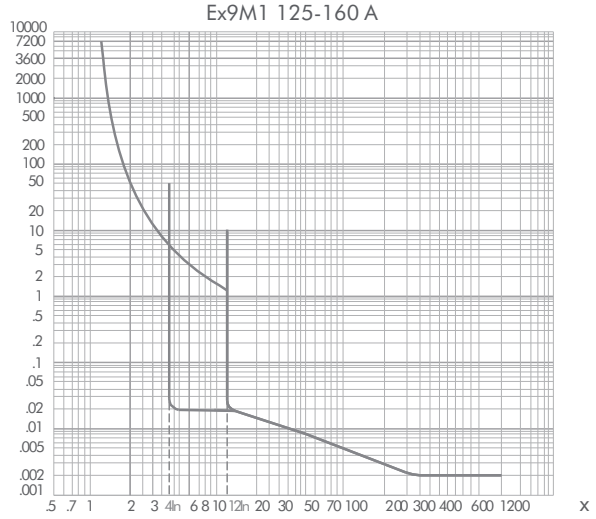
Ex9M1 40-63 A



Ex9M1 80-100 A



Ex9M1 125-160 A



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Technical Data Ex9M2 DC TM

DC TM Moulded Case Circuit Breakers up to 250 A

General parameters

Suitable for commercial as well as industrial applications		
I_r can be set in range (0.7 — 1.0) × I_n		
I_i can be set in range (7 — 12) × I_n for 125 A and (5 — 10) × I_n for other devices up to 250 A		
$I_{iN} = I_i$		
Internal accessories		
Auxiliary contact unit	AX21M	
Alarm contact unit	AL21M	
Shunt trip releases	SHT22	
Undervoltage releases	UVT22	
Max. number of installed internal accessories is 2 pcs of AX21M, 1 pc of AL21M and 1 pc of a release (SHT22 or UVT22)		
External accessories		
Direct rotary handle	RHD22	
Extended rotary handle	ERH22	
Remote motor operators	MOD22	
Terminal cover, short	TCV22 3P, 4P	
Terminal cover, long	TCE22 3P, 4P	
Phase barrier	PHS22	
Connection terminals	MC22	
DIN-rail adapter	DRA22	
Plug-in base	PIA 22	
Mounting screws, screw type terminals as well as phase barriers in the scope of delivery		

Derating coefficient of Tripping Characteristics on accessories combination

Combined accessory	I_n (T) [A]					
	125 A	160 A	180 A	200 A	225 A	250 A
PIA 22	1	1	1	0.95	0.95	0.95

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Technical Data Ex9M2 DC TM

DC TM Moulded Case Circuit Breakers up to 250 A

Electrical parameters

	Ex9M2B	Ex9M2S	Ex9M2N	Ex9M2Q	Ex9M2H
Tested according to	IEC/EN 60947-2				
Rated op. voltage U_e	500/ 750 / 1000 V DC				
Rated insulation voltage U_i	1 000 V				
Rated impulse withstand voltage U_{imp}	8 kV				
Rated frequency	DC				
Rated ultimate short-circuit breaking capacity I_{cu}	25 kA / 1000V	36 kA / 1000V	50 kA / 1000V	70 kA / 1000V	100 kA / 1000V
Rated service short-circuit breaking capacity I_{cs}	25 kA / 1000V	36 kA / 1000V	50 kA / 1000V	70 kA / 1000V	100 kA / 1000V
Rated current	125 / 160 / 180 / 200 / 225 / 250 A				
Utilization category	A				
Mechanical service life	15 000 operation cycles				
Electrical service life	1 500 operation cycles / 1000 V				
Total disconnection time at short circuit	< 2 ms				
Line voltage connection	arbitrary above or below				

Dependence of Tripping Characteristics on Ambient Temperature

T [°C]	I_n (T) [A]					
	125 A	160 A	180 A	200 A	225 A	250 A
-40	175	224	252	280	315	35
-35	172	220	247	275	309	343
-25	165	212	238	265	300	332
-15	159	204	229	255	288	319
-5	153	196	220	245	276	306
0	150	192	212	240	270	300
10	144	184	207	230	259	287
20	137	176	198	220	247	275
30	131	168	189	210	236	262
40	125	160	180	200	225	250
50	118	152	171	190	213	237
60	106	136	157	175	196	218
70	96	120	144	166	180	207

Power dissipation characteristics

I_n	125 A	160 A	180 A	200 A	225 A	250 A
Pole resistance (mΩ)	0.7	0.55	0.55	0.55	0.4	0.4
Pole power dissipation (W)	10.9	14.1	17.8	22	20.3	25

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Technical Data Ex9M2 DC TM

DC TM Moulded Case Circuit Breakers up to 250 A

Mechanical parameters

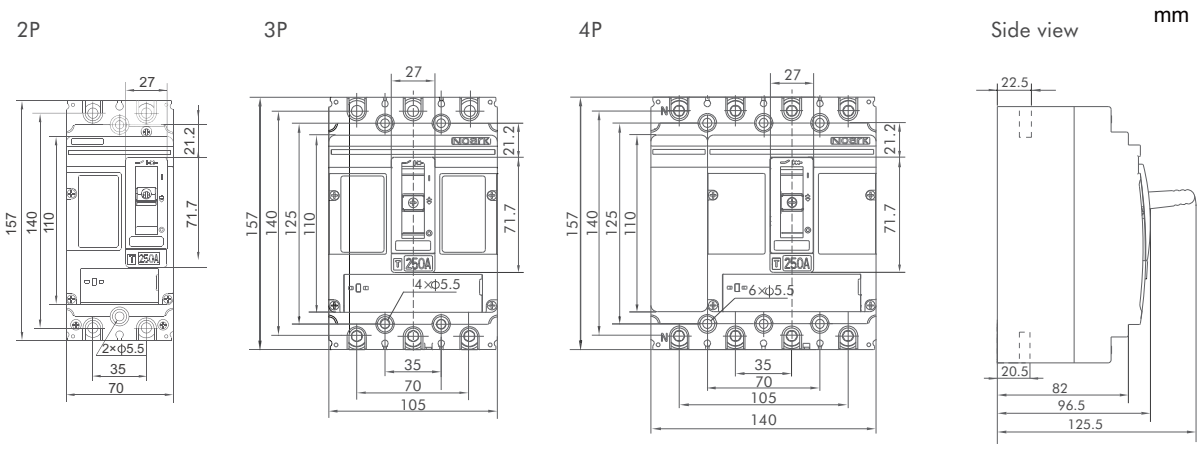
Device width 3P / 4P	105 mm / 140 mm
Device height	157 mm
Device depth	96.5 mm
Mounting	onto panel
Degree of protection	IP40, IP20 terminals
Terminals	box
Terminal capacity	10 — 120 mm^2
Fastening torque of terminals	25 Nm
Ambient temperature	-40 — +70 °C
Relative humidity	≤ 50 % at 40 °C, ≤ 90 % monthly average
Pollution degree	3
Weight 3P / 4P	1.85 kg / 2.5 kg
Mounting position	vertical, can be rotated by 90° in each axis

Derating coefficient of technical parameters based on altitude

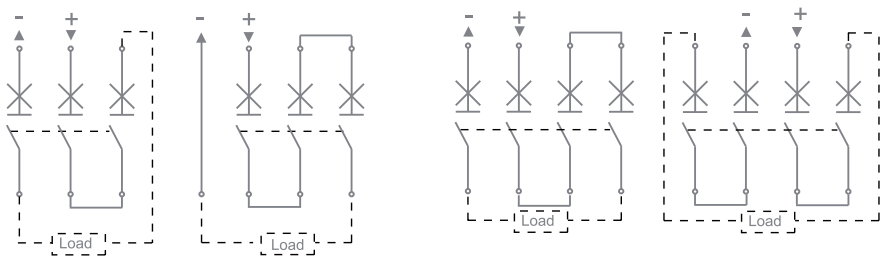
Altitude	**≤ 2 000 m**	**3 000 m**	**4 000 m**	**5 000 m**
Derrating op. current I_n coefficient	1	0.96	0.93	0.9
Maximum rated op. voltage U_e	1 000 V DC	900 V DC	850 V DC	800 V DC
Rated insulation voltage U_i	1 000 V DC	930 V DC	870 V DC	800 V DC
Rated impulse withstand voltage U_{imp}	8 kV	8 kV	8 kV	8 kV
Dielectric properties (U_{imp}=8 kV)	3 110 V DC	2 892 V DC	2 705 V DC	2 488 V DC

Dimensions

mm



Wiring diagram



3P / 750 V DC

4P / 1 000 V DC

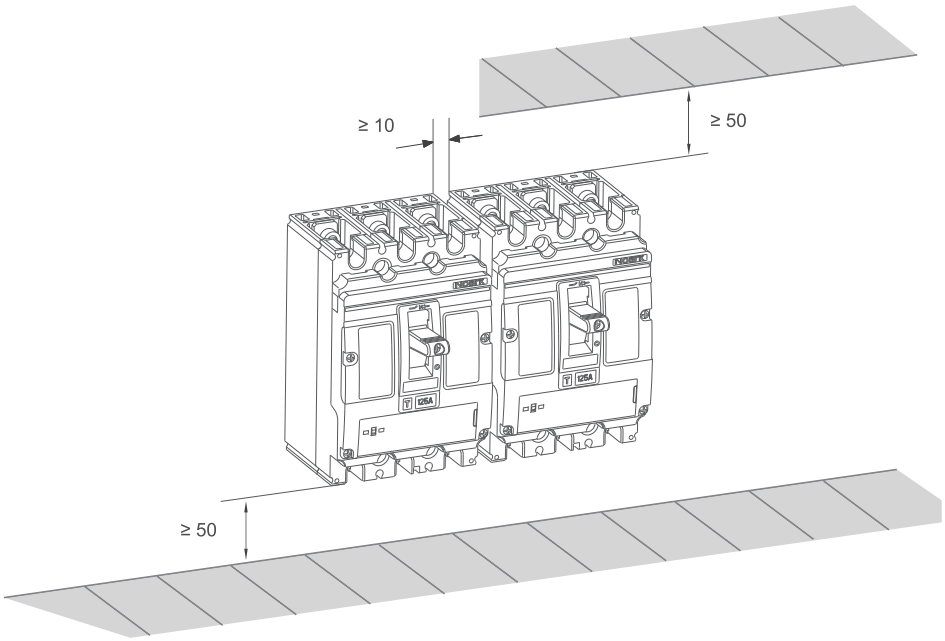
Ordering information p. 46

Technical Data Ex9M2 DC TM

DC TM Moulded Case Circuit Breakers up to 250 A

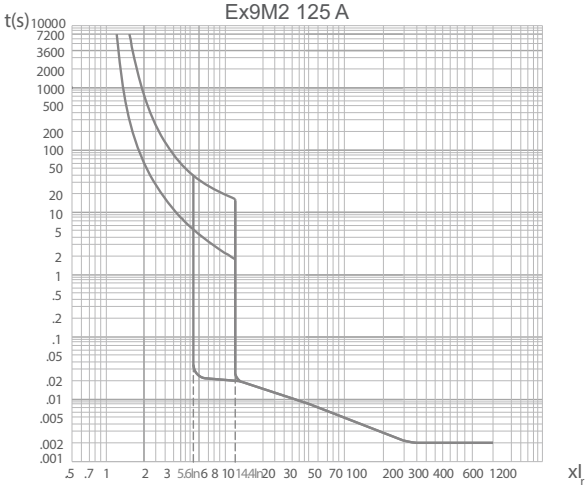
Installation space

mm

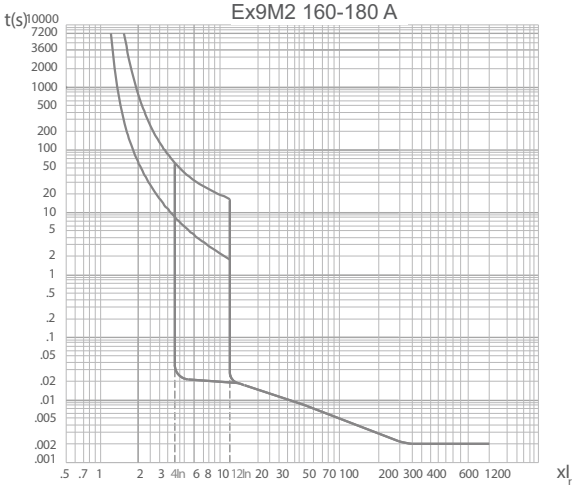


Tripping characteristics

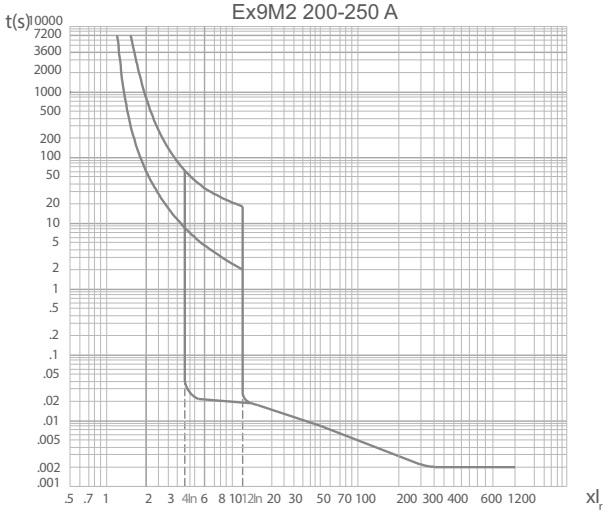
Ex9M2 125 A



Ex9M2 160-180 A



Ex9M2 200-250 A



Ordering information p. 46

Technical Data Ex9M3 DC TM

DC TM Moulded Case Circuit Breakers up to 400 A

General parameters

Suitable for commercial as well as industrial applications		
I_r can be set in range (0.7 — 1.0) × I_n		
I_i can be set in range (5 — 10) × I_n		
$I_{iN} = I_i$		
Internal accessories		
Auxiliary contact unit	AX21M	
Alarm contact unit	AL21M	
Shunt trip releases	SHT22	
Undervoltage releases	UVT22	
Max. number of installed internal accessories is 2 pcs of AX21M, 1 pc of AL21M and 1 pc of a release (SHT22 or UVT22)		
External accessories		
Direct rotary handle	RHD23	
Extended rotary handle	ERH23	
Remote motor operators	MOD23	
Terminal cover, short	TCV23 3P, 4P	
Terminal cover, long	TCE23 3P, 4P	
Phase barrier	PHS23	
Connection terminals	MC23	
Mounting screws, screw type terminals as well as phase barriers in the scope of delivery		

Ordering information p. 49

Technical Data Ex9M3 DC TM

DC TM Moulded Case Circuit Breakers up to 400 A

Electrical parameters

	Ex9M3B	Ex9M3S	Ex9M3N	Ex9M3Q	Ex9M3H
Tested according to	IEC/EN 60947-2				
Rated op. voltage U_e	750 / 1000 V DC				
Rated insulation voltage U_i	1 000 V				
Rated impulse withstand voltage U_{imp}	12 kV				
Rated frequency	DC				
Rated ultimate short-circuit breaking capacity I_{cu}	25 kA / 1000V	36 kA / 1000V	50 kA / 1000V	70 kA / 1000V	100 kA / 1000V
Rated service short-circuit breaking capacity I_{cs}	25 kA / 1000V	36 kA / 1000V	50 kA / 1000V	70 kA / 1000V	100 kA / 1000V
Rated current	250 / 315 / 350 / 400 A				
Utilization category	A				
Mechanical service life	15 000 operation cycles				
Electrical service life	1 500 operation cycles / 1000 V				
Total disconnection time at short circuit	< 2 ms				
Line voltage connection	arbitrary above or below				

Dependence of Tripping Characteristics on Ambient Temperature

T [°C]	I_n (T) [A]			
	250 A	315 A	350 A	400 A
-40	350	441	490	560
-35	343	433	481	550
-25	332	418	465	530
-15	319	402	447	510
-5	306	386	429	490
0	300	378	420	480
10	287	362	402	460
20	275	346	385	440
30	262	331	367	420
40	250	315	350	400
50	237	300	332	380
60	225	286	295	360
70	212	271	276	320

Power dissipation characteristics

I_n	250 A	315 A	350 A	400 A
Pole resistance (mΩ)	0.35	0.25	0.25	0.15
Pole power dissipation (W)	21.9	24.8	30.6	24

Ordering information p. 49

Technical Data Ex9M3 DC TM

DC TM Moulded Case Circuit Breakers up to 400 A

Mechanical parameters

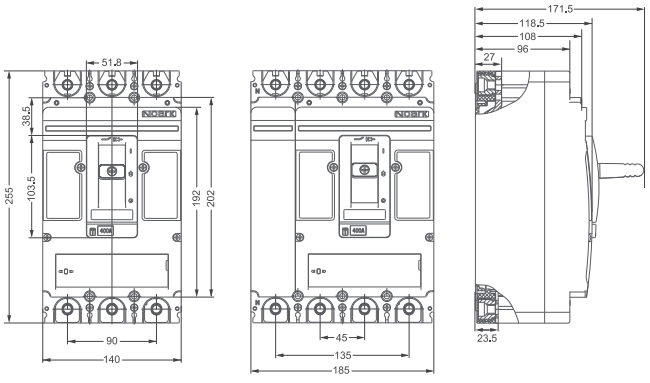
Device width 3P / 4P	140 mm / 185 mm
Device height	255 mm
Device depth	118.5 mm
Mounting	onto panel
Degree of protection	IP40, IP20 terminals
Terminals	M10 screws
Busbar thickness	≤ 8 mm
Busbar width	≤ 30 mm
Cable lug width	≤ 30 mm
Fastening torque of terminals	25 Nm
Ambient temperature	-40 — +70 °C
Relative humidity	≤ 50 % at 40 °C, ≤ 90 % monthly average
Pollution degree	3
Weight 3P / 4P	5.2 kg / 6.7 kg
Mounting position	vertical, can be rotated by 90° in each axis

Derating coefficient of technical parameters based on altitude

Altitude	**≤ 2 000 m**	**3 000 m**	**4 000 m**	**5 000 m**
Derrating op. current I_n coefficient	1	0.96	0.93	0.9
Maximum rated op. voltage U_e	1 000 V DC	900 V DC	850 V DC	800 V DC
Rated insulation voltage U_i	1 000 V DC	930 V DC	870 V DC	800 V DC
Rated impulse withstand voltage U_{imp}	12 kV	10 kV	8 kV	8 kV
Dielectric properties (U_{imp}=12 kV)	3 600 V DC	3 350 V DC	3 110 V DC	2 985 V DC

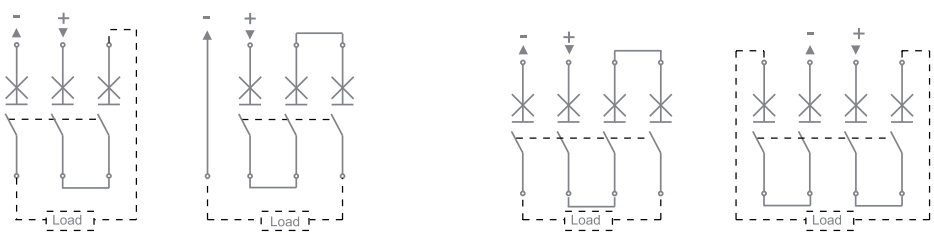
Dimensions

mm



3P 4P

Wiring diagram



3P / 750 V DC 4P / 1 000 V DC

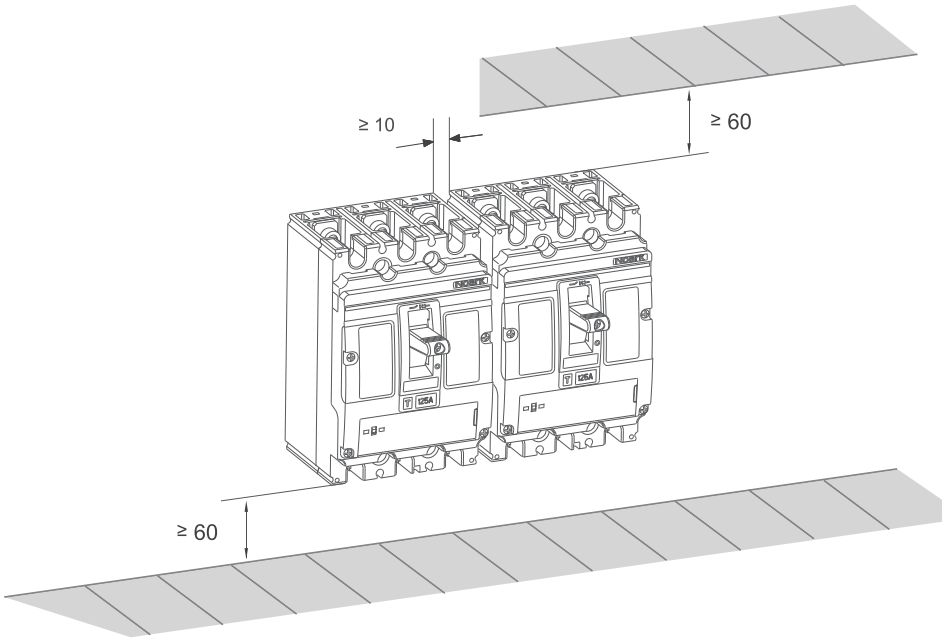
Ordering information p. 49

Technical Data Ex9M3 DC TM

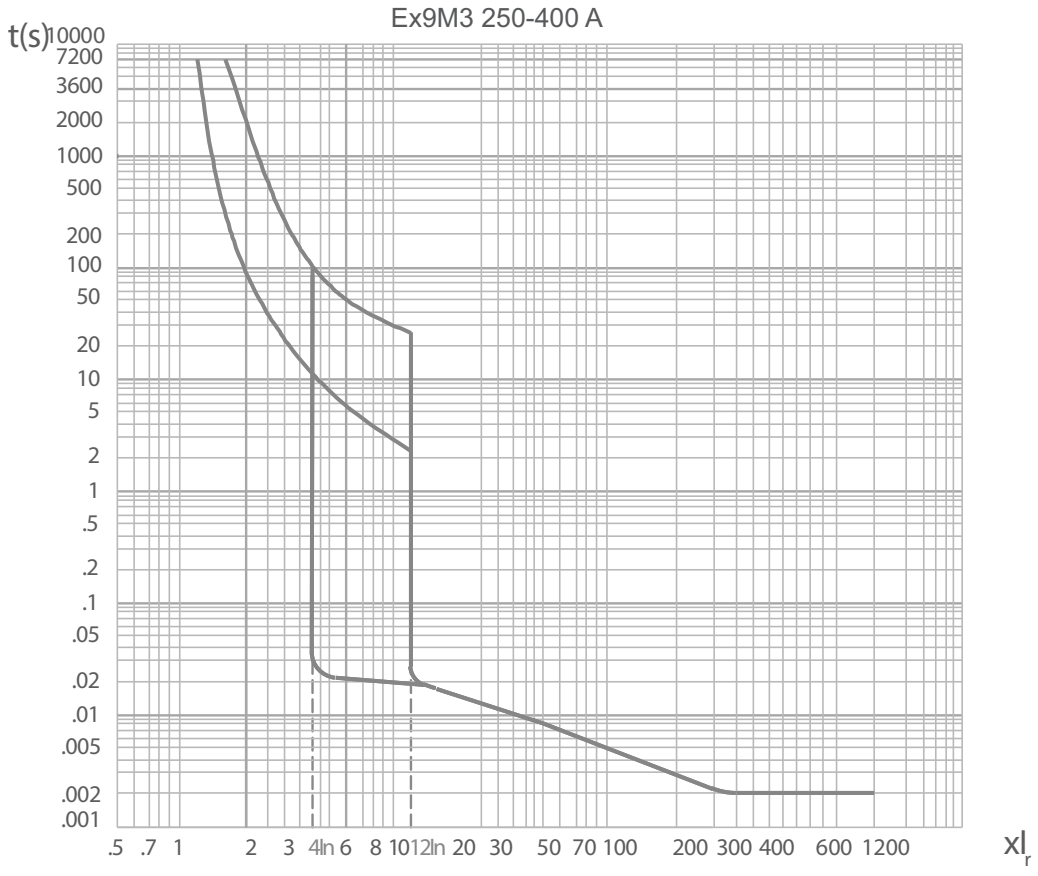
DC TM Moulded Case Circuit Breakers up to 400 A

Installation space

mm



Tripping characteristics



Ordering information p. 49

Technical Data Ex9M4 DC TM

DC TM Moulded Case Circuit Breakers up to 630 A

General parameters

Suitable for commercial as well as industrial applications		
I_r can be set in range (0.7 — 1.0) × I_n		
I_i can be set in range (5 — 10) × I_n		
$I_{iN} = I_i$		
Internal accessories		
Auxiliary contact unit	AX21M	
Alarm contact unit	AL21M	
Shunt trip releases	SHT24	
Undervoltage releases	UVT24	
Max. number of installed internal accessories is 2 pcs of AX21M, 1 pc of AL21M and 1 pc of a release (SHT24 or UVT24)		
External accessories		
Direct rotary handle	RHD24	
Extended rotary handle	ERH24	
Remote motor operators	MOD24	
Terminal cover, short	TCV24 3P, 4P	
Terminal cover, long	TCE24 3P, 4P	
Phase barrier	PHS24	
Connection terminals	MC24 W2	
Mounting screws, screw type terminals as well as phase barriers in the scope of delivery		

Ordering information p. 51

Technical Data Ex9M4 DC TM

DC TM Moulded Case Circuit Breakers up to 630 A

Electrical parameters

	Ex9M4B	Ex9M4S	Ex9M4N	Ex9M4Q	Ex9M4H
Tested according to	IEC/EN 60947-2				
Rated op. voltage U_e	750 / 1000 V DC				
Rated insulation voltage U_i	1 000 V				
Rated impulse withstand voltage U_{imp}	12 kV				
Rated frequency	DC				
Rated ultimate short-circuit breaking capacity I_{cu}	25 kA / 1000V	36 kA / 1000V	50 kA / 1000V	70 kA / 1000V	100 kA / 1000V
Rated service short-circuit breaking capacity I_{cs}	25 kA / 1000V	36 kA / 1000V	50 kA / 1000V	70 kA / 1000V	100 kA / 1000V
Rated current	400 / 500 / 630 A				
Utilization category	A				
Mechanical service life	10 000 operation cycles				
Electrical service life	1 500 operation cycles / 690 V AC				
Total disconnection time at short circuit	< 2 ms				
Line voltage connection	arbitrary above or below				

Dependence of Tripping Characteristics on Ambient Temperature

T [°C]	I_n (T) [A]		
	400 A	500 A	630 A
-40	560	700	882
-35	550	687	866
-25	530	662	836
-15	510	637	804
-5	490	612	772
0	480	600	756
10	460	575	724
20	440	550	693
30	420	525	661
40	400	500	630
50	390	490	580
60	370	460	530
70	320	400	490

Power dissipation characteristics

I_n	400 A	500 A	630 A
Pole resistance (mΩ)	0.08	0.08	0.08
Pole power dissipation (W)	12.8	20	31.8

Ordering information p. 51

Technical Data Ex9M4 DC TM

DC TM Moulded Case Circuit Breakers up to 630 A

Mechanical parameters

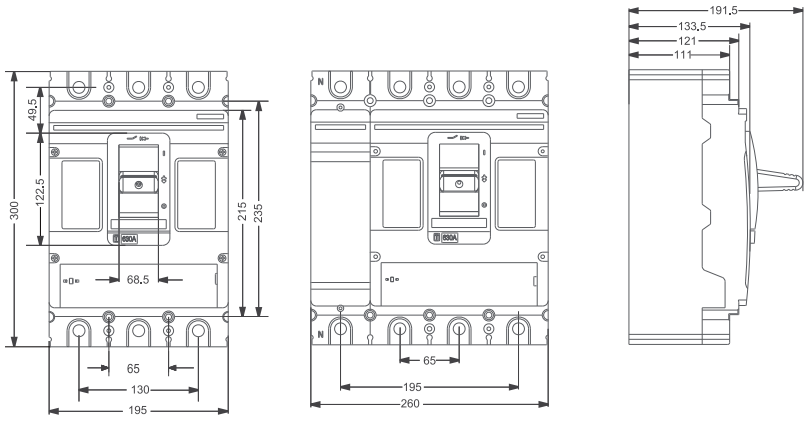
Device width 3P / 4P	195 mm / 260 mm
Device height	300 mm
Device depth	142 mm
Mounting	onto panel
Degree of protection	IP40, IP20 terminals
Terminals	M12 screws
Busbar thickness	≤ 10 mm
Busbar width	≤ 50 mm
Cable lug width	≤ 50 mm
Fastening torque of terminals	30 Nm
Ambient temperature	-40 — +70 °C
Relative humidity	≤ 50 % at 40 °C, ≤ 90 % monthly average
Pollution degree	3
Weight 3P / 4P	10.5 kg / 13.5 kg
Mounting position	vertical, can be rotated by 90° in each axis

Derating coefficient of technical parameters based on altitude

Altitude	**≤ 2 000 m**	**3 000 m**	**4 000 m**	**5 000 m**
Derrating op. current I_n coefficient	1	0.96	0.93	0.9
Maximum rated op. voltage U_e	1 000 V DC	900 V DC	850 V DC	800 V DC
Rated insulation voltage U_i	1 000 V DC	930 V DC	870 V DC	800 V DC
Rated impulse withstand voltage U_{imp}	12 kV	10 kV	8 kV	8 kV
Dielectric properties (U_{imp}=12 kV)	3 600 V DC	3 350 V DC	3 110 V DC	2 985 V DC

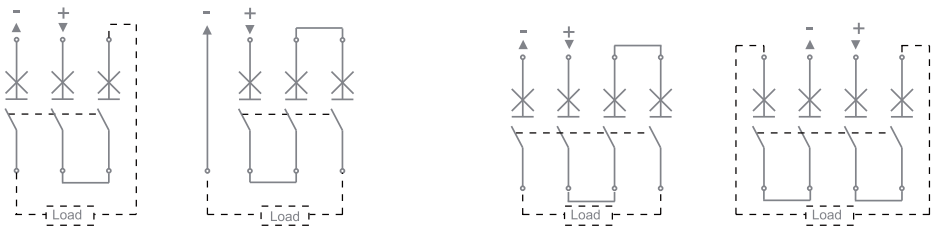
Dimensions

mm



3P 4P

Wiring diagram



3P / 750 V DC 4P / 1 000 V DC

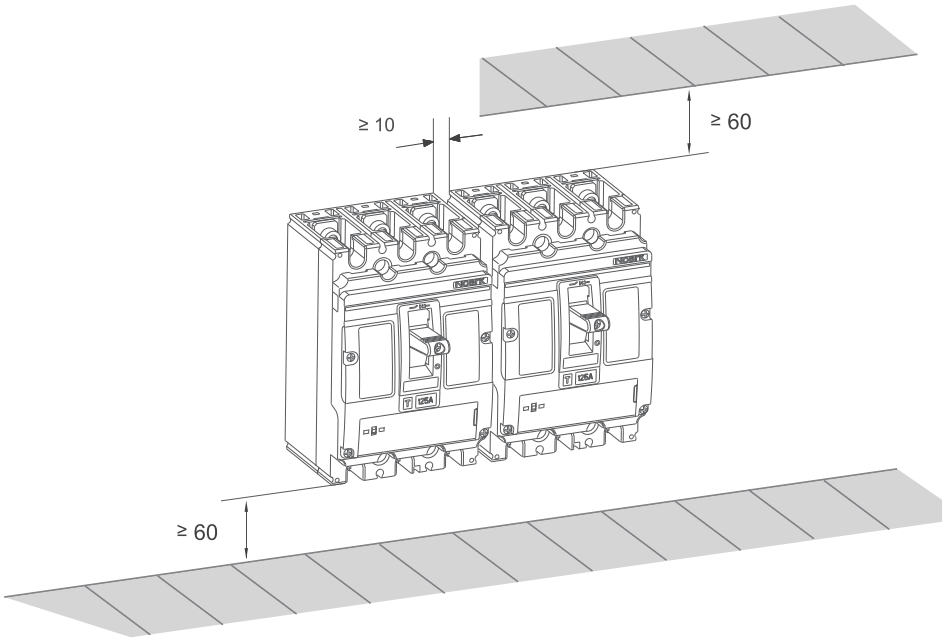
Ordering information p. 51

Technical Data Ex9M4 DC TM

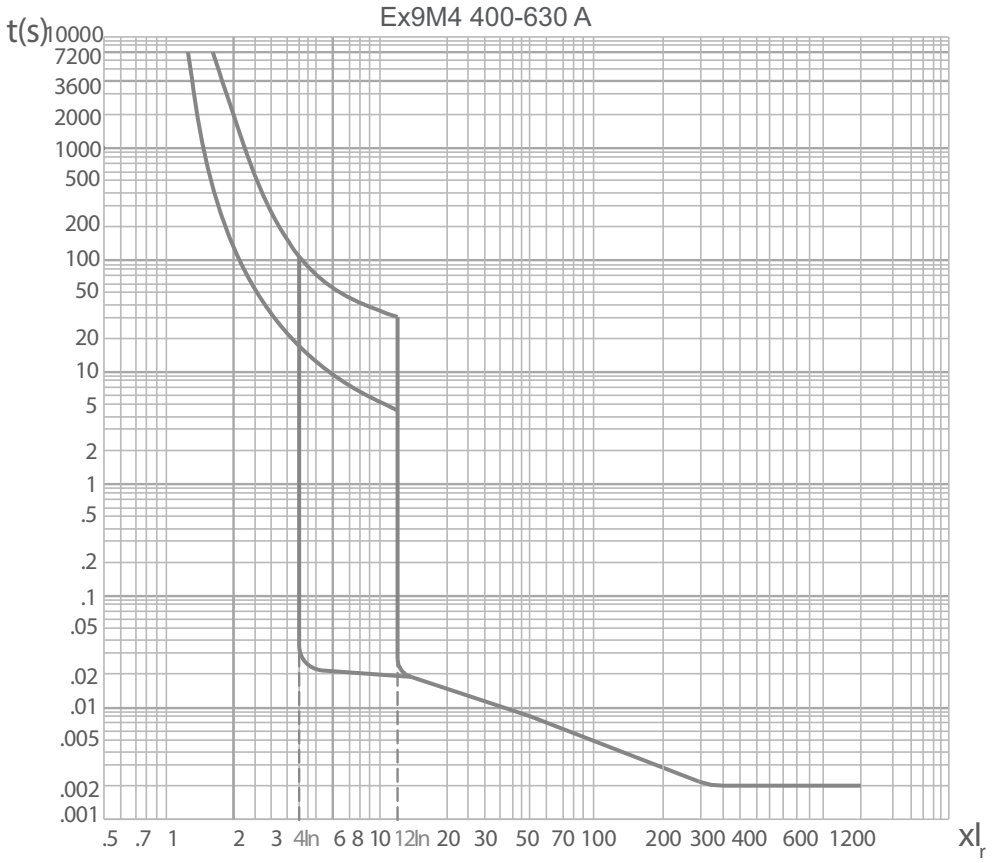
DC TM Moulded Case Circuit Breakers up to 630 A

Installation space

mm



Tripping characteristics



Ordering information p. 51

Technical Data Ex9M5 DC TM

DC TM Moulded Case Circuit Breakers up to 800 A

General parameters

Suitable for commercial as well as industrial applications		
I_r can be set in range (0.7 — 1.0) × I_n		
I_i can be set in range (5 — 10) × I_n		
$I_{iN} = I_i$		
Internal accessories		
Auxiliary contact unit	AX21M	
Alarm contact unit	AL21M	
Shunt trip releases	SHT24	
Undervoltage releases	UVT24	
Max. number of installed internal accessories is 2 pcs of AX21M, 1 pc of AL21M and 1 pc of a release (SHT24 or UVT24)		
External accessories		
Direct rotary handle	RHD24	
Extended rotary handle	ERH24	
Remote motor operators	MOD24	
Terminal cover, short	TCV24 3P, 4P	
Terminal cover, long	TCE24 3P, 4P	
Phase barrier	PHS24	
Connection terminals	MC24 W2	
Withdrawable base	DOB24	
Mounting screws, screw type terminals as well as phase barriers in the scope of delivery		

Derating coefficient of Tripping Characteristics on accessories combination

Combined accessory	**I_n (T) [A]**		
	630 A	**700 A**	**800 A**
DOB 24	0.95	0.95	0.9

Ordering information p. 53

Technical Data Ex9M5 DC TM

DC TM Moulded Case Circuit Breakers up to 800 A

Electrical parameters

	Ex9M5B	Ex9M5S	Ex9M5N	Ex9M5Q	Ex9M5H
Tested according to	IEC/EN 60947-2				
Rated op. voltage U_e	750 / 1000 V DC				
Rated insulation voltage U_i	1 000 V				
Rated impulse withstand voltage U_{imp}	12 kV				
Rated frequency	DC				
Rated ultimate short-circuit breaking capacity I_{cu}	25 kA / 1000V	36 kA / 1000V	50 kA / 1000V	70 kA / 1000V	100 kA / 1000V
Rated service short-circuit breaking capacity I_{cs}	25 kA / 1000V	36 kA / 1000V	50 kA / 1000V	70 kA / 1000V	100 kA / 1000V
Rated current	630 / 700 / 800 A				
Utilization category	A				
Mechanical service life	10 000 operation cycles				
Electrical service life	1 000 operation cycles / 1000 V DC				
Total disconnection time at short circuit	< 2 ms				
Line voltage connection	arbitrary above or below				

Dependence of Tripping Characteristics on Ambient Temperature

T [°C]	I_n (T) [A]		
	630 A	700 A	800 A
-40	882	980	1120
-35	866	962	1100
-25	836	927	1060
-15	804	892	1020
-5	772	857	980
0	756	840	960
10	724	805	920
20	693	770	880
30	661	735	840
40	630	700	800
50	580	670	735
60	530	645	670
70	490	575	625

Power dissipation characteristics

I_n	630 A	700 A	800 A
Pole resistance (mΩ)	0.08	0.08	0.08
Pole power dissipation (W)	31.8	39.2	51.2

Ordering information p. 53

Technical Data Ex9M5 DC TM

DC TM Moulded Case Circuit Breakers up to 800 A

Mechanical parameters

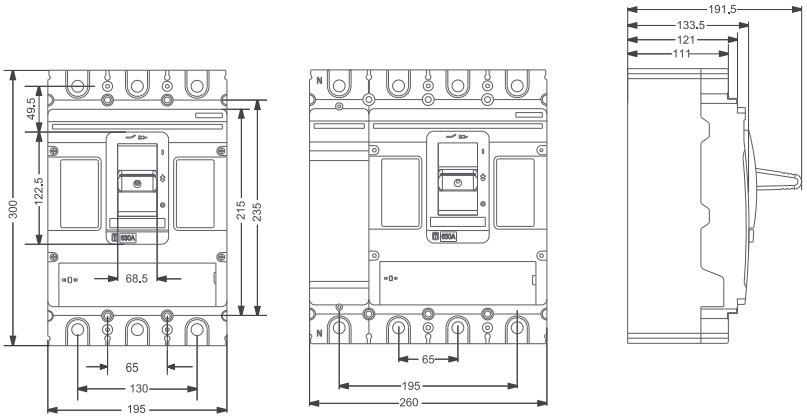
Device width 3P / 4P	195 mm / 260 mm
Device height	300 mm
Device depth	142 mm
Mounting	onto panel
Degree of protection	IP40, IP20 terminals
Terminals	M12 screws
Busbar thickness	≤ 10 mm
Busbar width	≤ 50 mm
Cable lug width	≤ 50 mm
Fastening torque of terminals	30 Nm
Ambient temperature	-40 — +70 °C
Relative humidity	≤ 50 % at 40 °C, ≤ 90 % monthly average
Pollution degree	3
Weight 3P / 4P	10.5 kg / 13.5 kg
Mounting position	vertical, can be rotated by 90° in each axis

Derating coefficient of technical parameters based on altitude

Altitude	**≤ 2 000 m**	**3 000 m**	**4 000 m**	**5 000 m**
Derrating op. current I_n coefficient	1	0.96	0.93	0.9
Maximum rated op. voltage U_e	1 000 V DC	900 V DC	850 V DC	800 V DC
Rated insulation voltage U_i	1 000 V DC	930 V DC	870 V DC	800 V DC
Rated impulse withstand voltage U_{imp}	12 kV	10 kV	8 kV	8 kV
Dielectric properties (U_{imp}=12 kV)	3 600 V DC	3 350 V DC	3 110 V DC	2 985 V DC

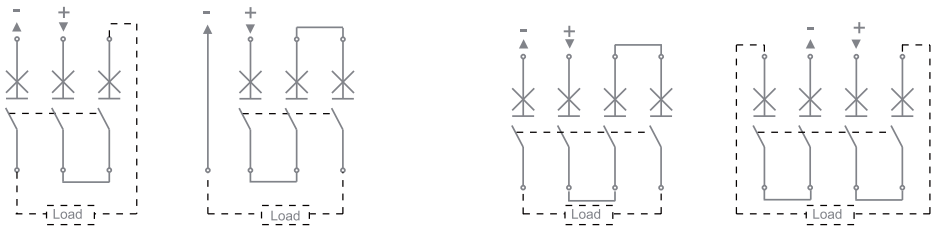
Dimensions

mm



3P 4P

Wiring diagram



3P / 750 V DC 4P / 1 000 V DC

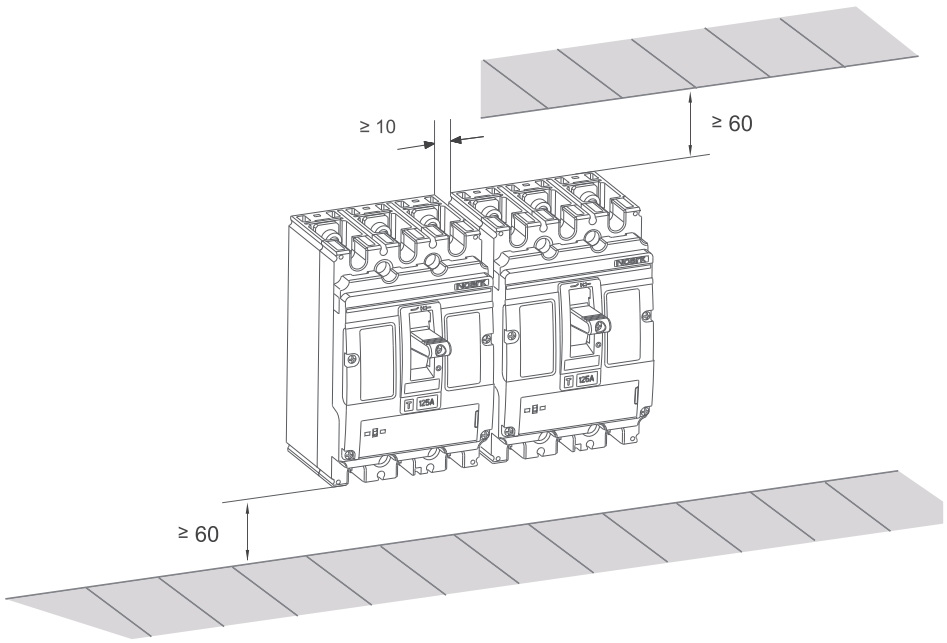
Ordering information p. 53

Technical Data Ex9M5 DC TM

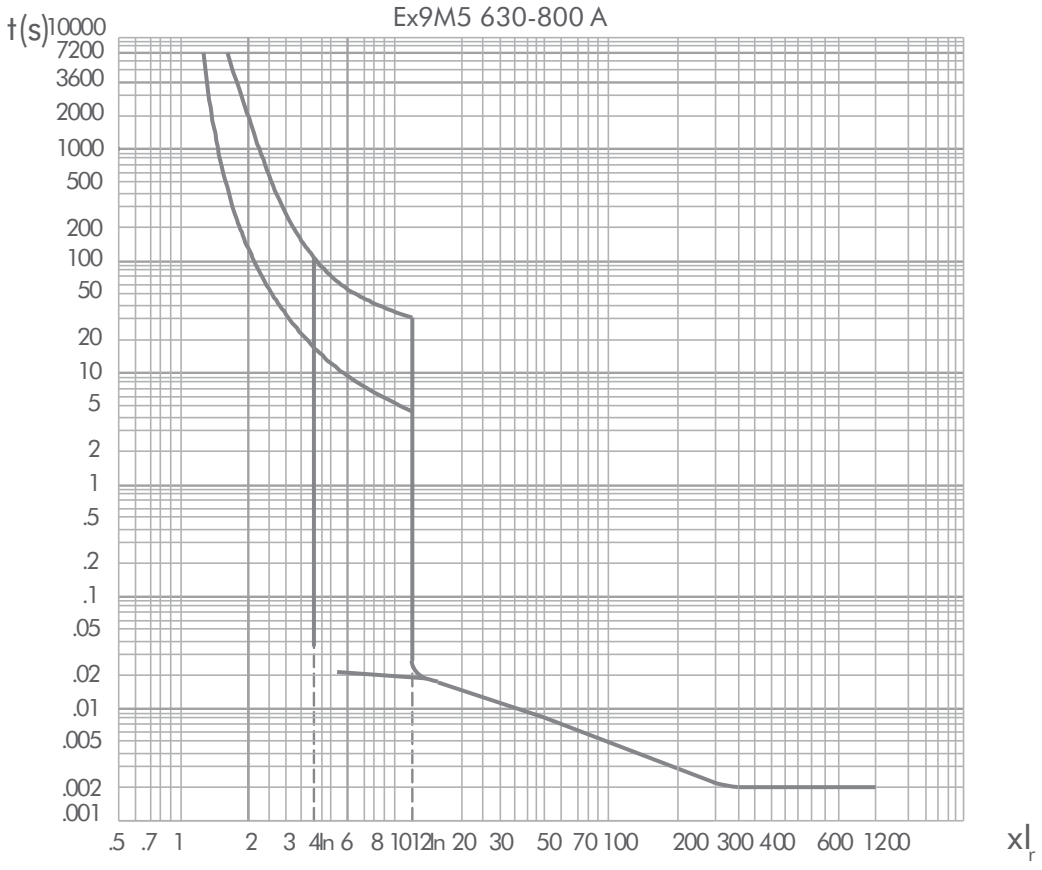
DC TM Moulded Case Circuit Breakers up to 800 A

Installation space

mm



Tripping characteristics



Ordering information p. 53