Accessories for MCCBs Ex9M

- **Accessories for Ex9M line devices**
- **Auxiliary contacts synchronous with main contacts**
- **Signal contacts active on electrical tripping of the circuit breaker (tripping signal contacts)**
- **Shunt trip and undervoltage releases**
- **Remote operators**
- **Rotary handles**
- **Connection terminals and covers**
- **Mounting depth spacers and adaptors**

Accessories suitable for Moulded Case Circuit Breakers Ex9M. It is possible to supplement or modify functions of a basic circuit breaker by installing of suitable accessories.

Circuit breakers can be equipped with auxiliary contacts AX21M (up to 2 units even for M1 frame size) and one unit of signal contact AL21M. AX21M and AL21M are mounted into different positions, a use of one type of the contact does not limit a number of the second type. AX21M and AL21M can be used regardless the frame size of the circuit breaker.

One unit of undervoltage release UVT2*i* or one unit of shunt trip relase SHT2*i* can be installed in the breaker. Different versions for different frame sizes allow to optimise power comsumption of these units.

The circuit breakers can also be equipped with different accesories for operation of the toggle. There are available direct rotary handle, rotary handle with extended shaft e.g. for door coupling and a motor operator.

Mounting of the device onto plate can be done directly with the screws which are included in the scope of delivery. Or in case of M1 and M2 devices there is possibility to use adaptors DRA for mounting onto DIN-rail 35 mm. If it is requested to place devices of different frame size side by side, it is possible to use for compensation of differences in height mounting depth spacers WG which assure the same position of front panel towards front plate.

For connection of conductors there are available various types of box and tunnel terminals MC.

Accessories for MCCBs Ex9M

Auxiliary and signal contact units

- Contact units for auxiliary and signal contact functions are suitable for all frame sizes
- Auxiliary contacts synchronous with main contacts of the circuit breaker
- Signal contacts active on electrical tripping of the circuit breaker (tripping signal contacts)
- It is possible to use 1 unit AL21 plus up to four units of AX21 in one MCCBs (depends on frame size)

Function	Frame size	Contacts	Article No.	Type	Packing
Auxiliary	all	1 CO	112071	AX21M	1/24
Signal	all	1 CO	112072	AL21M	1/24

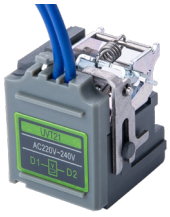
Shunt trip releases

- It is possible to use one unit of shunt trip release SHT2*i* or one unit of undervoltage release UVT2*i*

Aux. cont.	Frame size	Operating Voltage	Article No.	Type	Packing
-	M1	110V AC	101398	SHT21 AC110V	1/24
-	M1	220-240V AC	101399	SHT21 AC220-240V	1/24
-	M1	380-415V AC	101400	SHT21 AC380-415V	1/24
-	M1	24V DC	101401	SHT21 DC24V	1/24
-	M1	220V DC	101405	SHT21 DC220V	1/24
-	M2, M3	110V AC	101417	SHT22 AC110V	1/24
-	M2, M3	220-240V AC	101418	SHT22 AC220-240V	1/24
-	M2, M3	380-415V AC	101419	SHT22 AC380-415V	1/24
-	M2, M3	24V DC	101420	SHT22 DC24V	1/24
-	M2, M3	220V DC	101424	SHT22 DC220V	1/24
-	M4, M5	110V AC	103723	SHT24 AC110V	1/12
-	M4, M5	220-240V AC	103724	SHT24 AC220-240V	1/12
-	M4, M5	380-415V AC	103725	SHT24 AC380-415V	1/12
-	M4, M5	24V DC	103729	SHT24 DC24V	1/12

Undervoltage releases

- It is possible to use one unit of undervoltage release UVT2*i* or one unit of shunt trip release SHT2*i*



Aux. cont.	Frame size	Operating Voltage	Article No.	Type	Packing
-	M1	110V AC	108814	UVT21 AC110V	1/24
-	M1	220-240V AC	101406	UVT21 220-240V AC	1/24
-	M1	380-415V AC	101407	UVT21 380-415V AC	1/24
-	M1	24V DC	110705	UVT21 24V DC	1/24
-	M1	48V DC	108816	UVT21 DC48V	1/24
-	M1	110-120V DC	108817	UVT21 DC110-120V	1/24
-	M1	220V DC	108818	UVT21 DC220V	1/24
-	M2, M3	110V AC	108820	UVT22 AC110V	1/24
-	M2, M3	220-240V AC	101425	UVT22 220-240V AC	1/24
-	M2, M3	380-415V AC	101426	UVT22 380-415V AC	1/24
-	M2, M3	24V DC	110706	UVT22 DC24V	1/24
-	M2, M3	48V DC	108822	UVT22 DC48V	1/24
-	M2, M3	110-120V DC	108823	UVT22 DC110-120V	1/24
-	M2, M3	220V DC	108824	UVT22 DC220V	1/24
-	M4, M5	110V AC	103733	UVT24 AC110V	1/12
-	M4, M5	220-240V AC	103734	UVT24 AC220-240V	1/12
-	M4, M5	380-415V AC	103735	UVT24 AC380-415V	1/12
-	M4, M5	24V DC	103738	UVT24 DC24V	1/12
-	M4, M5	48V DC	103739	UVT24 DC48V	1/12
-	M4, M5	110-120V DC	103736	UVT24 DC110-120V	1/12
-	M4, M5	220V DC	103737	UVT24 DC220V	1/12

Accessories for MCCBs Ex9M

Phase barriers

- Phase barriers to avoid short circuit due to ionised gas during tripping off of the breaker when unisolated busbars are used for its connection
- In the scope of delivery of MCCBs, separately orderable as a spare part
- Set consists of appropriate number of barriers suitable for both sides MCCB

Frame size	Poles	Article No.	Type	Packing
M1	3P	101441	PB21 3P	1 set
M2	3P	101444	PB22 3P	1 set
M3	3P	101491	PB23 3P	1 set
M4, M5	3P	103751	PB24 3P	1 set
M1	4P	104852	PB21 4P	1 set
M2	4P	104853	PB22 4P	1 set
M3	4P	104854	PB23 4P	1 set
M4, M5	4P	104856	PB24 4P	1 set

Remote operators

- Motor drives for electrical and remote control of MCCBs
- Available for all frame sizes

Frame size	Operating Voltage	Article No.	Type	Packing
M1	380-415 V AC	112079	MOD 21 AC380-415V	1/8
M1	220-240 V AC / 220 V DC	101411	MOD 21 AC220-240V/DC220V	1/8
M1	110 V AC / 110-120 V DC	101412	MOD 21 AC110/DC110-120V	1/8
M1	24 V DC	101415	MOD 21 DC24V	1/8
M2	380-415 V AC	112080	MOD 22 AC380-415V	1/8
M2	220-240 V AC / 220 V DC	101430	MOD 22 AC220-240V/DC220V	1/8
M2	110 V AC / 110-120 V DC	101431	MOD 22 AC110/DC110-120V	1/8
M2	24 V DC	101434	MOD 22 DC24V	1/8
M3	380-415 V AC	112081	MOD 23 AC380-415V	1/4
M3	220-240 V AC / 220 V DC	101484	MOD 23 AC220-240V/DC220V	1/4
M3	110 V AC / 110-120 V DC	101485	MOD 23 AC110/DC110-120V	1/4
M3	24 V DC	101488	MOD 23 DC24V	1/4
M4, M5	380-415 V AC	112082	MOD 24 AC380-415V	1/2
M4, M5	220-240 V AC / 220 V DC	112873	MOD 24 AC220-240V/DC220V	1/2
M4, M5	110 V AC / 110-120 V DC	112874	MOD 24 AC110/DC110-120V	1/2
M4, M5	24 V DC	103747	MOD 24 DC24V	1/2

Key lock devices

- Scope of delivery: mechanism block
- Can be locked in OFF position with up to three padlocks (not in a scope of delivery)
- Compatible with padlocks with diameters of 5 up to 8mm

Frame size	Function	Article No.	Type	Packing
M1	Toggle position lock	108852	KLK 21	1/50
M2	Toggle position lock	108853	KLK 22	1/50
M3	Toggle position lock	108854	KLK 23	1/50

Accessories for MCCBs Ex9M

Mechanical interlocks

- Scope of delivery: mechanical interlock
- Installation in front toggles of the MCCBs, is not possible to install with other front mounted accessories i.e. ERH, MOD, RHD
- Suitable for mechanical interconnection of two pieces of MCCBs from the same frame size

Frame size	Function	Article No.	Type	Packing
M1	Avoids simultaneous connection	108855	MIT 21	1/50
M2	Avoids simultaneous connection	108856	MIT 22	1/50
M3	Avoids simultaneous connection	108857	MIT 23	1/50
M4, M5	Avoids simultaneous connection	108858	MIT 24	1/50

Direct rotary handles

- Rotary handle for direct mounting onto breaker
- Scope of delivery: mechanism block, rotary handle
- Indication of connected breaker status ON-OFF-TRIP
- Degree of protection IP40, IK07
- Can be locked in ON and OFF position with up to three padlocks (not in a scope of delivery)

Frame size	Colour	Article No.	Type	Packing
M1	Grey	101410	RHD 21	1/36
M2	Grey	101429	RHD 22	1/18
M3	Grey	101483	RHD 23	1/9
M4, M5	Grey	103742	RHD 24	1/6

Extended rotary handles

- Rotary handle with extension shaft (extension shaft can be shortened)
- Possibility of longer extension shaft 500 mm (only the shaft as separated item)
- Scope of delivery: mechanism block, extension shaft, rotary handle
- Indication of connected breaker status ON-OFF-TRIP
- Degree of protection IP54, IK08
- Can be locked in ON and OFF position with up to three padlocks (not in a scope of delivery)

Frame size	Length	Colour	Article No.	Type	Packing
M1	300 mm	Grey	101409	ERH 21	1/6
M2	300 mm	Grey	101428	ERH 22	1/6
M3	300 mm	Grey	101482	ERH 23	1/6
M4, M5	300 mm	Grey	103741	ERH 24	1/4
All (only the shaft)	500 mm	-	110189	ERH2x ES 500mm	1/50

Accessories for MCCBs Ex9M

Connection accessories

- Connection terminals for MCCBs of all frame sizes
- Box and tunnel terminal versions
- For connecting with Al or Cu wires (box terminals only for Cu wires)
- Packed separately (for 3P connection, it is necessary to order 3pcs of terminal)
- Box terminals newly in the scope of delivery of AC devices M1, M2
- Front connection plates for frame sizes from M1 until M3
- Rear connection plates for frame sizes from M1 until M5

Box terminals

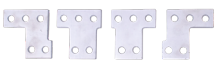
Frame size	Version	Terminals	Max. terminal capacity	Article No.	Type	Packing
M1	box	1	4-95 mm²	103705	MC21	1 pc
M2	box	1	10-120 mm²	103709	MC22	1 pc
M3	box	1	120-240 mm²	103715	MC23	1 pc
M3	box	1	120-240 mm²	103717	MC23 UL	1 pc

Tunnel terminals

Frame size	Version	Terminals	Max. terminal capacity	Article No.	Type	Packing
M1	tunnel	1	16-95 mm²	103707	MC21 W	1 pc
M2	tunnel	1	35-240 mm²	103869	MC22 W	1 pc
M2	tunnel	2	35-120 mm²	103711	MC22 W2	1 pc
M2	tunnel	6	10-35 mm²	103713	MC22 W6	1 pc
M3	tunnel	2	120-240 mm²	103719	MC23 W2	1 pc
M3	tunnel	2	120-240 mm²	103871	MC23 W2 UL	1 pc
M3	tunnel	4	35-95 mm²	103721	MC23 W4	1 pc
M4, M5	tunnel	2	120-240 mm²	106314	MC24 W2	1 pc

Screw terminals

Frame size	Version	Terminals	Screw size	Article No.	Type	Packing
M1	screw	1	M6	107873	MCS21	1 pc
M2	screw	1	M8	107874	MCS22	1 pc



Front connection plates

Frame size	Thickness (mm)	Plates per set	Busbar width (mm)	Article No.	Type	Packing
M1	4	3	15	108859	JP21 3P	1 set
M1	4	4	15	108865	JP21 4P	1 set
M2	5	3	20	108860	JP22 3P	1 set
M2	5	4	20	108866	JP22 4P	1 set
M3	8	3	30	108861	JP23 3P	1 set
M3	8	4	30	108867	JP23 4P	1 set

Rear connection plates

Frame size	Thickness (mm)	Plates per set	Busbar width (mm)	Article No.	Type	Packing
M1	3.5	6	12.5	108871	RCP21 3P	1 set
M1	3.5	8	12.5	108875	RCP21 4P	1 set
M2	6	6	18	108872	RCP22 3P	1 set
M2	6	8	18	108876	RCP22 4P	1 set
M3	8	6	30	108873	RCP23 3P	1 set
M3	8	8	30	108877	RCP23 4P	1 set
M4, M5	8	6	40	108874	RCP24 3P	1 set
M4, M5	8	8	40	108878	RCP24 4P	1 set

Accessories for MCCBs Ex9M

Plug-in bases

- Suitable for circuit breakers of frame sizes from M1 until M3
- Offered with front type and back type of terminals
- In scope of delivery the tripping mechanism, phase barriers, MCCB plug-in terminals, mounting screws, phase barriers and the plug-in base.

Frame size	Connection type	Poles	Article No.	Type	Packing
M1 TM	Front	3P	112875	PIA 21F 3P	1/4
M1 TM	Front	4P	112876	PIA 21F 4P	1/4
M2 TM	Front	3P	112877	PIA 22F 3P	1/2
M2 TM	Front	4P	112878	PIA 22F 4P	1/2
M2 SU	Front	3P	112093	PIA 22F 3P SU20	1/2
M2 SU	Front	4P	112094	PIA 22F 4P SU20	1/2
M3 TM	Front	3P	112879	PIA 23F 3P	1/1
M3 TM	Front	4P	112880	PIA 23F 4P	1/1
M3 SU	Front	3P	112095	PIA 23F 3P SU20 EU	1/1
M3 SU	Front	4P	112096	PIA 23F 4P SU20 EU	1/1
M1 TM	Back	3P	112881	PIA 21B 3P EU	1/4
M1 TM	Back	4P	112882	PIA 21B 4P EU	1/4
M2 TM	Back	3P	112883	PIA 22B 3P EU	1/2
M2 TM	Back	4P	112884	PIA 22B 4P EU	1/2
M2 SU	Back	3P	112097	PIA 22B 3P SU20 EU	1/2
M2 SU	Back	4P	112098	PIA 22B 4P SU20 EU	1/2
M3 TM	Back	3P	112885	PIA 23B 3P EU	1/1
M3 TM	Back	4P	112886	PIA 23B 4P EU	1/1
M3 SU	Back	3P	112099	PIA 23B 3P SU20 EU	1/1
M3 SU	Back	4P	112100	PIA 23B 4P SU20 EU	1/1

Draw Out bases

- Suitable for circuit breakers of frame sizes from M3 til M5
- Offered with front type and back type of terminals
- In scope of delivery the tripping mechanism, base position indicators, phase barriers, MCCB plug-in terminals, auxiliary terminals for the cassette, mounting screws, phase barriers and the draw-out base.

Frame size	Connection type	Poles	Article No.	Type	Packing
M3 TM	Front	3P	108887	DOB 23F 3P CO (400A)	1 pc
M3 TM	Front	4P	108899	DOB 23F 4P CO (400A)	1 pc
M3 TM	Front	3P	108889	DOB 23F 3P CO (630A)	1 pc
M3 TM	Front	4P	108901	DOB 23F 4P CO (630A)	1 pc
M3 SU	Front	3P	112101	DOB 23F 3P CO SU20(400A)	1 pc
M3 SU	Front	4P	112102	DOB 23F 4P CO SU20(400A)	1 pc
M3 SU	Front	3P	112105	DOB 23F 3P CO SU20(630A)	1 pc
M3 SU	Front	4P	112106	DOB 23F 4P CO SU20(630A)	1 pc
M4, M5 TM / SU	Front	3P	108891	DOB 24F 3P CO	1 pc
M4, M5 TM / SU	Front	4P	108903	DOB 24F 4P CO	1 pc
M3 TM	Back	3P	108893	DOB 23B 3P CO (400A)	1 pc
M3 TM	Back	4P	108905	DOB 23B 4P CO (400A)	1 pc
M3 TM	Back	3P	108895	DOB 23B 3P CO (630A)	1 pc
M3 TM	Back	4P	108907	DOB 23B 4P CO (630A)	1 pc
M3 SU	Back	3P	112103	DOB 23B 3P CO SU20(400A)	1 pc
M3 SU	Back	4P	112104	DOB 23B 4P CO SU20(400A)	1 pc
M3 SU	Back	3P	112107	DOB 23B 3P CO SU20(630A)	1 pc
M3 SU	Back	4P	112108	DOB 23B 4P CO SU20(630A)	1 pc
M4, M5 TM / SU	Back	3P	108897	DOB 24B 3P CO	1 pc
M4, M5 TM / SU	Back	4P	108909	DOB 24B 4P CO	1 pc

Accessories for MCCBs Ex9M

Terminal covers, short

- Terminal covers to increase touch protection of terminals

Frame size	Poles	Article No.	Type	Packing
M1	3P	101439	TCV21 3P	1 pc
M2	3P	101442	TCV22 3P	1 pc
M3	3P	101489	TCV23 3P	1 pc
M4, M5	3P	103748	TCV24 3P	1 pc
M1	4P	102372	TCV21 4P	1 pc
M2	4P	102374	TCV22 4P	1 pc
M3	4P	102376	TCV23 4P	1 pc
M4, M5	4P	103750	TCV24 4P	1 pc

Terminal covers, long

- Terminal covers to increase touch protection of terminals

Frame size	Poles	Article No.	Type	Packing
M1	3P	101440	TCE21 3P	1 pc
M2	3P	101443	TCE22 3P	1 pc
M3	3P	101490	TCE23 3P	1 pc
M4, M5	3P	103749	TCE24 3P	1 pc
M1	4P	102373	TCE21 4P	1 pc
M2	4P	102375	TCE22 4P	1 pc
M3	4P	102377	TCE23 4P	1 pc
M4, M5	4P	104855	TCE24 4P	1 pc

DIN-rail adaptors

- Adaptors for mounting of MCCBs onto DIN-rail 35 mm
- Suitable for all variants of MCCBs and MCCB Switch Disconnectors of given frame size

Frame size	Poles	Article No.	Type	Packing
M1	3P, 4P	106319	DRA21	1
M2	3P, 4P	106320	DRA22	1

Mounting depth spacers

- Set of mounting depth spacers for compensation of differences in height between frame sizes
- Assures the same position of front panel towards front plate
- Two variants with height 10 and 13 mm
- For compensation of heights please use these configuration:
  M1 -> M2 = 1x WG10
  M1 -> M3 = 1x WG10 + 2x WG13
  M1 -> M4, M5 = 1x WG10 + 3x WG13
  M2 -> M3 = 2x WG13
  M2 -> M4, M5 = 3x WG13
  M3 -> M4, M5 = 1x WG13

Frame size	Height	Article No.	Type	Packing
M1	10 mm	106321	WG 10	1 set
M2, M3, M4, M5	13 mm	106362	WG 13	1 set

Technical Data Ex9M Accessories

Accessories for Moulded Case Circuit Breakers Ex9M

Auxiliary and signal contact units AX21, AL21

General parameters

Contact units for auxiliary and signal contact functions are suitable for all MCCB frame sizes
Auxiliary contacts synchronous with main contacts of the circuit breaker
Signal contacts active on electrical tripping of the circuit breaker (tripping signal contacts)
With connection wires

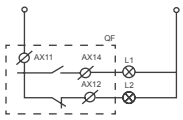
Electrical parameters

	AX21	**AL21**
Contacts	1 changeover (CO)	1 changeover (CO)
Contact function	auxiliary	signal
Tested according to	IEC/EN 60947-1, IEC/EN 60947-5-1	
Rated op. voltage U	240/415 V AC, 110/220 V DC	
Rated frequency	50/60 Hz	
Rated op. current I_e AC	4 A (240 V), 2 A (415 V)	
Rated op. current I_e DC	0.25 A (110 V), 0.25 A (220 V)	
Rated thermal current I_{th}	5 A	
Rated op. current I_e, ut. cat. AC-15	4 A (240 V), 2 A (415 V)	
Rated op. current I_e, ut. cat. DC-13	0.25 A (110 V), 0.25 A (220 V)	
Rated insulation voltage U_i	500 V	

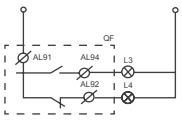
Mechanical parameters

	AX21	**AL21**
Suitable for	M1, M2, M3, M4, M5	M1, M2, M3, M4, M5
Connection	equipped with connection wires	

Wiring diagrams



AX21



AL21

Technical Data Ex9M Accessories

Accessories for Moulded Case Circuit Breakers Ex9M

Shunt trip releases SHT2*i*

General parameters

It is possible to use one unit of shunt trip release SHT2*i* or one unit of undervoltage release UVT2*i*
Can be used for remote switch off
SHT21 for MCCBs of frame size M1
SHT22 for MCCBs of frame sizes M2 and M3
SHT24 for MCCBs of frame sizes M4 and M5
With connection wires

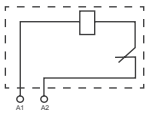
Electrical parameters

	SHT21	**SHT22**	**SHT24**
Tested according to	IEC/EN 60947-1, IEC/EN 60947-5-1		
Rated operating voltage U (according to type)	48 V AC 110 V AC 220 — 240 V AC 380 — 415 V AC 24 V DC 220 V DC	48 V AC 110 V AC 220 — 240 V AC 380 — 415 V AC 24 V DC 220 V DC	110 V AC 220 — 240 V AC 380 — 415 V AC 110 — 120 V DC 220 V DC 24 V DC
Rated frequency	50/60 Hz DC		
Rated insulation voltage U	500 V		
Tripping time	< 20 ms	< 20 ms	< 30 ms

Mechanical parameters

	SHT21	**SHT22**	**SHT24**
Suitable for	M1	M2, M3	M4, M5
Connection	equipped with connection wires		

Wiring diagrams



SHT2*i*

Technical Data Ex9M Accessories

Accessories for Moulded Case Circuit Breakers Ex9M

Undervoltage releases UVT2*i*

General parameters

It is possible to use one unit of shunt trip release SHT2*i* or one unit of undervoltage release UVT2*i*
To switch connected breaker off in case of voltage drop
UVT21 for MCCBs of frame size M1
UVT22 for MCCBs of frame size M2 and M3
UVT24 for MCCBs of frame size M4 and M5
With connection wires

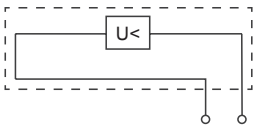
Electrical parameters

	UVT21	**UVT22**	**UVT24**
Tested according to	IEC/EN 60947-1, IEC/EN 60947-5-1		
Rated operating voltage U_n	220 — 240 V AC 380 — 415 V AC	220 — 240 V AC 380 — 415 V AC	110 V AC 220 — 240 V AC 380 — 415 V AC 110 —120 V DC 220 V DC 24 V DC 48 V DC
Rated frequency f	50/60 Hz DC		
Rated insulation voltage U_i	500 V		
Tripping time	< 20 ms	< 20 ms	< 20 ms
Making treshold	85 % U_n	85 % U_n	85 % U_n
Tripping treshold	35 % U_n	35 % U_n	35 % U_n

Mechanical parameters

	UVT21	**UVT22**	**UVT24**
Suitable for	M1	M2, M3	M4, M5
Connection	equipped with connection wires		

Wiring diagrams



UVT2*i*

Technical Data Ex9M Accessories

Accessories for Moulded Case Circuit Breakers Ex9M

Remote motor operators MOD2*i*

General parameters

Motor drives for electrical and remote control of MCCBs

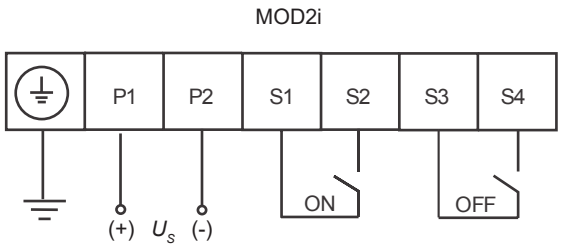
Electrical parameters

	MOD21	MOD22	MOD23	MOD24
Tested according to	IEC/EN 60947-1, IEC/EN 60947-5-1			
Rated operating voltage U_s (according to type)	230 V AC 110 V AC 220 V DC 110 V DC 24 V DC			
Rated frequency	50/60 Hz DC			
Power consumption	150 VA	150 VA	300 VA	300 VA
Total time to switch ON	500 ms	500 ms	1000 ms	1000 ms
Total time to switch OFF	500 ms	500 ms	1000 ms	1000 ms
Min. pulse duration for ON	300 ms	300 ms	300 ms	300 ms
Min. pulse duration for OFF	300 ms	300 ms	300 ms	300 ms
Max. pulse duration	limited by internal contact switch			

Mechanical parameters

	MOD21	MOD22	MOD23	MOD24
Suitable for	M1	M2	M3	M4, M5
Terminals	lift			
Terminal capacity	0.2 — 1.5 mm²			
Mechanical service life	10 000 operation cycles		8 000 operation cycles	
Maximum frequency of switch. cycles	120 operating cycles per hour			

Wiring diagram



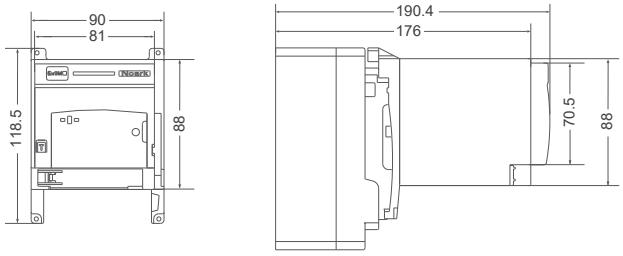
Technical Data Ex9M Accessories

Accessories for Moulded Case Circuit Breakers Ex9M

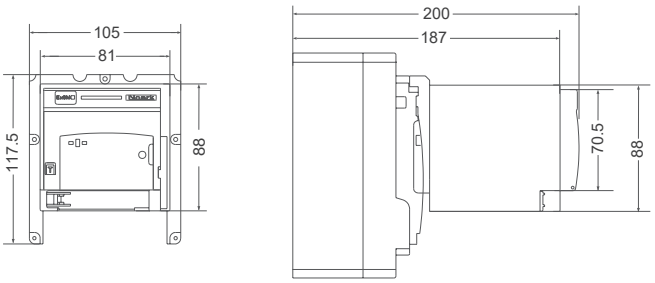
Remote motor operators MOD2*i*

Dimensions

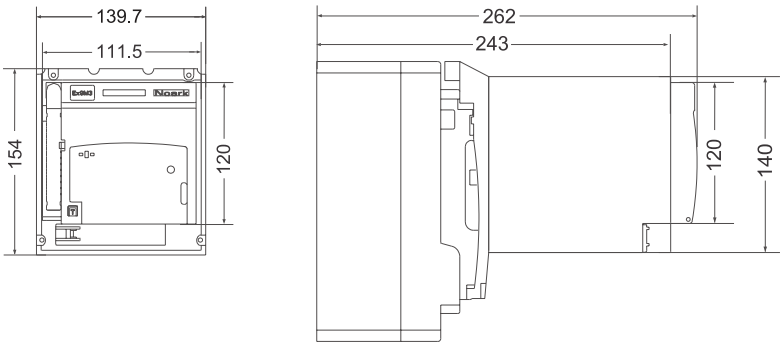
MOD21



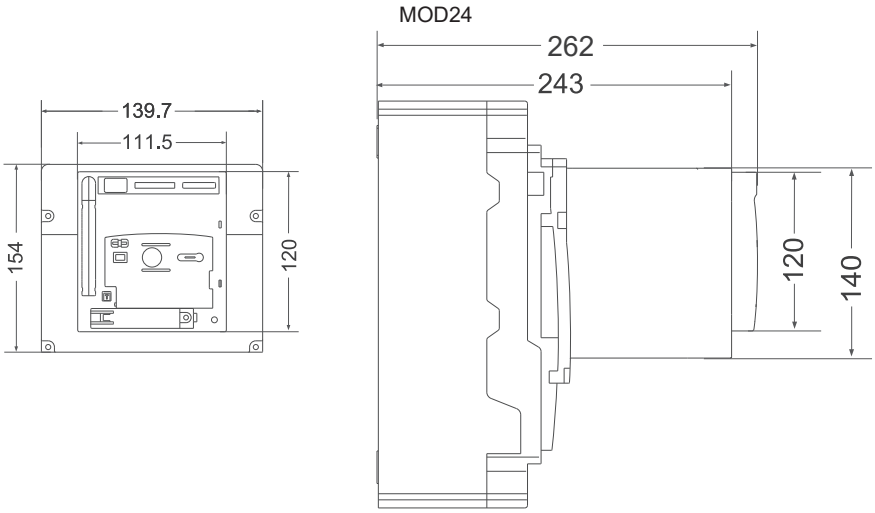
MOD22



MOD23



MOD24



Technical Data Ex9M Accessories

Accessories for Moulded Case Circuit Breakers Ex9M

Mechanical interlocks MIT2*i*

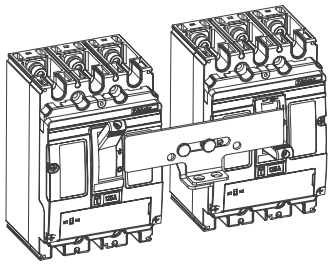
General parameters

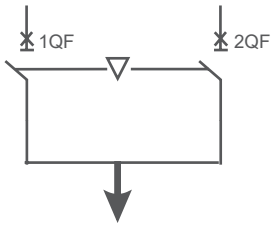
Avoid simultaneous connection of two interlocked MCCBs
Suitable for two circuit breakers of the same frame size
To be installed in the front of the circuit breakers, incompatible with other accessories installed in the front (RHD, ERH, MOD)

Mechanical parameters

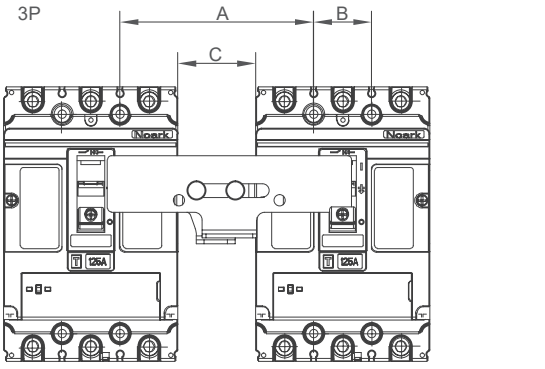
	MIT 21	MIT 22	MIT 23	MIT 24
Suitable for: Ex9M TM Ex9M SU Ex9M SD	M1	M2	M3	M4 / M5
Mounting	front cover			
Locking	Padlock, 5 up to 8mm diameter			

Diagram





Dimensions



(mm)	MIT 21	MIT 22	MIT 23	MIT 24
A	100	115	143.5	205
B	30	35	45	65
C	40	45	48.5	75
D	60	70	90	130
E	70	80	98.5	140
F	30	35	45	65
G	10	10	3.5	10
H	Ø4.5	Ø5.5	Ø5.5	Ø6.5
I	112	125	201	235

Technical Data Ex9M Accessories

Accessories for Moulded Case Circuit Breakers Ex9M

Direct rotary handles RHD2*i*

General parameters

Rotary handle for direct mounting onto breaker
Scope of delivery: mechanism block, rotary handle
Can be locked in ON and OFF position with up to three padlocks (not in the scope of delivery)

Electrical parameters

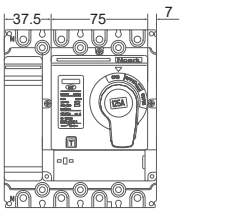
	RHD21	RHD22	RHD23	RHD24
Tested according to	IEC/EN 60947-3			
Degree of protection	IP40			

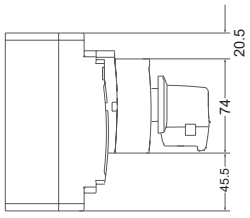
Mechanical parameters

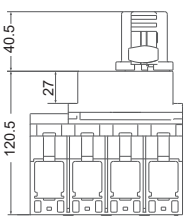
	RHD21	RHD22	RHD23	RHD24
Suitable for	M1	M2	M3	M4, M5
Mechanical shock resistance	IK07			
Indication	connected breaker status ON-OFF-TRIP			
Mounting	directly onto breaker			
Toggle colour	grey			

Dimensions

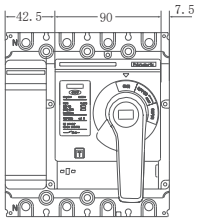
RHD21

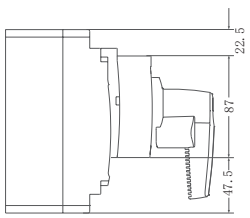


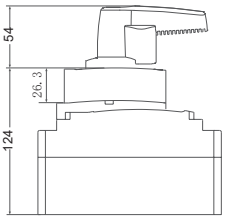




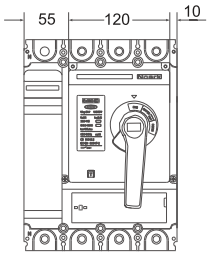
RHD22

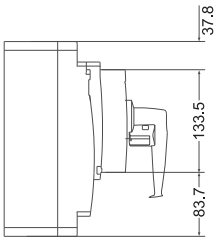


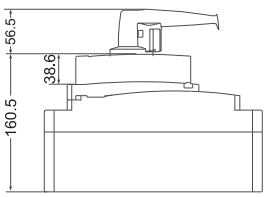




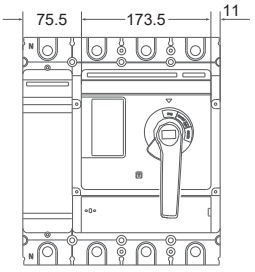
RHD23

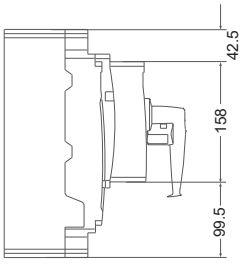


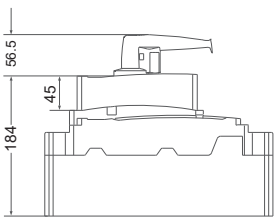




RHD24







Technical Data Ex9M Accessories

Accessories for Moulded Case Circuit Breakers Ex9M

Extended rotary handles ERH2*i*

General parameters

Rotary handle with extension shaft
Scope of delivery: mechanism block, extension shaft, rotary handle
Can be locked in ON and OFF position with up to three padlocks (not in the scope of delivery)
Extension shaft can be shortened
Possibility of longer extension shaft 500 mm (only the shaft as separated item)

Electrical parameters

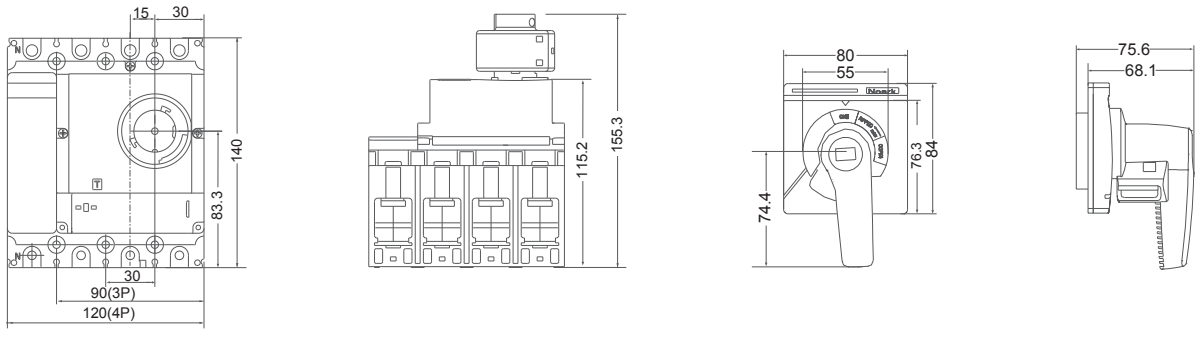
	ERH21	ERH22	ERH23	ERH24
Tested according to	IEC/EN 60947-3			
Degree of protection	IP54			

Mechanical parameters

	ERH21	ERH22	ERH23	ERH24
Suitable for	M1	M2	M3	M4, M5
Length of the extension shaft	300 mm	300 mm	300 mm	300 mm
Mechanical shock resistance	IK08			
Indication	connected breaker status ON-OFF-TRIP			
Mounting	directly onto breaker			
Toggle colour	grey			

Dimensions

ERH21



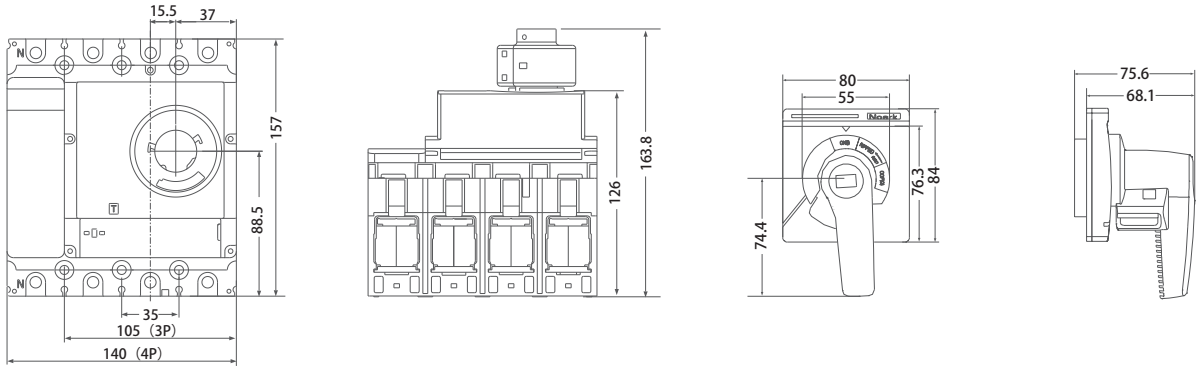
Technical Data Ex9M Accessories

Accessories for Moulded Case Circuit Breakers Ex9M

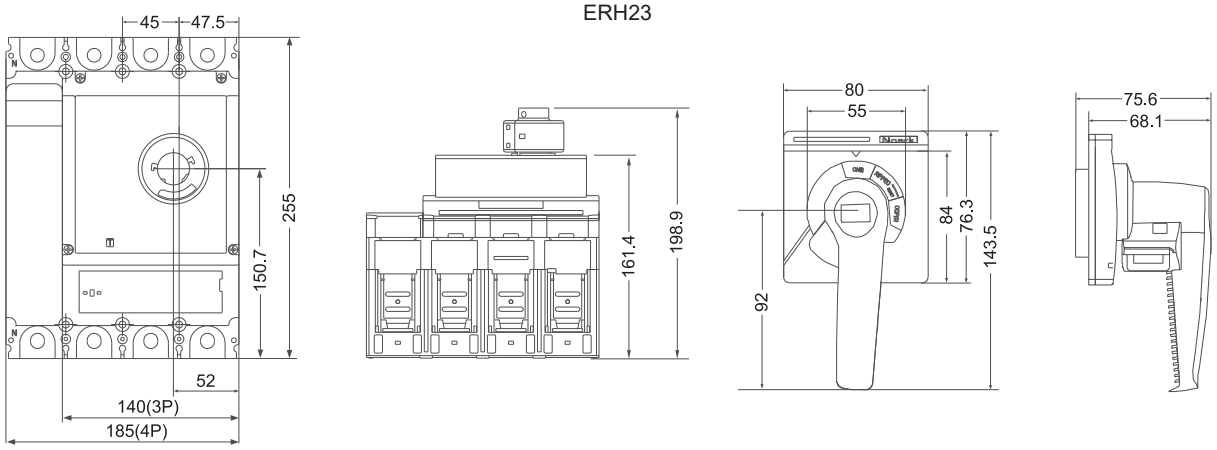
Extended rotary handles ERH2*i*

Dimensions

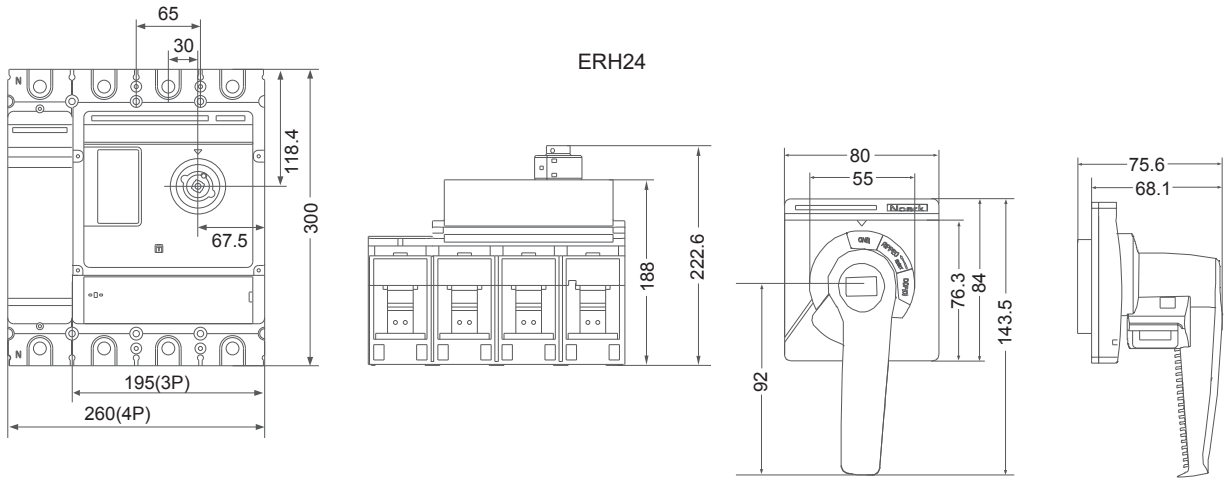
ERH22



ERH23



ERH24



Technical Data Ex9M Accessories

Accessories for Moulded Case Circuit Breakers Ex9M

Connection terminals MC2*i*

General parameters

Box and tunnel connection terminals for Ex9M MCCBs and MCCB based switch disconnectors
Versions suitable for all frame sizes
Screws in the scope of delivery

Mechanical parameters - box terminals

	MC21	MC22	MC23	MC23 UL
Suitable for	M1	M2	M3	M3
Terminal type	box			
Terminal capacity	4 — 95 mm²	10 — 120 mm²	120 — 240 mm²	120 — 240 mm²
Fastening torque of terminals	8 Nm	10 Nm	35 Nm	35 Nm

Drawings - box terminals

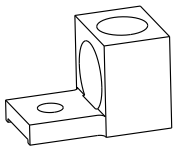
MC21(22)

MC23

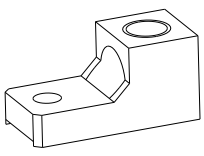
Mechanical parameters - tunnel terminals

	MC21 W	MC22 W	MC22 W2	MC22 W6	MC23 W2	MC23 W4	MC24 W2
Suitable for	M1	M2	M2	M2	M3	M3	M4, M5
Terminal type	tunnel						
Terminal capacity	1x 16 - 95 mm²	1x 35 - 240 mm²	2x 35 - 120 mm²	6x 10 - 35 mm²	2x 120 - 240 mm²	4x 35 - 95 mm²	2x 240 mm²
Fastening torque of terminals (to MCCB)	10 - 15 Nm	15 Nm	15 Nm	15 Nm	35 Nm	35 Nm	35 Nm
Fastening torque of terminals (wires)	10 Nm	30 Nm	30 Nm	10 Nm	35 Nm	15 Nm	35 Nm

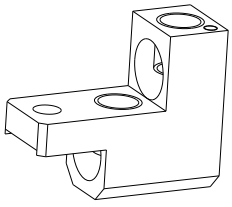
Drawings - tunnel terminals



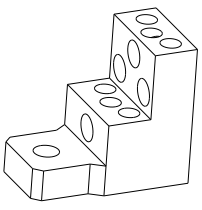
MC21 W



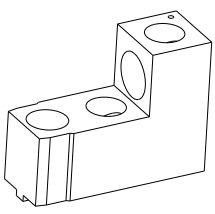
MC22 W



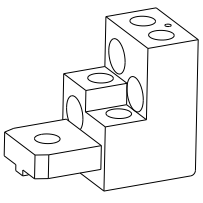
MC22 W2



MC22 W6



MC23 W2



MC23 W4

Technical Data Ex9M Accessories

Accessories for Moulded Case Circuit Breakers Ex9M

Front connection plates JP

General parameters

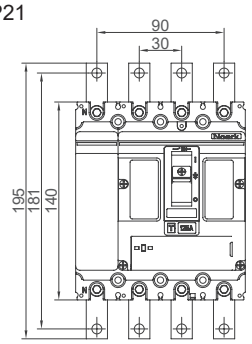
Front connection plates JP for frame sizes from M1 up to M3

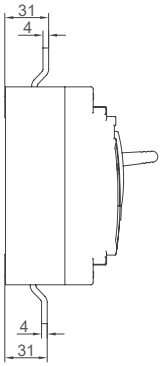
Mechanical parameters - Front connection plates JP

	JP21	JP22	JP23
Suitable for	M1	M2	M3
Terminal pitch	30mm	35	53
Busbar / cable lug width	15 mm	20mm	30 mm
Terminal screw size	M6	M8	M10
Fastening torque of terminals	6 Nm	11 Nm	25 Nm

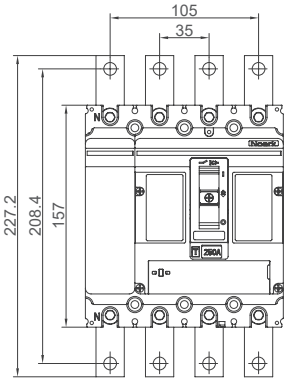
Dimensions

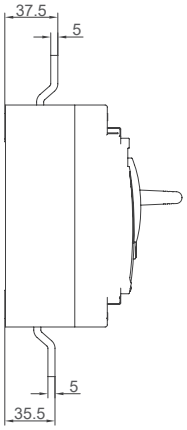
JP21



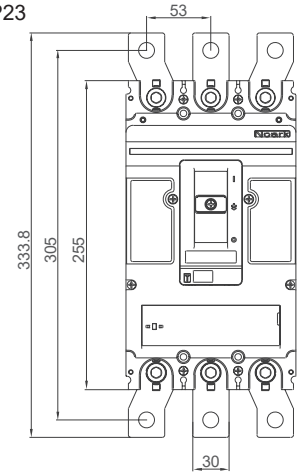


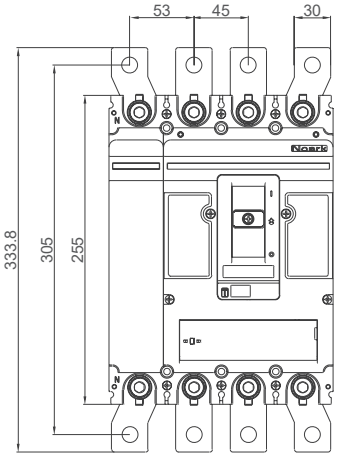
JP22

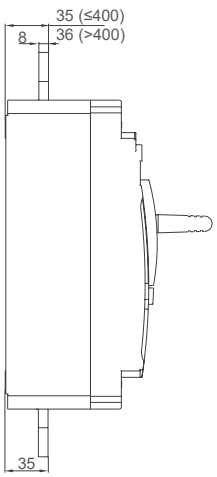




JP23







Technical Data Ex9M Accessories

Accessories for Moulded Case Circuit Breakers Ex9M

Rear connection plates RCP

General parameters

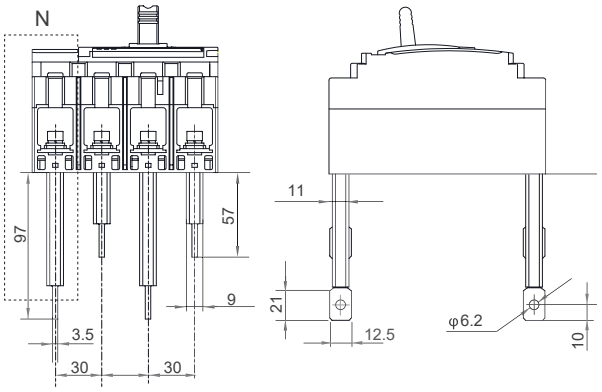
Front connection plates JP for frame sizes from M1 up to M3
Rear connection plates RCP for frame sizes from M1 up to M5

Mechanical parameters - rear connection plates RCP

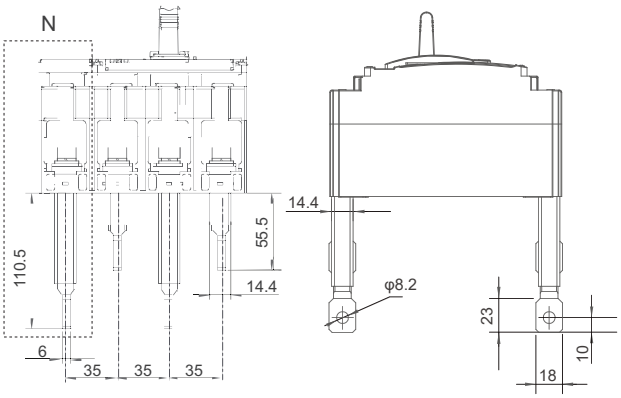
	RCP21	RCP22	RCP23	RCP24
Suitable for	M1	M2	M3	M4 / M5
Terminal pitch	30 mm	35 mm	53 mm	65 mm
Busbar / cable lug width	12.5 mm	20mm	30 mm	40 mm
Terminal screw size	M6	M8	M10	M12
Fastening torque of terminals	6 Nm	11 Nm	25 Nm	25 — 30 Nm

Dimensions

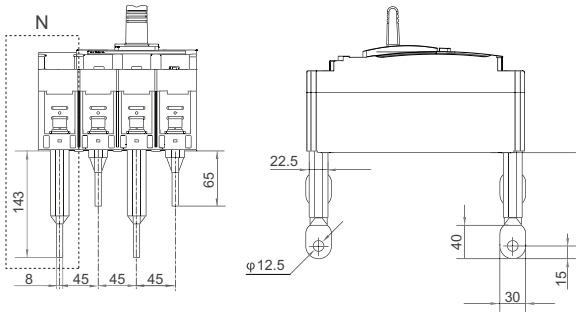
RCP21



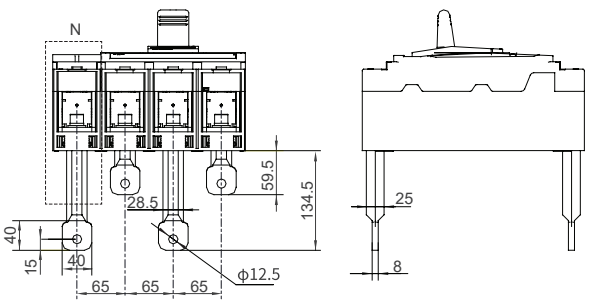
RCP22



RCP23



RCP24



Technical Data Ex9M Accessories

Accessories for Moulded Case Circuit Breakers Ex9M

Plug-in base PIA2*i*

General parameters

Suitable for commertial and industrial applications
For fast service and maintenance of the installation
Suitable for circuit breakers of frame sizes from M1 until M3
Thermomagnetic and electronic variants have different models available
Premounted with automatic safety trip mechanism to avoid damages while unplugin the circuit breaker.
Offered with front type and back type of terminals.
In scope of delivery the tripping mechanism, phase barriers, MCCB plug-in terminals, mounting screws, phase barriers and the plug-in base.

Derating coefficient of Tripping Characteristics on accessories combination

Nominal current	I_n (T) [A]				
	Ex9M1 TM	Ex9M2 TM	Ex9M3 TM	Ex9M2 SU20	Ex9M3 SU20
16 — 50 A	1	—	—	1	—
63 A	1	—	—	1	—
80 A	1	—	—	—	—
100 A	1	—	—	1	—
125 A	0.95	1	—	—	—
160 A	0.95	1	—	1	—
180 A	—	1	—	—	—
200 A	—	0.95	—	—	—
225 A	—	0.95	—	—	—
250 A	—	0.95	1	0.95	1
315 A	—	—	1	—	—
350 A	—	—	1	—	—
400 A	—	—	1	—	1
500 A	—	—	0.95	—	—
630 A	—	—	—	—	0.9 (≤570A)

Mechanical parameters

	PIA21	PIA22 / PIA22 SU20	PIA23 / PIA23 SU20
Device width 3P / 4P	90 mm / 120 mm	105 mm / 140 mm	140 mm / 185 mm
Device height front / back connection	252 mm / 186 mm	267 mm / 201 mm	359 mm / 326 mm
Device depth with MCCB mounted front connection	176 mm	193 mm	260 mm
Device depth with MCCB mounted back connection	230 mm	247 mm	325 mm
Mounting	onto panel / DIN rail 35mm		
Degree of protection	IP40, IP20 terminals		
Terminals	M8 screws	M8 screws	M10 screws
Busbar width	≤ 15 mm	≤ 18 mm	≤ 28 mm
Cable lug width	≤ 15 mm	≤ 18 mm	≤ 28 mm
Fastening torque of terminals	9 Nm	9 Nm	15 Nm
Ambient temperature	-40 — +70 °C		
Relative humidity	≤ 50 % at 40 °C, ≤ 90 % monthly average		
Weight 3P / 4P (front connection)	1 / 1.35 kg	1.64 / 2.23 kg	5.95 / 7.86 kg
Mounting position	vertical, can be rotated by 90° in each axis		

Technical Data Ex9M Accessories

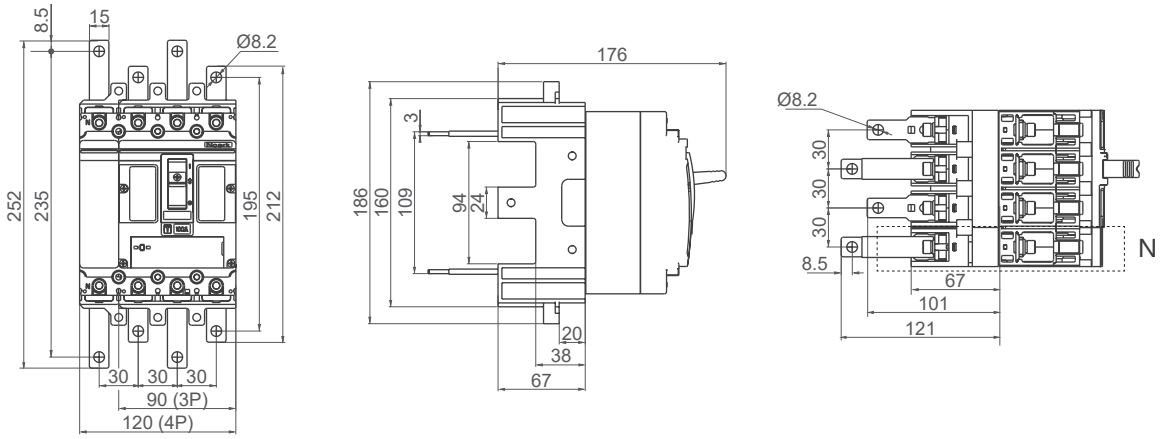
Accessories for Moulded Case Circuit Breakers Ex9M

Plug-in base PIA2*i*

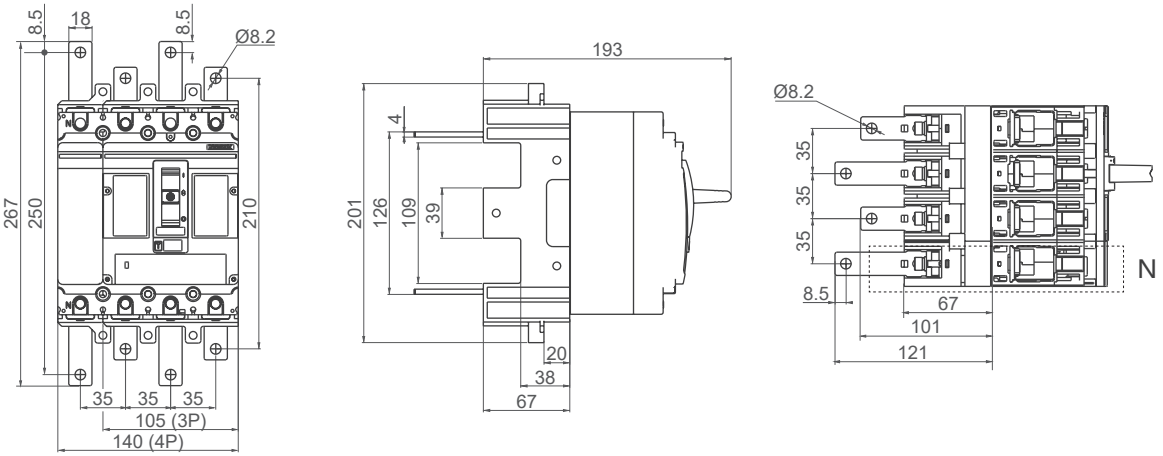
Dimensions

PIA 21

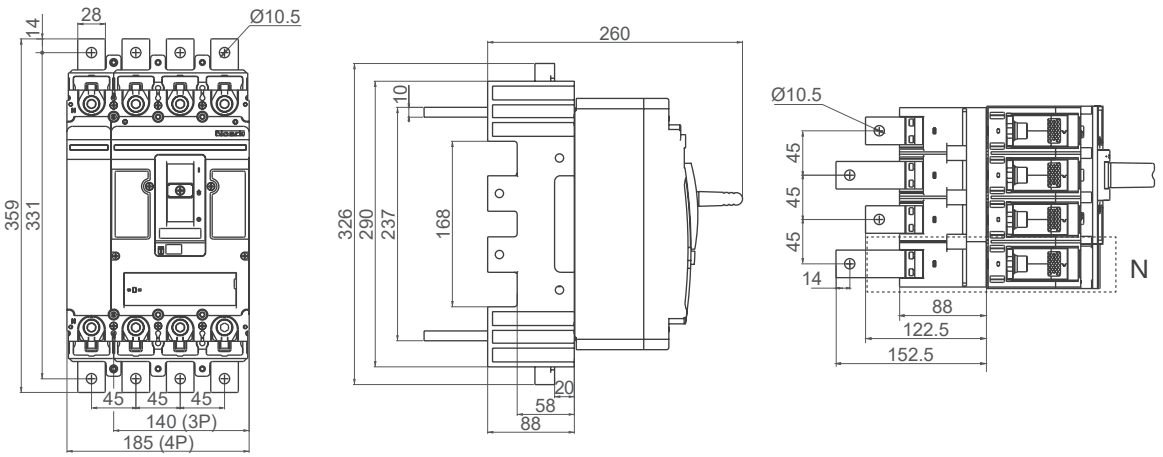
mm



PIA 22



PIA 23



Technical Data Ex9M Accessories

Accessories for Moulded Case Circuit Breakers Ex9M

Draw-Out Base DOB2*i*

General parameters

Suitable for commertial and industrial applications
For fast service and maintenance of the installation
Suitable for circuit breakers of frame sizes from M3 til M5
TM and electronic versions of Ex9M3 have different types of bases
Premounted with automatic safety trip mechanism to avoid damages while unplugin the circuit breaker.
Offered with front type and back type of terminals.
In scope of delivery the tripping mechanism, base position indicators, phase barriers, MCCB plug-in terminals, auxiliary terminals for the cassette, mounting screws, phase barriers and the draw-out base.

Derating coefficient of Tripping Characteristics on accessories combination

Nominal current	I_n (T) [A]					
	Ex9M3 TM	Ex9M4 TM	Ex9M5 TM	Ex9M3 SU20	Ex9M4 SU20	Ex9M5 SU20
250 A	1	—	—	1	—	—
315 A	1	—	—	—	—	—
350 A	1	—	—	—	—	—
400 A	1	0.95	—	1	—	—
500 A	1	0.95	—	—	—	—
630 A	—	0.95	0.95	0.9 (≤570A)	0.95	—
700 A	—	—	0.95	—	—	—
800 A	—	—	0.9	—	—	0.9

Mechanical parameters

	DOB 23	DOB 24
Device width 3P / 4P	214 mm / 259 mm	281 mm / 346 mm
Device height front / back connection	342 mm / 312 mm	485 mm / 275 mm
Device depth with MCCB mounted front connection	280 mm	270 mm
Device depth with MCCB mounted back connection	315.5 mm	332.5 mm
Mounting	onto panel / DIN rail 35mm	
Degree of protection	IP40, IP20 terminals	
Terminals	M10 screws	M12 screws
Busbar width	≤ 30 mm	≤ 40 mm
Cable lug width	≤ 30 mm	≤ 40 mm
Fastening torque of terminals	25 Nm	30 Nm
Ambient temperature	-40 — +70 °C	
Relative humidity	≤ 50 % at 40 °C, ≤ 90 % monthly average	
Weight 3P / 4P	8 / 10 kg (≤400 A) 8.1 / 10.12 kg (630A)	15.25 / 18.36 kg
Mounting position	vertical, can be rotated by 90° in each axis	

Technical Data Ex9M Accessories

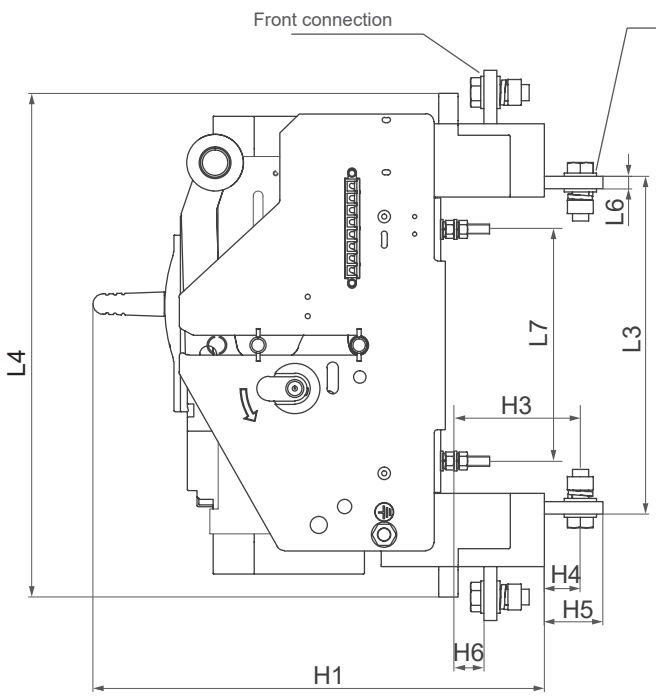
Accessories for Moulded Case Circuit Breakers Ex9M

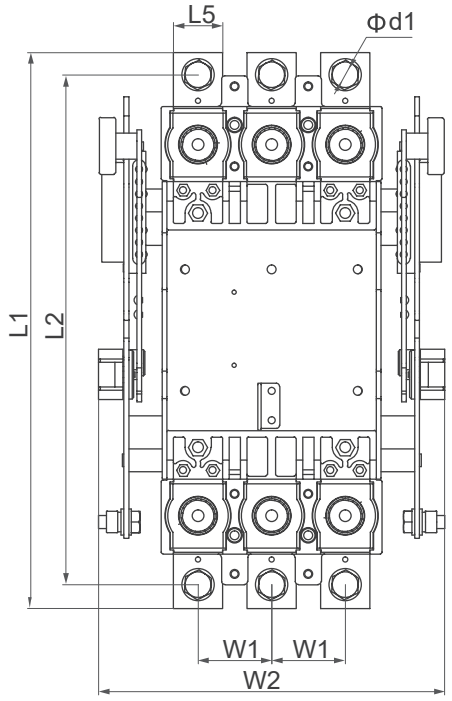
Draw-Out Base DOB2*i*

Dimensions

DOB 23 CO

mm





DOB 23	≤400 A		>400 A	
	3P	4P	3P	4P
L1	342	342	342.5	342.5
L2	313	313	314.5	314.5
L3	207	207	210.5	210.5
L4	312	312	313.5	313.5
L5	30	30	30	30
L6	6	6	8	8
L7	143	143	143	143
H1	280	280	280	280
H3	77	77	77.5	77.5
H4	21	21	21.5	21.5
H5	35.5	35.5	35.5	35.5
H6	17.5	17.5	17.5	17.5
W1	45	45	45	45
W2	214	259	214	259
Ø d1	11	11	11	11

Technical Data Ex9M Accessories

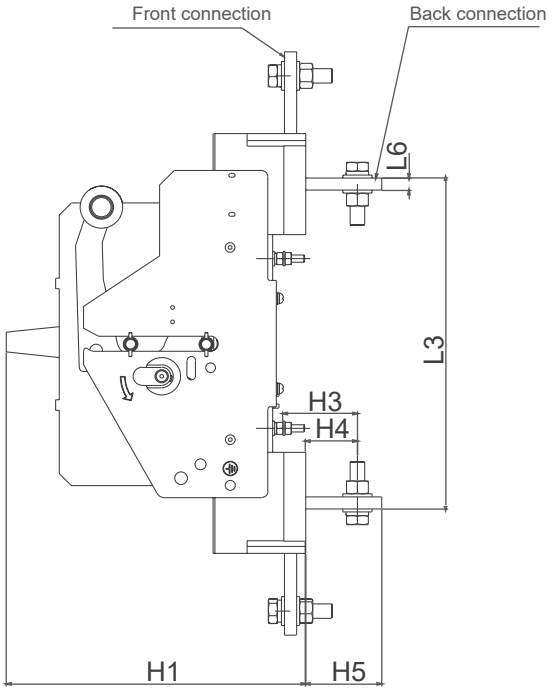
Accessories for Moulded Case Circuit Breakers Ex9M

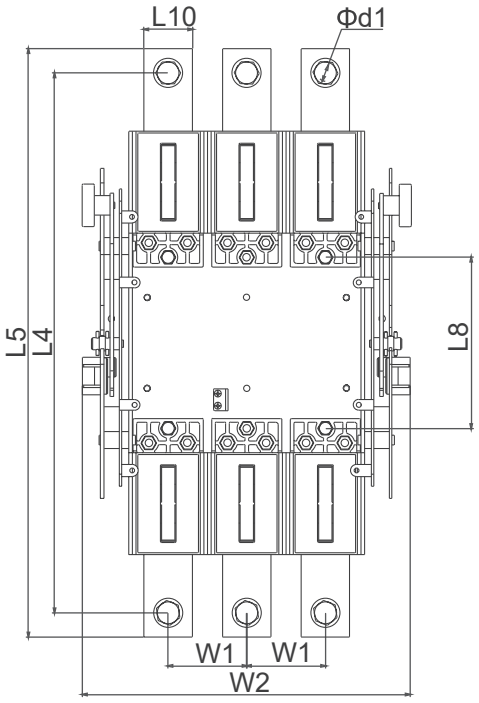
Draw-Out Base DOB2*i*

Dimensions

DOB 24 CO

mm





DOB 24	3P	4P
L3	275	275
L4	445	445
L5	485	485
L6	10	10
L8	141	141
L10	40	40
H1	270	270
H3	61	61
H4	42.5	42.5
H5	62.5	62.5
W1	65	65
W2	281	346
Ø d1	13	13

Technical Data Ex9M Accessories

Accessories for Moulded Case Circuit Breakers Ex9M

DIN-rail adaptors DRA2*i*

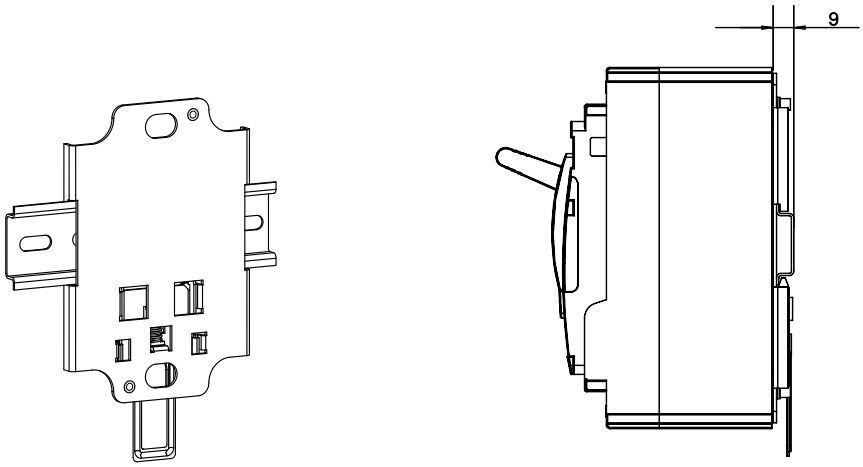
General parameters

Adaptors for mounting of MCCBs and MCCB Switch Disconnectors onto 35 mm device DIN-rail
Suitable for M1 and M2 frame sizes, 3P and 4P versions

Mechanical parameters

	DRA21	DRA22
Suitable for	M1	M2
Mounting	easy mounting onto 35 mm device rail (DIN)	

Drawings and dimensions



Technical Data Ex9M Accessories

Accessories for Moulded Case Circuit Breakers Ex9M

Mounting depth spacers WG

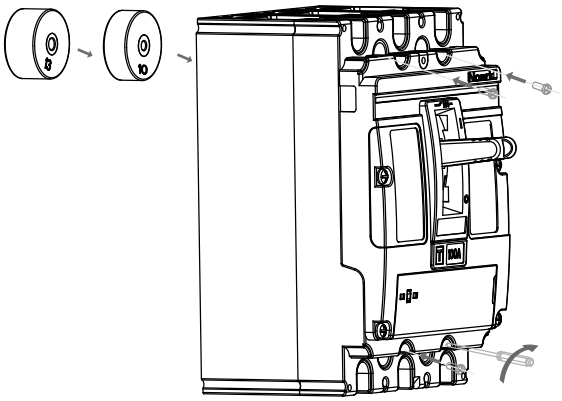
General parameters

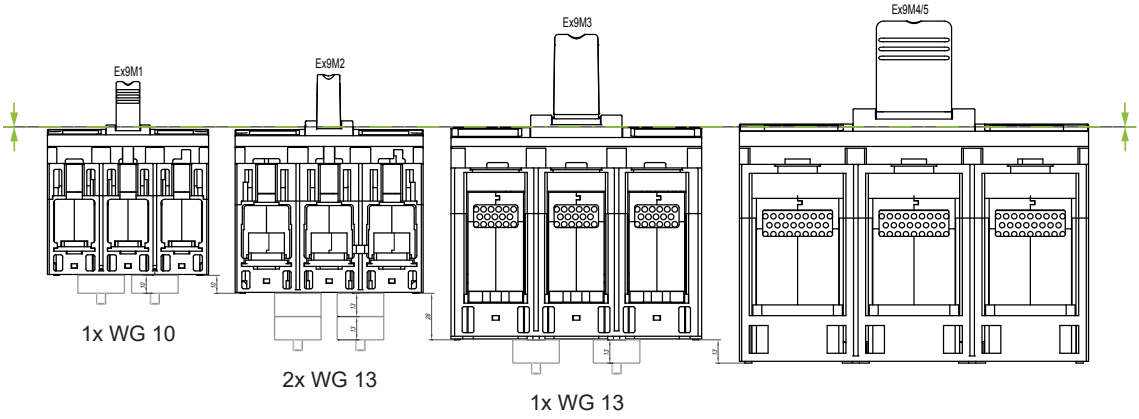
Set of mounting depth spacers for compensation of differences in height between frame sizes
Suitable for all variants of MCCBs and MCCB Switch Disconnectors
Variants with height 10 and 13 mm

Mechanical parameters

	WG 10	WG 13
Suitable for height compensation	M1 -> M2	M2 -> M3 M3 -> M4/M5
Height	10 mm	13 mm

Mounting





Ex9M / WG	9M1/9M2	9M1/9M3	9M1/9M4	9M2/9M3	9M2/9M4	9M3/9M4
WG10	4X	4X	4X			
WG13		8X	12X	8X	12X	4X