```
clear all
clc

An=80e3;
Vn=380;
cosfin=0.8;
Veccn=150;
Ieccn=6;
xs=160/100;
Rs=0.03;
p=4;
f=50;
%paramtri

In=An/(sqrt(3)*Vn)
Xs=xs*Vn/(sqrt(3)*In)

%trafo
Ant=90e3;
V1nt=380;
V2nt=5e3
iot=2/100
pot=0.12/100
vcct=5/100
cosfict=0.5
%calcolo parametri
I1nt=Ant/(sqrt(3)*V1nt)
Iot=iot*I1nt
Pot=pot*Ant
cosfiot=Pot/(sqrt(3)*V1nt*Iot)
Qot=Pot*tan(acos(cosfiot))
Rot=V1nt^2/(Pot)
Xot=V1nt^2/Qot
I2nt=Ant/(sqrt(3)*V2nt)
Vcct=vcct*V2nt
Pcc=sqrt(3)*Vcct*I2nt*cosfict
Rcc=Pcc/(3*I2nt^2)
Qcc=Pcc*tan(acos(cosfict))
Xcc=Qcc/(3*I2nt^2)

%dati carico
PL=45e3;
cosfiL=0.8;
VL=4e3;

QL=PL*tan(acos(cosfiL))
IL=PL/(sqrt(3)*VL*cosfiL)
PA=PL+3*Rcc*IL^2
QA=QL+3*Xcc*IL^2
VA=sqrt(PA^2+QA^2)/(sqrt(3)*IL)
kt=V1nt/V2nt
VAA=kt*VA
```

```
PB=PA+VAA^2/Rot
QB=QA+VAA^2/Xot
VB=VAA
IB=sqrt(PB^2+QB^2)/(sqrt(3)*VB)
cosfiB=PB/(sqrt(3)*VB*IB)

Er=VB/sqrt(3)+Rs*IB*cosfiB+Xs*IB*sin(acos(cosfiB))
Ei=-Rs*IB*sin(acos(cosfiB))+Xs*IB*cosfiB
E=sqrt(Er^2+Ei^2)

Ern=Vn/sqrt(3)+Rs*In*cosfin+Xs*In*sin(acos(cosfin))
Ein=-Rs*In*sin(acos(cosfin))+Xs*In*cosfin
En=sqrt(Ern^2+Ein^2)
Vecc=E/En*Veccn
Recc=Veccn/Ieccn
Pass=PB+3*Rs*IB^2+Vecc^2/Recc

rend=PL/(Pass)


In =

  121.5474


Xs =

    2.8880


V2nt =

        5000


iot =

    0.0200


pot =

    0.0012


vcct =

    0.0500


cosfict =

    0.5000
```

```
I1nt =

  136.7409

Iot =

    2.7348

Pot =

  108.0000

cosfiot =

    0.0600

Qot =

   1.7968e+03

Rot =

   1.3370e+03

Xot =

   80.3670

I2nt =

   10.3923

Vcct =

   250

Pcc =

        2250

Rcc =

    6.9444
```

```
Qcc =

   3.8971e+03

Xcc =

   12.0281

QL =

   3.3750e+04

IL =

    8.1190

PA =

   4.6373e+04

QA =

   3.6129e+04

VA =

   4.1803e+03

kt =

    0.0760

VAA =

  317.7041

PB =

   4.6449e+04

QB =
```

```
   3.7385e+04

VB =

  317.7041

IB =

  108.3533

cosfiB =

    0.7790

Er =

  382.1619

Ei =

  241.7363

E =

  452.1993

Ern =

  432.9276

Ein =

  278.6353

En =

  514.8436

Vecc =

  131.7485

Recc =
```

```
     25

Pass =

    4.8200e+04

rend =

     0.9336
```

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