

VT and CT

3.45/6.9/11.5/23/34.5kV
Up to 5000 Amps

■ Description

Fuji epoxy resin molded type CT and VT feature excellent water- and damp-proof characteristics. There is no danger of insulation deterioration. Their good thermal and mechanical performance make them suitable for a wide range of applications, while the initial cost of VT and CT are very reasonable.

■ Features

- Accuracy: Class 1.0
- No corona is produced.
- FUJI's advanced manufacturing techniques eliminate cracking of molded enclosure.
- VT is provided with a current-limiting fuse to give a large interrupting capacity.

■ Selection note

1. Primary current of CT must be 150% of the load current of measuring.
2. Rated overcurrent constant must be considered when used for circuit protection.
3. Accuracy class, rated burden and maximum voltage.
4. When determining VA, add secondary wiring or cabling burden.

■ General specifications

Current transformer (CT)

- Accuracy class: 1.0
- Maximum voltage: Up to 34.5kV
- Rated frequency: 50/60Hz
- Secondary current: 5A

Voltage transformer (VT)

- Accuracy class: 1.0
- Maximum voltage: Up to 33kV
- Rated frequency: 50/60Hz
- Secondary voltage: 110V

■ Current transformers



RC15-6C

RC15-6C



N33-142-12

CE3-10

● Epoxy resin molded CT NCE, CEC, CEA and CE types

NCE, CEC and CEA are used in distribution circuits of up to 6.9kV. Only the primary and secondary windings are molded in epoxy resin. CE type is designed for use in circuits between 11.5 – 34.5kV. Iron core windings, terminal stand and insulation are all integrated into one body and encapsulated with epoxy resin in a vacuum. The iron core is fabricated from silicon steel plate which ensures an excellent electrical performance. The corona and insulating characteristics are excellent so assuring a long service life. There is no fear of the epoxy resin cracking. The transformer is compact in design and takes up little space on installation.

RC15 type: 5/5–750/5 Amps, 6.9kV
NCE type: 10/5–400/5 Amps, 6.9kV
CEC type: 10/5–200/5 Amps, 6.9kV
CEA type: 300/5–2000/5 Amps, 6.9kV
CE type: 50/5–5000/5 Amps,
11.5–34.5kV

■ Types and ratings: See pages 11/38 and 11/39.

■ Dimensions: See pages 11/40 to 11/42.

■ Voltage transformers



CP-624

NPE12-6FA



N33-142-12

PE4-30

● Epoxy resin molded VT NPE, PEC and PE types

These types have both primary and secondary windings molded in epoxy resin. The insulating resin is also strong against chemical attack which makes the transformer suitable for use in chemical plants and other similar locations. PE type has windings, core and terminals incorporated into one body. It can be used for measuring voltages in the 11kV–33kV range.

■ Types and ratings: See pages 11/38.

■ Dimensions: See pages 11/43.

H.V. Distribution Equipment

Instrument transformers

General information

■ Selection table/CT

Maximum voltage	3.45/6.9kV	11.5kV	23kV	34.5kV
Type	RC15-6C (5–750A) NCE2-6B (10–400A) CEC1-6M (10–200A) CEA1-6M (300–2000A)	CE3-10 (50–1200A) CE5-10 (1500–2000A) CE2-10 (1500–4000A) CE6-10 (5000A)	CE1-20 (50–1200A) CE5-20 (1500–2000A) CE2-20 (1500–4000A) CE6-20 (5000A)	CE4-30 (50–1200A)

■ Selection table/VT

Voltage class	3kV	6kV	10kV	15kV	20kV	30kV
Type	NPE12-3FA (50VA) NPE12-3FA (100VA) PEC2-3FA (200VA)	NPE12-6FA (50VA) NPE12-6FA (100VA) PEC2-6FA (200VA)	PE10-10 PE11-10	PE10-15	PE12-20	PE4-30

■ Ordering information

Current transformer (CT)

Specify the following:

1. Type number
2. Rated voltage
3. Rated primary current
4. Rated secondary current
5. Rated frequency
6. Rated burden
7. Accuracy class

Voltage transformer (VT)

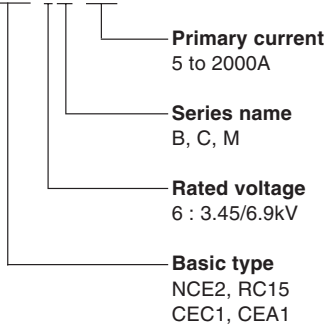
Specify the following:

1. Type number
2. Rated primary voltage
3. Rated secondary voltage
4. Rated frequency
5. Rated burden
6. Accuracy class

■ Type number nomenclature

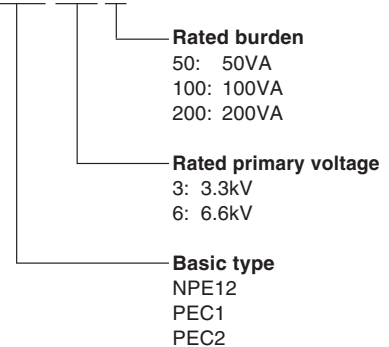
● Current transformer
Up to 6.9kV

CEC1-6M/100



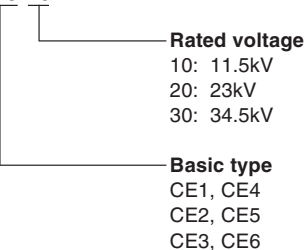
● Voltage transformer
Up to 6.6kV

NPE12-3FA/50



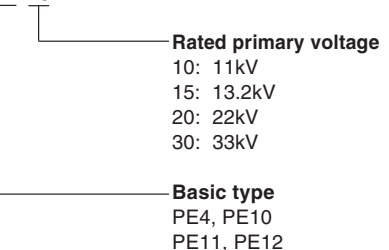
11.5 to 34.5kV

CE3-10






11 to 33kV

PE4-10




■ Types and ratings CT 3.45/6.9kV

Illustration	Max. voltage (kV)	Primary/Secondary current (A)	Type	Withstand current (kA/1s)	Mass (kg)	Technical information			
 <p>RC15-6C RC15-6C</p>	6.9 (3.45 common use)	5/5	RC15-6C/5	0.2	4.5	<ul style="list-style-type: none"> Rated overcurrent constant (n): n > 10 (at burden 10VA) n > 5 (at burden 20VA) Rated burden: 40VA Accuracy class: 1.0 Insulation level Withstand voltage (AC 1min.) Primary: 22kV, Secondary: 2kV Basic-impulse insulation level: 60kV (full wave) 			
		10/5	RC15-6C/10	0.4	4.5				
		15/5	RC15-6C/15	0.6	4.5				
		20/5	RC15-6C/20	0.8	4.5				
		30/5	RC15-6C/30	1.2	4.5				
		40/5	RC15-6C/40	1.6	4.5				
		50/5	RC15-6C/50	2	4.5				
		60/5	RC15-6C/60	2.4	4.5				
		75/5	RC15-6C/75	3	4.5				
		100/5	RC15-6C/100	4	4.5				
		150/5	RC15-6C/150	6	4.5				
		200/5	RC15-6C/200	8	4.5				
		300/5	RC15-6C/300	12	4.5				
		400/5	RC15-6C/400	16	4.5				
		500/5	RC15-6C/500	20	4.5				
		600/5	RC15-6C/600	24	4.5				
		750/5	RC15-6C/750	30	4.5				
		 <p>SH-1045 CEC1-6M</p>	6.9 (3.45 common use)	10/5	NCE2-6B/10		0.4	7.5	<ul style="list-style-type: none"> Rated overcurrent constant (n): n > 10 Rated burden: 40VA Accuracy class: 1.0 Insulation level Withstand voltage (AC 1min.) Primary: 22kV, Secondary: 2kV Basic-impulse insulation level: 60kV (full wave)
				15/5	NCE2-6B/15		0.6	7.5	
20/5	NCE2-6B/20			0.8	7.5				
30/5	NCE2-6B/30			1.2	7.5				
40/5	NCE2-6B/40			1.6	7.5				
50/5	NCE2-6B/50			2	7.5				
75/5	NCE2-6B/75			3	7.5				
100/5	NCE2-6B/100			4	7.5				
150/5	NCE2-6B/150			6	7.5				
200/5	NCE2-6B/200			8	7.5				
300/5	NCE2-6B/300			12	7.5				
400/5	NCE2-6B/400	16	7.5						
 <p>SH-1046 CEA1-6M</p>	6.9 (3.45 common use)	10/5	CEC1-6M/10	2.5	12	<ul style="list-style-type: none"> Rated overcurrent constant (n): n > 10 Rated burden: 25VA Accuracy class: 1.0 Insulation level Withstand voltage (AC 1min.) Primary: 22kV, Secondary: 2kV Basic-impulse insulation level: 60kV (full wave) 			
		15/5	CEC1-6M/15	3.75	12				
		20/5	CEC1-6M/20	5	12				
		30/5	CEC1-6M/30	7.5	12				
		40/5	CEC1-6M/40	10	12				
		50/5	CEC1-6M/50	12.5	12				
		75/5	CEC1-6M/75	18.75	12				
		100/5	CEC1-6M/100	25	12				
		150/5	CEC1-6M/150	25	12				
		200/5	CEC1-6M/200	25	12				
		300/5	CEA1-6M/300	25	10				
		400/5	CEA1-6M/400	25	10				
		500/5	CEA1-6M/500	25	10				
		600/5	CEA1-6M/600	25	10				
		750/5	CEA1-6M/750	25	10				
		1000/5	CEA1-6M/1000	25	10				
		1200/5	CEA1-6M/1200	25	10				
		1500/5	CEA1-6M/1500	25	10				
		2000/5	CEA1-6M/2000	25	10				

H.V. Distribution Equipment





Instrument transformers

■ Types and ratings VT 3300V – 33000V

Illustration	Primary/Secondary voltage (V)	Rated burden (VA)	Type	Interrupting capacity of fuse	Mass (kg)	Technical information
	3300/110	50	NPE12-3FA/50	40kA ^{*1}	8.5	<ul style="list-style-type: none"> • Accuracy class: 1.0 • Insulation level <ul style="list-style-type: none"> NPE12-3FA } BIL 45kV^{*2}, 16kV AC PEC2-3FA } NPE12-6FA } BIL 60kV, 22kV AC PEC2-6FA } PE11-10 } BIL 90kV, 28kV AC PE10-10 } PE10-15 } BIL 95kV, 34kV AC PE12-20 } BIL 125kV, 50kV AC PE4-30 } BIL 170kV, 70kV AC
	6600/110	50	NPE12-6FA/50	40kA ^{*1}	8.5	
	3300/110	100	NPE12-3FA/100	40kA ^{*1}	8.5	
	6600/110	100	NPE12-6FA/100	40kA ^{*1}	8.5	
	3300/110	200	PEC2-3FA/200	40kA ^{*1}	14	
	6600/110	200	PEC2-6FA/200	40kA ^{*1}	14	
	11000/110	200	PE11-10	40kA ^{*3}	25	
	11000/110	200 ^{*6}	PE10-10	40kA ^{*3}	38	
	13200/110	200 ^{*6}	PE10-15	31.5kA ^{*4}	38	
	22000/110	200	PE12-20	40kA ^{*5}	41	
	33000/110	200	PE4-30	–	68	

Note: *1 Type PTFA-6, rated current 2A (provided with VT as standard) *2 BIL: Basic-impulse insulation level (full wave)
 *3 Type JR-10/5 (optional), rated current 5A *4 Type JR-10N/5 (optional), rated current 5A *5 Type JR-20/5 (optional), rated current 5A
 *6 400VA available

■ Types and ratings CT 11.5kV – 34.5kV

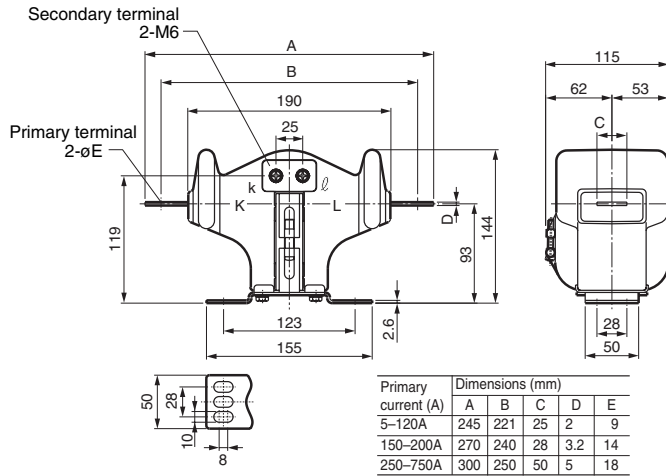
Illustration	Max. voltage (kV)	Primary current (A) Single ratio Double ratio	Secondary current (A)	Type	Withstand current (kA/1s)	Mass (kg)	Technical information				
 N33-142-12 CE3-10	11.5	50/5 – 75/5 – 100/5 200-100 150/5 300-150 200/5 400-200 300/5 600-300 400/5 800-400 500/5 1000-500 600/5 1200-600 750/5 – 1000/5 – 1200/5 –	5	CE3-10	25	19 to 26	<ul style="list-style-type: none"> • Accuracy class: 1.0 • Rated overcurrent constant (n): n > 10 • Rated burden 15VA (Primary current 50A) 25VA (Primary current 75A) 40VA (Primary current over 100A) • Insulation level Dielectric strength: 28kV • Basic-impulse insulation level: 90kV (full wave) 				
		1500/5 – 2000/5 2000-1000					5	CE5-10	25*	62	<ul style="list-style-type: none"> • Accuracy class: 1.0 • Rated overcurrent constant (n): n > 10
		1500/5 – 2000/5 2000-1000 3000/5 3000-1500 4000/5 4000-2000						CE2-10	50	41 to 66	<ul style="list-style-type: none"> • Rated burden: 60VA • Insulation level: Dielectric strength: 28kV Basic-impulse insulation level: 90kV (full wave)
		5000/5 5000-2500						CE6-10	50	41 to 66	
 N33-142-12 CE2-10 CE2-20	23	50/5 – 75/5 – 100/5 200-100 150/5 300-150 200/5 400-200 300/5 600-300 400/5 800-400 500/5 1000-500 600/5 1200-600 750/5 – 1000/5 – 1200/5 –	5	CE1-20	25*	26 to 35	<ul style="list-style-type: none"> • Accuracy class: 1.0 • Rated overcurrent constant (n): n > 10 • Rated burden: 15VA (Primary current 50A) 25VA (Primary current 75A) 40VA (Primary current over 100A) • Insulation level Dielectric strength : 50kV Basic-impulse insulation level: 125kV (full wave) 				
		1500/5 – 2000/5 2000-1000					5	CE5-20	25*	62	<ul style="list-style-type: none"> • Accuracy class: 1.0 • Rated overcurrent constant (n): n > 10 • Rated burden: 60VA
		1500/5 – 2000/5 2000-1000 3000/5 3000-1500 4000/5 4000-2000						CE2-20	50	41 to 66	<ul style="list-style-type: none"> • Insulation level Dielectric strength: 50kV Basic-impulse insulation level: 125kV (full wave)
		5000/5 5000-2500						CE6-20	50	41 to 66	
 N33-142-12 CE1-20	23	50/5 – 75/5 – 100/5 200-100 150/5 300-150 200/5 400-200 300/5 600-300 400/5 800-400 500/5 1000-500 600/5 1200-600 750/5 – 1000/5 – 1200/5 –	5	CE1-20	25*	26 to 35	<ul style="list-style-type: none"> • Accuracy class: 1.0 • Rated overcurrent constant (n): n > 10 • Rated burden: 15VA (Primary current 50A) 25VA (Primary current 75A) 40VA (Primary current over 100A) • Insulation level Dielectric strength : 50kV Basic-impulse insulation level: 125kV (full wave) 				
		1500/5 – 2000/5 2000-1000					5	CE5-20	25*	62	<ul style="list-style-type: none"> • Accuracy class: 1.0 • Rated overcurrent constant (n): n > 10 • Rated burden: 60VA
		1500/5 – 2000/5 2000-1000 3000/5 3000-1500 4000/5 4000-2000						CE2-20	50	41 to 66	<ul style="list-style-type: none"> • Insulation level Dielectric strength: 50kV Basic-impulse insulation level: 125kV (full wave)
		5000/5 5000-2500						CE6-20	50	41 to 66	
 N33-142-12 CE4-30	34.5	50/5 – 75/5 – 100/5 200-100 150/5 300-150 200/5 400-200 300/5 600-300 400/5 800-400 500/5 1000-500 600/5 1200-600 750/5 – 1000/5 – 1200/5 –	5	CE4-30	25	36 to 50	<ul style="list-style-type: none"> • Accuracy class: 1.0 • Rated overcurrent constant (n): n > 10 • Rated burden: 15VA (Primary current 50A) 25VA (Primary current 75A) 40VA (Primary current over 100A) • Insulation level Dielectric level: 70kV Basic-impulse insulation level: 170kV (full wave) 				
		1500/5 – 2000/5 2000-1000					5	CE5-30	25*	62	<ul style="list-style-type: none"> • Accuracy class: 1.0 • Rated overcurrent constant (n): n > 10 • Rated burden: 60VA
		1500/5 – 2000/5 2000-1000 3000/5 3000-1500 4000/5 4000-2000						CE2-30	50	41 to 66	<ul style="list-style-type: none"> • Insulation level Dielectric strength: 70kV Basic-impulse insulation level: 170kV (full wave)
		5000/5 5000-2500						CE6-30	50	41 to 66	

Note: * Withstand current of 25kA/2s type is also available

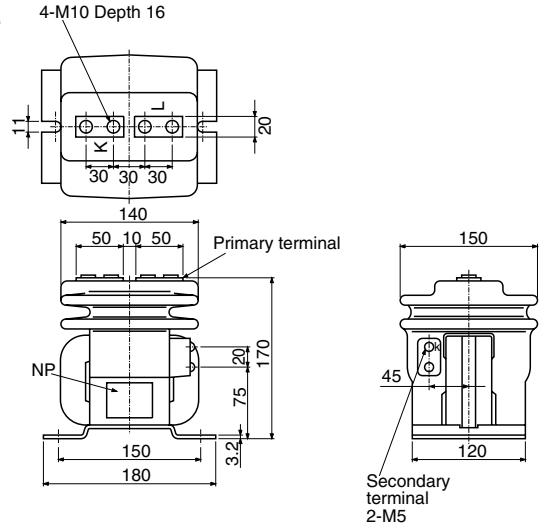
H.V. Distribution Equipment Instrument transformers

■ Dimensions, mm/CT

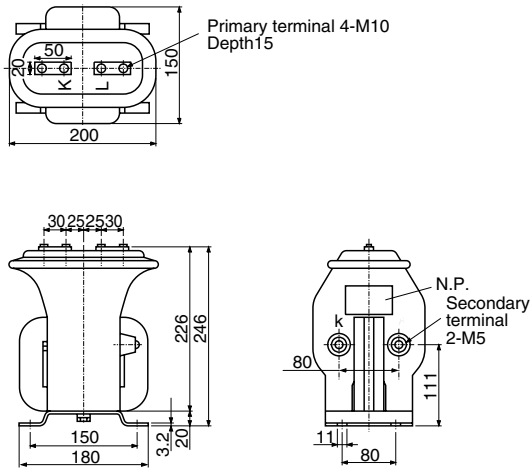
RC15-6C



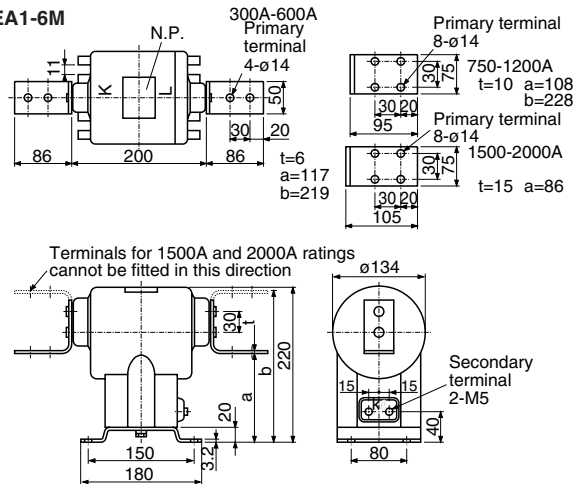
NCE2-6B



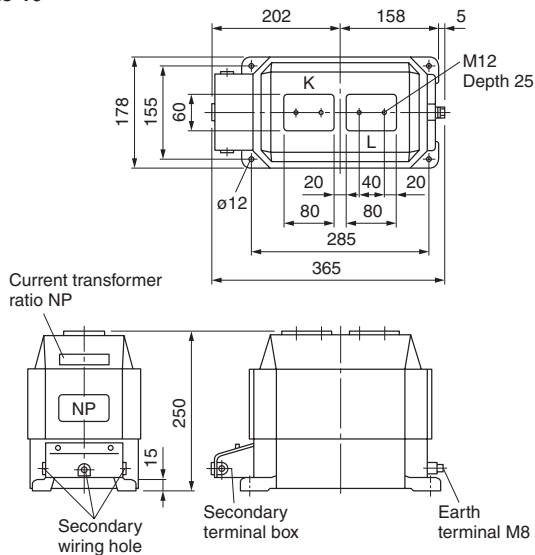
CEC1-6M



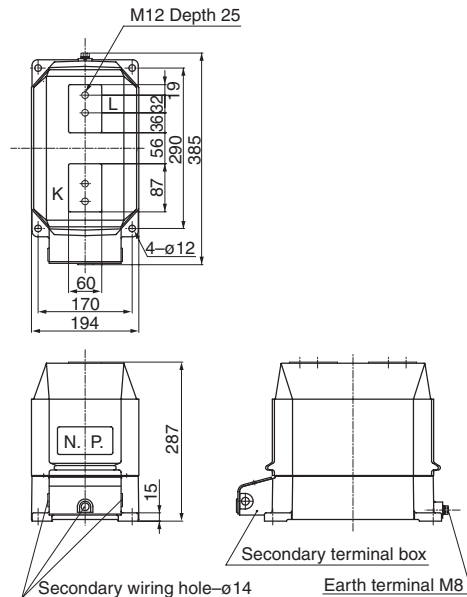
CEA1-6M



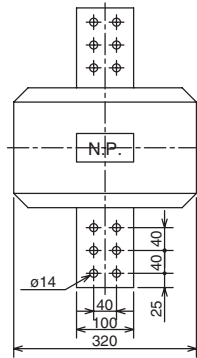
CE3-10



CE1-20

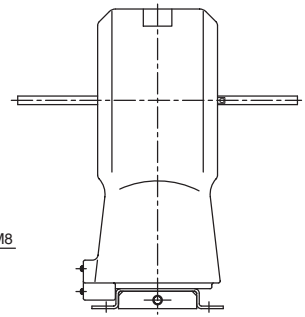
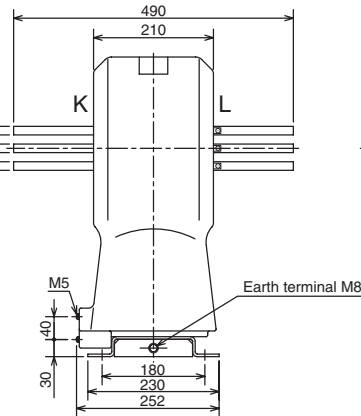
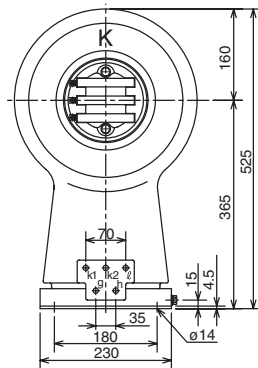
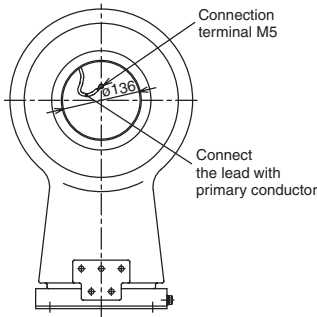


■ Dimensions, mm/CT
CE2-10, CE2-20

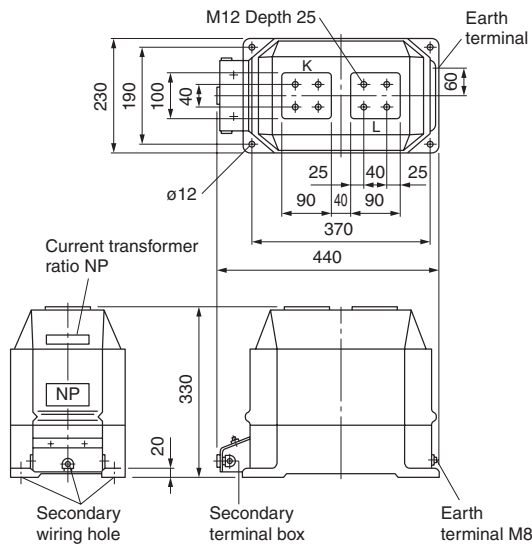


Primary current	Thickness of conductor T	No. of primary conductors
1500A	10	1
2000A, 2000-1000A	15	1
3000A, 3000-1500A	10	3
4000A, 4000-2000A	15	3

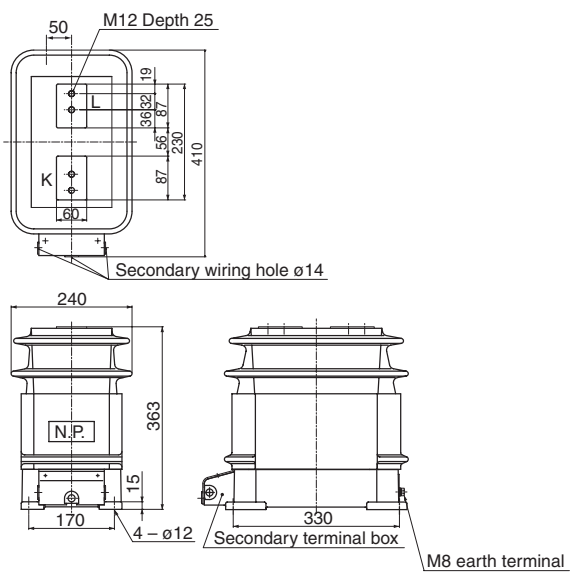
Standard	Terminal symbol			Terminal	
	Primary	Secondary			
		Single ratio	Double ratio	Double core	
IEC BS	P1, P2	S1, S2	S1-S2-S3	1S1-1S2, 2S1-2S2	—
ANSI	H1, H2	X1, X2	X1-X2-X3	X1-X2, Y1-Y2	—
JEC	K, L	k, l	k1-k2-l	1k-1l, 2k-2l	g, h



CE5-10, CE5-20



CE4-30



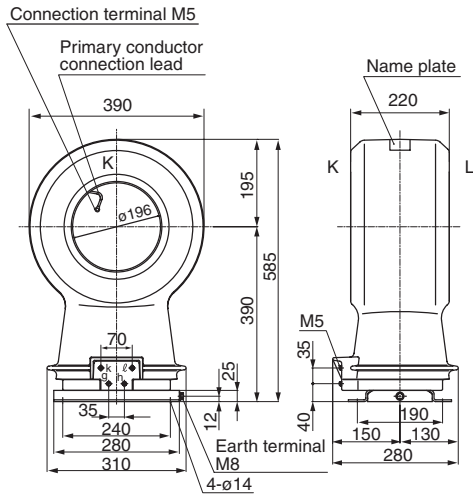
H.V. Distribution Equipment

Instrument transformers

■ Dimensions, mm/CT

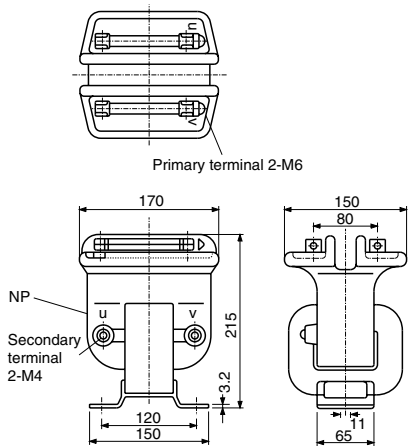
CE6-10

CE6-20

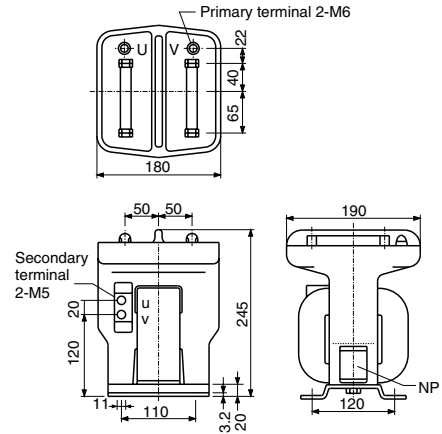


■ Dimensions, mm/VT (with fuse links)

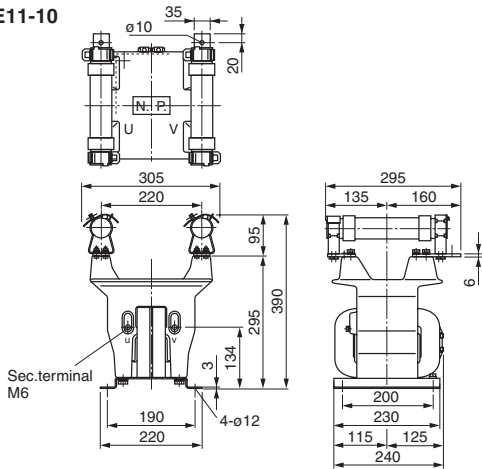
NPE12-3FA
NPE12-6FA



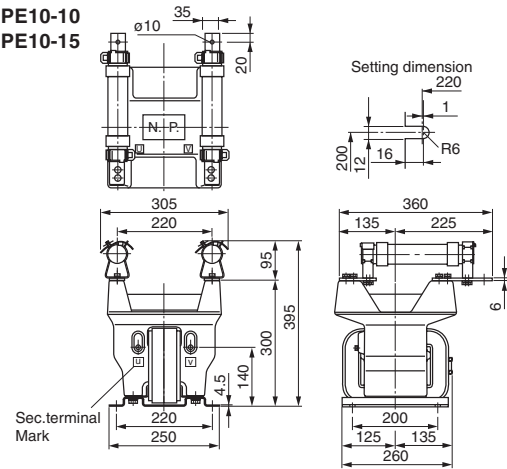
PEC2-3FA
PEC2-6FA



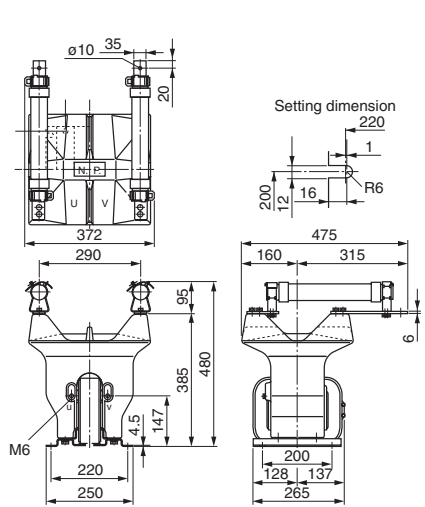
PE11-10



PE10-10
PE10-15



PE12-20



PE4-30

