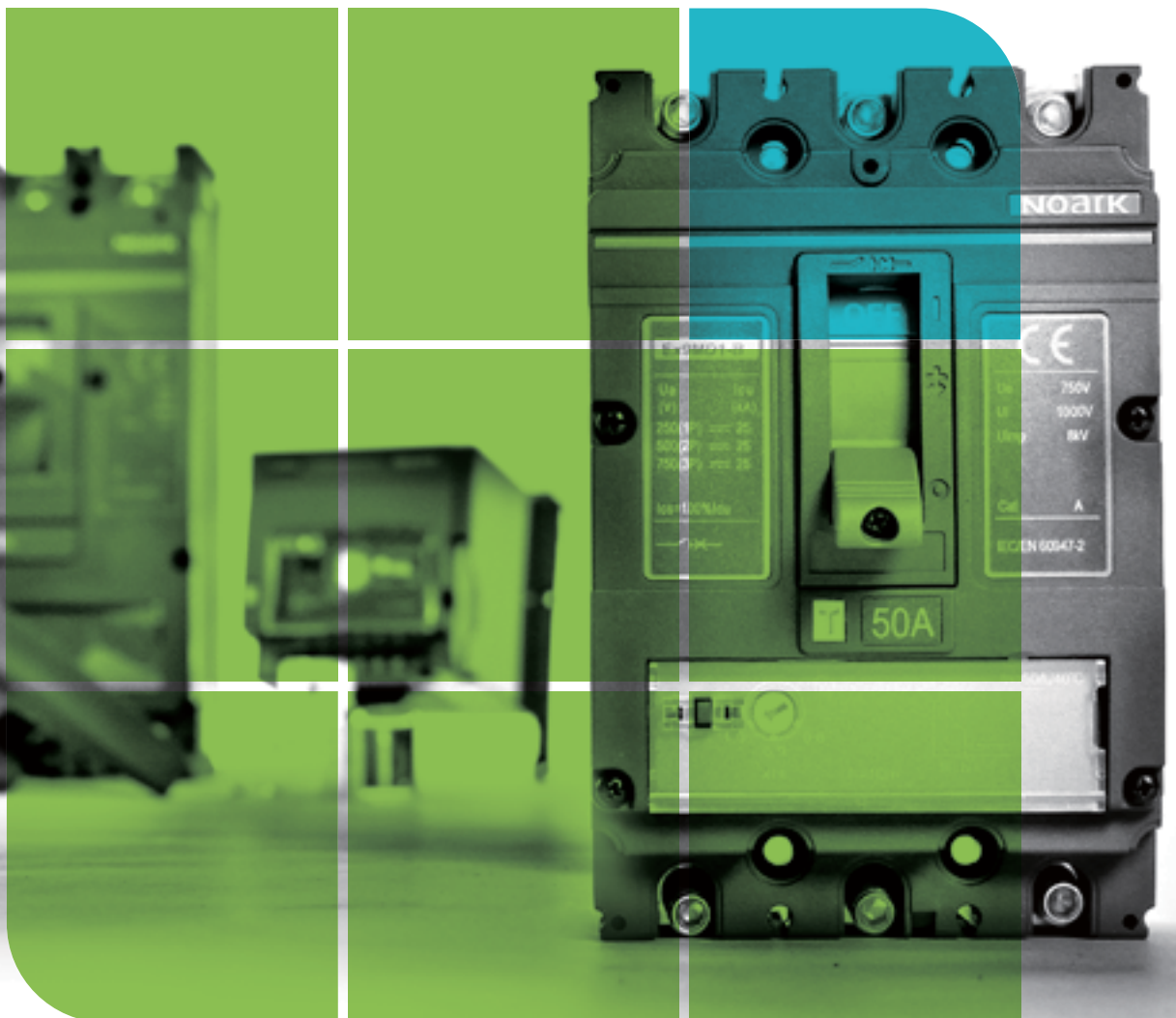


# MOULDED CASE CIRCUIT BREAKERS

CATALOGUE  
OF MOULDED CASE CIRCUIT  
BREAKERS AND SWITCH DISCONNECTORS

VALID FROM 1<sup>ST</sup> JANUARY 2023



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# NOARK



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## Technical data

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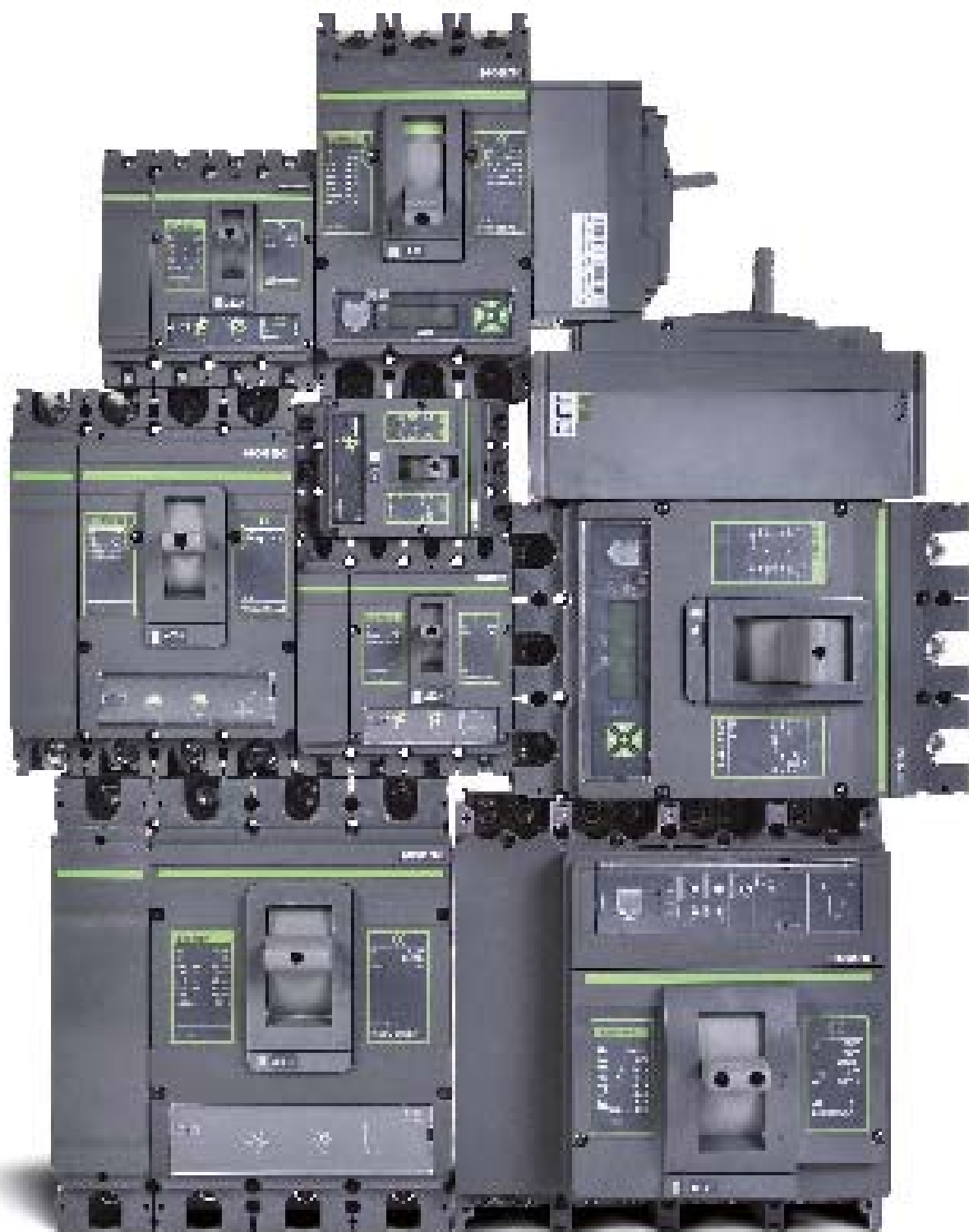
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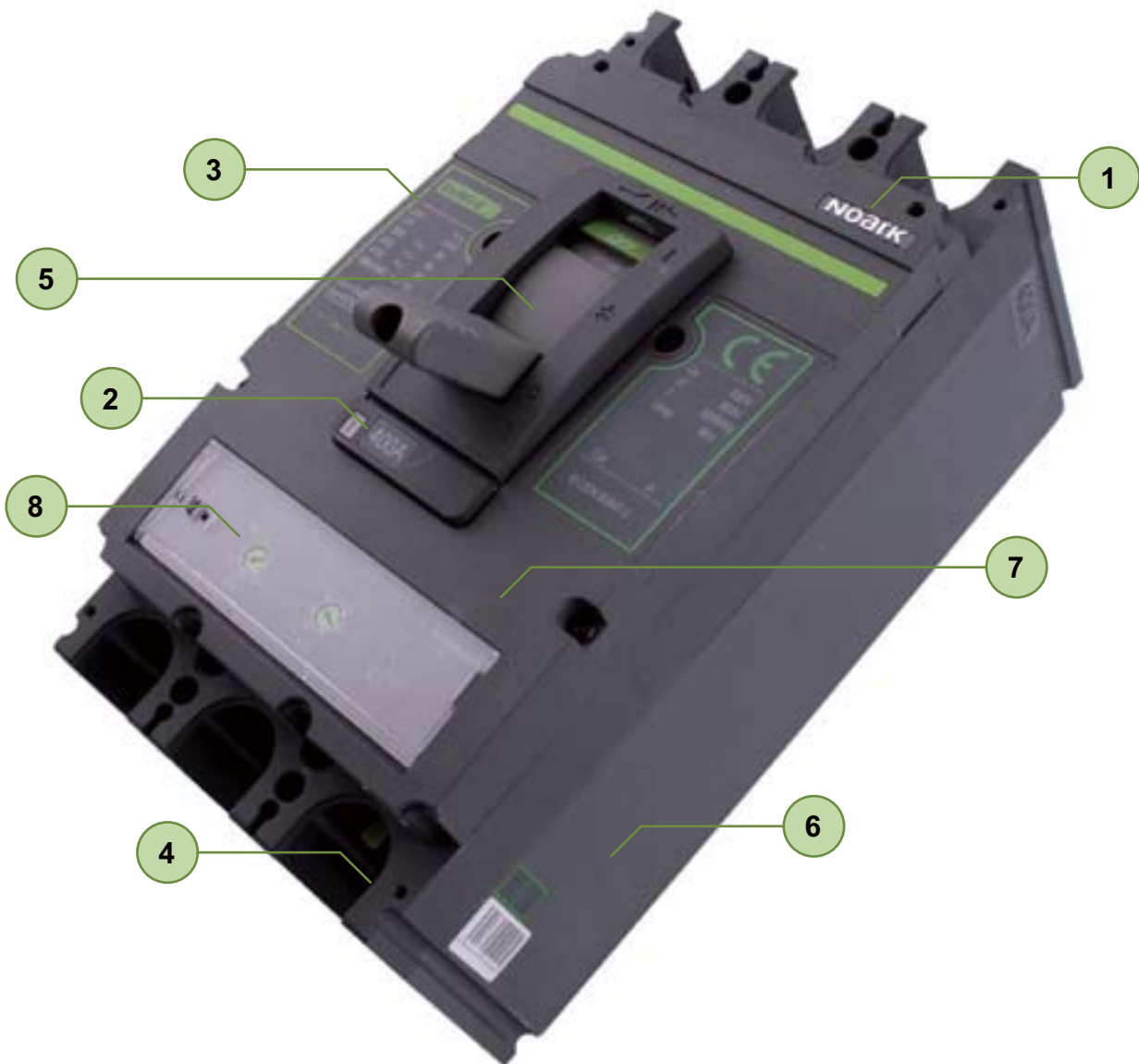
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# Moulded Case Circuit Breakers



# Moulded Case Circuit Breakers

## Professional Tips



- 1 5 years warranty
- 2 Rated current from 16 A up to 800 A
- 3 Breaking capacity up 150 kA
- 4 3 and 4-pole versions available
- 5 Six frame sizes M1 - M5
- 6 AC MCCBs and Switch disconnectors
- 7 Wide range of accessories
- 8 Thermomagnetic release for sizes up to M1

# Moulded Case Circuit Breakers Ex9M AC TM



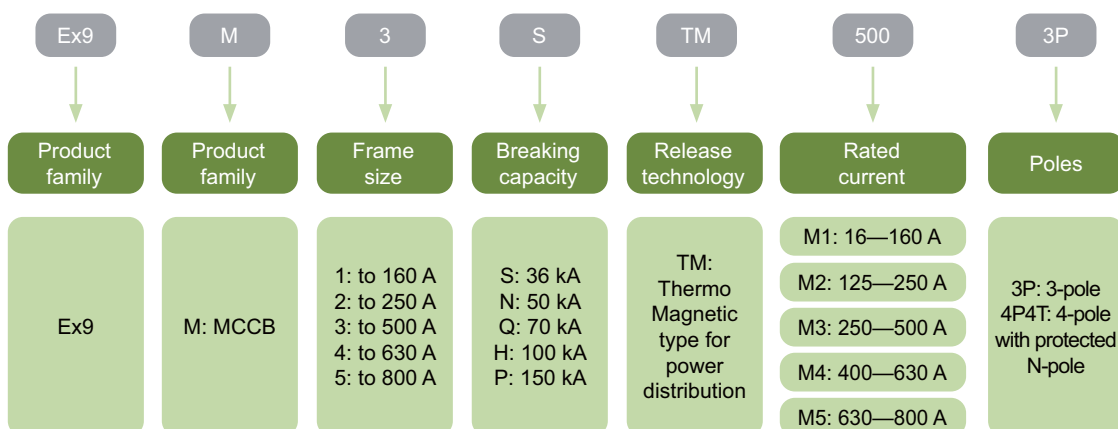
- Thermo-magnetic tripping unit for power distribution
- Frame sizes M1-M5
- Rated operating current up to 800 A
- 3 and 4-pole versions
- Rated ultimate short circuit breaking capacity  $I_{cu} = I_{cs}$  up to 150 kA,
- Rated voltage 415 / 690 V AC

Moulded Case Circuit Breakers Ex9M Thermo-magnetic (TM) type are intended for applications in power distribution mainly. Testing according to IEC / EN 60947-2 standards ensures the functionality and reliability for wide variety of applications including isolation.

These breakers are offered with breaking capacities from 36 kA up to extreme 150 kA. High rated impulse withstand voltage makes it possible to use them even in system with occurrences of transient overvoltage waves of high intensity, e.g. in heavy industry.

Utilization category A circuit breakers.

## Type Key

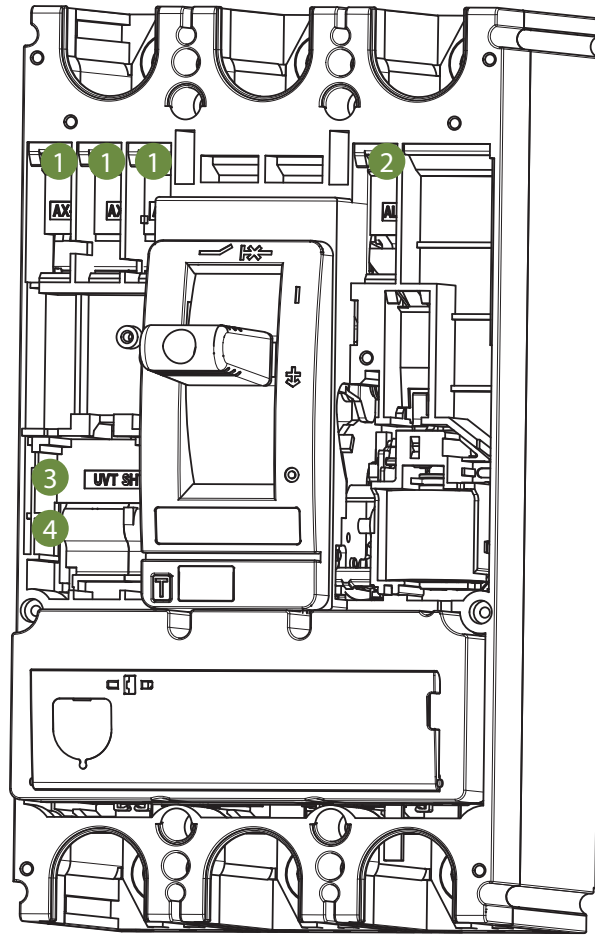


## Certification marks



# Moulded Case Circuit Breakers Ex9M AC TM

## Internal accessories



1

Auxiliary contact  
**AX21M**

2

Signal contact  
**AL21M**

3

Shunt trip release  
**SHT2i**  
1 unit or UVT2i

4

Undervoltage release  
**UVT2i**  
1 unit or SHT2i

Auxiliary contact AX21M

see page 92

Signal contact AL21M

see page 92

Shunt trip releases SHT2i

see page 92

Undervoltage releases UVT2i

see page 93

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



# Moulded Case Circuit Breakers Ex9M AC TM

## External accessories Ex9M1-M5 AC TM



Phase barriers  
**PHS2i**



Terminal cover, short  
**TCV2i**



Terminal cover, long  
**TCE2i**



Remote operator  
**MOD2i**



Direct rotary handle  
**RHD2i**



Extended rotary handle  
**ERH2i**

Phase barriers PHS2i

see page 94

Terminal cover, short TCV2i

see page 95

Remote operators MOD2i

see page 93

Extended rotary handles ERH2i

see page 94

Terminal cover, long TCE2i

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Direct rotary handles RHD2i

see page 94

# Moulded Case Circuit Breakers Ex9M AC TM

## External accessories Ex9M1-M5 AC TM



Tunnel terminals  
**MC2i W**



Mounting depth spacers  
**WG i**



Box terminals  
**MC2i**



Screw terminals  
**MCS2i**



Din rail adapter  
**DRA2i**

Tunnel terminals MC2i W

see page 95

Mounting depth spacers WG i

see page 96

Box terminals MC2i

see page 95

Screw terminals MCS2i

see page 95

Din rail DRA2i

see page 96

# Moulded Case Circuit Breakers Ex9M AC TM

## Version Ex9M1S up to 160 A, $I_{cu} = 36 \text{ kA}$

- 3 and 4-pole Moulded Case Circuit Breakers
- $I_{cs} = I_{cu} = 36 \text{ kA}$  at 415 V AC
- $I_r$  can be set in range  $(0.7 - 1.0) \times I_n$
- $I_i$  can be set in range  $(5 - 10) \times I_n$  for 125 A and 160 A types, otherwise is fixed at  $10 \times I_n$
- $I_{th}$  fixed at  $10 \times I_n$
- Mounting screws, box terminals as well as phase barriers in the scope of delivery



Poles	Rated current $I_n$	Part no.	Model	Packing
3	16A	852228	Ex9M1S TM 16 3P IEC	1/12
3	20A	852229	Ex9M1S TM 20 3P IEC	1/12
3	25A	852230	Ex9M1S TM 25 3P IEC	1/12
3	32A	852231	Ex9M1S TM 32 3P IEC	1/12
3	40A	852232	Ex9M1S TM 40 3P IEC	1/12
3	50A	852233	Ex9M1S TM 50 3P IEC	1/12
3	63A	852234	Ex9M1S TM 63 3P IEC	1/12
3	80A	852235	Ex9M1S TM 80 3P IEC	1/12
3	100A	852236	Ex9M1S TM 100 3P IEC	1/12
3	125A	852237	Ex9M1S TM 125 3P IEC	1/12
3	160A	852238	Ex9M1S TM 160 3P IEC	1/12
4	16A	852239	Ex9M1S TM 16 4P4T IEC	1/12
4	20A	852240	Ex9M1S TM 20 4P4T IEC	1/12
4	25A	852241	Ex9M1S TM 25 4P4T IEC	1/12
4	32A	852242	Ex9M1S TM 32 4P4T IEC	1/12
4	40A	852243	Ex9M1S TM 40 4P4T IEC	1/12
4	50A	852244	Ex9M1S TM 50 4P4T IEC	1/12
4	63A	852245	Ex9M1S TM 63 4P4T IEC	1/12
4	80A	852246	Ex9M1S TM 80 4P4T IEC	1/12
4	100A	852247	Ex9M1S TM 100 4P4T IEC	1/12
4	125A	852248	Ex9M1S TM 125 4P4T IEC	1/12
4	160A	852249	Ex9M1S TM 160 4P4T IEC	1/12

## Version Ex9M1N up to 160 A, $I_{cu} = 50 \text{ kA}$

- 3 and 4-pole Moulded Case Circuit Breakers
- $I_{cs} = I_{cu} = 50 \text{ kA}$  at 415 V AC
- $I_r$  can be set in range  $(0.7 - 1.0) \times I_n$
- $I_i$  can be set in range  $(5 - 10) \times I_n$  for 125 A and 160 A types, otherwise is fixed at  $10 \times I_n$
- $I_{th}$  fixed at  $10 \times I_n$
- Mounting screws, box terminals as well as phase barriers in the scope of delivery



Poles	Rated current $I_n$	Part no.	Model	Packing
3	16A	852250	Ex9M1N TM 16 3P IEC	1/12
3	20A	852251	Ex9M1N TM 20 3P IEC	1/12
3	25A	852252	Ex9M1N TM 25 3P IEC	1/12
3	32A	852253	Ex9M1N TM 32 3P IEC	1/12
3	40A	852254	Ex9M1N TM 40 3P IEC	1/12
3	50A	852255	Ex9M1N TM 50 3P IEC	1/12
3	63A	852256	Ex9M1N TM 63 3P IEC	1/12
3	80A	852257	Ex9M1N TM 80 3P IEC	1/12
3	100A	852258	Ex9M1N TM 100 3P IEC	1/12
3	125A	852259	Ex9M1N TM 125 3P IEC	1/12
3	160A	852260	Ex9M1N TM 160 3P IEC	1/12
4	16A	852261	Ex9M1N TM 16 4P4T IEC	1/12
4	20A	852262	Ex9M1N TM 20 4P4T IEC	1/12
4	25A	852263	Ex9M1N TM 25 4P4T IEC	1/12
4	32A	852264	Ex9M1N TM 32 4P4T IEC	1/12
4	40A	852265	Ex9M1N TM 40 4P4T IEC	1/12
4	50A	852266	Ex9M1N TM 50 4P4T IEC	1/12
4	63A	852267	Ex9M1N TM 63 4P4T IEC	1/12
4	80A	852268	Ex9M1N TM 80 4P4T IEC	1/12
4	100A	852269	Ex9M1N TM 100 4P4T IEC	1/12
4	125A	852270	Ex9M1N TM 125 4P4T IEC	1/12
4	160A	852271	Ex9M1N TM 160 4P4T IEC	1/12

# Moulded Case Circuit Breakers Ex9M AC TM

## Version Ex9M1Q up to 160 A, $I_{cu} = 70$ kA

- 3 and 4-pole Moulded Case Circuit Breakers
- $I_{cs} = I_{cu} = 70$  kA at 415 V AC
- $I_r$  can be set in range  $(0.7 - 1.0) \times I_n$
- $I_i$  can be set in range  $(5 - 10) \times I_n$  for 125 A and 160 A types, otherwise is fixed at  $10 \times I_n$
- $I_{th}$  fixed at  $10 \times I_n$
- Mounting screws, box terminals as well as phase barriers in the scope of delivery



Poles	Rated current $I_n$	Part no.	Model	Packing
3	16A	852272	Ex9M1Q TM 16 3P IEC	1/12
3	20A	852273	Ex9M1Q TM 20 3P IEC	1/12
3	25A	852274	Ex9M1Q TM 25 3P IEC	1/12
3	32A	852275	Ex9M1Q TM 32 3P IEC	1/12
3	40A	852276	Ex9M1Q TM 40 3P IEC	1/12
3	50A	852277	Ex9M1Q TM 50 3P IEC	1/12
3	63A	852278	Ex9M1Q TM 63 3P IEC	1/12
3	80A	852279	Ex9M1Q TM 80 3P IEC	1/12
3	100A	852280	Ex9M1Q TM 100 3P IEC	1/12
3	125A	852281	Ex9M1Q TM 125 3P IEC	1/12
3	160A	852282	Ex9M1Q TM 160 3P IEC	1/12
4	16A	852283	Ex9M1Q TM 16 4P4T IEC	1/12
4	20A	852284	Ex9M1Q TM 20 4P4T IEC	1/12
4	25A	852285	Ex9M1Q TM 25 4P4T IEC	1/12
4	32A	852286	Ex9M1Q TM 32 4P4T IEC	1/12
4	40A	852287	Ex9M1Q TM 40 4P4T IEC	1/12
4	50A	852288	Ex9M1Q TM 50 4P4T IEC	1/12
4	63A	852289	Ex9M1Q TM 63 4P4T IEC	1/12
4	80A	852290	Ex9M1Q TM 80 4P4T IEC	1/12
4	100A	852291	Ex9M1Q TM 100 4P4T IEC	1/12
4	125A	852292	Ex9M1Q TM 125 4P4T IEC	1/12
4	160A	852293	Ex9M1Q TM 160 4P4T IEC	1/12

## Version Ex9M1H up to 160 A, $I_{cu} = 100$ kA

- 3 and 4-pole Moulded Case Circuit Breakers
- $I_{cs} = I_{cu} = 100$  kA at 415 V AC
- $I_r$  can be set in range  $(0.7 - 1.0) \times I_n$
- $I_i$  can be set in range  $(5 - 10) \times I_n$  for 125 A and 160 A types, otherwise is fixed at  $10 \times I_n$
- $I_{th}$  fixed at  $10 \times I_n$
- Mounting screws, box terminals as well as phase barriers in the scope of delivery



Poles	Rated current $I_n$	Part no.	Model	Packing
3	16A	852294	Ex9M1H TM 16 3P IEC	1/12
3	20A	852295	Ex9M1H TM 20 3P IEC	1/12
3	25A	852296	Ex9M1H TM 25 3P IEC	1/12
3	32A	852297	Ex9M1H TM 32 3P IEC	1/12
3	40A	852298	Ex9M1H TM 40 3P IEC	1/12
3	50A	852299	Ex9M1H TM 50 3P IEC	1/12
3	63A	852300	Ex9M1H TM 63 3P IEC	1/12
3	80A	852301	Ex9M1H TM 80 3P IEC	1/12
3	100A	852302	Ex9M1H TM 100 3P IEC	1/12
3	125A	852303	Ex9M1H TM 125 3P IEC	1/12
3	160A	852304	Ex9M1H TM 160 3P IEC	1/12
4	16A	852305	Ex9M1H TM 16 4P4T IEC	1/12
4	20A	852306	Ex9M1H TM 20 4P4T IEC	1/12
4	25A	852307	Ex9M1H TM 25 4P4T IEC	1/12
4	32A	852308	Ex9M1H TM 32 4P4T IEC	1/12
4	40A	852309	Ex9M1H TM 40 4P4T IEC	1/12
4	50A	852310	Ex9M1H TM 50 4P4T IEC	1/12
4	63A	852311	Ex9M1H TM 63 4P4T IEC	1/12
4	80A	852312	Ex9M1H TM 80 4P4T IEC	1/12
4	100A	852313	Ex9M1H TM 100 4P4T IEC	1/12
4	125A	852314	Ex9M1H TM 125 4P4T IEC	1/12
4	160A	852315	Ex9M1H TM 160 4P4T IEC	1/12

# Moulded Case Circuit Breakers Ex9M AC TM

## Version Ex9M1P up to 160 A, $I_{cu} = 150$ kA

- 3 and 4-pole Moulded Case Circuit Breakers
- $I_{cs} = I_{cu} = 150$  kA at 415 V AC
- $I_r$  can be set in range  $(0.7 - 1.0) \times I_n$
- $I_i$  can be set in range  $(5 - 10) \times I_n$  for 125 A and 160 A types, otherwise is fixed at  $10 \times I_n$
- $I_{th}$  fixed at  $10 \times I_n$
- Mounting screws, box terminals as well as phase barriers in the scope of delivery



Poles	Rated current $I_n$	Part no.	Model	Packing
3	16A	852316	Ex9M1P TM 16 3P IEC	1/12
3	20A	852317	Ex9M1P TM 20 3P IEC	1/12
3	25A	852318	Ex9M1P TM 25 3P IEC	1/12
3	32A	852319	Ex9M1P TM 32 3P IEC	1/12
3	40A	852320	Ex9M1P TM 40 3P IEC	1/12
3	50A	852321	Ex9M1P TM 50 3P IEC	1/12
3	63A	852322	Ex9M1P TM 63 3P IEC	1/12
3	80A	852323	Ex9M1P TM 80 3P IEC	1/12
3	100A	852324	Ex9M1P TM 100 3P IEC	1/12
3	125A	852325	Ex9M1P TM 125 3P IEC	1/12
3	160A	852326	Ex9M1P TM 160 3P IEC	1/12
4	16A	852327	Ex9M1P TM 16 4P4T IEC	1/12
4	20A	852328	Ex9M1P TM 20 4P4T IEC	1/12
4	25A	852329	Ex9M1P TM 25 4P4T IEC	1/12
4	32A	852330	Ex9M1P TM 32 4P4T IEC	1/12
4	40A	852331	Ex9M1P TM 40 4P4T IEC	1/12
4	50A	852332	Ex9M1P TM 50 4P4T IEC	1/12
4	63A	852333	Ex9M1P TM 63 4P4T IEC	1/12
4	80A	852334	Ex9M1P TM 80 4P4T IEC	1/12
4	100A	852335	Ex9M1P TM 100 4P4T IEC	1/12
4	125A	852336	Ex9M1P TM 125 4P4T IEC	1/12
4	160A	852337	Ex9M1P TM 160 4P4T IEC	1/12

# Moulded Case Circuit Breakers Ex9M AC TM

## Version Ex9M2S up to 250 A, $I_{cu} = 36$ kA

- 3 and 4-pole Moulded Case Circuit Breakers
- $I_{cs} = I_{cu} = 36$  kA at 415 V AC
- $I_r$  can be set in range  $(0.7 - 1.0) \times I_n$
- $I_i$  can be set in range  $(7 - 12) \times I_n$  for 125 A and  $(5 - 10) \times I_n$  for other devices up to 250 A
- $I_{th} = I_i$
- Mounting screws, box terminals as well as phase barriers in the scope of delivery



Poles	Rated current $I_n$	Part no.	Model	Packing
3	125A	852338	Ex9M2S TM AC125 3P IEC	1/8
3	160A	852339	Ex9M2S TM AC160 3P IEC	1/8
3	180A	852340	Ex9M2S TM AC180 3P IEC	1/8
3	200A	852341	Ex9M2S TM AC200 3P IEC	1/8
3	225A	852342	Ex9M2S TM AC225 3P IEC	1/8
3	250A	852343	Ex9M2S TM AC250 3P IEC	1/8
4	125A	852344	Ex9M2S TM AC125 4P4T IEC	1/8
4	160A	852345	Ex9M2S TM AC160 4P4T IEC	1/8
4	180A	852346	Ex9M2S TM AC180 4P4T IEC	1/8
4	200A	852347	Ex9M2S TM AC200 4P4T IEC	1/8
4	225A	852348	Ex9M2S TM AC225 4P4T IEC	1/8
4	250A	852349	Ex9M2S TM AC250 4P4T IEC	1/8

## Version Ex9M2N up to 250 A, $I_{cu} = 50$ kA

- 3 and 4-pole Moulded Case Circuit Breakers
- $I_{cs} = I_{cu} = 50$  kA at 415 V AC
- $I_r$  can be set in range  $(0.7 - 1.0) \times I_n$
- $I_i$  can be set in range  $(7 - 12) \times I_n$  for 125 A and  $(5 - 10) \times I_n$  for other devices up to 250 A
- $I_{th} = I_i$
- Mounting screws, box terminals as well as phase barriers in the scope of delivery



Poles	Rated current $I_n$	Part no.	Model	Packing
3	125A	852350	Ex9M2N TM AC125 3P IEC	1/8
3	160A	852351	Ex9M2N TM AC160 3P IEC	1/8
3	180A	852352	Ex9M2N TM AC180 3P IEC	1/8
3	200A	852353	Ex9M2N TM AC200 3P IEC	1/8
3	225A	852354	Ex9M2N TM AC225 3P IEC	1/8
3	250A	852355	Ex9M2N TM AC250 3P IEC	1/8
4	125A	852356	Ex9M2N TM AC125 4P4T IEC	1/8
4	160A	852357	Ex9M2N TM AC160 4P4T IEC	1/8
4	180A	852358	Ex9M2N TM AC180 4P4T IEC	1/8
4	200A	852359	Ex9M2N TM AC200 4P4T IEC	1/8
4	225A	852360	Ex9M2N TM AC225 4P4T IEC	1/8
4	250A	852361	Ex9M2N TM AC250 4P4T IEC	1/8

# Moulded Case Circuit Breakers Ex9M AC TM

## Version Ex9M2Q up to 250 A, $I_{cu} = 75 \text{ kA}$

- 3 and 4-pole Moulded Case Circuit Breakers
- $I_{cs} = I_{cu} = 75 \text{ kA}$  at 415 V AC
- $I_r$  can be set in range  $(0.7 - 1.0) \times I_n$
- $I_i$  can be set in range  $(7 - 12) \times I_n$  for 125 A and  $(5 - 10) \times I_n$  for other devices up to 250 A
- $I_{th} = I_i$
- Mounting screws, box terminals as well as phase barriers in the scope of delivery



Poles	Rated current $I_n$	Part no.	Model	Packing
3	125A	852362	Ex9M2Q TM AC125 3P IEC	1/8
3	160A	852363	Ex9M2Q TM AC125 3P IEC	1/8
3	180A	852364	Ex9M2Q TM AC180 3P IEC	1/8
3	200A	852365	Ex9M2Q TM AC200 3P IEC	1/8
3	225A	852366	Ex9M2Q TM AC225 3P IEC	1/8
3	250A	852367	Ex9M2Q TM AC250 3P IEC	1/8
4	125A	852368	Ex9M2Q TM AC125 4P4T IEC	1/8
4	160A	852369	Ex9M2Q TM AC160 4P4T IEC	1/8
4	180A	852370	Ex9M2Q TM AC180 4P4T IEC	1/8
4	200A	852371	Ex9M2Q TM AC200 4P4T IEC	1/8
4	225A	852372	Ex9M2Q TM AC225 4P4T IEC	1/8
4	250A	852373	Ex9M2Q TM AC250 4P4T IEC	1/8

## Version Ex9M2H up to 250 A, $I_{cu} = 100 \text{ kA}$

- 3 and 4-pole Moulded Case Circuit Breakers
- $I_{cs} = I_{cu} = 100 \text{ kA}$  at 415 V AC
- $I_r$  can be set in range  $(0.7 - 1.0) \times I_n$
- $I_i$  can be set in range  $(7 - 12) \times I_n$  for 125 A and  $(5 - 10) \times I_n$  for other devices up to 250 A
- $I_{th} = I_i$
- Mounting screws, box terminals as well as phase barriers in the scope of delivery



Poles	Rated current $I_n$	Part no.	Model	Packing
3	125A	852374	Ex9M2H TM AC125 3P IEC	1/8
3	160A	852375	Ex9M2H TM AC160 3P IEC	1/8
3	180A	852376	Ex9M2H TM AC180 3P IEC	1/8
3	200A	852377	Ex9M2H TM AC200 3P IEC	1/8
3	225A	852378	Ex9M2H TM AC225 3P IEC	1/8
3	250A	852379	Ex9M2H TM AC250 3P IEC	1/8
4	125A	852380	Ex9M2H TM AC125 4P4T IEC	1/8
4	160A	852381	Ex9M2H TM AC160 4P4T IEC	1/8
4	180A	852382	Ex9M2H TM AC180 4P4T IEC	1/8
4	200A	852383	Ex9M2H TM AC200 4P4T IEC	1/8
4	225A	852384	Ex9M2H TM AC225 4P4T IEC	1/8
4	250A	852385	Ex9M2H TM AC250 4P4T IEC	1/8

# Moulded Case Circuit Breakers Ex9M AC TM

## Version Ex9M2P up to 250 A, $I_{cu} = 150$ kA

- 3 and 4-pole Moulded Case Circuit Breakers
- $I_{cs} = I_{cu} = 150$  kA at 415 V AC
- $I_r$  can be set in range  $(0.7 - 1.0) \times I_n$
- $I_i$  can be set in range  $(7 - 12) \times I_n$  for 125 A and  $(5 - 10) \times I_n$  for other devices up to 250 A
- $I_{th} = I_i$
- Mounting screws, box terminals as well as phase barriers in the scope of delivery



Poles	Rated current $I_n$	Part no.	Model	Packing
3	125A	852386	Ex9M2P TM AC125 3P IEC	1/8
3	160A	852387	Ex9M2P TM AC125 3P IEC	1/8
3	180A	852388	Ex9M2P TM AC180 3P IEC	1/8
3	200A	852389	Ex9M2P TM AC200 3P IEC	1/8
3	225A	852390	Ex9M2P TM AC225 3P IEC	1/8
3	250A	852391	Ex9M2P TM AC250 3P IEC	1/8
4	125A	852392	Ex9M2P TM AC125 4P4T IEC	1/8
4	160A	852393	Ex9M2P TM AC160 4P4T IEC	1/8
4	180A	852394	Ex9M2P TM AC180 4P4T IEC	1/8
4	200A	852395	Ex9M2P TM AC200 4P4T IEC	1/8
4	225A	852396	Ex9M2P TM AC225 4P4T IEC	1/8
4	250A	852397	Ex9M2P TM AC250 4P4T IEC	1/8



# Moulded Case Circuit Breakers Ex9M AC TM

## Version Ex9M3S up to 500 A, $I_{cu} = 36 \text{ kA}$

- 3 and 4-pole Moulded Case Circuit Breakers
- $I_{cs} = I_{cu} = 36 \text{ kA}$  at 415 V AC
- $I_r$  can be set in range  $(0.7 - 1.0) \times I_n$
- $I_i$  can be set in range  $(5 - 10) \times I_n$
- $I_{th} = I_i$
- Mounting screws, screw type terminals as well as phase barriers in the scope of delivery



Poles	Rated current In	Part no.	Model	Packing
3	250A	852398	Ex9M3S TM AC250 3P IEC	1/2
3	315A	852399	Ex9M3S TM AC315 3P IEC	1/2
3	350A	852400	Ex9M3S TM AC350 3P IEC	1/2
3	400A	852401	Ex9M3S TM AC400 3P IEC	1/2
3	500A	852402	Ex9M3S TM AC500 3P IEC	1/2
4	250A	852403	Ex9M3S TM AC250 4P4T IEC	1/2
4	315A	852404	Ex9M3S TM AC315 4P4T IEC	1/2
4	350A	852405	Ex9M3S TM AC350 4P4T IEC	1/2
4	400A	852406	Ex9M3S TM AC400 4P4T IEC	1/2
4	500A	852407	Ex9M3S TM AC500 4P4T IEC	1/2

## Version Ex9M3N up to 500 A, $I_{cu} = 50 \text{ kA}$

- 3 and 4-pole Moulded Case Circuit Breakers
- $I_{cs} = I_{cu} = 50 \text{ kA}$  at 415 V AC
- $I_r$  can be set in range  $(0.7 - 1.0) \times I_n$
- $I_i$  can be set in range  $(5 - 10) \times I_n$
- $I_{th} = I_i$
- Mounting screws, screw type terminals as well as phase barriers in the scope of delivery



Poles	Rated current In	Part no.	Model	Packing
3	250A	852408	Ex9M3N TM AC250 3P IEC	1/2
3	315A	852409	Ex9M3N TM AC315 3P IEC	1/2
3	350A	852410	Ex9M3N TM AC350 3P IEC	1/2
3	400A	852411	Ex9M3N TM AC400 3P IEC	1/2
3	500A	852412	Ex9M3N TM AC500 3P IEC	1/2
4	250A	852413	Ex9M3N TM AC250 4P4T IEC	1/2
4	315A	852414	Ex9M3N TM AC315 4P4T IEC	1/2
4	350A	852415	Ex9M3N TM AC350 4P4T IEC	1/2
4	400A	852416	Ex9M3N TM AC400 4P4T IEC	1/2
4	500A	852417	Ex9M3N TM AC500 4P4T IEC	1/2

## Version Ex9M3Q up to 500 A, $I_{cu} = 75 \text{ kA}$

- 3 and 4-pole Moulded Case Circuit Breakers
- $I_{cs} = I_{cu} = 75 \text{ kA}$  at 415 V AC
- $I_r$  can be set in range  $(0.7 - 1.0) \times I_n$
- $I_i$  can be set in range  $(5 - 10) \times I_n$
- $I_{th} = I_i$
- Mounting screws, screw type terminals as well as phase barriers in the scope of delivery



Poles	Rated current In	Part no.	Model	Packing
3	250A	852418	Ex9M3Q TM AC250 3P IEC	1/2
3	315A	852419	Ex9M3Q TM AC315 3P IEC	1/2
3	350A	852420	Ex9M3Q TM AC350 3P IEC	1/2
3	400A	852421	Ex9M3Q TM AC400 3P IEC	1/2
3	500A	852422	Ex9M3Q TM AC500 3P IEC	1/2
4	250A	852423	Ex9M3Q TM AC250 4P4T IEC	1/2
4	315A	852424	Ex9M3Q TM AC315 4P4T IEC	1/2
4	350A	852425	Ex9M3Q TM AC350 4P4T IEC	1/2
4	400A	852426	Ex9M3Q TM AC400 4P4T IEC	1/2
4	500A	852427	Ex9M3Q TM AC500 4P4T IEC	1/2

# Moulded Case Circuit Breakers Ex9M AC TM

## Version Ex9M3H up to 500 A, $I_{cu} = 100$ kA

- 3 and 4-pole Moulded Case Circuit Breakers
- $I_{cs} = I_{cu} = 100$  kA at 415 V AC
- $I_f$  can be set in range  $(0.7 - 1.0) \times I_n$
- $I_i$  can be set in range  $(5 - 10) \times I_n$
- $I_{IN} = I_f$
- 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	852428	Ex9M3H TM AC250 3P IEC	1/2
3	315A	852429	Ex9M3H TM AC315 3P IEC	1/2
3	350A	852430	Ex9M3H TM AC350 3P IEC	1/2
3	400A	852431	Ex9M3H TM AC400 3P IEC	1/2
3	500A	852432	Ex9M3H TM AC500 3P IEC	1/2
4	250A	852433	Ex9M3H TM AC250 4P4T IEC	1/2
4	315A	852434	Ex9M3H TM AC315 4P4T IEC	1/2
4	350A	852435	Ex9M3H TM AC350 4P4T IEC	1/2
4	400A	852436	Ex9M3H TM AC400 4P4T IEC	1/2
4	500A	852437	Ex9M3H TM AC500 4P4T IEC	1/2

## Version Ex9M3P up to 500 A, $I_{cu} = 150$ kA

- 3 and 4-pole Moulded Case Circuit Breakers
- $I_{cs} = I_{cu} = 150$  kA at 415 V AC
- $I_f$  can be set in range  $(0.7 - 1.0) \times I_n$
- $I_i$  can be set in range  $(5 - 10) \times I_n$
- $I_{IN} = I_f$
- 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	852438	Ex9M3P TM AC250 3P IEC	1/2
3	315A	852439	Ex9M3P TM AC315 3P IEC	1/2
3	350A	852440	Ex9M3P TM AC350 3P IEC	1/2
3	400A	852441	Ex9M3P TM AC400 3P IEC	1/2
3	500A	852442	Ex9M3P TM AC500 3P IEC	1/2
4	250A	852443	Ex9M3P TM AC250 4P4T IEC	1/2
4	315A	852444	Ex9M3P TM AC315 4P4T IEC	1/2
4	350A	852445	Ex9M3P TM AC350 4P4T IEC	1/2
4	400A	852446	Ex9M3P TM AC400 4P4T IEC	1/2
4	500A	852447	Ex9M3P TM AC500 4P4T IEC	1/2

# Moulded Case Circuit Breakers Ex9M AC TM

## Version Ex9M4S up to 630 A, $I_{cu} = 36 \text{ kA}$

- 3 and 4-pole Moulded Case Circuit Breakers
- $I_{cs} = I_{cu} = 36 \text{ kA}$  at 415 V AC
- $I_r$  can be set in range  $(0.7 - 1.0) \times I_n$
- $I_i$  can be set in range  $(5 - 10) \times I_n$
- $I_{th} = I_i$
- Mounting screws, screw type terminals as well as phase barriers in the scope of delivery



Poles	Rated current In	Part no.	Model	Packing
3	400A	852448	Ex9M4S TM AC400 3P IEC	1/1
3	500A	852449	Ex9M4S TM AC500 3P IEC	1/1
3	630A	852450	Ex9M4S TM AC630 3P IEC	1/1
4	400A	852451	Ex9M4S TM AC400 4P4T IEC	1/1
4	500A	852452	Ex9M4S TM AC500 4P4T IEC	1/1
4	630A	852453	Ex9M4S TM AC630 4P4T IEC	1/1

## Version Ex9M4N up to 630 A, $I_{cu} = 50 \text{ kA}$

- 3 and 4-pole Moulded Case Circuit Breakers
- $I_{cs} = I_{cu} = 50 \text{ kA}$  at 415 V AC
- $I_r$  can be set in range  $(0.7 - 1.0) \times I_n$
- $I_i$  can be set in range  $(5 - 10) \times I_n$
- $I_{th} = I_i$
- Mounting screws, screw type terminals as well as phase barriers in the scope of delivery



Poles	Rated current In	Part no.	Model	Packing
3	400A	852454	Ex9M4N TM AC400 3P IEC	1/1
3	500A	852455	Ex9M4N TM AC500 3P IEC	1/1
3	630A	852456	Ex9M4N TM AC630 3P IEC	1/1
4	400A	852457	Ex9M4N TM AC400 4P4T IEC	1/1
4	500A	852458	Ex9M4N TM AC500 4P4T IEC	1/1
4	630A	852459	Ex9M4N TM AC630 4P4T IEC	1/1

## Version Ex9M4Q up to 630 A, $I_{cu} = 75 \text{ kA}$

- 3 and 4-pole Moulded Case Circuit Breakers
- $I_{cs} = I_{cu} = 75 \text{ kA}$  at 415 V AC
- $I_r$  can be set in range  $(0.7 - 1.0) \times I_n$
- $I_i$  can be set in range  $(5 - 10) \times I_n$
- $I_{th} = I_i$
- Mounting screws, screw type terminals as well as phase barriers in the scope of delivery



Poles	Rated current In	Part no.	Model	Packing
3	400A	852460	Ex9M4Q TM AC400 3P IEC	1/1
3	500A	852461	Ex9M4Q TM AC500 3P IEC	1/1
3	630A	852462	Ex9M4Q TM AC630 3P IEC	1/1
4	400A	852463	Ex9M4Q TM AC400 4P4T IEC	1/1
4	500A	852464	Ex9M4Q TM AC500 4P4T IEC	1/1
4	630A	852465	Ex9M4Q TM AC630 4P4T IEC	1/1

# Moulded Case Circuit Breakers Ex9M AC TM

## Version Ex9M4H up to 630 A, $I_{cu} = 100$ kA

- 3 and 4-pole Moulded Case Circuit Breakers
- $I_{cs} = I_{cu} = 100$  kA at 415 V AC
- $I_r$  can be set in range  $(0.7 - 1.0) \times I_n$
- $I_i$  can be set in range  $(5 - 10) \times I_n$
- $I_{IN} = I_i$
- 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	852466	Ex9M4H TM AC400 3P IEC	1/1
3	500A	852467	Ex9M4H TM AC500 3P IEC	1/1
3	630A	852468	Ex9M4H TM AC630 3P IEC	1/1
4	400A	852469	Ex9M4H TM AC400 4P4T IEC	1/1
4	500A	852470	Ex9M4H TM AC500 4P4T IEC	1/1
4	630A	852471	Ex9M4H TM AC630 4P4T IEC	1/1

## Version Ex9M4P up to 630 A, $I_{cu} = 150$ kA

- 3 and 4-pole Moulded Case Circuit Breakers
- $I_{cs} = I_{cu} = 150$  kA at 415 V AC
- $I_r$  can be set in range  $(0.7 - 1.0) \times I_n$
- $I_i$  can be set in range  $(5 - 10) \times I_n$
- $I_{IN} = I_i$
- 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	852472	Ex9M4P TM AC400 3P IEC	1/1
3	500A	852473	Ex9M4P TM AC500 3P IEC	1/1
3	630A	852474	Ex9M4P TM AC630 3P IEC	1/1
4	400A	852475	Ex9M4P TM AC400 4P4T IEC	1/1
4	500A	852476	Ex9M4P TM AC500 4P4T IEC	1/1
4	630A	852477	Ex9M4P TM AC630 4P4T IEC	1/1

# Moulded Case Circuit Breakers Ex9M AC TM

## Version Ex9M5S up to 800 A, $I_{cu} = 36$ kA

- 3 and 4-pole Moulded Case Circuit Breakers
- $I_{cs} = I_{cu} = 36$  kA at 415 V AC
- $I_f$  can be set in range  $(0.7 - 1.0) \times I_n$
- $I_i$  can be set in range  $(5 - 10) \times I_n$
- $I_{th} = I_i$
- Mounting screws, screw type terminals as well as phase barriers in the scope of delivery



Poles	Rated current In	Part no.	Model	Packing
3	630A	852478	Ex9M5S TM AC630 3P IEC	1/1
3	700A	852479	Ex9M5S TM AC700 3P IEC	1/1
3	800A	852480	Ex9M5S TM AC800 3P IEC	1/1
4	630A	852481	Ex9M5S TM AC630 4P4T IEC	1/1
4	700A	852482	Ex9M5S TM AC700 4P4T IEC	1/1
4	800A	852483	Ex9M5S TM AC800 4P4T IEC	1/1

## Version Ex9M5N up to 800 A, $I_{cu} = 50$ kA

- 3 and 4-pole Moulded Case Circuit Breakers
- $I_{cs} = I_{cu} = 50$  kA at 415 V AC
- $I_f$  can be set in range  $(0.7 - 1.0) \times I_n$
- $I_i$  can be set in range  $(5 - 10) \times I_n$
- $I_{th} = I_i$
- Mounting screws, screw type terminals as well as phase barriers in the scope of delivery



Poles	Rated current In	Part no.	Model	Packing
3	630A	852484	Ex9M5N TM AC630 3P IEC	1/1
3	700A	852485	Ex9M5N TM AC700 3P IEC	1/1
3	800A	852486	Ex9M5N TM AC800 3P IEC	1/1
4	630A	852487	Ex9M5N TM AC630 4P4T IEC	1/1
4	700A	852488	Ex9M5N TM AC700 4P4T IEC	1/1
4	800A	852489	Ex9M5N TM AC800 4P4T IEC	1/1

## Version Ex9M5Q up to 800 A, $I_{cu} = 75$ kA

- 3 and 4-pole Moulded Case Circuit Breakers
- $I_{cs} = I_{cu} = 75$  kA at 415 V AC
- $I_f$  can be set in range  $(0.7 - 1.0) \times I_n$
- $I_i$  can be set in range  $(5 - 10) \times I_n$
- $I_{th} = I_i$
- Mounting screws, screw type terminals as well as phase barriers in the scope of delivery



Poles	Rated current In	Part no.	Model	Packing
3	630A	852490	Ex9M5Q TM AC630 3P IEC	1/1
3	700A	852491	Ex9M5Q TM AC700 3P IEC	1/1
3	800A	852492	Ex9M5Q TM AC800 3P IEC	1/1
4	630A	852493	Ex9M5Q TM AC630 4P4T IEC	1/1
4	700A	852494	Ex9M5Q TM AC700 4P4T IEC	1/1
4	800A	852495	Ex9M5Q TM AC800 4P4T IEC	1/1

# Moulded Case Circuit Breakers Ex9M AC TM

## Version Ex9M5H up to 800 A, $I_{cu} = 100$ kA

- 3 and 4-pole Moulded Case Circuit Breakers
- $I_{cs} = I_{cu} = 100$  kA at 415 V AC
- $I_r$  can be set in range  $(0.7 - 1.0) \times I_n$
- $I_f$  can be set in range  $(5 - 10) \times I_n$
- $I_{th} = I_f$
- 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	852496	Ex9M5H TM AC630 3P IEC	1/1
3	700A	852497	Ex9M5H TM AC700 3P IEC	1/1
3	800A	852498	Ex9M5H TM AC800 3P IEC	1/1
4	630A	852499	Ex9M5H TM AC630 4P4T IEC	1/1
4	700A	852500	Ex9M5H TM AC700 4P4T IEC	1/1
4	800A	852501	Ex9M5H TM AC800 4P4T IEC	1/1

## Version Ex9M5P up to 800 A, $I_{cu} = 150$ kA

- 3 and 4-pole Moulded Case Circuit Breakers
- $I_{cs} = I_{cu} = 150$  kA at 415 V AC
- $I_r$  can be set in range  $(0.7 - 1.0) \times I_n$
- $I_f$  can be set in range  $(5 - 10) \times I_n$
- $I_{th} = I_f$
- 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	852502	Ex9M5P TM AC630 3P IEC	1/1
3	700A	852503	Ex9M5P TM AC700 3P IEC	1/1
3	800A	852504	Ex9M5P TM AC800 3P IEC	1/1
4	630A	852505	Ex9M5P TM AC630 4P4T IEC	1/1
4	700A	852506	Ex9M5P TM AC700 4P4T IEC	1/1
4	800A	852507	Ex9M5P TM AC800 4P4T IEC	1/1

# AC MCCB Switch Disconnectors Ex9MSD

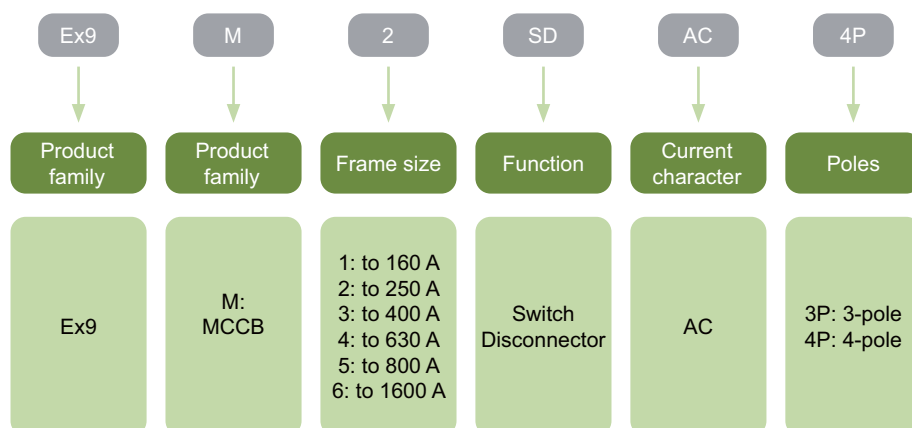


- AC MCCB Switch Disconnectors
- Frame sizes M1-M6
- Rated operating current up to 1 600 A
- Tested according to EN 60947-3
- AC current character
- 3 and 4-pole versions
- Rated operating voltage  $U_e$  up to 690 V AC

AC versions of MCCB based Switch Disconnectors Ex9MSD are used as a main switch in many various circuits. They are intended primarily for applications in power distribution. Testing according to IEC / EN 60947-3 standards ensures functions and reliability for wide variety of applications.

These switch disconnectors follows the same design pattern than their circuit breaker equivalents. Therefore there is possibility to use the fully compatible range of external and internal accessories including extended rotary handles, auxiliary contacts, tripping units and many others.

## Type Key

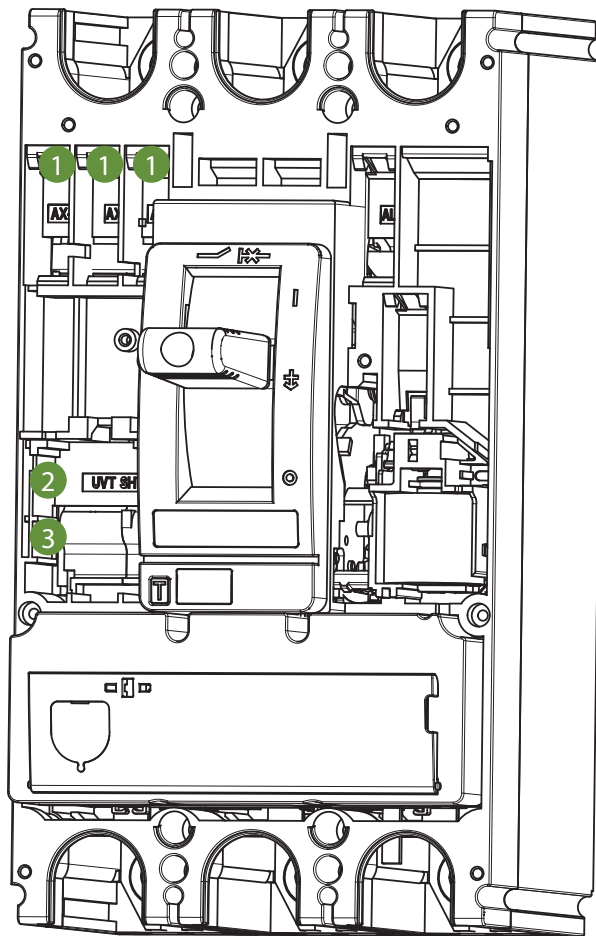


## Certification marks



# AC MCCB Switch Disconnectors Ex9MSD

## Internal accessories Ex9M1-M5 AC SD



1

Auxiliary contact  
**AX21M**

2

Shunt trip release  
**SHT2i**  
1 unit or UVT2i

3

Undervoltage release  
**UVT2i**  
1 unit or SHT2i

Auxiliary contact AX21M

Shunt trip releases SHT2i

Undervoltage releases UVT2i

see page 92

see page 92

see page 93



# AC MCCB Switch Disconnectors Ex9MSD

## External accessories Ex9M1-M5 AC SD



Phase barriers  
**PB2i**



Terminal cover set, short  
**TCV2i**



Terminal cover set, long  
**TCE2i**



Remote operator  
**MOD2i**



Direct rotary handle  
**RHD2i**



Extended rotary handle  
**ERH2i**

Phase barriers PHS2i

see page 94

Terminal cover, short TCV2i

see page 95

Remote operators MOD2i

see page 93

Extended rotary handles ERH2i

see page 94

Terminal cover, long TCE2i

see page 96

Direct rotary handles RHD2i

see page 94

# AC MCCB Switch Disconnectors Ex9MSD

## External accessories Ex9M1-M5 AC SD



Tunnel terminals  
**MC2i W**



Mounting depth spacers  
**WG i**



Box terminals  
**MC2i**



Screw terminals  
**MCS2i**



Din rail adapter  
**DRA2i**

Tunnel terminals MC2i W

see page 95

Mounting depth spacers WG i

see page 96

Box terminals MC2i

see page 95

Screw terminals MCS2i

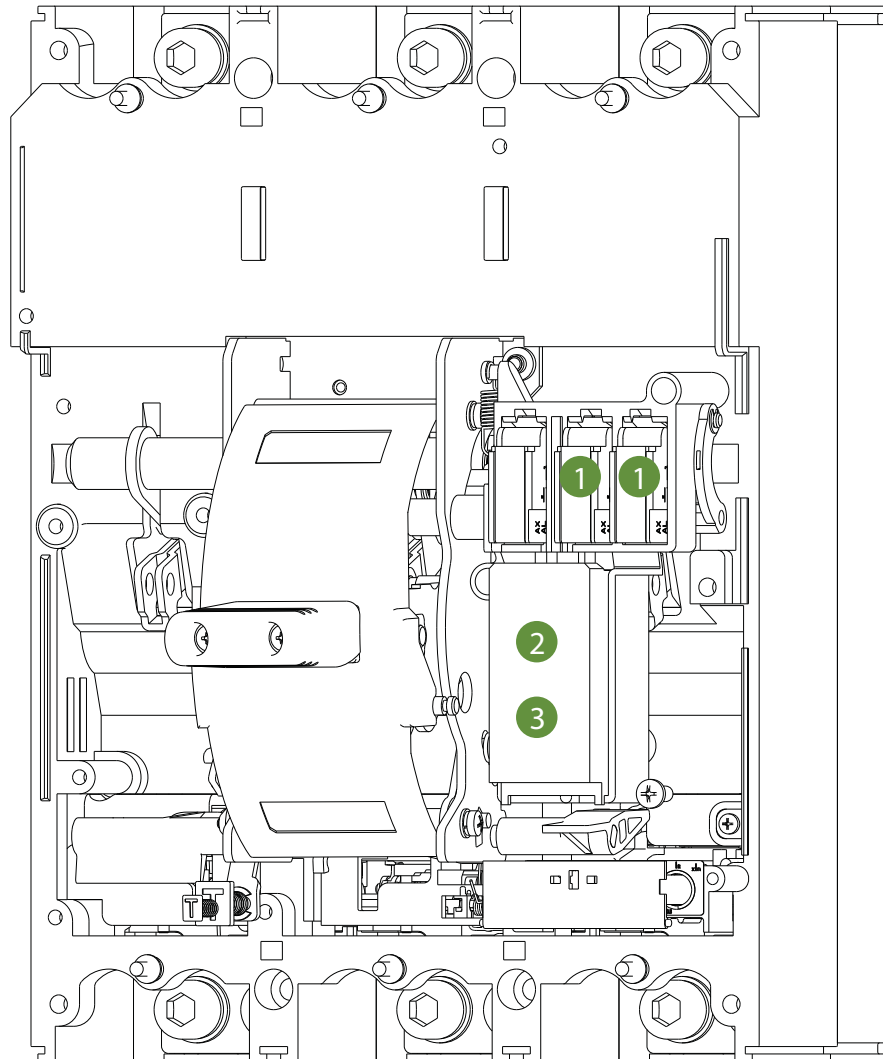
see page 95

Din rail DRA2i

see page 96

# AC MCCB Switch Disconnectors Ex9M6SD

## Internal accessories Ex9M6 AC SD



1

Auxiliary contact  
**AX21M**

2

Shunt trip release  
**SHT26**  
1 unit or UVT2i

3

Undervoltage release  
**UVT26**  
1 unit or SHT2i

Auxiliary contact AX21M

Shunt trip releases SHT26

Undervoltage releases UVT26

see page 92

see page 92

see page 93

# AC MCCB Switch Disconnectors Ex9M6SD

## External accessories Ex9M6 AC SD



Extended rotatory  
handle  
**ERH26**



Extended handle  
**LHD26**



Front connection  
plate  
**JP26**

Extended rotatory handles ERH26

Extended handles LHD26

Front connection plate JP26

see page 99

see page 99

see page 99

# AC MCCB Switch Disconnectors Ex9MSD

## 3-pole versions

- Mounting screws as well as phase barriers in the scope of delivery



Rated current $i_n$	Frame size	Article No.	Type	Packing
160 A	M1	852837	Ex9M1SD AC 3P	1/8
250 A	M2	852841	Ex9M2SD AC 3P	1/8
400 A	M3	852845	Ex9M3SD AC 3P	1/2
630 A	M4	852849	Ex9M4SD AC 3P	1/1
800 A	M5	852853	Ex9M5SD AC 3P	1/1
800 A	M6	852863	Ex9M6SD AC800 3P	1/1
1 000 A	M6	852857	Ex9M6SD AC1000 3P	1/1
1 250 A	M6	852859	Ex9M6SD AC1250 3P	1/1
1 600 A	M6	852861	Ex9M6SD AC1600 3P	1/1

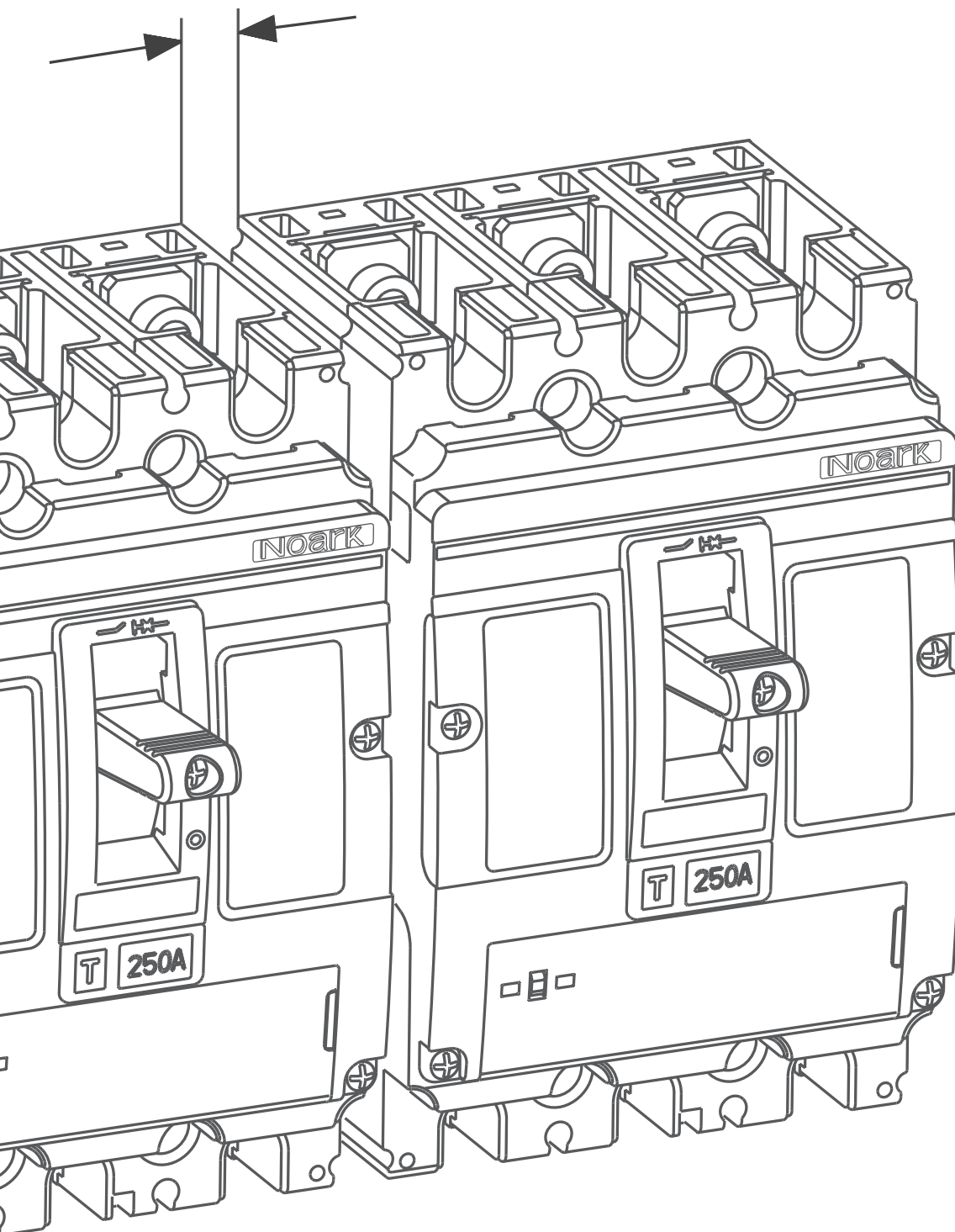
## 4-pole versions

- Mounting screws as well as phase barriers in the scope of delivery



Rated current $i_n$	Frame size	Article No.	Type	Packing
160 A	M1	852838	Ex9M1SD AC 4P	1/8
250 A	M2	852842	Ex9M2SD AC 4P	1/8
400 A	M3	852846	Ex9M3SD AC 4P	1/2
630 A	M4	852850	Ex9M4SD AC 4P	1/1
800 A	M5	852854	Ex9M5SD AC 4P	1/1
800 A	M6	852864	Ex9M6SD AC800 4P	1/1
1 000 A	M6	852858	Ex9M6SD AC1000 4P	1/1
1 250 A	M6	852860	Ex9M6SD AC1250 4P	1/1
1 600 A	M6	852862	Ex9M6SD AC1600 4P	1/1

# Technical Data



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## Technical data

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AC TMM Moulded  
Case Circuit Breakers  
Ex9M

AC Electronic  
MCCB  
Ex9M SU20L  
(DIP switches)

AC Electronic  
MCCB  
Ex9M SU20L  
(LCD version)

AC MCCB  
Switch Disconnectors  
Ex9MSD

DC TMM Moulded  
Case Circuit Breakers  
Ex9M

DC MCCB  
Switch Disconnectors  
Ex9MSD

Accessories  
for  
MCCBs

# Technical Data Ex9M1 AC TM

## AC 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  $(0.7 - 1.0) \times I_n$

$I_i$  can be set in range  $(5 - 10) \times I_n$  for 125 A and 160 A types, otherwise is fixed at  $10 \times I_n$

$I_{IN}$  fixed at  $10 \times I_n$

#### Internal accessories

Auxiliary contact unit	AX21M	
------------------------	-------	--

Alarm contact unit	AL21M	
--------------------	-------	--

Shunt trip releases	SHT21	
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Undervoltage releases	UVT21	
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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	
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Extended rotary handle	ERH21	
------------------------	-------	--

Remote motor operators	MOD21	
------------------------	-------	--

Terminal cover, short	TCV21 3P, 4P	
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Terminal cover, long	TCE21 3P, 4P	
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Phase barrier	PHS21	
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Connection terminals	MC21	
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DIN-rail adapter	DRA21	
------------------	-------	--

Mounting screws, box terminals as well as phase barriers in the scope of delivery



# Technical Data Ex9M1 AC TM

## AC TM Moulded Case Circuit Breakers up to 160 A

### Electrical parameters

	Ex9M1S	Ex9M1N	Ex9M1Q	Ex9M1H	Ex9M1P
Tested according to	IEC/EN 60947-2				
Rated op. voltage $U_e$	380 / 400 / 415, 440, 500, 660 / 690 V AC				
Rated insulation voltage $U_i$	1 000 V				
Rated impulse withstand voltage $U_{imp}$	8 kV				
Rated frequency	50/60 Hz				
Rated ultimate short-circuit breaking capacity $I_{cu}$	36 kA / 415 V 6 kA / 690 V	50 kA / 415 V 8 kA / 690 V	70 kA / 415 V 8 kA / 690 V	100 kA / 415 V 10 kA / 690 V	150 kA / 415 V 10 kA / 690 V
Rated service short-circuit breaking capacity $I_{cs}$	36 kA / 415 V 6 kA / 690 V	50 kA / 415 V 8 kA / 690 V	70 kA / 415 V 8 kA / 690 V	100 kA / 415 V 10 kA / 690 V	150 kA / 415 V 10 kA / 690 V
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	8 000 operation cycles / 415 V AC 2 000 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]										
	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

# Technical Data Ex9M1 AC TM

## AC TM Moulded Case Circuit Breakers up to 160 A

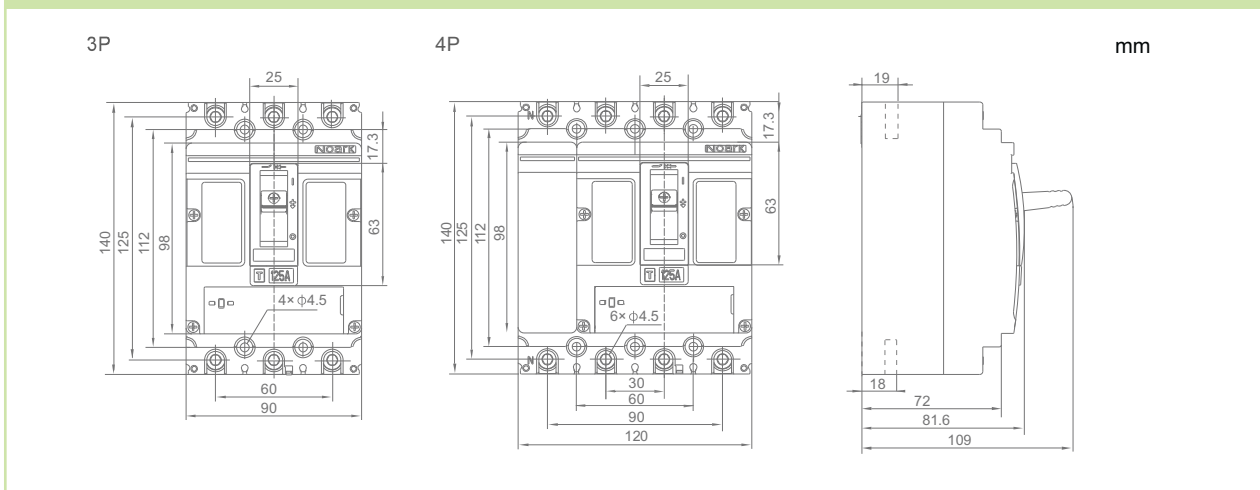
### Mechanical parameters

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 <sup>2</sup>
Fastening torque of terminals	6 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

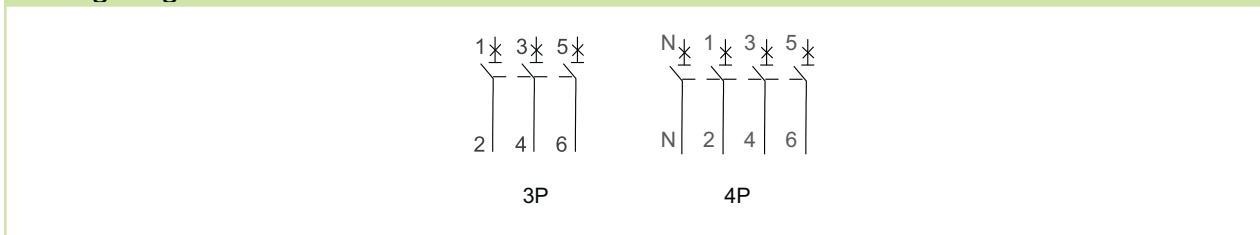
### Derating coefficient of technical parameters based on altitude

Altitude	≤ 2 000 m	3 000 m	4 000 m	5 000 m
Derating op. current $I_n$ coefficient	1	0.96	0.93	0.9
Maximum rated op. voltage $U_e$	690 V AC	550 V AC	480 V AC	420 V AC
Rated insulation voltage $U_i$	1000 V AC	930 V AC	870 V AC	800 V AC
Rated impulse withstand voltage $U_{imp}$	8 kV	8 kV	8 kV	8 kV
Dielectric properties ( $U_{imp}=8$ kV)	2200 V AC	2050 V AC	1900 V AC	1770 V AC

### Dimensions



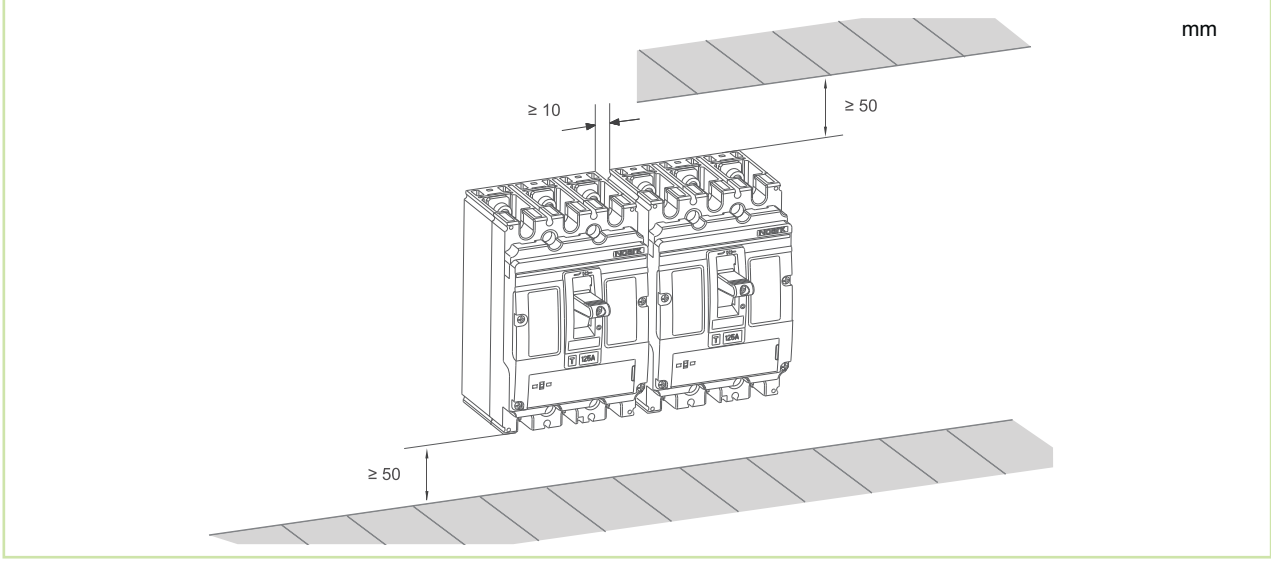
### Wiring diagram



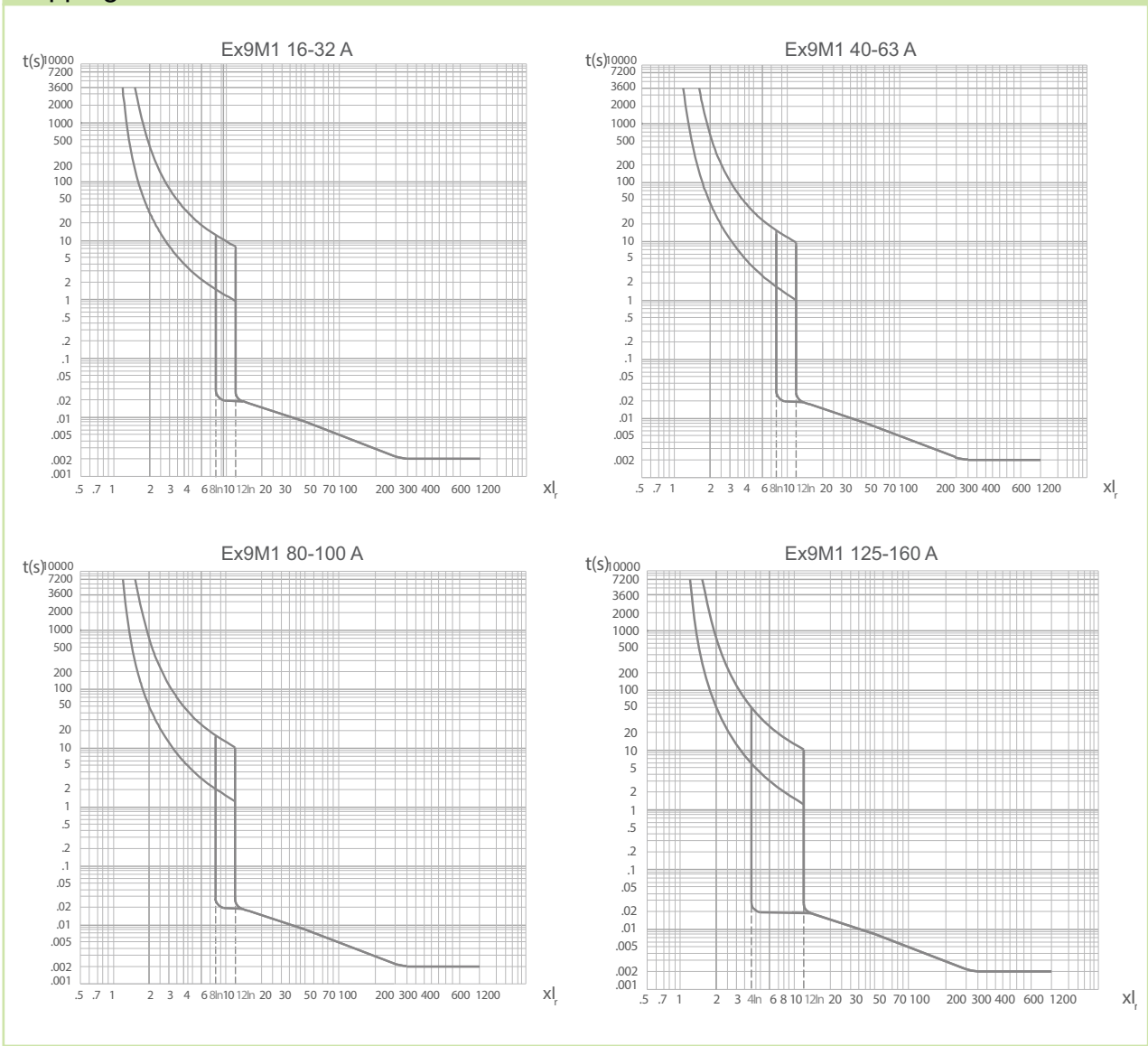
# Technical Data Ex9M1 AC TM

## AC TM Moulded Case Circuit Breakers up to 160 A

### Installation space



### Tripping characteristics



Ordering information p. 9

# Technical Data Ex9M2 AC TM

## AC 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  $(0.7 - 1.0) \times I_n$

$I_i$  can be set in range  $(7 - 12) \times I_n$  for 125 A and  $(5 - 10) \times I_n$  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	

Mounting screws, box terminals as well as phase barriers in the scope of delivery

# Technical Data Ex9M2 AC TM

## AC TM Moulded Case Circuit Breakers up to 250 A

### Electrical parameters

	Ex9M2S	Ex9M2N	Ex9M2Q	Ex9M2H	Ex9M2P
Tested according to	IEC/EN 60947-2				
Rated op. voltage $U_e$	380 / 400 / 415, 440, 500, 660 / 690 V AC				
Rated insulation voltage $U_i$	1 000 V				
Rated impulse withstand voltage $U_{imp}$	8 kV				
Rated frequency	50/60 Hz				
Rated ultimate short-circuit breaking capacity $I_{cu}$	36 kA / 415 V 6 kA / 690 V	50 kA / 415 V 8 kA / 690 V	70 kA / 415 V 8 kA / 690 V	100 kA / 415 V 10 kA / 690 V	150 kA / 415 V 10 kA / 690 V
Rated service short-circuit breaking capacity $I_{cs}$	36 kA / 415 V 6 kA / 690 V	50 kA / 415 V 8 kA / 690 V	70 kA / 415 V 8 kA / 690 V	100 kA / 415 V 10 kA / 690 V	150 kA / 415 V 10 kA / 690 V
Rated current	125 / 160 / 180 / 200 / 225 / 250 A				
Utilization category	A				
Mechanical service life	15 000 operation cycles				
Electrical service life	5 000 operation cycles / 415 V AC 2 000 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]					
	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	216	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

# Technical Data Ex9M2 AC TM

## AC TM Moulded Case Circuit Breakers up to 250 A

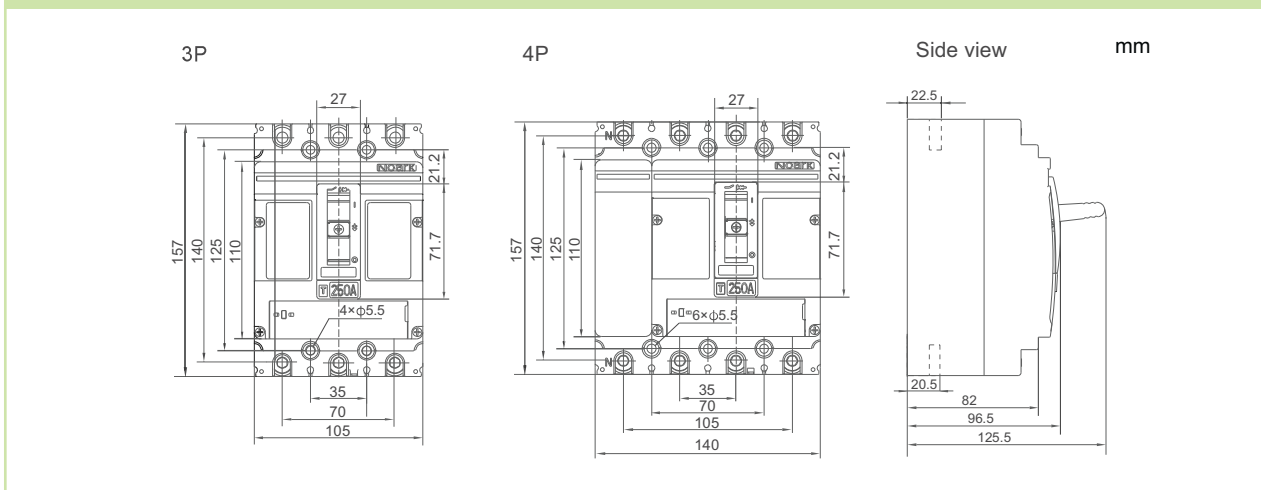
### Mechanical parameters

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 <sup>2</sup>
Fastening torque of terminals	11 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

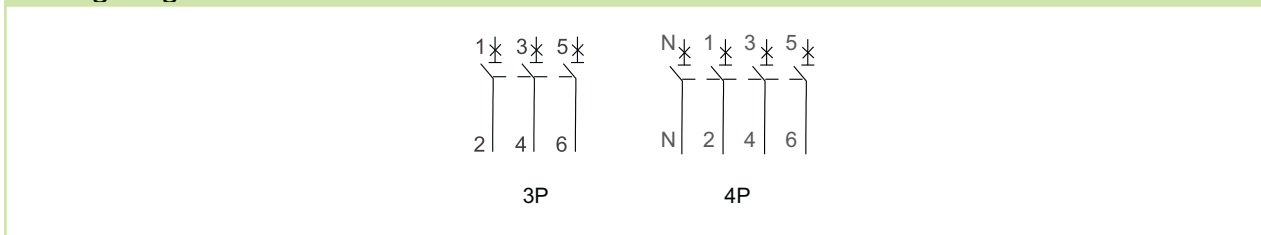
### Derating coefficient of technical parameters based on altitude

Altitude	≤ 2 000 m	3 000 m	4 000 m	5 000 m
Derating op. current I <sub>n</sub> coefficient	1	0.96	0.93	0.9
Maximum rated op. voltage U <sub>e</sub>	690 V AC	550 V AC	480 V AC	420 V AC
Rated insulation voltage U <sub>i</sub>	1000 V AC	930 V AC	870 V AC	800 V AC
Rated impulse withstand voltage U <sub>imp</sub>	8 kV	8 kV	8 kV	8 kV
Dielectric properties (U <sub>imp</sub> =8 kV)	2200 V AC	2050 V AC	1900 V AC	1770 V AC

### Dimensions



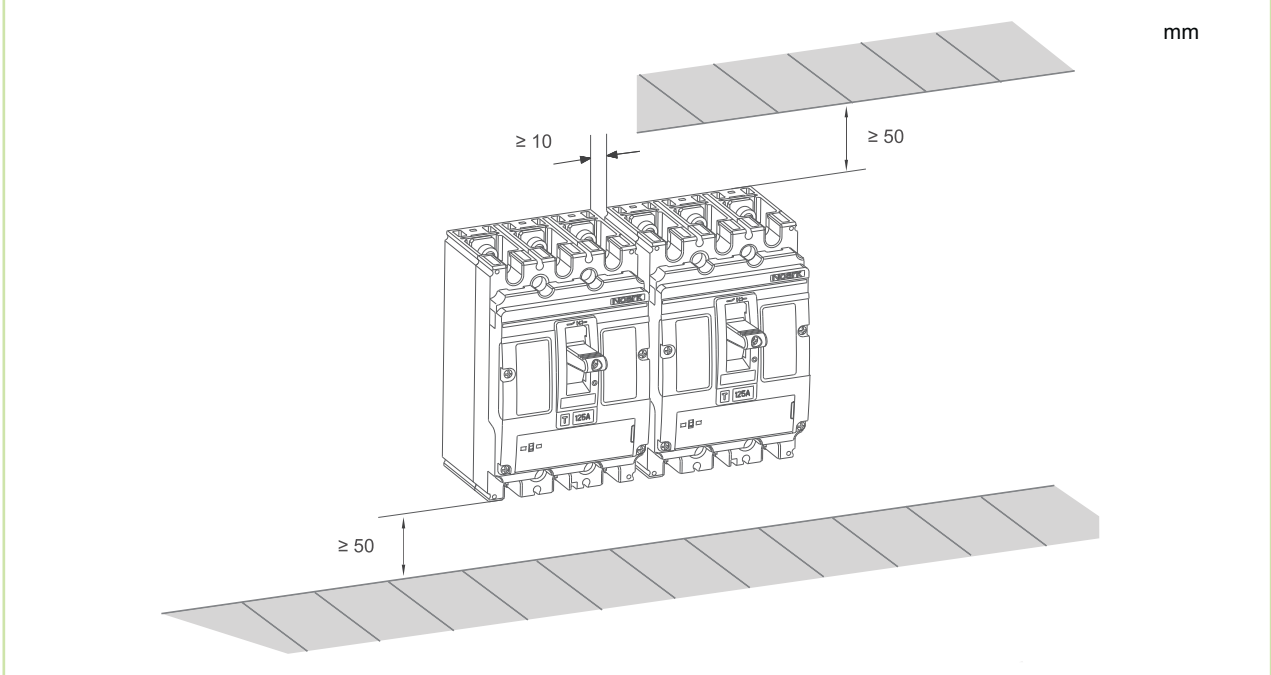
### Wiring diagram



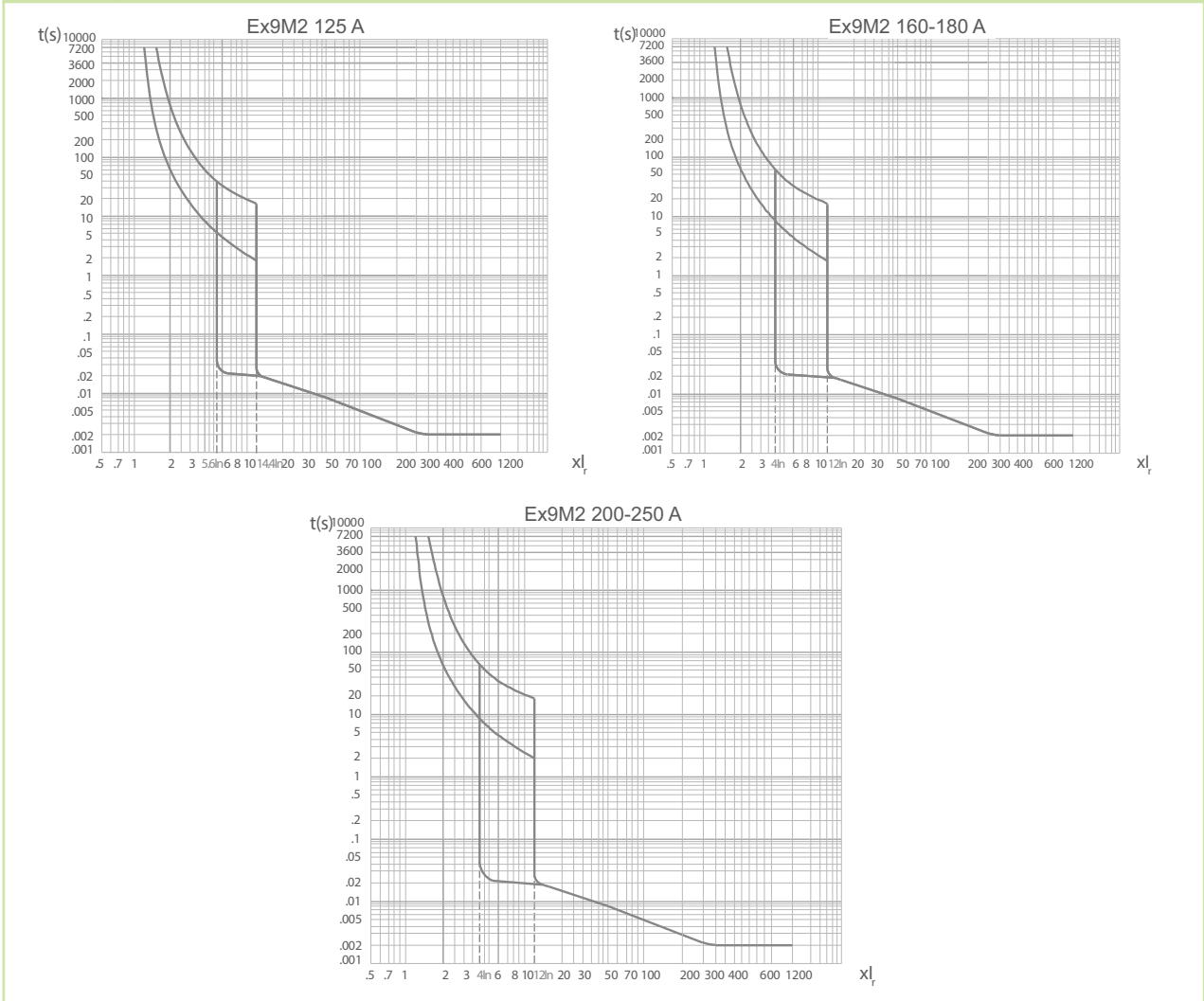
# Technical Data Ex9M2 AC TM

## AC TM Moulded Case Circuit Breakers up to 250 A

### Installation space



### Tripping characteristics



Ordering information p. 12

# Technical Data Ex9M3 AC TM

## AC TM Moulded Case Circuit Breakers up to 500 A

### General parameters

Suitable for commercial as well as industrial applications

$I_r$  can be set in range  $(0.7 - 1.0) \times I_n$

$I_i$  can be set in range  $(5 - 10) \times I_n$

$I_{IN} = I_i$

#### 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
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Terminal cover, long	TCE23 3P, 4P
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Phase barrier	PHS23
---------------	-------

Connection terminals	MC23
----------------------	------

Mounting screws, screw type terminals as well as phase barriers in the scope of delivery



# Technical Data Ex9M3 AC TM

## AC TM Moulded Case Circuit Breakers up to 500 A

### Electrical parameters

	Ex9M3S	Ex9M3N	Ex9M3Q	Ex9M3H	Ex9M3P
Tested according to	IEC/EN 60947-2				
Rated op. voltage $U_e$	380 / 400 / 415, 440, 500, 660 / 690 V AC				
Rated insulation voltage $U_i$	1 000 V				
Rated impulse withstand voltage $U_{imp}$	12 kV				
Rated frequency	50/60 Hz				
Rated ultimate short-circuit breaking capacity $I_{cu}$	36 kA / 415 V 10 kA / 690 V	50 kA / 415 V 12 kA / 690 V	70 kA / 415 V 12 kA / 690 V	100 kA / 415 V 15 kA / 690 V	150 kA / 415 V 15 kA / 690 V
Rated service short-circuit breaking capacity $I_{cs}$	36 kA / 415 V 10 kA / 690 V	50 kA / 415 V 12 kA / 690 V	70 kA / 415 V 12 kA / 690 V	100 kA / 415 V 15 kA / 690 V	150 kA / 415 V 15 kA / 690 V
Rated current	250 / 315 / 350 / 400 / 500 A				
Utilization category	A				
Mechanical service life	15 000 operation cycles				
Electrical service life	4 000 operation cycles / 415 V AC 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]				
	250 A	315 A	350 A	400 A	500 A
-40	350	441	490	560	700
-35	343	433	481	550	687
-25	332	418	465	530	662
-15	319	402	447	510	637
-5	306	386	429	490	612
0	300	378	420	480	600
10	287	362	402	460	575
20	275	346	385	440	550
30	262	331	367	420	525
40	250	315	350	400	500
50	237	300	332	380	450
60	225	286	295	360	406
70	212	271	276	320	360

### Power dissipation characteristics

$I_n$	250 A	315 A	350 A	400 A	500 A
Pole resistance (mΩ)	0.35	0.25	0.25	0.15	0.12
Pole power dissipation (W)	21.9	24.8	30.6	24	30

# Technical Data Ex9M3 AC TM

## AC TM Moulded Case Circuit Breakers up to 500 A

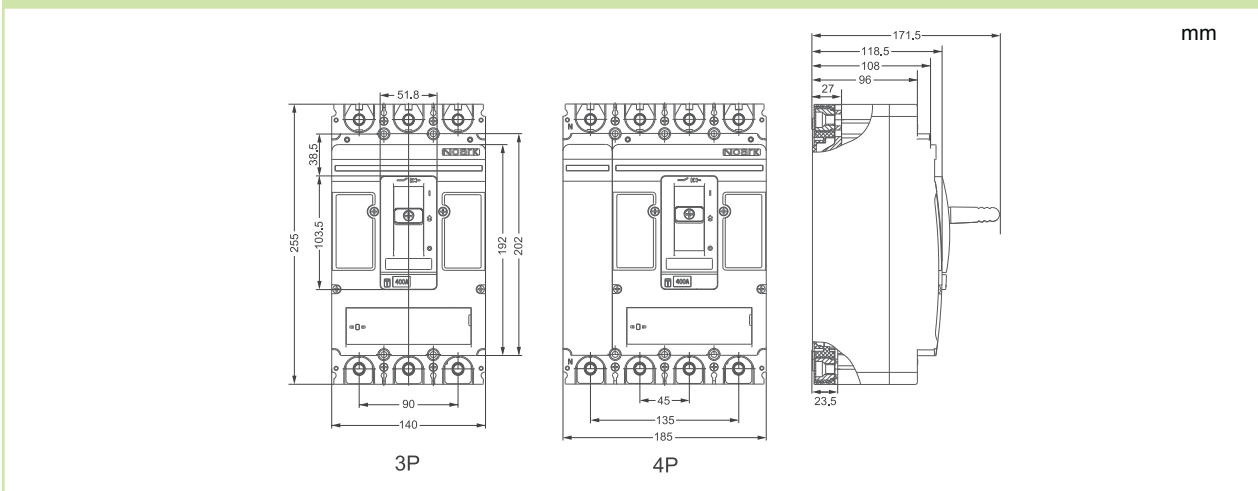
### Mechanical parameters

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

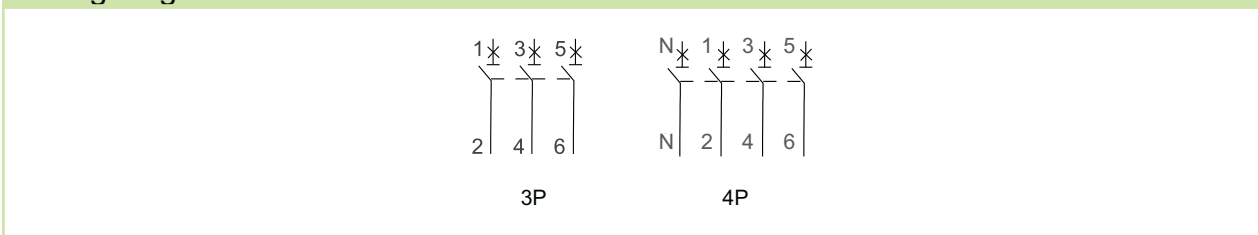
### Derating coefficient of technical parameters based on altitude

Altitude	≤ 2 000 m	3 000 m	4 000 m	5 000 m
Derating op. current $I_n$ coefficient	1	0.96	0.93	0.9
Maximum rated op. voltage $U_e$	690 V AC	550 V AC	480 V AC	420 V AC
Rated insulation voltage $U_i$	1000 V AC	930 V AC	870 V AC	800 V AC
Rated impulse withstand voltage $U_{imp}$	12 kV	10 kV	8 kV	8 kV
Dielectric properties ( $U_{imp}=12$ kV)	2550 V AC	2370 V AC	2200 V AC	2050 V AC

### Dimensions



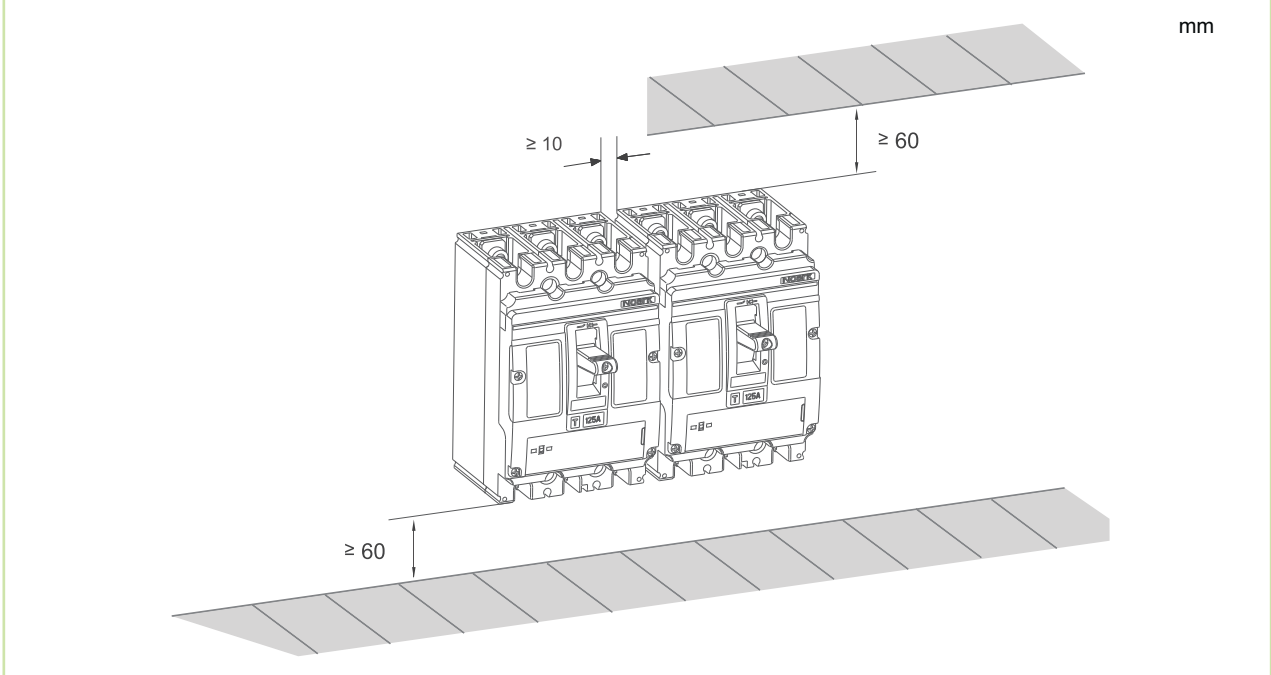
### Wiring diagram



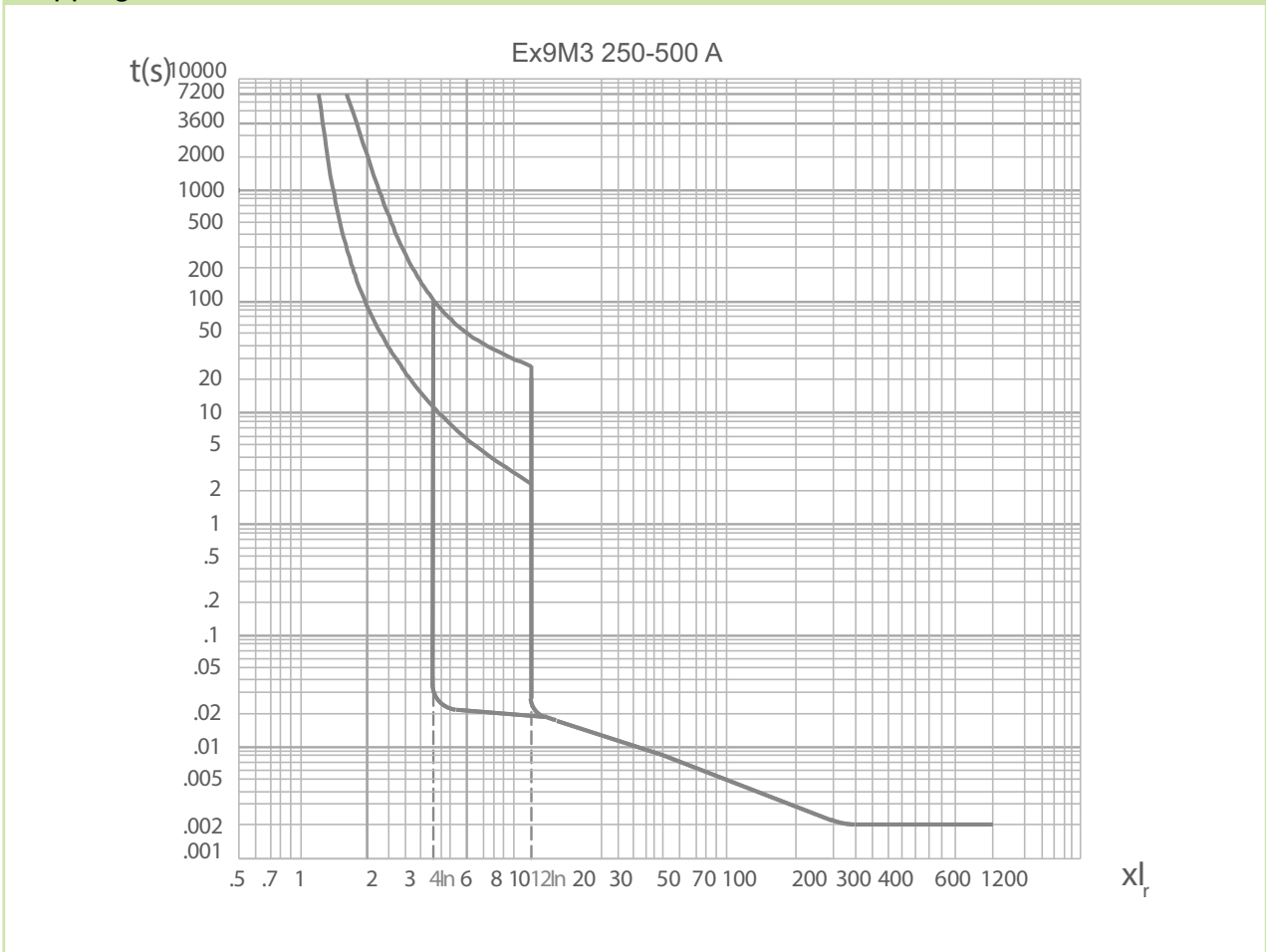
# Technical Data Ex9M3 AC TM

## AC TM Moulded Case Circuit Breakers up to 500 A

### Installation space



### Tripping characteristics



# Technical Data Ex9M4 AC TM

## AC 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  $(0.7 - 1.0) \times I_n$

$I_i$  can be set in range  $(5 - 10) \times I_n$

$I_{IN} = I_i$

#### 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
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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

# Technical Data Ex9M4 AC TM

## AC TM Moulded Case Circuit Breakers up to 630 A

### Electrical parameters

	Ex9M4S	Ex9M4N	Ex9M4Q	Ex9M4H	Ex9M4P
Tested according to	IEC/EN 60947-2				
Rated op. voltage $U_e$	380 / 400 / 415, 440, 500, 660 / 690 V AC				
Rated insulation voltage $U_i$	1 000 V				
Rated impulse withstand voltage $U_{imp}$	12 kV				
Rated frequency	50/60 Hz				
Rated ultimate short-circuit breaking capacity $I_{cu}$	36 kA / 415 V 12 kA / 690 V	50 kA / 415 V 15 kA / 690 V	70 kA / 415 V 15 kA / 690 V	100 kA / 415 V 20 kA / 690 V	150 kA / 415 V 30 kA / 690 V
Rated service short-circuit breaking capacity $I_{cs}$	36 kA / 415 V 12 kA / 690 V	50 kA / 415 V 15 kA / 690 V	70 kA / 415 V 15 kA / 690 V	100 kA / 415 V 15 kA / 690 V	150 kA / 415 V 15 kA / 690 V
Rated current	400 / 500 / 630 A				
Utilization category	A				
Mechanical service life	10 000 operation cycles				
Electrical service life	3 000 operation cycles / 415 V AC 1 000 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

# Technical Data Ex9M4 AC TM

## AC TM Moulded Case Circuit Breakers up to 630 A

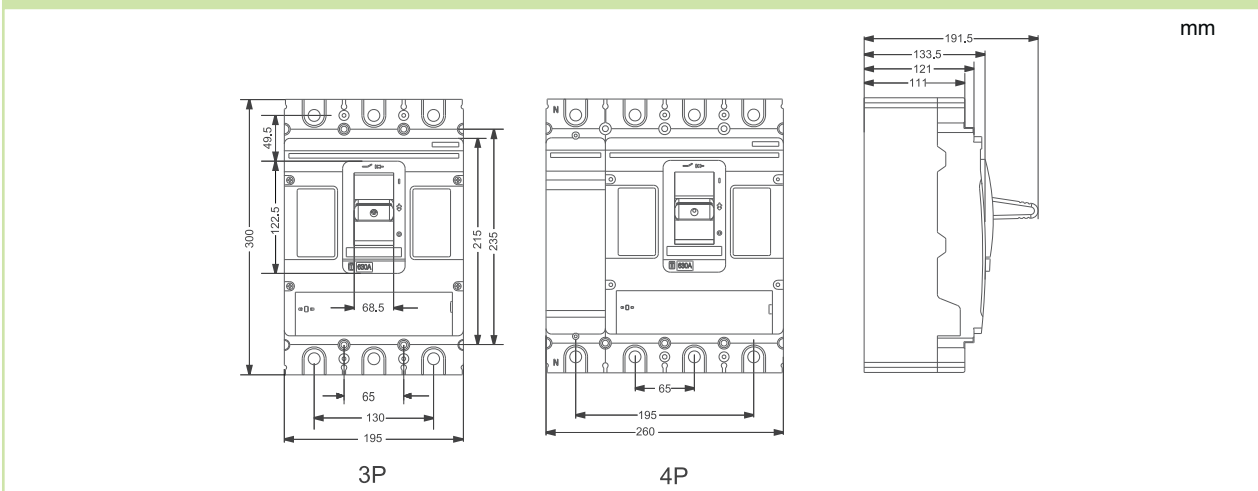
### Mechanical parameters

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

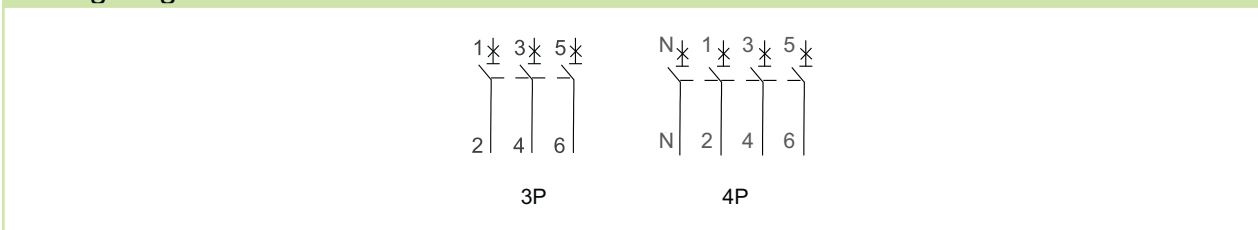
### Derating coefficient of technical parameters based on altitude

Altitude	≤ 2 000 m	3 000 m	4 000 m	5 000 m
Derating op. current $I_n$ coefficient	1	0.96	0.93	0.9
Maximum rated op. voltage $U_e$	690 V AC	550 V AC	480 V AC	420 V AC
Rated insulation voltage $U_i$	1000 V AC	930 V AC	870 V AC	800 V AC
Rated impulse withstand voltage $U_{imp}$	12 kV	10 kV	8 kV	8 kV
Dielectric properties ( $U_{imp}=12$ kV)	2550 V AC	2370 V AC	2200 V AC	2050 V AC

### Dimensions



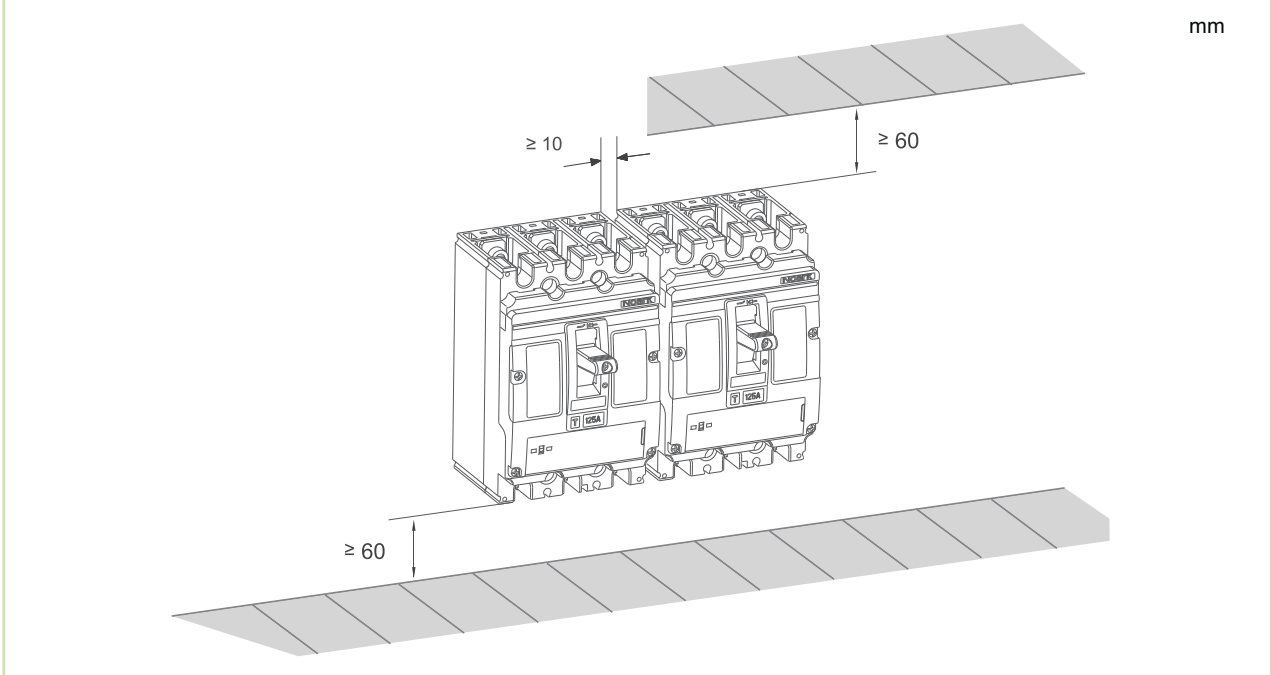
### Wiring diagram



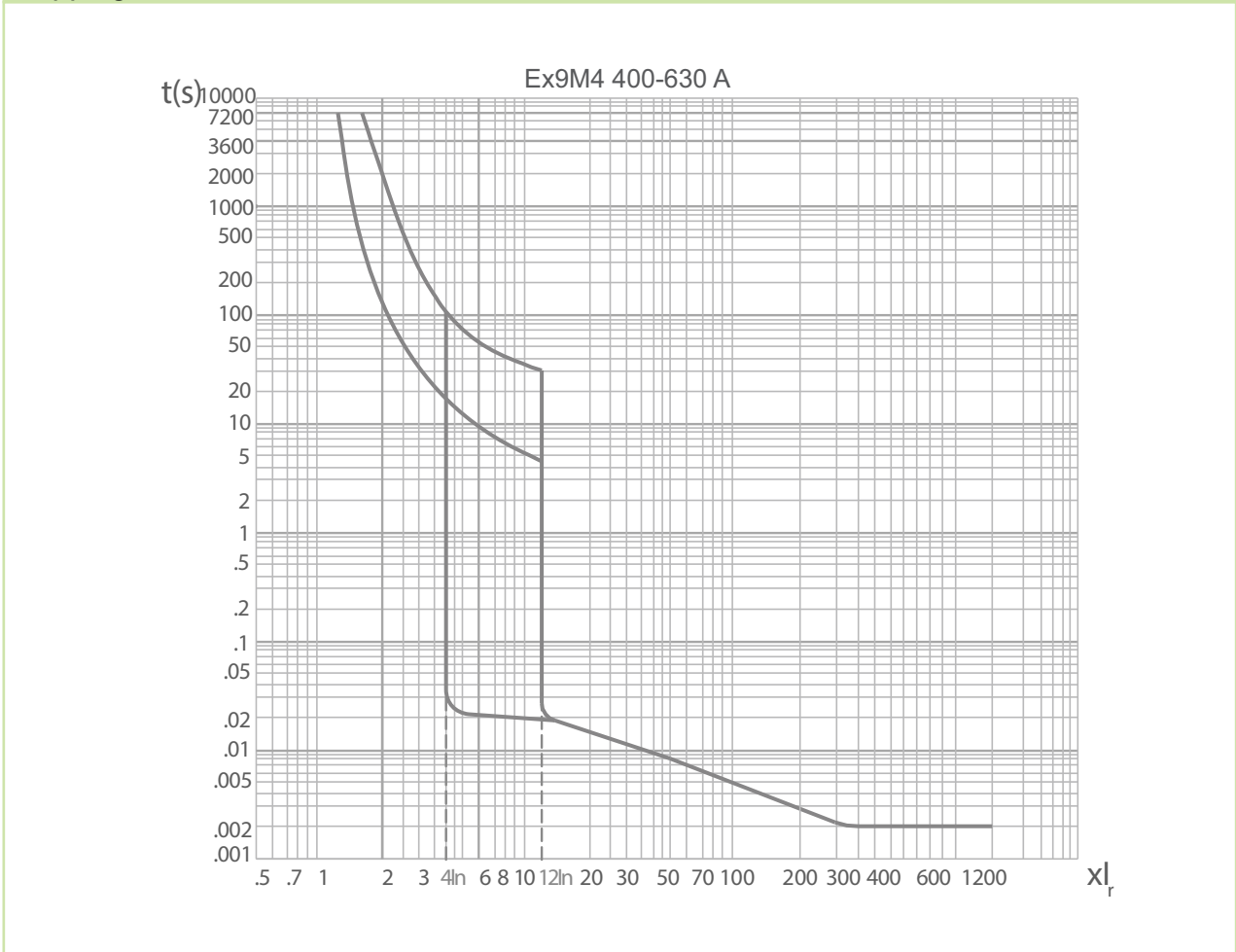
# Technical Data Ex9M4 AC TM

## AC TM Moulded Case Circuit Breakers up to 630 A

### Installation space



### Tripping characteristics



# Technical Data Ex9M5 AC TM

## AC 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  $(0.7 - 1.0) \times I_n$

$I_i$  can be set in range  $(5 - 10) \times I_n$

$I_{IN} = I_i$

#### 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



# Technical Data Ex9M5 AC TM

## AC TM Moulded Case Circuit Breakers up to 800 A

### Electrical parameters

	Ex9M5S	Ex9M5N	Ex9M5Q	Ex9M5H	Ex9M5P
Tested according to	IEC/EN 60947-2				
Rated op. voltage $U_e$	380 / 400 / 415, 440, 500, 660 / 690 V AC				
Rated insulation voltage $U_i$	1 000 V				
Rated impulse withstand voltage $U_{imp}$	12 kV				
Rated frequency	50/60 Hz				
Rated ultimate short-circuit breaking capacity $I_{cu}$	36 kA / 415 V 12 kA / 690 V	50 kA / 415 V 15 kA / 690 V	70 kA / 415 V 15 kA / 690 V	100 kA / 415 V 20 kA / 690 V	150 kA / 415 V 30 kA / 690 V
Rated service short-circuit breaking capacity $I_{cs}$	36 kA / 415 V 12 kA / 690 V	50 kA / 415 V 15 kA / 690 V	70 kA / 415 V 15 kA / 690 V	100 kA / 415 V 15 kA / 690 V	150 kA / 415 V 15 kA / 690 V
Rated current	630 / 700 / 800 A				
Utilization category	A				
Mechanical service life	10 000 operation cycles				
Electrical service life	2 000 operation cycles / 415 V AC 1 000 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]		
	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

# Technical Data Ex9M5 AC TM

## AC TM Moulded Case Circuit Breakers up to 800 A

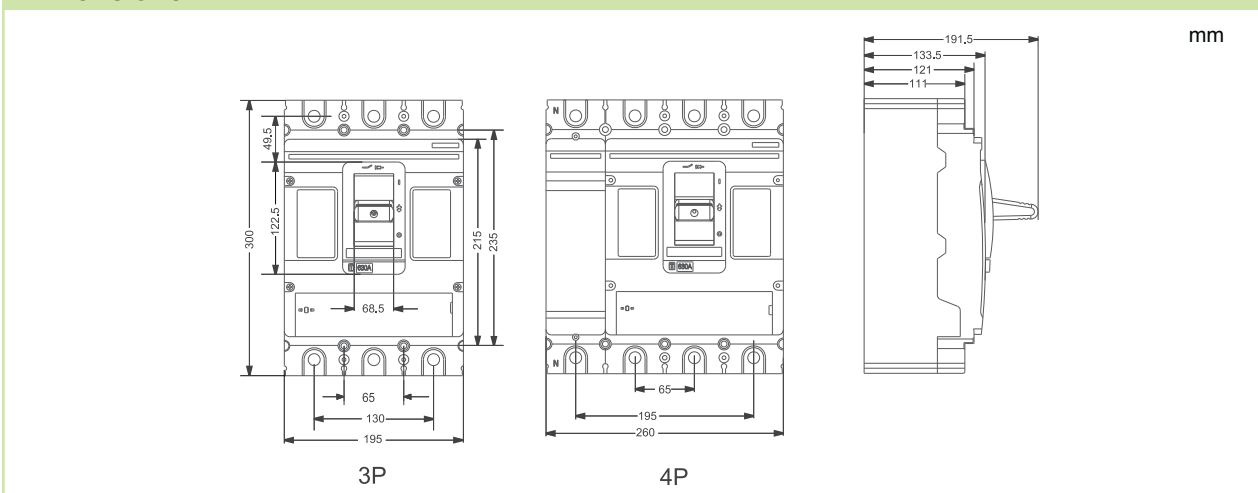
### Mechanical parameters

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

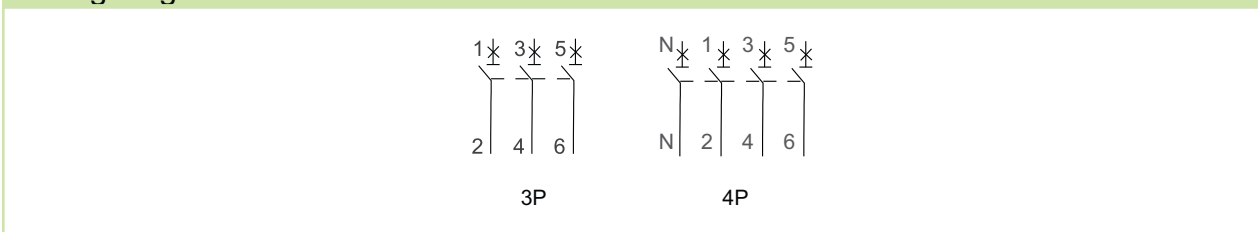
### Derating coefficient of technical parameters based on altitude

Altitude	≤ 2 000 m	3 000 m	4 000 m	5 000 m
Derating op. current $I_n$ coefficient	1	0.96	0.93	0.9
Maximum rated op. voltage $U_e$	690 V AC	550 V AC	480 V AC	420 V AC
Rated insulation voltage $U_i$	1000 V AC	930 V AC	870 V AC	800 V AC
Rated impulse withstand voltage $U_{imp}$	12 kV	10 kV	8 kV	8 kV
Dielectric properties ( $U_{imp}=12$ kV)	2550 V AC	2370 V AC	2200 V AC	2050 V AC

### Dimensions



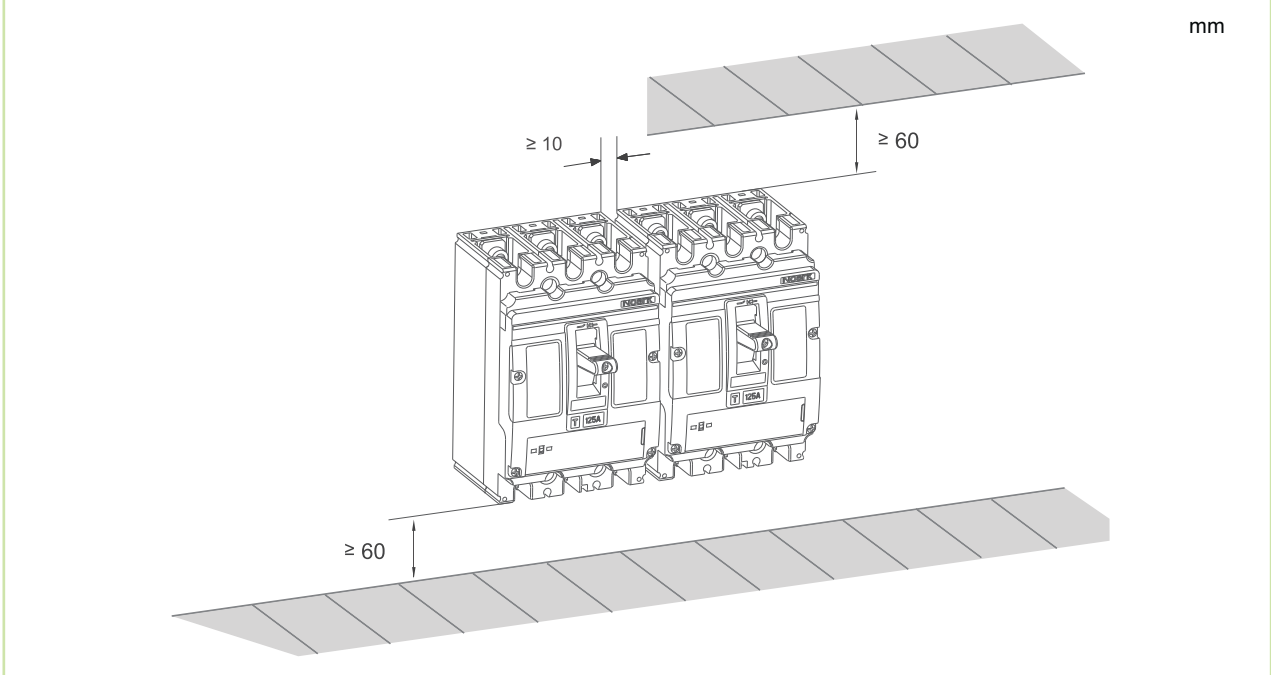
### Wiring diagram



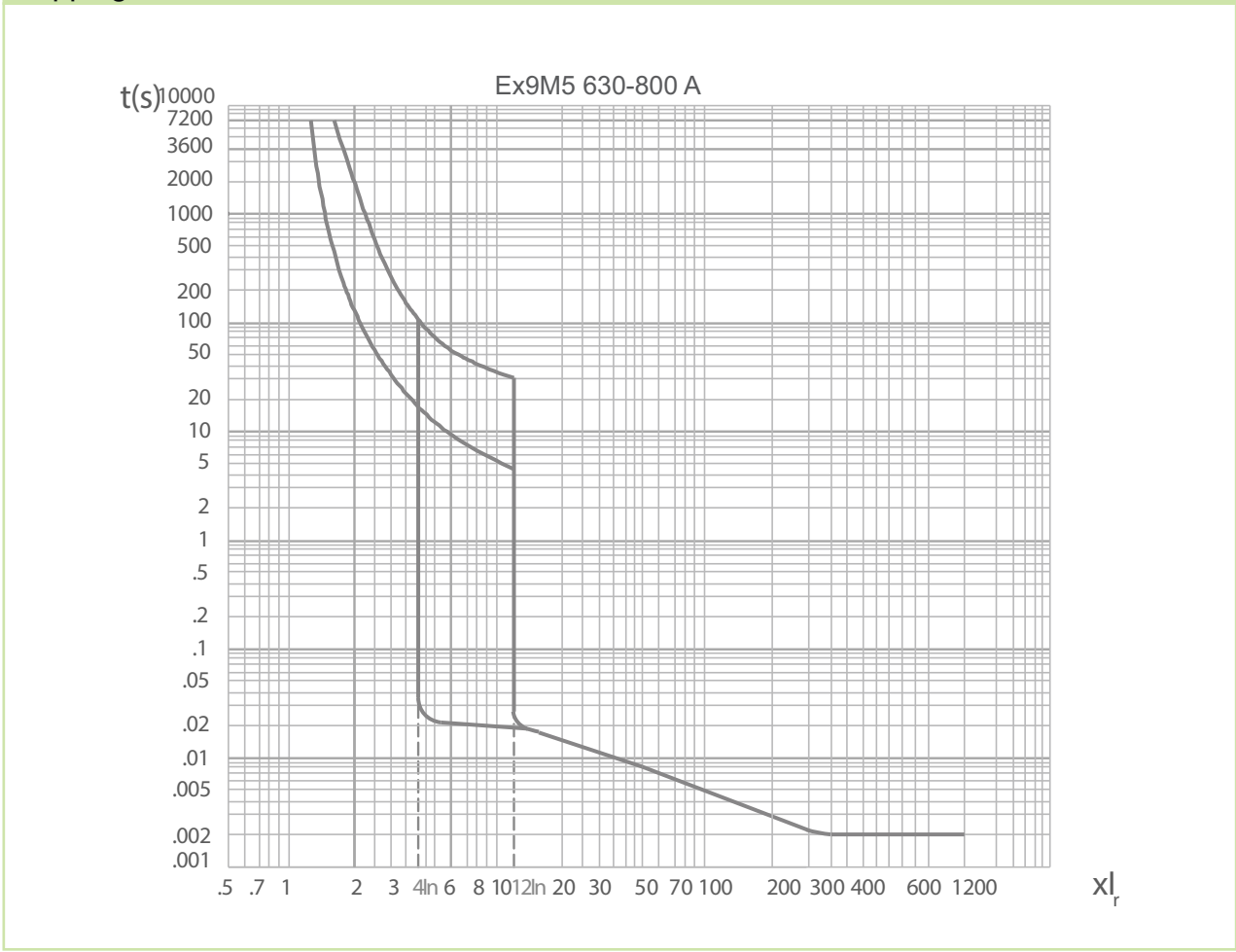
# Technical Data Ex9M5 AC TM

AC TM Moulded Case Circuit Breakers up to 800 A

## Installation space



## Tripping characteristics



# Technical Data Ex9M1SD AC

## AC Moulded Case Switch Disconnectors up to 160 A

### General parameters

Suitable for commercial as well as industrial applications

#### Internal accessories

Auxiliary contact unit	AX21M	112071
Shunt trip releases	SHT21	101397 — 101405
Undervoltage releases	UVT21	101406 — 101407
Max. number of installed internal accessories is 2 pcs of AX21M and 1 pc of a release (SHT21 or UVT21)		

#### External accessories

Direct rotary handle	RHD21	101410
Extended rotary handle	ERH21	101409
Remote motor operators	MOD21	101411 — 101415
Terminal cover, short	TCV21 3P, 4P	101439, 102372
Terminal cover, long	TCE21 3P, 4P	101440, 102373
Phase barrier	PHS21	112110
Connection terminals	MC21	103705 — 103708
DIN-rail adapter	DRA21	106319

Mounting screws, box terminals as well as phase barriers in the scope of delivery

# Technical Data Ex9M1 AC SD

## AC Moulded Case Switch Disconnectors up to 160 A

### Electrical parameters

Tested according to	IEC/EN 60947-3
Rated op. voltage $U_e$	690 V AC
Rated insulation voltage $U_i$	1 000 V
Rated impulse withstand voltage $U_{imp}$	8 kV
Rated frequency	50/60 Hz
Rated short-time making capacity $I_{cm}$	3.2 kA
Rated short-time withstand current $I_{cw}$	2 kA / 1 s 2 kA / 3 s
Rated current	160 A
Utilization category	AC-22A, AC-23A
Mechanical service life	15 000 operation cycles
Electrical service life	2 000 operation cycles / 690 V AC
Total disconnection time at short circuit	< 2 ms
Line voltage connection	arbitrary above or below

### Power dissipation characteristics

$I_n$	<b>160 A</b>
Pole resistance (m $\Omega$ )	0.8
Pole power dissipation (W)	20.5

### 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 <sup>2</sup>
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	1.05 kg / 1.55 kg
Mounting position	vertical, can be rotated by 90° in each axis

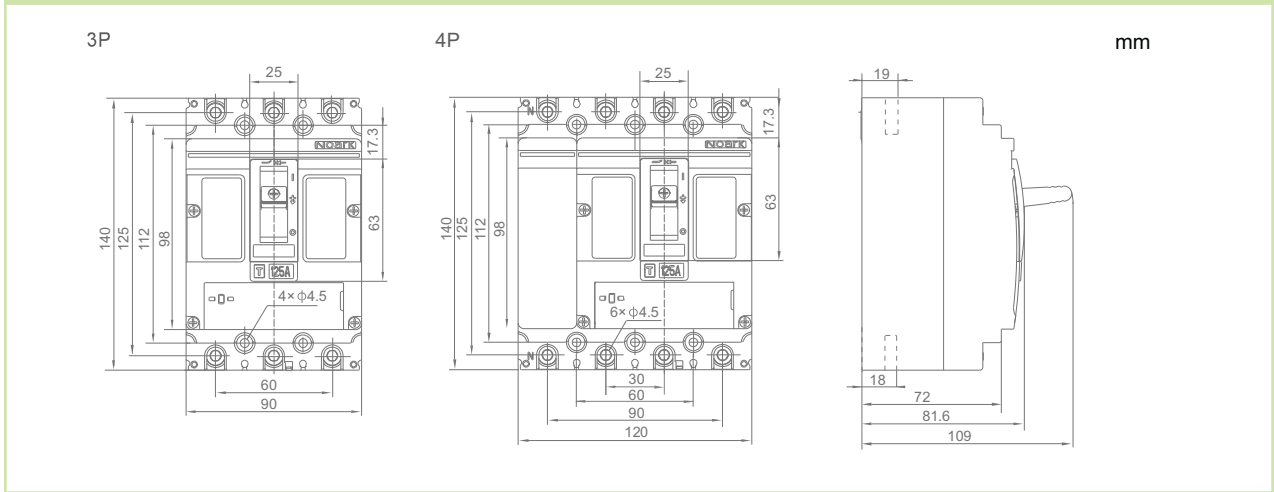
### Derating coefficient of technical parameters based on altitude

Altitude	≤ 2 000 m	3 000 m	4 000 m	5 000 m
Derating op. current $I_n$ coefficient	1	0.96	0.93	0.9
Maximum rated op. voltage $U_e$	690 V AC	550 V AC	480 V AC	420 V AC
Rated insulation voltage $U_i$	1000 V AC	930 V AC	870 V AC	800 V AC
Rated impulse withstand voltage $U_{imp}$	8 kV	8 kV	8 kV	8 kV
Dielectric properties ( $U_{imp}=8$ kV)	2200 V AC	2050 V AC	1900 V AC	1770 V AC

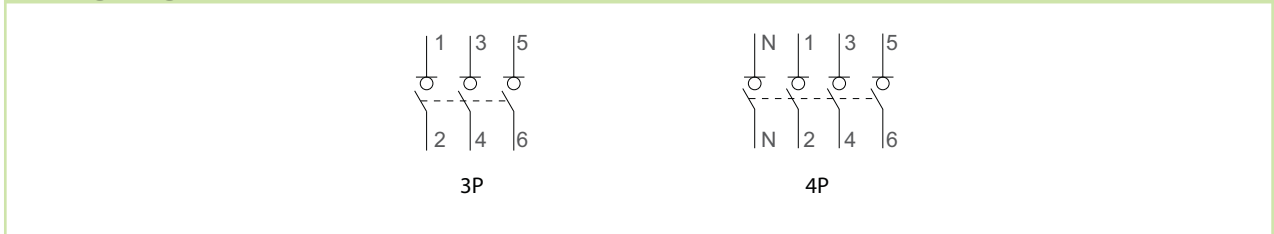
# Technical Data Ex9M1SD AC

## AC Moulded Case Switch Disconnectors up to 160 A

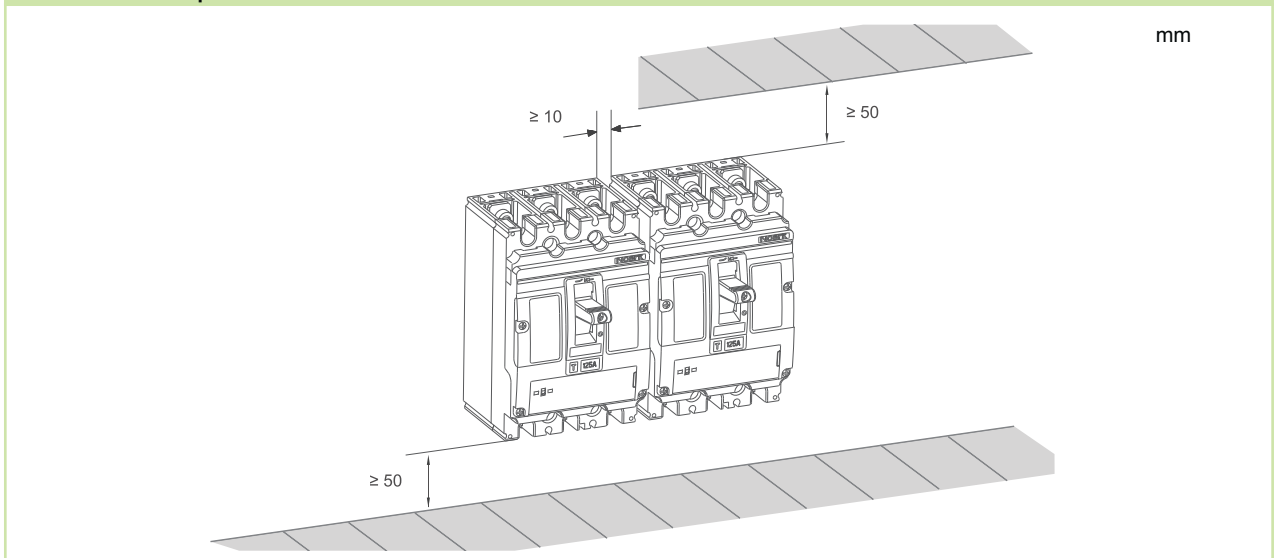
### Dimensions



### Wiring diagram



### Installation space



# Technical Data Ex9M2SD AC

## AC Moulded Case Switch Disconnectors up to 250 A

### General parameters

Suitable for commercial as well as industrial applications

#### Internal accessories

Auxiliary contact unit	AX21M	
Shunt trip releases	SHT22	
Undervoltage releases	UVT22	

Max. number of installed internal accessories is 2 pcs of AX21M 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	

Mounting screws, box terminals as well as phase barriers in the scope of delivery

# Technical Data Ex9M2SD AC

## AC Moulded Case Switch Disconnectors up to 250 A

### Electrical parameters

Tested according to	IEC/EN 60947-3
Rated op. voltage $U_e$	690 V AC
Rated insulation voltage $U_i$	1 000 V
Rated impulse withstand voltage $U_{imp}$	8 kV
Rated frequency	50/60 Hz
Rated short-time making capacity $I_{cm}$	5 kA / 690 V
Rated short-time withstand current $I_{cw}$	3.2 kA / 1 s 3.2 kA / 3 s
Rated current	250 A
Utilization category	AC-22A, AC-23A
Mechanical service life	15 000 operation cycles
Electrical service life	2 000 operation cycles / 690 V AC
Total disconnection time at short circuit	< 2 ms
Line voltage connection	arbitrary above or below

### Power dissipation characteristics

$I_n$	<b>250 A</b>
Pole resistance (mΩ)	0.4
Pole power dissipation (W)	25

### 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 <sup>2</sup>
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

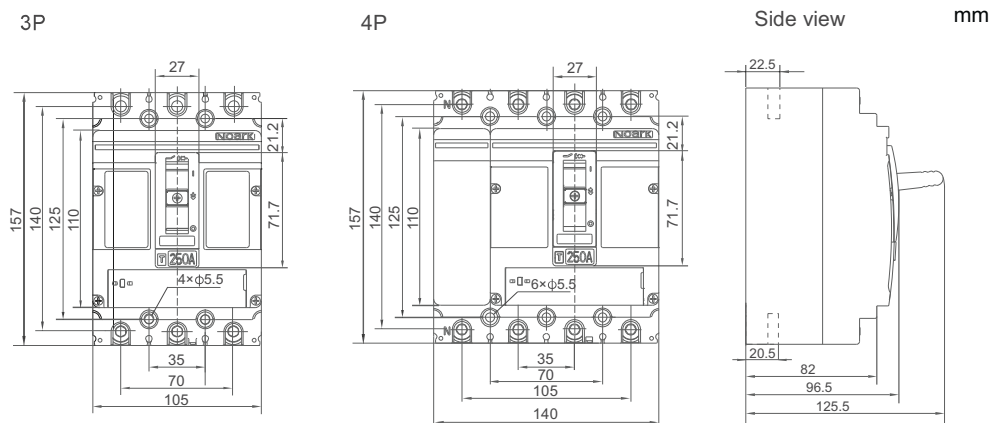
Altitude	≤ 2 000 m	3 000 m	4 000 m	5 000 m
Derating op. current $I_n$ coefficient	1	0.96	0.93	0.9
Maximum rated op. voltage $U_e$	690 V AC	550 V AC	480 V AC	420 V AC
Rated insulation voltage $U_i$	1000 V AC	930 V AC	870 V AC	800 V AC
Rated impulse withstand voltage $U_{imp}$	8 kV	8 kV	8 kV	8 kV
Dielectric properties ( $U_{imp}=8$ kV)	2200 V AC	2050 V AC	1900 V AC	1770 V AC



# Technical Data Ex9M2SD AC

## AC Moulded Case Switch Disconnectors up to 250 A

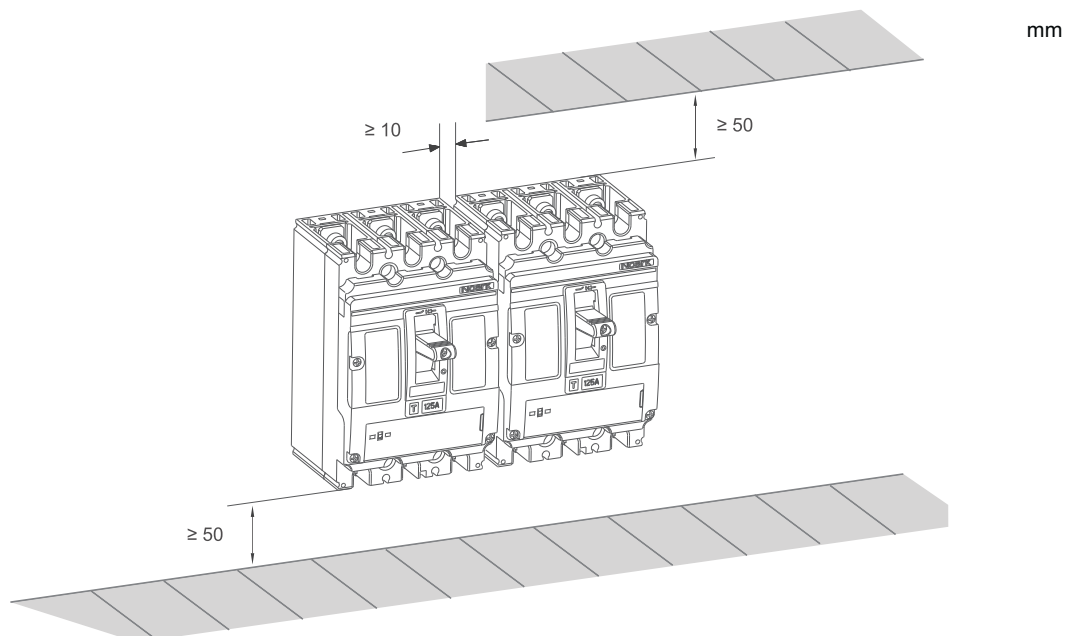
### Dimensions



### Wiring diagram



### Installation space



# Technical Data Ex9M3SD AC

## AC Moulded Case Switch Disconnectors up to 400 A

### General parameters

Suitable for commercial as well as industrial applications

#### Internal accessories

Auxiliary contact unit	AX21M	
Shunt trip releases	SHT22	
Undervoltage releases	UVT22	

Max. number of installed internal accessories is 2 pcs of AX21M 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

# Technical Data Ex9M3SD AC

## AC Moulded Case Switch Disconnectors up to 400 A

### Electrical parameters

Tested according to	IEC/EN 60947-3
Rated op. voltage $U_e$	690 V AC
Rated insulation voltage $U_i$	1 000 V
Rated impulse withstand voltage $U_{imp}$	12 kV
Rated frequency	50/60 Hz
Rated short-time making capacity $I_{cm}$	8 kA / 690 V
Rated short-time withstand current $I_{cw}$	5 kA / 1 s 5 kA / 3 s
Rated current	400 A
Utilization category	AC-22A, AC-23A
Mechanical service life	15 000 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

### Power dissipation characteristics

$I_n$	<b>400 A</b>
Pole resistance (m $\Omega$ )	0.15
Pole power dissipation (W)	24

### 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	$\leq 8$ mm
Busbar width	$\leq 30$ mm
Cable lug width	$\leq 30$ mm
Fastening torque of terminals	25 Nm
Ambient temperature	-40 — +70 °C
Relative humidity	$\leq 50$ % at 40 °C, $\leq 90$ % monthly average
Pollution degree	3
Weight 3P / 4P	5 kg / 6.5 kg
Mounting position	vertical, can be rotated by 90° in each axis

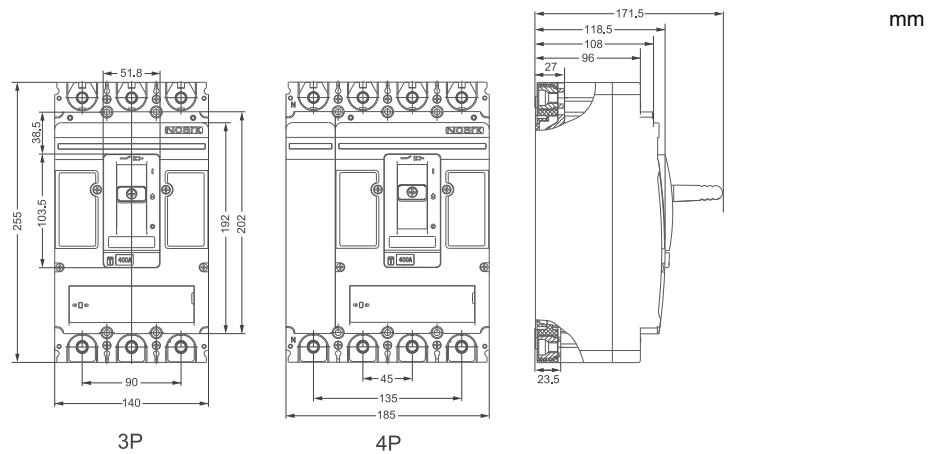
### Derating coefficient of technical parameters based on altitude

Altitude	$\leq 2\ 000$ m	3 000 m	4 000 m	5 000 m
Derating op. current $I_n$ coefficient	1	0.96	0.93	0.9
Maximum rated op. voltage $U_e$	690 V AC	550 V AC	480 V AC	420 V AC
Rated insulation voltage $U_i$	1000 V AC	930 V AC	870 V AC	800 V AC
Rated impulse withstand voltage $U_{imp}$	12 kV	10 kV	8 kV	8 kV
Dielectric properties ( $U_{imp}=12$ kV)	2550 V AC	2370 V AC	2200 V AC	2050 V AC

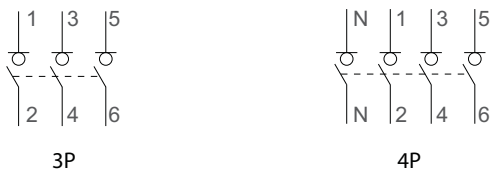
# Technical Data Ex9M3SD AC

AC Moulded Case Switch Disconnectors up to 400 A

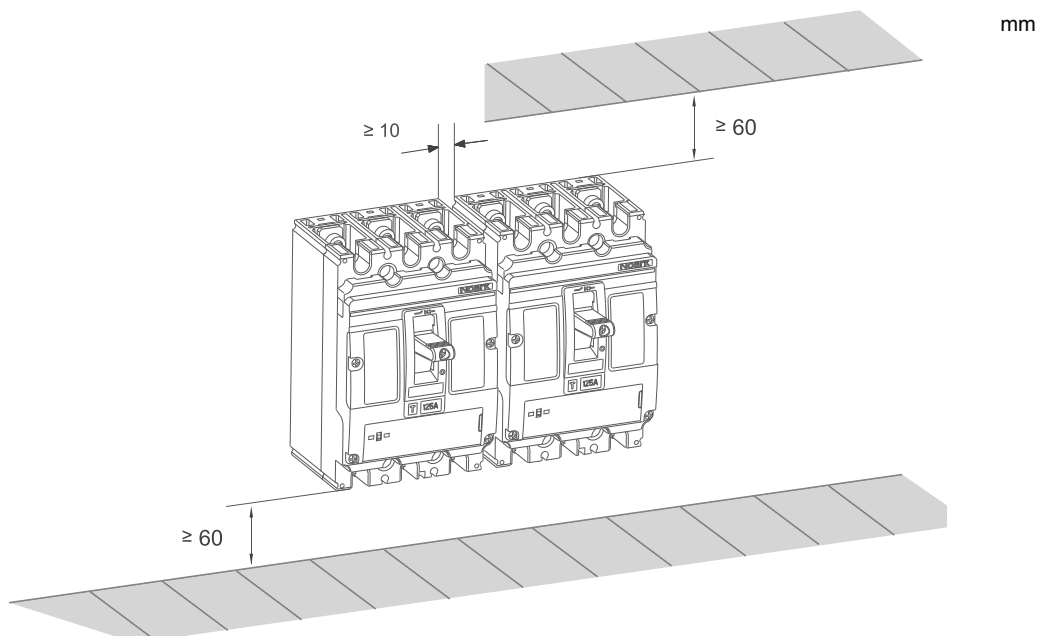
## Dimensions



## Wiring diagram



## Installation space



# Technical Data Ex9M4SD AC

## AC Moulded Case Switch Disconnectors up to 630 A

### General parameters

Suitable for commercial as well as industrial applications

#### Internal accessories

Auxiliary contact unit	AX21M	
Shunt trip releases	SHT24	
Undervoltage releases	UVT24	

Max. number of installed internal accessories is 2 pcs of AX21M 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

# Technical Data Ex9M4SD AC

## AC Moulded Case Switch Disconnectors up to 630 A

### Electrical parameters

Tested according to	IEC/EN 60947-3
Rated op. voltage $U_e$	690 V AC
Rated insulation voltage $U_i$	1 000 V
Rated impulse withstand voltage $U_{imp}$	12 kV
Rated frequency	50/60 Hz
Rated short-time making capacity $I_{cm}$	14 kA / 690 V
Rated short-time withstand current $I_{cw}$	8 kA / 1 s 8 kA / 3 s
Rated current	630 A
Utilization category	AC-22A, AC-23A
Mechanical service life	10 000 operation cycles
Electrical service life	1 000 operation cycles / 690 V AC
Total disconnection time at short circuit	< 2 ms
Line voltage connection	arbitrary above or below

### Power dissipation characteristics

$I_n$	<b>630 A</b>
Pole resistance (m $\Omega$ )	0.08
Pole power dissipation (W)	31.8

### 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	$\leq 10$ mm
Busbar width	$\leq 50$ mm
Cable lug width	$\leq 50$ mm
Fastening torque of terminals	30 Nm
Ambient temperature	-40 — +70 °C
Relative humidity	$\leq 50$ % at 40 °C, $\leq 90$ % monthly average
Pollution degree	3
Weight 3P / 4P	9.5 kg / 12.5 kg
Mounting position	vertical, can be rotated by 90° in each axis

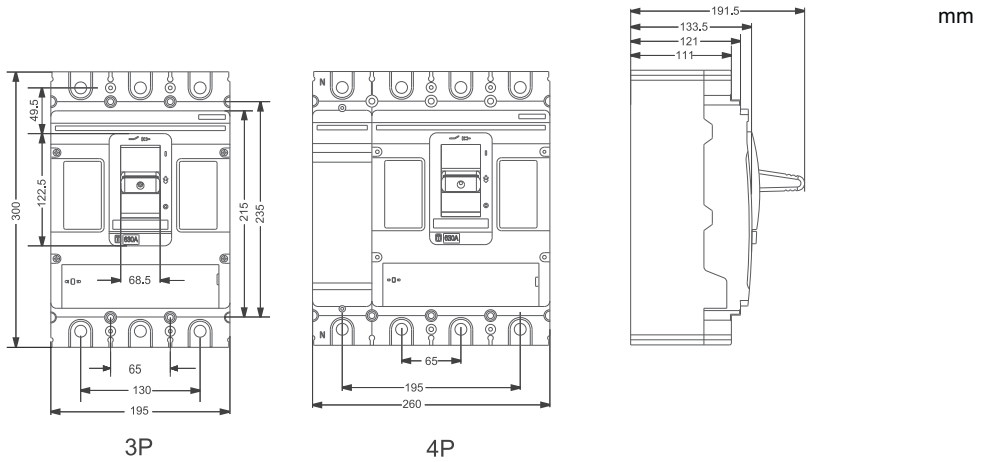
### Derating coefficient of technical parameters based on altitude

Altitude	$\leq 2\ 000$ m	3 000 m	4 000 m	5 000 m
Derating op. current $I_n$ coefficient	1	0.96	0.93	0.9
Maximum rated op. voltage $U_e$	690 V AC	550 V AC	480 V AC	420 V AC
Rated insulation voltage $U_i$	1000 V AC	930 V AC	870 V AC	800 V AC
Rated impulse withstand voltage $U_{imp}$	12 kV	10 kV	8 kV	8 kV
Dielectric properties ( $U_{imp}=12$ kV)	2550 V AC	2370 V AC	2200 V AC	2050 V AC

# Technical Data Ex9M4SD AC

## AC Moulded Case Switch Disconnectors up to 630 A

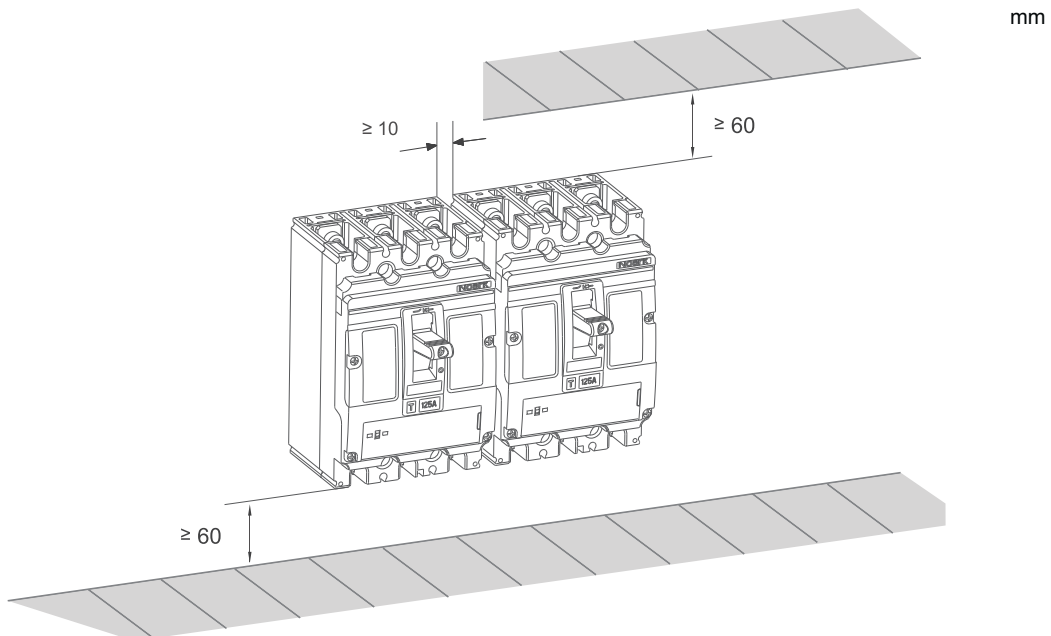
### Dimensions



### Wiring diagram



### Installation space



# Technical Data Ex9M5SD AC

## AC Moulded Case Switch Disconnectors up to 800 A

### General parameters

Suitable for commercial as well as industrial applications

#### Internal accessories

Auxiliary contact unit	AX21M
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Shunt trip releases	SHT24
---------------------	-------

Undervoltage releases	UVT24
-----------------------	-------

Max. number of installed internal accessories is 2 pcs of AX21M and 1 pc of a release (SHT24 or UVT24)

#### External accessories

Direct rotary handle	RHD24
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Extended rotary handle	ERH24
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Remote motor operators	MOD24
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Terminal cover, short	TCV24 3P, 4P
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Terminal cover, long	TCE24 3P, 4P
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Phase barrier	PHS24
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Connection terminals	MC24 W2
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Mounting screws, screw type terminals as well as phase barriers in the scope of delivery



# Technical Data Ex9M5SD AC

## AC Moulded Case Switch Disconnectors up to 800 A

### Electrical parameters

Tested according to	IEC/EN 60947-3
Rated op. voltage $U_e$	690 V AC
Rated insulation voltage $U_i$	1 000 V
Rated impulse withstand voltage $U_{imp}$	12 kV
Rated frequency	50/60 Hz
Rated short-time making capacity $I_{cm}$	17 kA / 690 V
Rated short-time withstand current $I_{cw}$	10 kA / 1 s 10 kA / 3 s
Rated current	800 A
Utilization category	AC-22A, AC-23A
Mechanical service life	10 000 operation cycles
Electrical service life	1 000 operation cycles / 690 V AC
Total disconnection time at short circuit	< 2 ms
Line voltage connection	arbitrary above or below

### Power dissipation characteristics

$I_n$	800 A
Pole resistance (mΩ)	0.08
Pole power dissipation (W)	51.2

### 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	9.5 kg / 12.5 kg
Mounting position	vertical, can be rotated by 90° in each axis

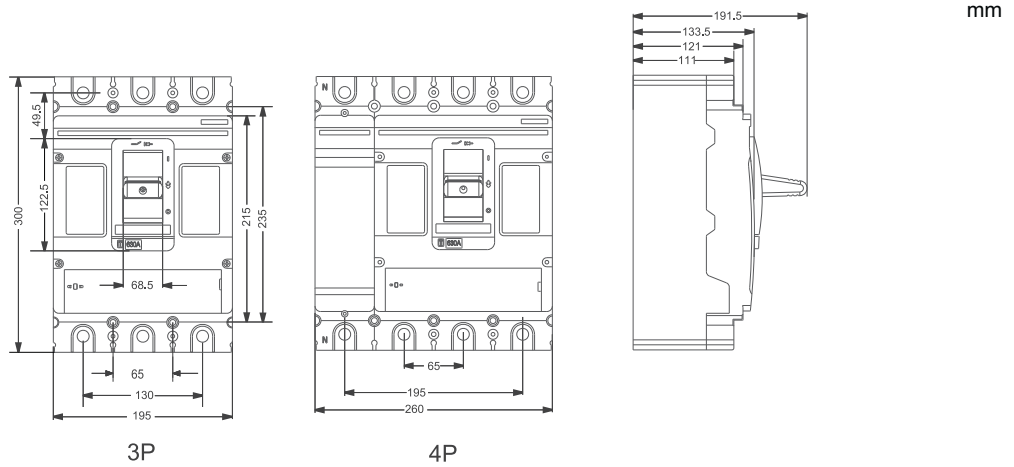
### Derating coefficient of technical parameters based on altitude

Altitude	≤ 2 000 m	3 000 m	4 000 m	5 000 m
Derating op. current $I_n$ coefficient	1	0.96	0.93	0.9
Maximum rated op. voltage $U_e$	690 V AC	550 V AC	480 V AC	420 V AC
Rated insulation voltage $U_i$	1000 V AC	930 V AC	870 V AC	800 V AC
Rated impulse withstand voltage $U_{imp}$	12 kV	10 kV	8 kV	8 kV
Dielectric properties ( $U_{imp}=12$ kV)	2550 V AC	2370 V AC	2200 V AC	2050 V AC

# Technical Data Ex9M5SD AC

AC Moulded Case Switch Disconnectors up to 800 A

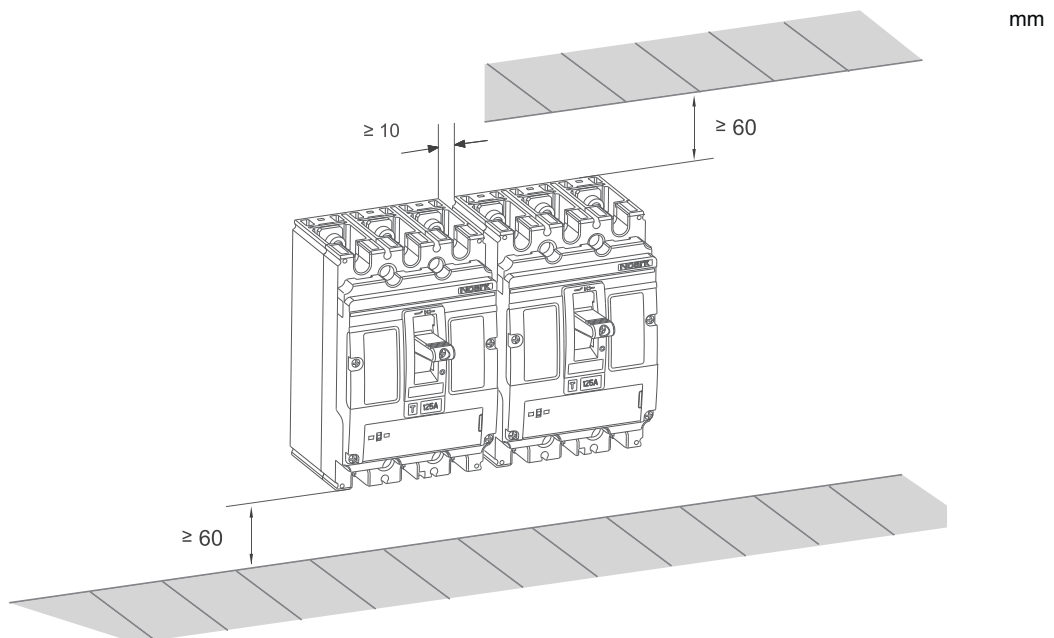
## Dimensions



## Wiring diagram



## Installation space



# Technical Data Ex9M6SD AC

## AC Moulded Case Switch Disconnectors up to 1 600 A

### General parameters

Suitable for household as well as industrial applications

#### Internal accessories

Auxiliary contact unit	AX21M	
Shunt trip releases	SHT26	
Undervoltage releases	UVT26	

Max. number of installed internal accessories is 2 pcs of AX21 and 1 pc of a release (SHT26 or UVT26)

#### External accessories

Extended handle	LHD26	
Extended rotary handle	ERH26	
Front connection plate	JP26	

Mounting screws, screw type terminals as well as phase barriers in the scope of delivery

# Technical Data Ex9M6SD AC

## AC Moulded Case Switch Disconnectors up to 1 600 A

### Electrical parameters

Tested according to	IEC/EN 60947-3
Rated op. voltage $U_e$	690 V AC
Rated insulation voltage $U_i$	1 000 V
Rated impulse withstand voltage $U_{imp}$	12 kV
Rated frequency	50/60 Hz
Rated short-time making capacity $I_{cm}$	40 kA / 690 V
Rated short-time withstand current $I_{cw}$	20 kA / 1 s 20 kA / 3 s
Rated current	800 / 1 000 / 1 250 / 1 600 A
Utilization category	AC-22A, AC-23A
Mechanical service life	6 000 operation cycles
Electrical service life	1 000 operation cycles / 690 V AC
Total disconnection time at short circuit	< 2 ms
Line voltage connection	arbitrary above or below

### Power dissipation characteristics

$I_n$	800 A	1 000 A	1 250 A	1 600 A
Pole resistance (mΩ)	0.08	0.08	0.04	0.04
Pole power dissipation (W)	51.2	80.0	62.5	102.4

### Mechanical parameters

Device width 3P / 4P	210 mm / 280 mm
Device height	286 mm
Device depth	191 mm
Mounting	onto panel
Degree of protection	IP40, IP20 terminals
Terminals	M10 screws
Busbar thickness	≤ 10 mm
Busbar width	≤ 50 mm
Cable lug width	≤ 50 mm
Fastening torque of terminals	25 — 30 Nm
Ambient temperature	-40 — +70 °C
Relative humidity	≤ 50 % at 40 °C, ≤ 90 % monthly average
Pollution degree	3
Weight 3P / 4P	13 / 17 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
Derating op. current $I_n$ coefficient	1	0.96	0.93	0.9
Maximum rated op. voltage $U_e$	690 V AC	550 V AC	480 V AC	420 V AC
Rated insulation voltage $U_i$	1000 V AC	930 V AC	870 V AC	800 V AC
Rated impulse withstand voltage $U_{imp}$	8 kV	8 kV	8 kV	8 kV
Dielectric properties ( $U_{imp}=8$ kV)	2200 V AC	2050 V AC	1900 V AC	1770 V AC

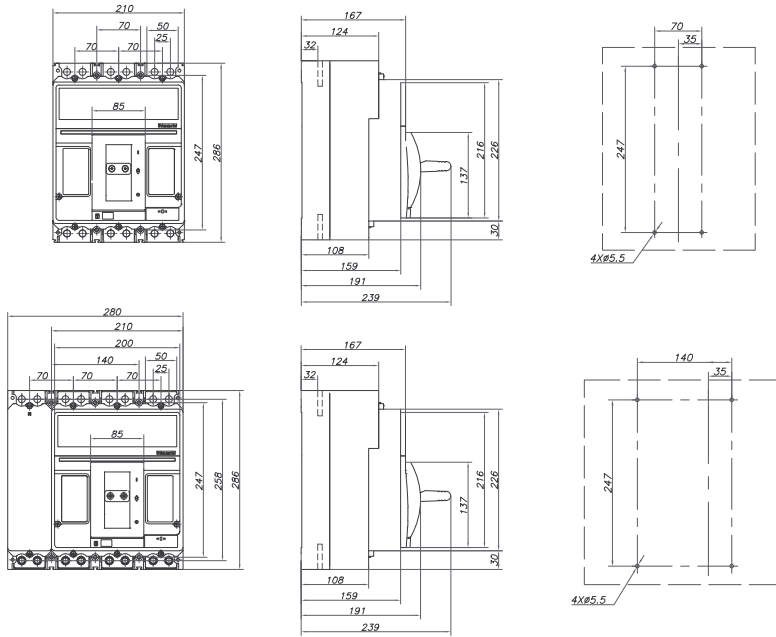
# Technical Data Ex9M6SD AC

## AC Moulded Case Switch Disconnectors up to 1 600 A

### Dimensions

mm

3P



4P

### Wiring diagram

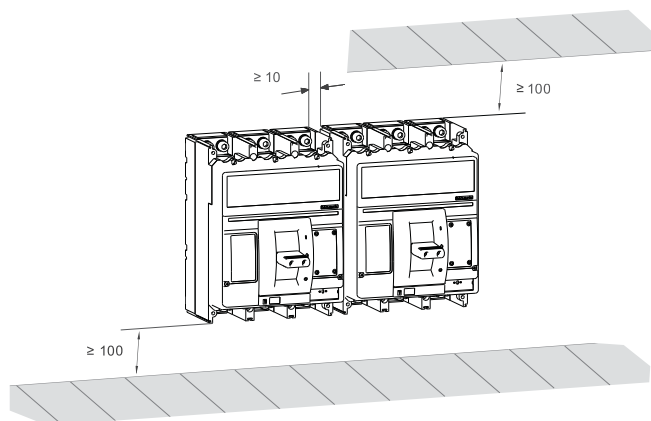


3P

4P

### Installation space

mm



# Coordination table

Coordination table for cascade protection (220/230/240 VAC)

Up-stream	Ex9M1					Ex9M2					Ex9M3					Ex9M4					Ex9M5				
	S	N	Q	H	P	S	N	Q	H	P	S	N	Q	H	P	S	N	Q	H	P	S	N	Q	H	P
Breaking capacity (kA rms)	36	50	70	100	150	36	50	70	100	150	36	50	70	100	150	36	50	70	100	150	36	50	70	100	150
Down-stream	Breaking capacity (kA rms)																								
Ex9BN	25	30	40	60	60	25	30	40	60	60	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ex9BH	30	40	50	65	65	30	40	50	65	65	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ex9M1S		50	60	80	100		50	60	80	100		50	60	80	100		50	60	80	100		50	60	80	100
Ex9M1N			70	90	120			70	90	120			70	90	120			70	90	120			70	90	120
Ex9M1Q				90	140				90	140				90	140				90	140				90	140
Ex9M1H					150					150					150					150					150
Ex9M2S							50	60	80	100		50	60	80	100		50	60	80	100		50	60	80	100
Ex9M2N								70	90	120			70	90	120			70	90	120			70	90	120
Ex9M2Q									90	140				90	140				90	140				90	140
Ex9M2H										150					150					150					150
Ex9M3S												50	60	80	100		50	60	80	100		50	60	80	100
Ex9M3N													70	90	120			70	90	120			70	90	120
Ex9M3Q														90	140				90	140				90	140
Ex9M3H															150					150					150
Ex9M4S																	50	60	80	100		50	60	80	100
Ex9M4N																		70	90	120			70	90	120
Ex9M4Q																			90	140				90	140
Ex9M4H																				150					150
Ex9M5S																						50	60	80	100
Ex9M5N																							70	90	120
Ex9M5Q																								90	140
Ex9M5H																									150

# Coordination table

Coordination table for cascade protection (380/400/415 VAC)

Up-stream	Ex9M1					Ex9M2					Ex9M3					Ex9M4					Ex9M5				
	S	N	Q	H	P	S	N	Q	H	P	S	N	Q	H	P	S	N	Q	H	P	S	N	Q	H	P
Breaking capacity (kA rms)	36	50	70	100	150	36	50	70	100	150	36	50	70	100	150	36	50	70	100	150	36	50	70	100	150
Down-stream	Breaking capacity (kA rms)																								
Ex9BN	25	25	25	25	25	25	25	25	25	25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ex9BH	30	30	30	30	30	30	30	30	30	30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ex9M1S		50	50	80	100		50	50	80	100		50	50	80	100		50	50	80	100		50	50	80	100
Ex9M1N			70	90	120			70	90	120			70	90	120			70	90	120			70	90	120
Ex9M1Q				90	140				90	140				90	140				90	140				90	140
Ex9M1H				150						150					150					150					150
Ex9M2S							50	50	80	100		50	50	80	100		50	50	80	100		50	50	80	100
Ex9M2N								70	90	120			70	90	120			70	90	120			70	90	120
Ex9M2Q									90	140				90	140				90	140				90	140
Ex9M2H										150					150					150					150
Ex9M3S												50	50	80	100		50	50	80	100		50	50	80	100
Ex9M3N													70	90	120			70	90	120			70	90	120
Ex9M3Q														90	140				90	140				90	140
Ex9M3H															150					150					150
Ex9M4S																	50	50	80	100		50	50	80	100
Ex9M4N																		70	90	120			70	90	120
Ex9M4Q																			90	140				90	140
Ex9M4H																				150					150
Ex9M5S																						50	50	80	100
Ex9M5N																							70	90	120
Ex9M5Q																								90	140
Ex9M5H																									150

# Selectivity protection

Selectivity protection table. Number: Maximum fault current to achieve selectivity

Upstream		Ex9M1 TM											Ex9M2 TM					Ex9M2 SU20S								
Down-stream	In (A)	16	20	25	32	40	50	63	80	100	125	160	125	160	180	200	225	250	32	63	100	160	250			
Ex9B B and C Characteristics	≤10	190	190	300	400	500	500	500	630	800	1000	1250	T	T	T	T	T	T	400	500	1000	T	T			
	16			300	400	500	500	500	630	800	1000	1250	T	T	T	T	T	T	400	500	1000	T	T			
	20					500	500	500	630	800	1000	1250	T	T	T	T	T	T		500	1000	T	T			
	25						500	500	630	800	1000	1250	T	T	T	T	T	T		500	1000	T	T			
	32							500	630	800	1000	1250	2000	5000	T	T	T	T		500	1000	T	T			
	40								630	800	1000	1250	2000	5000	T	T	T	T			1000	T	T			
	50									800	1000	1250	2000	5000	T	T	T	T			1000	T	T			
	63										1000	1250	2000	5000	T	T	T	T			1000	T	T			
Ex9M1 TM	16					400	500	500	630	800	1000	1250	1000	2500	2500	2500	2500	2800		500	1000	2500	2800			
	20						500	500	630	800	1000	1250	1000	2500	2500	2500	2500	2800		500	1000	2500	2800			
	25							500	630	800	1000	1250	1000	2500	2500	2500	2500	2800		500	1000	2500	2800			
	32								630	800	1000	1250	1000	2500	2500	2500	2500	2800			1000	2500	2800			
	40									800	1000	1250	1000	2000	2000	2500	2500	2800			1000	2500	2800			
	50										1000	1250	1000	2000	2000	2500	2500	2800			1000	2500	2800			
	63											1250	1000	2000	2000	2500	2500	2800				2500	2800			
	80													2000	2000	2500	2500	2800				2500	2800			
	100																2500	2500	2800					2800		
	125																		2500	2800					2800	
160																				2500	2800					2800
Ex9M2 TM	125																									
	160																									
	180																									
	200																									
	225																									
250																										
Ex9M2 SU20S/L	32																				1000	2000	2800			
	63																					2000	2800			
	100																						2800			
	160																									
	250																									
Ex9M3	250																									
	315																									
	350																									
	400																									
	500																									
Ex9M3 SU20S/L	250																									
	400																									
	630																									



