Cesky metrologicky institut

Certificat pentru aprobarea tipului

Nr. 0111-CS-A008-18

Institutul Ceh de Metrologie, în conformitate cu Legea metrologiei nr. 505/1990 Coll., cu modificările ulterioare

a aprobat

transformatorul de curent de măsură
tipurile TPU 4x.xx, TPU 5x.xx, TPU 6x.xx, TPU 7x.xx, TPE 6O.xx și TPE 63.xx

cu respectarea datelor tehnice menționate în Anexa acestui Certificat.

Marcă de aprobare tip: **TCM 212/18 - 5547**

Solicitant: **ABB s.r.o.**
Vyskocilova 1561/4a
140 00 Praga Cehia
ID:49682563

Producător: **ABB s.r.o.**
Cehia

Valabil până la: **20 martie 2028**

Informații privind căile de atac juridic:
Căile de atac împotriva acestei decizii sunt disponibile solicitantului prin intermediul Institutului Ceh de Metrologie către Oficiul Ceh pentru Standardizare, Metrologie și Testare, în termen de 15 zile de la primirea acestui certificat.

Descriere:
Caracteristicile esențiale, condițiile aprobate, condițiile speciale, rezultatele examinării, inclusiv desenele tehnice și schemele, sunt prezentate în raportul de încercare tehnică aferent acestui certificat. Certificatul este compus din pagina de față și raportul de încercare tehnică. Certificatul are 29 de pagini.

[Ștampilă indescifrabilă] [Semnătură indescifrabilă]

Brno, 21 martie 2018

RNDr. Pavel Klenovsky
Director General

Raport tehnic de încercare

1. Descrierea echipamentului de măsurare

Transformatoarele de curent TPU 4x.xx, TPU 5x.xx, TPU 6x.xx, TPU 7x.xx, TPE 60.xx şi TPE 63.xx sunt proiectate pentru măsurare sau protecţie, posibil şi pentru utilizări speciale în medii interioare. Acestea sunt turnate în răşină epoxidică, cu posibilitatea de montare în orice poziţie şi sunt concepute pentru tensiuni de izolaţie între 3,6kV şi 40,5kV. Transformatoarele sunt proiectate ca transformatoare cu o singură spira sau cu mai multe spire, cu un singur raport de transformare, sau cu posibilitatea de a fi comutate pe partea secundară sau primară. Înfăşurările secundare sunt destinate pentru măsurare, protecţie sau scopuri speciale. În timpul funcţionării, un terminal al fiecărei înfăşurări secundare utilizate, precum şi un terminal al înfăşurării neutilizate scurtcircuitate, trebuie legate la pământ. Înfăşurările secundare sunt conduse către o placă de borne secundare turnată.

2. Metrologie de bază şi date tehnice

Tip	TPU 4x.xx	TPU 5x.xx	TPU 6x.xx
Tensiunea maximă pentru echipament	max. 12kV	max. 17,5kV	max. 25kV
Tensiunea de încercare la frecvenţa industrială	max. 28kV	max. 38kV	max. 50kV
Tensiunea de încercare la impuls de trăsnet	max. 75kV	max. 95kV	max. 125kV
Curentul primar nominal	(5 - 3200) A		
Curentul secundar nominal	1A, 5A		
Curentul termic continuu maxim admis nominal	max. 200% din curentul primar nominal		
Numărul de înfăşurări secundare de măsurare	max. 6		
Numărul de înfăşurări secundare pentru verificare	max. 6		
Clasa de precizie a înfăşurării de măsurare	0,1; 0,2; 0,5 ; 0,2S; 0,5S		
Puterea înfăşurării de măsurare	max. 30VA		
Frecvenţa nominală	50/60Hz		
Domeniul extins al curentului	max. 200% din curentul primar nominal		

Tip	TPU 7x.xx
Tensiunea maximă pentru echipament	max. 40,5kV
Tensiunea de încercare la frecvenţa industrială	max. 95kV
Tensiunea de încercare la impuls de trăsnet	Max. 200kV
Curentul primar nominal	(5 - 2500) A
Curentul secundar nominal	1A, 5A
Curentul termic continuu maxim admis nominal	max. 200% din curentul primar nominal
Numărul de înfăşurări secundare de măsurare	max. 4
Numărul de înfăşurări secundare pentru verificare	max. 4
Clasa de precizie a înfăşurării de măsurare	0,1; 0,2; 0,5 ; 0,2S; 0,5S
Puterea înfăşurării de măsurare	max. 30VA
Frecvenţa nominală	50/60Hz
Domeniul extins al curentului	max. 200% din curentul primar nominal

Tip	TPE 6O.xx;	TPE 63.xx
Tensiunea maximă pentru echipament	max. 25kV	max. 25kV
Tensiunea de încercare la frecvența industrială	max. 50kV	max. 50kV
Tensiunea de încercare la impuls de trăsnet	Max. 125kV	Max. 125kV
Curentul primar nominal	(5 - 600) A	(5 - 1250) A
Curentul secundar nominal	1A, 5A	1A, 5A
Curentul termic continuu maxim admis nominal	max. 200% din curentul primar nominal	max. 200% din curentul primar nominal
Numărul de înfășurări secundare de măsurare	1-2	1-2
Numărul de înfășurări secundare pentru verificare	1 -2	1 -2
Număr de domenii primare	1-3	1-3
Clasa de precizie a înfășurării de măsurare	0,1; 0,2; 0,5 ; 0,2S; 0,5S	0,1; 0,2; 0,5 ; 0,2S; 0,5S
Puterea înfășurării de măsurare	max. 30VA	max. 30VA
Frecvența nominală	50/60Hz	50/60Hz
Domeniul extins al curentului	max. 200% din curentul primar nominal	max. 200% din curentul primar nominal

3. Date despre echipamentul de măsurare

Transformatoarele sunt prevăzute cu o etichetă autoadezivă din plastic, nereutilizabilă. Pe această etichetă sunt înscrise următoarele date:

a) Denumirea producătorului
b) Seria, tipul și anul fabricației
c) Curentul nominal primar și secundar
d) Suprasarcina admisă
e) Puterea nominală și clasa de precizie pentru fiecare înfășurare
f) Frecvența nominală
g) Tensiunea de izolație
h) Marcajul de aprobare tip

4. Încercare de tip

Încercările de tip au fost efectuate de Institutul Ceh de Metrologie în cadrul Laboratorului Tehnic ABB, s.r.o. EPMV Brno, în colaborare cu producătorul, pentru întreaga gamă, conform standardelor IEC 61869-1 (ČSN EN 61869-1) și IEC 61869-2 (ČSN EN 61869-2) — vezi rapoartele de încercare de tip ale laboratoarelor ABB și PEHLA nr. 14193Ra, 14194Ra, 14201Ra, 14202Ra, 14203Ra, 14204Ra, 14205Ra, 14206Ra, 14207Ra, 14208Ra, 14210Ra, 1421 lRa, 14217Ra, 14218Ra, 14219Ra, 14220Ra, 14221Ra, 14222Ra, 14223Ra, 14224Ra, 14227Ra, 14228Ra, 14233Ra, 14234Ra, 14235Ra, 14236Ra, 15043Ra, 15044Ra, 15047Ra, 15048Ra, 14197Ra, 14198Ra, 14199Ra, 14200Ra, 14209Ra, 14215Ra, 14225Ra, 14231Ra, 14238Ra, 14242Ra, 14244Ra, 14257Ra, 14262Ra, 15046Ra, 15049Ra, 15050Ra, 14245Ra, 14246Ra, 14247Ra, 14248Ra, 14249Ra, 14250Ra, 14241Ra, 14242Ra, 14244Ra, 14251Ra, 15051Ra, 15055Ra, 14267Ra, 14268Ra, 15056Ra, 15057Ra, 15059Ra, 15060Ra, 15061Ra, 15062Ra, 14257Ra, 14262Ra, 15058Ra, 15063Ra, 14263Ra, 14269Ra, 15068Ra, 15069Ra, 15070Ra, 15071Ra, 15072Ra, 14258Ra, 1VLR018254, 15052Ra, 15053Ra și 15054Ra. Rapoartele de încercare, inclusiv rezultatele testelor și documentația tehnică, sunt păstrate la Institutul Ceh de Metrologie, în Laboratorul de metrologie primară (Departamentul de Mărimi Electromagnetice) din Praga. Rapoartele de încercare de tip conțin toate încercările de tip obligatorii conform standardelor IEC 61869-1 și IEC 61869-2, relevante pentru acest tip de transformatoare de curent.

Rezultatele încercărilor de tip au arătat că aparatul respectă cerințele standardelor menționate și este aprobat pentru utilizare în sistemul de transport din Republica Cehă. Dacă sunt respectate instrucțiunile producătorului, aparatul este capabil să își îndeplinească funcția fără impact negativ asupra siguranței personalului și a mediului.

5. Verificare

Verificarea se efectuează conform documentului valabil emis de CMI pentru verificarea transformatoarelor de instrumentație. Transformatoarele care trec testele cerute sunt marcate cu un semn oficial (marcaj de verificare, etichetă sau sigiliu).

6. Perioada de valabilitate a verificării

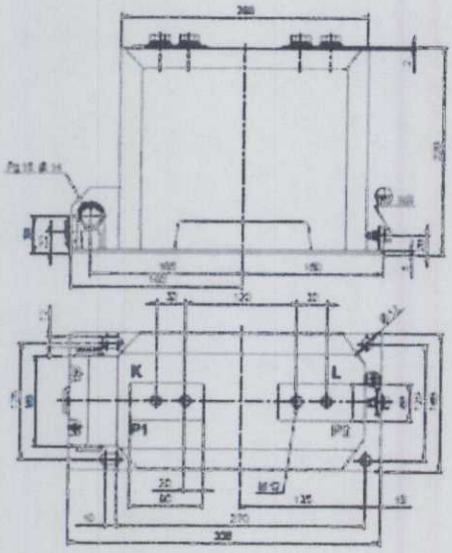
Perioada de valabilitate a verificării este stabilită prin ordin al Ministerului Industriei și Comerțului.

Anexa: Schemele TPU 4x.xx, TPU 5x.xx, TPU 6x.xx, TPU 7x.xx, TPE 6O.xx și TPE 63.xx.

ANEXA

TPU 40.11
TPU 43.11

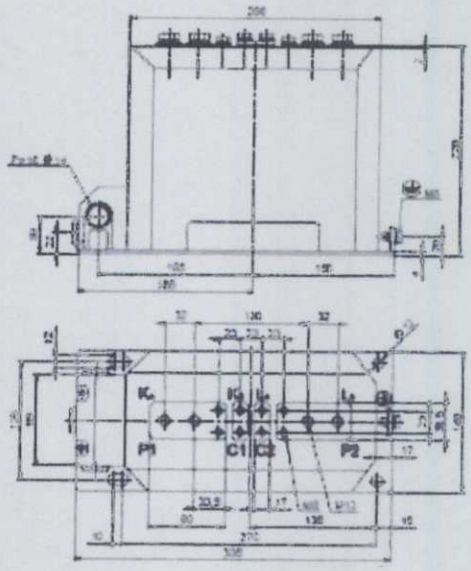
Greutate: 20- 24kg
Distanță de fugă 201 mm



Drawing n	Polarity
4481140320	P1 to secondary terminal
4481140110	P2 to secondary terminal

TPU 40.12

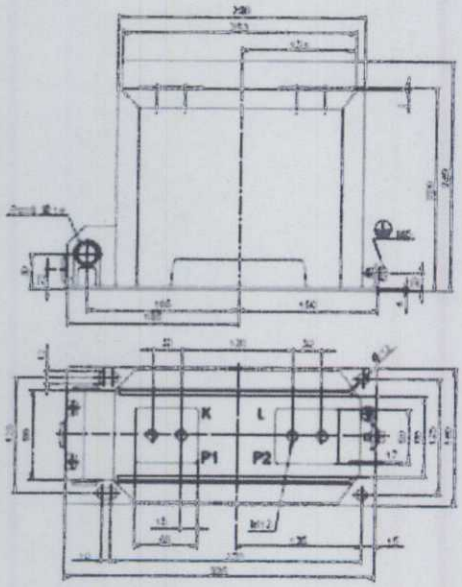
Greutate: 19 25kg
Distanță de fugă: 338 mm



Drawing n	Polarity
4481140330	P1 to secondary terminal
4481140350	P2 to secondary terminal

TPU 40.13
TPU 43.13

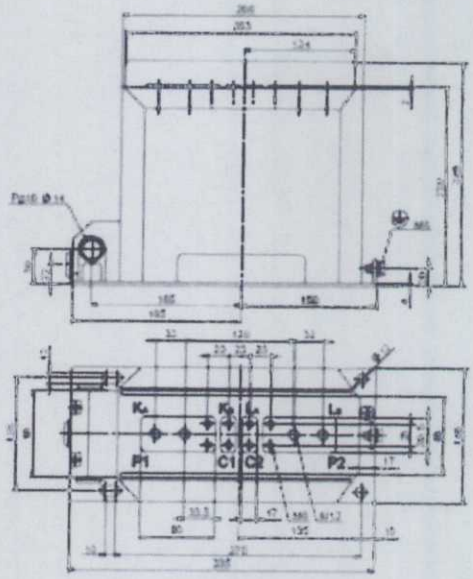
Greutate: 20 24kg
Distanță de fugă 214mm



Drawing n	Polarity
4481140410	P1 to secondary terminal
4481140510	P2 to secondary terminal

TPU 40.14

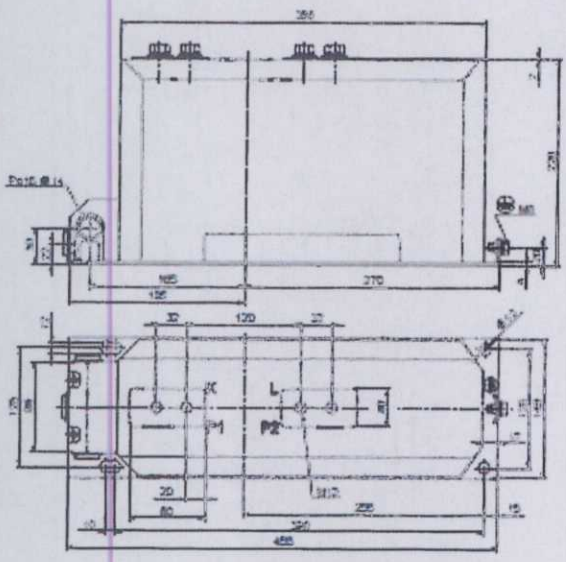
Greutate 19 25kg
Distanță de fugă: 201mm



Drawing n	Polarity
4481140510	P1 to secondary terminal
4481140710	P2 to secondary terminal

TPU 40.21
TPU 43.21

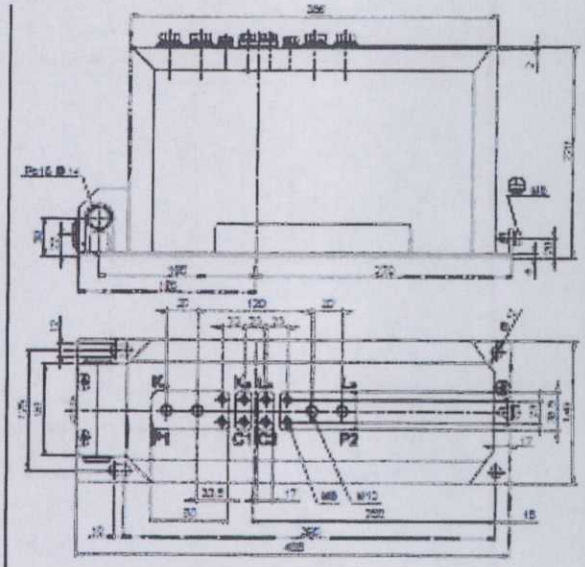
Greutate: 29-37kg
Distanță de fugă: 201 mm



Drawing n	Polarity
44614060	P1 to secondary terminal
44614090	P2 to secondary terminal

TPU 40.22

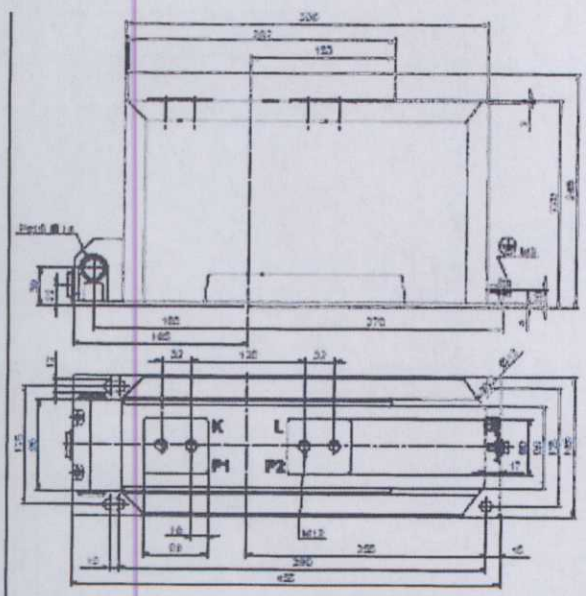
Greutate; 2937kg
Distanță de fugă: 215mm



Drawing n	Polarity
44614100	P1 to secondary terminal
44614110	P2 to secondary terminal

TPU 40.23
TPU 43.23

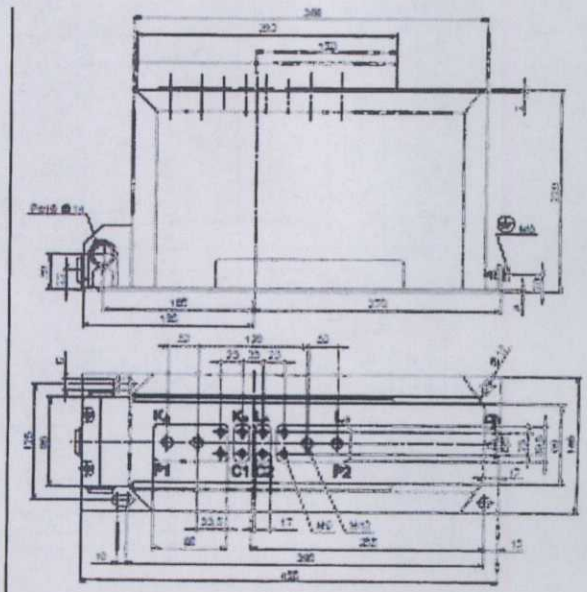
Greutate: 29-37kg
Distanță de fugă: 214mm



Drawing n	Polarity
44614120	P1 to secondary terminal
44614130	P2 to secondary terminal

TPU 40.24

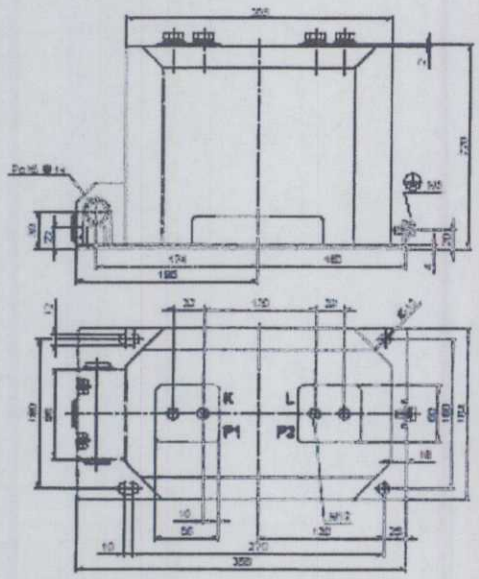
Greutate: 29 37kg
Distanță de fugă: 215mm



Drawing n	Polarity
44614140	P1 to secondary terminal
44614150	P2 to secondary terminal

TPU 40.31
TPU 43.31

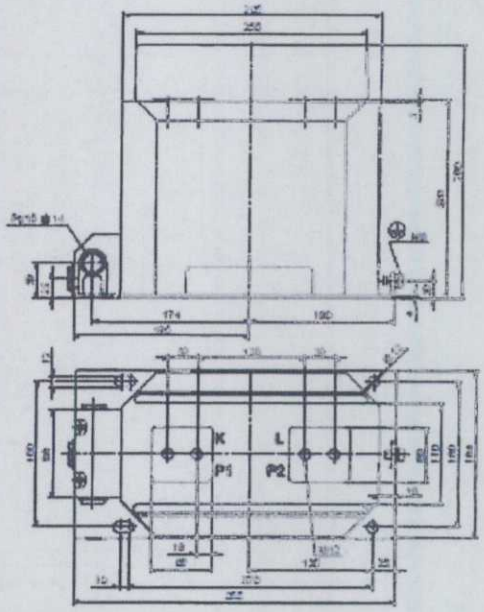
Greutate: 31 39kg
Distanță de fugă: 215mm



Drawing n	Polarity
44814160	P1 to secondary terminal
44814170	P2 to secondary terminal

TPU 40.33
TPU 43.33

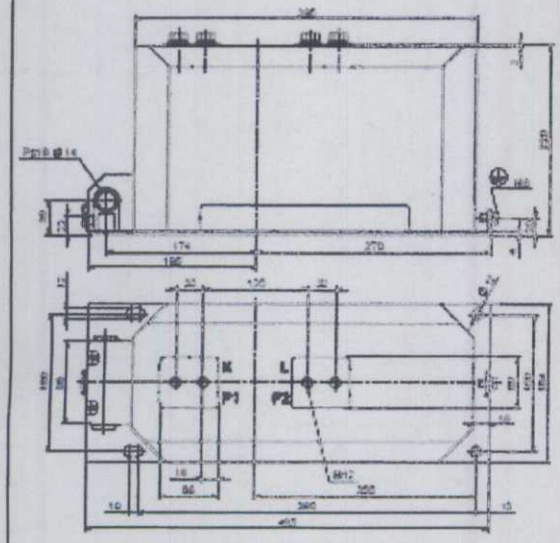
Greutate: 31 39kg
Distanță de fugă: 215mm



Drawing n	Polarity
44814180	P1 to secondary terminal
44814190	P2 to secondary terminal

TPU 40.41
TPU 41.41
TPU 43.41

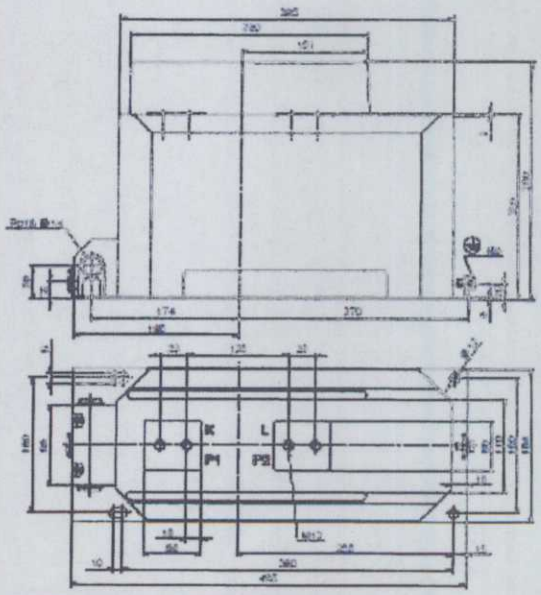
Greutate; 45-55kg
Distanță de fugă: 215mm



Drawing n	Polarity
44814200	P1 to secondary terminal
44814210	P2 to secondary terminal

TPU 40.43
TPU 41.43
TPU 43.43

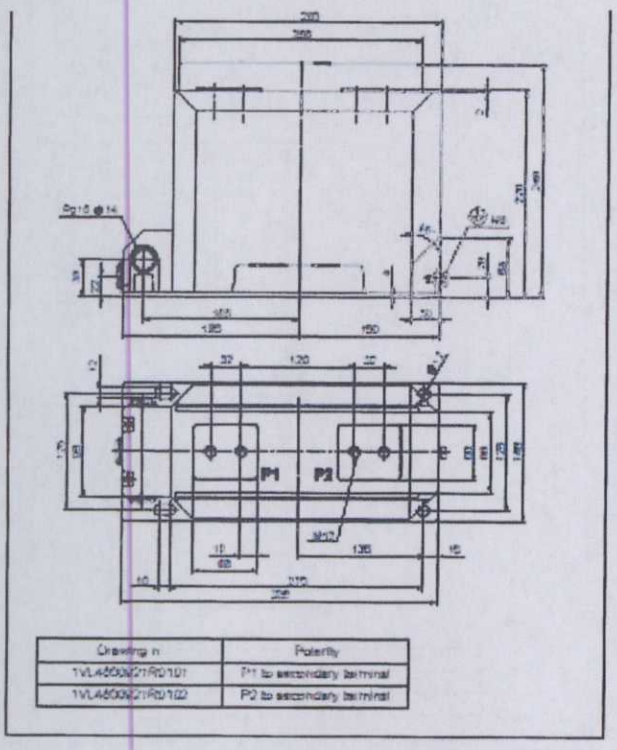
Greutate: 45-55kg
Distanță de fugă: 215mm



Drawing n	Polarity
44814220	P1 to secondary terminal
44814230	P2 to secondary terminal

TPU 40.53
TPU 43.63

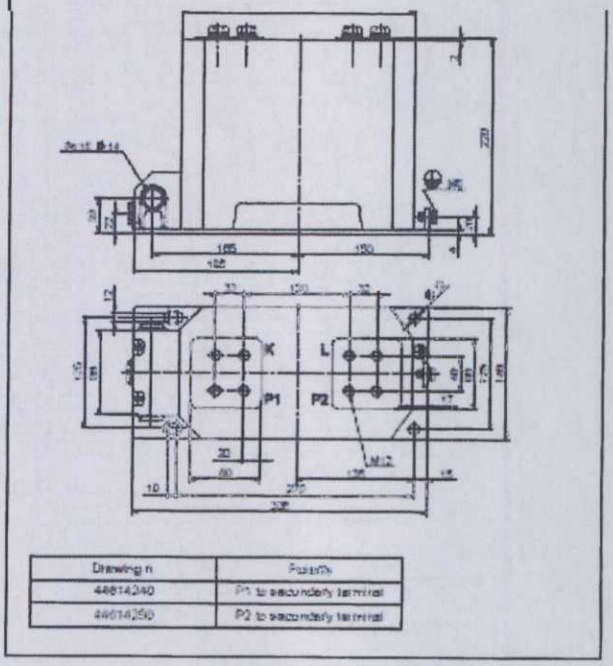
Greutate: 28kg
Distanță de fugă: 214mm



Drawing n	Polarity
1VLA600021R0101	P1 to secondary terminal
1VLA600021R0102	P2 to secondary terminal

TPU 44.11
TPU 45.11
TPU 46.11
TPU 47.11
TPU 48.11

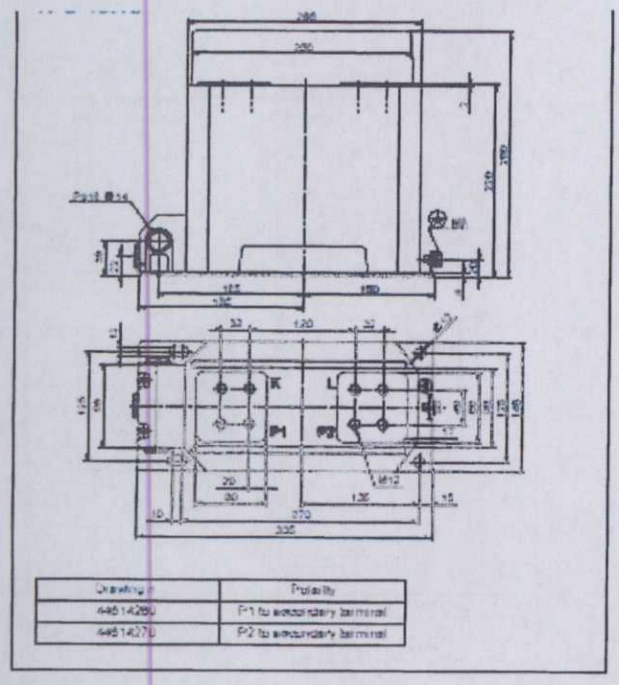
Greutate: 25-31 kg
Distanță de fugă: 201mm



Drawing n	Polarity
44814240	P1 to secondary terminal
44814250	P2 to secondary terminal

TPU 44.13
TPU 45.13
TPU 46.13
TPU 47.13
TPU 46.13

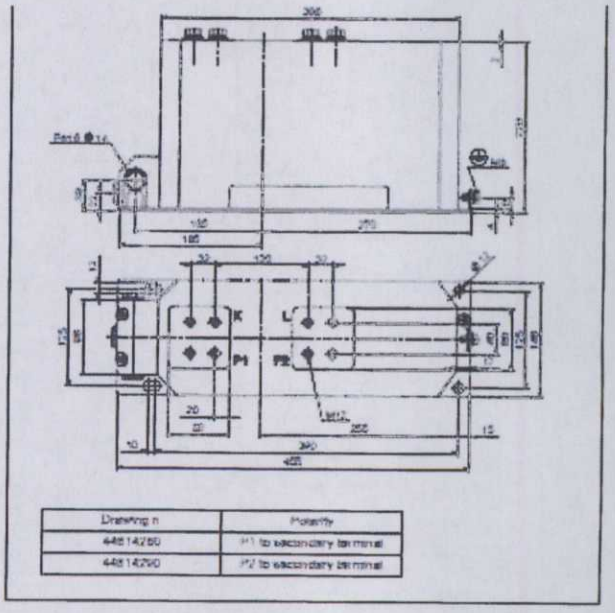
Greutate: 28 – 31kg
Distanță de fugă: 201mm



Drawing n	Polarity
44814260	P1 to secondary terminal
44814270	P2 to secondary terminal

TPU 44.21
TPU 45.21
TPU 46.21
TPU 47.21
TPU 48.21

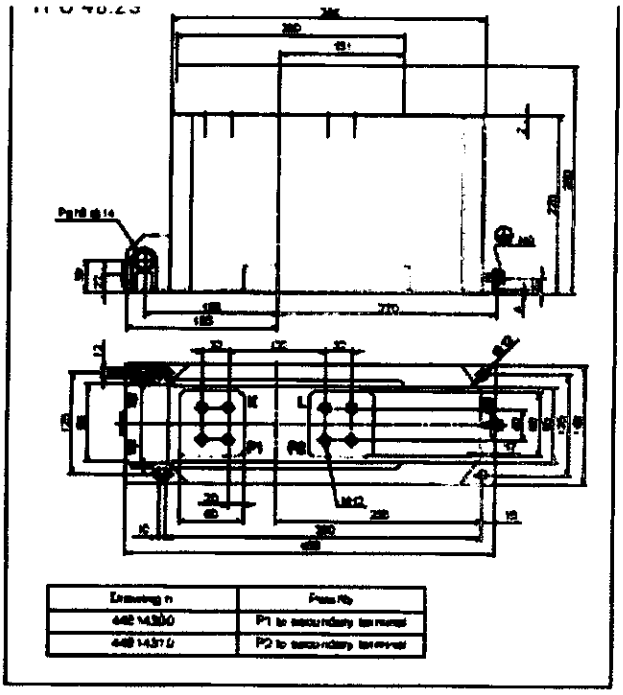
Greutate :40- 45kg
Distanță de fugă: 201 mm



Drawing n	Polarity
44814280	P1 to secondary terminal
44814290	P2 to secondary terminal

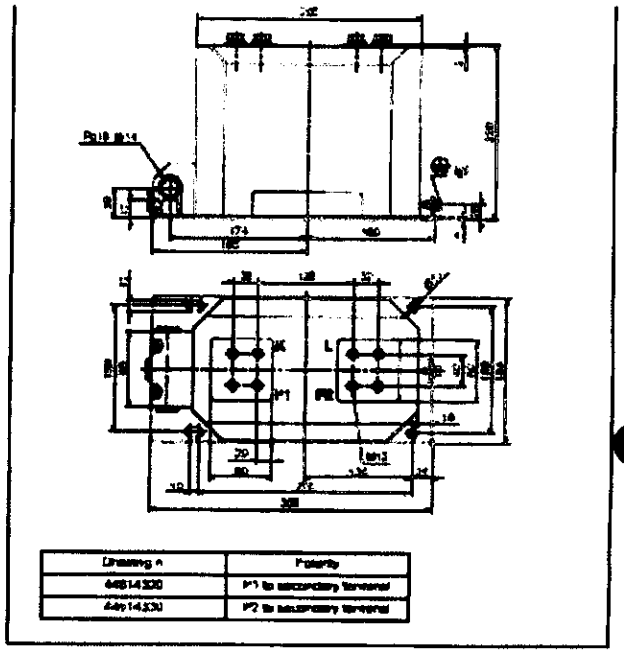
TPU 44.23
TPU 45.23
TPU 46.23
TPU 47.23
TOI14Q00

Greutate 40- 45kg
Distanță de fugă: 201 mm



TPU 44.31
TPU 45.31
TPU 46.31
TPU 47.31
TPU 48.31

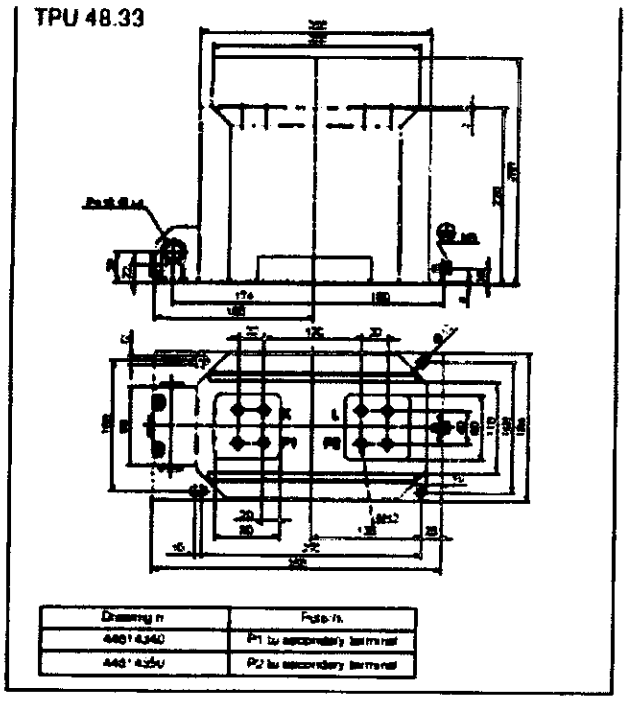
Greutate: 34-42kg
Distanță de fugă: 210 mm



TPU 44.33
TPU 45.33
TPU 46.33
TPU 47.33

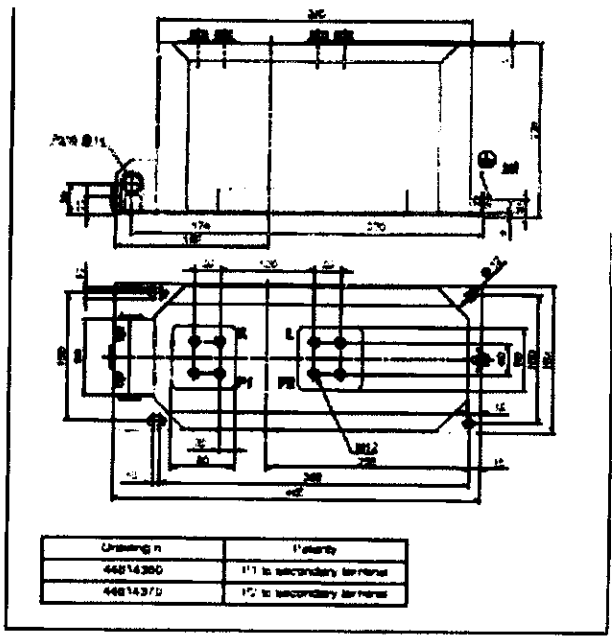
Greutate: 34-42kg
Distanță de fugă: 210mm

TPU 48.33



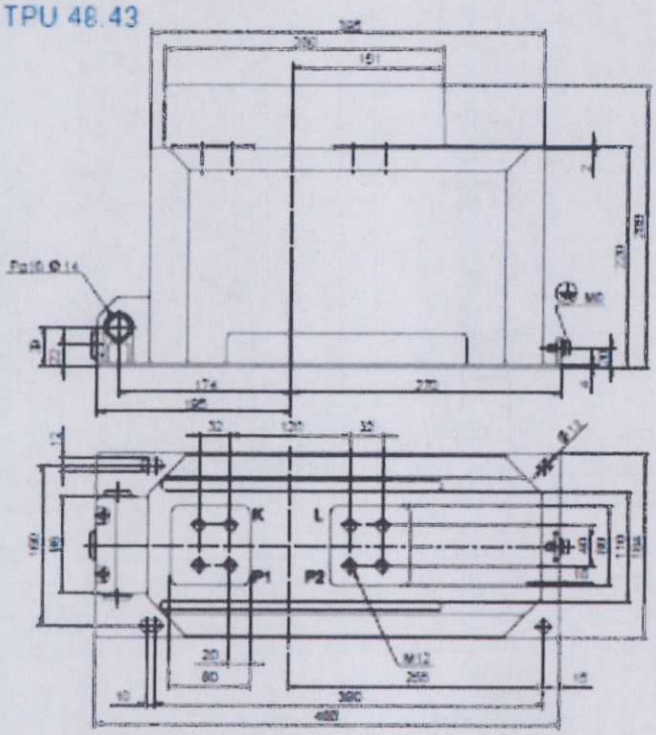
TPU 44.41
TPU 45.41
TPU 46.41
TPU 47.41
TPU 48.41

Greutate: 46-58kg
Distanță de fugă: 210mm



TPU 44.43
TPU 45.43
TPU 46.43
TPU 47.43
TPU 48.43

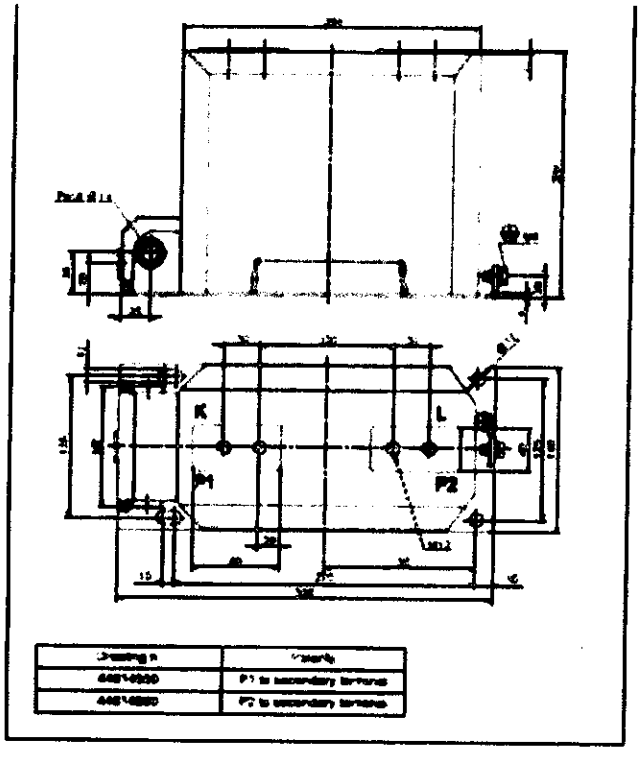
Greutate 46-58kg
Distanță de fugă: 210mm



Drawing n	Polarity
44614380	P1 to secondary terminal
44614390	P2 to secondary terminal

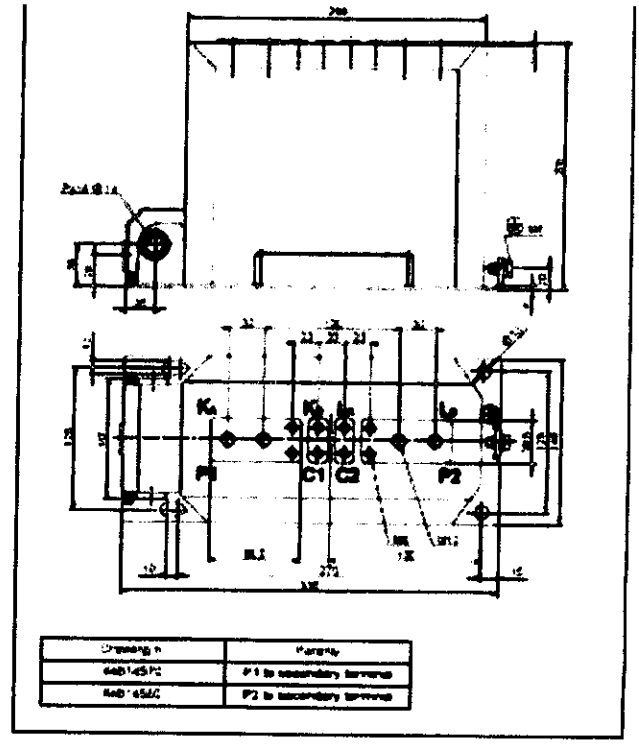
TPU 50 11
TPU5311

Greutate; 20-24kg
Distanţă de fugă: 201 mm



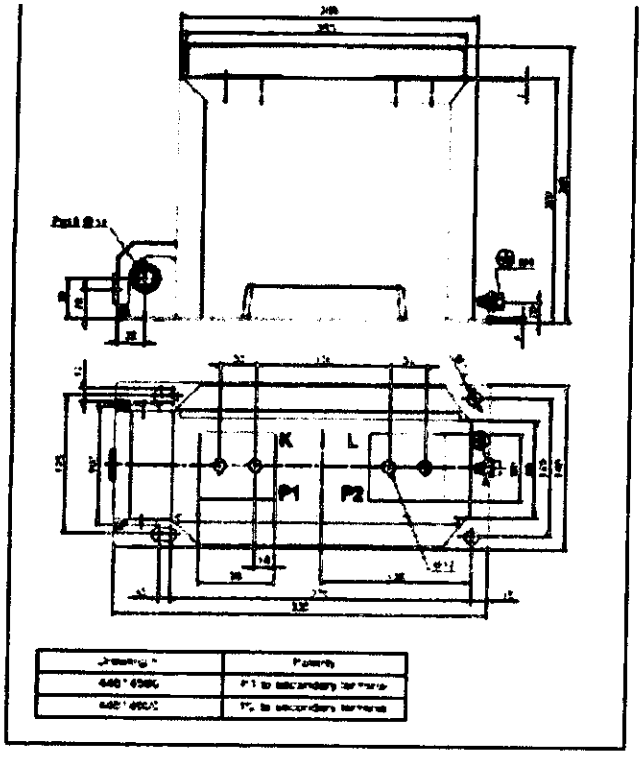
TPU 50.12

Greutate: 19-25 kg
Distanţă de fugă: 215mm



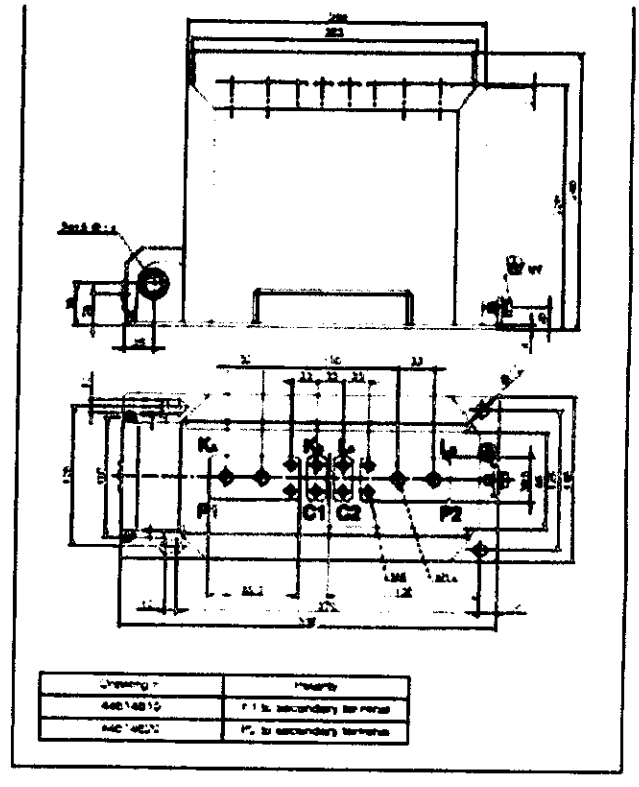
TPU 50.13
TPU 53 13

Greutate: 20-24kg
Distanţă de fugă: 214mm



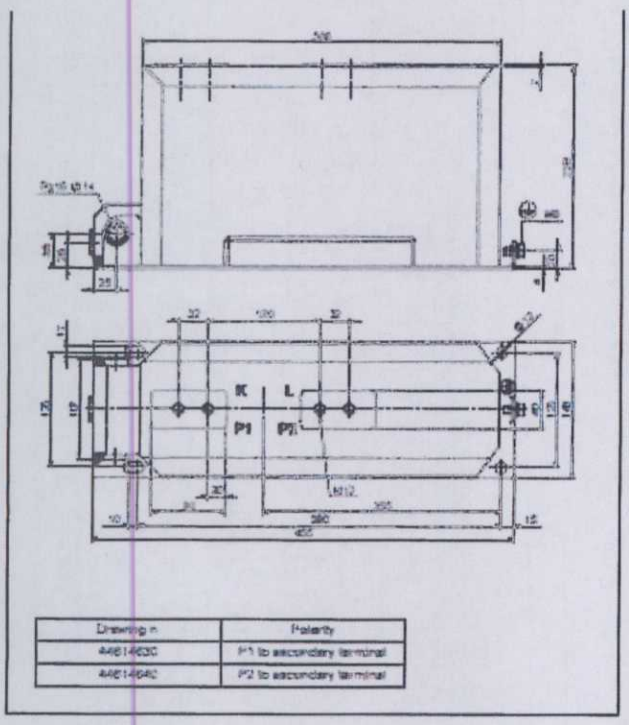
TPU 50.14

Greutate 19-25kg
Distanţă de fugă: 215mm



TPU 50.21
TPU 53.21

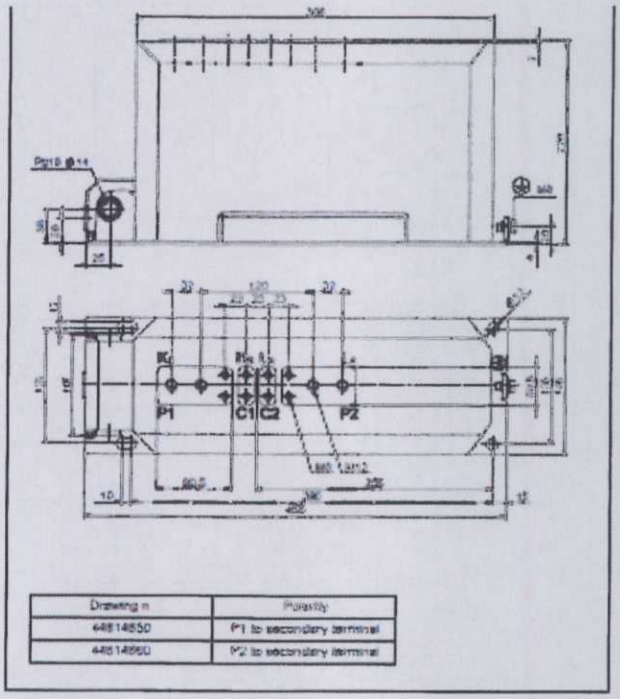
Greutate: 29-37kg
Distanță de fugă: 201 mm



Drawing n	Polarity
44514630	P1 to secondary terminal
44514640	P2 to secondary terminal

TPU 50.22

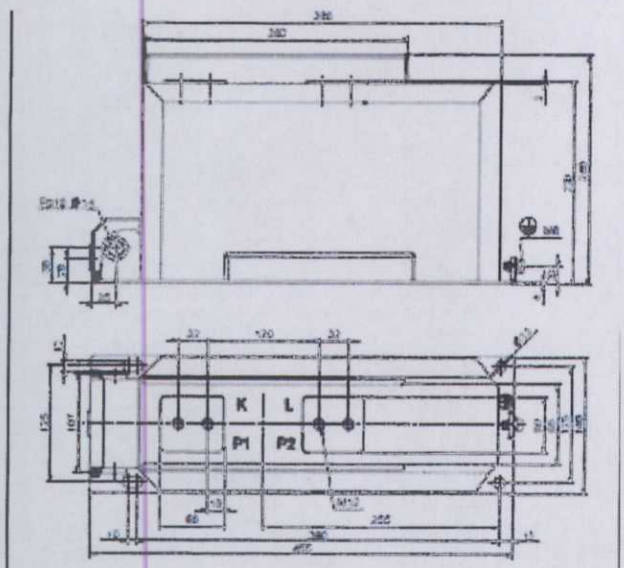
Greutate: 29-37kg
Distanță de fugă: 215mm



Drawing n	Polarity
44514650	P1 to secondary terminal
44514660	P2 to secondary terminal

TPU 50.23
TPU 53.23

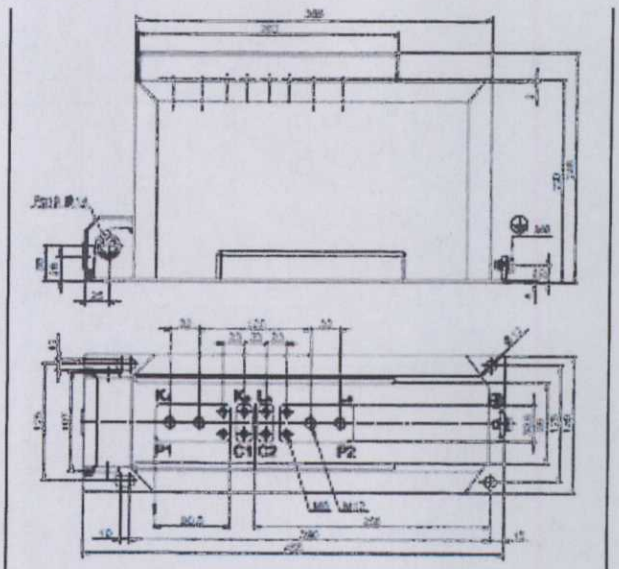
Greutate: 29-37kg
Distanță de fugă: 214mm



Drawing n	Polarity
44514670	P1 to secondary terminal
44514680	P2 to secondary terminal

TPU 50.24

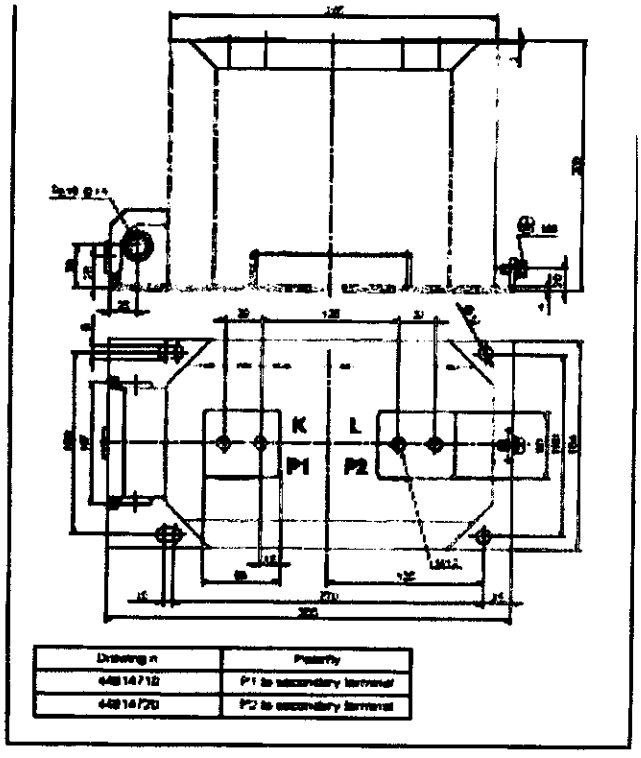
Greutate: 29-37kg
Distanță de fugă: 215mm



Drawing n	Polarity
44514690	P1 to secondary terminal
44514700	P2 to secondary terminal

TPU 50.31
TPU 53.31

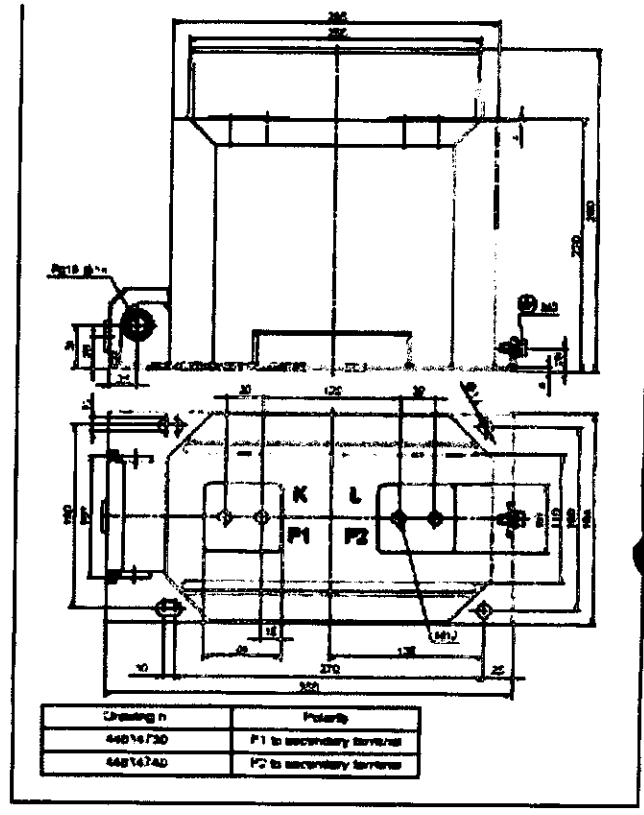
Greutate: 31-39kg
Distanță de fugă.- 215mm



Drawing n	Polarity
44814710	P1 to secondary terminal
44814720	P2 to secondary terminal

TPU 50.33
TPU 53.33

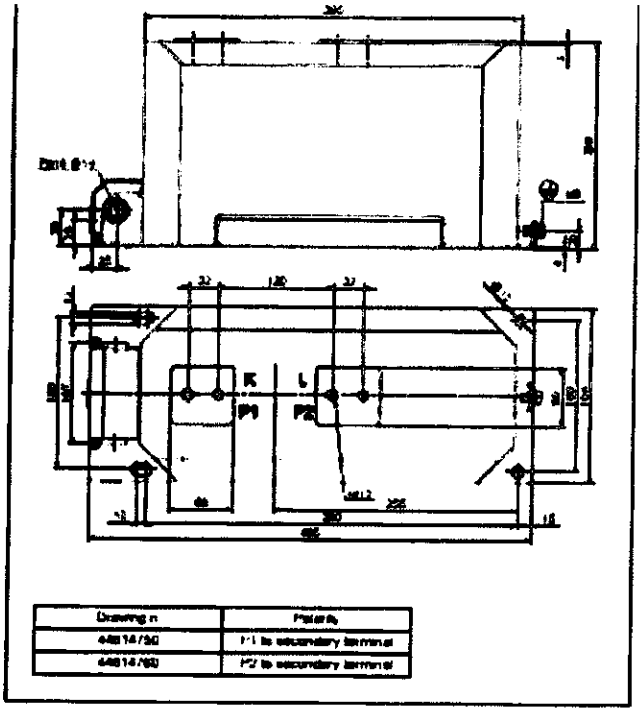
Greutate: 31-39 kg
Distanță de fugă: 215mm



Drawing n	Polarity
44814730	P1 to secondary terminal
44814740	P2 to secondary terminal

TPU 50.41
TPU 51.41
TPU 53.41

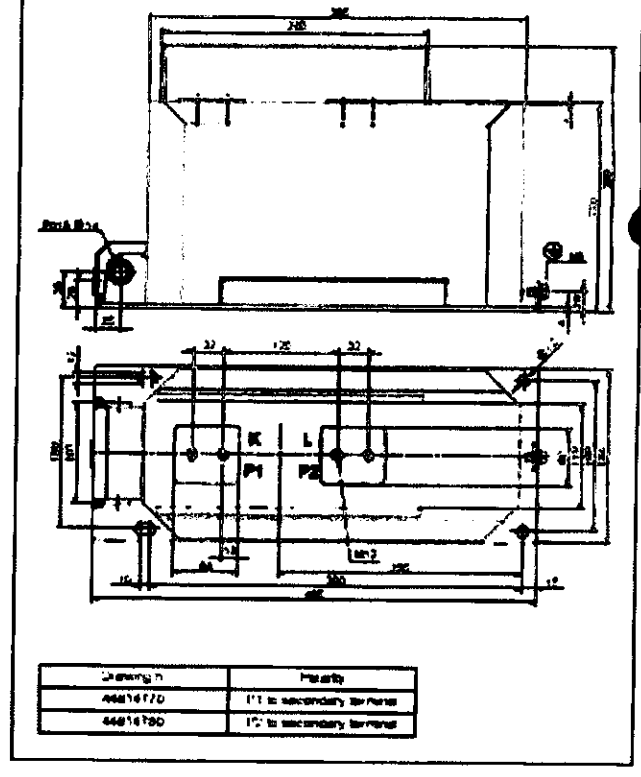
Greutate 45-55kg
Distanță de fugă; 215mm



Drawing n	Polarity
44814750	P1 to secondary terminal
44814760	P2 to secondary terminal

TPU 50.43
TPU 51.43
TPU 53.43

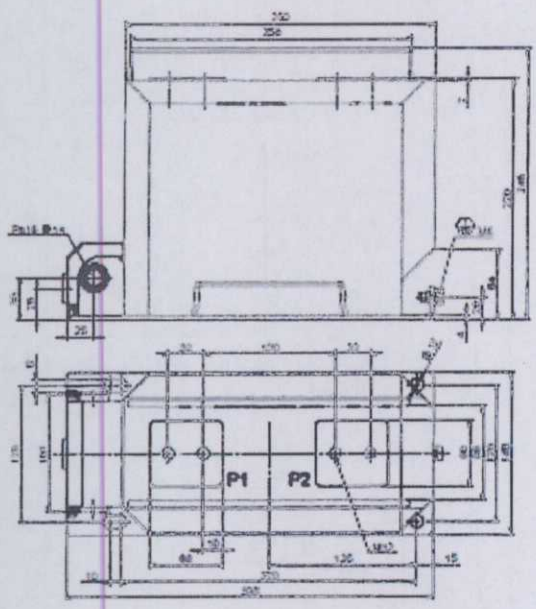
Greutate: 45-55kg
Distanță de fugă: 215mm



Drawing n	Polarity
44814770	P1 to secondary terminal
44814780	P2 to secondary terminal

TPU 50.53
TPU 53.53

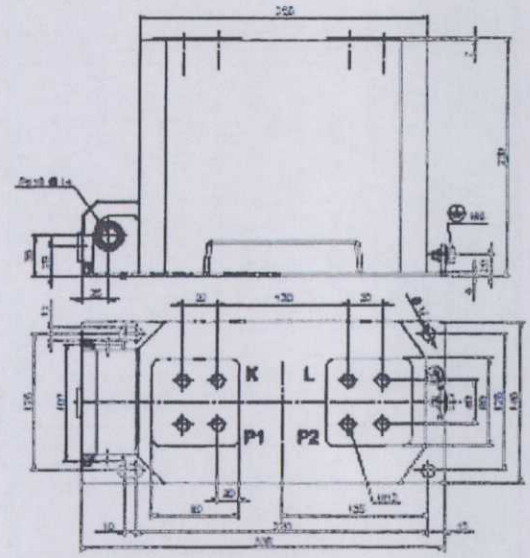
Greutate: 28kg
Distanță de fugă: 214mm



Drawing n	Polarity
1VL4600372P0201	P1 to secondary terminal
1VL4600372P0202	P2 to secondary terminal

TPU 54.11
TPU 55.11
TPU 56.11
TPU 57.11
TPU 58.11

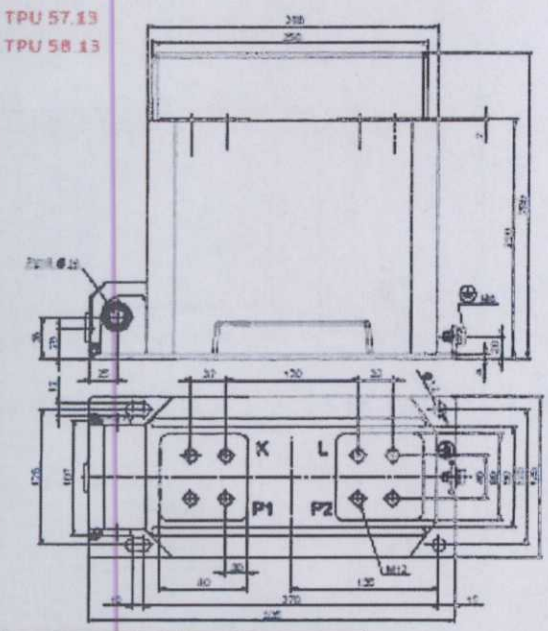
Greutate:25-31kg
Distanță de fugă: 201mm



Drawing n	Polarity
1VL4600498P0101	P1 to secondary terminal
1VL4600498P0102	P2 to secondary terminal

TPU 54.13
TPU 55.13
TPU 56.13
TPU 57.13
TPU 58.13

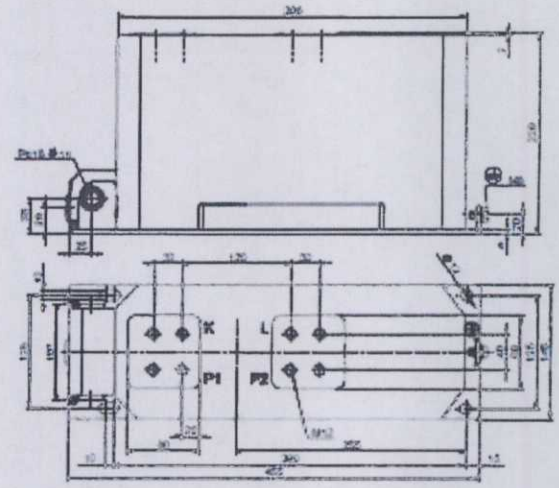
Greutate 25-31kg
Distanță de fugă: 201mm



Drawing n	Polarity
1VL4600600P0101	P1 to secondary terminal
1VL4600600P0102	P2 to secondary terminal

TPU 54.21
TPU 55.21
TPU 56.21
TPU 57.21
TPU 58.21

Greutate: 40-45kg
Distanță de fugă: 201mm



Drawing n	Polarity
1VL4600501P0101	P1 to secondary terminal
1VL4600501P0102	P2 to secondary terminal

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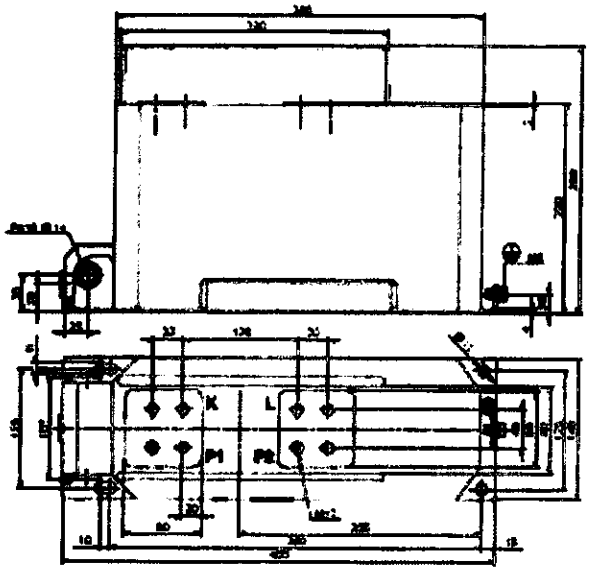
TPU 54.23
TPU 55.23
TPU 56.23
TPU 57.23
TPU 58.23

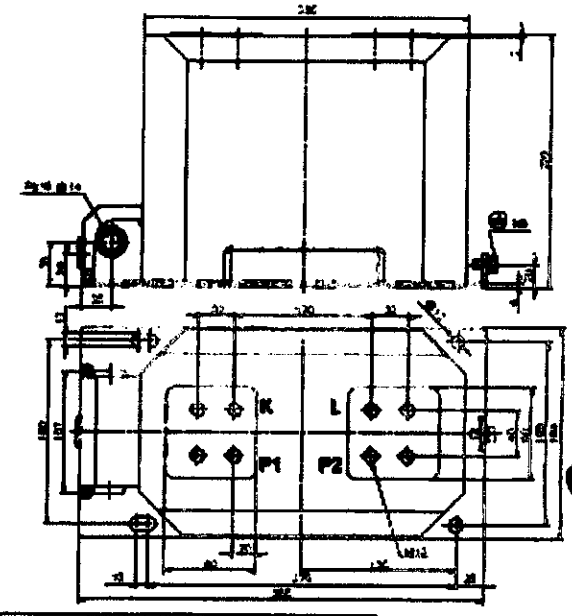
Greutate: 40-45kg
Distanță de fugă: 201mm



Drawing n	Polarity
[illegible]	P1 to secondary terminal
[illegible]	P2 to secondary terminal

TPU 54.31
TPU 55.31
TPU 56.31
TPU 57.31
TPU 58.31

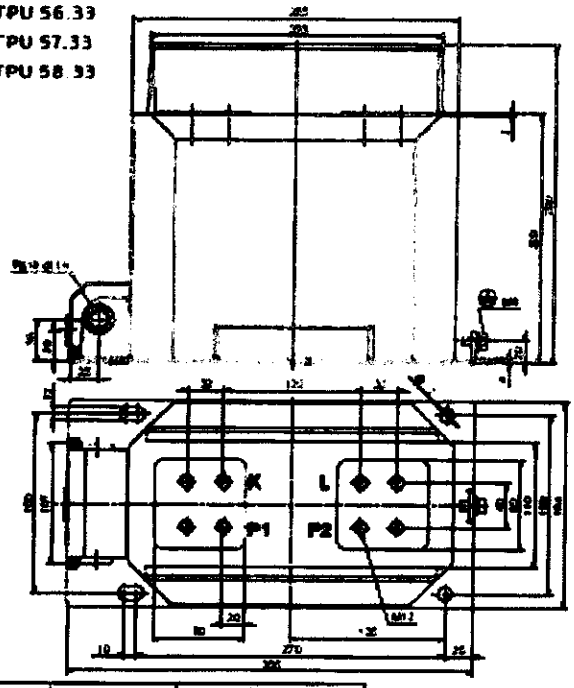
Greutate: 31-42kg
Distanță de fugă: 210mm



Drawing n	Polarity
4481[illegible]	P1 to secondary terminal
4481[illegible]	P2 to secondary terminal

TPU 54.33
TPU 55.33
TPU 56.33
TPU 57.33
TPU 58.33

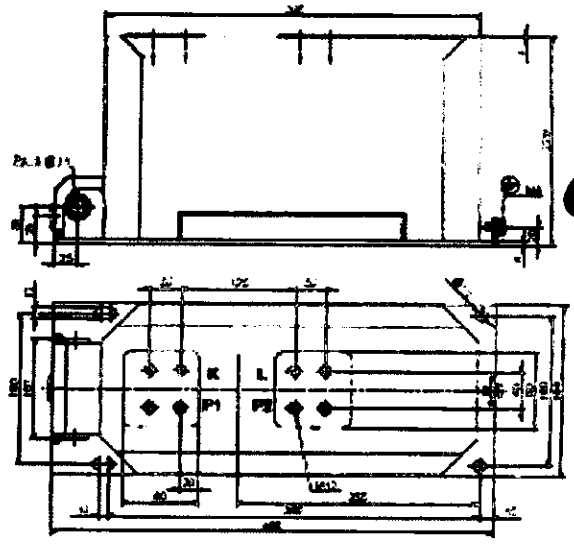
Greutate: 34-42kg
Distanță de fugă: 210 mm



Drawing n	Polarity
4481[illegible]	P1 to secondary terminal
4481[illegible]	P2 to secondary terminal

TPU 54.41
TPU 55.41
TPU 56.41
TPU 57.41
TPU 58.41

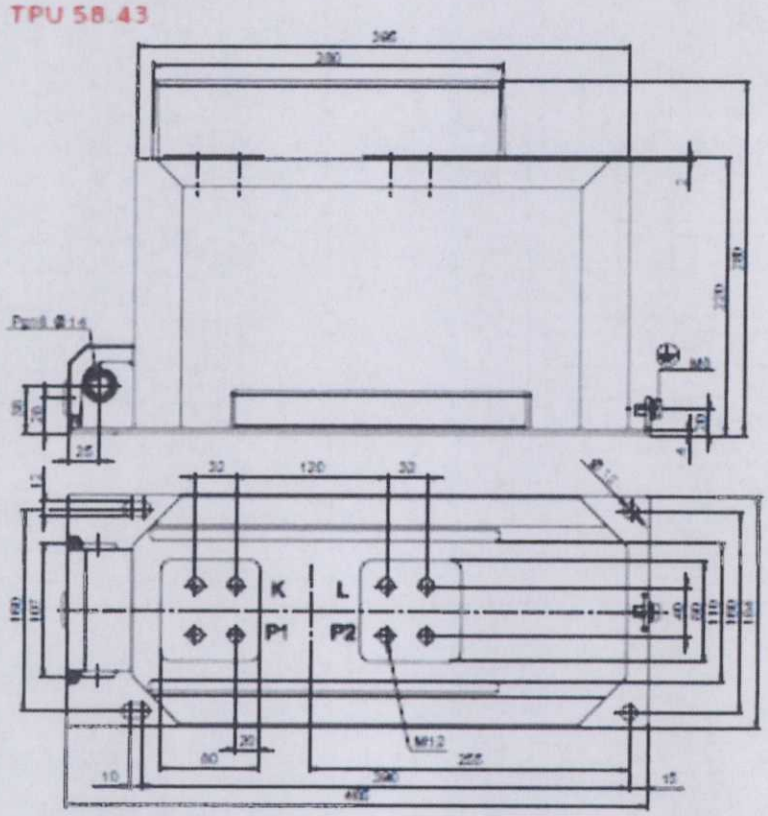
Greutate 46-58kg
Distanță de fugă: 210mm



Drawing n	Polarity
4481[illegible]	P1 to secondary terminal
4481[illegible]	P2 to secondary terminal

TPU 54.43
TPU 55.43
TPU 56.43
TPU 57.43
TPU 58.43

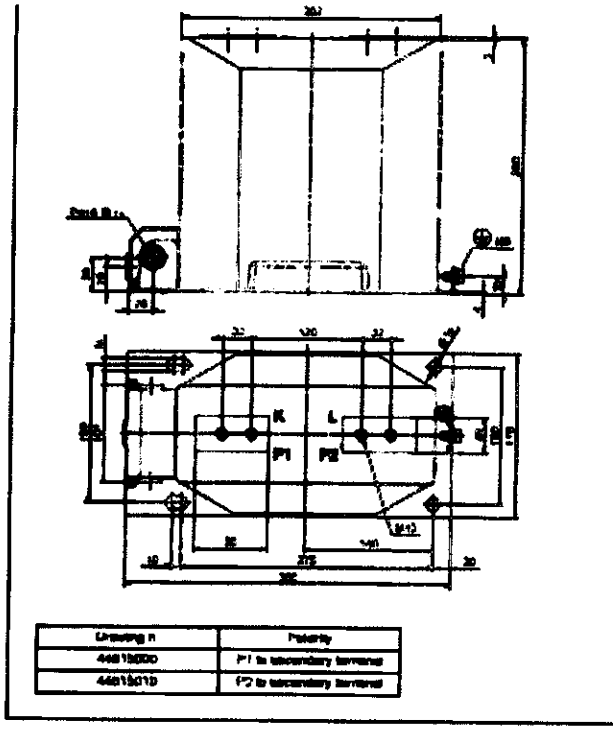
Greutate: 46-58kg
Distanța de fugă: 210mm



Drawing n	Polarity
44614850	P1 to secondary terminal
44614860	P2 to secondary terminal

TPU 60.11
TPU 63.11

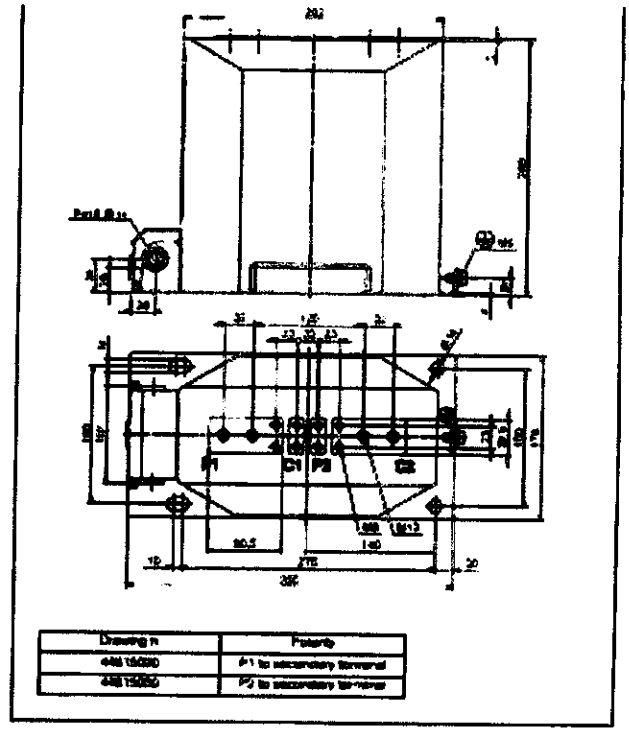
Greutate: 31-35 kg
Distanță de fugă: 270 mm



Drawing n	Polarity
44615000	P1 to secondary terminal
44615010	P2 to secondary terminal

TPV 60.12

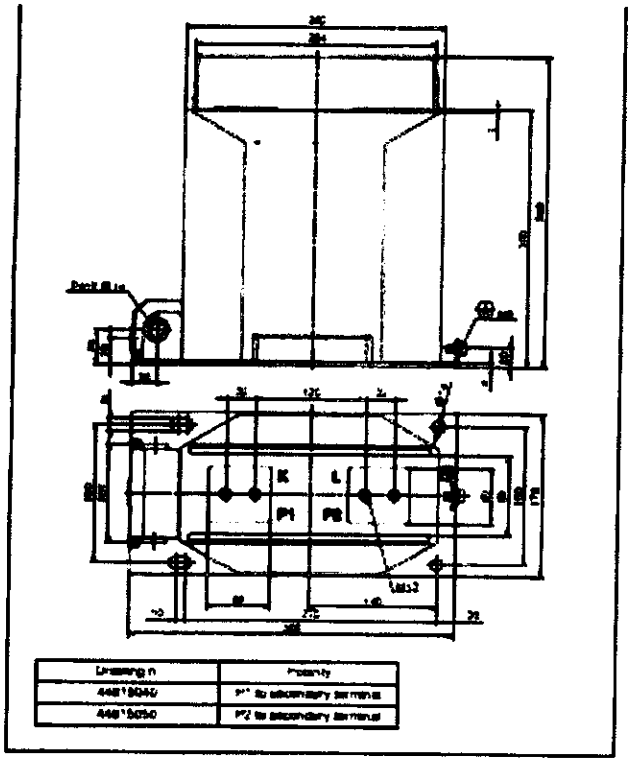
Greutate: 31-35 kg
Distanță de fugă: 282 mm



Drawing n	Polarity
44615000	P1 to secondary terminal
44615050	P2 to secondary terminal

TPU 60.13
TPU 63.13

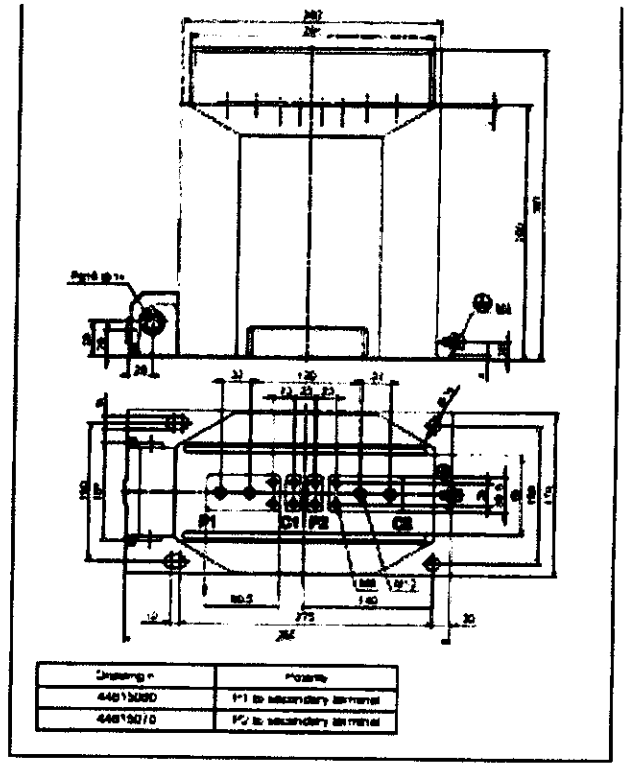
Greutate: 31-35 kg
Distanță de fugă: 280mm



Drawing n	Polarity
44615040	P1 to secondary terminal
44615050	P2 to secondary terminal

TPU 60.14

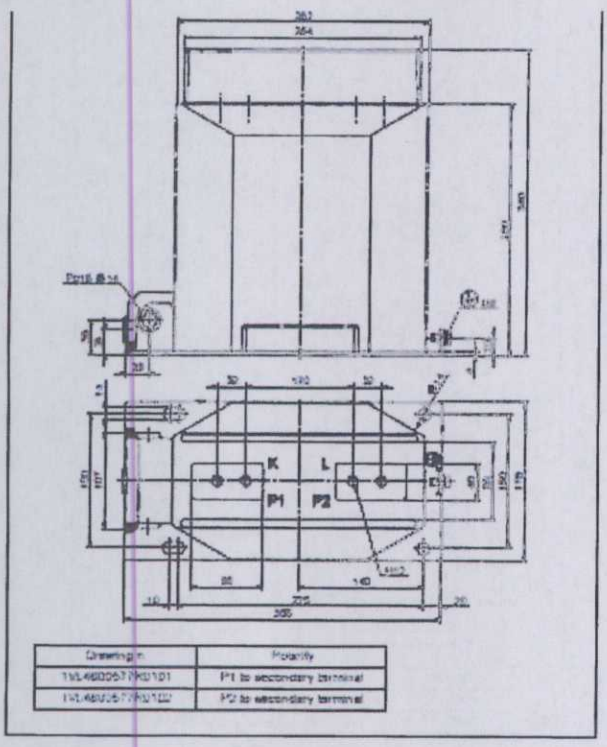
Greutate: 31-35 kg
Distanță de fugă: 282 mm



Drawing n	Polarity
44615000	P1 to secondary terminal
44615010	P2 to secondary terminal

TPU 60.15
TPU 63 .15

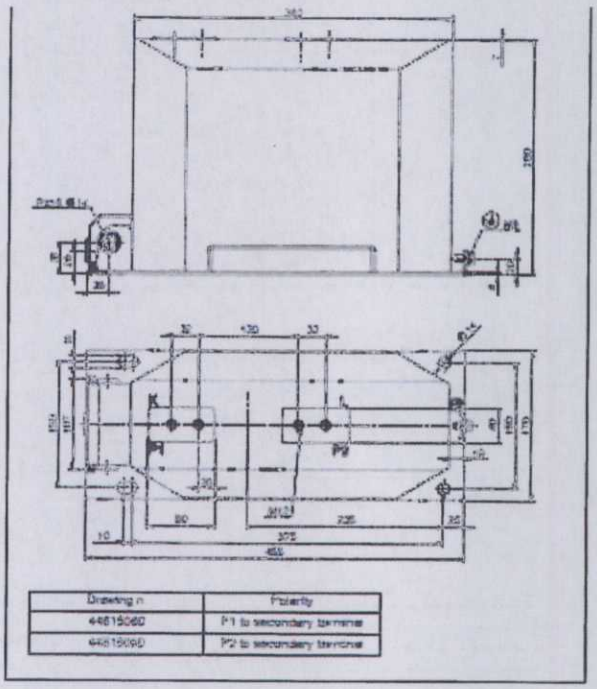
Greutate: 31-35 kg
Distanță de fugă: 270 mm



Drawing n	Polarity
1VL4600567R0101	P1 to secondary terminal
1VL4600567R0102	P2 to secondary terminal

TPU 60.21
TPU 63.21

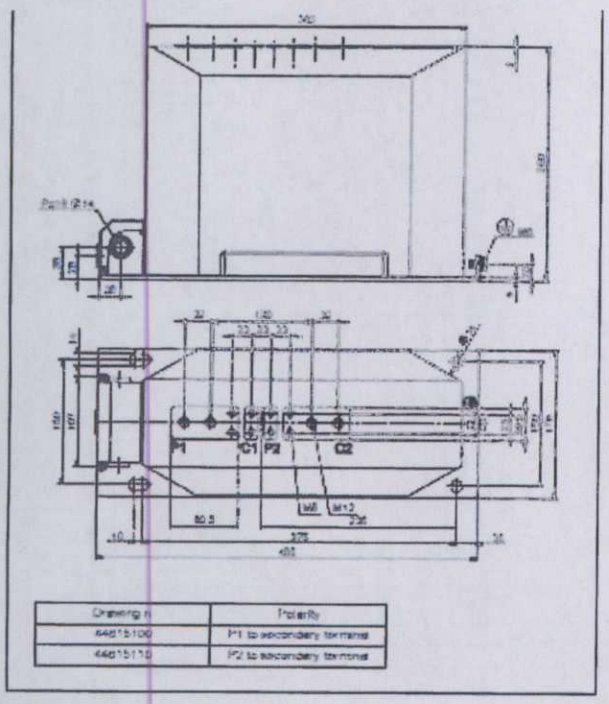
Greutate: 43 -49 kg
Distanță de fugă: 270 mm



Drawing n	Polarity
44815060	P1 to secondary terminal
44815090	P2 to secondary terminal

TPU 60.22

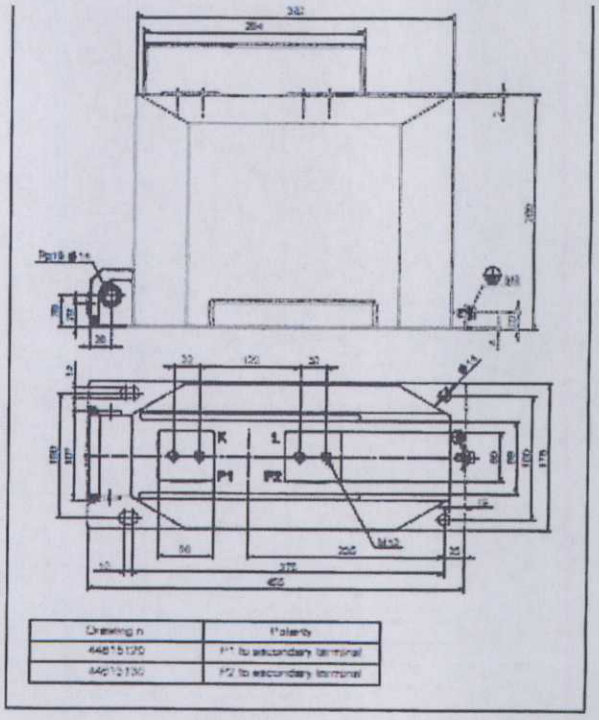
Greutate: 43-49 kg
Distanță de fugă: 282 mm



Drawing n	Polarity
44815100	P1 to secondary terminal
44815110	P2 to secondary terminal

TPU 60.23
TPU 63.23

Greutate: 43-49 kg
Distanță de fugă: 280 mm



Drawing n	Polarity
44815120	P1 to secondary terminal
44815130	P2 to secondary terminal

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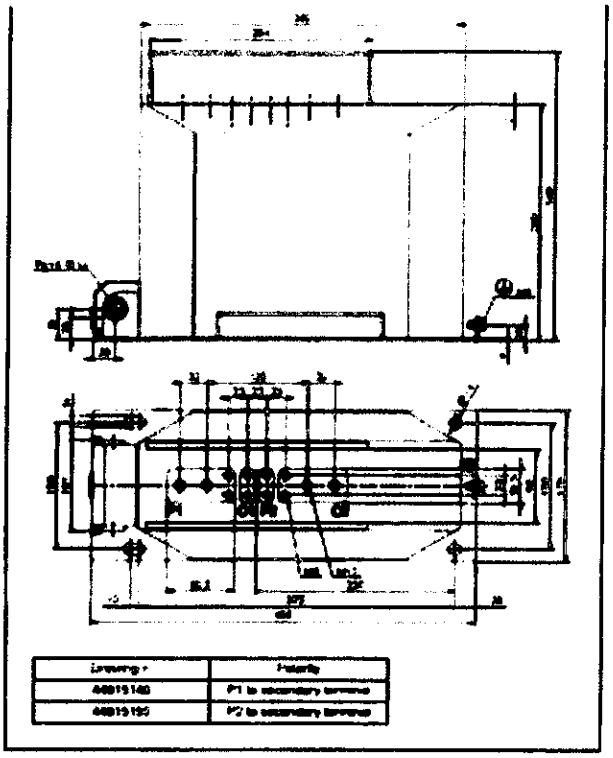
TPU 60.24

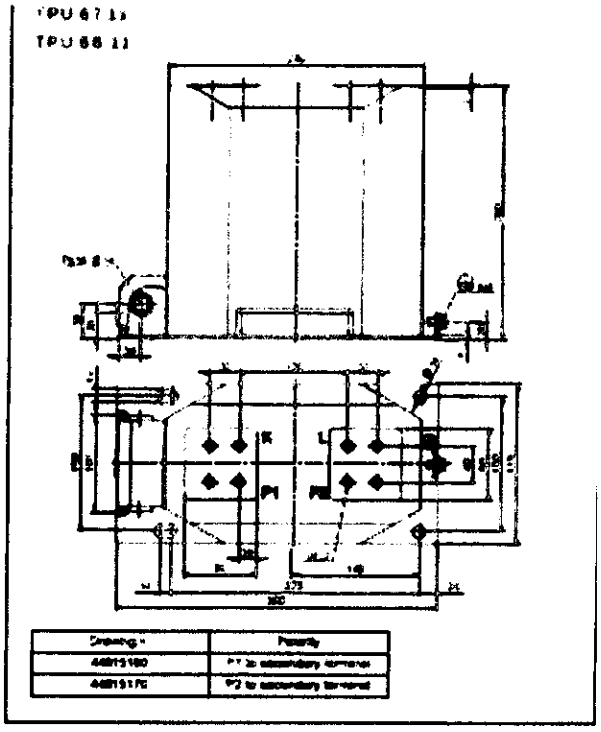
Greutate: 43-49 kg
Distanță de fugă: 282 mm



Drawing n°	Polarity
44915140	P1 to secondary terminal
44915155	P2 to secondary terminal

TPU 64.11
TPU 65 11
TPU66.ii
TPU 67 11
TPU 68 11

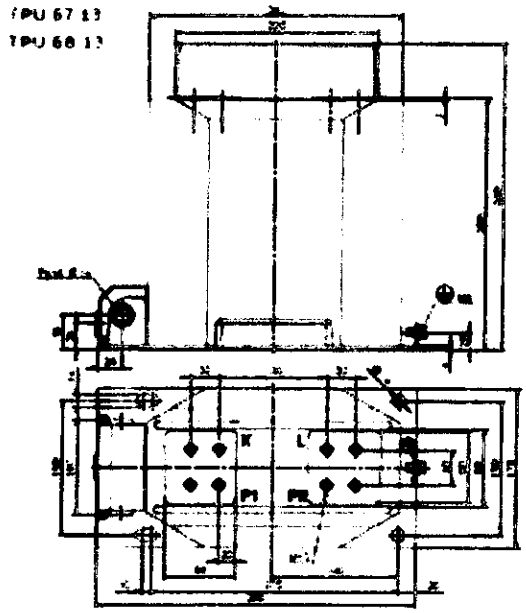
Greutate; 36-41 kg
Distanță de fugă: 270 mm



Drawing n°	Polarity
44915160	P1 to secondary terminal
44915175	P2 to secondary terminal

TPU 64.13
TPU 65.13
TPU 66.13
TPU 67 13
TPU 68 13

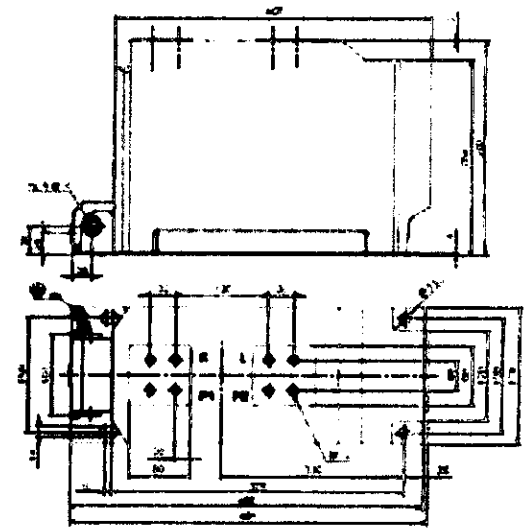
Greutate: 36-41 kg
Distanță de fugă: 270 mm



Drawing n°	Polarity
44915185	P1 to secondary terminal
44915190	P2 to secondary terminal

TPU 64 21
TPU 65 21
TPU 66 21
TPU 67 21
TPU 68 21

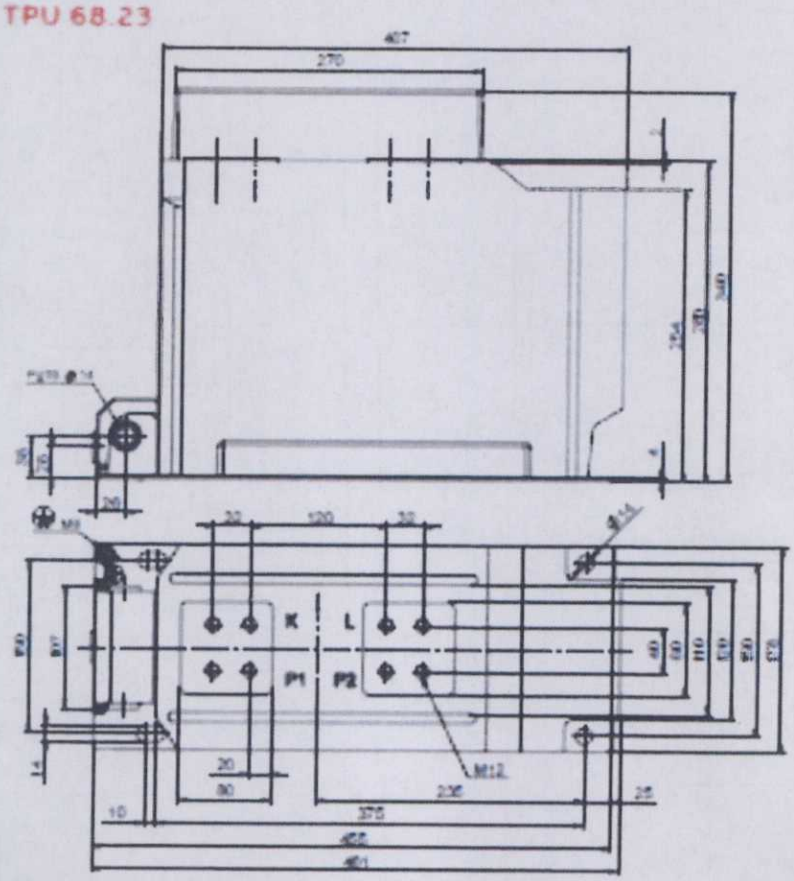
Greutate; 50-57 kg
Distanță de fugă: 272 mm



Drawing n°	Polarity
44915200	P1 to secondary terminal
44915215	P2 to secondary terminal

TPU 64.23
TPU 65 23
TPU 66.23
TPU 67.23
TPU 68.23

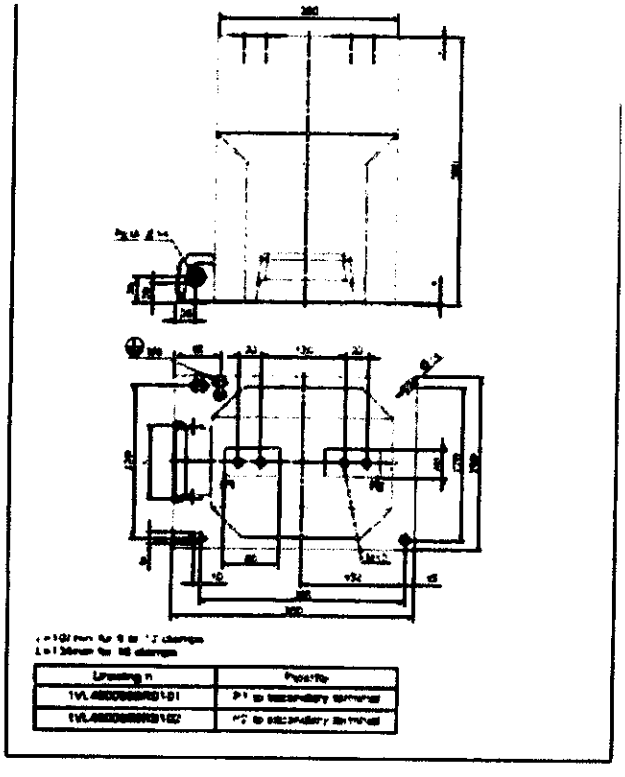
Greutate-50-57 kg
Distanță de fugă: 272 mm



Drawing n	Polarity
448615220	P1 to secondary terminal
448615230	P2 to secondary terminal

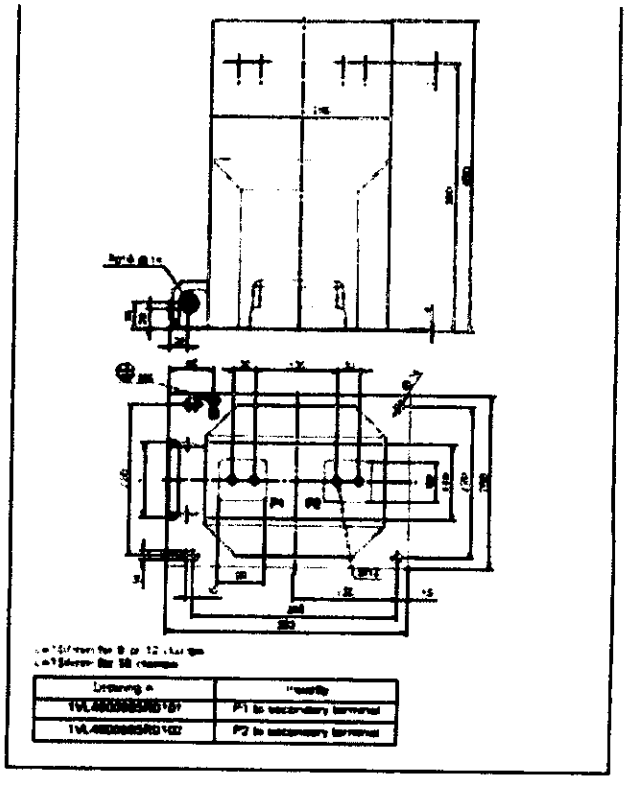
TPU 70.41
TPU 73.41

Greutate: 41 kg
Distanţa de fugă: 380 mm



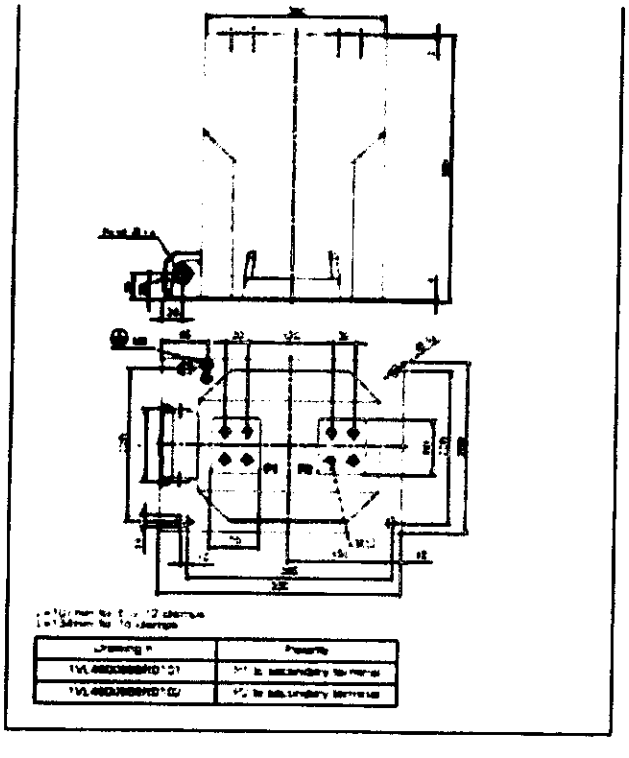
VPU 70 43
TPU 73.43

Greutate: 41kg
Distanţă de fugă: 380 mm



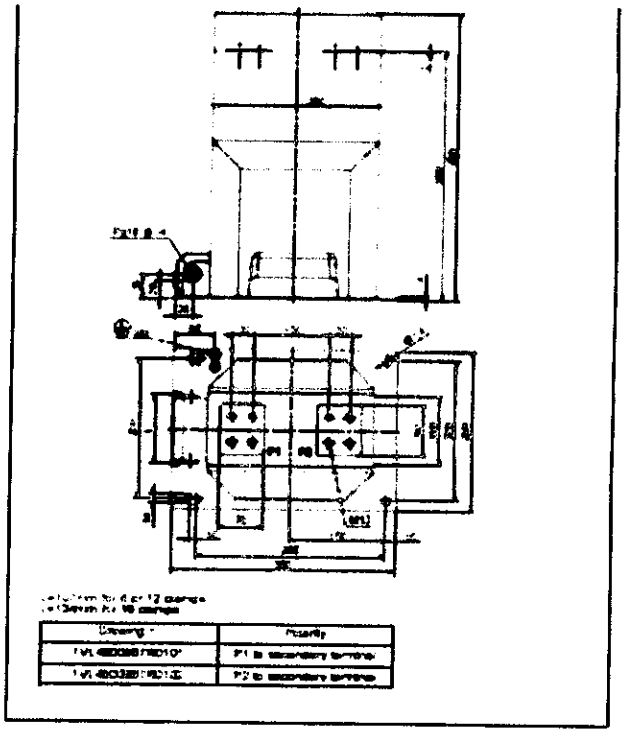
TPU 74 41
TPU 75 41
"PU 76 41

Greutate. 43 kg
Distanţă de fugă: 377 mm



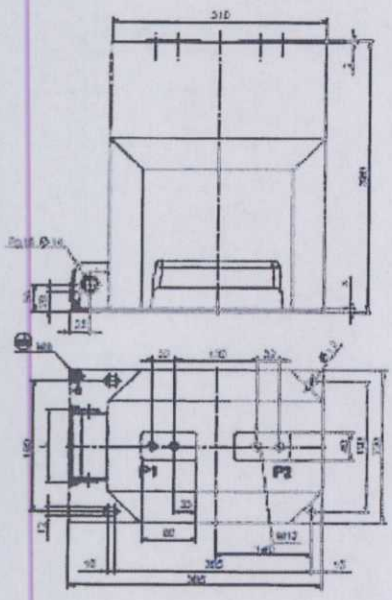
TPU 74.43
TPU 75.43
TPU 76.43

Greutate: 43 kg
Distanţă de fugă: 377 mm



TPU 70.51
TPU 73.51

Greutate: 44-54 kg
Distanță de fugă: 400 mm

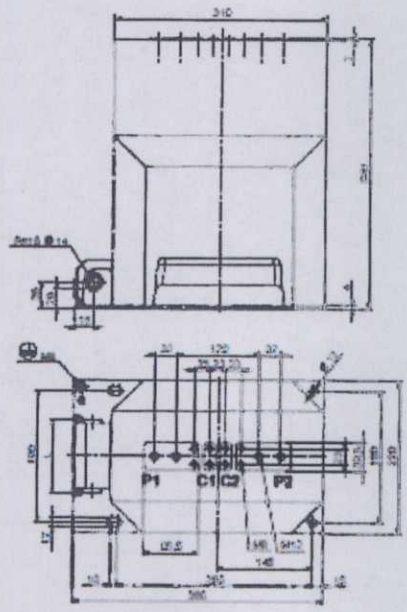


L=101mm for 6 or 12 clamps
L=134mm for 10 clamps

Drawing n	Polarity
44815730	P1 to secondary terminal
44815740	P2 to secondary terminal

TPU 70.52

Greutate: 44-54 kg
Distanță de fugă: 409 mm

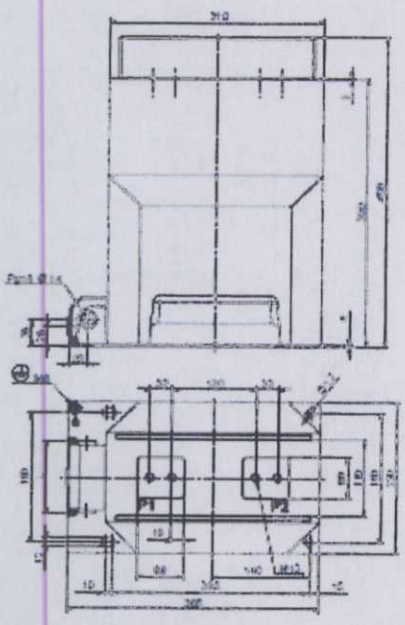


L=101mm for 6 or 12 clamps
L=134mm for 10 clamps

Drawing n	Polarity
44815750	P1 to secondary terminal
44815760	P2 to secondary terminal

TPU 70.53
TPU 73.53

Greutate: 44-54 kg
Distanță de fugă: 397 mm

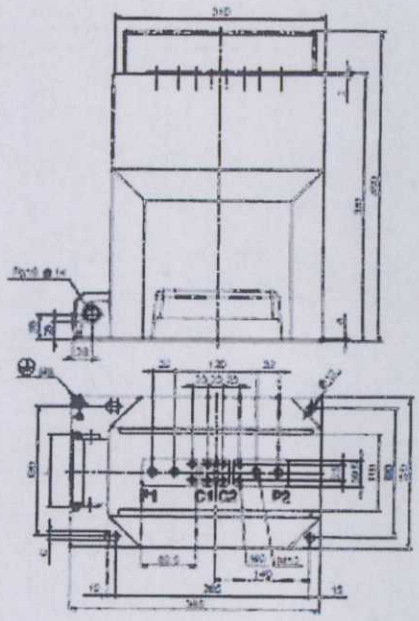


L=101mm for 6 or 12 clamps
L=134mm for 10 clamps

Drawing n	Polarity
44815650	P1 to secondary terminal
44815660	P2 to secondary terminal

TPU 70.54

Greutate 44-54 kg
Distanță de fugă: 409 mm

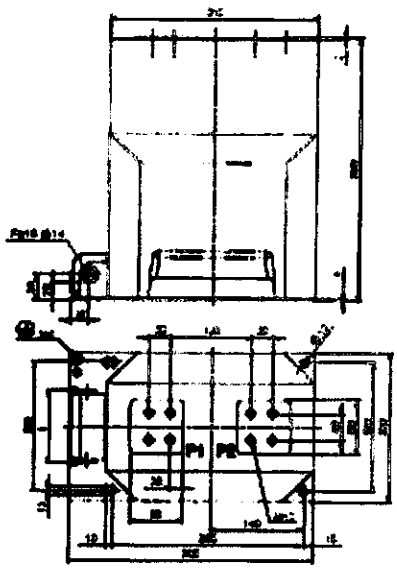


L=101mm for 6 or 12 clamps
L=134mm for 10 clamps

Drawing n	Polarity
44815710	P1 to secondary terminal
44815720	P2 to secondary terminal

TPU 74.51
TPU 75.51
TPU 76.51

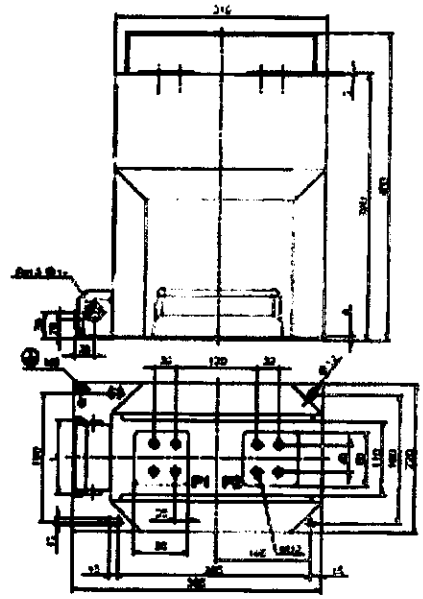
Greutate: 46-58 kg
Distanță de fugă: 386 mm



Drawing n	Polarity
[illegible]	P1 to secondary terminal
[illegible]	P2 to secondary terminal

TPU 74.53
TPU 75.53
TPU 76.53

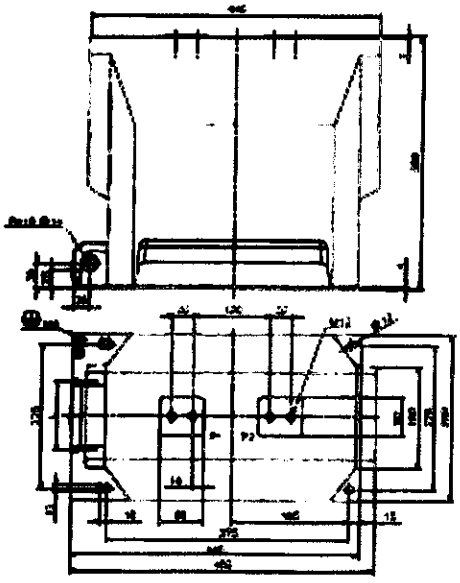
Greutate: 46-58 kg
Distanță de fugă: 366 mm



Drawing n	Polarity
[illegible]	P1 to secondary terminal
[illegible]	P2 to secondary terminal

TPU 70.61
TPU 73.61

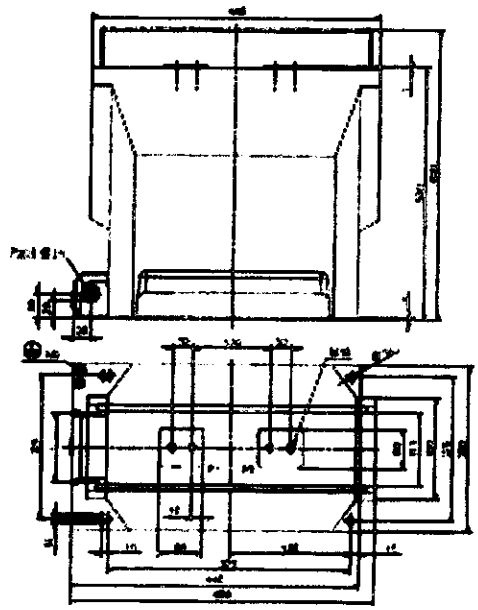
Greutate: 70-86 kg
Distanță de fugă: 475 mm



Drawing n	Polarity
[illegible]	P1 to secondary terminal
[illegible]	P2 to secondary terminal

TPU 70.63
TPU 73.63

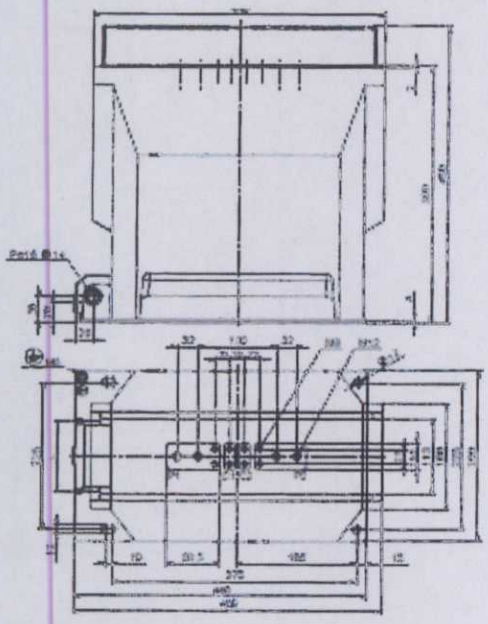
Greutate: 70-86 kg
Distanță de fugă: 475 mm



Drawing n	Polarity
[illegible]	P1 to secondary terminal
[illegible]	P2 to secondary terminal

TPU 70.64
TPU 73.64

Greutate: 70-86 kg
Distanță de fugă: 488 mm

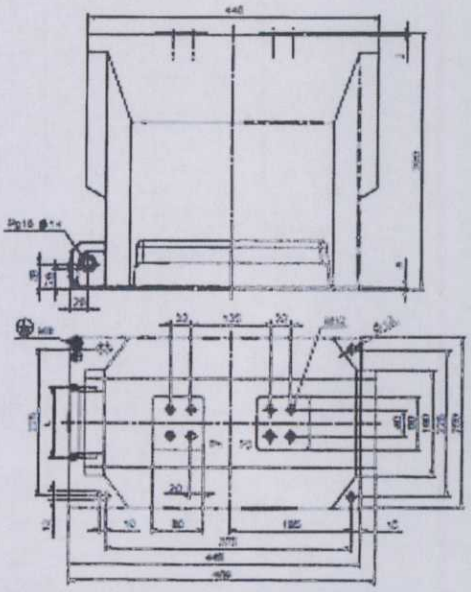


L=101mm for 6 or 12 clamps
L=134mm for 18 clamps

Drawing n	Polarity
448159610	P1 to secondary terminal
448159620	P2 to secondary terminal

TPU 74.61
TPU 75.61
TPU 76.61

Greutate: 72-88 kg
Distanță de fugă: 465 mm

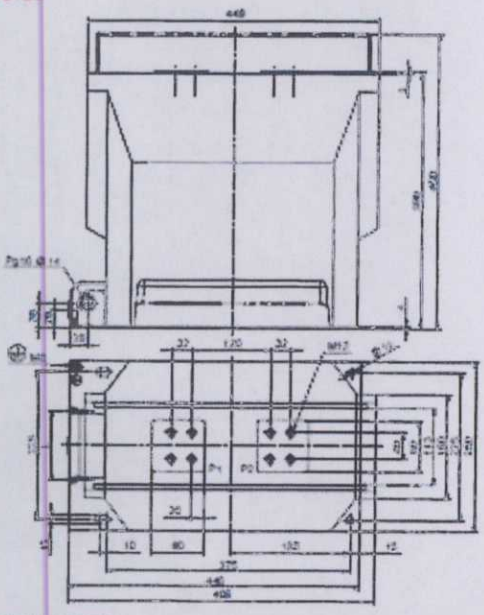


L=101mm for 6 or 12 clamps
L=134mm for 18 clamps

Drawing n	Polarity
1VL4600847R0101	P1 to secondary terminal
1VL4600847R0102	P2 to secondary terminal

TPU 74.63
TPU 75.63
TPU 76.63

Greutate:72-88 kg
Distanță de fugă: 465 mm



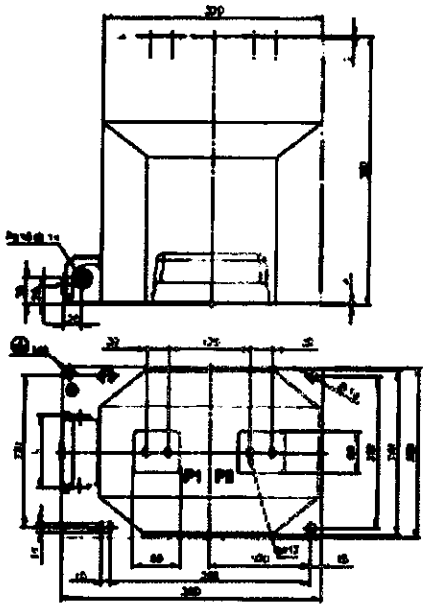
L=101mm for 6 or 12 clamps
L=134mm for 18 clamps

Drawing n	Polarity
448159600	P1 to secondary terminal
448159500	P2 to secondary terminal

ALINA NAE

TPU 70.71
TPU 73.71

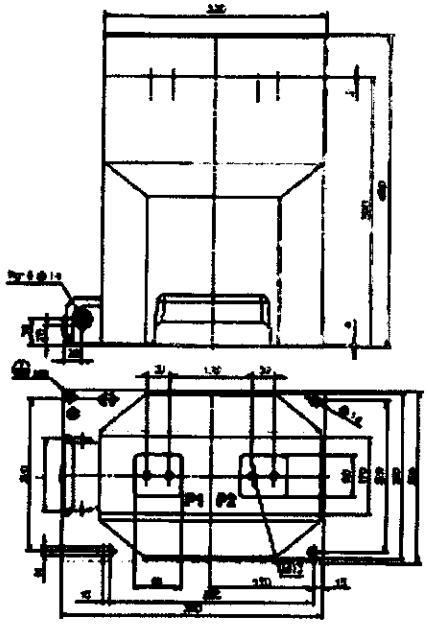
Greutate: 56 kg
Distanță de fugă: 410 mm



Drawing n	Polarity
[illegible]	P1 to secondary terminal
[illegible]	P2 to secondary terminal

TPU 70.73
TPU 73.73

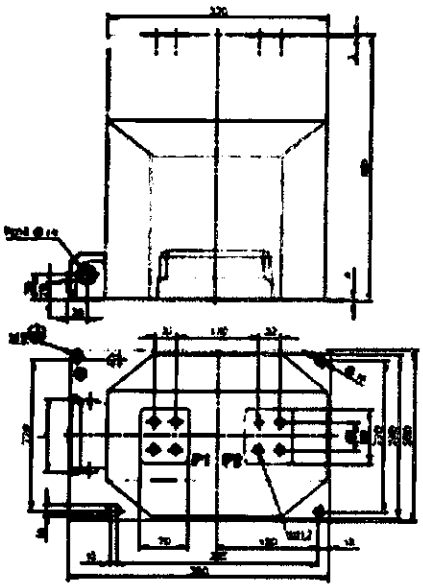
Greutate: 56 kg
Distanță de fugă: 410 mm



Drawing n	Polarity
[illegible]	P1 to secondary terminal
[illegible]	P2 to secondary terminal

TPU 74.71
TPU 75.71
TPU 76.71

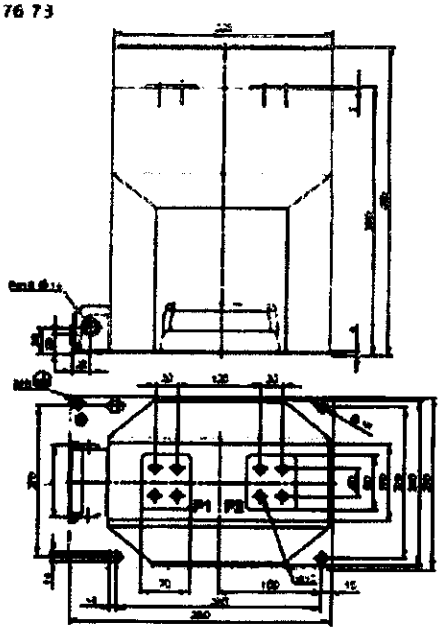
Greutate: aprox. 53 kg
Distanță de fugă . 410 mm



Drawing n	Polarity
[illegible]	P1 to secondary terminal
[illegible]	P2 to secondary terminal

TPU 74.73
TPU 75.73
TPU 76.73

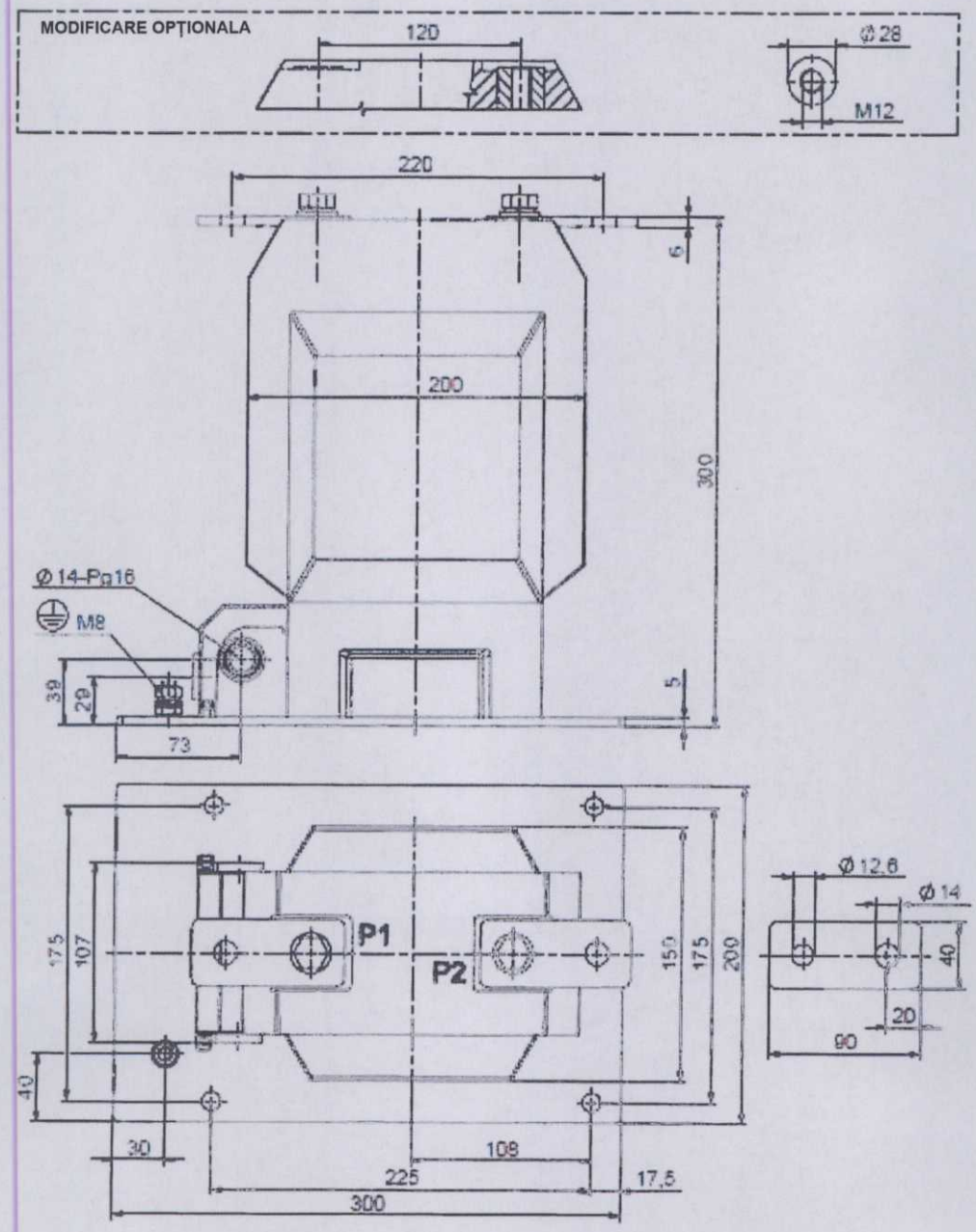
Greutate: aprox. 58 kg
Distanță de fugă: 410 mm



Drawing n	Polarity
[illegible]	P1 to secondary terminal
[illegible]	P2 to secondary terminal

TPE 60.11

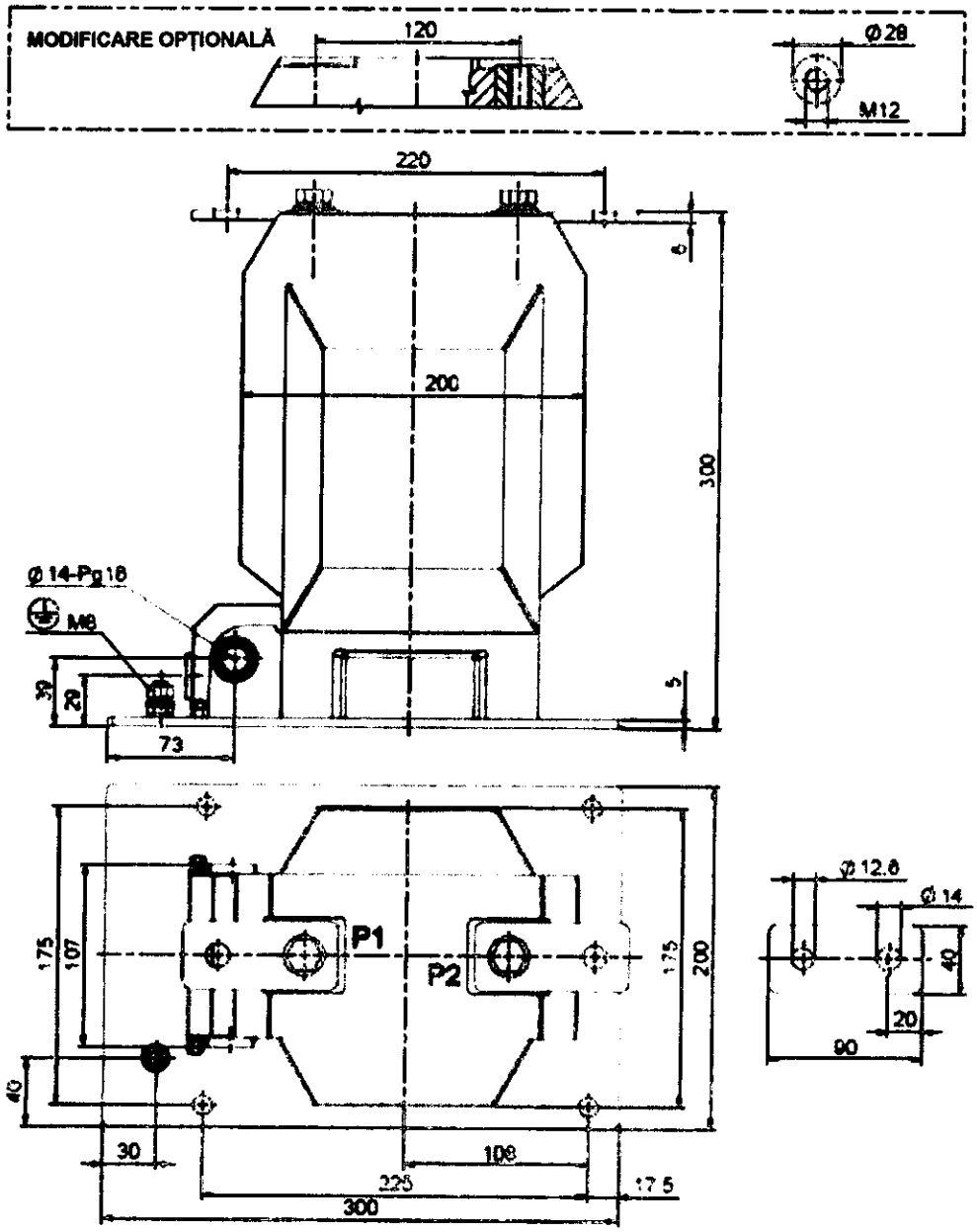
Greutate: 16 kg
Distanță de fugă: 280 mm



Schema nr.	Polaritate
1VL.4600663R0101	P1 la borna secundară
1VL4600663R0201	P2 la borna secundară

TPE **60.11**

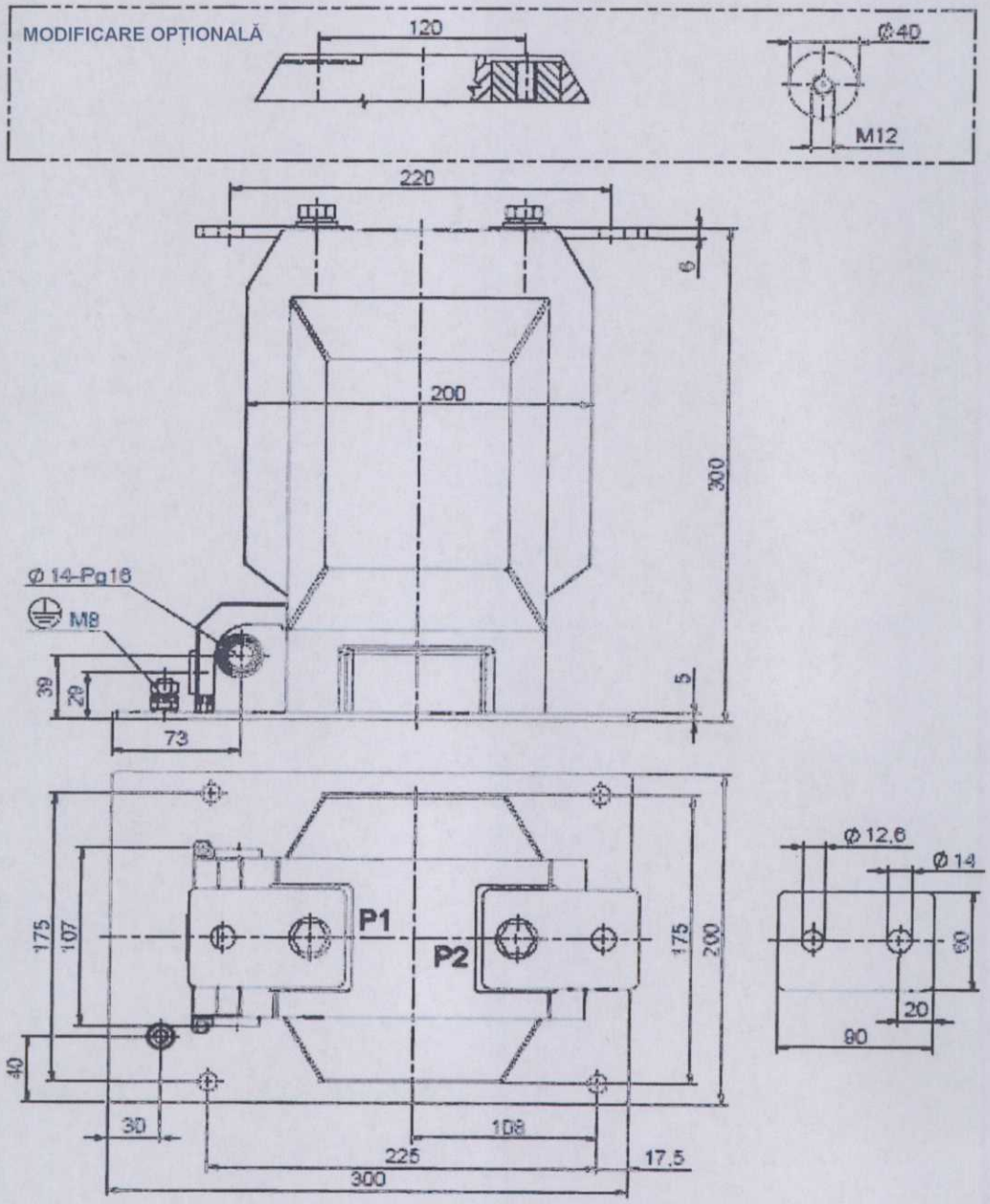
Greutate: 16kg
Distanță de fugă: 280 mm



Schema nr.	Polaritate
1VL4600666R0101	P1 la borna secundară
1VL4600666R0201	P2 la borna secundară

TPE 53.31

Greutate: 18-20 kg
Distanță de fugă 280 mm



Schema nr.	Polaritate
1VL4600666R0102	P1 la borna secundară
1VL4600666R0202	P2 la borna secundară

****

Subsemnata, Alina Nae, traducător autorizat de Ministerul de Justiţie din România cu autorizaţia numărul 13202/2005, certific exactitatea traducerii în limba română cu înscrisul în limba engleză, care a fost vizat de mine.

TRADUCĂTOR,

Certificat pentru aprobarea tipului

Nr. 0111-CS-A008-18

Completare nr. 1

Institutul Ceh de Metrologie, în conformitate cu Legea nr. 505/1990 Coll., cu modificările ulterioare emite prezenta Completare pentru:

Transformatorul de curent de măsură
tipurile TPU 4x.xx, TPU 5x.xx, TPU 6x.xx, TPU 7x.xx, TPE 6O.xx şi TPE 63.xx

în conformitate cu datele tehnice menționate în anexa acestui certificat.

Marcă de aprobare tip: **TCM 212/18 - 5547**

Solicitant: **ABB s.r.o.**
Vyskocilova 1561/4a
140 00 Praga Cehia
ID: 49682563

Producător: **ABB s.r.o.**
Cehia

Valabil până la: **20 martie 2028**

Prezentul certificat de aprobare de tip a fost completat pe baza evaluării tehnice după cum urmează:

- **creșterea valorii curentului primar conform specificațiilor din anexă**

Informații privind căile de atac juridic:
Căile de atac împotriva acestei decizii sunt disponibile solicitantului prin intermediul Institutului Ceh de Metrologie către Oficiul Ceh pentru Standardizare, Metrologie și Testare, în termen de 15 zile de la primirea acestui certificat.

Descriere:
Caracteristicile esențiale, condițiile aprobate, condițiile speciale, rezultatele examinării, inclusiv desenele tehnice și schemele sunt prezentate în raportul tehnic de încercare aferent acestui certificat. Certificatul este compus din prima pagină și raportul tehnic de încercare. Certificatul are 2 pagini

Brno, 18 august 2023
[Ștampilă indescifrabilă] [Semnătură indescifrabilă]

Dr. Ing. Frantisek Stanek
Director Adjunct pentru Metrologie Legală

Raport tehnic de încercare

Subiectul completării:
Completarea este emisă de Institutul Ceh de Metrologie la cererea ABB, s.r.o., Brno. Obiectul completării este creşterea valorii curentului primar, pe baza protocolului de tip al laboratorului ABB Brno (Nr. 1VLR020419).

Raportul de încercări de tip va fi completat şi modificat după cum urmează în următoarele puncte:

2. Metrologie de bază şi date tehnice

Tip	**TPU 7x.xx**
Curent primar nominal	(5 - 3200)A

Celelalte caracteristici metrologice şi celelalte date rămân neschimbate.

Český metrologický institut

Certificat de aprobare a tipului

Nr. 0111-CS-A008-18

Completare nr. 2

Institutul Ceh de Metrologie, în conformitate cu Legea nr. 505/1990 Coll., cu modificările ulterioare emite prezenta Completare pentru:

Transformatorul de curent de măsură
tipurile: TPU 4x.xx, TPU 5x.xx, TPU 6x.xx, TPU 7x.xx, TPE 6O.xx și TPE 63.xx

în conformitate cu datele tehnice menționate în anexa acestui certificat.

Marcă de aprobare tip: **TCM 212/18 - 5547**

Solicitant: **ABB s.r.o.**
Vyskocilova 1561/4a
140 00 Praga
Cehia ID: 49682563

Producător: **ABB s.r.o.**
Cehia

Valabil până la: **20 martie 2028**

Acest Certificat pentru aprobarea tipului a fost emis pe baza evaluării tehnice, după cum urmează:

- **tipul nou TPE 4x.xx**
  conform specificațiilor din Anexă

Informații privind căile de atac juridic:
Căile de atac împotriva acestei decizii sunt disponibile solicitantului prin intermediul Institutului Ceh de Metrologie către Oficiul Ceh pentru Standardizare, Metrologie și Testare, în termen de 15 zile de la primirea acestui certificat.

Descriere:
Caracteristicile esențiale, condițiile aprobate, condițiile speciale, rezultatele examinării, inclusiv desenele tehnice și schemele sunt prezentate în raportul tehnic de încercare aferent acestui certificat. Certificatul este compus din prima pagină și raportul tehnic de încercare. Certificatul are 2 pagini.

[Ștampilă indescifrabilă] *[Semnătură indescifrabilă]*

Brno, 4 aprilie 2024

Dr. Ing. Frantisek Stanek
Director Adjunct pentru Metrologie Legală

Raport tehnic de încercare

Subiectul completării:
Obiectul completării constă în extinderea aprobării de tip cu marcajul TCM 212/18-5547 prin includerea tipului TPE 4x.xx, care are parametri şi utilizări similare cu cele ale tipurilor deja aprobate.

Raportul tehnic de încercare va fi completat şi modificat după cum urmează în următoarele puncte:

2. Metrologie de bază şi date tehnice

Tip	TPE 4x.xx
Tensiunea maximă pentru echipamente	max. 12kV
Tensiunea de încercare la frecvenţă industrială	max. 28kV
Tensiune de impuls de trăsnet	max. 75kV
Curent primar nominal I_{1N}	max. 800A
Curent secundar nominal I_{2N}	5A, 1A
Curent termic de scurtă durată nominal I_{th}	max. 63kA/1 s
Curent dinamic nominal I_{dyn}:	max. 157,5kA
Clasa de precizie	0,2; 0,2S; 0,5; 0,5S
Frecvenţă nominală	50Hz
Sarcină nominală	max. 150VA
Clasă de izolaţie	E

4. Încercări de tip

Încercările de tip au fost efectuate în laboratorul ABB Brno (vezi protocoalele nr. 1VLR019995 şi 1VLR020013). Protocoalele de încercare cu rezultatele măsurătorilor şi documentaţia tehnică sunt păstrate de către executantul tehnic al încercărilor în departamentul de transformatoare de măsură al CMILPM Praga.

Rezultatele încercărilor tehnice au demonstrat că aparatul respectă Măsura cu caracter general nr. 0111-OOP-C088-18 şi că funcţionarea sa în sistemul de transport din Cehia este aprobată. Dacă se respectă instrucţiunile producătorului, aparatul este capabil să îndeplinească funcţia pentru care a fost proiectat.

Celelalte caracteristici metrologice şi celelalte date rămân neschimbate.

Český metrologický institut

Type Approval Certificate

No. 0111-CS-A008-18

Czech Metrology in accordance with the Law of metrology No. 505/1990 Coll. as amended

approved

instrument current transformer
type TPU 4x.xx, TPU 5x.xx, TPU 6x.xx, TPU 7x.xx, TPE 60.xx and TPE 63.xx

under observation of technical data referred to in Annex of this Certificate.

Type approval mark: **TCM 212/18 - 5547**

Applicant: **ABB s.r.o.**
Vyskočilova 1561/4a
140 00 Praha
Czech Republic
ID: 49682563

Manufacturer: **ABB s.r.o.**
Czech Republic

Valid until: **20 March 2028**

Information on judicial remedies:
The judicial remedies against this decision are available to the applicant through Czech Metrology Institute to Czech Office for Standardization, Metrology and Testing within 15 days since the receipt of this Certificate.

Description:
Essential characteristic, approved conditions special conditions, examination results including technical drawings and schemas are set out in the technical test report appertaining to this certificate. The certificate comprises the front page and the technical test report. Certificate has 29 pages.

Český metrologický institut

Brno, 21 March 2018

RNDr. Pavel Klenovský
Director General

Technical test report

1. Gauge Description

Current transformers TPU 4x.xx, TPU 5x.xx, TPU 6x.xx, TPU 7x.xx, TPE 60.xx and TPE 63.xx are designed for measuring or securing purposes, possibly for special use in the interior environment. It is case into epoxy resin with the possibility of mounting in any position and designed for insulation voltages from 3.6 kV up to 40.5 kV. The transformers are designed as single or multiple turn transformers, with one transformer ratio, or with the possibility to be switched over on the secondary or primary side. The secondary windings are designed for measuring, securing, or special purposes. In operation, one terminal of every secondary winding used and also one terminal of the shorted unused winding must be grounded. The secondary windings are led to a cast secondary terminal board.

2. Basic metrology and technical data

Type	TPU 4x.xx	TPU 5x.xx	TPU 6x.xx
Highest voltage for equipment	max. 12 kV	max. 17.5 kV	max. 25 kV
Power frequency withstand test voltage	max. 28 kV	max. 38 kV.	max. 50 kV
Lightning impulse test voltage	max. 75 kV	max. 95 kV	max. 125 kV
Rated primary current	(5 - 3200) A		
Rated secondary current	1A, 5 A		
Max. rated continuous thermal current	max. 200% of rated primary current		
Number of secondary measuring windings	max. 6		
Number of secondary windings for verification	max. 6		
Measuring winding accuracy class	0,1; 0,2; 0,5 ; 0,2S; 0,5S		
Measuring winding output	max. 30 VA		
Nominal frequency	50/60 Hz		
Extended current range	max. 200% of rated primary current		

Type	TPU 7x.xx
Highest voltage for equipment	max. 40.5 kV
Power frequency withstand test voltage	max. 95 kV
Lightning impulse test voltage	Max. 200kV
Rated primary current	(5 - 2500) A
Rated secondary current	1A, 5 A
Max. rated continuous thermal current	max. 200% of rated primary current
Number of secondary measuring windings	max. 4
Number of secondary windings for verification	max. 4
Measuring winding accuracy class	0,1; 0,2; 0,5 ; 0,2S; 0,5S
Measuring winding output	max. 30 VA
Nominal frequency	50/60 Hz
Extended current range	max. 200% of rated primary current

Type	TPE 60.xx;	TPE 63.xx
Highest voltage for equipment	max. 25 kV	max. 25 kV
Power frequency withstand test voltage	max. 50 kV	max. 50 kV
Lightning impulse test voltage	Max. 125 kV	Max. 125 kV
Rated primary current	(5 - 600) A	(5 - 1250) A
Rated secondary current	1A, 5 A	1A, 5 A
Max. rated continuous thermal current	max. 200% of rated primary current	max. 200% of rated primary current
Number of secondary measuring windings	1 - 2	1 - 2
Number of secondary windings for verification	1 - 2	1 - 2
Number of primary ranges	1 - 3	1 - 3
Measuring winding accuracy class	0,1; 0,2; 0,5 ; 0,2S; 0,5S	0,1; 0,2; 0,5 ; 0,2S; 0,5S
Measuring winding output	max. 30 VA	max. 30 VA
Nominal frequency	50/60 Hz	50/60 Hz
Extended current range	max. 200% of rated primary current	max. 200% of rated primary current

3. Gauge data

The transformers are fitted with an irremovable plastic self-adhesive label. The following data is stated on the label:

a) Producer designation
b) Serial number, type, and production year
c) Rated primary and secondary current
d) Permitted overload
e) Rated output and precision class for each winding
f) Rated frequency
g) Insulation voltage
h) Type approval mark.

4. Type test

Type tests were performed by the Czech Metrology Institute at the Technical Laboratory ABB, s.r.o. EPMV Brno in cooperation with manufacturer in whole range according to standard IEC 61869-1 (ČSN EN 61869-1) and IEC 61869-2 (ČSN EN 61869-2) – see type test reports ABB and PEHLA laboratory No. 14193Ra, 14194Ra, 14201Ra, 14202Ra, 14203Ra, 14204Ra, 14205Ra, 14206Ra, 14207Ra, 14208Ra, 14210Ra, 14211Ra, 14217Ra, 14218Ra, 14219Ra, 14220Ra, 14221Ra, 14222Ra, 14223Ra, 14224Ra, 14227Ra, 14228Ra, 14233Ra, 14234Ra, 14235Ra, 14236Ra, 15043Ra, 15044Ra, 15047Ra, 15048Ra, 14197Ra, 14198Ra, 14199Ra, 14200Ra, 14209Ra, 14215Ra, 14225Ra, 14231Ra, 14238Ra, 14242Ra, 14244Ra, 14257Ra, 14262Ra, 15046Ra, 15049Ra, 15050Ra, 14245Ra, 14246Ra, 14247Ra, 14248Ra, 14249Ra, 14250Ra, 14241Ra, 14242Ra, 14244Ra, 14251Ra, 15051Ra, 15055Ra, 14267Ra, 14268Ra, 15056Ra, 15057Ra, 15059Ra, 15060Ra, 15061Ra, 15062Ra, 14257Ra, 14262Ra, 15058Ra, 15063Ra, 14263Ra, 14269Ra, 15068Ra, 15069Ra, 15070Ra, 15071Ra, 15072Ra, 14258Ra, 1VLR018254, 15052Ra, 15053Ra and 15054Ra. Test reports including test results and technical documentation are stored at the Czech Metrology Institute, Laboratory of primary metrology (Dept. of Electromagnetic Quantities) in Prague. Type test reports contain all mandatory type tests according the standards IEC 61869-1 and IEC 61869-2 relevant for this type of current transformers.

Type test results showed that the gauge is fulfilling requirements of above standards and it is being approved for use at the transmission system in the Czech Republic. If manufacturer's instructions are followed the gauge is able to fulfill its function without negative impact on personnel safety and environment.

5. Verification

Verification is performed according to the valid CMI document for instrument transformers verification. Transformers which pass required tests are marked by official mark (verification mark, label or seal).

6. Verification Validity Time

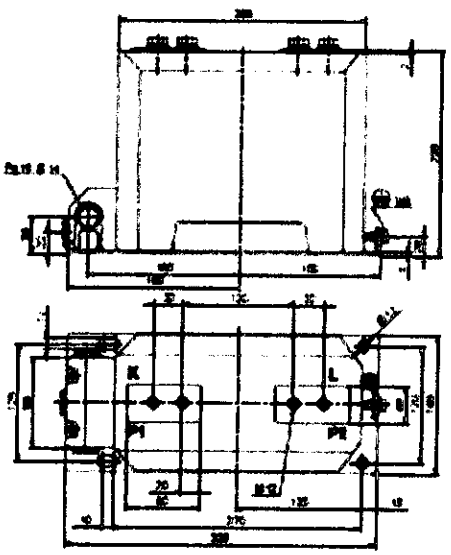
The verification validity time is determined by the ordinance of the Ministry of Industry and Trade.

Appendix: Drawings TPU 4x.xx, TPU 5x.xx, TPU 6x.xx, TPU 7x.xx, TPE 60.xx and TPE 63.xx.

APPENDIX

TPU 40.11
TPU 43.11

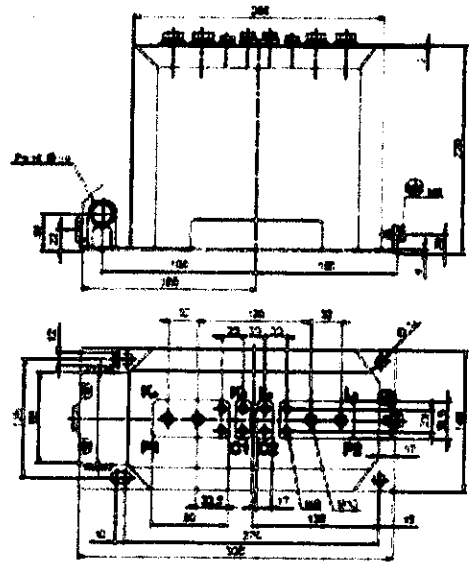
Weight: 20.24kg
Creepage distance: 201 mm



Drawing n	Polarity
44814000	P1 to secondary terminal
44814010	P2 to secondary terminal

TPU 40.12

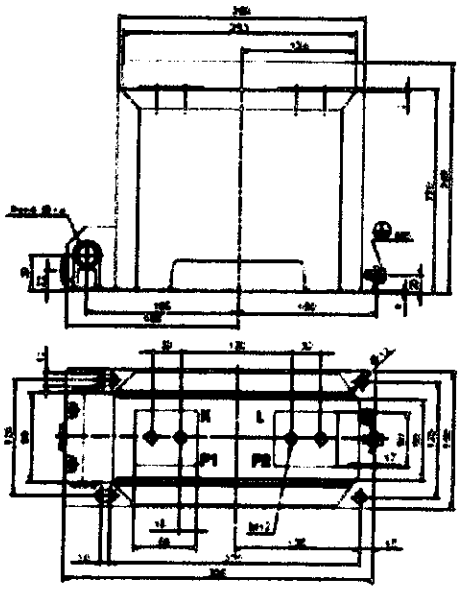
Weight: 19.25kg
Creepage distance: 338 mm



Drawing n	Polarity
[illegible]	P1 to secondary terminal
[illegible]	P2 to secondary terminal

TPU 40.13
TPU 43.13

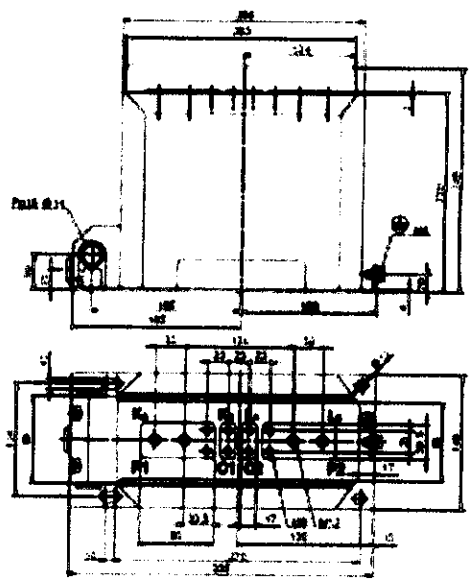
Weight: 20.24kg
Creepage distance: 214mm



Drawing n	Polarity
[illegible]	P1 to secondary terminal
[illegible]	P2 to secondary terminal

TPU 40.14

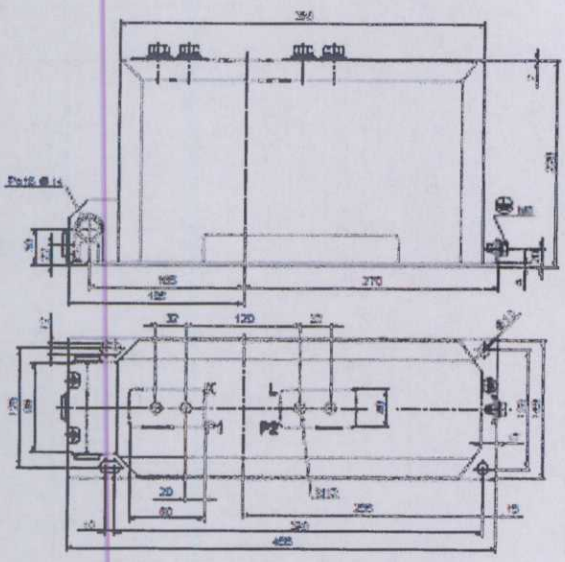
Weight: 19.25kg
Creepage distance: 201mm



Drawing n	Polarity
[illegible]	P1 to secondary terminal
[illegible]	P2 to secondary terminal

TPU 40.21
TPU 43.21

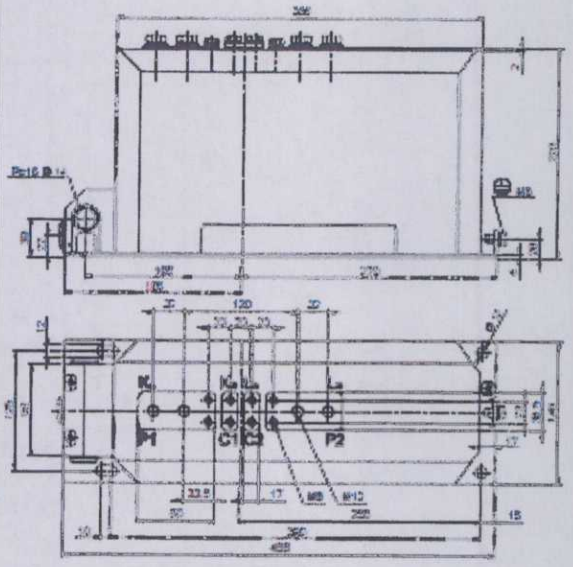
Weight: 29-37kg
Creepage distance: 201mm



Drawing n	Polarity
44814090	P1 to secondary terminal
44814090	P2 to secondary terminal

TPU 40.22

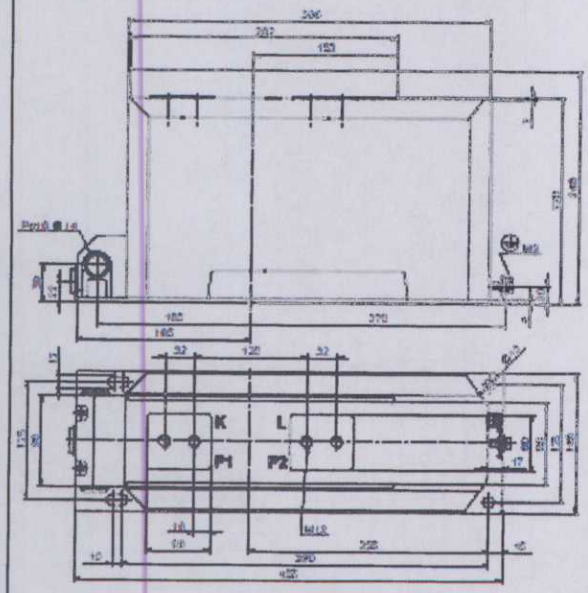
Weight: 29-37kg
Creepage distance: 215mm



Drawing n	Polarity
44814100	P1 to secondary terminal
44814110	P2 to secondary terminal

TPU 40.23
TPU 43.23

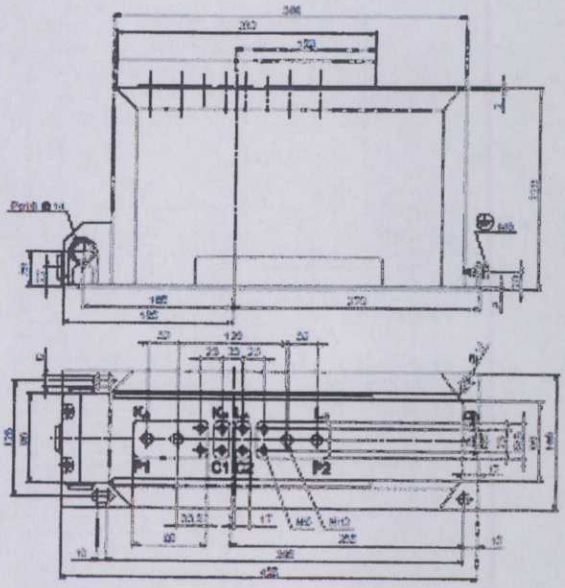
Weight: 29-37kg
Creepage distance: 214mm



Drawing n	Polarity
44814120	P1 to secondary terminal
44814130	P2 to secondary terminal

TPU 40.24

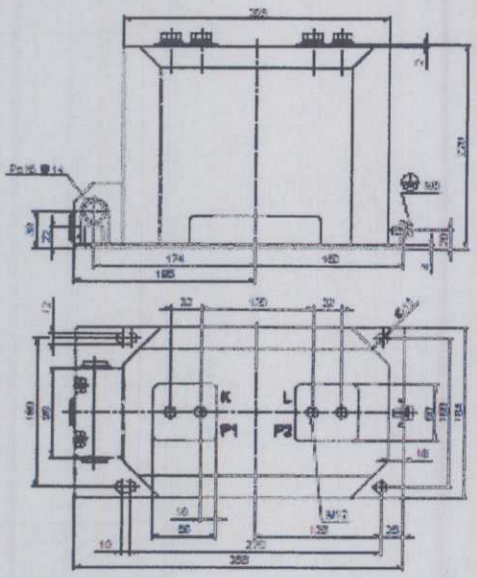
Weight: 29-37kg
Creepage distance: 215mm



Drawing n	Polarity
44814140	P1 to secondary terminal
44814150	P2 to secondary terminal

TPU 40.31
TPU 43.31

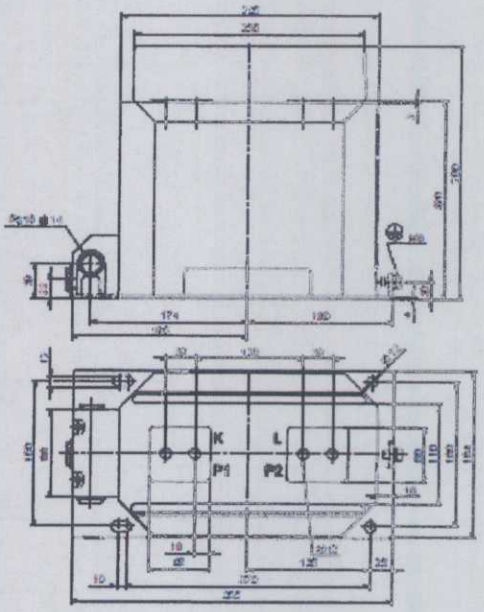
Weight: 31-39kg
Creepage distance: 215mm



Drawing n	Polarity
446314180	P1 to secondary terminal
446314170	P2 to secondary terminal

TPU 40.33
TPU 43.33

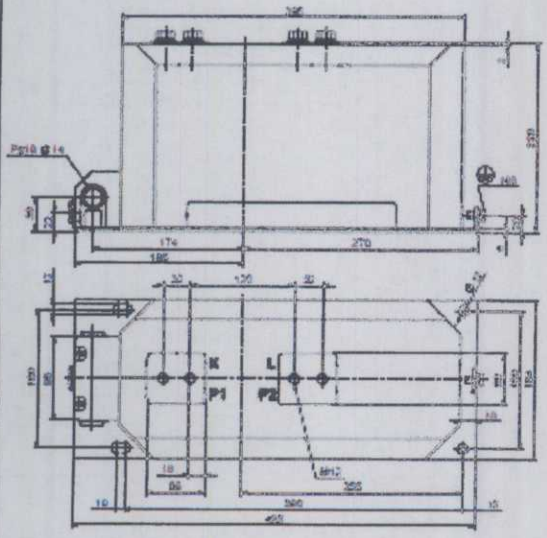
Weight: 31-39kg
Creepage distance: 215mm



Drawing n	Polarity
446314180	P1 to secondary terminal
446314190	P2 to secondary terminal

TPU 40.41
TPU 41.41
TPU 43.41

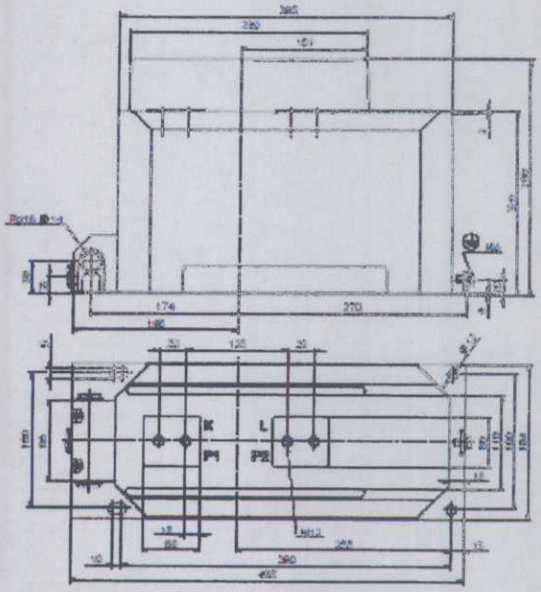
Weight: 45-55kg
Creepage distance: 215mm



Drawing n	Polarity
446314200	P1 to secondary terminal
446314210	P2 to secondary terminal

TPU 40.43
TPU 41.43
TPU 43.43

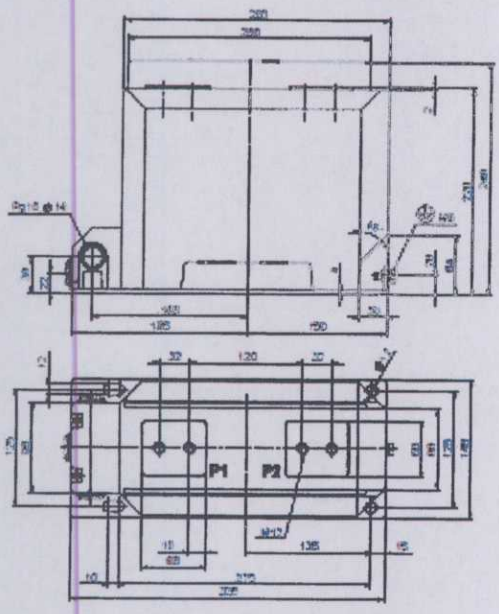
Weight: 45-55kg
Creepage distance: 215mm



Drawing n	Polarity
446314220	P1 to secondary terminal
446314230	P2 to secondary terminal

TPU 40.53
TPU 43.53

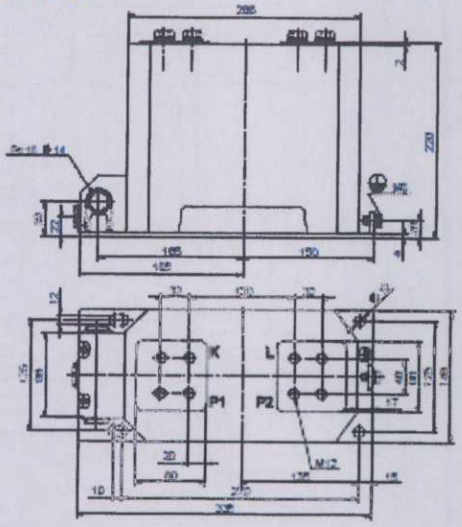
Weight: 28kg
Creepage distance: 214mm



Drawing n	Polarity
1VLA600027R0101	P1 to secondary terminal
1VLA600027R0102	P2 to secondary terminal

TPU 44.11
TPU 45.11
TPU 46.11
TPU 47.11
TPU 48.11

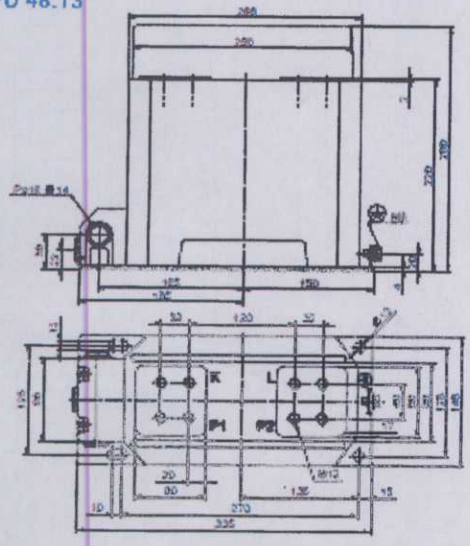
Weight: 25-31kg
Creepage distance: 201mm



Drawing n	Polarity
44614240	P1 to secondary terminal
44614250	P2 to secondary terminal

TPU 44.13
TPU 45.13
TPU 46.13
TPU 47.13
TPU 48.13

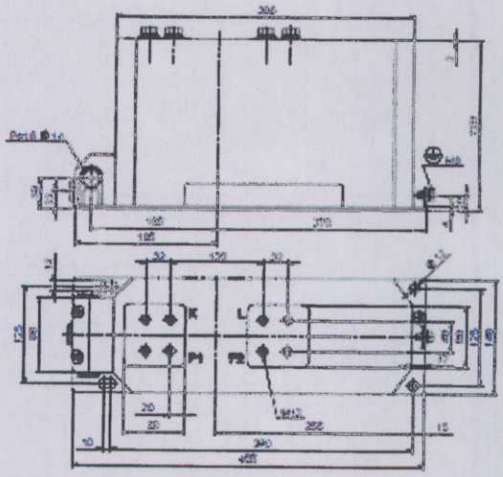
Weight: 25-31kg
Creepage distance: 201mm



Drawing n	Polarity
44614260	P1 to secondary terminal
44614270	P2 to secondary terminal

TPU 44.21
TPU 45.21
TPU 46.21
TPU 47.21
TPU 48.21

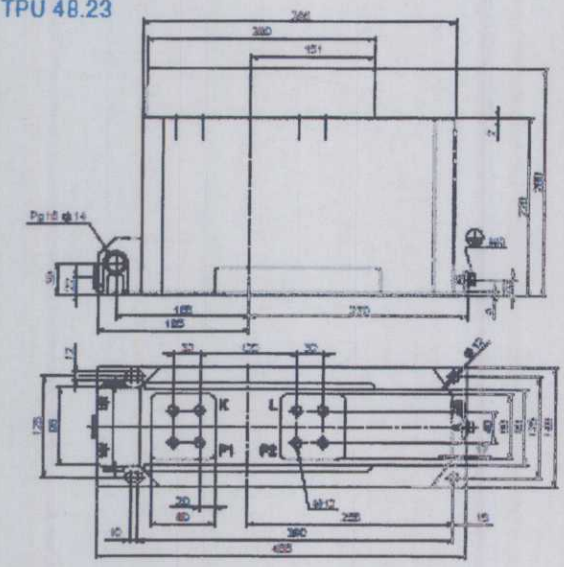
Weight: 40-45kg
Creepage distance: 201mm



Drawing n	Polarity
44614280	P1 to secondary terminal
44614290	P2 to secondary terminal

TPU 44.23
TPU 45.23
TPU 46.23
TPU 47.23
TPU 48.23

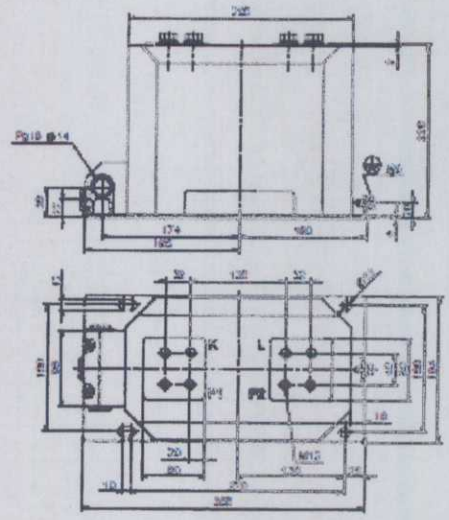
Weight: 40-45kg
Creepage distance: 201mm



Drawing n	Polarity
44814300	P1 to secondary terminal
44814310	P2 to secondary terminal

TPU 44.31
TPU 45.31
TPU 46.31
TPU 47.31
TPU 48.31

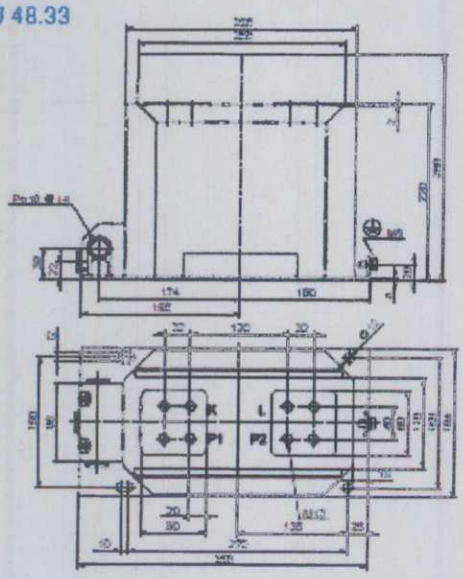
Weight: 34-42kg
Creepage distance: 210 mm



Drawing n	Polarity
44814320	P1 to secondary terminal
44814330	P2 to secondary terminal

TPU 44.33
TPU 45.33
TPU 46.33
TPU 47.33
TPU 48.33

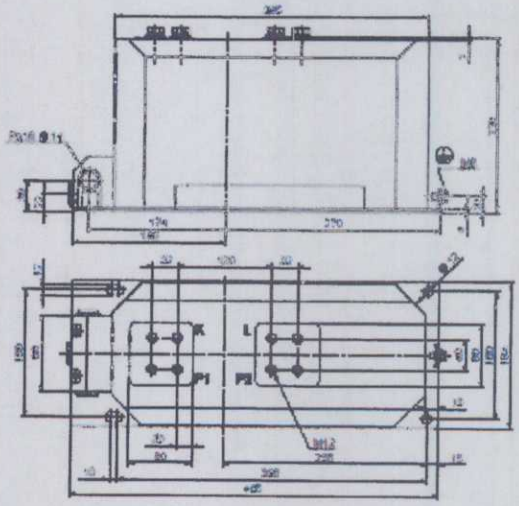
Weight: 34-42kg
Creepage distance: 210mm



Drawing n	Polarity
44814340	P1 to secondary terminal
44814350	P2 to secondary terminal

TPU 44.41
TPU 45.41
TPU 46.41
TPU 47.41
TPU 48.41

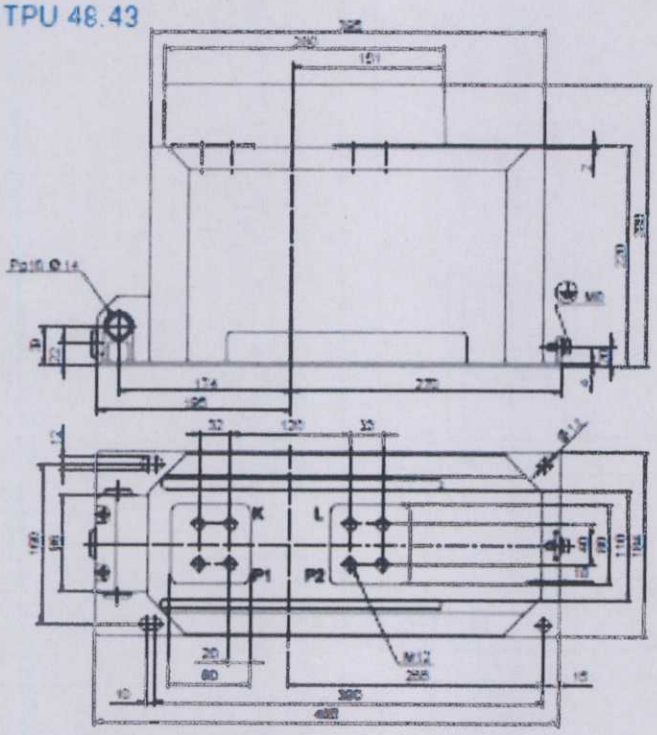
Weight: 46-58kg
Creepage distance: 210mm



Drawing n	Polarity
44814360	P1 to secondary terminal
44814370	P2 to secondary terminal

TPU 44.43
TPU 45.43
TPU 46.43
TPU 47.43
TPU 48.43

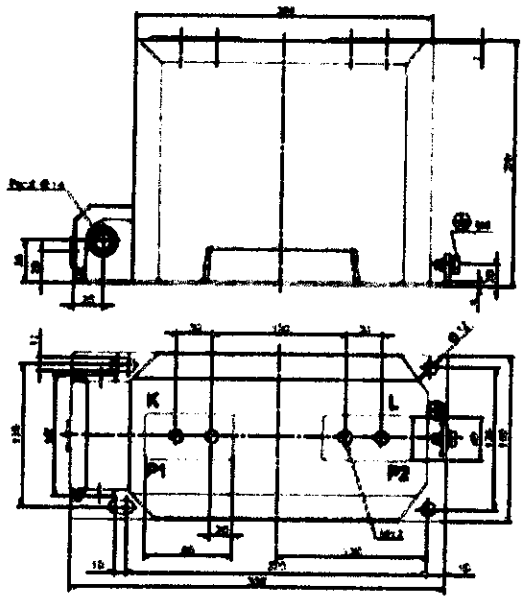
Weight: 46-58kg
Creepage distance: 210mm



Drawing n	Polarity
44614380	P1 to secondary terminal
44614390	P2 to secondary terminal

TPU 50.11
TPU 53.11

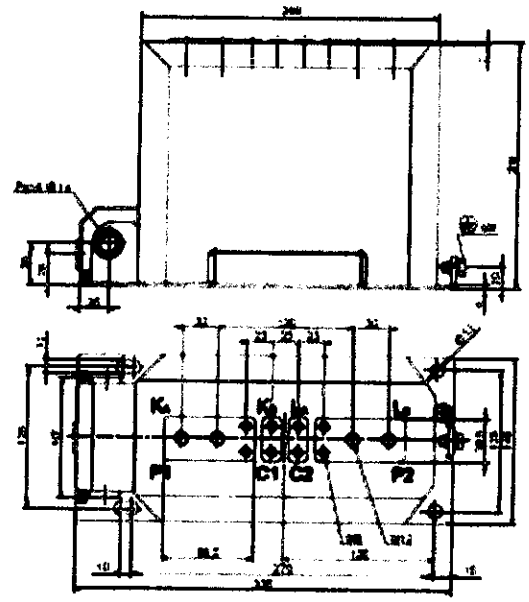
Weight: 20-24kg
Creepage distance: 201 mm



Drawing n	Polarity
[illegible]	P1 to secondary terminal
[illegible]	P2 to secondary terminal

TPU 50.12

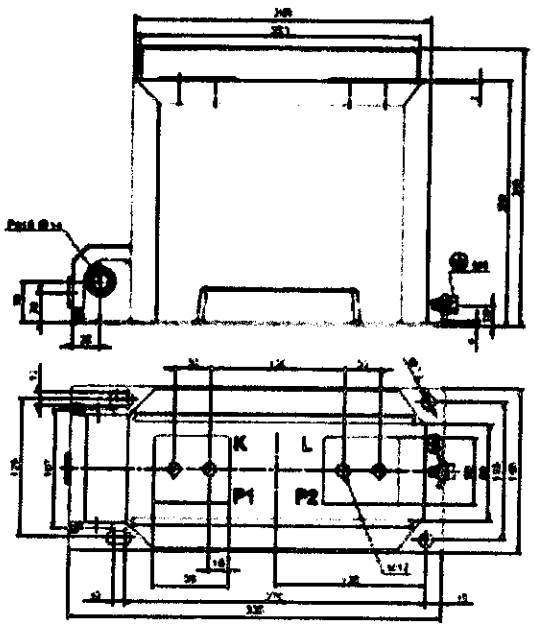
Weight: 19-25kg
Creepage distance: 215mm



Drawing n	Polarity
[illegible]	P1 to secondary terminal
[illegible]	P2 to secondary terminal

TPU 50.13
TPU 53.13

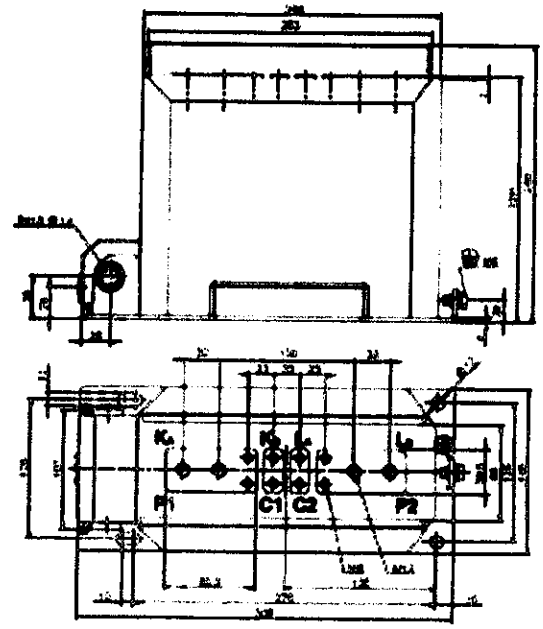
Weight: 20-24kg
Creepage distance: 214mm



Drawing n	Polarity
[illegible]	P1 to secondary terminal
[illegible]	P2 to secondary terminal

TPU 50.14

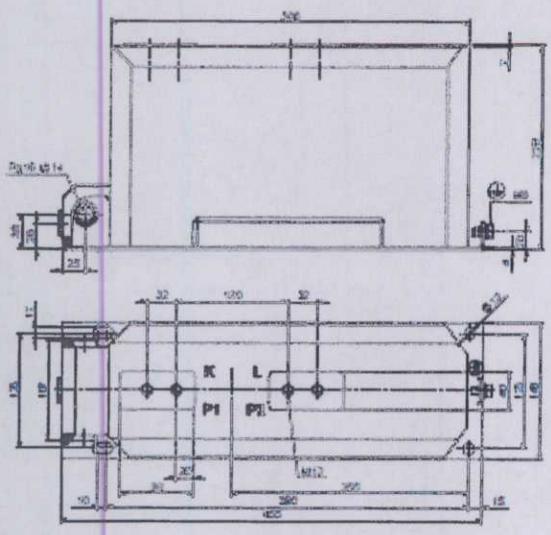
Weight: 19-25kg
Creepage distance: 215mm



Drawing n	Polarity
[illegible]	P1 to secondary terminal
[illegible]	P2 to secondary terminal

TPU 50.21
TPU 53.21

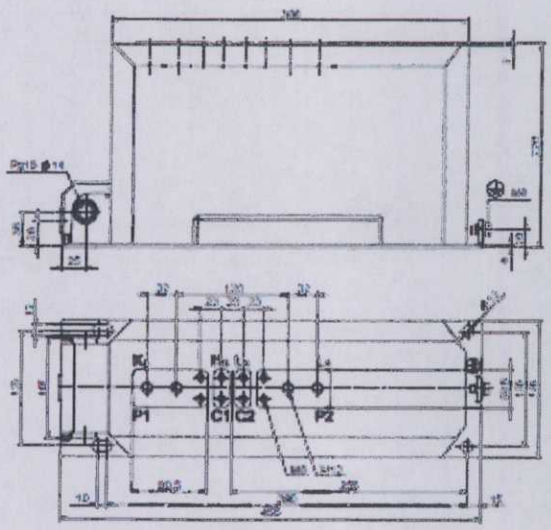
Weight: 29-37kg
Creepage distance: 201 mm



Drawing n	Polarity
448146[illegible]0	P1 to secondary terminal
448146[illegible]0	P2 to secondary terminal

TPU 50.22

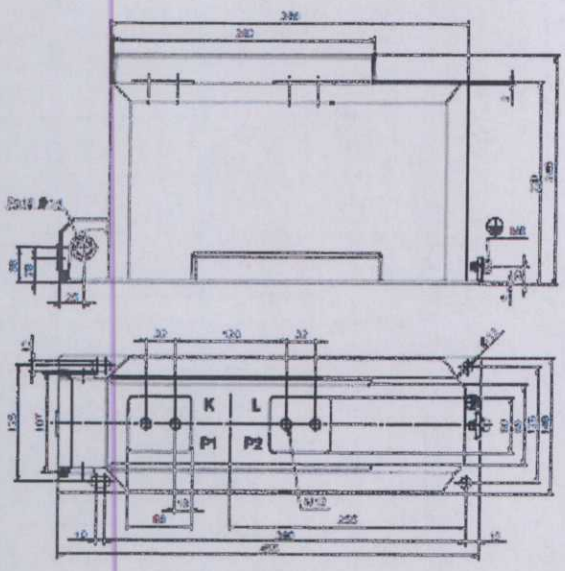
Weight: 29-37kg
Creepage distance: 215mm



Drawing n	Polarity
448146[illegible]50	P1 to secondary terminal
448146[illegible]00	P2 to secondary terminal

TPU 50.23
TPU 53.23

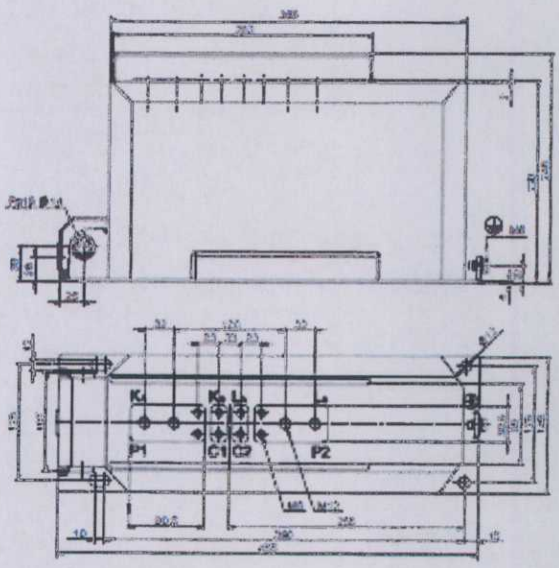
Weight: 29-37kg
Creepage distance: 214mm



Drawing n	Polarity
448146[illegible]70	P1 to secondary terminal
448146[illegible]0	P2 to secondary terminal

TPU 50.24

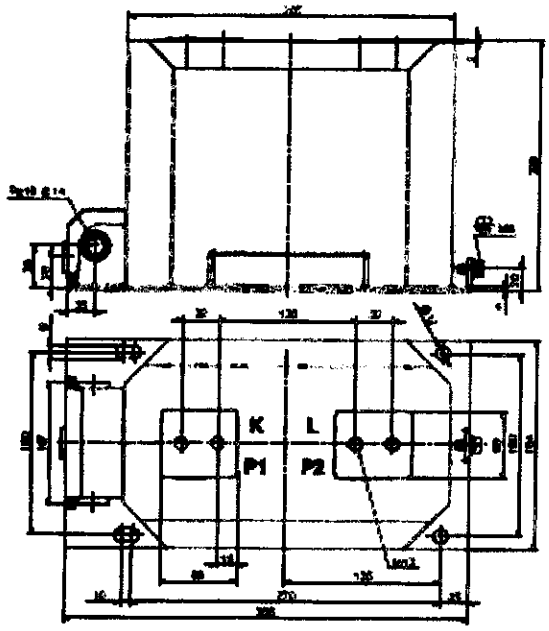
Weight: 29-37kg
Creepage distance: 215mm



Drawing n	Polarity
448146[illegible]0	P1 to secondary terminal
448147[illegible]0	P2 to secondary terminal

TPU 50.31
TPU 53.31

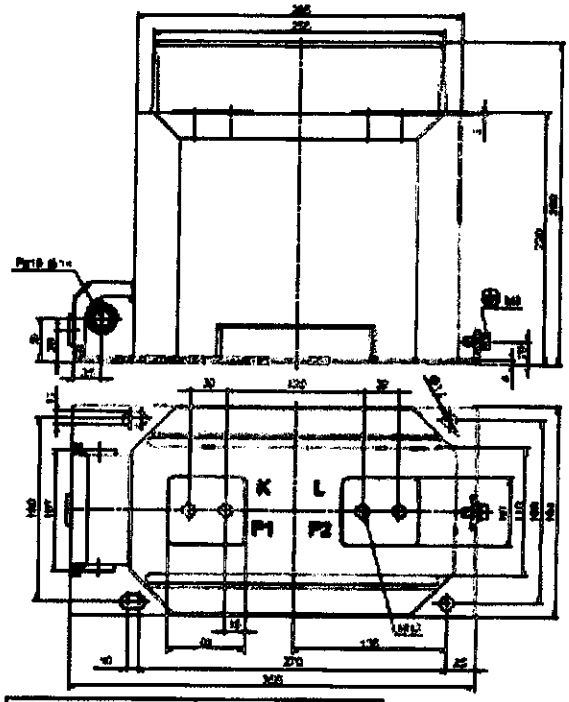
Weight: 31-39kg
Creepage distance: 215mm



Drawing n	Polarity
44814710	P1 to secondary terminal
44814720	P2 to secondary terminal

TPU 50.33
TPU 53.33

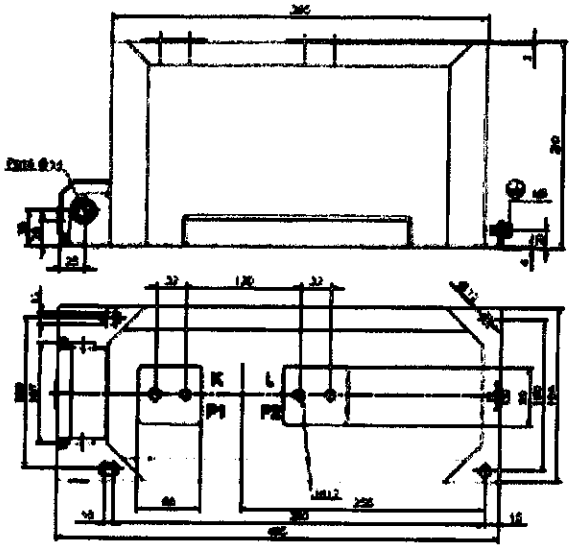
Weight: 31-39kg
Creepage distance: 215mm



Drawing n	Polarity
44814730	P1 to secondary terminal
44814740	P2 to secondary terminal

TPU 50.41
TPU 51.41
TPU 53.41

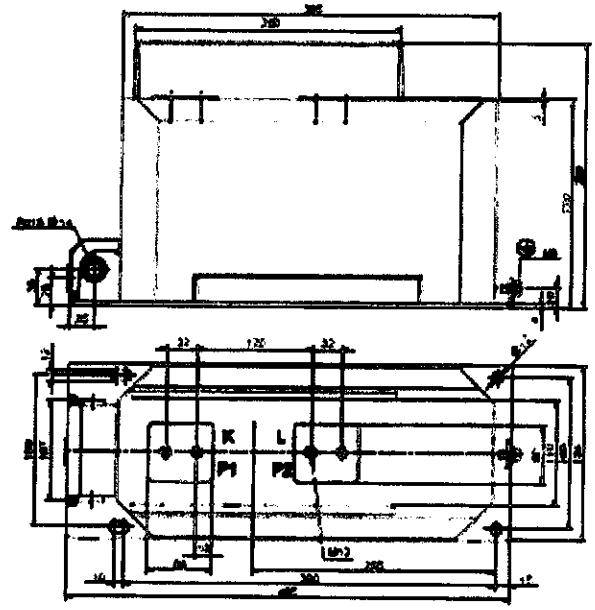
Weight: 45-55kg
Creepage distance: 215mm



Drawing n	Polarity
44814750	P1 to secondary terminal
44814760	P2 to secondary terminal

TPU 50.43
TPU 51.43
TPU 53.43

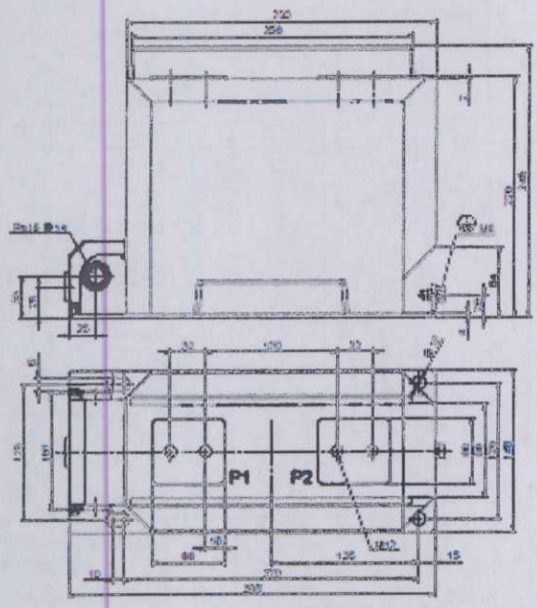
Weight: 45-55kg
Creepage distance: 215mm



Drawing n	Polarity
44814770	P1 to secondary terminal
44814780	P2 to secondary terminal

TPU 50.53
TPU 53.53

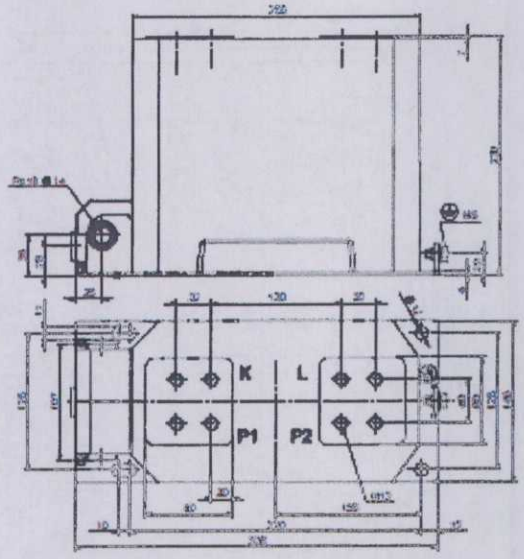
Weight: 28kg
Creepage distance: 214mm



Drawing n	Polarity
1WL4600671P0201	P1 to secondary terminal
1WL4600671P0202	P2 to secondary terminal

TPU 54.11
TPU 55.11
TPU 56.11
TPU 57.11
TPU 58.11

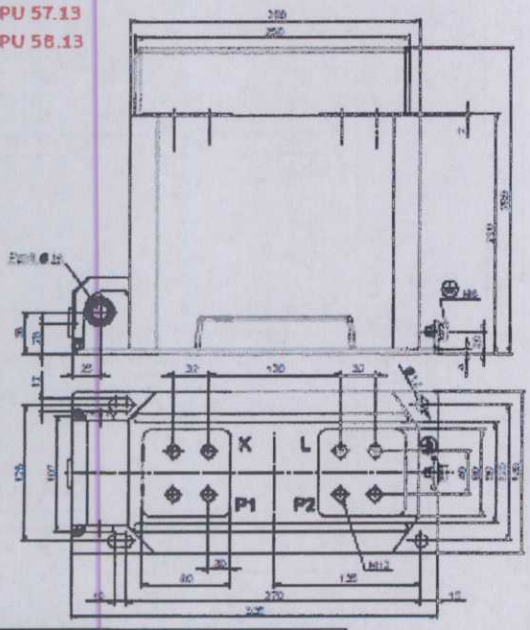
Weight: 25-31kg
Creepage distance: 201mm



Drawing n	Polarity
1WL4600499P0101	P1 to secondary terminal
1WL4600499P0102	P2 to secondary terminal

TPU 54.13
TPU 55.13
TPU 56.13
TPU 57.13
TPU 58.13

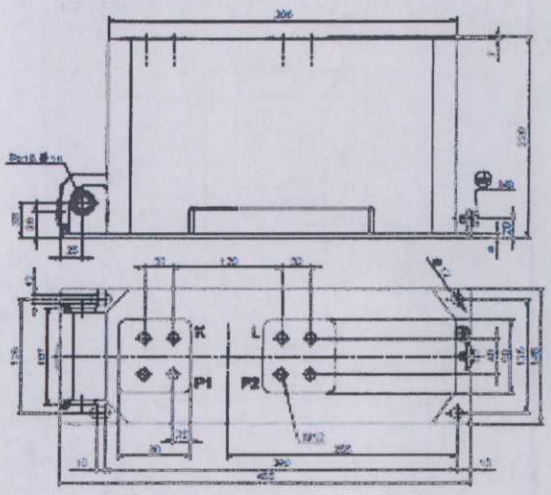
Weight: 25-31kg
Creepage distance: 201mm



Drawing n	Polarity
1WL4600600P0101	P1 to secondary terminal
1WL4600600P0102	P2 to secondary terminal

TPU 54.21
TPU 55.21
TPU 56.21
TPU 57.21
TPU 58.21

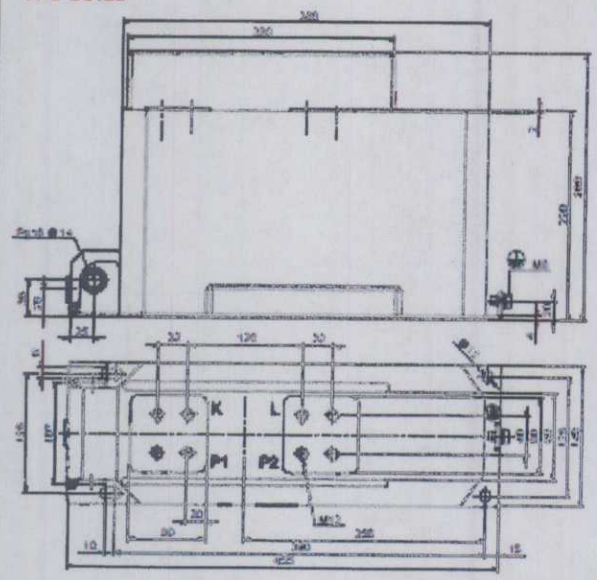
Weight: 40-45kg
Creepage distance: 201mm



Drawing n	Polarity
1WL4600501P0101	P1 to secondary terminal
1WL4600501P0102	P2 to secondary terminal

TPU 54.23
TPU 55.23
TPU 56.23
TPU 57.23
TPU 58.23

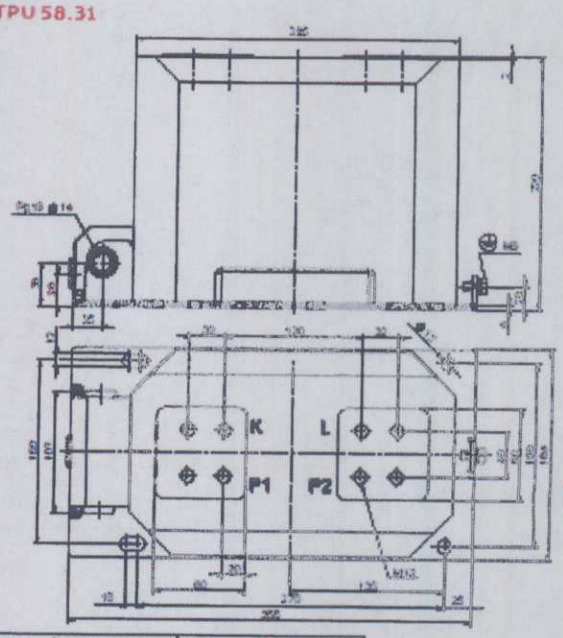
Weight: 40-45kg
Creepage distance: 201mm



Drawing n	Polarity
1VL4850ECDYU1D1	P1 to secondary terminal
1VL4850ECDYU1D2	P2 to secondary terminal

TPU 54.31
TPU 55.31
TPU 56.31
TPU 57.31
TPU 58.31

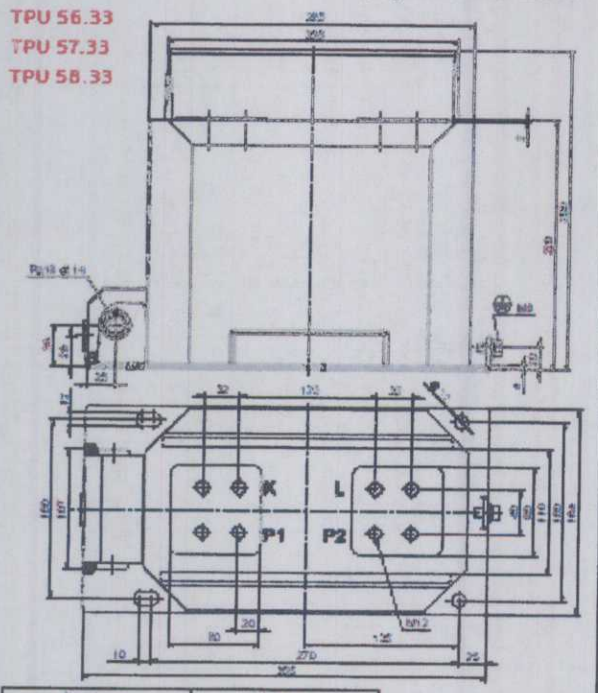
Weight: 34-42kg
Creepage distance: 210mm



Drawing n	Polarity
44814790	P1 to secondary terminal
44814800	P2 to secondary terminal

TPU 54.33
TPU 55.33
TPU 56.33
TPU 57.33
TPU 58.33

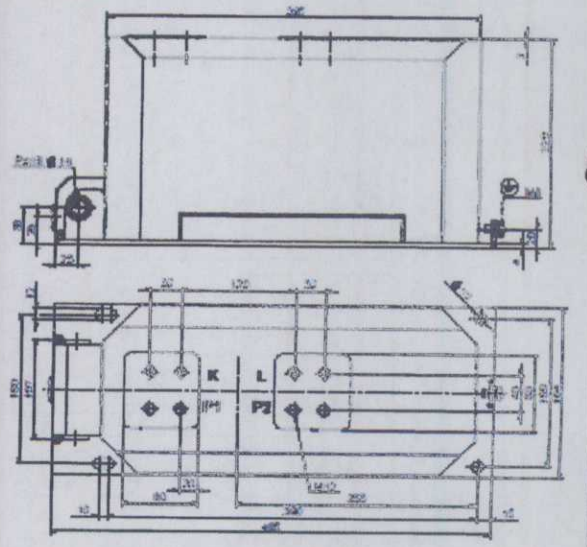
Weight: 34-42kg
Creepage distance: 210mm



Drawing n	Polarity
44814810	P1 to secondary terminal
44814820	P2 to secondary terminal

TPU 54.41
TPU 55.41
TPU 56.41
TPU 57.41
TPU 58.41

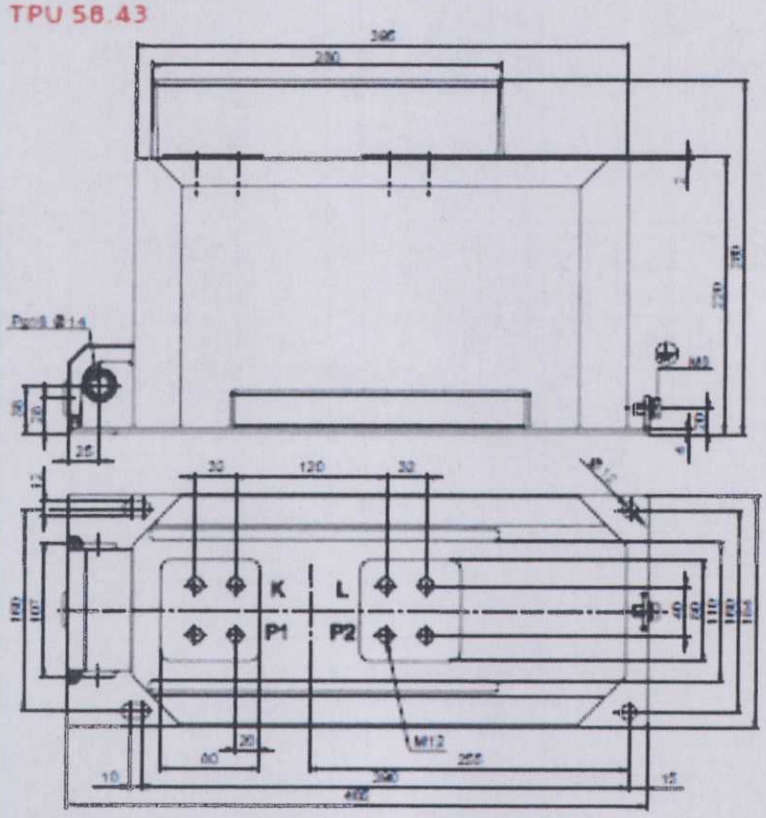
Weight: 46-58kg
Creepage distance: 210mm



Drawing n	Polarity
44814830	P1 to secondary terminal
44814840	P2 to secondary terminal

TPU 54.43
TPU 55.43
TPU 56.43
TPU 57.43
TPU 58.43

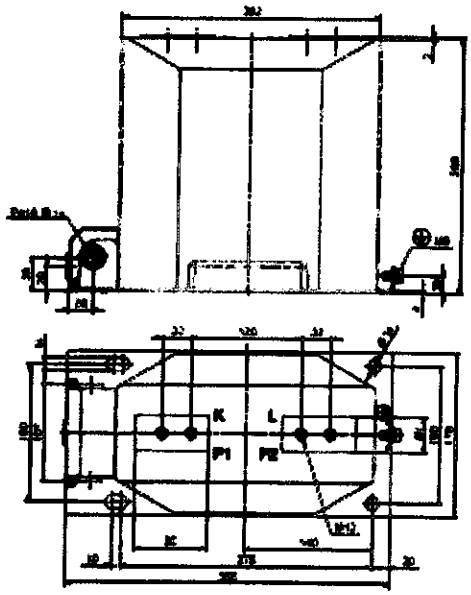
Weight: 46-58kg
Creepage distance: 210mm



Drawing n	Polarity
44614650	P1 to secondary terminal
44614660	P2 to secondary terminal

TPU 60.11
TPU 63.11

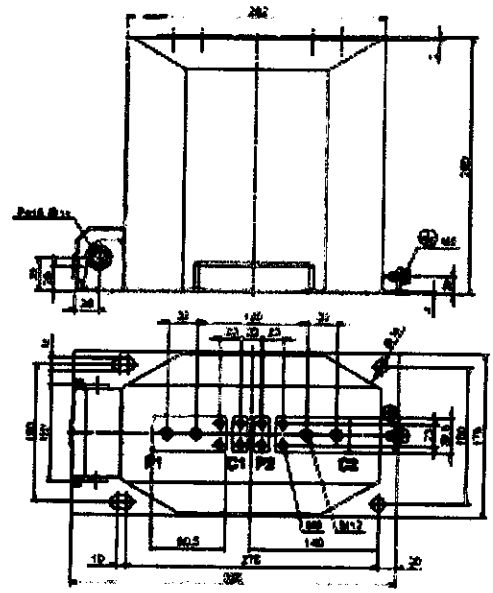
Weight: 31-35 kg
Creepage distance: 270 mm



Drawing n	Polarity
44813000	P1 to secondary terminal
44813010	P2 to secondary terminal

TPU 60.12

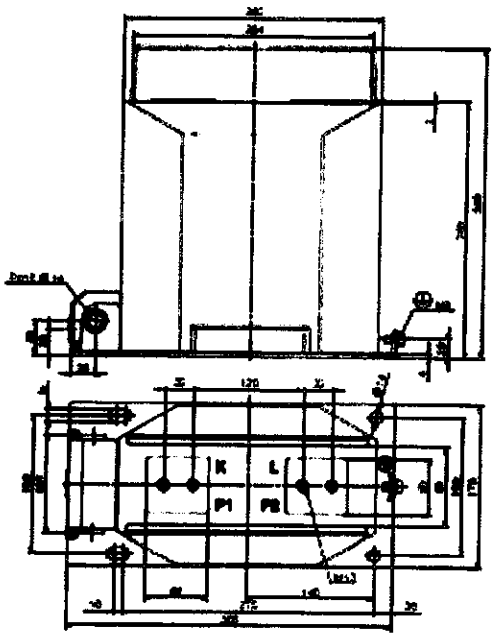
Weight: 31-35 kg
Creepage distance: 282 mm



Drawing n	Polarity
44813020	P1 to secondary terminal
44813030	P2 to secondary terminal

TPU 60.13
TPU 63.13

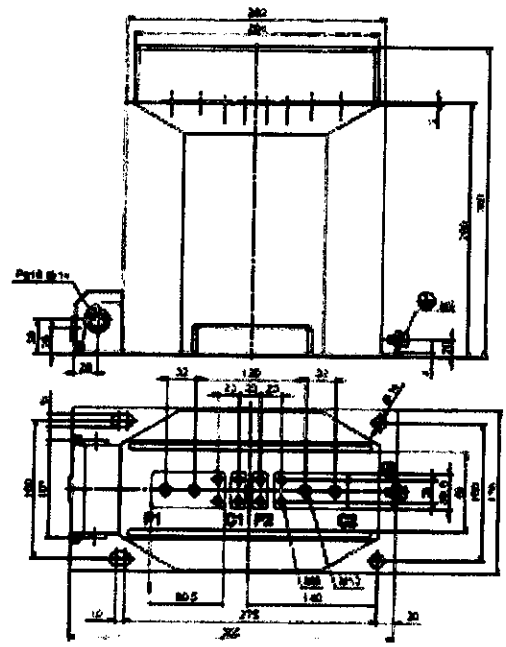
Weight: 31-35 kg
Creepage distance: 280 mm



Drawing n	Polarity
44813040	P1 to secondary terminal
44813050	P2 to secondary terminal

TPU 60.14

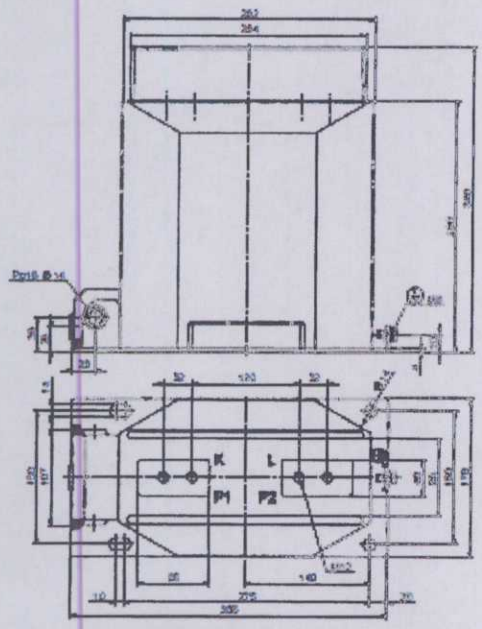
Weight: 31-35 kg
Creepage distance: 282 mm



Drawing n	Polarity
44813060	P1 to secondary terminal
44813070	P2 to secondary terminal

TPU 60.15
TPU 63.15

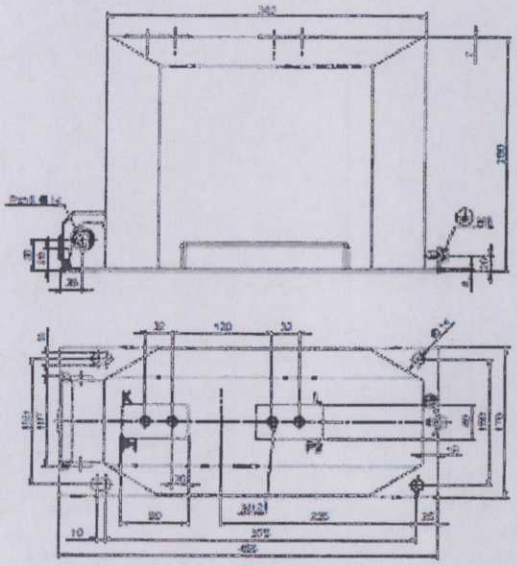
Weight: 31-35 kg
Creepage distance: 270 mm



Drawing n	Polarity
1VL4602057R0101	P1 to secondary terminal
1VL4602057R0102	P2 to secondary terminal

TPU 60.21
TPU 63.21

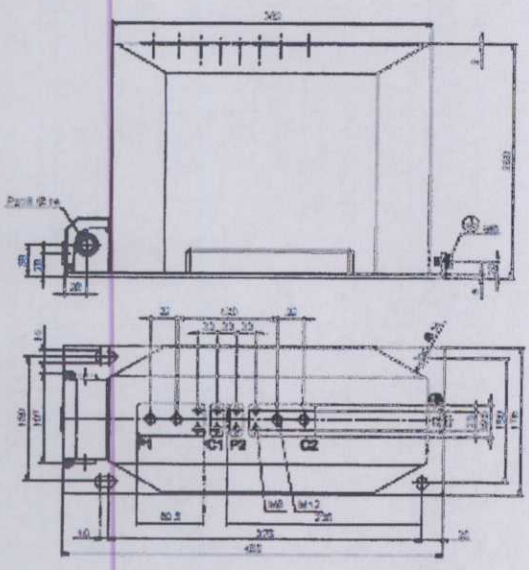
Weight: 43-49 kg
Creepage distance: 270 mm



Drawing n	Polarity
448150[illegible]	P1 to secondary terminal
448150[illegible]	P2 to secondary terminal

TPU 60.22

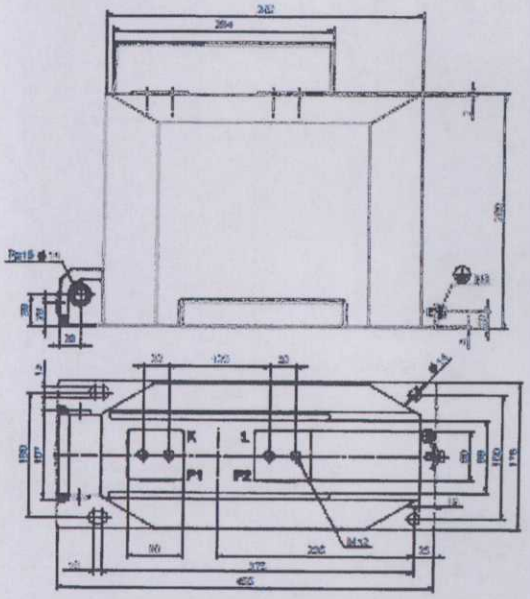
Weight: 43-49 kg
Creepage distance: 282 mm



Drawing n	Polarity
448151[illegible]	P1 to secondary terminal
448151[illegible]	P2 to secondary terminal

TPU 60.23
TPU 63.23

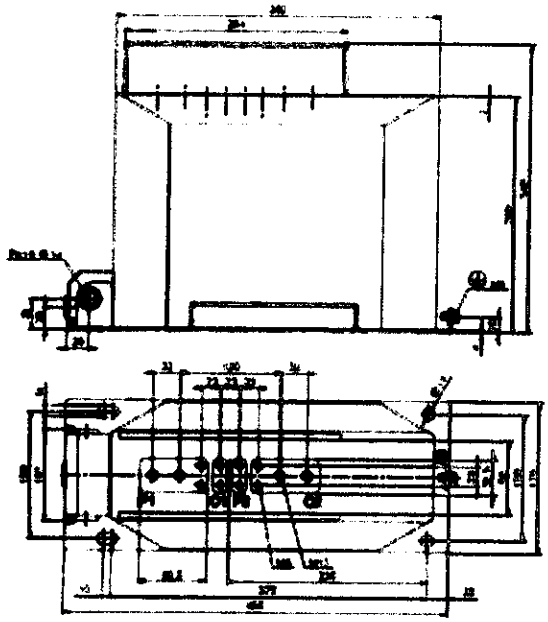
Weight: 43-49 kg
Creepage distance: 280 mm



Drawing n	Polarity
448151[illegible]	P1 to secondary terminal
448151[illegible]	P2 to secondary terminal

TPU 60.24

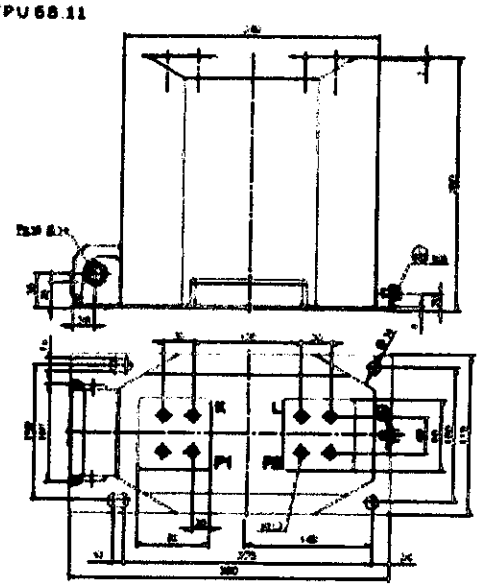
weight: 43-49 kg
Creepage distance: 282 mm



Drawing	Polarity
44815140	P1 to secondary terminal
44815190	P2 to secondary terminal

TPU 64.11
TPU 65.11
TPU 66.11
TPU 67.11
TPU 68.11

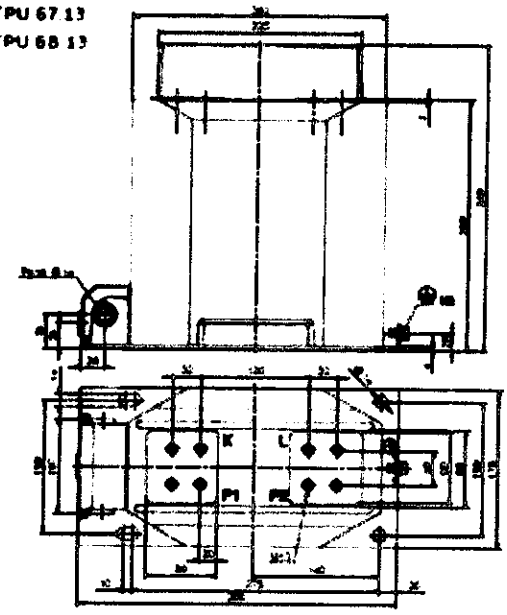
Weight: 36-41 kg
Creepage distance: 270 mm



Drawing	Polarity
44815160	P1 to secondary terminal
44815170	P2 to secondary terminal

TPU 64.13
TPU 65.13
TPU 66.13
TPU 67.13
TPU 68.13

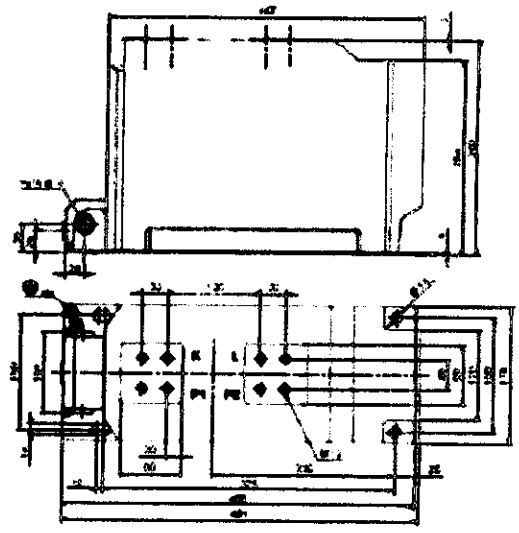
weight: 36-41 kg
Creepage distance: 270 mm



Drawing	Polarity
44815180	P1 to secondary terminal
44815190	P2 to secondary terminal

TPU 64.21
TPU 65.21
TPU 66.21
TPU 67.21
TPU 68.21

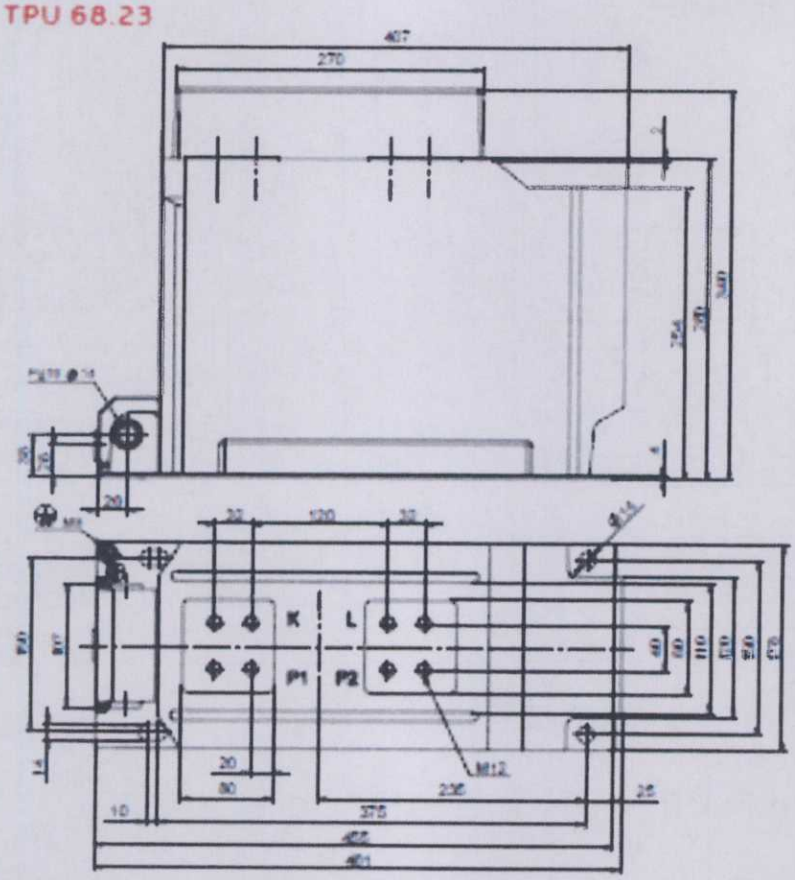
weight: 50-57 kg
Creepage distance: 272 mm



Drawing	Polarity
44815300	P1 to secondary terminal
[illegible]	P2 to secondary terminal

TPU 64.23
TPU 65.23
TPU 66.23
TPU 67.23
TPU 68.23

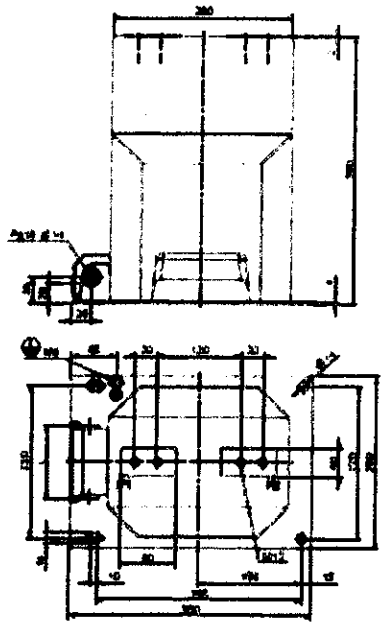
Weight: 50-57 kg
Creepage distance: 272 mm



Drawing n.	Polarity
446815220	P1 to secondary terminal
446815230	P2 to secondary terminal

TPU 70.41
TPU 73.41

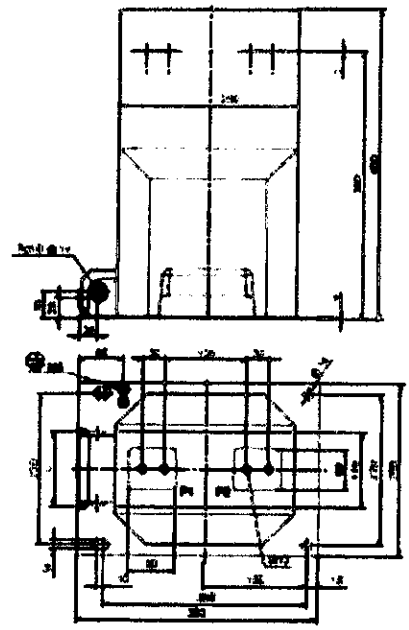
Weight: 41 kg
Creepage distance: 380 mm



Drawing n	Priority
[illegible]	P1 to secondary terminal
[illegible]	P2 to secondary terminal

TPU 70.43
TPU 73.43

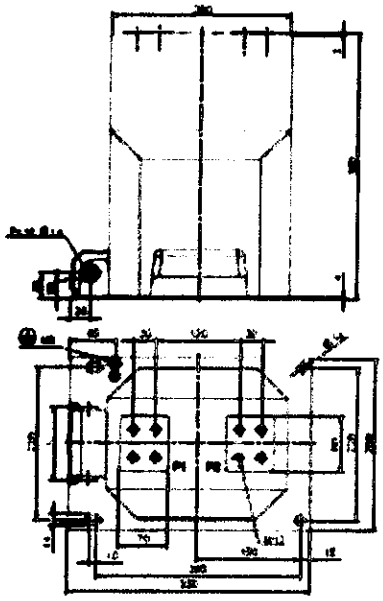
Weight: 41 kg
Creepage distance: 380 mm



Drawing n	Priority
[illegible]	P1 to secondary terminal
[illegible]	P2 to secondary terminal

TPU 74.41
TPU 75.41
TPU 76.41

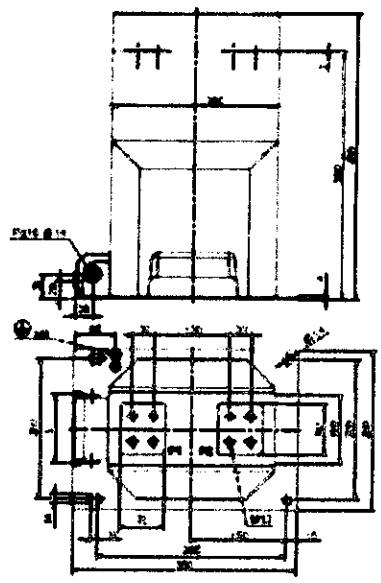
Weight: 43 kg
Creepage distance: 377 mm



Drawing n	Priority
[illegible]	P1 to secondary terminal
[illegible]	P2 to secondary terminal

TPU 74.43
TPU 75.43
TPU 76.43

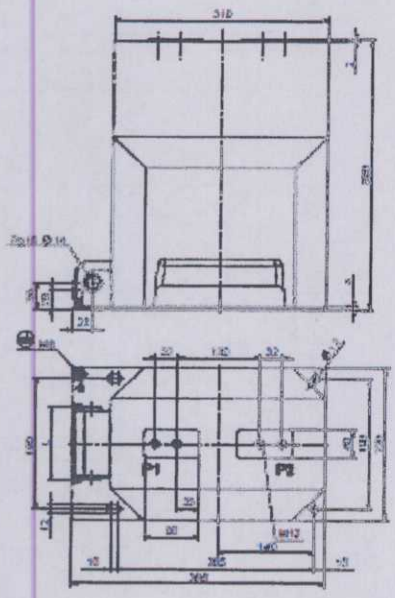
Weight: 43 kg
Creepage distance: 377 mm



Drawing n	Priority
[illegible]	P1 to secondary terminal
[illegible]	P2 to secondary terminal

TPU 70.51
TPU 73.51

Weight: 44-54 kg
Creepage distance: 400 mm

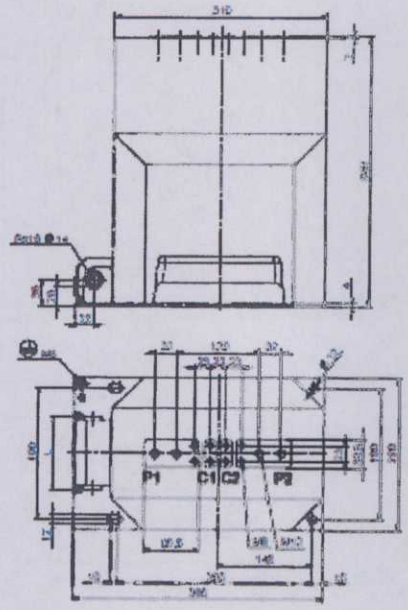


L=107mm for 8 or 12 clamps
L=134mm for 10 clamps

Drawing n	Polarity
448157730	P1 to secondary terminal
448157740	P2 to secondary terminal

TPU 70.52

Weight: 44-54 kg
Creepage distance: 409 mm

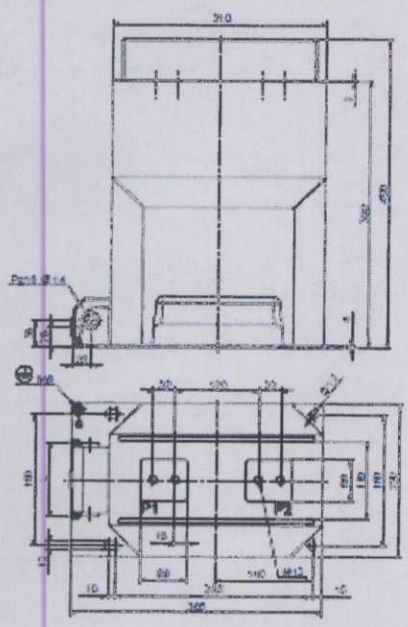


L=107mm for 8 or 12 clamps
L=134mm for 10 clamps

Drawing n	Polarity
448157750	P1 to secondary terminal
448157760	P2 to secondary terminal

TPU 70.53
TPU 73.53

Weight: 44-54 kg
Creepage distance: 397 mm

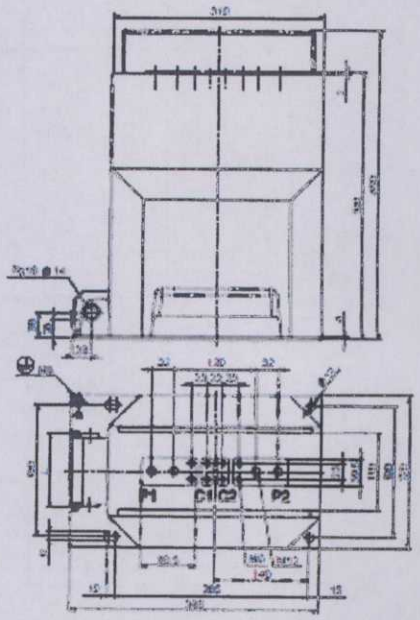


L=107mm for 8 or 12 clamps
L=134mm for 10 clamps

Drawing n	Polarity
448157650	P1 to secondary terminal
448157660	P2 to secondary terminal

TPU 70.54

Weight: 44-54 kg
Creepage distance: 409 mm

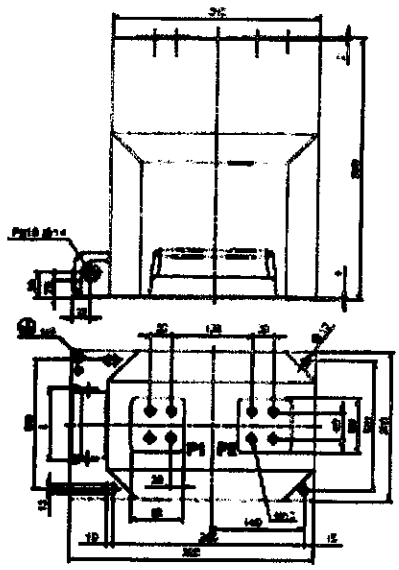


L=107mm for 8 or 12 clamps
L=134mm for 10 clamps

Drawing n	Polarity
448157710	P1 to secondary terminal
448157720	P2 to secondary terminal

TPU 74.51
TPU 75.51
TPU 76.51

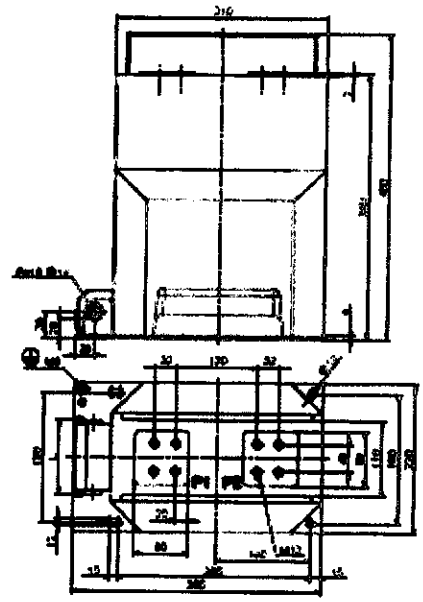
Weight: 46-58 kg
Creepage distance: 386 mm



Drawing n	Polarity
[illegible]	P1 to secondary terminal
[illegible]	P2 to secondary terminal

TPU 74.53
TPU 75.53
TPU 76.53

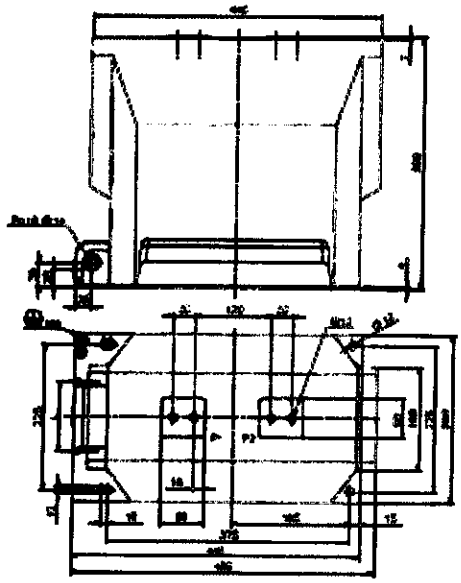
Weight: 46-58 kg
Creepage distance: 386 mm



Drawing n	Polarity
[illegible]	P1 to secondary terminal
[illegible]	P2 to secondary terminal

TPU 70.61
TPU 73.61

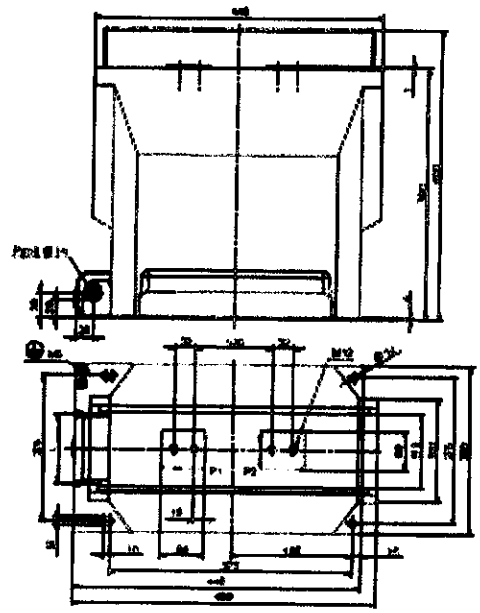
Weight: 70-86 kg
Creepage distance: 475 mm



Drawing n	Polarity
[illegible]	P1 to secondary terminal
[illegible]	P2 to secondary terminal

TPU 70.63
TPU 73.63

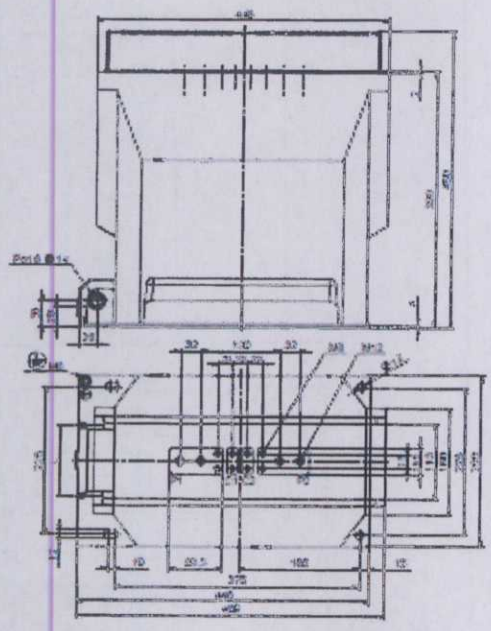
Weight: 70-86 kg
Creepage distance: 475 mm



Drawing n	Polarity
[illegible]	P1 to secondary terminal
[illegible]	P2 to secondary terminal

TPU 70.64
TPU 73.64

Weight: 70-86 kg
Creepage distance: 488 mm

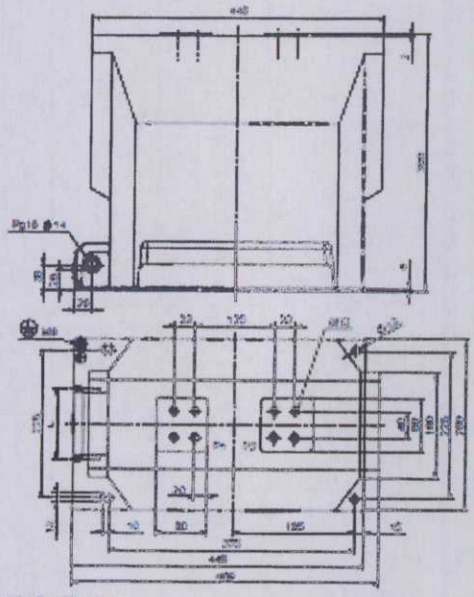


L=107mm for 8 or 12 clamps
L=134mm for 18 clamps

Drawing n	Polarity
4461961D	P1 to secondary terminal
4461962D	P2 to secondary terminal

TPU 74.61
TPU 75.61
TPU 76.61

Weight: 72-88 kg
Creepage distance: 465 mm

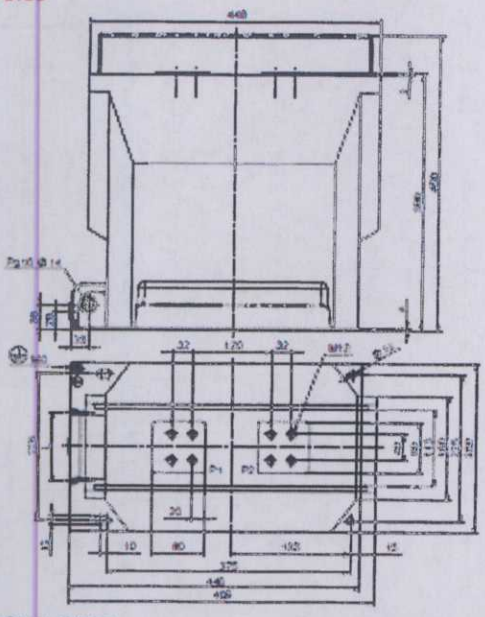


L=107mm for 8 or 12 clamps
L=134mm for 18 clamps

Drawing n	Polarity
1VLA600847R0101	P1 to secondary terminal
1VLA600847R0102	P2 to secondary terminal

TPU 74.63
TPU 75.63
TPU 76.63

Weight:72-88 kg
Creepage distance: 465 mm

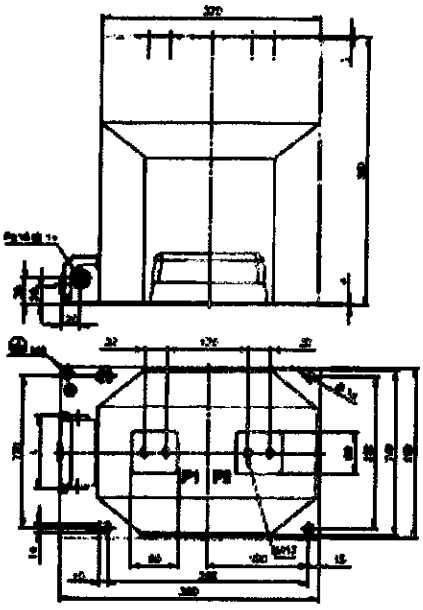


L=107mm for 8 or 12 clamps
L=134mm for 18 clamps

Drawing n	Polarity
4461962D	P1 to secondary terminal
4461962D	P2 to secondary terminal

TPU 70.71
TPU 73.71

Weight: 56 kg
Creepage distance: 410 mm

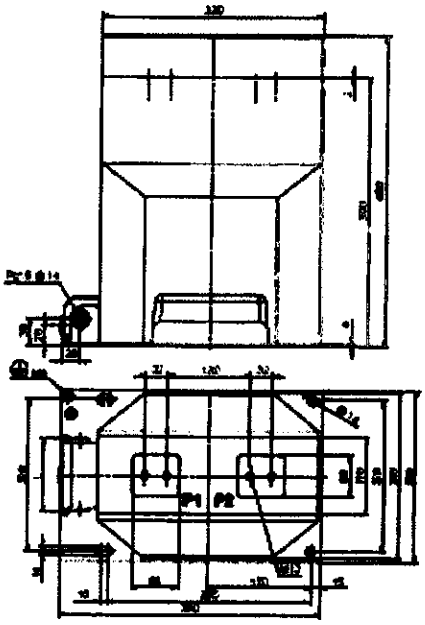


L=107mm for 6 or 12 clamps
L=134mm for 18 clamps

Drawing n	Polarity
[illegible]	P1 to secondary terminal
[illegible]	P2 to secondary terminal

TPU 70.73
TPU 73.73

Weight: 56 kg
Creepage distance: 410 mm

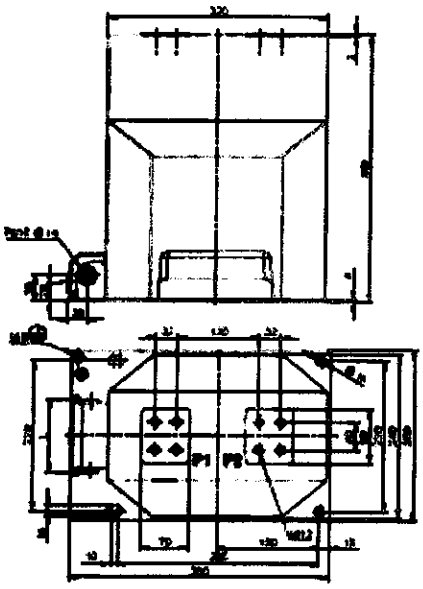


L=107mm for 6 or 12 clamps
L=134mm for 18 clamps

Drawing n	Polarity
[illegible]	P1 to secondary terminal
[illegible]	P2 to secondary terminal

TPU 74.71
TPU 75.71
TPU 76.71

Weight: appr. 58 kg
Creepage distance: 410 mm

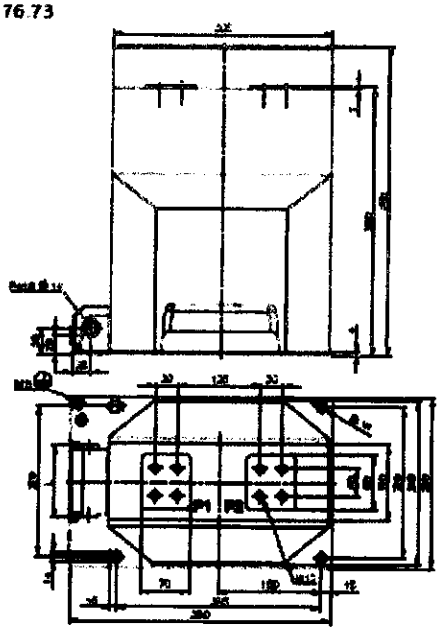


L=107mm for 6 or 12 clamps
L=134mm for 18 clamps

Drawing n	Polarity
[illegible]	P1 to secondary terminal
[illegible]	P2 to secondary terminal

TPU 74.73
TPU 75.73
TPU 76.73

Weight: appr. 58 kg
Creepage distance: 410 mm

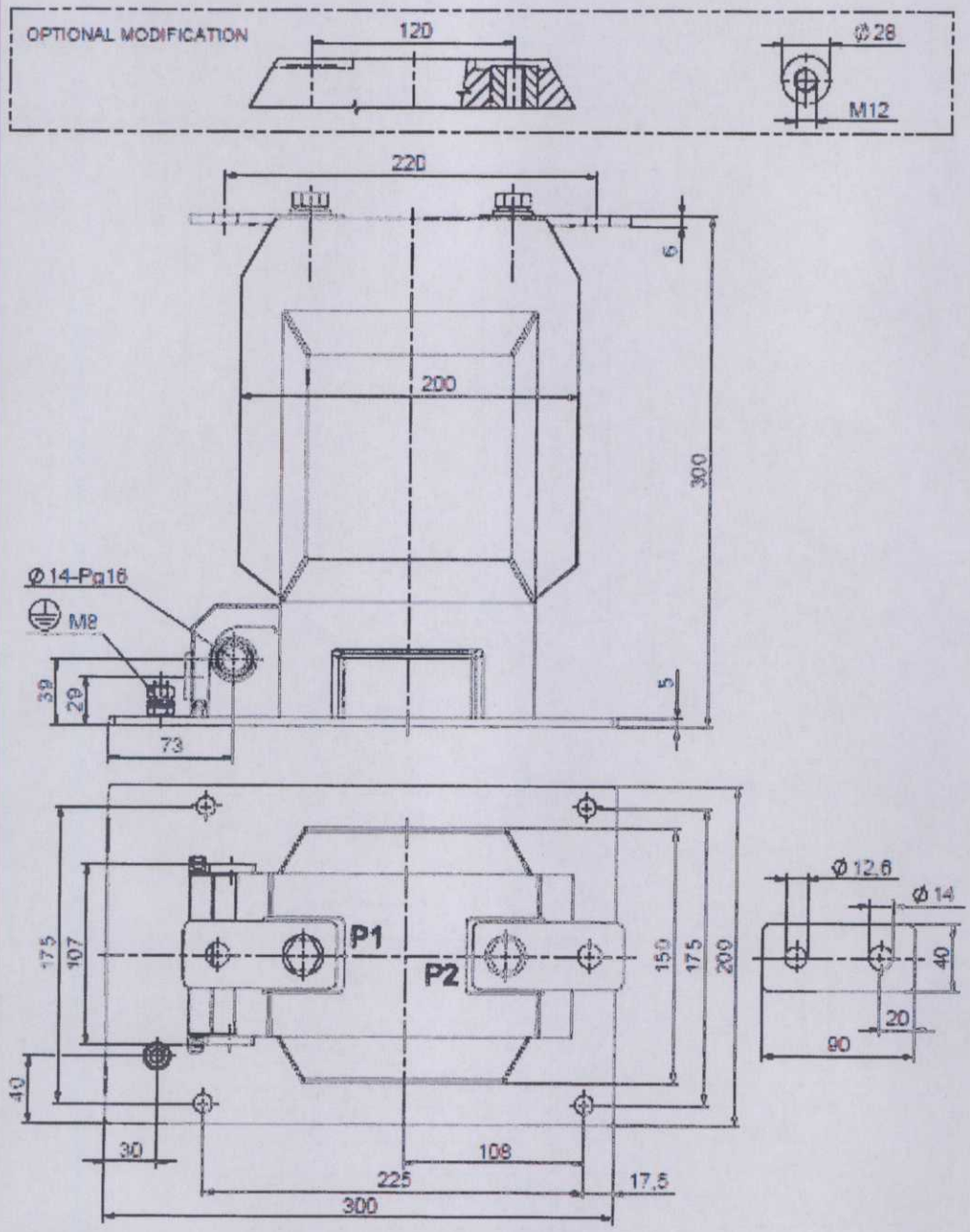


L=107mm for 6 or 12 clamps
L=134mm for 18 clamps

Drawing n	Polarity
[illegible]	P1 to secondary terminal
[illegible]	P2 to secondary terminal

TPE 60.11

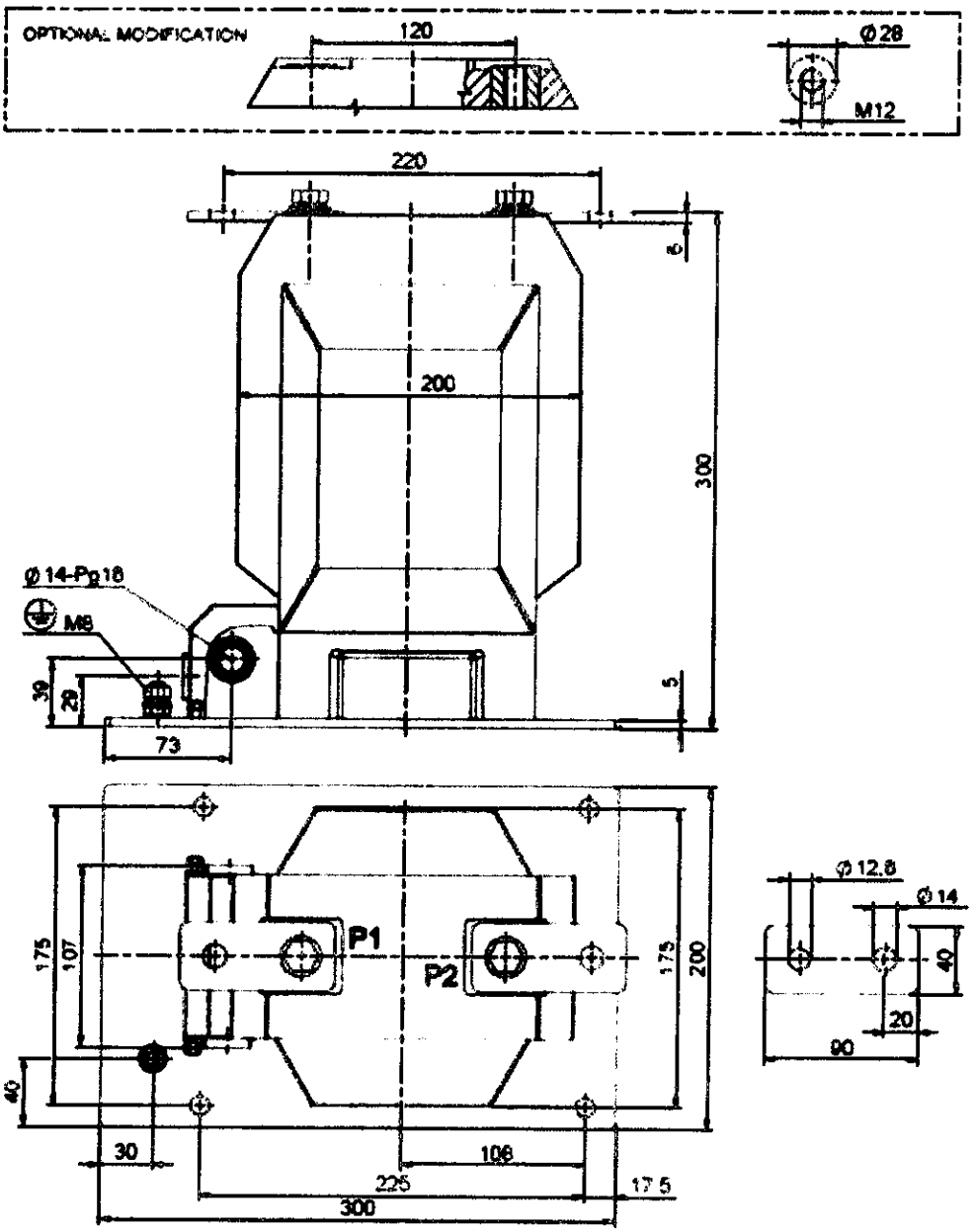
Weight: 16 kg
Creepage Distance: 280 mm



Drawing n.	Polarity
1VL4600663R0101	P1 to secondary terminal
1VL4600663R0201	P2 to secondary terminal

TPE 60.31

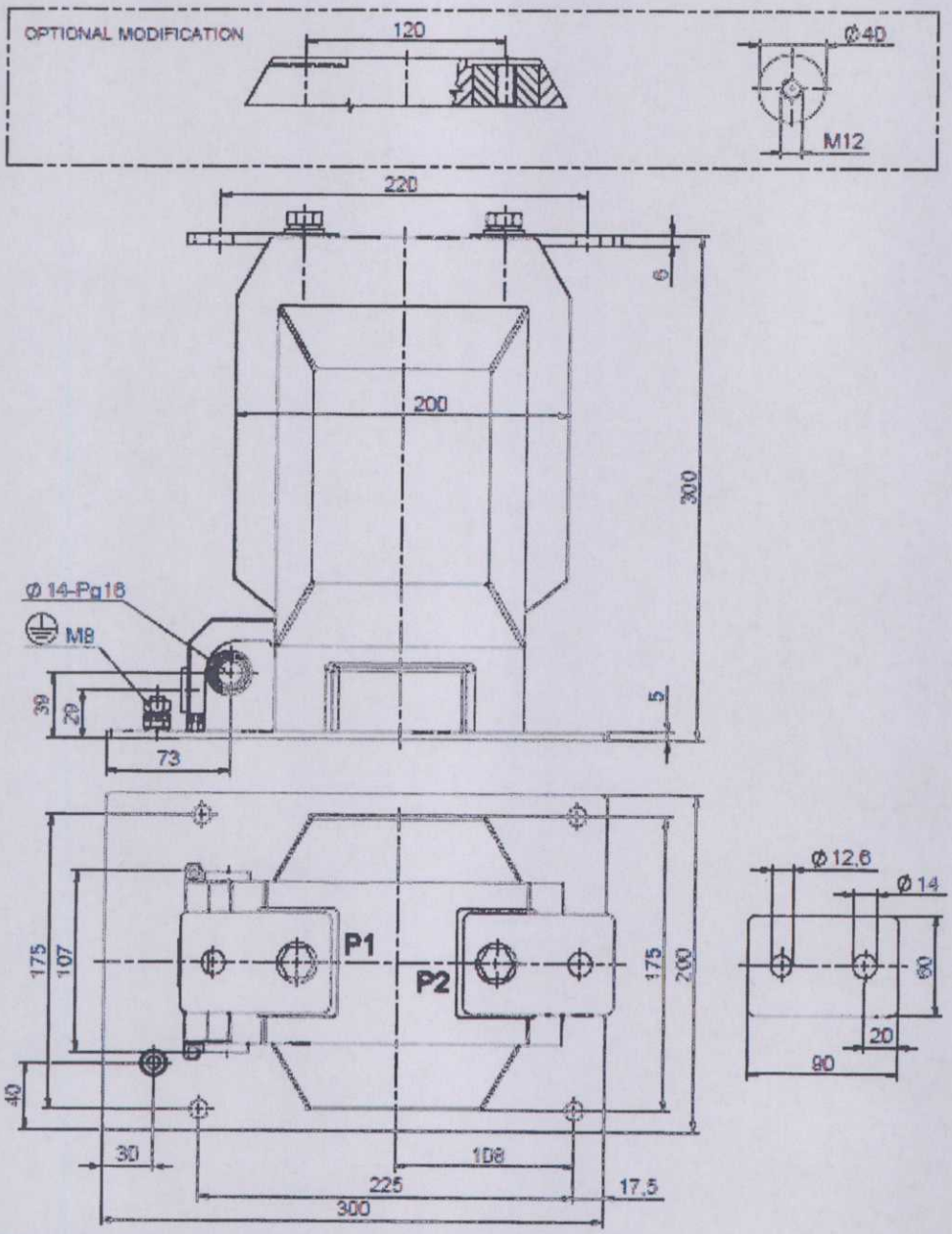
Weight: 18-20 kg
Creepage Distance 280 mm



Drawing n.	Polarity
1VL4600666R0101	P1 to secondary terminal
1VL4600666R0201	P2 to secondary terminal

TPE 63.31

Weight: 18-20 kg
Creepage Distance: 280 mm



Drawing n.	Polarity
1VL4600666R0102	P1 to secondary terminal
1VL4600666R0202	P2 to secondary terminal

Český metrologický institut

Type Approval Certificate

No. 0111-CS-A008-18

Addition No. 1

Czech Metrology Institute in accordance with the Act No 505/1990 Coll., as later amended issuing this Addition for:

instrument current transformer
type TPU 4x.xx, TPU 5x.xx, TPU 6x.xx, TPU 7x.xx, TPE 60.xx and TPE 63.xx

under observation of technical data referred to in Annex of this Certificate.

Type Approval Mark: **TCM 212/18 - 5547**

Applicant: **ABB s.r.o.**
Vyskočilova 1561/4a
140 00 Praha
Czech Republic
ID: 49682563

Manufacturer: **ABB s.r.o.**
Czech Republic

Valid until: **20 March 2028**

This Type Approval Certificate has been added on the base of the technical assessment as follows:

- **increase the value of the primary current according to specification in the Annex**

Information on judicial remedies:
The judicial remedies against this decision are available to the applicant through Czech Metrology Institute to Czech Office for Standardization, Metrology and Testing within 15 days since the receipt of this Certificate.

Description:
Essential characteristic, approved conditions special conditions, examination results including technical drawings and schemas are set out in the technical test report appertaining to this certificate. The certificate comprises the front page and the technical test report. Certificate has 2 pages.

Český metrologický institut

Brno, 18 August 2023

Ing. František Staněk, PhD.
Deputy Director for Legal Metrology

Technical test report

Subject of the addition:
The addition is issued by the Czech Metrology Institute at the request of ABB, s. r.o., Brno. The subject of the supplement is to increase the value of the primary current based on the type protocol of the ABB Brno laboratory (No. 1VLR020419).

The technical test report shall be supplemented and amended as follows in the following points:

2. Basic metrology and technical data

Type	**TPU 7x.xx**
Rated primary current	(5 - 3200) A

Other metrological characteristics and other data remain unchanged.

Český metrologický institut

Type Approval Certificate

No. 0111-CS-A008-18

Addition No. 2

Czech Metrology Institute in accordance with the Act No 505/1990 Coll., as later amended issuing this Addition for:

instrument current transformer
type TPU 4x.xx, TPU 5x.xx, TPU 6x.xx, TPU 7x.xx, TPE 60.xx and TPE 63.xx

under observation of technical data referred to in Annex of this Certificate.

Type Approval Mark: **TCM 212/18 - 5547**

Applicant: **ABB s.r.o.**
Vyskočilova 1561/4a
140 00 Praha
Czech Republic
ID: 49682563

Manufacturer: **ABB s.r.o.**
Czech Republic

Valid until: **20 March 2028**

This Type Approval Certificate has been added on the base of the technical assessment as follows:

- **new type TPE 4x.xx**
  according to specification in the Annex

Information on judicial remedies:
The judicial remedies against this decision are available to the applicant through Czech Metrology Institute to Czech Office for Standardization, Metrology and Testing within 15 days since the receipt of this Certificate.

Description:
Essential characteristic, approved conditions special conditions, examination results including technical drawings and schemas are set out in the technical test report appertaining to this certificate. The certificate comprises the front page and the technical test report. Certificate has 2 pages.

Brno, 4 April 2024

Ing. František Staněk, PhD.
Deputy Director for Legal Metrology

Technical test report

Subject of the addition:
The subject of the addition is the extension of the type approval with the TCM 212/18-5547 mark by the TPE 4x.xx type, which has similar parameters and use as the already approved types.

The technical test report shall be supplemented and amended as follows in the following points:

2. Basic metrology and technical data

Type	TPE 4x.xx
Highest voltage for equipment	max. 12 kV
Power frequency withstand test voltage	max. 28 kV
Lightning impulse voltage	max. 75 kV
Rated primary current I_{1N}	max. 800 A
Rated secondary current I_{2N}	5 A, 1 A
Rated short-time thermal current I_{th}	max. 63 kA/1 s
Rated dynamic current I_{dyn}:	max. 157,5 kA
Accuracy class	0,2; 0,2S; 0,5; 0,5S
Rated frequency	50 Hz
Rated burden	max. 150 VA
Insulation class	E

4. Type test

Type tests were performed by ABB Brno laboratory (see the protocols No. 1VLR019995 and 1VLR020013). Test protocols with measurement results and technical documentation are kept by the technical test executor in the measuring transformers department of CMI LPM Prague.

The results of the technical tests proved that the meter complies with Measure of a general nature No. 0111-OOP-C088-18 and its operation in the transmission system in the Czech Republic is approved. If the manufacturer's instructions are followed, the meter is able to perform the function for which it is intended.

Other metrological characteristics and other data remain unchanged.