

Accessories for MCCBs Ex9MHV



- Accessories for Ex9MHV 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
- Tunnel terminals (1 conductor) and covers
- Mounting depth spacers and adaptors

Accessories suitable for Moulded Case Circuit Breakers Ex9MHV. 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 UVT2i or one unit of shunt trip release SHT2i can be installed in the breaker. Different versions for different frame sizes allow to optimise power consumption of these units.

The circuit breakers can also be equipped with different accessories 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. 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 terminal types of box and tunnel terminals MC.

Accessories for MCCBs **Ex9MHV**

Distribution map of Ex9MHV accessories

Ex9M frame size	Ex9M2HV (22HV)	Ex9M3HV (23HV)
Accessory		
Auxiliary contacts AX	112071 AX21M	
Signal contacts AL	112072 AL21M	
Shunt trip release SHT-HV (remote OFF)	114832 SHT22HV AC110V 114833 SHT22HV AC220-240V 114834 SHT22HV AC380-415V 114835 SHT22HV DC24V 114836 SHT22HV DC110-120V 114837 SHT22HV DC220V	114844 SHT23HV AC110V 114845 SHT23HV AC220-240V 114846 SHT23HV AC380-415V 114847 SHT23HV DC24V 114848 SHT23HV DC110-120V 114849 SHT23HV DC220V
Undervoltage release UVT-HV (remote OFF inverse logic)	114838 UVT22HV AC110V 114839 UVT22HV AC220-240V 114840 UVT22HV AC380-415V 114841 UVT22HV DC24V 114842 UVT22HV DC110-120V 114843 UVT22HV DC220V	114850 UVT23HV AC110V 114851 UVT23HV AC220-240V 114852 UVT23HV AC380-415V 114853 UVT23HV DC24V 114854 UVT23HV DC110-120V 114855 UVT23HV DC220V
Extended rotary handle ERH-HV	114856 ERH22HV 3P	114857 ERH23HV 3P
Extended toggle handle LHD	—	114858 LHD23HV
Tunnel terminals MC	103869 MC22 W	103715 MC23
Mounting depth spacers WG	106321 WG 10 106362 WG 13	
Remote operators MOD	117414 MOD22HV AC110/DC110-120V EU 117415 MOD22HV AC220-240V/DC220V EU 117416 MOD22HV AC380-415V EU 117417 MOD22HV DC24V EU	117418 MOD23HV AC110/DC110-120V EU 117419 MOD23HV AC220-240V/DC220V EU 117420 MOD23HV AC380-415V EU 117421 MOD23HV DC24V EU

Accessories for MCCBs **Ex9MHV**

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 AL21M plus up to three units of AX21M 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 SHT2i or one unit of undervoltage release UVT2i



Aux. cont.	Frame size	Operating Voltage	Article No.	Type	Packing
-	M2HV	110 V AC	114832	SHT22HV AC110V	1/24
-	M2HV	220-240 V AC	114833	SHT22HV AC220-240V	1/24
-	M2HV	380-415 V AC	114834	SHT22HV AC380-415V	1/24
-	M2HV	24 V DC	114835	SHT22HV DC24V	1/24
-	M2HV	110-120 V DC	114836	SHT22HV DC110-120V	1/24
-	M2HV	220 V DC	114837	SHT22HV DC220V	1/24
-	M3HV	110 V AC	114844	SHT23HV AC110V	1/24
-	M3HV	220-240 V AC	114845	SHT23HV AC220-240V	1/24
-	M3HV	380-415 V AC	114846	SHT23HV AC380-415V	1/24
-	M3HV	24 V DC	114847	SHT23HV DC24V	1/24
-	M3HV	110-120 V DC	114848	SHT23HV DC110-120V	1/24
-	M3HV	220 V DC	114849	SHT23HV DC220V	1/24

Undervoltage releases

- It is possible to use one unit of undervoltage release UVT2i or one unit of shunt trip release SHT2i



Aux. cont.	Frame size	Operating Voltage	Article No.	Type	Packing
-	M2HV	110 V AC	114838	UVT22HV AC110V	1/24
-	M2HV	220-240 V AC	114839	UVT22HV 220-240V AC	1/24
-	M2HV	380-415 V AC	114840	UVT22HV 380-415V AC	1/24
-	M2HV	24 V DC	114841	UVT22HV 24V DC	1/24
-	M2HV	110-120 V DC	114842	UVT22HV DC110-120V	1/24
-	M2HV	220 V DC	114843	UVT22HV DC220V	1/24
-	M3HV	110 V AC	114850	UVT23HV AC110V	1/24
-	M3HV	220-240 V AC	114851	UVT23HV 220-240V AC	1/24
-	M3HV	380-415 V AC	114852	UVT23HV 380-415V AC	1/24
-	M3HV	24 V DC	114853	UVT23HV DC24V	1/24
-	M3HV	110-120 V DC	114854	UVT23HV DC110-120V	1/24
-	M3HV	220 V DC	114855	UVT23HV DC220V	1/24

Accessories for MCCBs **Ex9MHV**

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
M2HV	300 mm	Grey	114856	ERH22HV 3P	1/6
M3HV	300 mm	Grey	114857	ERH23HV 3P	1/6

Extended handle

- For easier operation of the toggle



Suitable MCCB	Colour	Article No.	Type	Packing
Ex9M3HV	Grey	114858	LHD23HV	1/20

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
- For compensation of heights please use these configuration:
M2HV -> M3HV = 1x WG13



Frame size	Height	Article No.	Type	Packing
M2HV	13 mm	106362	WG 13	1 set

Accessories for MCCBs **Ex9MHV**

Connection accessories

- 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 in the scope of delivery of breakers of frame size M2HV
- Front connection plates for frame sizes M2HV and M3HV

Tunnel terminals



Frame size	Version	Terminals	Max. terminal capacity	Article No.	Type	Packing
M2HV	tunnel	1	35-240 mm ²	103869	MC22 W	1 pc

Screw terminals



Frame size	Version	Terminals	Screw size	Article No.	Type	Packing
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
M2HV	5	3	20	108860	JP22 3P	1 set
M3HV	8	3	30	108861	JP23 3P	1 set

Remote operators

- Motor drives for electrical and remote control of 800V MCCBs
- Available for M2HV-M3HV



Frame size	Operating Voltage	Article No.	Type	Packing
M2	110 V AC / 110-120 V DC	117414	MOD22HV AC110/DC110-120V EU	1/8
M2	220-240 V AC / 220 V DC	117415	MOD22HV AC220-240V/DC220V EU	1/8
M2	380-415 V AC	117416	MOD22HV AC380-415V EU	1/8
M2	24 V DC	117417	MOD22HV DC24V EU	1/8
M3	110 V AC / 110-120 V DC	117418	MOD23HV AC110/DC110-120V EU	1/4
M3	220-240 V AC / 220 V DC	117419	MOD23HV AC220-240V/DC220V EU	1/4
M3	380-415 V AC	117420	MOD23HV AC380-415V EU	1/4
M3	24 V DC	117421	MOD23HV DC24V EU	1/4

Technical Data **Ex9MHV** Accessories

Accessories for Moulded Case Circuit Breakers Ex9MHV

Auxiliary and signal contact units AX21M, AL21M

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)

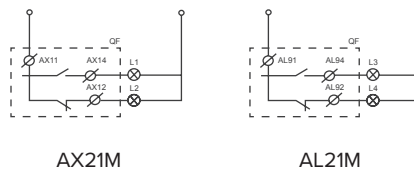
Electrical parameters

	AX21M	AL21M
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

	AX21M	AL21M
Suitable for	M2HV, M3HV	M2HV, M3HV

Wiring diagrams



Technical Data **Ex9MHV** Accessories

Accessories for Moulded Case Circuit Breakers Ex9MHV

Shunt trip releases SHT2iHV

General parameters

It is possible to use one unit of shunt trip release SHT2i or one unit of undervoltage release UVT2i

Can be used for remote switch off

SHT22HV for MCCBs of frame size M2HV

SHT23HV for MCCBs of frame sizes M3HV

With connection wires

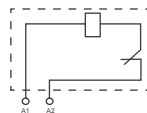
Electrical parameters

	SHT22HV	SHT23HV
Tested according to	IEC/EN 60947-1, IEC/EN 60947-5-1	
Rated operating voltage U (according to type)	110 V AC 220 — 240 V AC 380 — 415 V AC 24 V DC 110 — 120 V DC 220 V DC	110 V AC 220 — 240 V AC 380 — 415 V AC 24 V DC 110 — 120 V DC 220 V DC
Rated frequency	50/60 Hz DC	
Rated insulation voltage U	500 V	
Tripping time	< 20 ms	< 20 ms

Mechanical parameters

	SHT22HV	SHT23HV
Suitable for	M2HV	M3HV
Connection	equipped with connection wires	

Wiring diagrams



SHT2i

Technical Data **Ex9MHV** Accessories

Accessories for Moulded Case Circuit Breakers Ex9MHV

Undervoltage releases UVT2iHV

General parameters

It is possible to use one unit of shunt trip release SHT2iHV or one unit of undervoltage release UVT2iHV

To switch connected breaker off in case of voltage drop

UVT22HV for MCCBs of frame size M2HV

UVT23HV for MCCBs of frame size M3HV

With connection wires

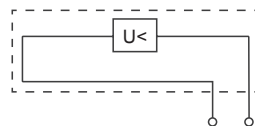
Electrical parameters

	UVT22HV	UVT23HV
Tested according to	IEC/EN 60947-1, IEC/EN 60947-5-1	
Rated operating voltage U_n	110 V AC 220 – 240 V AC 380 – 415 V AC 24 V DC 110 –120 V DC 220 V DC	110 V AC 220 – 240 V AC 380 – 415 V AC 24 V DC 110 –120 V DC 220 V DC
Rated frequency f	50/60 Hz DC	
Rated insulation voltage U_i	500 V	
Tripping time	< 20 ms	< 20 ms
Making treshold	85 % U_n	85 % U_n
Tripping treshold	35 % U_n	35 % U_n

Mechanical parameters

	UVT22HV	UVT23HV
Suitable for	M2HV	M3HV
Connection	equipped with connection wires	

Wiring diagrams



UVT2iHV

Technical Data **Ex9MHV** Accessories

Accessories for Moulded Case Circuit Breakers Ex9MHV

Extended rotary handles ERH2/HV

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

	ERH22HV	ERH23HV
Tested according to	IEC/EN 60947-3	
Degree of protection	IP54	

Mechanical parameters

	ERH22HV	ERH23HV
Suitable for	M2HV	M3HV
Length of the extension shaft	300 mm	300 mm
Mechanical shock resistance	IK08	
Indication	connected breaker status ON-OFF-TRIP	
Mounting	directly onto breaker	
Toggle colour	grey	

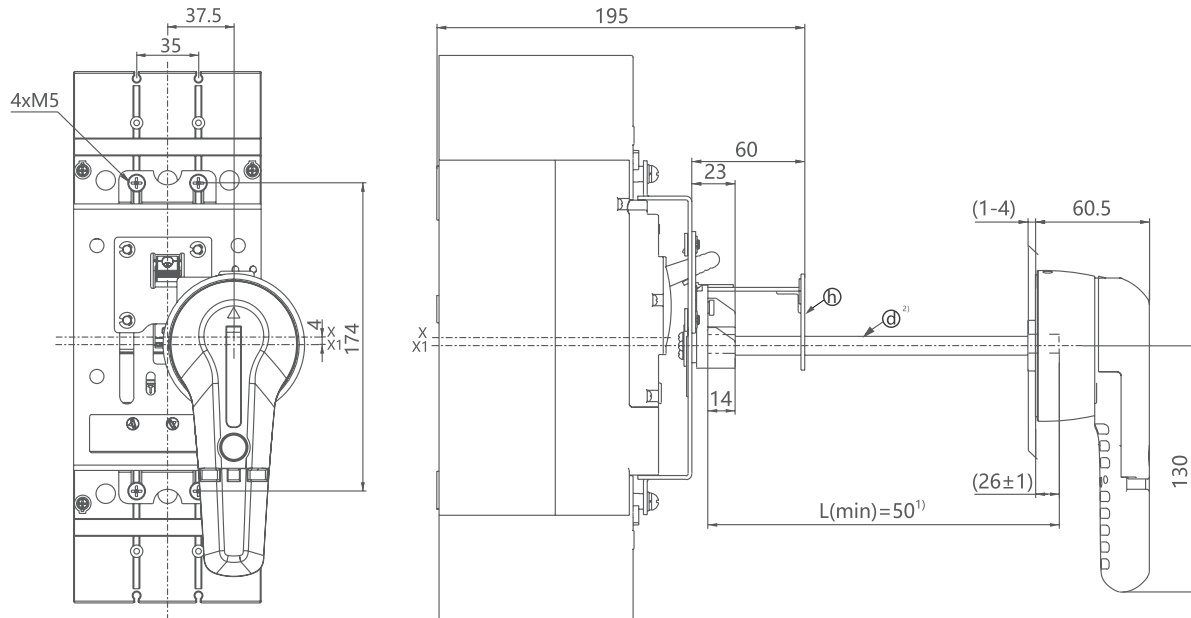
Technical Data Ex9MHV Accessories

Accessories for Moulded Case Circuit Breakers Ex9MHV

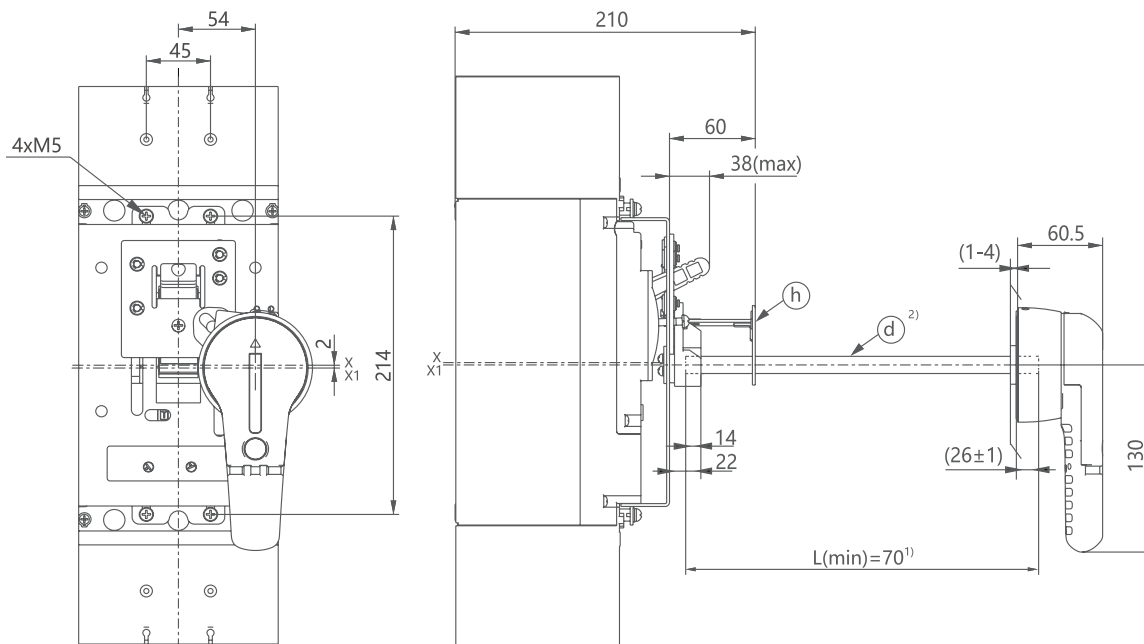
Extended rotary handles ERH2/HV

Dimensions

ERH22HV



ERH23HV



Note:

If the length (L) of the shaft (d) is bigger than 150mm, it is needed to install the support plate (h) to avoid sagging of the shaft.

Technical Data **Ex9MHV** Accessories

Accessories for Moulded Case Circuit Breakers Ex9MHV

Connection terminals MC2i

General parameters

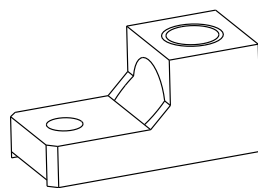
Tunnel connection terminals for Ex9MHV MCCBs

Screws in the scope of delivery

Mechanical parameters - tunnel terminals

	MC22 W
Suitable for	M2HV
Terminal type	Tunnel
Terminal capacity	1x 35 - 240 mm ²
Fastening torque of terminals (to MCCB)	15 Nm
Fastening torque of terminals (wires)	30 Nm

Drawings - tunnel terminals



MC22 W

Technical Data **Ex9MHV** Accessories

Accessories for Moulded Case Circuit Breakers Ex9MHV

Front connection plates JP

General parameters

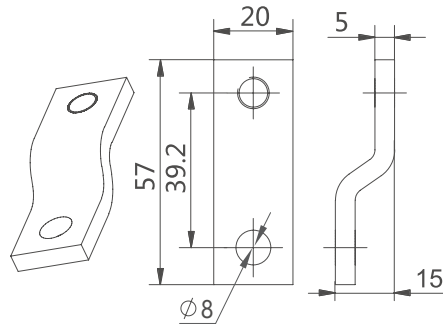
Front connection plates JP for frame sizes M2HV and M3HV

Mechanical parameters - Front connection plates JP

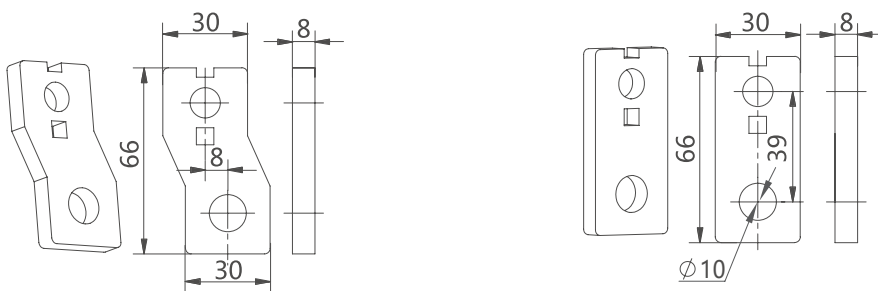
	JP22	JP23
Suitable for	M2HV	M3HV
Terminal pitch	35	53
Busbar / cable lug width	20mm	30 mm
Terminal screw size	M8	M10
Fastening torque of terminals	11 Nm	25 Nm

Dimensions

JP22



JP23



Technical Data **Ex9MHV** Accessories

Accessories for Moulded Case Circuit Breakers Ex9MHV

Mounting depth spacers WG

General parameters

Set of mounting depth spacers for compensation of differences in height between frame sizes

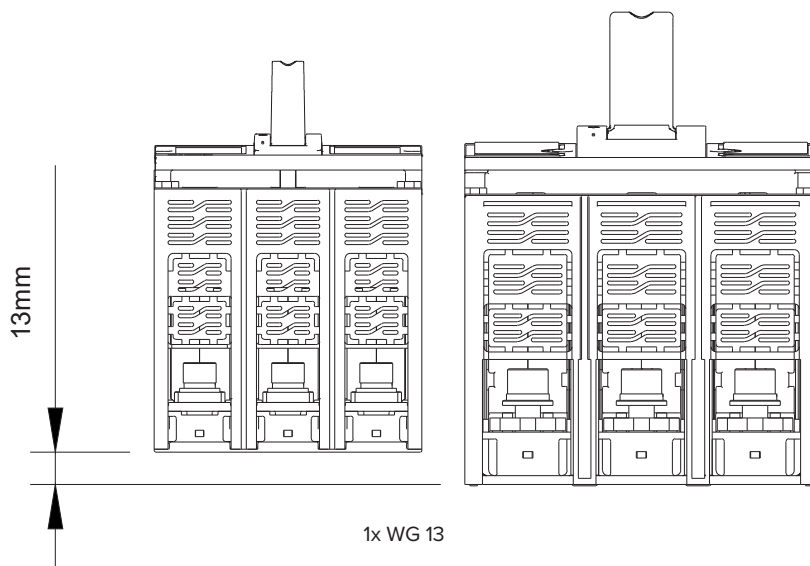
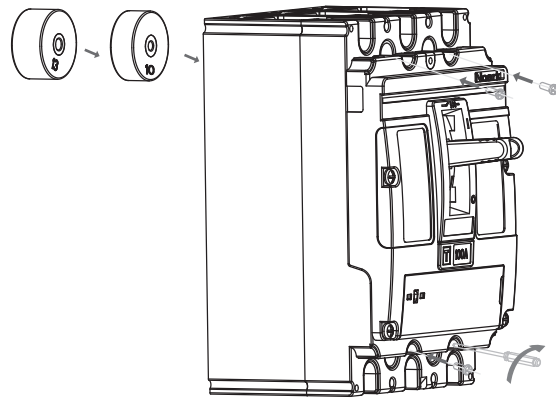
Suitable for all variants of MCCBs and MCCB Switch Disconnectors

Variants with height 10 and 13 mm

Mechanical parameters

	WG 13
Suitable for height compensation	M2HV -> M3HV
Height	13 mm

Mounting



Technical Data **Ex9MHV** Accessories

Accessories for Moulded Case Circuit Breakers Ex9M

Remote motor operators MOD2iHV

General parameters

Motor drives for electrical and remote control of 800V HV MCCBs

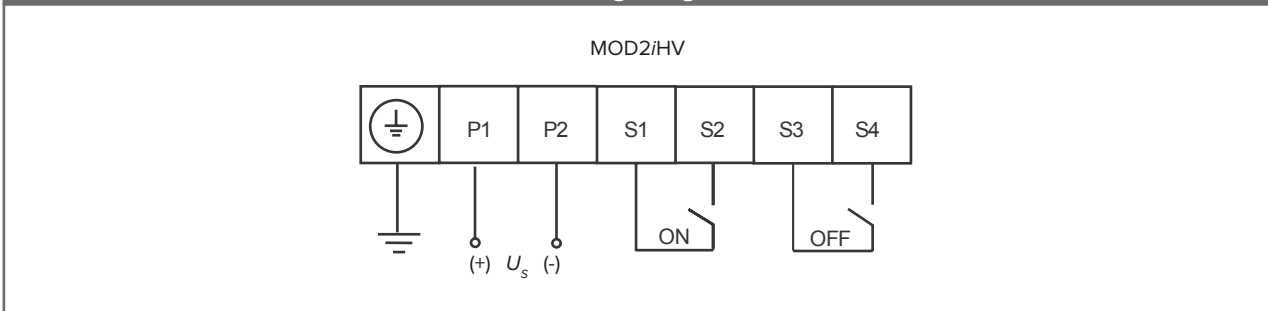
Electrical parameters

	MOD22HV	MOD23HV
Tested according to	IEC/EN 60947-1, IEC/EN 60947-5-1	
Rated operating voltage U_s (according to type)	110 V AC / 110 - 120 V DC 220 - 240 V AC / 220 V DC 380 V AC - 415 V AC 24 V DC	
Rated frequency	50/60 Hz	
Power consumption	150 VA	300 VA
Total time to switch ON	500 ms	1000 ms
Total time to switch OFF	500 ms	1000 ms

Mechanical parameters

	MOD22HV	MOD23HV
Suitable for	M2HV	M3HV
Terminals	lift	
Terminal capacity	0.2 – 1.5 mm ²	
Mechanical service life	10 000 operation cycles	8 000 operation cycles
Maximum frequency of switch. cycles	120 operating cycles per hour	

Wiring diagram



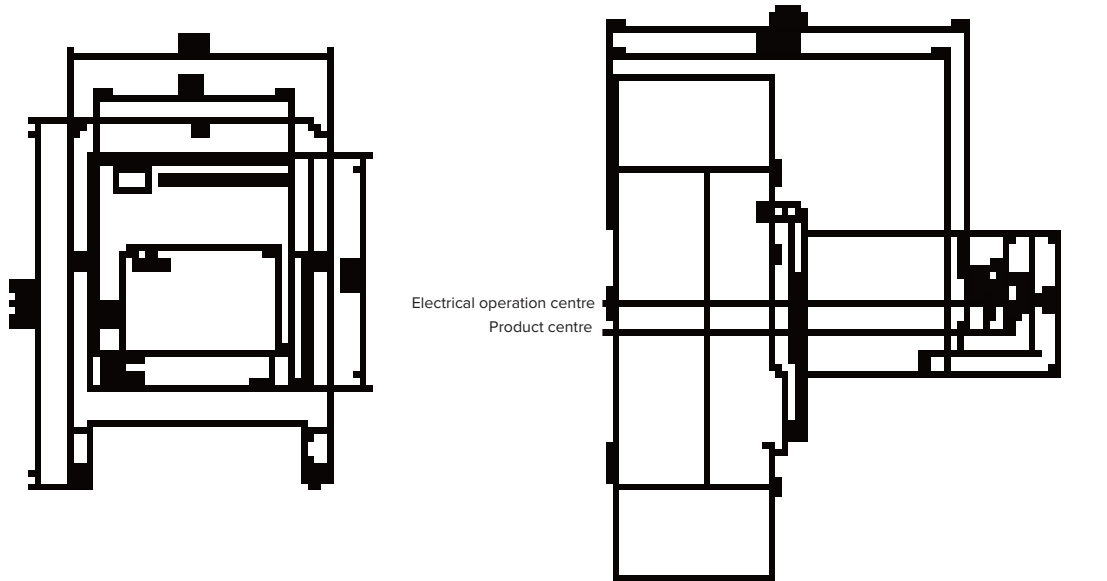
Technical Data **Ex9MHV** Accessories

Accessories for Moulded Case Circuit Breakers Ex9M

Remote motor operators MOD2iHV

Dimensions

MOD22HV



MOD23HV

