



Electric motor MCH for Masterpact NT.



Electric motor MCH for Masterpact NW.

### Electric motor MCH

The electric motor automatically charges and recharges the spring mechanism when the circuit breaker is closed. Instantaneous reclosing of the breaker is thus possible following opening. The spring-mechanism charging handle is used only as a backup if auxiliary power is absent.

The electric motor MCH is equipped as standard with a limit switch contact CH that signals the "charged" position of the mechanism (springs charged).

#### Characteristics

Power supply	V AC 50/60 Hz	48/60 - 100/130 - 200/240 - 277 - 380/415 - 400/440 - 480
	V DC	24/30 - 48/60 - 100/125 - 200/250
Operating threshold	0.85 to 1.1 Un	
Consumption (VA or W)	180	
Motor overcurrent	2 to 3 In for 0.1 s	
Charging time	maximum 3 s for Masterpact NT	
	maximum 4 s for Masterpact NW	
Operating frequency	maximum 3 cycles per minute	
CH contact	10 A at 240 V	

### Voltage releases XF and MX

Their supply can be maintained or automatically disconnected.

#### Closing release XF

The XF release remotely closes the circuit breaker if the spring mechanism is charged.

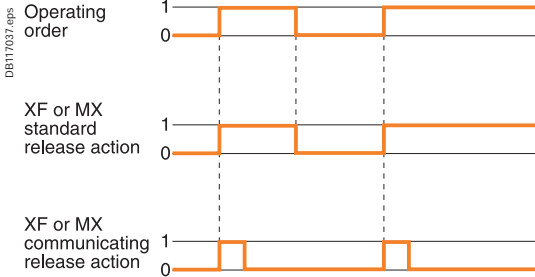
#### Opening release MX

The MX release instantaneously opens the circuit breaker when energised. It locks the circuit breaker in OFF position if the order is maintained (except for MX "communicating" releases).

*Note: whether the operating order is maintained or automatically disconnected (pulse-type), XF or MX "communicating" releases ("bus" solution with "COM" communication option) always have an impulse-type action (see diagram).*

#### Characteristics

	XF	MX
Power supply	V AC 50/60 Hz	24 - 48 - 100/130 - 200/250 - 277 - 380/480
	V DC	12 - 24/30 - 48/60 - 100/130 - 200/250
Operating threshold	0.85 to 1.1 Un	
Consumption (VA or W)	Hold: 4.5	Hold: 4.5
	Pick-up: 200 (200 ms)	Pick-up: 200 (200 ms)
Circuit breaker response time at Un	55 ms ±10 (Masterpact NT)	
	70 ms ±10 (NW ≤ 4000 A)	
	80 ms ±10 (NW > 4000 A)	



XF and MX voltage releases.

### "Ready to close" contact PF

The "ready to close" position of the circuit breaker is indicated by a mechanical indicator and a PF changeover contact. This signal indicates that all the following are valid:

- the circuit breaker is in the OFF position
- the spring mechanism is charged
- a maintained opening order is not present:
- MX energised
- fault trip
- remote tripping second MX or MN
- device not completely racked in
- device locked in OFF position
- device interlocked with a second device.

#### Characteristics

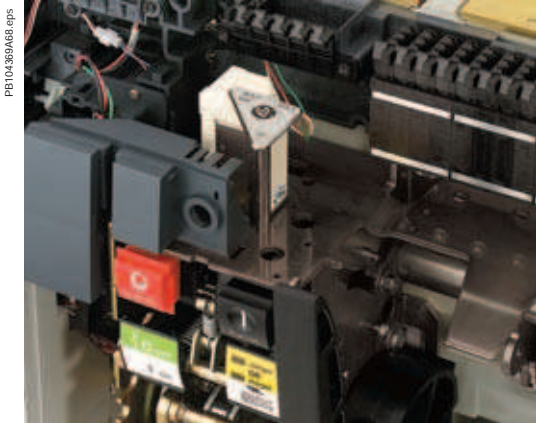
		NT/NW	
Maximum number		1	
Breaking capacity (A) p.f.: 0.3 AC12/DC12	Standard	Minimum load: 100 mA/24 V	
		V AC	
	240/380	5	
	480	5	
	690	3	
	V DC	24/48	3
	125	0.3	
	250	0.15	
	Low-level	Minimum load: 2 mA/15 V	
	V AC	24/48	3
240	3		
380	3		
V DC	24/48	3	
125	0.3		
250	0.15		



"Ready to close" contacts PF.

# Remote operation

## Remote tripping



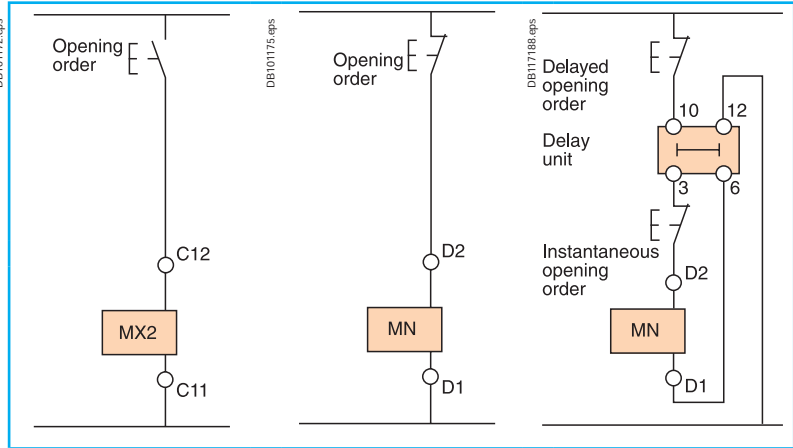
MX or MN voltage release.

This function opens the circuit breaker via an electrical order. It is made up of:

- a shunt release second MX
- or an undervoltage release MN
- or a delayed undervoltage release MNR: MN + delay unit.

These releases (2<sup>nd</sup> MX or MN) cannot be operated by the communication bus. The delay unit, installed outside the circuit breaker, may be disabled by an emergency OFF button to obtain instantaneous opening of the circuit breaker.

### Wiring diagram for the remote-tripping function



### Voltage releases second MX

When energised, the MX voltage release instantaneously opens the circuit breaker. A continuous supply of power to the second MX locks the circuit breaker in the OFF position.

Characteristics			
Power supply	V AC 50/60Hz	24 - 48 - 100/130 - 200/250 - 277 - 380/480	
	V DC	12 - 24/30 - 48/60 - 100/130 - 200/250	
Operating threshold		0.7 to 1.1 Un	
Permanent locking function		0.85 to 1.1 Un	
Consumption (VA or W)		Pick-up: 200 (80 ms)	Hold: 4.5
Circuit breaker response time at Un		50 ms ±10	

### Instantaneous voltage releases MN

The MN release instantaneously opens the circuit breaker when its supply voltage drops to a value between 35 % and 70 % of its rated voltage. If there is no supply on the release, it is impossible to close the circuit breaker, either manually or electrically. Any attempt to close the circuit breaker has no effect on the main contacts. Circuit-breaker closing is enabled again when the supply voltage of the release returns to 85 % of its rated value.

Characteristics			
Power supply	V AC 50/60 Hz	24 - 48 - 100/130 - 200/250 - 380/480	
	V DC	24/30 - 48/60 - 100/130 - 200/250	
Operating threshold	Opening	0.35 to 0.7 Un	
	Closing	0.85 Un	
Consumption (VA or W)		Pick-up: 200 (200 ms)	Hold: 4.5
MN consumption with delay unit (VA or W)		Pick-up: 200 (200 ms)	Hold: 4.5
Circuit breaker response time at Un		40 ms ±5 for NT	
		90 ms ±5 for NW	

### MN delay units

To eliminate circuit-breaker nuisance tripping during short voltage dips, operation of the MN release can be delayed. This function is achieved by adding an external delay unit in the MN voltage-release circuit. Two versions are available, adjustable and non-adjustable.

Characteristics			
Power supply	Non-adjustable	100/130 - 200/250	
	Adjustable	48/60 - 100/130 - 200/250 - 380/480	
Operating threshold	Opening	0.35 to 0.7 Un	
	Closing	0.85 Un	
Delay unit consumption		Pick-up: 200 (200 ms)	Hold: 4.5
Circuit breaker response time at Un	Non-adjustable	0.25 s	
	Adjustable	0.5 s - 0.9 s - 1.5 s - 3 s	