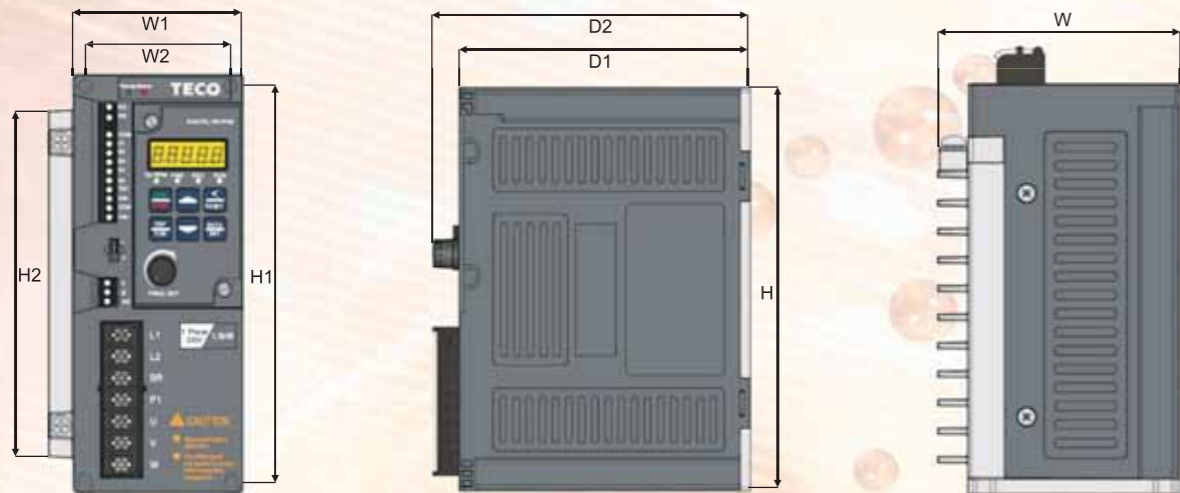


## Braking unit and braking resistor

| Model          | AC inductance at input side |                 | Suitable Motor Capacity (HP) | Suitable Motor Capacity (KW) | Braking resistor Specification |     |             | Braking resistor Duty Cycle (%) | Braking torque (%) |
|----------------|-----------------------------|-----------------|------------------------------|------------------------------|--------------------------------|-----|-------------|---------------------------------|--------------------|
|                | Current (A)                 | Inductance (mH) |                              |                              | (W)                            | (Ω) | Number used |                                 |                    |
| S310-2P5-H1BCD | 5.2                         | 4.2             | 0.5                          | 0.375                        | 60                             | 200 | -           | 8                               | 218                |
| S310-201-H1BCD | 9.4                         | 2.1             | 1                            | 0.75                         | 60                             | 200 | -           | 8                               | 119                |

## Dimension

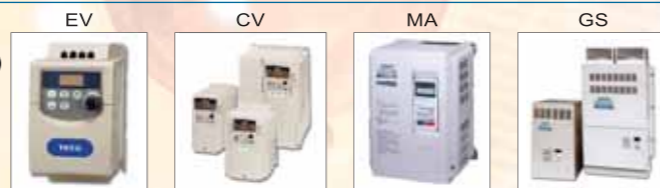


Unit:mm(inch)

| Model                | W        | W1       | W2       | H         | H1        | H2        | D        | D1        |
|----------------------|----------|----------|----------|-----------|-----------|-----------|----------|-----------|
| S310-20P5/2001-H1BCD | 79(3.11) | 69(2.71) | 59(2.32) | 160(6.29) | 152(5.98) | 133(5.23) | 145(5.7) | 133(5.23) |

### TECO INVERTER

- EV series : 0.25~1HP(110V),0.25~3HP(220V),1~3HP(440V)
- CV series : 0.5~40HP(220V),1~75HP(440V)
- MA series : 1~40HP(220V),1~75HP(440V)
- GS series : 25~100HP(220V),25~400HP(440V)



### TECO PLC / PLR

- TP03 series : 14/20/26/30/36/40/60 I/O MAX256points
- SG2 series : 10/12/20points



Distributor

### TECO SERVO

- JSDA series : 100W~15KW(220V)
- JSDE series : 50W~2KW(220V)



**TECO** TECO Electric & Machinery Co., Ltd.

10F, No.3-1, Yuan Cyu St., Nan-Kang District, Taipei 115, Taiwan  
 TEL:886-2-66159111Ext.1721 FAX:886-2-66151033  
 E-mail:tonyyeh@teco.com.tw http://www.teco.com.tw

GJ-48-00 2009-08-31

Variable Frequency Drive

TECO

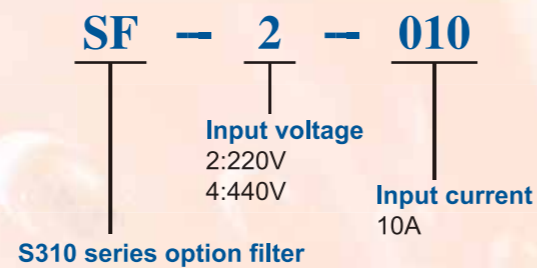
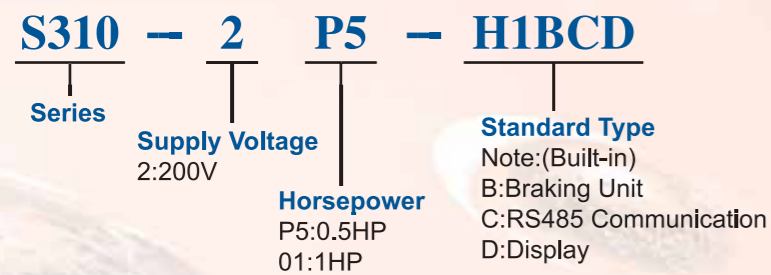
**S310 Series**



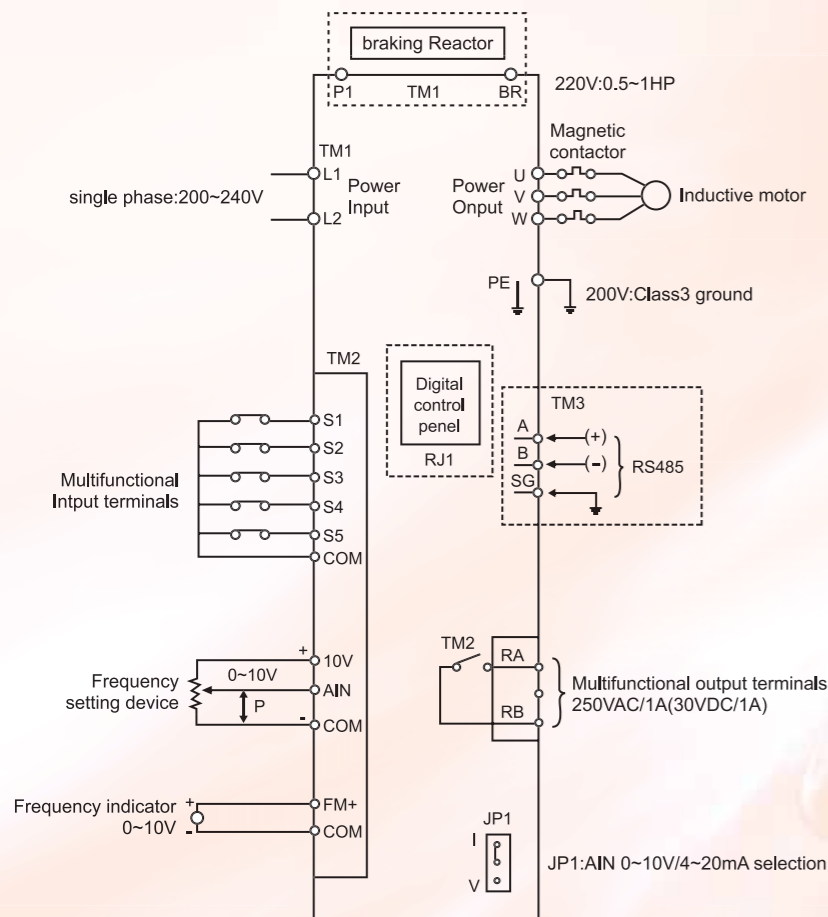
## Product Features

- ▶ With auto torque boost, 150% torque output at 6 Hz
- ▶ Output frequency up to 400Hz
- ▶ Ultra low noise operation with built-in SOFT-PWM
- ▶ Improved braking Capability by Built-in Braking Transistor
- ▶ Built-in RS485 communication
- ▶ 5 digit 7 segment removable keypad with standard RJ45 interface
- ▶ Natural cooling, eliminating noise from fan
- ▶ Economic blind type model (Without display/keypad) is available

## Definition of model / filter



## Wiring Diagram



## Application

### Application for Cutting Machine

- **High Environment Immunity**
  - Without fan
  - Heat sink outside designing for dusty environment
  - Less trip at low voltage
  - Coated PCB
- **High Performance**
  - High braking ability without braking resistor
  - High torque at low speed
  - Fast response time



Flat Knitting Machine



Cone Winding Machine



Gloves Knitting Machine



Socks Knitting Machine

## Product Specifications

### ▶ Single / Three phase, 200-240V model

| S310-□□□□-XXX                                | 2P5  | 201  |
|--|--|------|
| Horsepower (HP)                              | 0.5  | 1    |
| Max Applicable Motor Output (KW)             | 0.4  | 0.75 |
| Rated Output Current (A)                     | 3.1  | 4.2  |
| Rated Capacity (KVA)                         | 0.88   | 1.60 |
| Max. Input Voltage                           | Single Phase: 200~240V +10% -15%, 50/60Hz ± 5% |      |
| Max. Output Voltage                          | Single Phase: 200~240V                         |      |
| Input Current (A)                            | 5.4  | 10.4 |
| Net Weight (KG)                              | 0.97   | 0.97 |
| Net Weight (KG)(keypad)                      | 1.0  | 1.0  |
| Allowable momentary power loss time (second) | 1.0  | 1.0  |

### ▶ General Specifications

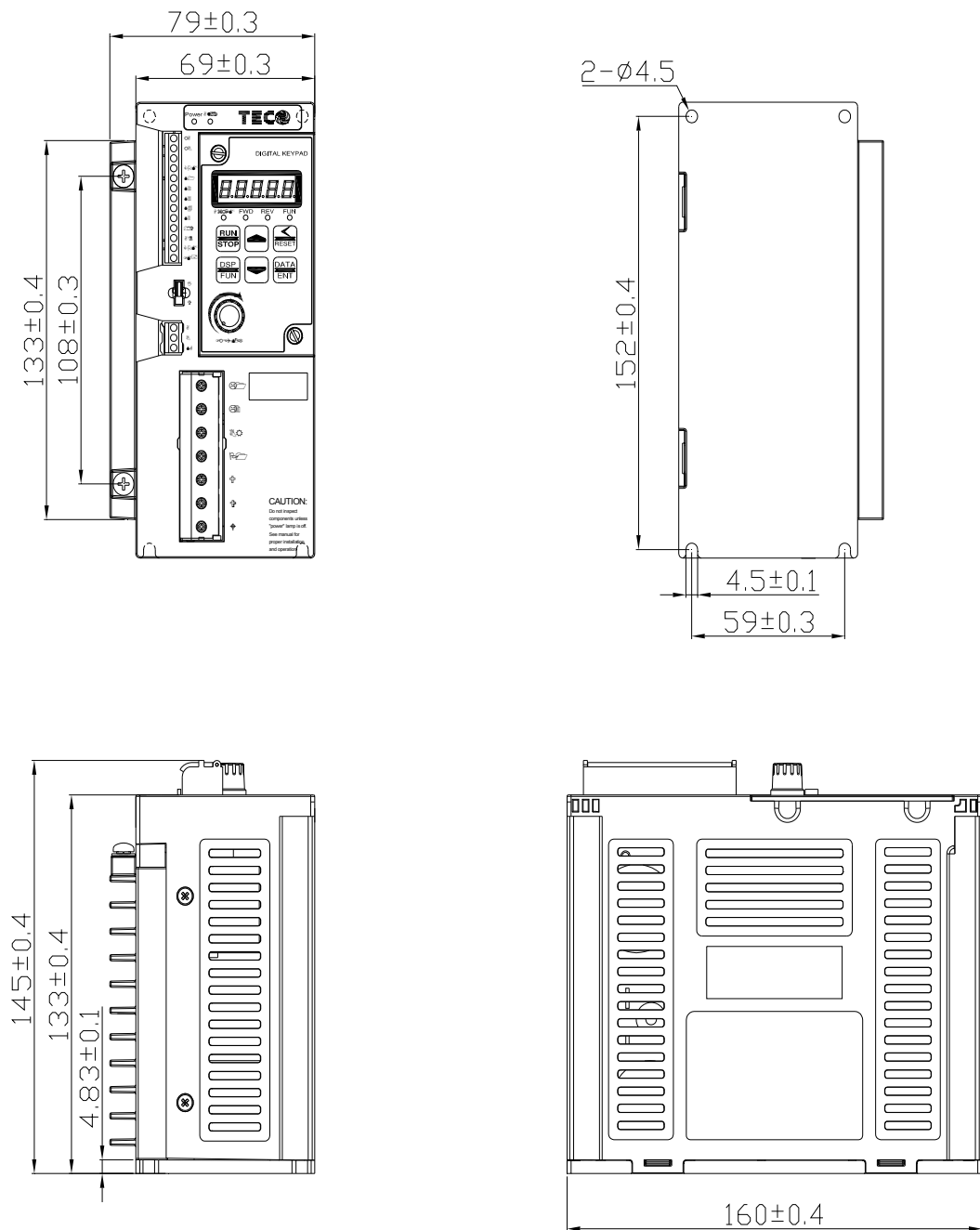
| Item                  | S310 TYPE  |  |
|-----------------------|--|--|
| Control Mode          | V/F  |  |
| Frequency Control     | Range  | 0.01~400.00 Hz   |
|                       | Setting resolution   | Digital: 0.01Hz (Note*1 ), Analog: 0.06Hz/ 60Hz (10bits)   |
|                       | Keypad setting   | Set directly with ▲▼ keys or the VR on the keypad  |
|                       | Display Function   | Five digital LED and status indicator: display frequency / Inverter parameter/ Fault Log/ Program Version  |
|                       | External signal setting  | 1. External potentiometer 0-10V/ 0-20mA<br>2. Provides up/down controls, speed control with multifunctional contacts on the terminal block (TM2)   |
|                       | Frequency Limit Function   | Upper/lower frequency limits   |
| General Control       | Carrier frequency  | 1 ~ 12 kHz   |
|                       | V/F pattern  | 6 fixed patterns, 1 programable curve  |
|                       | Acc/Dec control  | Acc/Dec time (0.1 ~ 3,600 seconds)   |
|                       | Multifunction analog output  | 4 functions (refer to description on 2-12)   |
|                       | Multifunction input  | 9 functions (refer to description on 01-00~01-04)  |
|                       | Multifunction output   | 3 functions (refer to description on 01-09)  |
|                       | Other Functions  | Momentary Power Loss Restart, Overload Detection, 8 preset speeds, 2/3-wire Control, torque boost, Slip Compensation, Frequency Upper/Lower Limit, Modbus slave and PC/PDA Link, Auto Restart. |
| Communication Control | 1. Control by RS485<br>2. One to one or one to many (RS485 ONLY) control.<br>3. BAUD RATE/STOP BIT/PARITY/bit can be set |  |
| Braking Torque        | About 20%, standard model the specified external braking resistors can provide 100%                                      |  |
| Operation temperature | 14-120°F (-10 ~ 50°C) (Note*2)   |  |
| Storage temperature   | 4-140°F (-20 ~ 60°C)   |  |
| Humidity              | 0-95% Relative Humidity (Non-condense)   |  |
| Vibration             | 1G (9.8m/s <sup>2</sup> )  |  |
| Enclosure             | IP20   |  |
| Protective Functions  | FUSE protection  | The motor stops after FUSE melt  |
|                       | Over Voltage   | 200V class: DC Voltage > 410V  |
|                       | Under Voltage  | 200V class: DC Voltage < 190V  |
|                       | Momentary Power Loss Restart   | Restart can be initiated with spin start after momentary power loss in Max 2 sec.  |
|                       | Other Function   | Over torque detection, error contact control, reverse prohibit, prohibit for direct start after power up and error recovery.   |

※ Note 1: Frequency control resolution up to 0.01 Hz.

※ Note 2: 14-120°F (-10 ~ 50°C) without dustproof cover, 14-104°F (-10 ~ 40°C) with dustproof cover.

### 3.7 Outline Dimension (unit: mm)

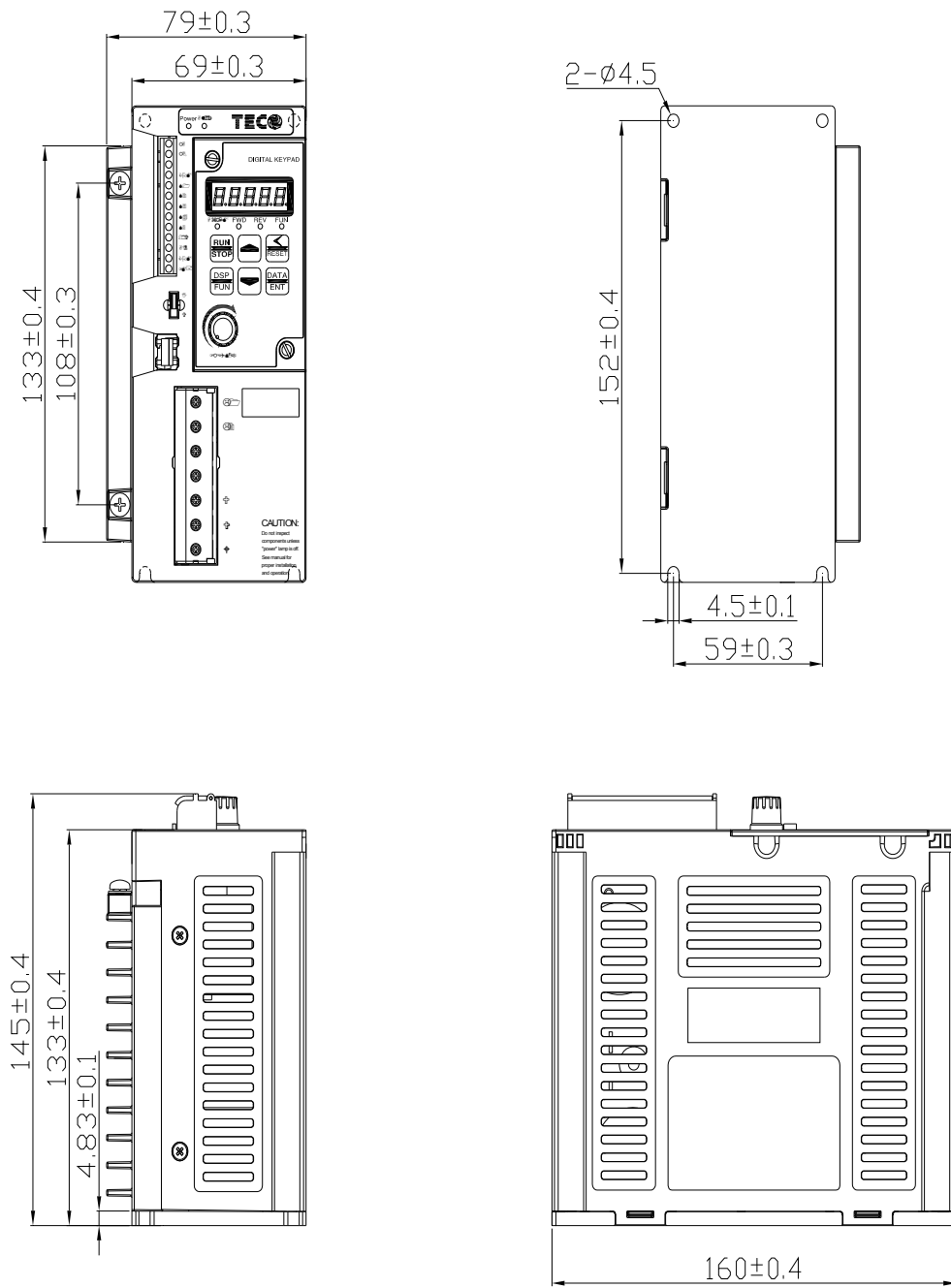
(1) Frame1 : single phase S310-2P5/201-H1BCD



## S310-2P5/201-H1BCD

Figure 3-9 Frame size 1 Dimensions

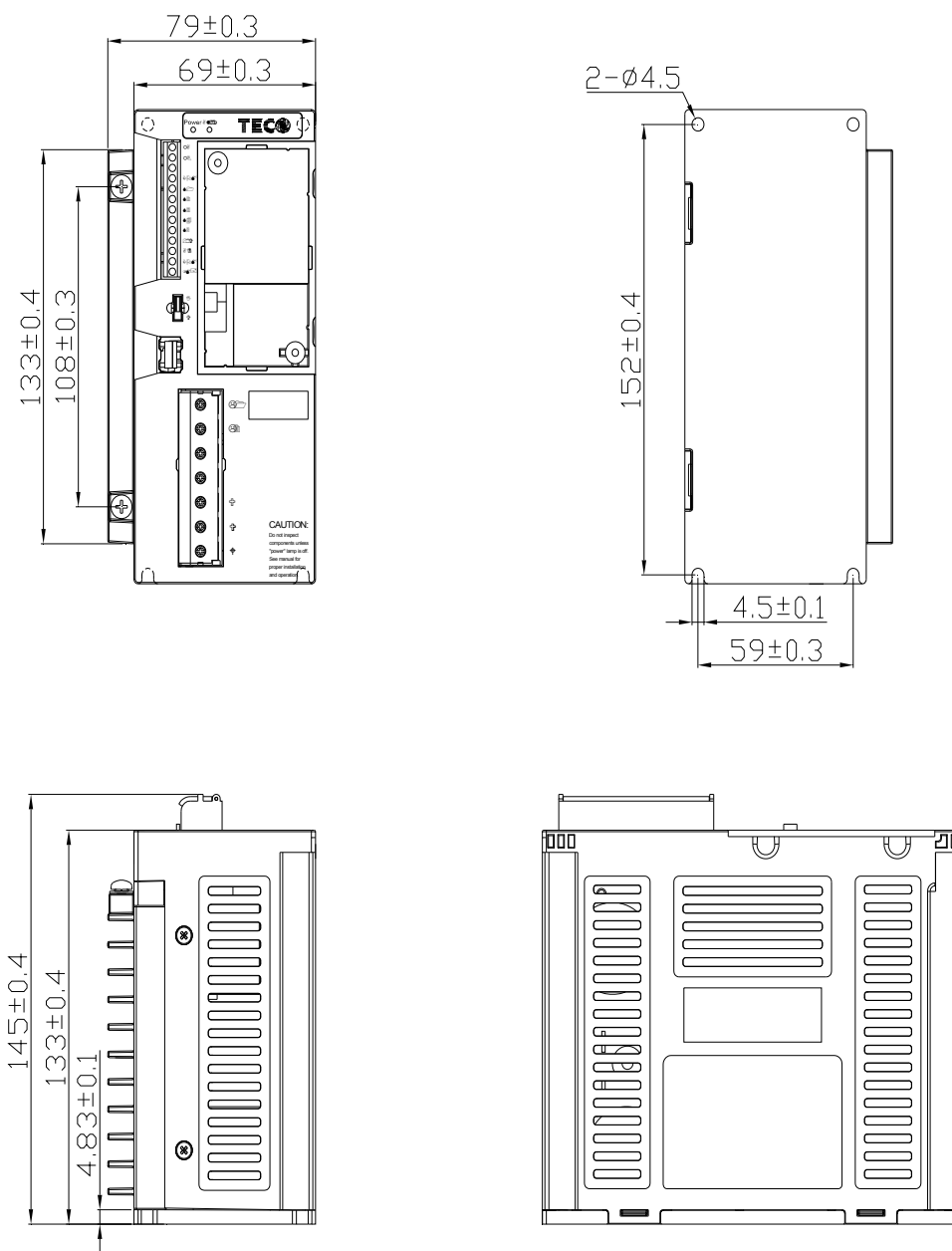
(2) Frame2 : Single phase : S310-2P5/201-1D



**S310-2P5/201-H1D**

Figure 3-10 Frame size 2 Dimensions

(3) Frame3 : Single phase : S310-2P5/201-H1



**S310-2P5/201-H1**

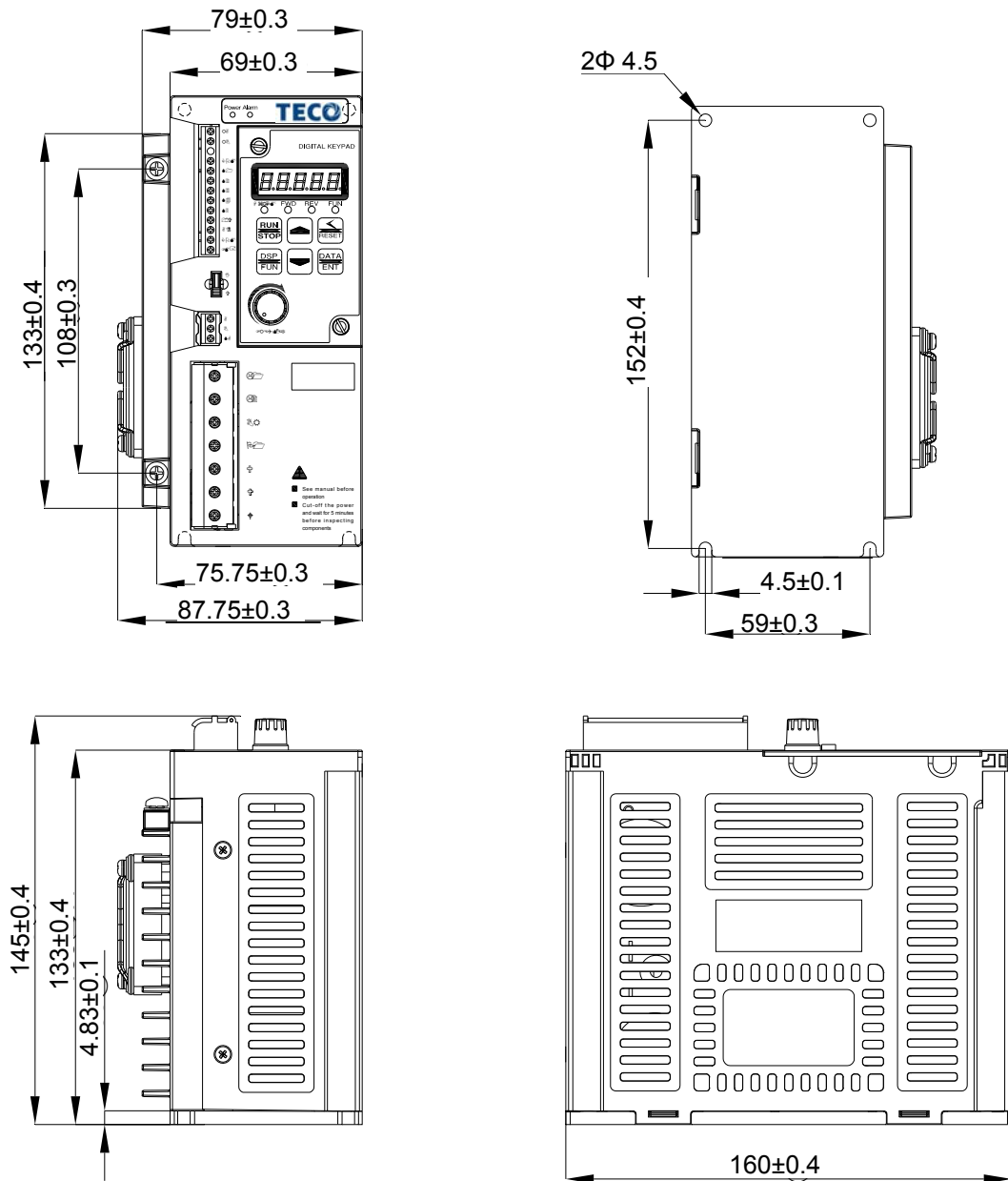
Figure 3-11 Frame size 3 Dimensions

Note :

| model              | unit | Breaking unit | RS485 | keypad | fan |
|--------------------|------|---------------|-------|--------|-----|
| S310-201/2P5-H1D   |      | ×             | ×     | √      | ×   |
| S310-201/2P5-H1BCD |      | √             | √     | √      | ×   |
| S310-201/2P5-H1    |      | ×             | ×     | ×      | ×   |

√ : built-in    × : None

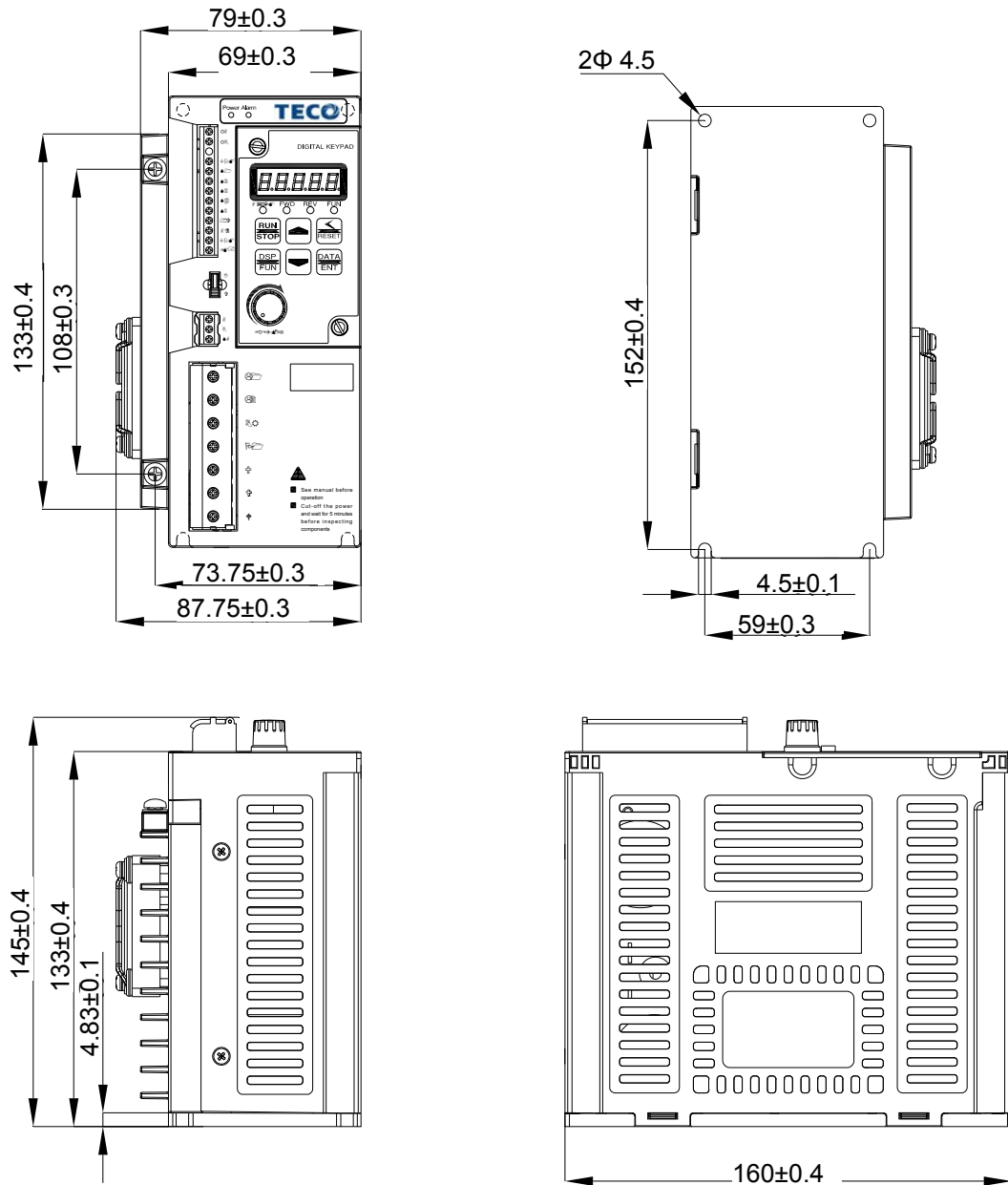
(4) Frame4 : Single phase : S310-202-H1BCD



**S310-202-H1BCD**

Figure 3-12 Frame size 4 Dimensions

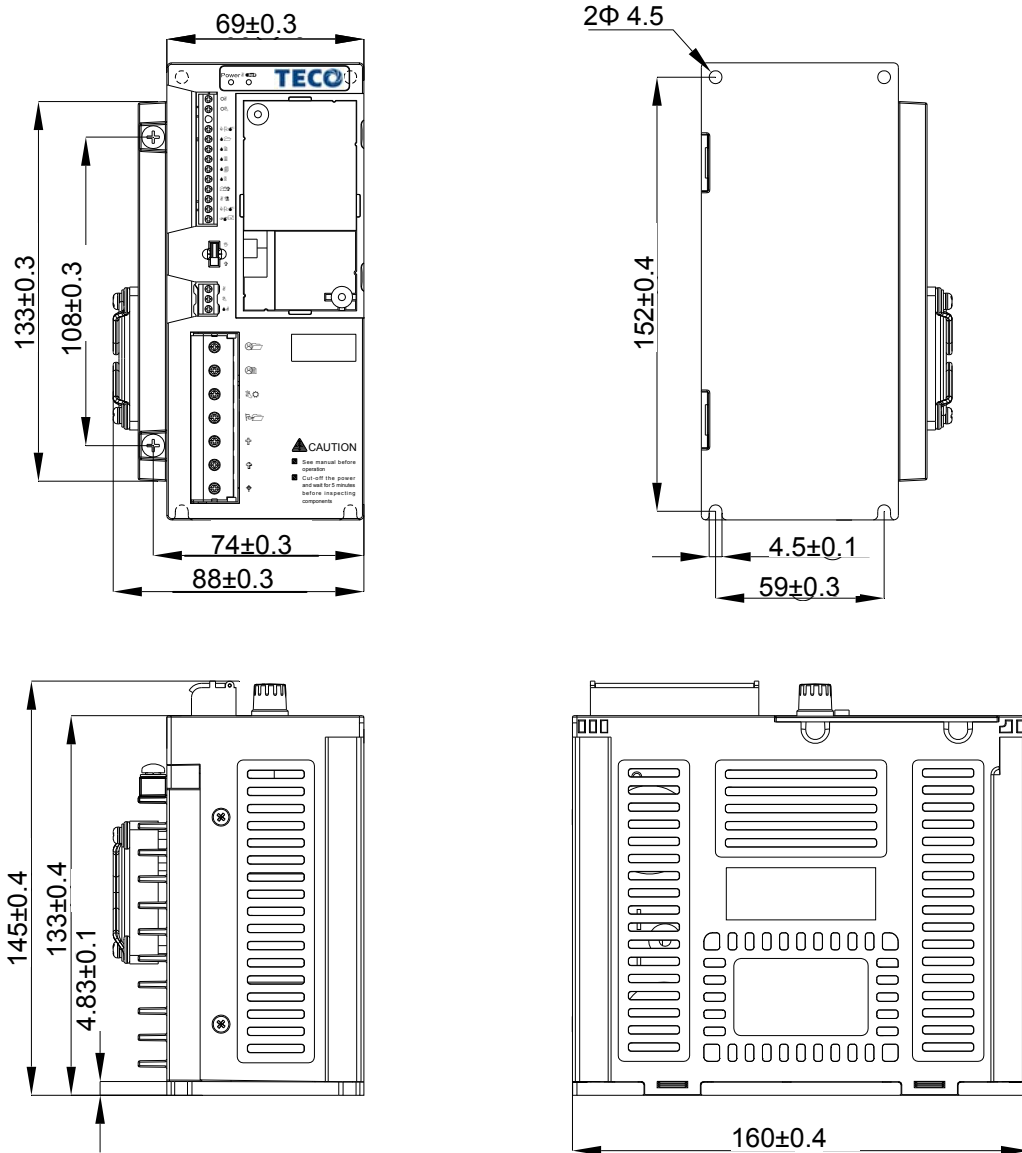
(5) Frame5 : Single phase : S310-202-H1D



**S310-202-H1D**

Figure 3-13 Frame size 5 Dimensions

(6) Frame6 : Single phase : S310-202-H1



**S310-202-H1**

Figure 3-14 Frame size 6 Dimensions

Note:

| model          | unit | Breaking unit | RS485 | keypad | fan |
|----------------|------|---------------|-------|--------|-----|
| S310-202-H1D   |      | ×             | ×     | √      | √   |
| S310-202-H1BCD |      | √             | √     | √      | √   |
| S310-202-H1    |      | ×             | ×     | ×      | √   |

√:built-in    ×:None