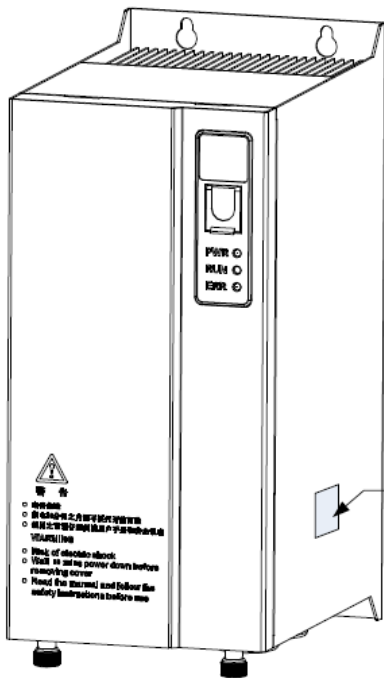
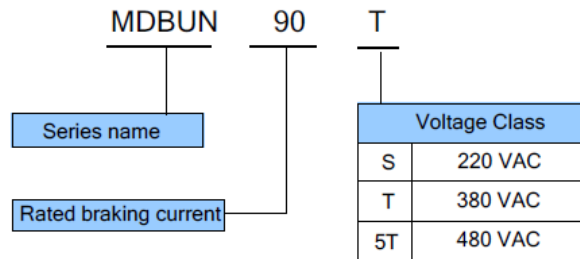


## MDBUN Series

### ■ Product appearance and designation rule



Position of nameplate



**Nameplate**

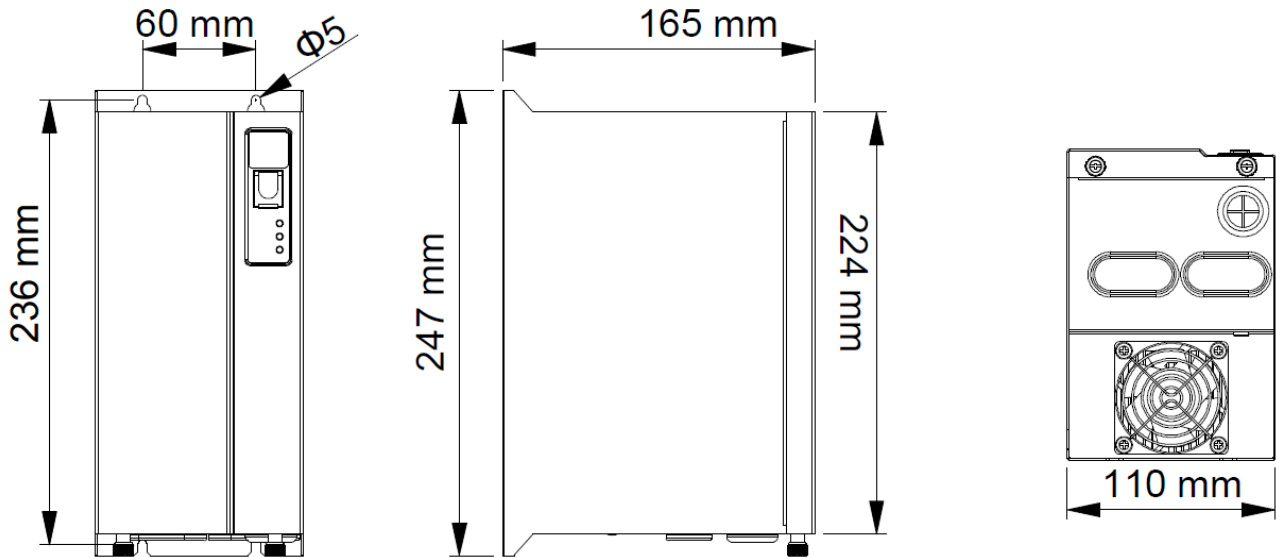
Model	MODEL: MDBUN-90-T
Rated power	POWER: 63kW
Rated input	INPUT: DC 300 - 800V
Rated output	OUTPUT: 0 - 90A
S/N	S/N: 010131264C800109

Suzhou Inovance Technology Co.,Ltd.

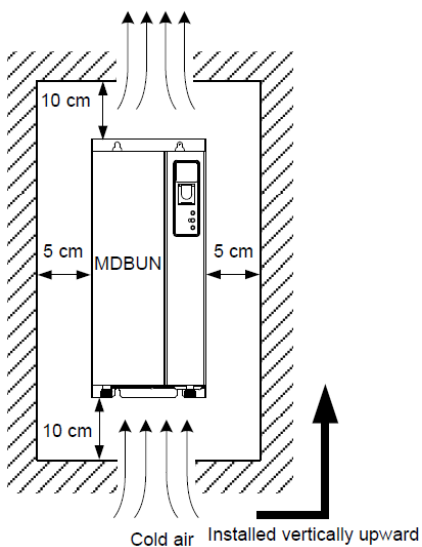
## ■ Specifications

Braking Unit Model	Input Voltage of Adaptable Drive	Rated Continuous Braking Current (A)	Peak Braking Current (A)	Max. Continuous Braking Power (kW)	Min. Braking Resistance ( $\Omega$ )
MDBUN-45-S	220 VAC	45	54	21	8
MDBUN-60-S		60	72	27	6
MDBUN-90-S		90	108	41	4
MDBUN-45-T	380 VAC	45	54	38	15
MDBUN-60-T		60	72	51	11
MDBUN-90-T		90	108	76	8
MDBUN-45-5 T	480 VAC	45	54	43	17
MDBUN-60-5 T		60	72	58	13
MDBUN-90-5 T		90	108	86	9

## ■ Dimensions

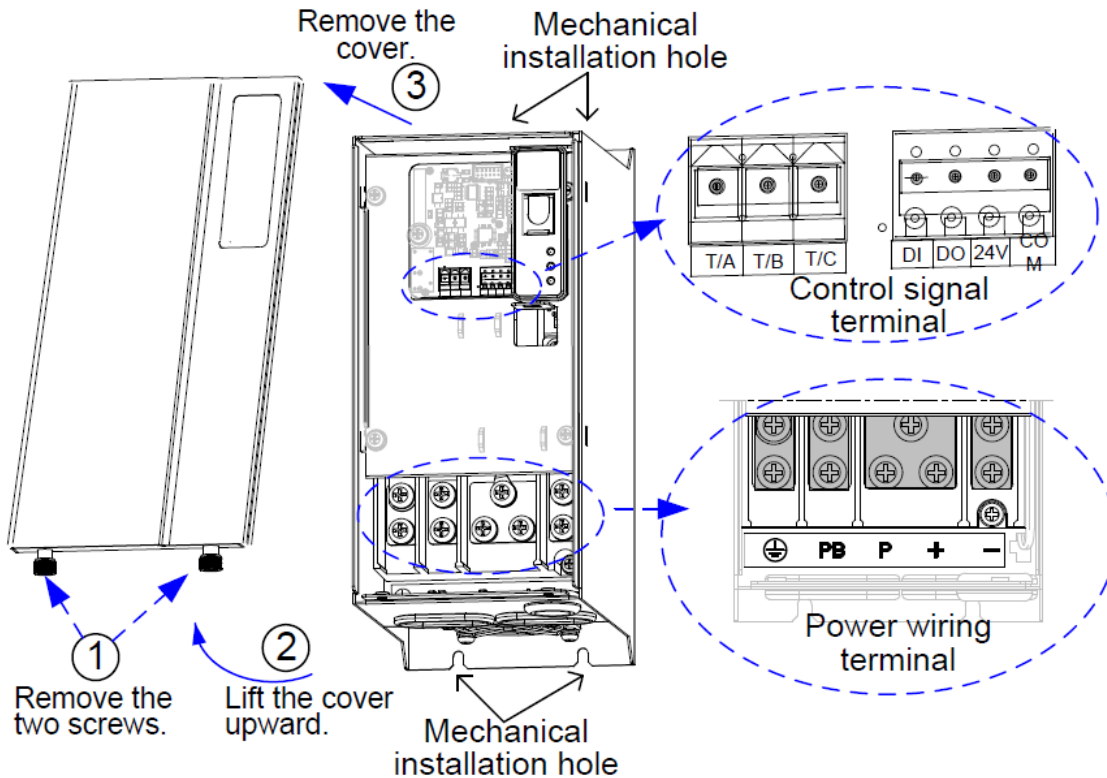



## ■ Mechanical installation





Altitude	Lower than 1000 m (1% de-rated for each 100 m above this height; max. 4000 m)
Ambient temperature	-10°C to +40°C
Humidity	Lower than 95% RH, without condensing
Vibration	Lower than 5.9 m/s <sup>2</sup> (0.6 g)
Storage temperature	-20°C to +60°C
Pollution level	Level 2
Cooling method	Air cooling
Ingress level	IP20

## ■ Electrical installation



Terminal	Name	Description
+, -	Positive and negative terminals of the DC bus	Used as the input point of the common DC bus
P(+), BR	Terminals connecting for the braking resistor	Used for connecting the braking resistor
	Grounding terminal	Used for grounding

The wiring precautions are as follows:

1. Do not reverse the polarity of the DC bus terminals (+) and (-). Otherwise, the drive and braking unit may be damaged.
2. The grounding terminal  and the power zero line terminal N must be different terminals.
3. The terminal  PE must be grounded reliably, and the resistance value of the grounding wire must be smaller than 4 Ω.
4. The cable between the braking unit and the drive must not longer than 5 m and must be twisted-pair, and cable between the braking unit and the braking resistor must not longer than 10 m.

Terminal	Name	Description
DI	Digital input	In master mode: block input in the case of an external fault In slave mode: start or stop input of braking unit
DO	Digital output	Running/Stop signal output
TA/TB/TC	Fault relay output	Normally open (NO)/Normally closed (NC) contact, which acts when the braking unit becomes faulty
24V and COM	Power supply/Common terminal	I/O auxiliary power supply and reference ground

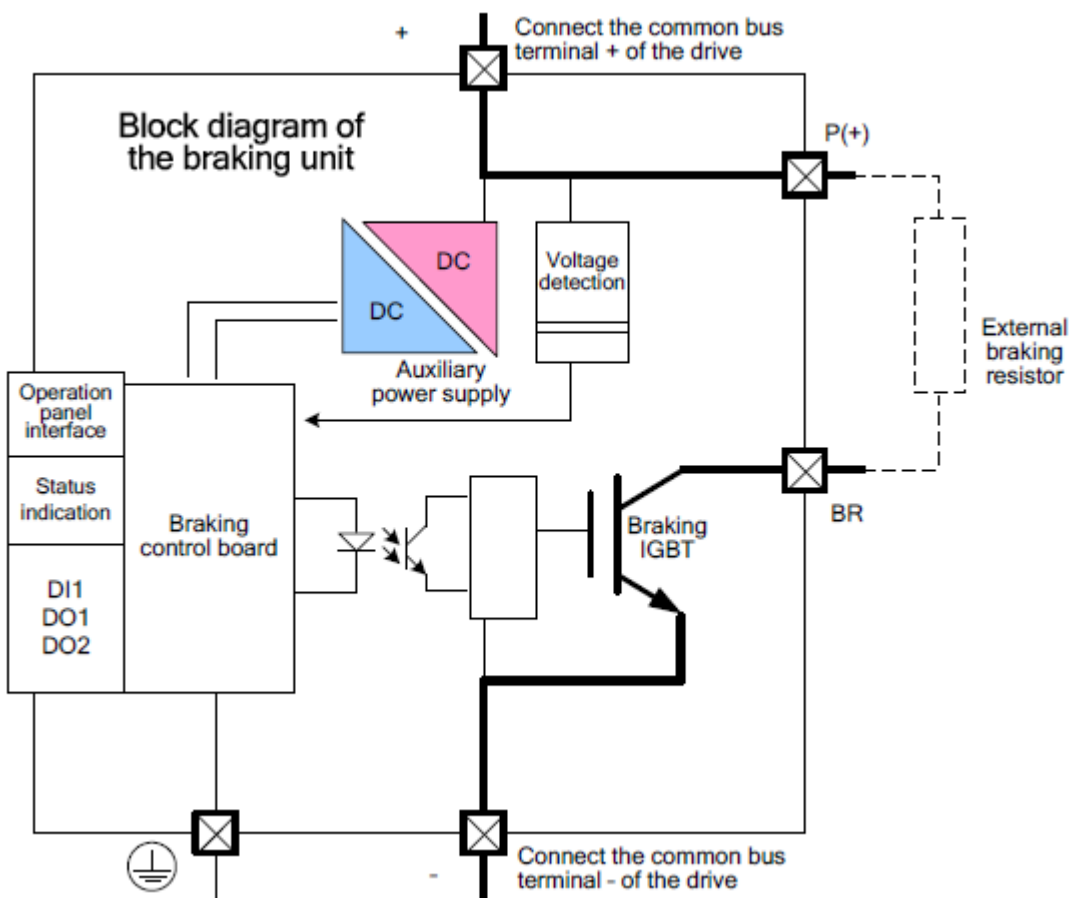
TA and TB are in NC contact, and TA and TC are in NO contact. The three terminals are used as fault output.

Note that the TA, TB, and TC terminals use the following relay contact specifications. Pay attention to the control power of the control coil in the main circuit contactor.

NC: 3 A, 250 VAC/1 A, 30 VDC

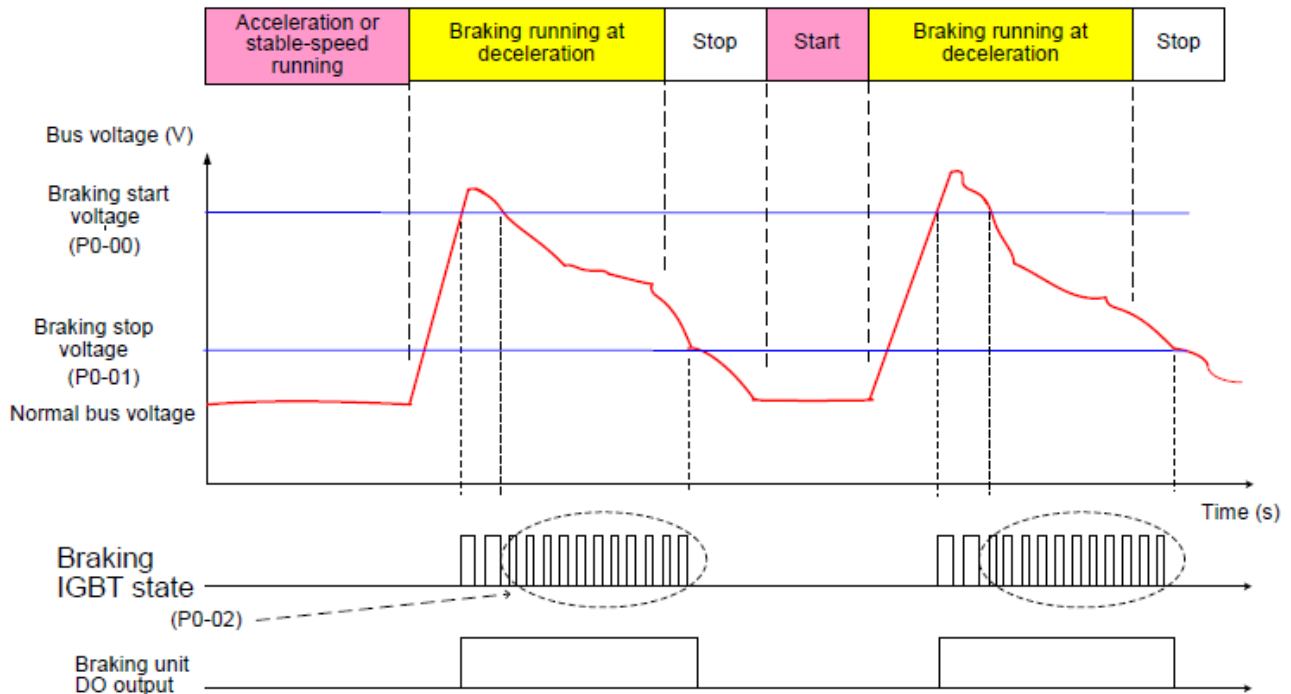
NO: 5 A, 250 VAC/3 A, 30 VDC

## ■ Working principle



The braking unit consumes the electric energy fed back from the motor to the drive to limit the voltage of the drive within a secure range.

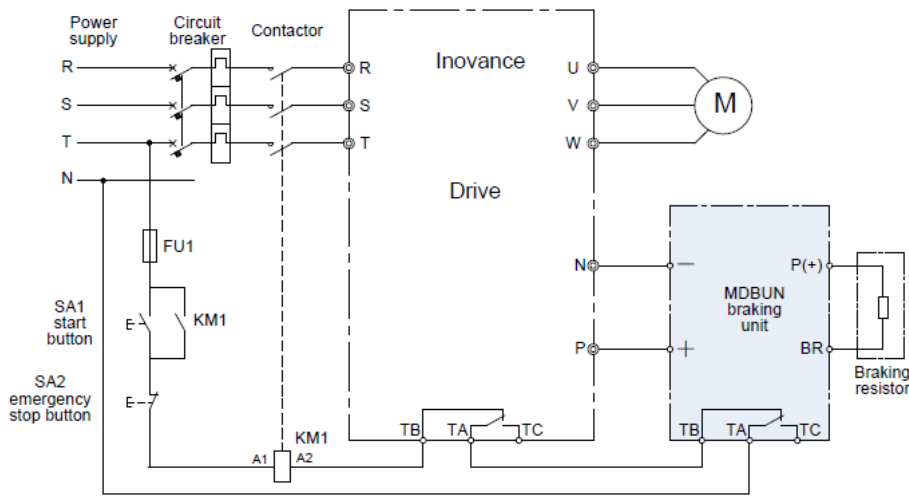
Before normal running of the braking unit, you need to set the braking start and stop voltages based on the AC power voltage class of the drive. The following figure shows the braking start and stop voltages and voltage during normal running of the main capacitor.



As shown in the preceding figure, the relationship between three voltages is as follows: Braking start voltage > Braking stop voltage > Normal bus voltage. When the braking unit is in the master mode, the control circuit detects the bus voltage in real time. If the bus voltage reaches the set braking start voltage (set in P0-00), the braking IGBT starts to work and discharges the electricity in the main capacitor of the drive through the external braking resistor, so that the bus voltage reduces to lower than the braking stop voltage (set in P0-01). The start braking rate (set in P0-02) of the braking unit can also be set to adjust the discharge rate during braking so as to change the braking time.

## ■ Wiring method

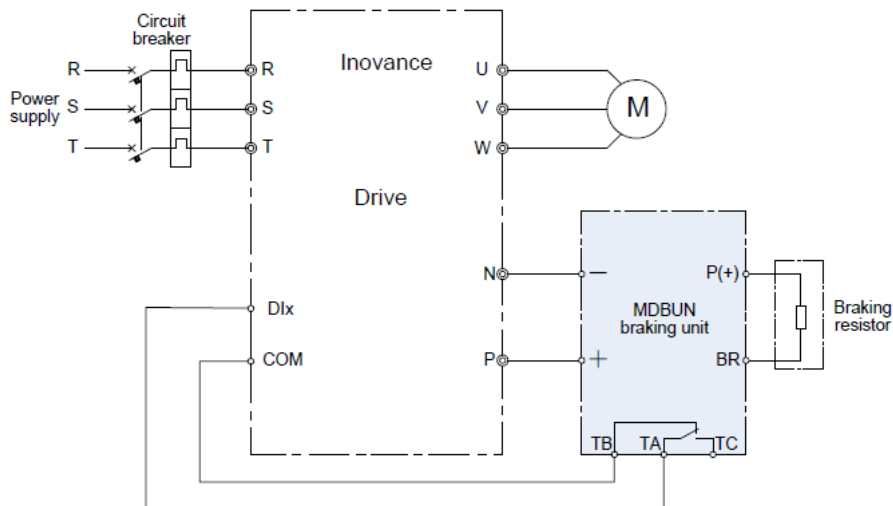
### Method 1



In the preceding wiring method, TA/TB/TC on the drive side are used as relay fault output of the drive, and TA/TB/TC on the braking unit side are used as relay fault output of the braking unit.

The input voltage class of the contactor control coil is 220 VAC.

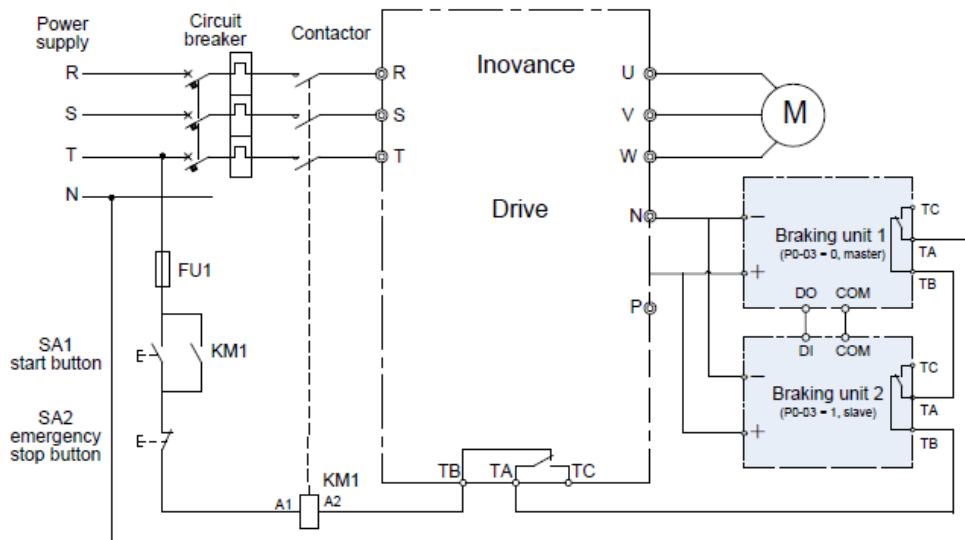
### Method 2



If the preceding wiring method is used, you need to allocate a certain DI (for example, DI1) of the drive with the function of external fault NO input. Take Inovance IS300 servo drive as an example; to allocate DI3 with the function of external fault NO input, set F4-02 to 11.

When you use the drive of other companies, perform the setting according to the user manual of this drive.

### Method 3



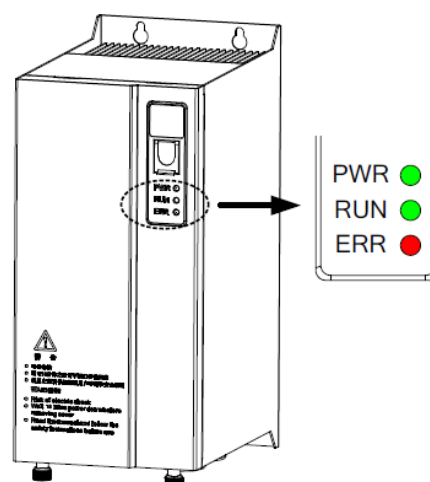
The preceding wiring method is used when multiple braking units are connected in parallel. The wiring between the braking unit and the braking resistor is not shown in the figure.

The input voltage class of the contactor control coil is 220 VAC.

When multiple braking units are connected in parallel, set one braking unit as the master (P0-03 = 0), and set all other braking units as the slave (P0-03 = 1).

Set the same braking start voltage (P0-00), braking stop voltage (P0-01), and start braking rate (P0-02) for the master and all slaves.

### ■ LED display



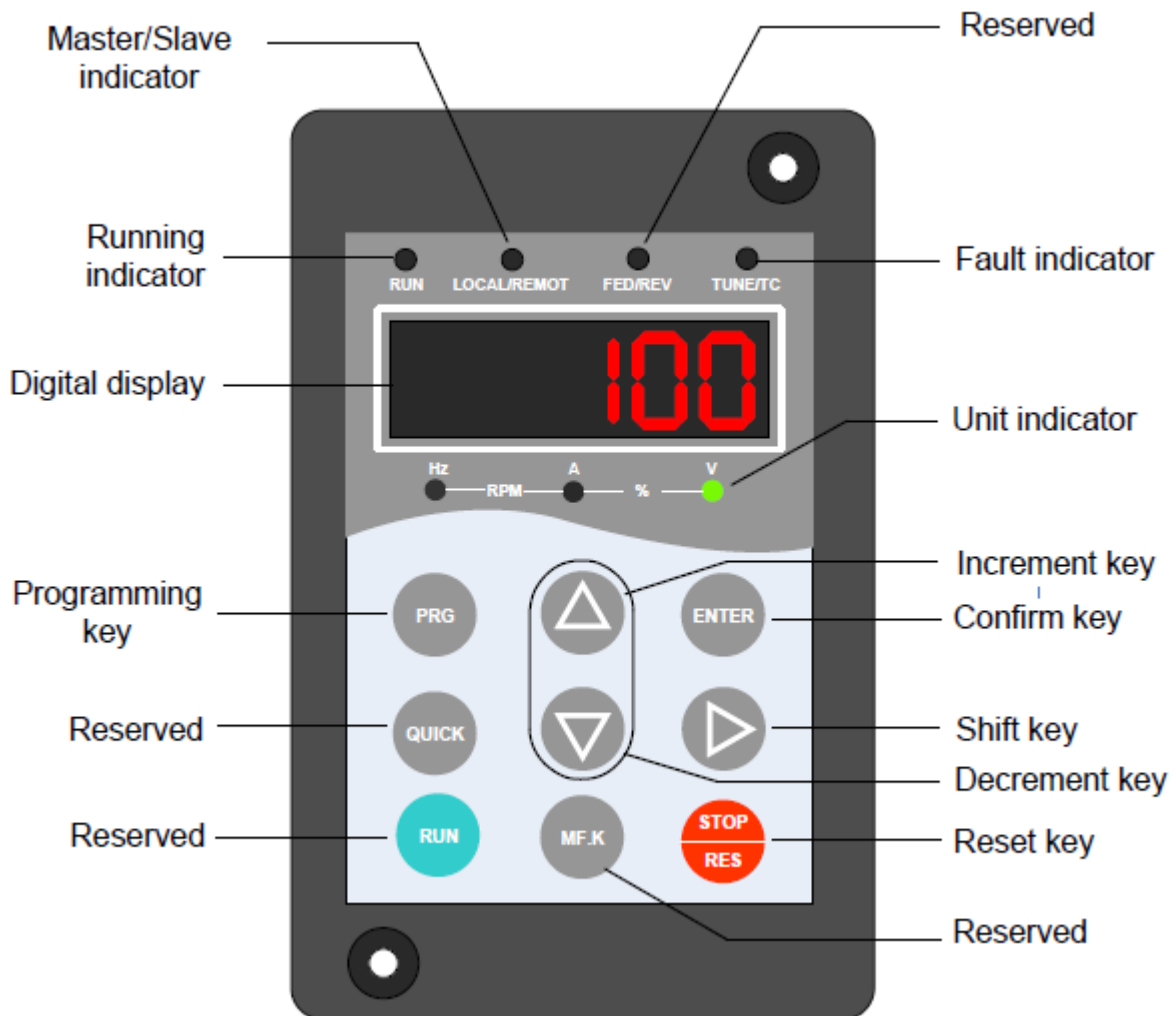
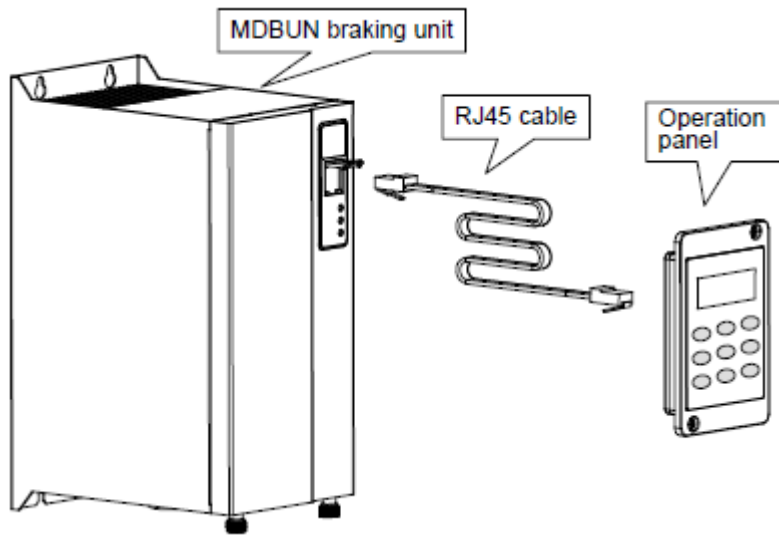
PWR: power indicator. It is ON after the braking unit is energized.

RUN: running indicator. It is ON when the braking unit is in running state.

ERR: fault indicator. It is ON when the braking unit becomes faulty.

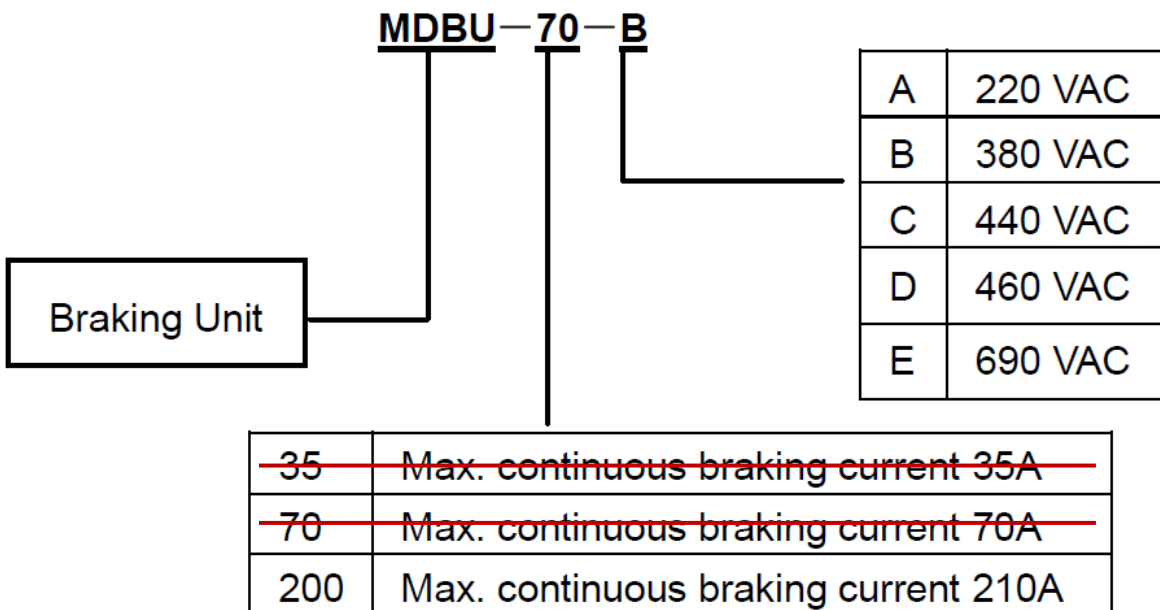
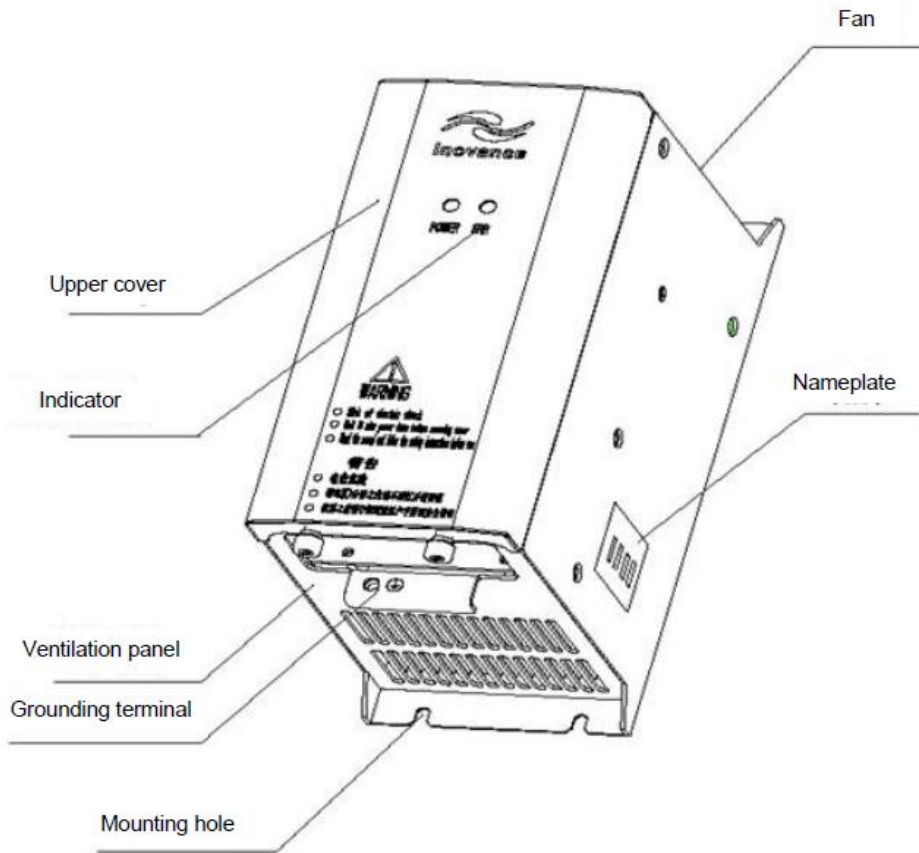


## ■ Operation panel



## MDBU Series

### ■ Product appearance and designation rule



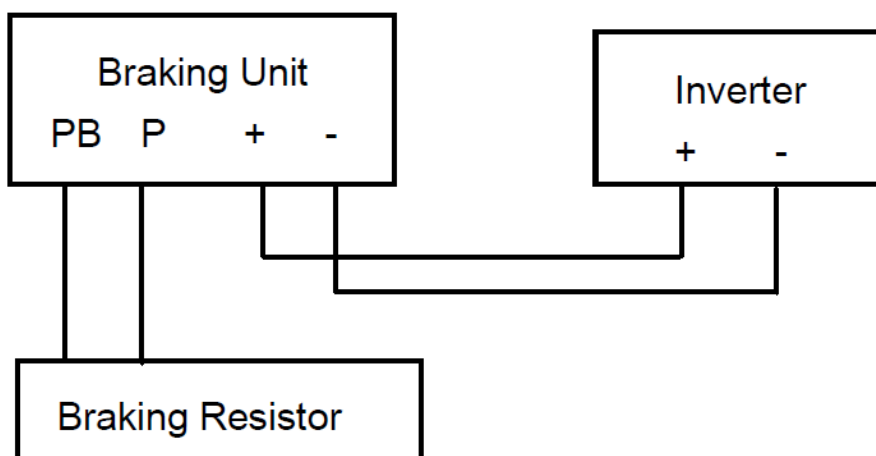
**Attention: only MDBU-200-X is available now!**

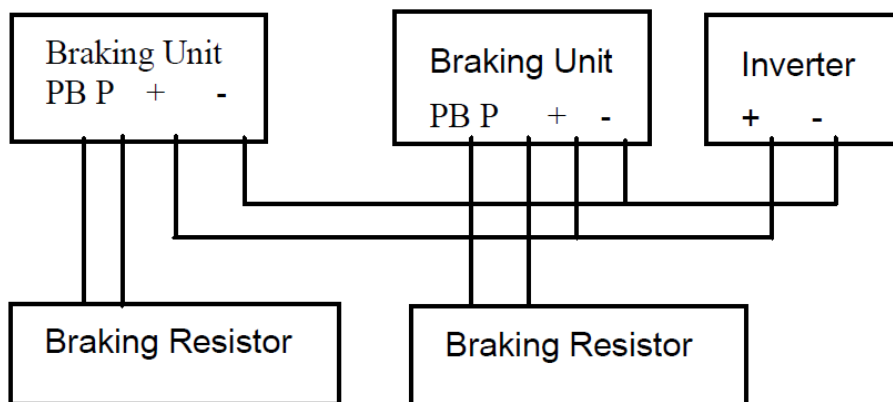


## ■ Environment

Installation location	Indoors and free from direct sunlight, dust, corrosive gas, combustible gas, oil mist, vapor, drip and salt
Altitude	Lower than 1000m Derate the device by 1% per 100m if the altitude is above 1000m.
Ambient temperature	-10°C to +40°C Derate the device if ambient temperature is from 40°C to 50°C.
Humidity	Less than 95%RH, without condensing
Vibration	<5.9m/s <sup>2</sup> (0.6g)
Storage temperature	-20°C to +60°C
Cooling method	Forced air cooling Starting temperature: 55°C±3°C

## ■ Wiring




**Notes:**

1. Braking resistor can be connected only to the corresponding braking unit. Do not parallel-connect the braking resistor to the output side of the braking unit. Otherwise, it may damage the braking unit.
2. Use a twisted cable (max. length: 3m) to connect the braking unit to the inverter.

## ■ Protective thresholds

Braking Unit Model	Over-voltage Protection (V)	Over-current Protection (A)	Overheat Protection (°C)
MDBU-200-A	470	350	80
MDBU-200-B	830	350	80
MDBU-200-C	950	350	80
MDBU-200-D	990	350	80
MDBU-200-E	1400	220	80

**Notes:**

1. The braking unit is configured with automatic recovery function in case of overheat and over-voltage. For recovery points, refer to the table below.
2. In the case of over-current, you need to re-power on the braking unit and then reset it.

Braking Unit Model	Over-voltage Protection (V)	Overheat Protection (°C)
MDBU-35(70/200)-A	440	70
MDBU-70/35/200-B	790	70
MDBU-70/35/200-C	890	70
MDBU-70/35/200-D	940	70
MDBU-200-E	1350	70

## ■ LED display

Power indicator: **green light**. Error Indicator: **red light**.

**Note:** If the error indicator is always ON, it indicates that an over-current error occurs. In this case, check whether the braking resistor is short-circuited and whether the value of the braking resistor is too small.