

Magnetic Switch • Magnetic Contactor Manual

Electromagnetic Contactor and Electromagnetic Switch are widely used as switches of motor, heater and lighting circuits. Read this description in case of fixing, maintenance and inspection for the purpose of protecting unexpected trouble.


CAUTION ON SAFETY



Indicates the situation which could result in dangerous and could be killed or be heavily injured, if handled in error



Indicates the situation which could result in dangerous states, could be slightly damaged or injured and could be materially damaged only, if handled in error

Well, even if it is described in the items of , there could be the possibility which results in serious as case as may be.



- Do not touch nor approach this device under the live condition.
Fear of electric shock and burn.
- Carry out the maintenance and inspection after confirming that this device is not energized. Fear of electric shock
- Connect the metal enclosure case to the grounded(earth)point reliably.
Fear of electric shock.



- Install this device with the specified mounting space of more in the catalogue kept. Fear of burn and fire.
- Use the properly-sized wire applicable to the rated current and voltage, and the specified fastening torque. Fear of fire.
- Check regularly the terminal screw is loose or not.
- This device do not have the function of short-circuit protection. Use together other switches with the function.
- Make the pre-set current of thermal overload relay meet with the rated current of motor. Fear of motor burnout.

CAUTION ON USE

◆Collation

Confirm before use that the type and rating are in accordance with that which are required.

◆Installation

These devices should be vertically fixed on the board and so forth, placed in undusty and dried atmosphere.

◆Connection

- 1) Connect according to attached connection diagram.
- 2) Use the electric wire suited to the current.
- 3) Do not leave wire scrap or screw in device and screw up enough the terminal screw of no use.
- 4) In case of metal case cover, the earth terminal at lower part of the case must be grounded.

◆Maintenance / Inspection

Inspect the following items monthly during use.

1) Screw up

Because the screw becomes loose for a long time, screw up enough certainly.

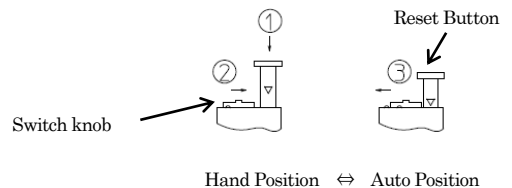
2) Operating voltage

Allowable voltage is 85 ~ 110% of the rating. It causes of shortening life, generating hum and contact welding to use under the unright voltage.

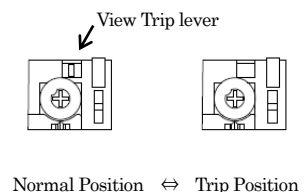
◆Thermal overload relay

- 1) It is possible to adjust within 80 ~ 120%(±20%)of setting current.
Confirm that setting current is in accordance with rated current of the motor.
- 2) When the thermal overload relay operates, push the button after taking off the causes of overload.

●HAND⇔AUTO (HRE)



●THERMAL ACTION INDICATION (HRE)



RATED

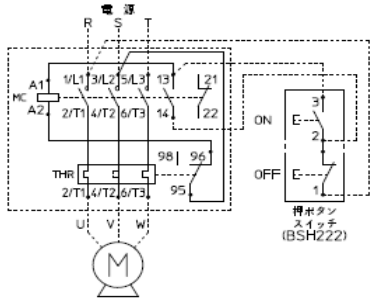
| Frame | 3φ 200V | | 3φ 400V | | Rated thermal current (A) I t h |
|----------------|---------------------|-------------------|---------------------|-------------------|---------------------------------|
| | Rated capacity (kW) | Rated current (A) | Rated capacity (kW) | Rated current (A) | |
| MUD5HB | 1.5 | 8 | 1.5 | 4 | 10 |
| MUF7HB | 2.2 | 11 | 2.7 | 7 | 20 |
| MUF10-4,10-5HB | 2.7 | 13 | 4 | 9 | 20 |
| HMUF10HB | 2.7 | 13 | 4 | 9 | 20 |
| HMUE18HB | 3.7 | 18 | 5.5 | 13 | 20 |
| MUF18HB | 4 | 20 | 5.5 | 13 | 30 |
| MUF20HB | 4 | 20 | 7.5 | 17 | 32 |
| MUF25HB | 5.5 | 26 | 11 | 24 | 50 |
| MUF35HB | 7.5 | 35 | 15 | 32 | 60 |
| MUF50HB | 11 | 50 | 22 | 48 | 80 |
| MUF65HB | 15 | 65 | 30 | 65 | 100 |
| MUE80HB | 19 | 80 | 37 | 80 | 110 |
| MUE100HB | 22 | 93 | 45 | 90 | 125 |
| MUE125HB | 30 | 125 | 60 | 120 | 180 |
| MUE150HB | 37 | 150 | 75 | 150 | 200 |
| MUE180HB | 45 | 180 | 90 | 180 | 220 |
| MUF300HB | 75 | 300 | 150 | 300 | 350 |
| MUF400HB | 110 | 400 | 200 | 400 | 450 |

FIT WIRE

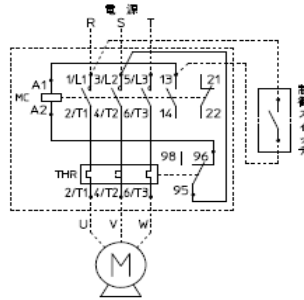
| Frame | Main circuit | | | | Control circuit | | | | |
|------------------------|---------------|----------------------------------|--------------------------------------|-------------------------|-----------------|-----------------------------|--------------------------------------|-------------------------|---------|
| | Screw size | Fit wire (mm ²) | Suitable crimp-style terminals (N·m) | Tightening torque (N·m) | Screw size | Fit wire (mm ²) | Suitable crimp-style terminals (N·m) | Tightening torque (N·m) | |
| Caster | MUD6 | M3.5 | 1.25~2 | 1.25-0.5~ | M3.5 | 1.25~2 (φ1.0) | 1.25-0.6~ 2-0.5 | 1~1.3 | |
| | MUF7,10-4 | M3.5 | (φ1.0) | 2-0.5 | | | | | 1~1.3 |
| | HMUF10, HMU13 | M3.5 | | | | | | | |
| | MUF18 | M4 | 2~5.5 | 2-4~0.5-4 | | | | | 1.4~1.8 |
| | HMUE18 | M4 | (φ1.6~2.0) | | | | | | |
| | MUF30 | M4 | | | | | | | |
| | MUF25,35 | M5 | 2~14 (φ2~3.0) | 2.5~14.5 | | | | | 2.5~3.5 |
| | MUF50,65 | M6 | 2~30 | 2.5~22.6 | | | | | 4~6 |
| | MUE80 | M6 | | 2.5~28.6 | | | | | 4~5 |
| | MUE100,125 | M6 | 2~60 | 2.8~60.8 | | | | | 6~18 |
| Thermal overload relay | MUR150,180 | M10 | 2~100 | 2.10~100.10 | 20~27 | | | | |
| | MUF300,400 | M12 | 2~200 | 2.10~200.10 | 40~80 | | | | |
| | MUK12 | M3.5 | 1.25~2 (φ1.0) | 1.25-0.5~ 2-0.5 | 1~1.3 | M3.5 | 1.25~2 (φ1.0) | 1.25-0.6~ 2-0.5 | 1~1.3 |
| | HRD10 | M3.5 | 1.25~2 (φ1.0) | 1.25-0.5~ 2-0.5 | 1~1.3 | M3.5 | 1.25~2 (φ1.0) | 1.25-0.6~ 2-0.5 | 1~1.3 |
| | HRD18 | M4 | 2~5.5 (φ1.6~2.0) | 2-4~0.5-4.5 | 1.4~1.8 | M4 (φ1.0) | 1.25~4~ 2-4 | 1.4~1.8 | |
| | HRB38 | M5 | 2~14 (φ2~3.0) | 2.5~14.5 | 2.5~3.5 | | | | |
| | HRB75 | M6 | 2~30 | 2.5~28.6 | 4~5 | | | | |
| | HRB150 | M6 | 2~30 | 2.8~60.8 | 6~18 | | | | |
| | HRB180 | M8 | 2~60 | 2.8~60.8 | 6~18 | | | | |
| | HRB180 | M8(power side) M10(load side) | 2~60 2~100 | 2.8~60.8 2.10~100.10 | 6~18 20~27 | | | | |

Connection Example

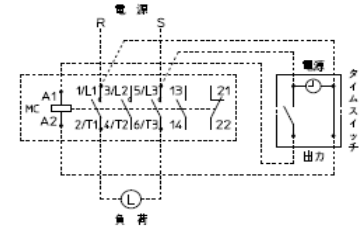
(1) Manual operation of the motor



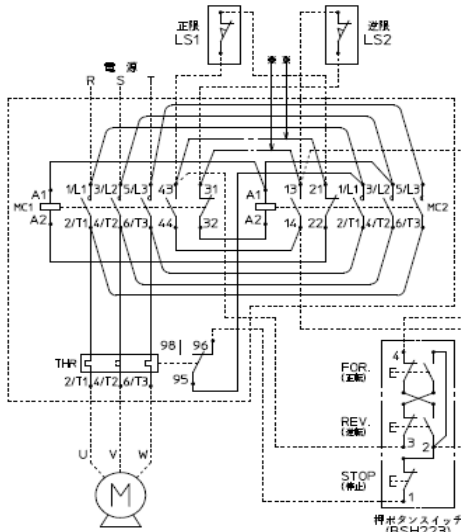
(2) Automatic operation of the motor



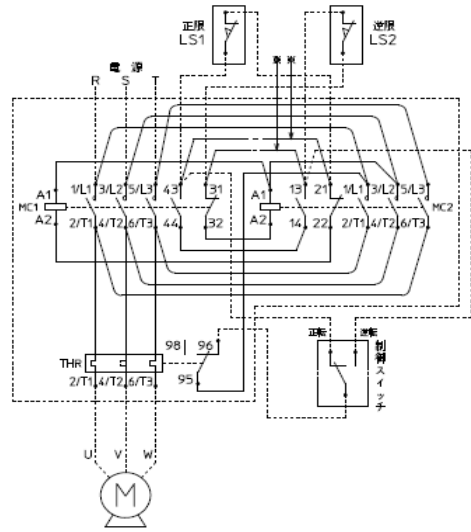
(3) Flasher circuits using time switch



(4) With push-button reverse operation



(5) With control switch reverse operation



Note

If the wiring is (4),(5), remove the crossover between 31~13 and between 43~21

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