# FREQUENCY INVERTER

## 300 SERIES – S SELECTION MANUAL

VECTOR / PERMANENT MAGNET SYNCHRONOUS / PV



RELIABLE PERFORMANCE

ADVANCED TECHNOLOGY CREATES EXCELLENT QUALITY

# VECTOR INVERTER

## PRODUCT PERFORMANCE

| Item | Parameter |
|---|---|
| **Output Frequency** | 0–3000Hz |
| **Overload Capacity** | 150% rated current for 1 minute, 180% rated current for 3 seconds |
| **Control Method** | Optimized space voltage vector SVPWM control |
| **Control Mode** | Sensorless vector control (with optimal low-frequency dead zone compensation) |
| **Frequency Resolution** | Digital setting 0.01Hz; analog setting maximum frequency ×0.025% |
| **Starting Frequency** | 0.0–10.0Hz |
| **Torque Boost** | Automatic torque boost: manual torque boost 0.1%–30.0% |
| **Built-in PID** | Convenient built-in closed-loop control system |
| **Multi-speed Operation** | Multi-speed operation via built-in PLC or control terminals |
| **Run Command Channel** | Control panel setting, control terminals setting, 485 communication |
| **Switch Input Channel** | Forward and reverse run commands: 5 programmable digital inputs |
| **Analog Input Channel** | 2 analog signal inputs, 0–20mA, 0–10V |
| **Analog Output Channel** | Analog signal output 4–20mA or 0–10V selectable, supporting multiple physical quantity outputs such as set frequency output. |
| **Switch Output Channel** | 2 relay outputs |
| **Protection Functions** | Overcurrent protection, overvoltage protection, undervoltage protection, overheat protection, overload protection, etc. |
| **PV Power Tracking** | CVT mode, MPPT mode |

# VECTOR INVERTER

## PRODUCT PARAMETERS

| Model | Rated Current | External Dimensions (Height*Width*Depth) (Unit: mm) | IGBT | Operating Voltage |
|---|---|---|---|---|
| 300N-0.75KWG-3 | 2.5A | 165*98*128 | Single Tube | Three-phase 380V Input Three-phase 380V Output |
| 300N-1.5KWG-3 | 3.7A | | | |
| 300N-2.2KWG-3 | 5A | | | |
| 300N-3KWG-3 | 6.8A | | | |
| 300N-4KWG-3 | 9A | 187*100*137.5 | | |
| 300N-5.5KWG-3 | 13A | | | |
| 300N-7.5KWG-3 | 17A | | | |
| 300N-11KWG-3 | 25A | 220*130*177.5 (Plastic Shell) | | |
| 300N-15KWG-3 | 32A | | | |
| 300T-11KWG-3 | 25A | 280*150*196 (Iron Shell) | | |
| 300T-15KWG-3 | 32A | | | |
| 300T-18.5KWG-3 | 37A | 330*170*235 | Module | |
| 300N-22KWG-3 | 45A | 380*215*215 | | |
| 300T-30KWG-3 | 60A | | | |
| 300T-37KWG-3 | 75A | | | |
| 300-45KWG-3 | 90A | 510*260*260 | | |
| 300-55KWG-3 | 110A | | | |
| 300T-75KWG-3 | 150A | 535*260*272 | | |
| 300T-90KWG-3 | 176A | | | |
| 300-110KWG-3 | 210A | 600*340*280 | | |
| 300-132KWG-3 | 250A | 800*380*310 | | |
| 300-160KWG-3 | 300A | | | |
| 300-185KWG-3 | 340A | | | |
| 300-200KWG-3 | 380A | | | |
| 300-220KWG-3 | 415A | | | |
| 300-230KWG-3 | 470A | 920*500*315 | | |
| 300-285KWG-3 | 520A | | | |
| 300-315KWG-3 | 600A | 1050*650*360 | | |
| 300-355KWG-3 | 640A | | | |
| 300-400KWG-3 | 690A | 1250*850*350 | | |
| 300-450KWG-3 | 820A | | | |
| 300-500KWG-3 | 860A | | | |
| 300-550KWG-3 | 920A | 1350*1000*390 | | |
| 300-630KWG-3 | 1100A | | | |
| 300-720KWG-3 | 1220A | | | |

# VECTOR INVERTER




| | |
|---|---|
| Power | 0.75kW/1.5kW/2.2kW/3kW |
| Input Voltage | 3PH 380V 50/60Hz |
| Output Voltage | 3PH 0-380V |
| Output Frequency | 0-600Hz |
| Net Weight | 1.24kg |




| | |
|---|---|
| Power | 4kW/5.5kW/7.5kW |
| Input Voltage | 3PH 380V 50/60Hz |
| Output Voltage | 3PH 0-380V |
| Output Frequency | 0-600Hz |
| Net Weight | 1.8kg |




| | |
|---|---|
| Power | 11kW/15kW |
| Input Voltage | 3PH 380V 50/60Hz |
| Output Voltage | 3PH 0-380V |
| Output Frequency | 0-600Hz |
| Net Weight | 2.85kg |




| | |
|---|---|
| Power | 11kW/15kW/18.5kW |
| Input Voltage | 3PH 380V 50/60Hz |
| Output Voltage | 3PH 0-380V |
| Output Frequency | 0-600Hz |
| Net Weight | 5.1kg |




| | |
|---|---|
| Power | 22kW |
| Input Voltage | 3PH 380V 50/60Hz |
| Output Voltage | 3PH 0-380V |
| Output Frequency | 0-600Hz |
| Net Weight | 8kg |




| | |
|---|---|
| Power | 30kW/37kW |
| Input Voltage | 3PH 380V 50/60Hz |
| Output Voltage | 3PH 0-380V |
| Output Frequency | 0-600Hz |
| Net Weight | 11.2kg |




| | |
|---|---|
| Power | 45kW/55kW |
| Input Voltage | 3PH 380V 50/60Hz |
| Output Voltage | 3PH 0-380V |
| Output Frequency | 0-600Hz |
| Net Weight | 20.4kg |




| | |
|---|---|
| Power | 75kW/90kW |
| Input Voltage | 3PH 380V 50/60Hz |
| Output Voltage | 3PH 0-380V |
| Output Frequency | 0-600Hz |
| Net Weight | 22.5kg |




| | |
|---|---|
| Power | 110kW |
| Input Voltage | 3PH 380V 50/60Hz |
| Output Voltage | 3PH 0-380V |
| Output Frequency | 0-600Hz |
| Net Weight | 35kg |

# VECTOR INVERTER

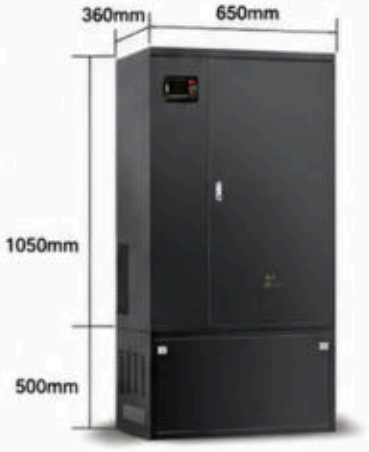
## PRODUCT PARAMETERS




| | |
|---|---|
| Power | 132kW/160kW/185kW/200kW |
| Input Voltage | 3PH 380V 50/60Hz |
| Output Voltage | 3PH 0-380V |
| Output Frequency | 0-600Hz |
| Net Weight | 52kg |




| | |
|---|---|
| Power | 220kW/250kW/285kW |
| Input Voltage | 3PH 380V 50/60Hz |
| Output Voltage | 3PH 0-380V |
| Output Frequency | 0-600Hz |
| Net Weight | 78kg |




| | |
|---|---|
| Power | 315kW/350kW |
| Input Voltage | 3PH 380V 50/60Hz |
| Output Voltage | 3PH 0-380V |
| Output Frequency | 0-600Hz |
| Net Weight | |




| | |
|---|---|
| Power | 400kW/450kW/500kW |
| Input Voltage | 3PH 380V 50/60Hz |
| Output Voltage | 3PH 0-380V |
| Output Frequency | 0-600Hz |
| Net Weight | |




| | |
|---|---|
| Power | 550kW/630kW/720kW |
| Input Voltage | 3PH 380V 50/60Hz |
| Output Voltage | 3PH 0-380V |
| Output Frequency | 0-600Hz |
| Net Weight | |

# VECTOR INVERTER

## PRODUCT PARAMETERS

| Model | Rated Current | External Dimensions (Height*Width*Depth) (Unit: mm) | IGBT | Operating Voltage |
|---|---|---|---|---|
| 300-0.75KWG-S2 | Input 4.5A / Output 3.5A | H165*W98*D128 | Single Tube | Single-phase 220V Input Three-phase 220V Output |
| 300-1.5KWG-S2 | Input 8A / Output 6.8A | | | |
| 300-2.2KWG-S2 | Input 12A / Output 10A | | | |
| 300-3KWG-S2 | Input 15A / Output 13A | H187*W100*D137.5 | | |
| 300-4KWG-S2 | Input 18A / Output 15A | | | |
| 300-5.5KWG-S2 | Input 25A / Output 20A | H220*W130*D177.5 | | |




| | |
|---|---|
| Power | 0.75kW/1.5kW/2.2kW |
| Input Voltage | 1PH 220V 50/60Hz |
| Output Voltage | 3PH 0-220V |
| Output Frequency | 0-600Hz |
| Net Weight | 1.24kg |




| | |
|---|---|
| Power | 3kW |
| Input Voltage | 1PH 220V 50/60Hz |
| Output Voltage | 3PH 0-220V |
| Output Frequency | 0-600Hz |
| Net Weight | 1.8kg |




| | |
|---|---|
| Power | 4kW/5.5kW |
| Input Voltage | 1PH 220V 50/60Hz |
| Output Voltage | 3PH 0-220V |
| Output Frequency | 0-600Hz |
| Net Weight | 2.85kg |

# VECTOR INVERTER

## PRODUCT PARAMETERS

| Model | Rated Current | External Dimensions (Height*Width*Depth) (Unit: mm) | IGBT | Operating Voltage |
|---|---|---|---|---|
| 300-0.75KWG-S3 | Input 4.5A / Output 2.5A | H165*W98*D128 | Single Tube | Single-phase 220V Input Three-phase 380V Output |
| 300-1.5KWG-S3 | Input 8A / Output 3.7A | | | |
| 300-2.2KWG-S3 | Input 12A / Output 5A | | | |
| 300-3KWG-S3 | Input 15A / Output 6.8A | H187*W100*D137.5 | | |
| 300-4KWG-S3 | Input 18A / Output 9A | | | |
| 300-5.5KWG-S3 | Input 25A / Output 13A | | | |
| 300-7.5KWG-S3 | Input 34A / Output 17A | H220*W130*D177.5 | | |
| 300-11KWG-S3 | Input 50A / Output 25A | | | |




| | |
|---|---|
| Power | 0.75kW/1.5kW/2.2kW/3kW |
| Input Voltage | 1PH 220V 50/60Hz |
| Output Voltage | 3PH 0-380V |
| Output Frequency | 0-600Hz |
| Net Weight | 1.24kg |




| | |
|---|---|
| Power | 4kW/5.5kW |
| Input Voltage | 1PH 220V 50/60Hz |
| Output Voltage | 3PH 0-380V |
| Output Frequency | 0-600Hz |
| Net Weight | 1.8kg |




| | |
|---|---|
| Power | 7.5kW/11kW |
| Input Voltage | 1PH 220V 50/60Hz |
| Output Voltage | 3PH 0-380V |
| Output Frequency | 0-600Hz |
| Net Weight | 2.85kg |

# VECTOR INVERTER

## PRODUCT PARAMETERS

| Model | Rated Current | External Dimensions (Height*Width*Depth) (Unit: mm) | IGBT | Operating Voltage |
|---|---|---|---|---|
| 300-0.75KWG-H2 | Input 3.5A / Output 3.5A | H165*W98*D128 | Single Tube | Single-phase 220V Input Single-phase 220V Output |
| 300-1.5KWG-H2 | Input 8A / Output 6.8A | | | |
| 300-2.2KWG-H2 | Input 10A / Output 10A | | | |
| 300-3.0KWG-H2 | Input 13A / Output 13A | H187*W100*D137.5 | | |



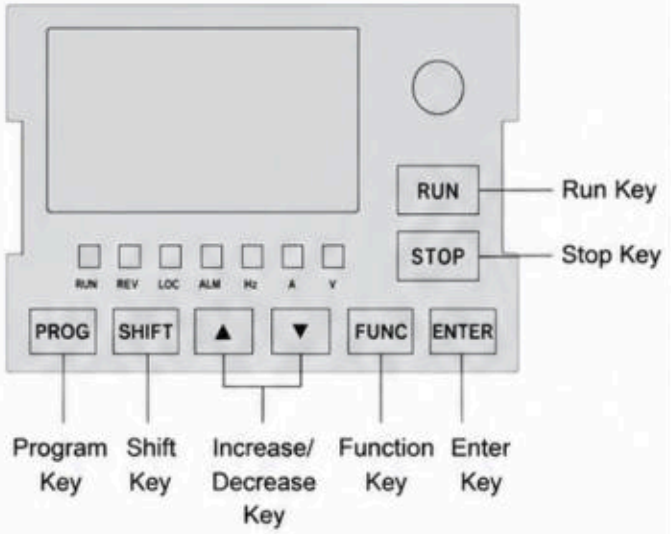

| | |
|---|---|
| **Power** | 0.75kW/1.5kW/2.2kW |
| **Input Voltage** | 1PH 220V 50/60Hz |
| **Output Voltage** | 1PH 0-220V |
| **Output Frequency** | 0-600Hz |
| **Net Weight** | 1.24kg |



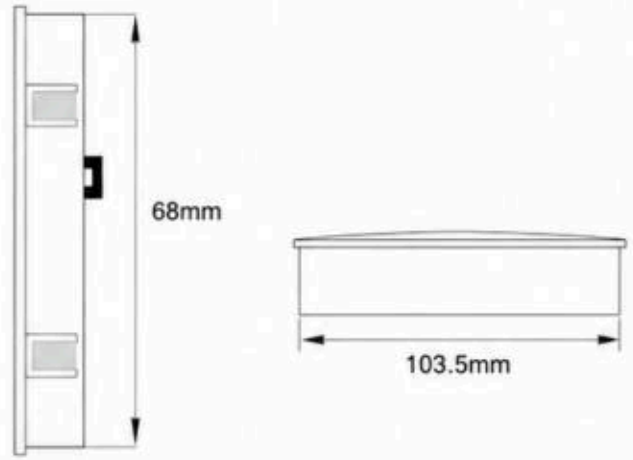

| | |
|---|---|
| **Power** | 3kW |
| **Input Voltage** | 1PH 220V 50/60Hz |
| **Output Voltage** | 1PH 0-220V |
| **Output Frequency** | 0-600Hz |
| **Net Weight** | 1.8kg |

# VECTOR INVERTER

## INVERTER KEYPAD




## PANEL CUTOUT




Panel cutout size: 68*103.5mm

# ELECTRICAL INSTALLATION

**Main Circuit Terminals and Wiring**

1) Description of main circuit terminals:

| Terminal Mark | Name | Description |
|---|---|---|
| R/L1, S, T/L2 | AC power input terminals | AC power connection points |
| PP, PB | Braking resistor connection terminals | Connect to braking resistor |
| U, V, W | Inverter output terminals | Connect to three-phase motor |
| H2 inverter U, V | Inverter output terminals | Connect to single-phase motor |
| G, ⏚ , E | Ground terminal | Connect to the enclosure ground terminal or other specified grounding electrode. |

# VECTOR INVERTER

## Control Circuit Wiring Diagram for Inverter

## Description of control terminal functions:

Description of control terminal functions for 300 series inverters

| Category | Terminal Symbol | Terminal Name | Function Description | |
|---|---|---|---|---|
| Power Supply | +10V-GND | External +10V power supply | Provides +10V power, maximum output current: 50mA<br>Generally used as working power for external potentiometer, potentiometer resistance range: 1kΩ~5kΩ | |
| | +24V (PC)-GND | External +24V power supply | Provides +24V power, generally used as working power for digital input terminals and external sensors, maximum output current: 200mA | |
| Analog Input | AI1-GND | Analog input terminal 1 | 1. Input range: DC 0~10V / 0~20mA<br>2. Input impedance: When input voltage is 22kΩ, input current is 500Ω? | |
| | AI2-GND | Analog input terminal 2 | 1. Input range: DC 0~10V<br>2. Input impedance: When input voltage is 22kΩ, input current is 500Ω? | |
| Digital Input | DI1-GND (COM) | Digital input 1 | 1. Input impedance: 1kΩ<br>2. Voltage level when ON: 5V~30V<br>DI5 can be used as high-speed pulse input terminal. (Select by setting.)<br>Maximum input frequency: 20kHz<br>DI6 (reserved for partial models) | |
| | DI2-GND (COM) | Digital input 2 | | |
| | DI3-GND (COM) | Digital input 3 | | |
| | DI4-GND (COM) | Digital input 4 | | |
| | DI5-GND (COM) | Digital input 5 | | |
| | DI6-GND (COM) | Digital input 6 | | |
| Analog Output | AO1-GND | Analog output 1 | Output voltage range: 0V~10V<br>Output current range: 0~20mA | |
| | AO2-GND | Analog output 2 | Output voltage range: 0V~10V | |
| Relay Output | T1A-T1C | Relay 1 NO | Contact drive capability: AC250V, 3A, COSϕ=0.4. DC30V, 1A | Unassigned terminals may vary depending on the model. Actual product shall prevail. |
| | T1A-T1B | Relay 1 NC | | |
| | T2A-T2C | Relay 2 NO | Contact drive capability: AC250V, 3A, COSϕ=0.4. DC30V, 1A | |
| | T2A-T2B | Relay 2 NC | | |
| Communication | 485+ , 485- (A+ , B-) | RS485 communication | A+ (485+) is the positive input for 485 communication differential signal, B- (485-) is the negative input for 485 communication differential signal | |
| Digital Output | DO1-COM | Collector open output | Used as collector open output terminal (reserved for partial models) | |
| | FM-COM | High-speed pulse output | If used as high-speed pulse output, maximum frequency: 50kHz;<br>If used as collector open output, same as DO1 specification.<br>(Reserved for partial models) | |

### 2.1.5 Wiring description for signal input terminals:

Because analog voltage signals are easily affected by external interference, shielded cables are generally required, and wiring distance should be as short as possible, not exceeding 20 m. In environments with severe interference, the analog signal source side must be equipped with a filter capacitor or ferrite core.

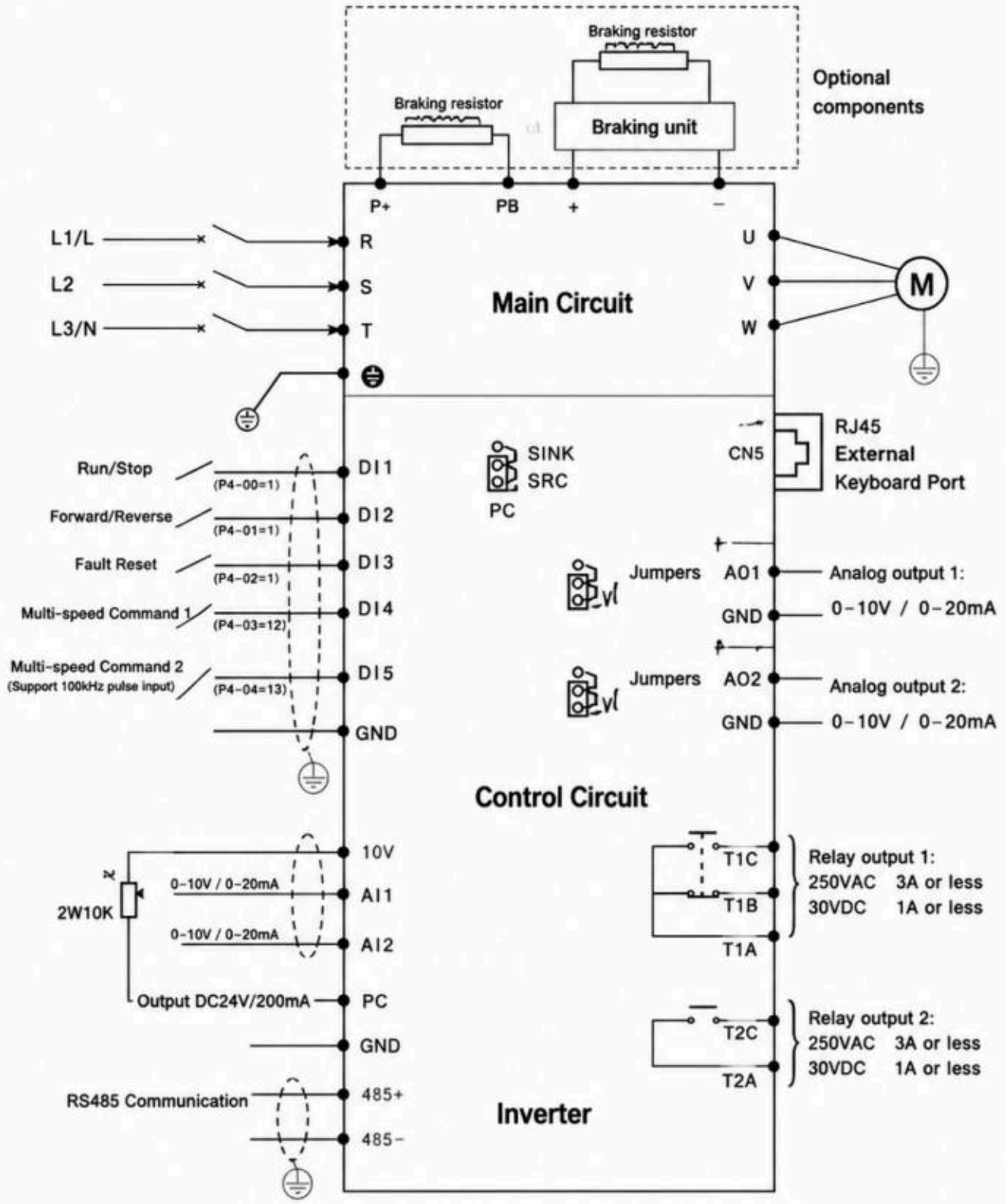
# VECTOR INVERTER

## DESCRIPTION OF CONTROL TERMINALS

**The layout of the control circuit terminals on the A-type main board is shown below:**

A Type

| AI1 | AI2 | AO1 | AO2 | GND | DI1 | DI2 | T1A | T1B | T1C |
|---|---|---|---|---|---|---|---|---|---|
| A+ | B− | 10V | GND | PC | DI3 | DI4 | DI5 | T2A | T2C |




**A-type main board control circuit wiring diagram**

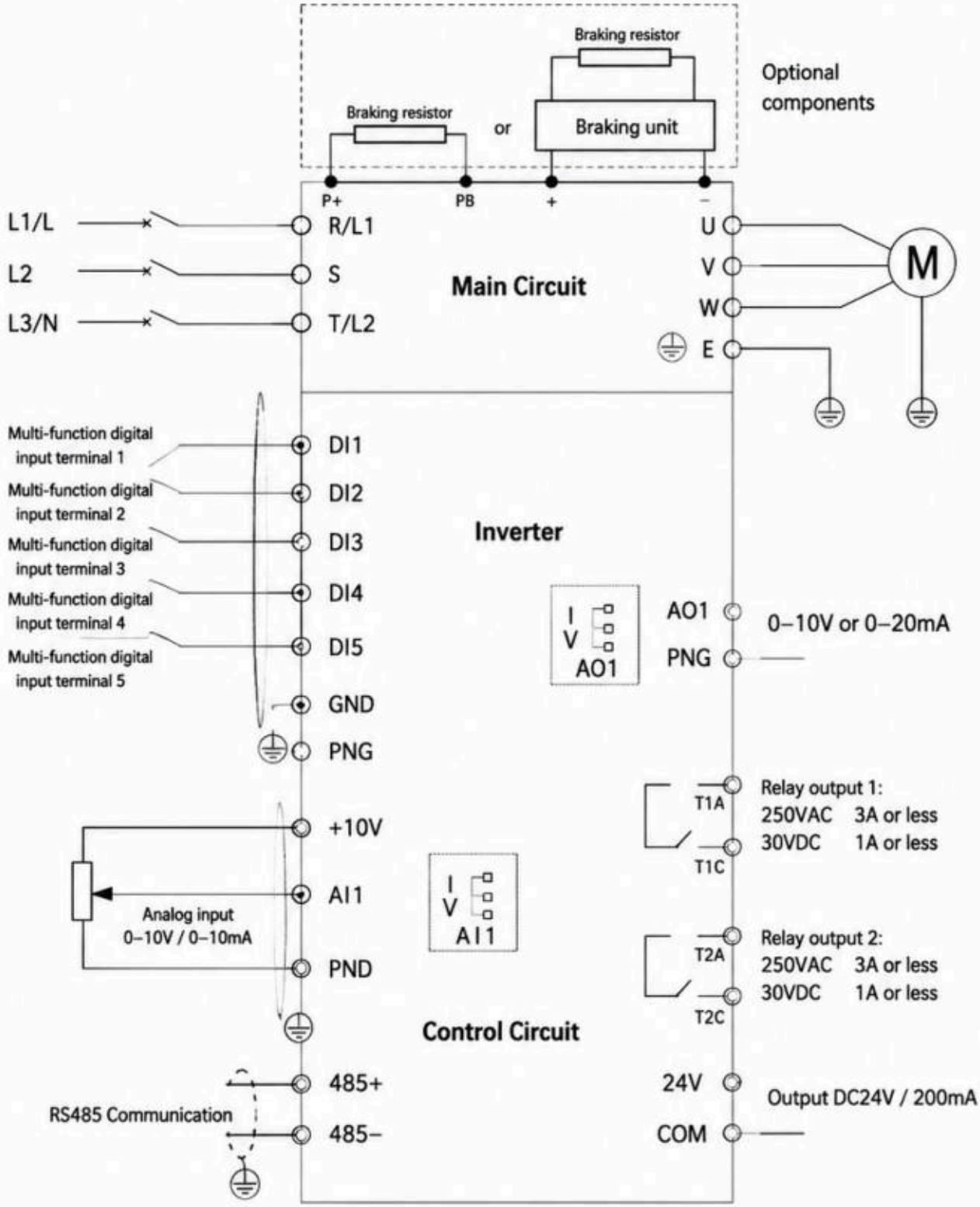
# VECTOR INVERTER

## DESCRIPTION OF CONTROL TERMINALS

The layout of control circuit terminals on the B-type main board is shown below:

| PND | AI1 | AO1 | 10V | GND | 24V | GND | T1A | T1C |
|---|---|---|---|---|---|---|---|---|
| 485+ | 485- | DI1 | DI2 | DI3 | DI4 | DI5 | T2A | T2C |

B Type




**B-type main board control circuit wiring diagram**

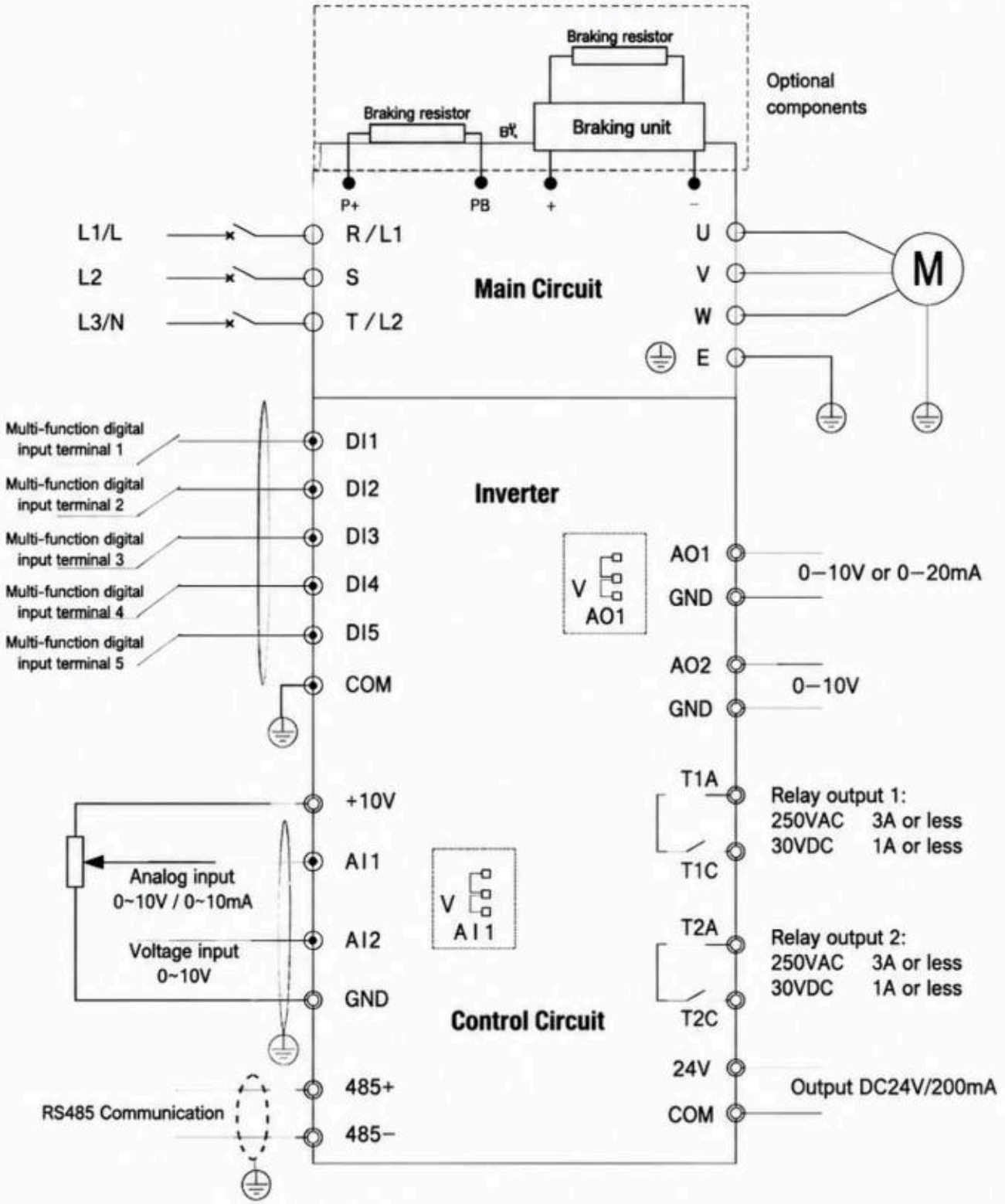
# VECTOR INVERTER

## DESCRIPTION OF CONTROL TERMINALS

**The layout of control circuit terminals on the C-type main board is shown below:**

C Type

| AI1 | AI2 | AO1 | AO2 | COM | DI1 | DI3 | DI5 | T1A | T1C |
|---|---|---|---|---|---|---|---|---|---|
| 485+ | 485− | 10V | GND | COM | 24V | DI2 | DI4 | T2A | T2C |




**C-type main board control circuit wiring diagram**

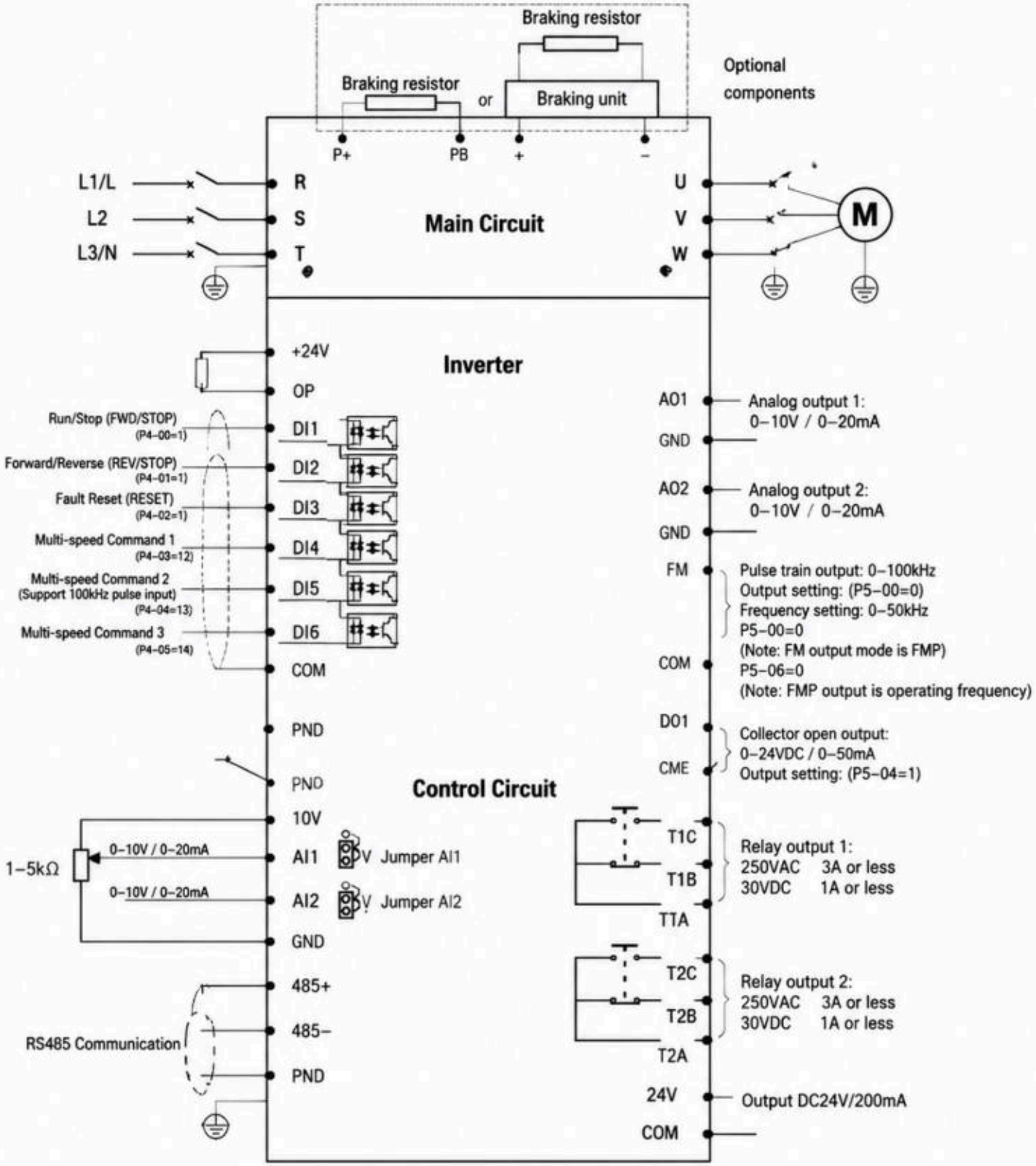
# VECTOR INVERTER

## DESCRIPTION OF CONTROL TERMINALS

**The layout of control circuit terminals on the D-type main board is shown below:**

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PND | AI1 | AI2 | AO1 | AO2 | DI1 | DI2 | DI3 | DI4 | DI5 | DI6 | T1A | T1B | T1C | |
| 485+ | 485- | 10V | GND | COM | FM | DO1 | COM | CME | 24V | OP | T2A | T2B | T2C | |

D Type




**D-type main board control circuit wiring diagram**

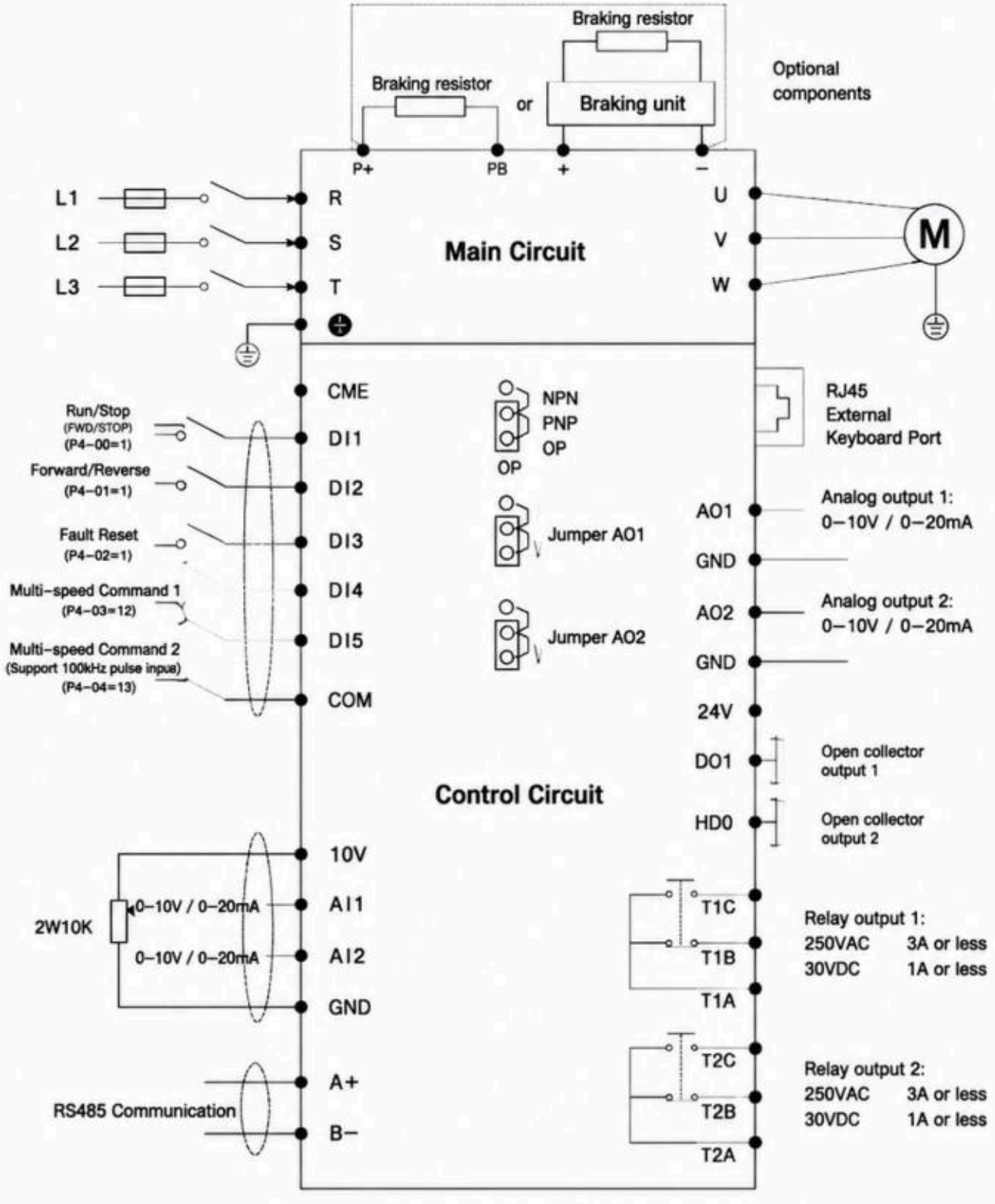
# VECTOR INVERTER

## DESCRIPTION OF CONTROL TERMINALS

**The layout of control circuit terminals on the E-type main board is shown below:**

E Type

| DI1 | DI2 | DI3 | DI4 | DI5 | COM | AI1 | AI2 | AO1 | AO2 | T1A | T1B | T1C |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| HD0 | DO1 | COM | CME | 24V | GND | GND | +10V | A+ | B− | T2A | T2B | T2C |




E-type main board control circuit wiring diagram