

# DATA SHEET: TEMPOWER2 ACB

Types: AR325S, AR332S,

## Electrical Characteristics to IEC 609847-1, IEC 60947-2

| Type                                                                    | AR325S                     | AR332S                    |
|-------------------------------------------------------------------------|----------------------------|---------------------------|
| <b>Series</b>                                                           | Standard                   | Standard                  |
| AMPERE RATING(A)                                                        | 2500                       | 3200                      |
| RATED CURRENT (max) [ $I_n$ ](A)                                        | JIS ⑫, IEC, EN, AS         | 3200                      |
| ① ②                                                                     | NEMA, ANSI                 | 3200                      |
|                                                                         | Marine                     | 3200                      |
| NEUTRAL POLE AMPERES FRAME (A)                                          | 2500                       | 3200                      |
| NUMBER OF POLES ③ ④                                                     | 3 4                        | 3 4                       |
| RATED PRIMARY CURRENT OF OVER-CURRENT RELEASE [ $I_{CT}$ ](A)           | 2500                       | 3200                      |
| • for general feeder circuit use                                        |                            |                           |
| RATED CURRENT OF OVER-CURRENT RELEASE(A)                                | $1250 \leq I_n \leq 2500$  | $1600 \leq I_n \leq 3200$ |
| • for generator protection use<br>[ $I_n$ ] is generator rated current. |                            |                           |
| AC RATED INSULATION VOLTAGE [ $U_i$ ](V. 50/60Hz)                       | 1000                       | 1000                      |
| RATED OPERATIONAL VOLTAGE [ $U_e$ ](V. 50/60Hz)                         | 690                        | 690                       |
| AC RATED BREAKING CAP [kA sym rms] MAKING CAPACITY [kA peak]            |                            |                           |
| JIS ⑫, IEC, EN, AS                                                      | AC 690V ⑤                  | 65/143                    |
| [ $I_{CS} = I_{CU}$ ]                                                   | 440V                       | 85/187 ⑥                  |
| NEMA                                                                    | AC 635V                    | 50/115                    |
| ANSI                                                                    | 508V                       | 65/149.5                  |
|                                                                         | 254V                       | 85/195.5                  |
| ⑦                                                                       | DC 600V ⑧                  | 40/40                     |
|                                                                         | 250V                       | 40/40                     |
| NK ⑨                                                                    | AC 690V                    | 65/153                    |
|                                                                         | 450V                       | 85/201 ⑥                  |
| LR, AB, ⑨                                                               | AC 690V                    | 65/153                    |
| GL, BV                                                                  | 450V                       | 85/201 ⑥                  |
| RATED IMPULSE WITHSTAND VOLTAGE [ $U_{imp}$ ](kV)                       | 12                         | 12                        |
| RATED SHORT TIME WITHSTAND                                              | 1s                         | 85                        |
| CURRENT [ $I_{cw}$ ](kA rms)                                            | 3s                         | 65                        |
| LATCHING CURRENT (kA)                                                   | 85                         | 85                        |
| TOTAL BREAKING TIME (s)                                                 | 0.03                       | 0.03                      |
| CLOSING OPERATION TIME                                                  |                            |                           |
| SPRING CHARGING TIME (s) max.                                           | 10                         | 10                        |
| CLOSE TIME (s) max.                                                     | 0.08                       | 0.08                      |
| No. of operating cycles                                                 |                            |                           |
| Mechanical life                                                         | with maintenance           | 20000                     |
|                                                                         | without maintenance        | 10000                     |
| Electrical life                                                         | without maintenance AC460V | 7000                      |
|                                                                         | AC690V                     | 5000                      |
| Draw-Out Body (kg)                                                      | ⑪                          | 56 68                     |
| Draw-Out Chassis (kg)                                                   | ⑪                          | 49 57                     |
| Total Draw-Out Weight (kg)                                              | ⑪                          | 105 125                   |
| Fixed (kg)                                                              | ⑪                          | 80 92                     |
| OUTLINE DIMENSION (mm)                                                  |                            |                           |
| FIXED TYPE                                                              |                            |                           |
|                                                                         | a                          | 466 586                   |
|                                                                         | b                          | 460                       |
|                                                                         | c                          | 290                       |
|                                                                         | d                          | 75                        |
| DRAW-OUT TYPE ⑩                                                         |                            |                           |
|                                                                         | a                          | 460 580                   |
|                                                                         | b                          | 460                       |
|                                                                         | c                          | 345                       |
|                                                                         | d                          | 40                        |

① : Values in open air at 40°C (45°C for marine applications).

② : Values of AR208S, AR212S, AR216S for draw-out type with horizontal terminals, Values of the other ACBs for draw-out type with vertical terminals.

③ : For 2 pole ACBs use outside poles of 3 pole ACB.

④ : 4poles ACBs without Neutral phases protection can not apply IT earthing system.

⑤ : Contact TERASAKI for the details.

⑥ : For 500V AC.

⑦ : ARG OCRs can not be used for DC. Please contact TERASAKI for DC application.

⑧ : A special version of the ACB is required above 250V DC. Contact Terasaki for details.

⑨ : Applicable to only 3 pole ACBs.

⑩ : For vertical terminals or horizontal terminals.

⑪ : These weights are based on normal specifications with the OCR and standard accessories

⑫ : Comply with JIS C 8201-2-1 Ann.1 Ann.2

⑬ : Being or will be applied.

⑭ : Values for ACBs with INST. 100/220kA for ACBs with MCR.

# : Contact TERASAKI for the ratings.

**Note:** When the INST trip function is set to NON, the MCR function should be enabled, otherwise, the rated breaking capacity is reduced to the rated latching current.

## DATA SHEET: TEMPOWER2 ACB

**Types:** AR325S, AR332S

**L-characteristic for general feeder circuits (Type AGR-11BL, 21BL, 31BL)**

## Specifications

## Setting range of protection functions

Adjustable long time-delay trip characteristics

LT

Pick-up current [I<sub>R</sub>] (A)

Time-delay [t<sub>R</sub>] (s)

Time-delay setting tolerance (%)

Adjustable short time-delay trip characteristics

ST

Pick-up current [I<sub>sg</sub>] (A)

Current setting tolerance (%)

Time-delay [t<sub>sg</sub>] (ms) Relay time

Resettable time (ms)

Max. total clearing time (ms)

Adjustable instantaneous trip characteristics

INST or MCR (For AGR-11B, INST only)

Pick-up current [I<sub>i</sub>] (A)

Current setting tolerance (%)

Adjustable pre-trip alarm characteristics

PTA

Pick-up current [I<sub>p1</sub>] (A)

Current setting tolerance (%)

Time-delay [t<sub>p1</sub>] (s)

Time-delay setting tolerance (%)

Adjustable ground fault trip characteristics

GF

Pick-up current [I<sub>g</sub>] (A)

Current setting tolerance (%)

Time-delay [t<sub>g</sub>] (ms) Relay time

Resettable time (ms)

Max. total clearing time (ms)

Ground fault trip characteristics on line side

REF (AGR-21B, 31B only)

Pick-up current [I<sub>REF</sub>] (A)

current setting tolerance (%)

Time-delay (s)

N-phase protection characteristics

NP

Pick-up current [I<sub>N</sub>] (A)

Time-delay [t<sub>N</sub>] (s)

Time-delay setting tolerance (%)

Phase rotation protection characteristics

NS (AGR-21B, 31B only)

Pick-up current [I<sub>NS</sub>] (A)

current setting tolerance (%)

Time-delay [t<sub>NS</sub>] (s)

Time-delay setting tolerance (%)

Adjustable earth leakage trip characteristics

ELT (AGR-31B only)

Pick-up current [I<sub>AR</sub>] (A)

Current setting tolerance

Time-delay [t<sub>AR</sub>] (ms) Relay time

Resettable time (ms)

Max. total clearing time (ms)

Undervoltage alarm characteristics

UV (AGR-31B only)

Recovery setting voltage (V)

Recovery voltage setting tolerance (%)

Setting voltage (V)

Voltage setting tolerance (%)

Time-delay (s)

Time-delay setting tolerance (%)

Control power

Setting range

I<sub>n</sub>×(0.8 – 0.85 – 0.9 – 0.95 – 1.0 – NON) ; 6 graduations

• Non tripping when load current ≤ ([I<sub>R</sub>]×1.05). • Tripping when ([I<sub>R</sub>]×1.05) < load current ≤ ([I<sub>R</sub>]×1.2)

(0.5 – 1.25 – 2.5 – 5 – 10 – 15 – 20 – 25 – 30) at 600% of [I<sub>R</sub>]; 9 graduations

±15% +150ms – 0ms

I<sub>n</sub>×(1 – 1.5 – 2 – 2.5 – 3 – 4 – 6 – 8 – 10 – NON) ; 10 graduations

±15%

50

100

200

400

600

800

25

75

175

375

575

775

120

170

270

470

670

870

6 graduations

I<sub>i</sub>×(2 – 4 – 6 – 8 – 10 – 12 – 14 – 16 – NON) ; 9 graduations

±20%

I<sub>n</sub>×(0.75 – 0.8 – 0.85 – 0.9 – 0.95 – 1.0) ; 6 graduations

±7.5%

(5 – 10 – 15 – 20 – 40 – 60 – 80 – 120 – 160 – 200) at [I<sub>p1</sub>] or more; 10 graduations

±15% +100ms – 0ms

Note: Set [I<sub>g</sub>] to 1200A or less.

[I<sub>CT</sub>]×(0.1 – 0.2 – 0.3 – 0.4 – 0.6 – 0.8 – 1.0 – NON) ; 8 graduations

±20%

100

200

300

500

1000

2000

75

175

275

475

975

1975

170

270

370

570

1070

2070

6 graduations

[I<sub>CT</sub>]×(0.1 – 0.2 – 0.3 – 0.4 – 0.6 – 0.8 – 1.0 – NON) ; 8 graduations

±20%

Inst

[I<sub>CT</sub>]×(0.4 – 0.5 – 0.63 – 0.8 – 1.0) ; Factory set to a user-specified value for AGR-11BL.

• Non tripping when load current ≤ ([I<sub>N</sub>]×1.05). • Tripping when ([I<sub>N</sub>]×1.05) < load current ≤ ([I<sub>N</sub>]×1.2)

Tripping at 600% of [I<sub>N</sub>] with [LT] time-delay [t<sub>R</sub>]

±15% +150ms – 0ms

I<sub>n</sub>×(0.2 – 0.3 – 0.4 – 0.5 – 0.6 – 0.7 – 0.8 – 0.9 – 1.0) ; 9 graduations

±10%

(0.4 – 0.8 – 1.2 – 1.6 – 2 – 2.4 – 2.8 – 3.2 – 3.6 – 4) at 150% of [I<sub>NS</sub>] ; 10 graduations

±20% +150ms – 0ms

0.2 – 0.3 – 0.5 (Medium sensitivity) or 1 – 2 – 3 – 5 – 10 (Low sensitivity)

Non operate below 70% of [I<sub>AR</sub>]. Operate between 70% and 100% of [I<sub>AR</sub>].

100

150

300

500

800

1500

3000

50

100

250

450

750

1450

2950

250

300

450

650

950

1650

3150

7 graduations

[V<sub>n</sub>]×(0.8 – 0.85 – 0.9 – 0.95) ; 4 graduations

±5%

[V<sub>n</sub>]×(0.4 – 0.6 – 0.8) ; 3 graduations

±5%

0.1 – 0.5 – 1 – 2 – 5 – 10 – 15 – 20 – 30 – 36 ; 10 graduations

±15% +100ms–0ms

AC100 – 120V ) Common

DC100 – 125V ) Common

DC24V ) Common

AC200 – 240V )

DC200 – 250V )

DC48V )

Power consumption: 5 VA

: Default setting

## DATA SHEET: TEMPOWER2 ACB

Types: AR325S, AR332S

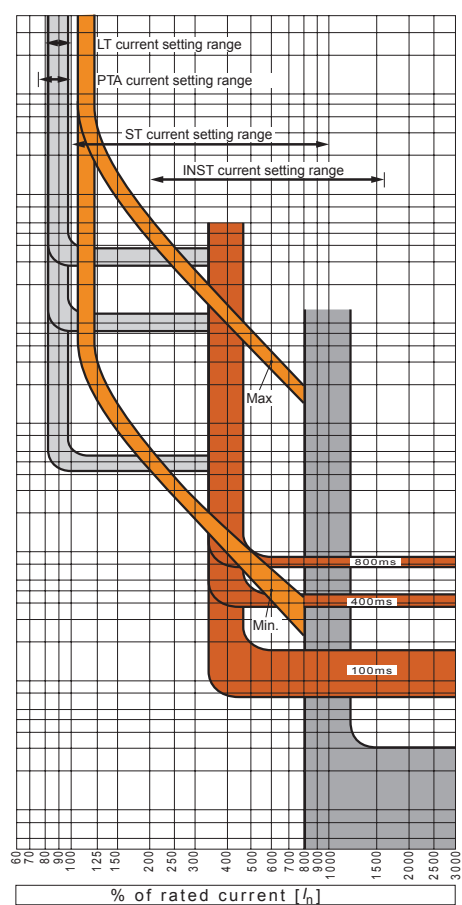
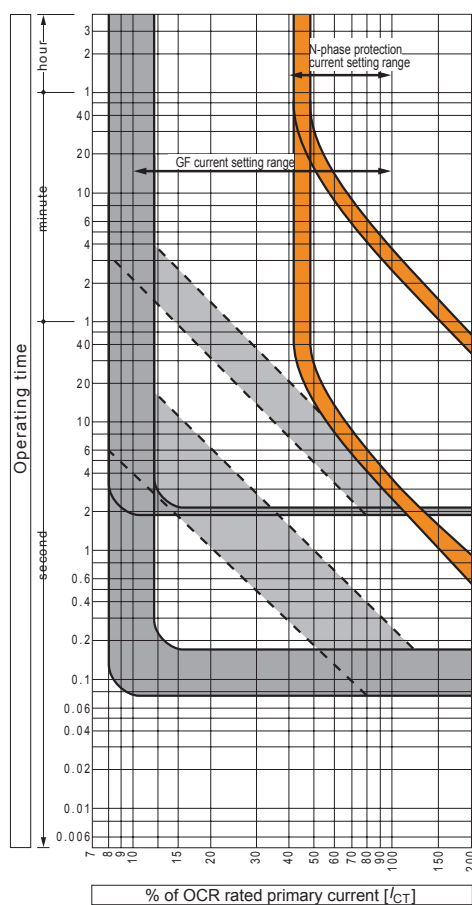
L-characteristic for general feeder circuits (Type AGR-11BL, 21BL, 31BL)

### Specifications

#### ■ Values of $[I_{CT}]$ and $[I_n]$

| Type   | Applicable  | Rated current $[I_n]$ (A) |                            |                             |                            |                            |
|--------|-------------|---------------------------|----------------------------|-----------------------------|----------------------------|----------------------------|
|        |             | $[I_{CT}]$<br>(A)         | $[I_{CT}]$<br>$\times 0.5$ | $[I_{CT}]$<br>$\times 0.63$ | $[I_{CT}]$<br>$\times 0.8$ | $[I_{CT}]$<br>$\times 1.0$ |
| AR325S | <b>2500</b> | 1250                      | 1600                       | 2000                        | 2500                       |                            |
| AR332S | <b>3200</b> | 1600                      | 2000                       | 2500                        | 3200                       |                            |

## PROTECTION CHARACTERISTICS



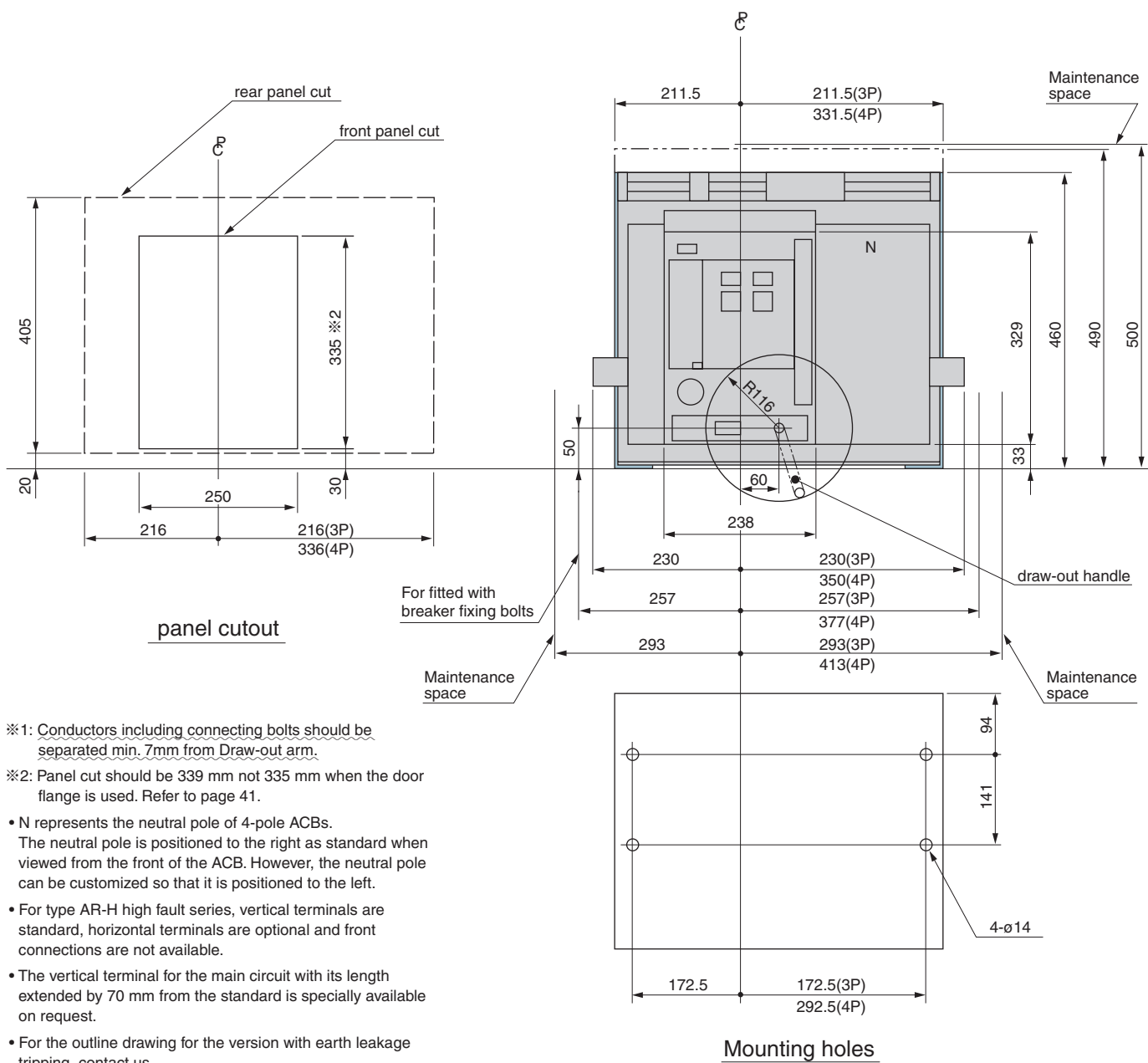
The ST trip characteristic shown in the figure applies when the ramp characteristic select switch is in the OFF position.

# DATA SHEET: TEMPOWER2 ACB

Types: AR325S, AR332S

## Drawout Type Outline Dimensions

$\bar{C}$ : ACB Front cover center line



※1: Conductors including connecting bolts should be separated min. 7mm from Draw-out arm.

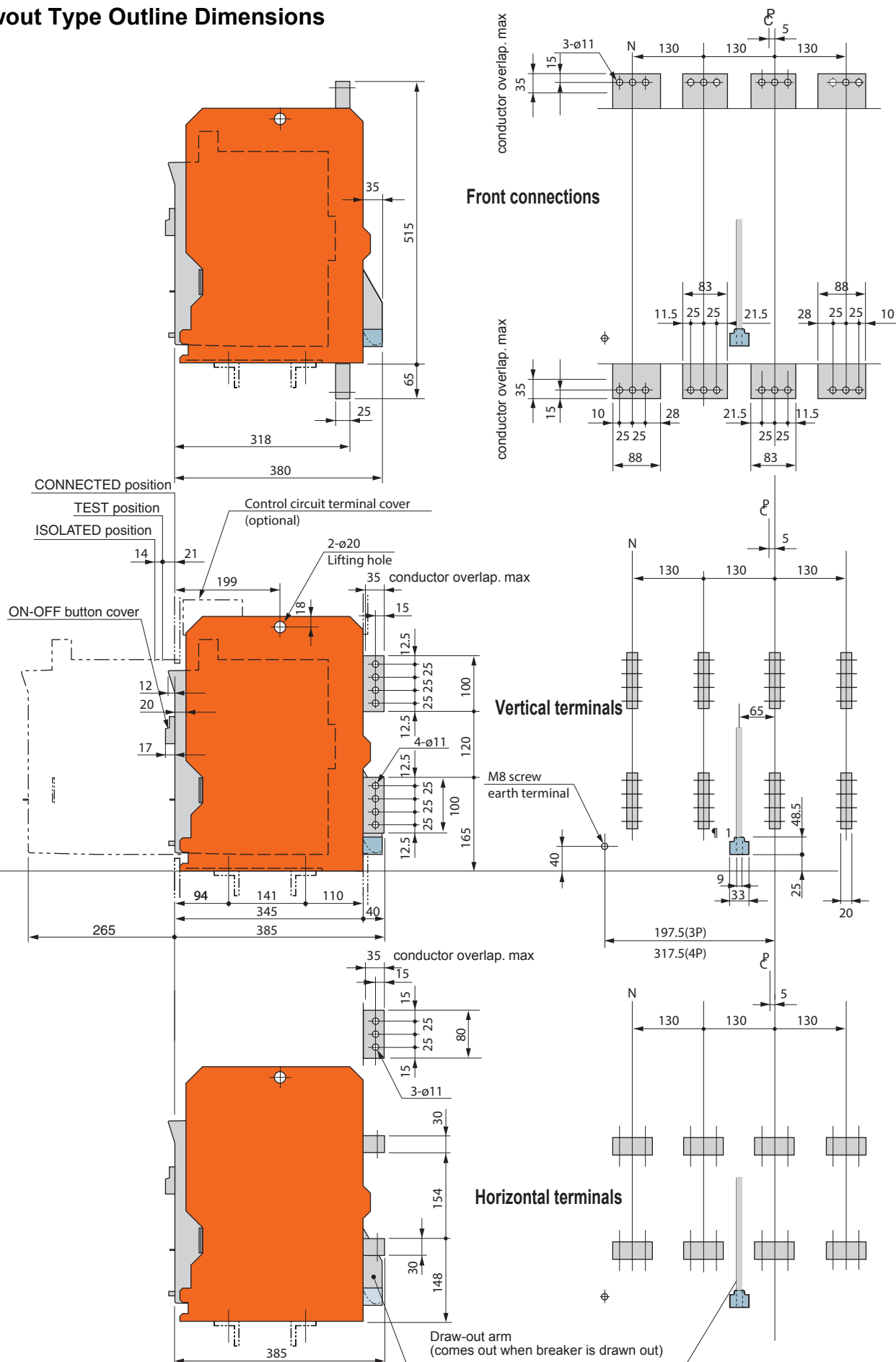
※2: Panel cut should be 339 mm not 335 mm when the door flange is used. Refer to page 41.

- N represents the neutral pole of 4-pole ACBs. The neutral pole is positioned to the right as standard when viewed from the front of the ACB. However, the neutral pole can be customized so that it is positioned to the left.
- For type AR-H high fault series, vertical terminals are standard, horizontal terminals are optional and front connections are not available.
- The vertical terminal for the main circuit with its length extended by 70 mm from the standard is specially available on request.
- For the outline drawing for the version with earth leakage tripping, contact us.

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Types: AR325S, AR332S

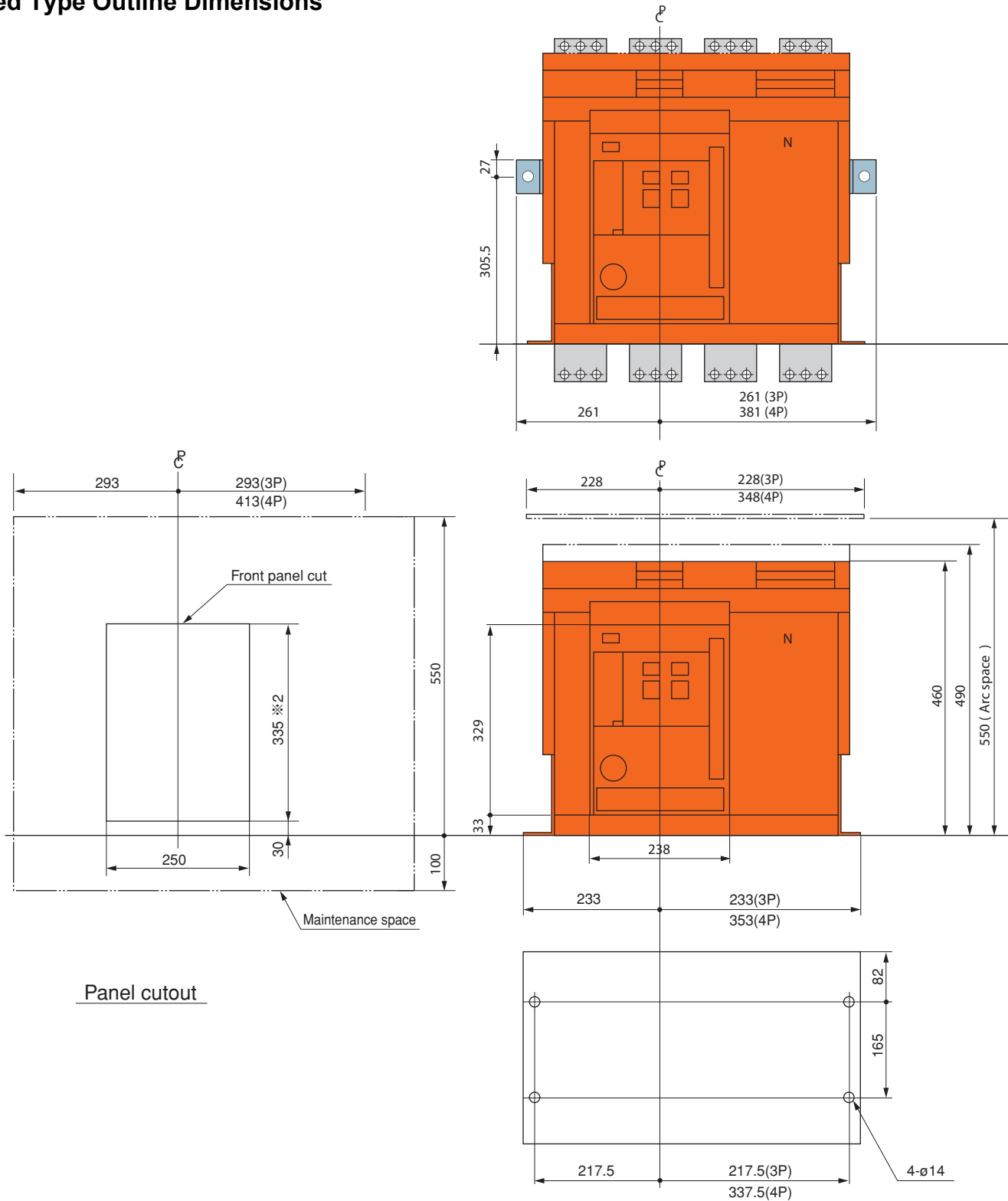
## Drawout Type Outline Dimensions



# DATA SHEET: TEMPOWER2 ACB

Types: AR325S, AR332S

## Fixed Type Outline Dimensions



※2: Panel cut should be 339 mm not 335 mm when the door flange is used. Refer to page 41.

- N represents the neutral pole of 4-pole ACBs.  
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Types: AR325S, AR332S

## Fixed Type Outline Dimensions

