

# Moulded case circuit breakers

Change of parameters of the motor drives MP-BL-X230 and MP-BL-X110

## CHANGE OF PARAMETERS OF THE MOTOR DRIVES MP-BL-X230 AND MP-BL-X110

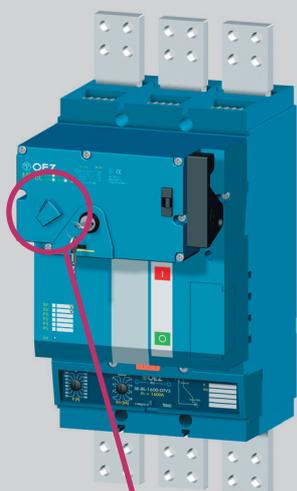


For motor drives MP-BL-X230 and MP-BL-X110 intended for circuit breakers BL1000S, BL1600S the driving unit design has been changed. In consequence of this innovation the time of circuit breaker switching off by the motor drive from the position „I“ (ON) to position „0“ (OFF) has been changed.

For detailed parameters see the catalogue sheet of the motor drives, which can be downloaded here: „Catalogue sheet of motor drives MP-BL“. The new motor drives have serial number 00500-0703 and higher.

In use of the new motor drives for automatic standby units MODI manufactured to 01. 04. 2007, the automatic standby unit MODI must be reprogrammed. In this case, please call the service department of OEZ s.r.o.

## MOTOR DRIVES



DIMENSIONS, see page H23

Push button cover OD-BL-KT01



### Description

The motor drive is part of circuit breaker accessories enabling you to switch the circuit breaker on and off remotely. Modular design of the drives enables easy installation on the circuit breaker after removing the cavity cover from the circuit breaker. Modeion circuit breakers with motor drives can be used in the most demanding industrial applications such as protection of standby sources, synchronization of two sources, etc. and anywhere it is necessary to ensure automated and unmanned operation of electrical equipment. As the motor drives are equipped with spring storage to accumulate energy necessary for activation, it is possible to turn on the circuit breaker in times up to 70 ms. Releasing of the storage device and turning on the circuit breaker is ensured by a closing coil included in standard equipment of every motor drive. The time before the circuit breaker breaks contact on account of a motor drive is approx. 10 s. When faster circuit breaker tripping is required (e.g. emergency STOP button), it is possible to use the motor drive combined with undervoltage release or shunt trip.

- On the motor drive front panel there is a switch selector to select drive modes with a possibility to indicate remotely the state of this switch. The first mode is automatic remote control (position AUTO). This is the standard position in automatic operation. The other mode is manual control (selector position MANUAL), the motor drive does not need any voltage to perform its operation.
- When the selector is in position AUTO, it is possible to switch on and off remotely with the push buttons that must be wired to the connector on the drive. When the drive is in MANUAL mode, the circuit breaker can be switched on using the green button on the front part of the drive cover and to switch it off with the red TEST button on the overcurrent release unit. The function of the remote control ON button in MANUAL MODE is locked up, whereas the function of the remote control OFF button remains active for safety reasons.

- The motor drive makes it simple to control the circuit breaker when there is a loss of control voltage. In MANUAL mode, it is possible to wind up the spring storage assembly by repeated rotation of the foldable handle. After the storage is wound up, the circuit breaker can be turned on using the green button on the front part of the insulation cover of the drive and it can be turned off using the red TEST button on the overcurrent release.
- The motor drive, unlike the circuit breaker, recognizes only two fixed positions. In position one, the circuit breaker is in on-state. If the circuit breaker in AUTO mode is put in off-state by some overcurrent releases, auxiliary trip devices or from a distance, the PS-BL -2200 switch (included in motor drive delivery) will generate a pulse to load the spring storage mechanism automatically as a result of electrical linkage with the circuit breaker. If the switch is not placed in cavity 3 or 4, no automatic loading process will take place. In the second fixed position the circuit breaker is switched off and the loaded drive device is ready to activate the circuit breaker after receiving the control pulse.
- The presence of the control voltage in the drive is indicated by a steadily lit green LED indicator below the drive plate. If the indicator is not lit, the position of the circuit breaker lever need not comply with the correct positions of the power contacts.
- The drive may be furnished with an electromechanical operations counter.
- The drive can be locked up in off-state position using the built-in cylinder type lock and using as many as three padlocks with the shank diameter max. 7 mm. Before the drive is locked up, it is necessary to turn the drive unit switch to MANUAL mode position, to withdraw the drive unit yellow lockup strip and to insert the padlock shank into the oval opening in the lockup strip. When a cylinder type lock is used, the lockup strip will run out a little.
- An OD-BL-KT01 cover can be affixed to the drive's turn-on switch and then sealed. The cover prevents turning on the circuit breaker from the drive panel.

### Specifications

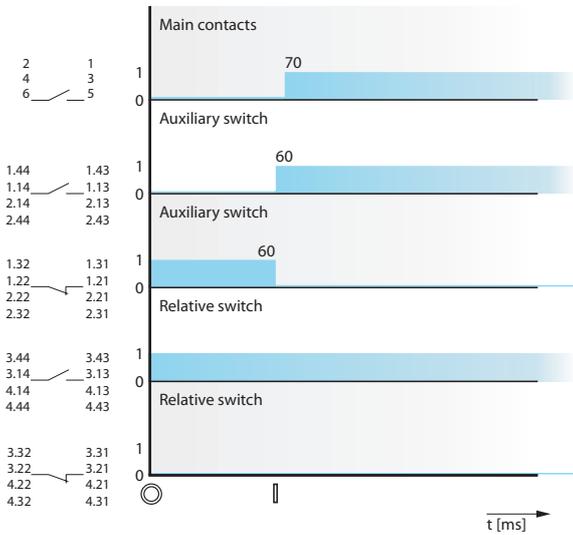
| Type   | MP-BL-X..., MP-BL-X...-P                         |  |
|--|--|--|
| Operational voltage  | $U_e$  | 110, 230 V a.c.<br>110, 220 V d.c.             |
| Rated frequency  | $f_n$  | 50 / 60 Hz                                     |
| Control pulse length for switching on                        |  | >20 ÷ 1500 ms <sup>1)</sup>                    |
| Control pulse length for switching off                       |  | >20 ms ÷ ∞ <sup>1)</sup>                       |
| Time to switch-on  |  | <70 ms   |
| Time to the accumulating of motor drive under voltage $U_e$  | 230 V a.c.<br>220 V d.c.                         | 14 s<br>18 s                                   |
| Time to switch-off $U_e$                                     | 230 V a.c.<br>220 V d.c.                         | 10 s<br>12 s                                   |
| Frequency of ON/OFF cycles                                   |  | 2 cycles/min                                   |
| Frequency of cycles - immediately one after another ON/OFF   |  | 8 cycles                                       |
| Mechanical endurance   |  | 10 000 cycles                                  |
| Input power  | AC<br>DC   | 200 VA<br>200 W                                |
| Protection   | 110 V a.c., 230 V a.c.<br>110 V d.c., 220 V d.c. | LSN 4C/1, LSN 2C/1<br>LSN-DC 4C/1, LSN-DC 2C/1 |
| Rated operating current of the switch selector AUTO / MANUAL | $I_e / U_e$                                      | 6 A/250 V a.c.                                 |

<sup>1)</sup> - for sequence of control pulses, see page H50

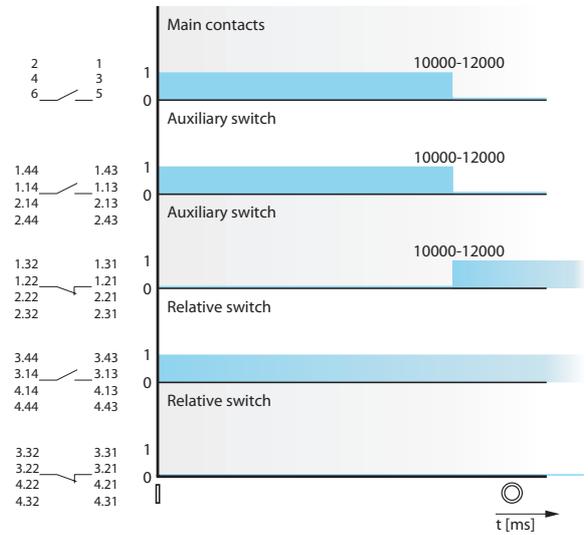
# MOTOR DRIVES

## Specifications

Circuit breaker switched on by motor drive - electrical by push button ON

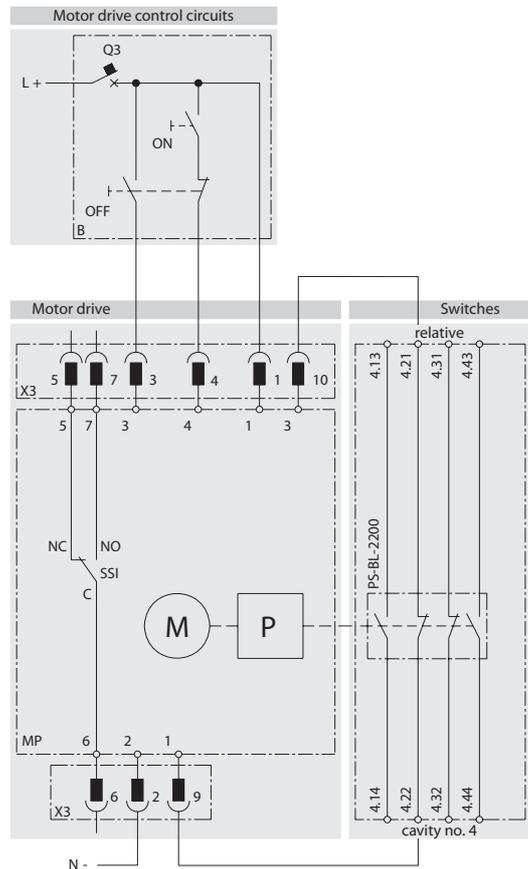


Circuit breaker switched off by motor drive - electrical by push button OFF



## Wiring diagram

Circuit breaker switch on and switched off by motor driver - electrical by push button ON and push button OFF



Circuit breaker states and Lever positions of circuit breakers

| Circuit breaker state                          | Lever positions of circuit breaker |
|--|------------------------------------|
| Switched on                                    | ⏏                                  |
| Switched off by releases or by TEST button     | ⏏                                  |
| Switched off manually or electrically by drive | ⊙                                  |

## Wiring diagram description

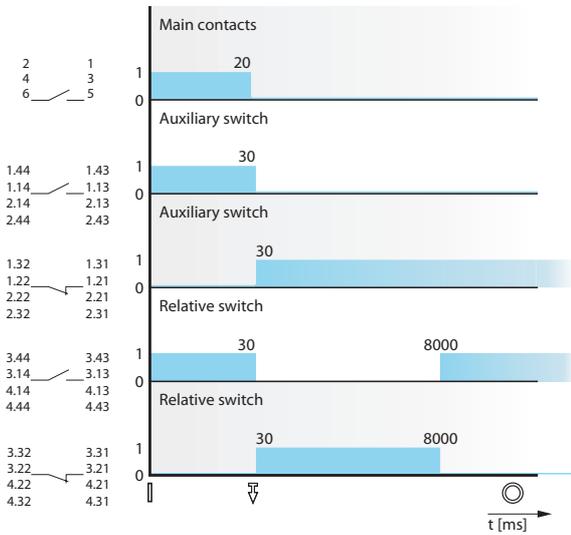
| Symbol | Description  |
|--------|--|
| MP     | motor drive MP-BL-X...   |
| M      | motor  |
| P      | storage device   |
| X3     | connector for connecting auxiliary circuits                              |
| SSI    | switch indicating MANUAL (NO-C) / AUTO (NC-C) modes                      |
| B      | recommended wiring of the control circuits (not included in drive order) |
| ON     | make push-button   |
| OFF    | break push button  |
| Q3     | motor drive circuit breaker - see page H47                               |

# MOTOR DRIVE

3P

## Specifications

### Tripping of the circuit breaker with motor drive by shunt trip or undervoltage release



### Circuit breaker states and Lever positions of circuit breakers

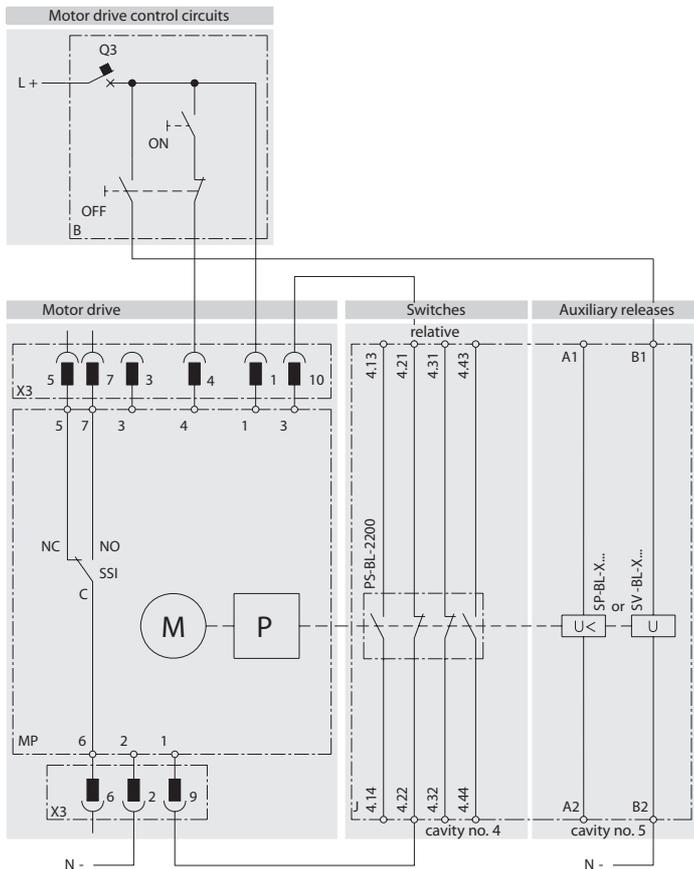
| Circuit breaker state                          | Lever positions of circuit breaker |
|--|------------------------------------|
| Switched on                                    |                                    |
| Switched off by releases or by TEST button     |                                    |
| Switched off manually or electrically by drive |                                    |

### Wiring diagram description

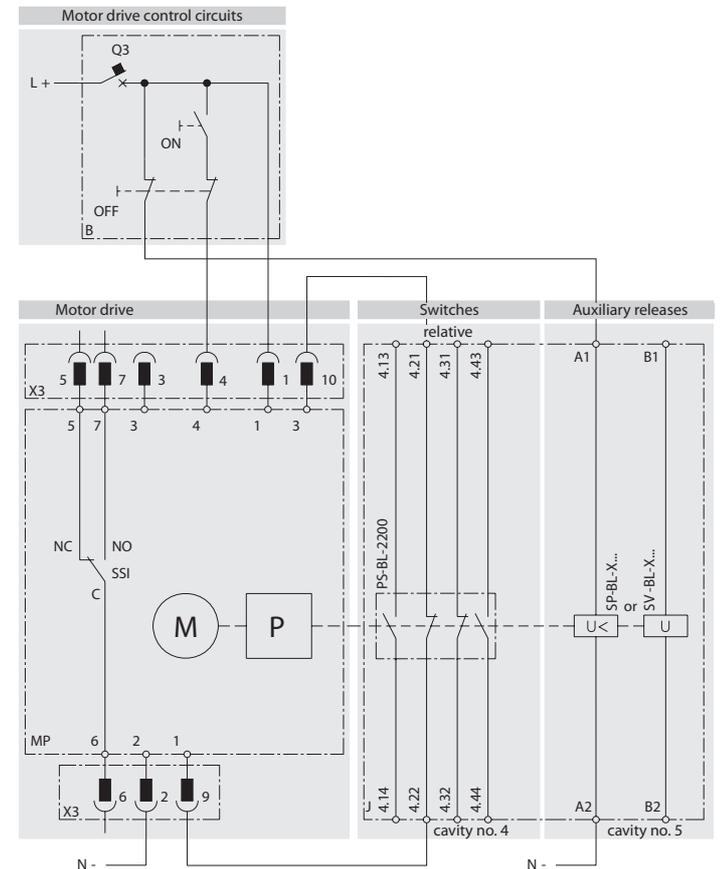
| Symbol     | Description  |
|------------|--|
| <b>MP</b>  | motor drive MP-BL-X...   |
| <b>M</b>   | motor  |
| <b>P</b>   | storage device   |
| <b>X3</b>  | connector for connecting auxiliary circuits                              |
| <b>SSI</b> | switch indicating MANUAL (NO-C) / AUTO (NC-C) modes                      |
| <b>B</b>   | recommended wiring of the control circuits (not included in drive order) |
| <b>ON</b>  | make push-button   |
| <b>OFF</b> | break push button  |
| <b>Q3</b>  | motor drive circuit breaker - see page H47                               |

## Wiring diagram

### Circuit breaker switched on by motor drive (electrical push button ON) and switched off by shut trip



### Circuit breaker switched on by motor drive (electrical push button ON) and switched off by undervoltage trip

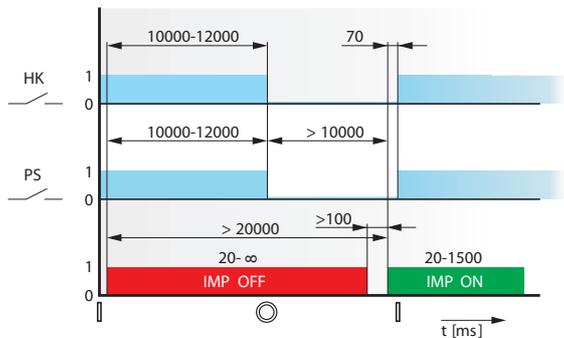


# MOTOR DRIVE

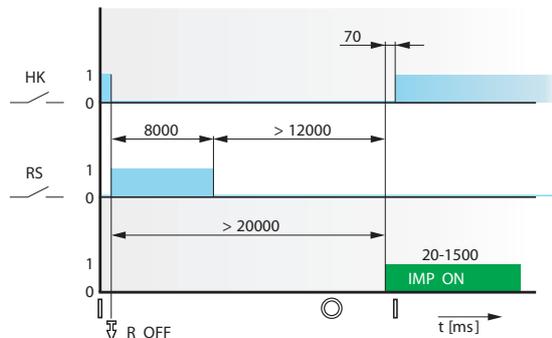
## Specifications

### Recommended actuating pulses

Circuit breaker switched on/off by motor drive



Circuit breaker switched off by overcurrent or auxiliary releases and switched on by motor drive - S switch permanently closed



### Circuit breaker states and Lever positions of circuit breakers

| Circuit breaker state                          | Lever positions of circuit breaker |
|--|------------------------------------|
| Switched on                                    |                                    |
| Switched off by releases, or by TEST button    | ⏏                                  |
| Switched off manually or electrically by drive | ⊙                                  |

### Description of charts

| Symbol  | Description                                |
|---------|--|
| HK      | main contacts                              |
| PS      | auxiliary switch                           |
| RS      | relative switch                            |
| R OFF   | circuit breaker closing instant by release |
| IMP ON  | make pulse for motor drive                 |
| IMP OFF | break pulse for motor drive                |

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