

Watt-hour Meter (Transducer Type) - PWK

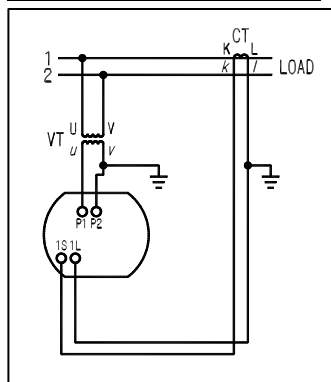
WATTHOUR METER (Transducer All-In-One Type) ⁽¹⁾

| Application | Type | Rating ⁽²⁾ | Consumption VA | | Accessory |
|------------------------|------------------------------|-----------------------|----------------|--------------|-----------|
| | | | Voltage side | Current side | |
| Single phase | PWK-120NC-12 | 110V, 5A (1A) | 2VA | 1VA | — |
| | PWK-100NC-12 | 220V, 5A (1A) | 3.5VA | 1VA | |
| Single phase 3-wire | PWK-120NC-13 PWK-100NC-13 | 110V, 5A (1A) | 2VA | 1VA | — |
| 3 phase 3-wire | PWK-120NC-33 | 110V, 5A (1A) | 2VA | 1VA | — |
| | PWK-100NC-33 | 220V, 5A (1A) | 3.5VA | 1VA | |
| 3 phase 4-wire | PWK-120NC-34 | 110/√3V, 5A (1A) | 2VA | 1VA | — |
| | PWK-100NC-34 | 220/√3V, 5A (1A) | 3.5VA | 1VA | |

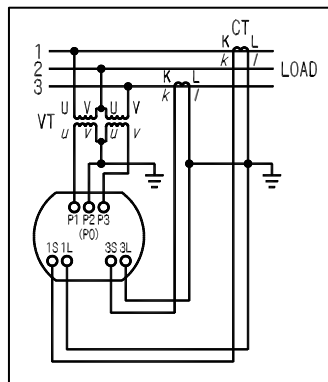
Note:

- ⁽¹⁾ Please refer to (page 18) for manufacture limit and max. scale value.
- ⁽²⁾ Please use external CT, 5A(1A) or VT, 110V respectively if above rating is exceeds.
Usable voltage range for 110V: 90~130V & 220V: 180~260V

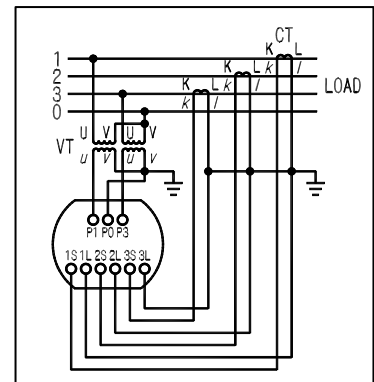
Connection Diagram



Single phase watt-hour meter

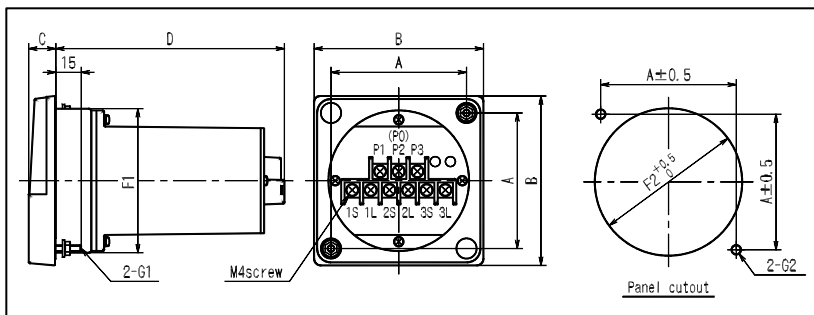


Single phase 3-wire watt-hour meter
3 phase 3-wire watt-hour meter



3 phase 4-wire watt-hour meter

Dimensions



| Type | A | B | C | D | F1 | F2 | G1 | G2 | weight (g) |
|-----------|-----|-----|----|-------|------|----------|----------|----------|------------|
| PWK-120NC | 100 | 123 | 20 | 145.5 | 110Φ | 112ΦHole | M5 Screw | 7ΦHole | 510 |
| PWK-100NC | 80 | 100 | 16 | 135 | 85Φ | 87ΦHole | M4 Screw | 5.5ΦHole | 400 |

Var Meter (Transducer Type) - PWVK

VAR METER (Transducer All-In-One Type) ⁽¹⁾

| Application | Type | Rating ⁽²⁾ | Consumption VA | | Accessory |
|----------------|---------------|-----------------------|----------------|---------|-----------|
| | | | Voltage | Current | |
| Single phase | PWVK-120NC-12 | 110V, 5A (1A) | 2VA | 1VA | — |
| | PWVK-100NC-12 | 220V, 5A (1A) | 3.5VA | 1VA | |
| 3 phase 3-wire | PWVK-120NC-33 | 110V, 5A (1A) | 2VA | 1VA | — |
| | PWVK-100NC-33 | 220V, 5A (1A) | 3.5VA | 1VA | |
| 3 phase 4-wire | PWVK-120NC-34 | 110V, 5A (1A) | 2VA | 1VA | — |
| | PWVK-100NC-34 | 220V, 5A (1A) | 3.5VA | 1VA | |

Note:

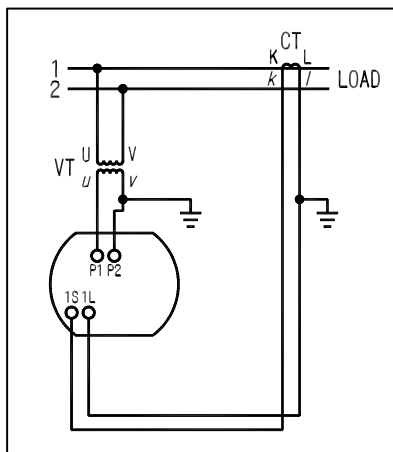
⁽¹⁾ Please refer to (page 18) for manufacture limit and max. scale value.

Standard scale: Lead □ var ~ 0 ~ Lag □ var

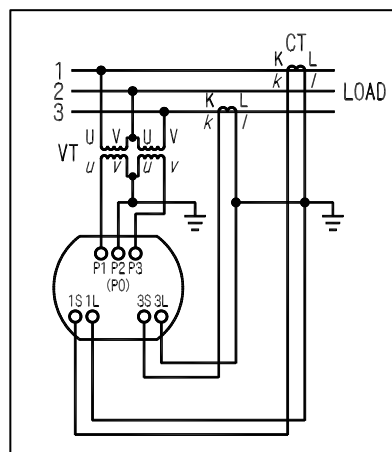
⁽²⁾ Please use external CT, 5A(1A) or VT, 110V respectively if above rating is exceeds.

Usable voltage range for 110V: 90 ~ 130V & 220V: 180 ~ 260V

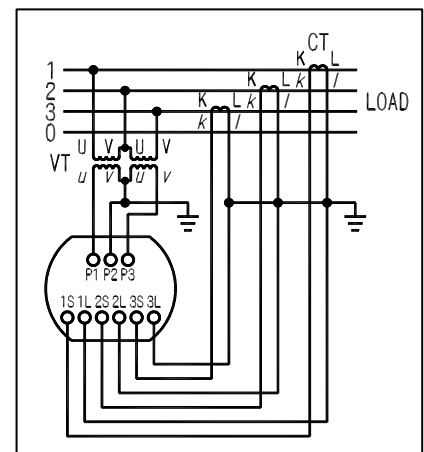
Connection Diagram



Single phase var meter

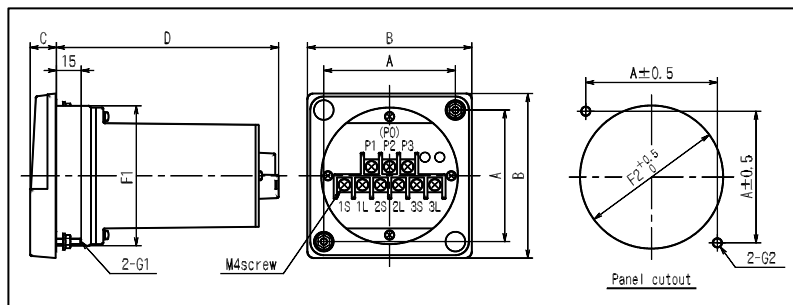


3 phase 3-wire var meter



3 phase 4-wire var meter

Dimensions



| Type | A | B | C | D | F1 | F2 | G1 | G2 | weight (g) |
|------------|-----|-----|----|-------|------|----------|----------|----------|------------|
| PWVK-120NC | 100 | 123 | 20 | 145.5 | 110Φ | 112ΦHole | M5 Screw | 7ΦHole | 510 |
| PWVK-100NC | 80 | 100 | 16 | 135 | 85Φ | 87ΦHole | M4 Screw | 5.5ΦHole | 400 |

Watt-hour Meter (Transducer Type) - PWK

WATTHOUR METER (External with Transducer Type) ⁽¹⁾

| Application | Type | Rating ⁽²⁾ | Consumption VA | | Accessory (Transducer) |
|----------------------------------|----------------------|-----------------------|------------------|----------------|------------------------|
| | | | Voltage | Current | |
| Single phase | PWK-80C-12 60C-12 | 110V, 5A (1A) | 2VA | 1VA | WT-62M-12 |
| | | 220V, 5A (1A) | 3.5VA | 1VA | |
| Single phase 3-wire | PWK-80C-13 60C-13 | 110V, 5A (1A) | Each phase 2VA | Each phase 1VA | WT-83M-13 |
| 3 phase | PWK-80C-33 60C-33 | 110V, 5A (1A) | Each phase 2VA | Each phase 1VA | WT-83M-33 |
| | | 220V, 5A (1A) | Each phase 3.5VA | Each phase 1VA | |
| 3 phase 4-wire ⁽³⁾ | PWK-80C-34 60C-34 | 110/√3V, 5A (1A) | Each phase 1.5VA | Each phase 1VA | WT-83M-34 |
| | | 220/√3V, 5A (1A) | Each phase 3VA | Each phase 1VA | |

Note:

(1) Please refer to (page 18) for manufacture limit and Max. scale value.

(2) If above rating is exceeds, please use external CT, 5A(1A) or VT, 110V respectively.

Usable voltage range: 110V: 90~130V; 220V: 180~260V

(3) 3 phase 4-wire is voltage balanced.

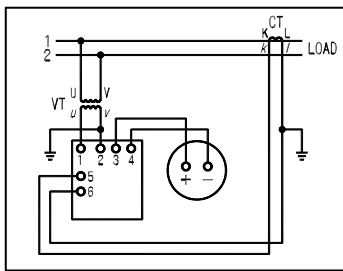
► For High harmonic ware use, please specify the frequency.

For SCR Wareform Meter

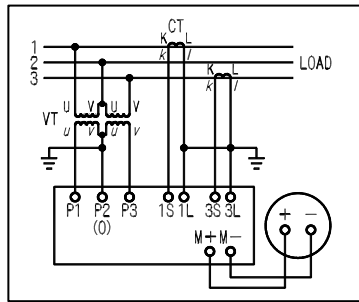
PWK-□CH-□

Aux. power is necessary. (3 phase 4-wire can not manufacture)

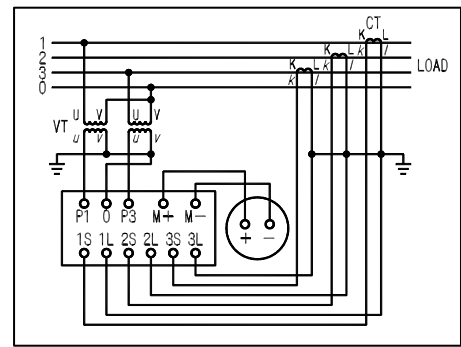
Connection Diagram



Single phase watt-hour meter external with WT-62M12

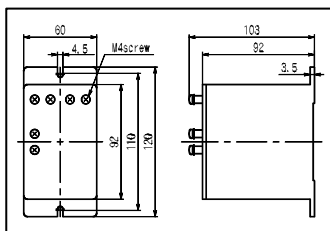
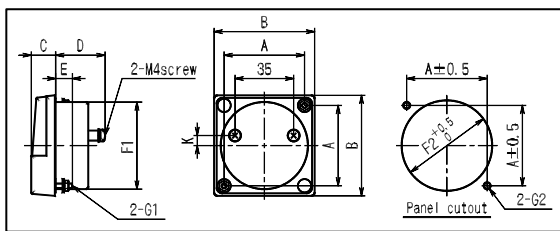


Single phase 3-wire & 3 phase watt-hour meter external with WT-83M13/ 33

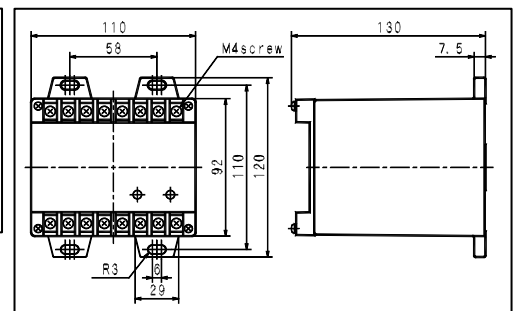


3 phase 4-wire watt-hour meter WT-83M34

Dimensions



For Type: □T62M - □ - □



For Type: □T - 83M - □

| Type | A | B | C | D | E | F1 | F2 | G1 | G2 | K | weight (g) |
|---------|----|----|------|------|----|-----|---------|----------|--------|---|------------|
| PWK-80C | 64 | 80 | 14.5 | 29.5 | 10 | 65Φ | 67ΦHole | M3 Screw | 4ΦHole | 0 | 1000 |
| PWK-60C | 48 | 60 | 14.5 | 29.5 | 10 | 52Φ | 54ΦHole | M3 Screw | 4ΦHole | 6 | 950 |

Var Meter (Transducer Type) - PWVK

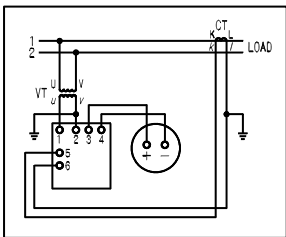
VAR METER (External with Transducer Type) ⁽¹⁾

| Application | Type | Rating ⁽²⁾ | Consumption VA | | Accessory (Transducer) |
|---|------------------------|-----------------------|------------------|----------------|------------------------|
| | | | Voltage | Current | |
| Single phase ⁽³⁾ | PWVK-80C-12 60C-12 | 110V, 5A (1A) | 2VA | 1.5VA | WVT-62M-12 |
| | | 220V, 5A (1A) | 3.5VA | 1.5VA | |
| 3 phase (balanced) ⁽⁴⁾ | PWVBK-80C-33 60C-33 | 110V, 5A (1A) | Each phase 2VA | Each phase 1VA | WVBT-83M-33 |
| | | 220V, 5A (1A) | Each phase 3.5VA | Each phase 1VA | |
| 3 phase (unbalanced) ⁽⁴⁾ | PWVK-80C-33 60C-33 | 110V, 5A (1A) | Each phase 2VA | Each phase 1VA | WVT-83M-33 |
| | | 220V, 5A (1A) | Each phase 3.5VA | Each phase 1VA | |
| 3 phase 4-wire (unbalanced) ⁽⁴⁾⁽⁵⁾ | PWVK-80C-34 60C-34 | 110V, 5A (1A) | Each phase 2VA | Each phase 1VA | WVT-83M-34 |
| | | 220V, 5A (1A) | Each phase 3.5VA | Each phase 1VA | |

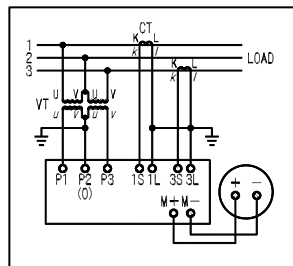
Note:

- (1) Please refer to (page 18) for Manufacture limit and Max. scale value.
Standard scale: Lead □ var ~ 0 ~ Lag □ var
- (2) If above rating is exceeds,
Please use external CT, 5A(1A) or VT, 110V respectively.
Usable voltage range for 110V: 90 ~ 130V & 220V: 180 ~ 260V
- (3) Please specify the frequency (50Hz or 60Hz) for single phase circuit.
- (4) Please use 3 phase, 3 phase 4-wire in positive phase sequence.
- (5) 3 phase 4-wire is voltage balanced.

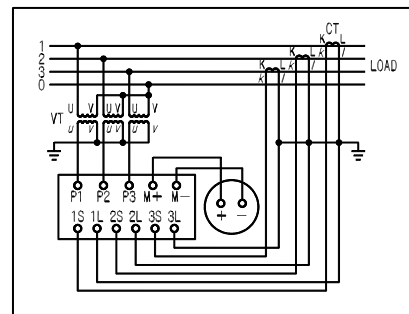
Connection Diagram



Single phase var meter external with WVT-62M-12

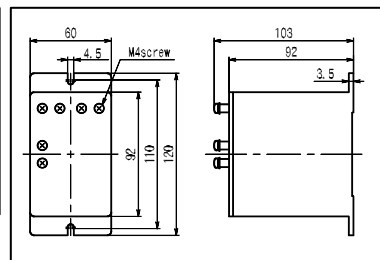
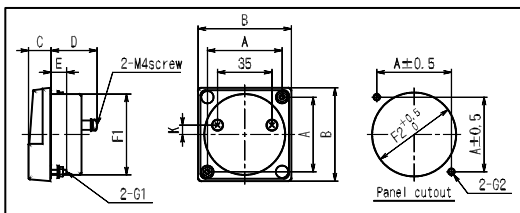


Single phase 3-wire & 3 phase var meter external with WVT-83M-13/ 33

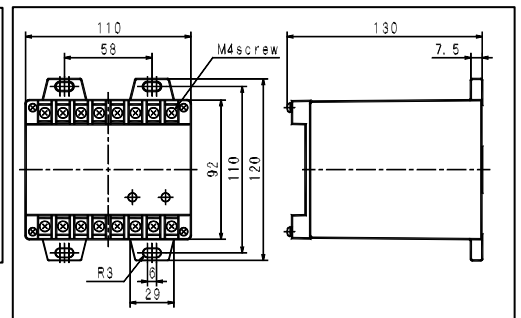


3 phase 4-wire var meter external with WVT-83M-34

Dimensions



For Type: □T62M - □-□



For Type: □T - 83M - □

| Type | A | B | C | D | E | F1 | F2 | G1 | G2 | K | weight (g) |
|-------------|----|----|------|------|----|-----|---------|----------|--------|---|------------|
| PWV(B)K-80C | 64 | 80 | 14.5 | 29.5 | 10 | 65Φ | 67ΦHole | M3 Screw | 4ΦHole | 0 | 1000 |
| PWV(B)K-60C | 48 | 60 | 14.5 | 29.5 | 10 | 52Φ | 54ΦHole | M3 Screw | 4ΦHole | 6 | 950 |

Watt-hour Meter & Var Meter (Transducer Type) – PWK / PWVK

MANUFACTURABLE RANGE MAX. SCALE VALUE FOR INTRINSIC METER

Manufacturable range will be limited where intrinsic max. scale value is within the scope as shown in the right list. But in the case, the meter is used with external CV or VT, max. scale value will be calculated as following formula:

$$\frac{\text{Intrinsic Max. scale value}}{\text{Max. scale value}} = \frac{\text{Max. scale value}}{\text{VT ratio} \times \text{CT ratio}}$$

| Type Name | Rating | | | Manufacturable Intrinsic Max. Scale Value | |
|---------------------|---------------|---------|---------|---|---------------------------|
| | | | | Watt-hour Meter | Var Meter |
| Single phase | 110V / 5A(1A) | | | 350~600W (70~120W) | 350~600var (70~120var) |
| | 220V / 5A(1A) | | | 700~1200W (140~240W) | 700~1200var (140~240var) |
| Single phase 3-wire | 110V / 5A(1A) | | | 600~1200W (120~240W) | — |
| 3 phase 3-wire | 110V / 5A(1A) | | | 600~1200W (120~240W) | 600~1200var (120~240var) |
| | 220V / 5A(1A) | | | 1200~2400W (240~480W) | 1200~2400var (240~480var) |
| 3 phase 4-wire | Line | Phase | Current | — | — |
| | 110V | 110/√3V | 5A(1A) | 600~1200W (120~240W) | 600~1200var (120~240var) |
| | 220V | 220/√3V | 5A(1A) | 1200~2400W (240~480W) | 1200~2400var (240~480var) |

REFERENCE LIST FOR STANDARD MAX. SCALE VALUE THREE PHASE WATTMETER

The following table is the standard of 3 phase wattmeter.

This table also applies for 3 phase 4-wire wattmeter, single phase 3-wire watt-hour meter and var meter.

Standard for single phase wattmeter calculation is: the listed value × 1/2

| Line vol. CT ratio | 6600V (VT6600/110V) | | | 3300V (VT3300/110V) | | | 440V (VT440/110V) | | | 220V | | | 110V | | |
|-----------------------|------------------------|----------|----------|------------------------|----------|----------|----------------------|---------|---------|---------|-----------|-----------|---------|-----------|-----------|
| | kW 60 | kW 50 | kW 40 | kW 30 | kW 25 | kW 20 | kW 4 | kW 5 | kW 3 | kW 2 | kW 1.5 | kW 1.2 | kW 1 | kW 0.8 | kW 0.6 |
| 5/5A | 90 | 75 | 60 | 45 | 40 | 30 | 6 | 5 | 4 | 3 | 2.5 | 2 | 1.5 | 1.2 | 1 |
| 7.5/5A | 120 | 100 | 80 | 60 | 50 | 40 | 8 | 7.5 | 6 | 4 | 3 | 2.5 | 2 | 1.5 | 1.2 |
| 10/5A | 200 | 150 | 120 | 100 | 75 | 60 | 12 | 10 | 8 | 6 | 5 | 4 | 3 | 2.5 | 2 |
| 15/5A | 240 | 200 | 150 | 120 | 100 | 80 | 15 | - | 12 | 8 | 6 | 5 | 4 | 3 | 2.5 |
| 20/5A | 300 | 250 | 200 | 150 | 120 | 100 | 20 | - | 15 | 10 | 8 | 7.5 | 5 | 4 | 3 |
| 25/5A | 400 | 300 | 240 | 200 | 150 | 120 | 24 | - | 20 | 12 | 10 | 8 | 6 | 5 | 4 |
| 30/5A | 480 | 400 | 300 | 240 | 200 | 150 | 30 | - | 24 | 15 | 12 | 10 | 8 | 7.5 | 5 |
| 40/5A | 600 | 500 | 400 | 300 | 250 | 200 | 40 | - | 30 | 20 | 15 | 12 | 10 | 8 | 6 |
| 50/5A | 750 | 600 | 480 | 400 | 300 | 240 | 48 | - | 40 | 24 | - | 20 | 12 | 10 | 8 |
| 60/5A | 900 | 750 | 600 | 450 | 400 | 300 | 60 | 50 | 40 | 30 | 25 | 20 | 15 | 12 | 10 |
| 75/5A | 1200 | 1000 | 800 | 600 | 500 | 400 | 80 | 75 | 60 | 40 | 30 | 25 | 20 | 15 | 12 |
| 100/5A | 2000 | 1500 | 1200 | 1000 | 750 | 600 | 120 | 100 | 80 | 60 | 50 | 40 | 30 | 25 | 20 |
| 150/5A | 2400 | 2000 | 1500 | 1200 | 1000 | 800 | 150 | - | 120 | 80 | 60 | 50 | 40 | 30 | 25 |
| 200/5A | 3000 | 2500 | 2000 | 1500 | 1200 | 1000 | 200 | - | 150 | 100 | 80 | 75 | 50 | 40 | 30 |
| 250/5A | 4000 | 3000 | 2400 | 2000 | 1500 | 1200 | 240 | - | 200 | 120 | 100 | 80 | 60 | 50 | 40 |
| 300/5A | 4000 | - | 3000 | 2000 | - | 1500 | 300 | 250 | 200 | 150 | 120 | 100 | 75 | 60 | 50 |
| 350/5A | 4800 | 4000 | 3000 | 2400 | 2000 | 1500 | 300 | - | 250 | 150 | 120 | 100 | 80 | 75 | 50 |
| 400/5A | 6000 | 5000 | 4000 | 3000 | 2500 | 2000 | 400 | 300 | 250 | 200 | 150 | 120 | 100 | 75 | 60 |
| 450/5A | 6000 | 5000 | 4000 | 3000 | 2500 | 2000 | 400 | - | 300 | 200 | 150 | 120 | 100 | 75 | 60 |
| 500/5A | 7500 | 6000 | 4800 | 4000 | 3000 | 2400 | 500 | - | 400 | 240 | - | 200 | 120 | 100 | 70 |
| 600/5A | 9000 | 7500 | 6000 | 4500 | 4000 | 3000 | 650 | 500 | 400 | 300 | 250 | 200 | 150 | 120 | 100 |
| 750/5A | 10MW | 8000 | 7500 | 5000 | - | 4000 | 700 | 600 | 500 | 300 | 250 | 200 | 150 | 120 | 100 |
| 800/5A | 12MW | 10MW | 8000 | 6000 | 5000 | 4000 | 800 | 750 | 600 | 400 | 300 | 250 | 200 | 150 | 120 |
| 1000/5A | 15MW | 12MW | 10MW | 7500 | 6000 | 5000 | 1000 | 800 | 750 | 500 | 400 | 300 | 250 | 200 | 150 |
| 1200/5A | 20MW | 15MW | 12MW | 10MW | 7500 | 6000 | 1200 | 1000 | 800 | 600 | 500 | 400 | 300 | 250 | 200 |
| 1500/5A | | | | | | | | | | | | | | | |