

Masterpact™ installation instructions

universal power breaker



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refer to technical manual for :

- control units
- time-current curves
- wiring diagrams
- dimensions
- maintenance
- endurances

Masterpact™ MP-MC circuit breaker

introduction

Instructions are to be followed when receiving the breaker and before installing it.

tools needed

- hex key wrenches
- straight blade screwdriver (large and small)
- wire stripper

recommendations for storing

it is not recommended to store the breakers in corrosive or salt laden environment.

Temperature limits :

from -60°F (-50°C) min to +160°F (+70°C)max

Breaker status :

- main contacts open
- spring discharged
- connected position

Do not store breaker without its original shipping carton or any protective covering.

Stacking :

maximum permitted :

MP08 to MP30

MP40 to MP63

Masterpact™ MP-MC circuit breaker

identifying your Masterpact location of markings

circuit breaker frame

electrical accessories
identification label
(fixed mounting)

name label giving rating,
interrupting ratings
and rated voltage

no. order number - position - date
standard or specific diagram
sensor rating
instantaneous pickup

stationary assembly

electrical accessories
identification label

frame size
standard or specific diagram no.
order number - position - date

Masterpact™ MP-MC circuit breaker

unpacking

MP08 to MP30

Breakers are screwed on their palett by means of 4 bolts.

With drawout mounting, it is necessary to withdraw and remove the breaker to have access to the bolts.

fixed mounted

drawout mounted

remove the four bolts

disconnect the breaker (see page 12)
and remove it from its stationary assembly
(see page 13)

pull the two handgrips to extract the breaker

remove bolts, nuts and washers

drawout mounted without stationary assembly

remove the 4 shipping bolts

breaker is delivered upside down. Place another palett next to shipping palett. Rotate breaker onto terminals, then onto its bottom on second palett

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unpacking (cont'd)

MP08 to MP30

stationary assembly only

remove the tape holding the clusters (if any)

MP40 to MP63 drawout mounted

circuit breaker frame

remove the 4 shipping bolts

breaker is delivered upside down. Place another palett next to shipping palett. Rotate breaker onto terminals, then onto its bottom on second palett

stationary assembly

caps

∂ remove the 4 shipping bolts
Σ
position another wooden palett and rotate the frame
Π remove the plastic

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handling

MP08 to MP30 - MC08 to MC20

The Masterpact frame and its stationary assembly are provided with lateral handles in order to facilitate lifting.

Before handling it is suggested to remove the breaker from its stationary assembly.

See page 13 for operation.

External or overhead lifting device can use the lateral handles for lifting the circuit breaker as shown.

Weights (lbs/kg)

	stationary assembly	frame	terminals
MP08	51 / 23	102 / 46	13 / 6 ①
MP12	51 / 23	102 / 46	13 / 6 ①
MP16	51 / 23	102 / 46	13 / 6
MP20	60 / 27	121 / 55	36 / 16
MP25	110 / 50	176 / 80	89 / 40
MP30	110 / 50	176 / 80	89 / 40
MC08	51 / 23	102 / 46	13 / 6 ①
MC16	51 / 23	102 / 46	13 / 6
MC20	60 / 27	121 / 55	36 / 16

① optional terminals

using the lateral handles

frame alone

stationary assembly alone

using a lifting sling

slings :

.40 dia max.

Ø 10 mm max.

frame alone

stationary assembly alone

using a fork lift

frame alone

caution:

to avoid damage to the stationary assembly do not let the forks of the fork lift protrude past the rear of the breaker.

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handling (cont'd)

MC32

An external or overhead lifting device can use the lateral handles for lifting the circuit breaker as shown.

using a lifting sling

slings :
.40 dia max.
Ø 10 mm max.

Weights (lbs/kg)

	stationary assembly	frame
MC32	254 / 115	198 / 90

frame alone (compensation bar not supplied-hooks can be supplied on request)

2 slings : .40 dia max. <i>Ø 10 mm max.</i>	1 sling : .40 dia max. 58.8 long max. <i>Ø 10 mm max. lg = 1500 mm max.</i>
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stationary assembly alone (compensation bar not supplied-hooks can be supplied on request)

using a fork lift

stationary assembly alone

caution:
lift the stationary assembly enough to avoid any shock between the load terminals and the cubicle cell.

Masterpact™ MP-MC circuit breaker

handling (cont'd)

MP40 to MP63

An external or overhead lifting device can use the lateral handles for lifting the circuit breaker as shown.

using a lifting sling

slings :

.40 dia max.
Ø 10mm max.

30" min.
800mm min.

Weights (lbs/kg)

	stationary assembly	frame	terminals
MP40	198 / 90	264 / 120	88 / 40 ①
MP50	198 / 90	264 / 120	177 / 80
MP63	242 / 110	308 / 140	177 / 80

① optional terminals

frame alone

30" min.
800mm min.

stationary assembly alone

using a fork lift

2"
50 mm

1,2"
30 mm

frame alone

caution:

to avoid damage to the stationary assembly do not let the forks of the fork lift protrude past the rear of the breaker.

stationary assembly alone

caution:

to avoid capsizing the stationary assembly place a chock as shown. Remove it as soon as the ends of forks lean on the cubicle floor.

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attaching rear terminals

The terminals provided with the Masterpact® shall be mounted as indicated below :
MP08 - MP20

MP08 - MP12 - MP16
fixed mounted

drawout mounted

MP20
fixed mounted

drawout mounted

screws M10, 60mm long
tightening torque = 375 lb.in.
11/16 hex head wrench may be used

MP25 - MP30

fixed mounted
drawout mounted

MP25 - MP30
fixed mounted

drawout mounted

screws M10, 60mm long
11/16 hex head wrench may be used

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**attaching rear terminals
(cont'd)**

**MC32
drawout mounted**

**MP40
fixed mounted**

**MP40 - MC40
drawout mounted**

or

or

**MP50
fixed mounted**

**MP50 - MP63 - MC50
drawout mounted**

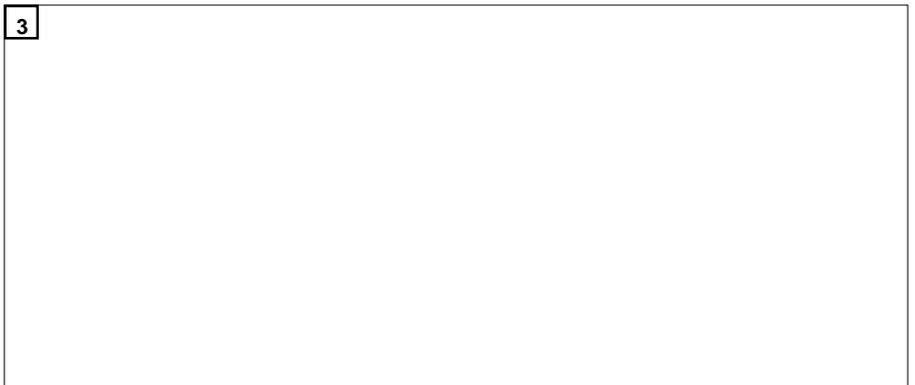
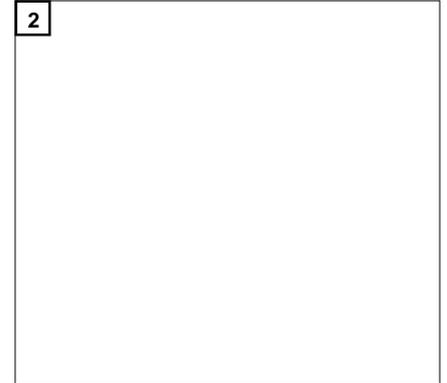
Masterpact™ MP-MC circuit breaker

control wiring

Each terminal may be connected by one stranded copper wire 18 to 14 AWG (0.6 to 2.5 mm²)
Cable strip length : **3/8" / 9mm**

fixed mounting

- 1** install the connector
 - 2** remove the transparent shield
 - 3** connect the control wires according to the wiring diagrams shown on the label and using a small screwdriver
 - 4** replace the transparent cover
- warning** : do not route the control wires close to the arc chutes

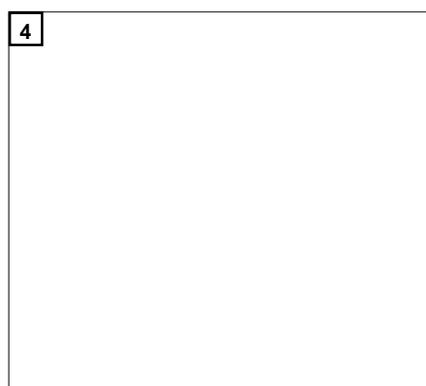
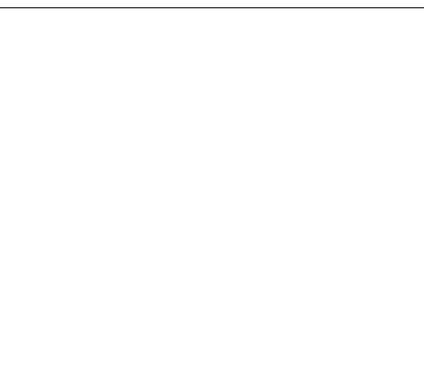
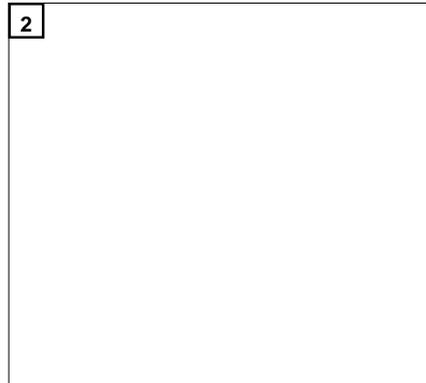
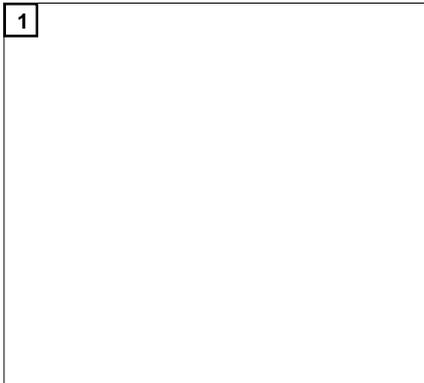


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control wiring (cont'd)

drawout mounting

- 1 remove the front terminal cover
- 2 determine the terminal number ① according to the wiring label ②
- 3 connect the control wires using a small screwdriver and replace the front terminal cover
- 4 **warning** : do not route the control wires close to the arc chutes



location of terminals

note : Z = Z - W

Control unit (left hand side)

Accessories (right hand side)

Masterpact™ MP-MC circuit breaker

disconnecting and connecting instructions

All Masterpact circuit breakers have four drawout positions and can be operated in these four positions. The circuit breaker is captive in all positions except "withdrawn". To connect or disconnect the Masterpact circuit breaker, first insert the racking crank.

Insertion of the racking crank can be prevented by the following stationary assembly accessories:

- padlock
- key-lock
- racking interlock

note : Disconnecting and connecting instructions are summarized on a sticker provided with the installation instructions . The sticker must be affixed to the door of the

cubicle . ■ In the CONNECTED position, the primary and secondary disconnecting terminals are engaged, and the circuit breaker is ready for service.

■ In the TEST position, the primary terminals are disengaged; however, control contacts are connected to permit operation of the circuit breaker. The TEST position is used for testing circuit breaker operation and control system functions as provided. In this position, the circuit breaker is not suitable for internal inspection or any maintenance function.

■ In the DISCONNECTED position, the primary and secondary disconnect terminals are disengaged and separated by a safe distance from the corresponding stationary terminals

■ In the WITHDRAWN position, both primary and secondary contacts are disconnected. The circuit breaker may be removed for complete accessibility.
note: a racking crank maintained inserted or breaker not completely disconnected prevents the extraction of the right rail.

notes :

- a closed circuit breaker is automatically opened prior to being connected or disconnected during a racking in or racking out operation.
- the circuit breaker may be operated in all four positions.

CONNECTED position

TEST position

DISCONNECTED position

WITHDRAWN position

Masterpact™ MP-MC circuit breaker

disconnecting instructions

note: open the breaker before disconnecting it. Otherwise it will open automatically during disconnection.

1 remove the racking crank from its storage hole and engage it in the racking slot

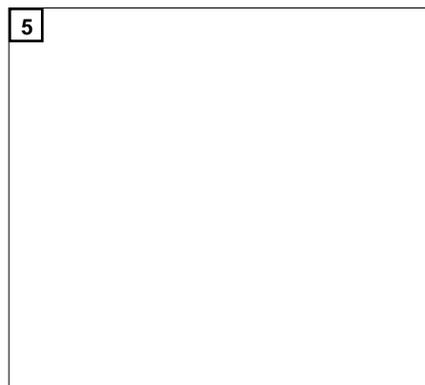
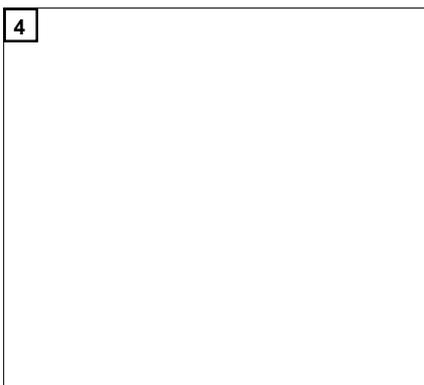
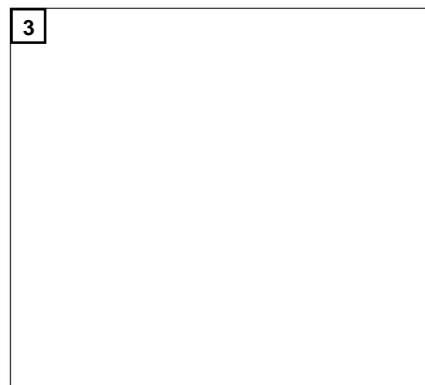
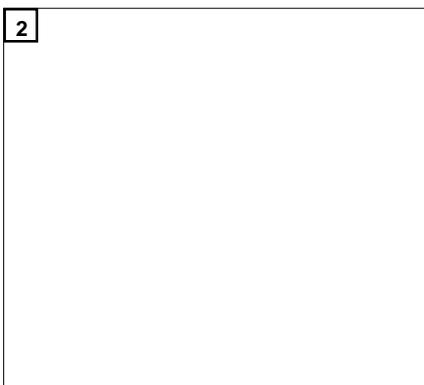
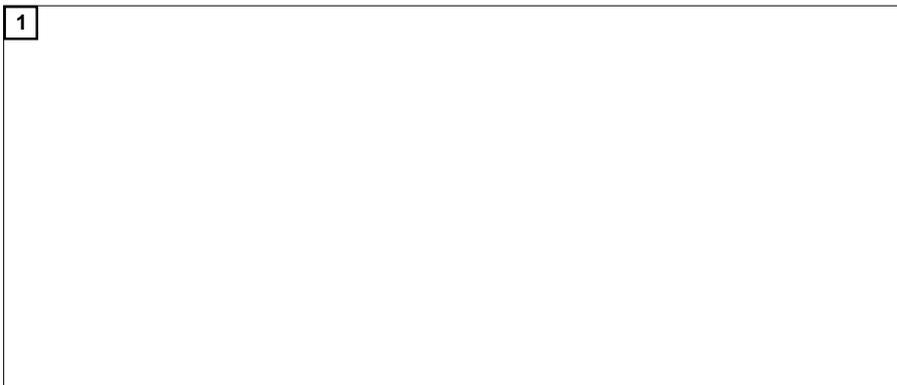
note : in case of racking interlock, press the "compartment door closed" sensor located at the front of the drawout mechanism to simulate a closed door.

2 to reach the test position then disconnected position turn the racking crank anticlockwise until the test and disconnected indication are shown on the position indicator

3 caution : The racking handle must be removed before pulling out the breaker, otherwise the right rail will not fully extend

4 pull the two handgrips to extract the breakers

5 use the two lateral handles to remove the frame from its stationary assembly. See other means of handling page 6



Masterpact™ MP-MC circuit breaker

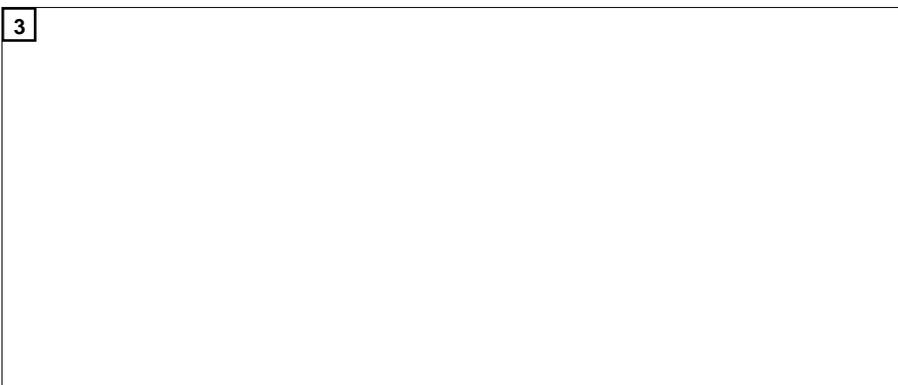
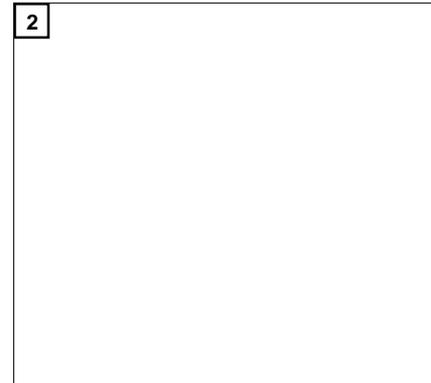
installing the breaker in its stationary assembly

note : a racking handle remaining inserted in its racking slot or a breaker not fully disconnected prevents the extraction of the right rail

1 pull the two extension rails by their handles

2 install the breaker on the two extension rails making sure that the four breaker supports located on the two sides of the circuit breaker are correctly engaged in the slots. See page 6 for other means of handling

3 to move the breaker from the WITHDRAWN position to the DISCONNECTED position, push the breaker into the stationary assembly until it stops.
As a safety feature, the racking crank cannot be engaged if the breaker is not in the DISCONNECTED position.
caution : do not press on the control unit while pushing the breaker in.



Masterpact™ MP-MC circuit breaker

connecting instructions

1 engage racking crank into its racking slot

note : the operation is possible only if :

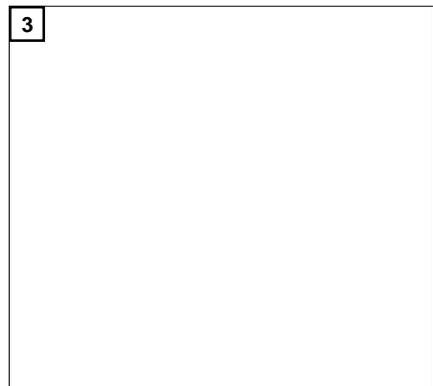
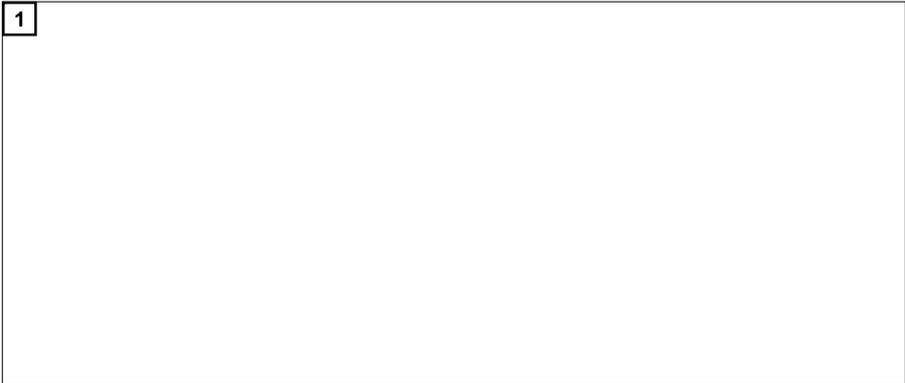
- breaker is in DISCONNECTED position
- drawout mechanism padlocks have been removed
- Kirk key lock has been unlocked
- compartment door is closed

note : in case of racking interlock, press the "compartment door closed" sensor located at the front of the drawout mechanism to simulate a closed door

2 turn the racking crank clockwise until the **CONNECTED** position is reached on the position indicator

warning : as the fully connected position is neared, more force will be necessary to turn the crank. Continue cranking until two "click" sounds are heard (locking the breaker in the connected position)

3 remove the racking crank and put it back in its storage hole



Masterpact™ MP-MC circuit breaker

charging instructions

Manually

Electrically

All basic breaker and drawout operations can be performed from the front of the breaker.

Suitable electrical and mechanical interlocks are provided to prevent incorrect operation of the breaker. Manually operated breakers have multiple charge-close provisions which allow the following possible operating sequence : charge-close-recharge-open-close-open.

To manually charge an electrically or manually operated breaker, push or pull down on the charging handle. The handle is shaped to make manual charging easy, when the breaker is located in either a low or high position within a switchboard enclosure.

Six full strokes can be used. When the spring is fully charged, the yellow "charged" indicator will appear in the stored energy window on the breaker front cover.

When the mechanism is fully charged, the handle stops and will return to normal position when released.

closing instructions

All that is required to close the breaker locally is to push the mechanical "Push-to-close" pushbutton. Pre-charged breakers may be closed remotely via a spring release solenoid which is standard for electrically operated breakers and optional for manually operated breakers.

Before attempting to close the breaker locally, the yellow stored energy window indicator must read "charged".

note :

■ The closing coil (XF) withstands a continuous voltage, providing antipumping function. If the breaker is not ready to close when the closing order is intended, inhibit it and try again as soon as the breaker is ready to close

■ to inhibit the antipumping function, wire in series the ready-to-close switch (terminals 251 - 252) with the closing coil.

Breaker can be closed only if :

- it is opened
- charged
- pop-out type fault indicator is correctly reset
- no opening order is intended

opening instructions

Opening the breaker locally is accomplished with the mechanical "Push to open"

pushbutton on the breaker front cover .

Breakers may be opened remotely via either a shunt trip or an undervoltage trip device

depending upon the application requirements.

resetting instructions

The **mechanical fault** indicator indicates that an overcurrent has occurred and prevents reclosure of the circuit breaker until reset.

caution : in case of tripping due to overcurrent or ground fault, the fault must be cleared before any attempt of resetting

page 2

tools needed

- hex key wrenches
- straight blade screwdriver (large and small)
- wire stripper

page 5

remove the tape holding the clusters (if any)

page 6

handling

MP08 to MP30 - MC08 to MC20

The Masterpact frame and its stationary assembly are provided with lateral handles in order to facilitate lifting.

Before handling it is suggested to remove the breaker from its stationary assembly. See page 13 for operation.

External or overhead lifting device can use the lateral handles for lifting the circuit breaker as shown.

page 7

rod .48 dia.
 \varnothing 12 mm

Weights (lbs/kg)

	stationary assembly	frame
MC32	254 / 115	198 / 90

2 slings : .40 dia max.
 \varnothing 10 mm max.

1 sling : .40 dia max. 58.8 long max.
 \varnothing 10 mm max. lg = 1500 mm max.

stationary assembly alone

caution:

lift the stationary assembly enough to avoid any shock between the load terminals and the cubicle cell.

page 9

screws M10, 60mm long
 tightening torque = 375 lb.in.
 11/16 hex head wrench may be used

screws M10, 60mm long
 11/16 hex head wrench may be used

page 14

1 remove the racking crank from its storage hole and engage it in the racking slot

note : in case of racking interlock, press the "compartment door closed" sensor located at the front of the drawout mechanism to simulate a closed door.

2 to reach the test position then disconnected position turn the racking crank anticlockwise until the test and disconnected indication are shown on the position indicator

3 caution : The racking handle must be removed before pulling out the breaker, otherwise the right rail will not fully extend

4 pull the two handgrips to extract the breakers

5 use the two lateral handles to remove the frame from its stationary assembly. See other means of handling page 6

page 18

Shackle diameter : 1/4" to 5/16"

sommaire

couverture

page 5

remove the tape holding the clusters (if any)

Masterpact™ MP-MC circuit breaker

locking

circuit breaker frame

- by Kirk lock (VSKA)

- padlocking using a device (VBP).

Access to opening ① and/or closing ② of the circuit breaker can be prevented by a padlock.

locking in open position :

- ① push the OFF button
- ② turn the lock
- ③ remove the key

Shackle diameter : 1/4 to 5/16

stationary assembly

- by Kirk key lock (VSKC)

note : locking in disconnected position or in all positions : connected - test and disconnected (on request)

locking in the disconnected position :

- ① disconnect the breaker
 - ② turn the lock
 - ③ remove the key
-

- by padlocking device (standard)

Shackle diameter : 1/4" to 5/16"

note : this locking inhibits the insertion of the racking handle. This will prevent racking the breaker into its stationary assembly

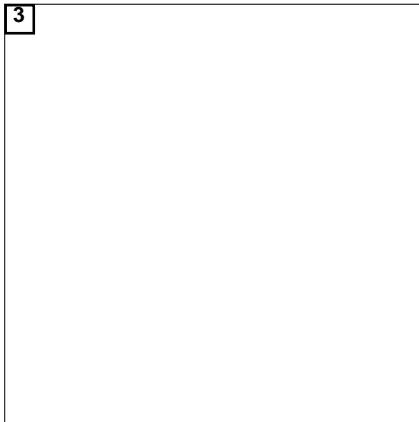
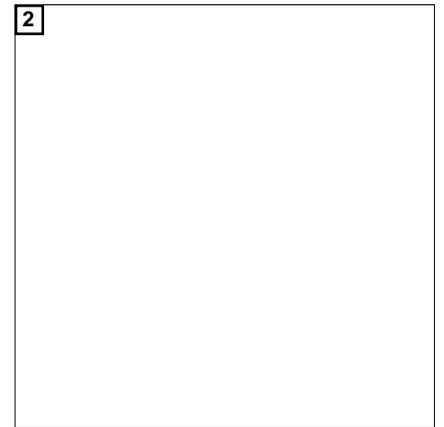
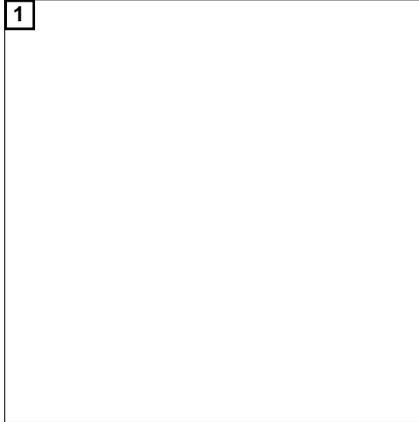
Masterpact MP-MC circuit breaker

locking (cont'd)

Door
by door interlock (VDP)

Prevents the door from opening when the breaker is in the connected and test positions.
note : the hook can be mounted on either side.

To change location :



Masterpact™ MP-MC circuit breaker

locking (cont'd)

Shutters
by padlocking device

storage
position

lock in closed
position

lock in open
position

padlocking

Spring charged

When the closing springs are charged, this interlock prevents the breaker from being disconnected by-catching it in its stationary assembly
Before pulling out the circuit breaker, discharge the spring by pressing the ON pushbutton then the OFF pushbutton
caution : not suitable with undervoltage trip device

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Kingston (Wilkes-Barre) (717) 288-1461
Media (Philadelphia) (215) 565-8750
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Sherman (903) 868-2720
Waco (817) 776-3432
Wichita Falls (817) 322-5589

Utah

Murray
(Salt Lake City) (801) 266-2096

Vermont

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Virginia

Charlottesville (804) 973-7069
Norfolk (804) 461-1290
Richmond (804) 285-7508
Roanoke (703) 989-1250

Washington

Mercer Island (Seattle) (206) 232-9702
Spokane (509) 535-3685

West Virginia

Barboursville
(Huntington) (304) 736-8944
Charleston (304) 342-3211

Wisconsin

Green Bay (414) 494-3313
Madison (608) 271-2600
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Wyoming

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united states international locations

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Smyrna, TN (615) 459-5026
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other north american sales offices

Canada

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Halifax (902) 450-5337
Hamilton (416) 578-3398

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Moncton (506) 587-0719
Montreal (514) 697-4790
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