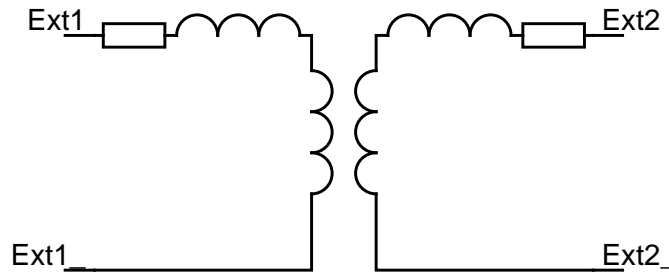
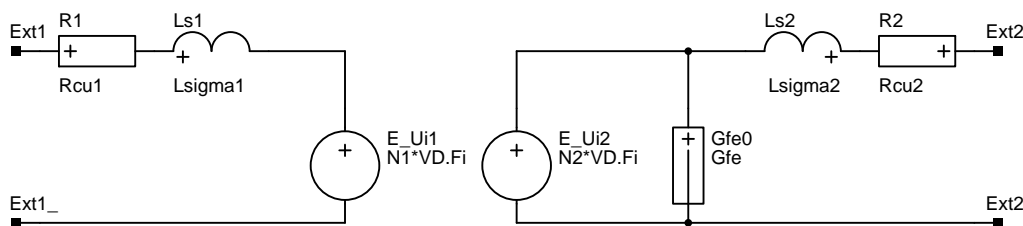


# One Phase Transformer



## Assumptions

Model transformátoru bez sycení jádra s respektováním transformačního p evodu, rozptylu a inného odporu vinutí plus inných ztrát naprázdno.



## Interface

Ext1  
Ext1\_  
Ext2  
Ext2\_

## External Parameters

$N1 = 22000$	[-]	Pocet zavitu vinuti 1.
$N2 = 110000$	[-]	Pocet zavitu vinuti 2.
$S_n = 20ME$	[VA]	Jmenovity zdanlivy vykon
$U_{n2} = 110k$	[V]	Jmenovite napeti vinuti 2.
$I_0 = 0.2$	[%]	Proud naprazdno
$U_k = 10$	[%]	Napeti nakratko
$dPk = 0.3$	[%]	Cinne ztraty nakratko
$dP_0 = 0.05$	[%]	Cinne ztraty naprazdno
$Freq_1 = 50$	[Hz]	Jmenovita frekvence

## System Parameters

**Data**

:: One Phase Transformer

ONEPHTRA2

Ext1,

Ext1\_,

Ext2,

Ext2\_/

N1= 22000, :: [-] Pocet zavitu vinuti 1.

N2=110000, :: [-] Pocet zavitu vinuti 2.

Sn=20ME, :: [VA] Jmenovity zdanlivy vykon

Un2=110k, :: [V] Jmenovite napeti vinuti 2.

I0=0.2, :: [%] Proud naprazdno

Uk=10, :: [%] Napeti nakratko

dPk=0.3, :: [%] Cinne ztraty nakratko

dP0=0.05, :: [%] Cinne ztraty naprazdno

Freq1=50; :: [Hz] Jmenovita frekvence

$Kva\_Pre=N1*N1/(N2*N2);$  :: [-] Kvadrat prevodu

$\Omega=2\pi*Freq1;$  :: [rad/sec] Uhlova rychlost

$Zn=Un2**2/Sn;$  :: [Ohm] Jmenovita impedance

$Rcu2=(dPk/100)*Zn/2;$  :: [Ohm] Cinny odpor vinuti 2.

$Rcu1=Rcu2*Kva\_Pre;$  :: [Ohm] Cinny odpor vinuti 1.

$Zk=(Uk/100)*Zn/2;$  :: [Ohm] Podelna impedance

$Lsigma2=sqrt(Zk**2-Rcu2**2)/\Omega;$  :: [H] Rozptylova indukcnost vinuti 2.

$Lsigma1=Lsigma2*Kva\_Pre;$  :: [H] Rozptylova indukcnost vinuti 1.

$Gfe=(dP0/100)/Zn;$  :: [S] Pricna cinna admittance

$Yg=(I0/100)/Zn;$  :: [S] Pricna admittance

$Lh=1/sqrt(Yg**2-Gfe**2)/\Omega;$  :: [H] Hlavni reaktance

$Rm=N2*N2/Lh;$  :: [-] Magneticky odpor jadra

SYSVAR Fi; :: Magneticky tok jadra

$0=Fi*Rm-N1*I.E\_Ui1-N2*I.E\_Ui2;$

R1 Ext1-1 = Rcu1;

R2 Ext2-3 = Rcu2;

$E\_Ui1\ 2-Ext1\_ = N1*VD.Fi;$

$E\_Ui2\ 4-Ext2\_ = N2*VD.Fi;$

Ls1 1-2 = Lsigma1;

Ls2 3-4 = Lsigma2;

Gfe0 4-Ext2\_ = Gfe;

EO@;

**Origin**

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**Last Update**

November 13, 2019