

Transformers, Inductors, and other Magnetics general schematic

Basic Definition

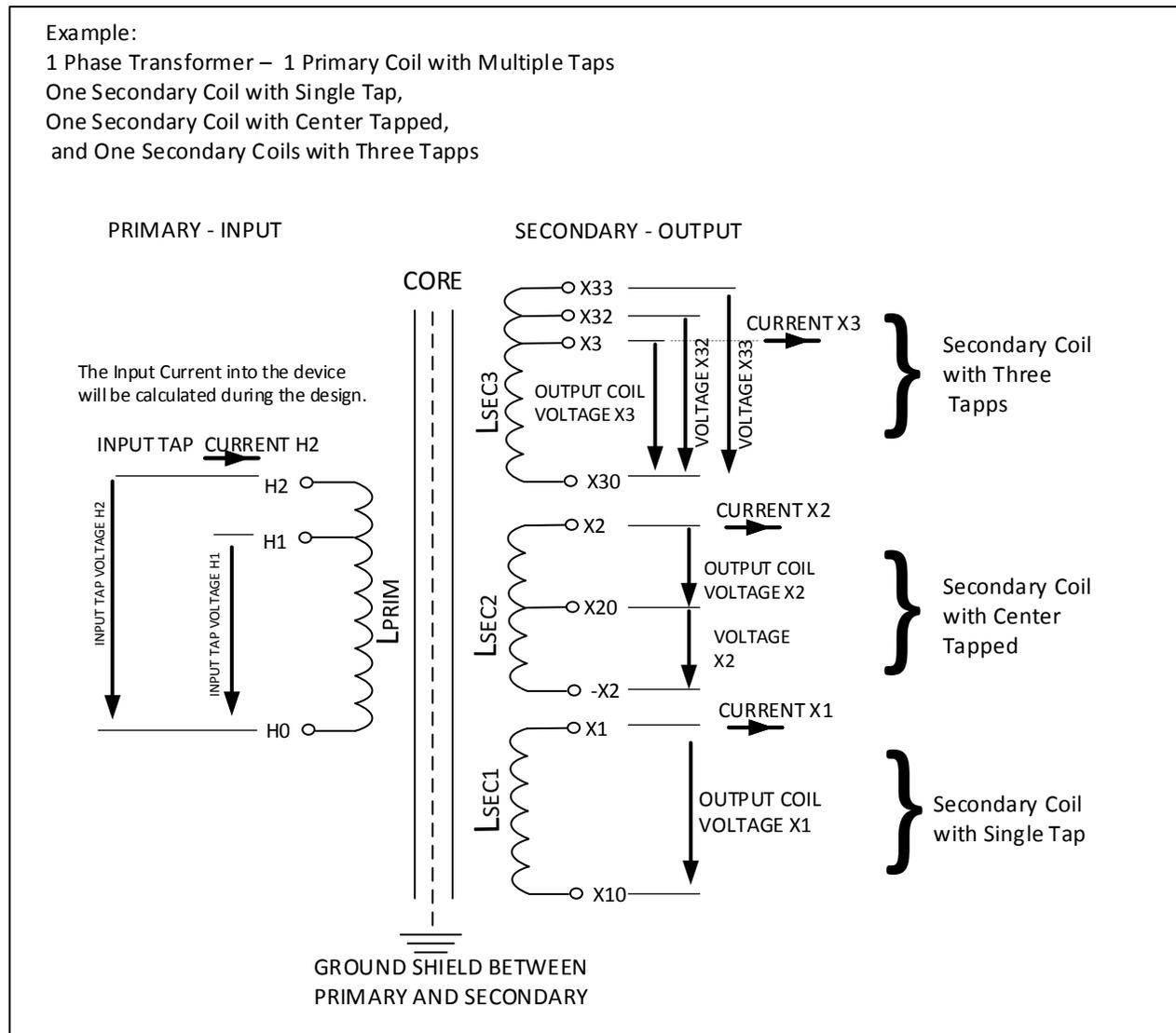
Example:

1 Phase Transformer – 1 Primary Coil with Multiple Taps

One Secondary Coil with Single Tap,

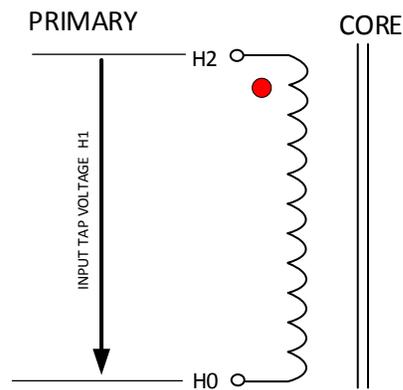
One Secondary Coil with Center Tapped,

and One Secondary Coils with Three Taps

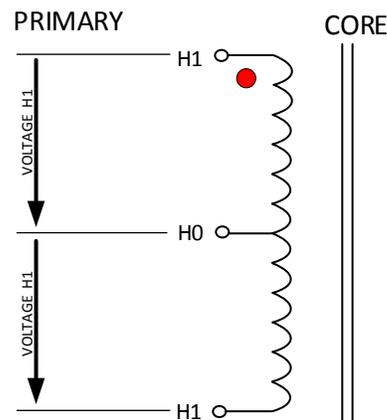


Basic Definition for INPUTS

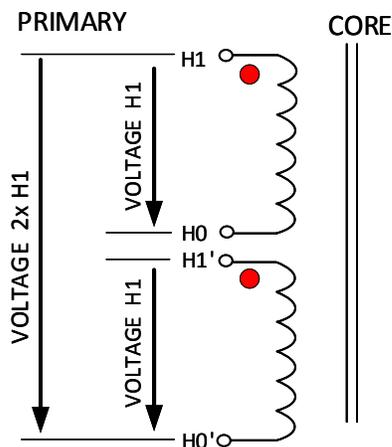
INPUT TYPE: SINGLE
INPUT WINDING: SINGLE WINDING



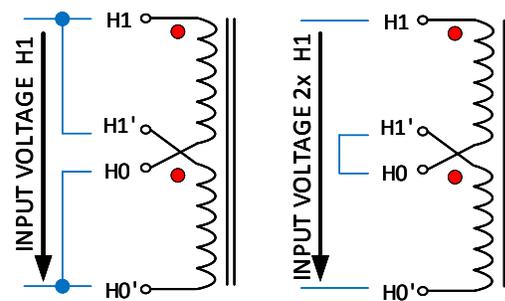
INPUT TYPE: SINGLE
INPUT WINDING: CENTER TAPPED



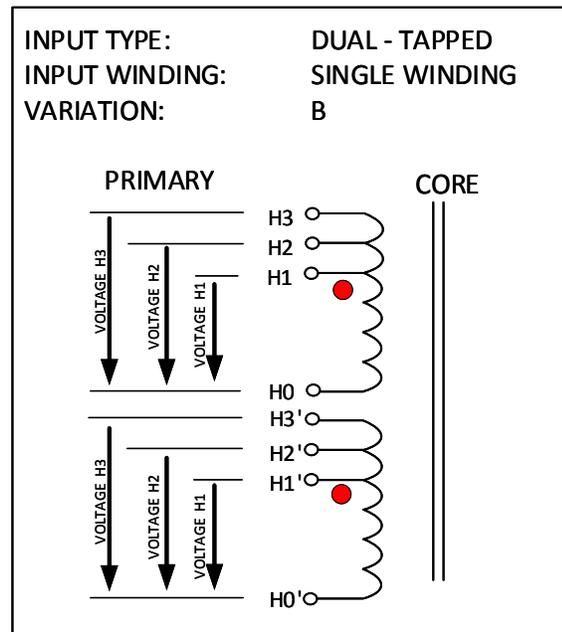
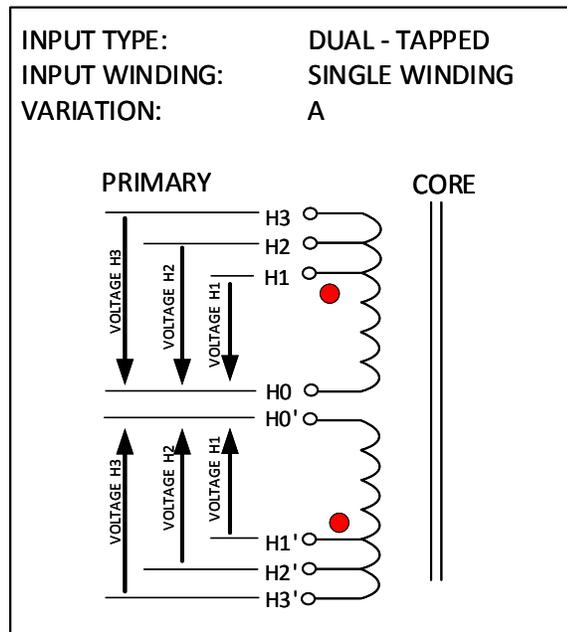
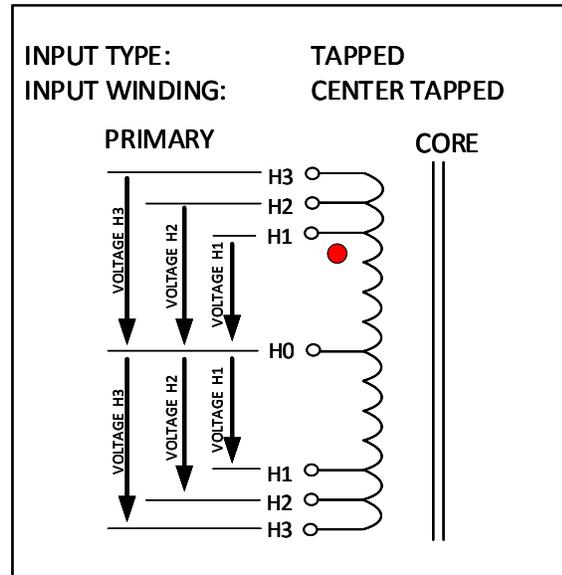
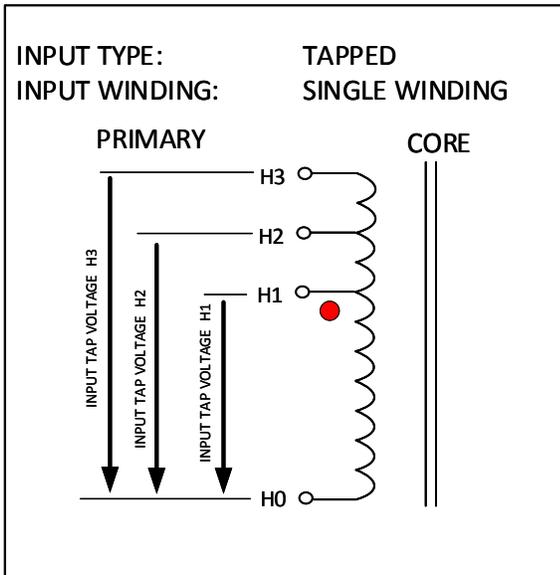
INPUT TYPE: DUAL
INPUT WINDING: SINGLE WINDING



DUAL INPUT VOLTAGE
120V vs. 240V
PARALLEL SERIAL



Basic Definition for INPUTS

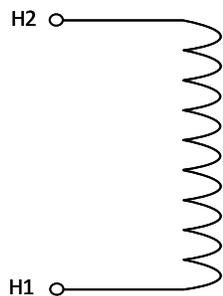


Transformer Inductor and other Magnetics general schematic

Inductors

FIGURE 1

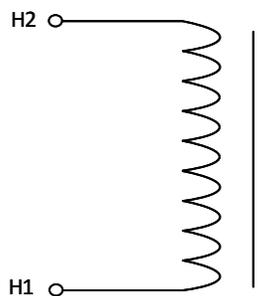
Inductor - Air Coil, no Core



Taps: only H1 and H2

FIGURE 2

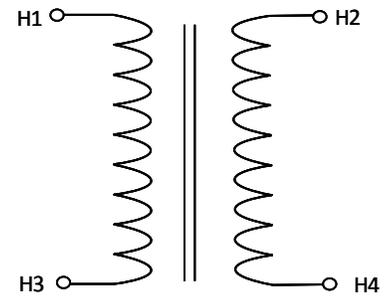
Inductor - with Core



Taps: only H1 and H2

FIGURE 3

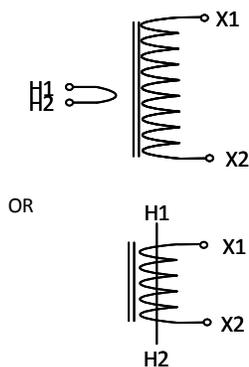
Inductor - Common Mode Chocks



Taps: only H1 to H4

Current Sensors

FIGURE 4 Magnetic Current Sensor

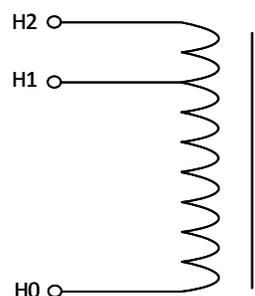


Taps: H1 & H2 can be missing.
Taps X1, X2 or more

Single Phase Transformers

FIGURE 5

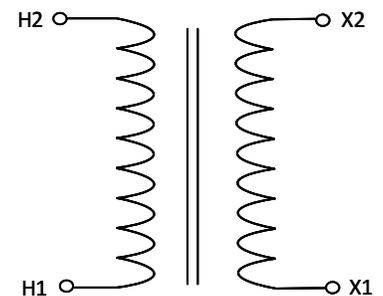
1 Phase Auto-Transformer



Taps: H1, H2 or more Taps

FIGURE 6

1 Phase Transformer - Simple

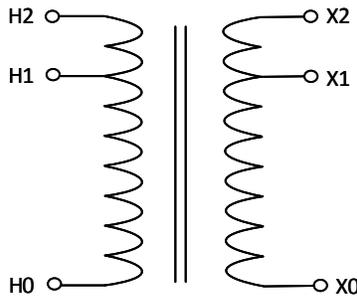


Taps: only H1, H2 and X1, X2

Single Phase Transformers

FIGURE 7

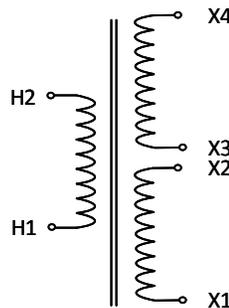
1 Phase Transformer – Simple Multi Tap



Taps: H0, H1, H2 or more
X0, X1, X2 or more

FIGURE 8

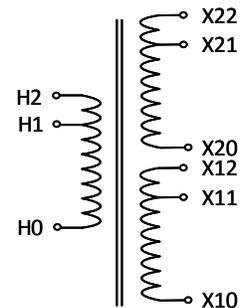
1 Phase Transformer – 2 Secondary Simple



Taps: only H1, H2
only X1, X2, X3 & X4

FIGURE 9

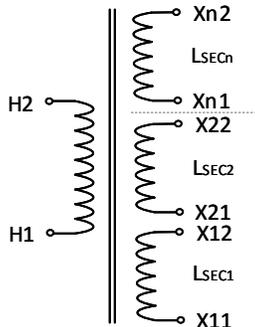
1 Phase Transformer – 2 Secondary, Multi-Tap



Taps: H0, H1, H2 or more
Xy0, Xy1, Xy2 or more

FIGURE 10

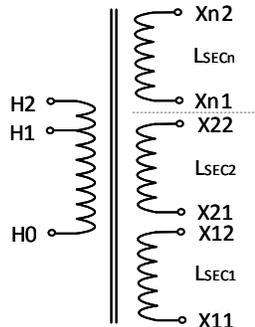
1 Phase Transformer – Multiple Secondary Coils



Taps: only H1, H2 multiple pairs of Xy1, Xy2 from Coils LSECy

FIGURE 11

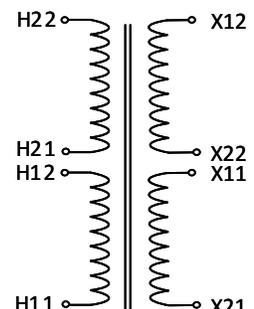
1 Phase Transformer – Multiple Secondary Coils – Multi Prim Taps



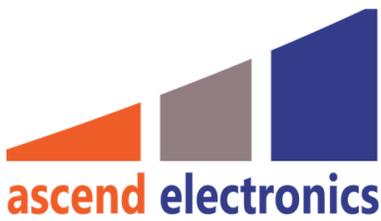
Taps: H0, H1, H2 multiple and pairs of Xy1, Xy2 from Coils LSECy

FIGURE 12

1 Phase Transformer – Double Coil Sec. & Prim - Simple Tap



Taps: only H11, H21, H12, H22
only X11, X21, X12, X22



ASCEND ELECTRONICS INC.

MAGNETIC BASE SCHEMATICS

PN004004

<https://ascendelec.com/>

SIZE

A4

FSCM NO

5HYK7

DWG NO

004004-230716

REV

1.02

DEPARTMENT: Engineering

SCALE

non

DESIGN REFERENCE

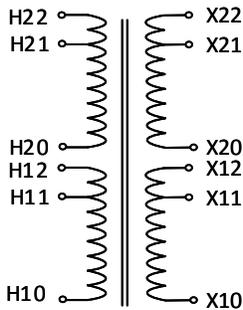
SHEET

6 OF 10

Single Phase Transformers

FIGURE 13

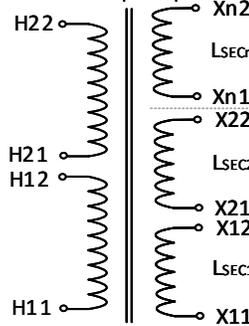
1 Phase Transformer – Double Coil Sec. & Prim – Multi-Tap



Taps: H10, H11, H12, H22, H21 and more
X01, X11, X12, X20, X21, X22 and more

FIGURE 14

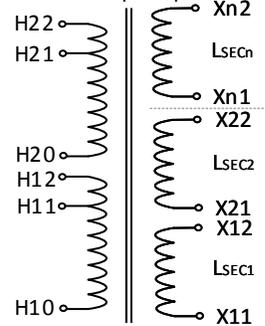
1 Phase Transformer – Double Coil Prim. & Multi Coil Sec. - Simple Tap



Taps: only H11, H12, H21, H22
Multi Coil pairs X11, X12, X21, X22,..Xn1,Xn2

FIGURE 15

1 Phase Transformer – Double Coil Prim. & Multi Coil Sec. - Simple Tap

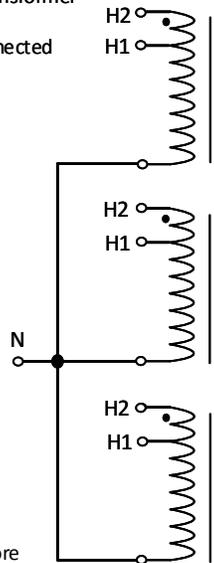


Taps: multi H10,H11,H12,H20,H21,H22, more
Multi Coil pairs X11, X12, X21, X22,..Xn1,Xn2

3-Phase Transformers

FIGURE 16

3-Phase Auto-Transformer –
Multiple Taps
Neutral Wye connected



Taps:
H1, H2, H3 and more

FIGURE 17

3-Phase Transformer –
WYE – WYE Connection
Single Taps

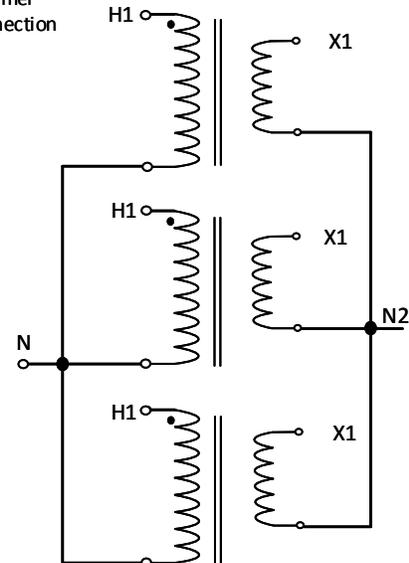
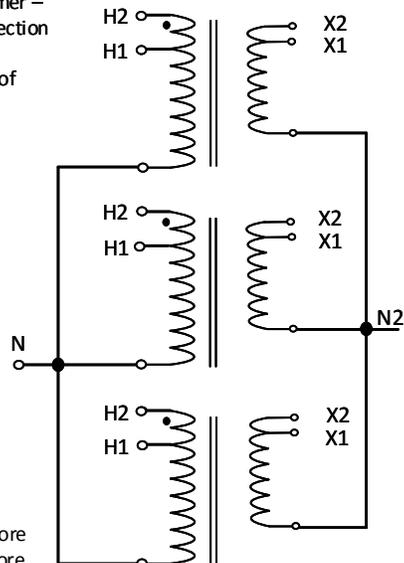


FIGURE 18

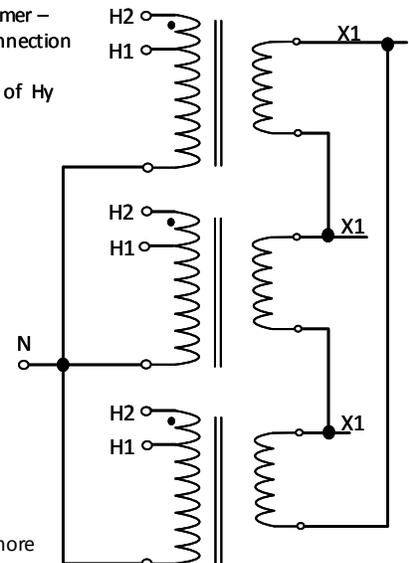
3-Phase Transformer –
WYE – WYE Connection
Multi-Taps
Any combination of
Hy and Xy



Taps:
H1, H2, H3 and more
X1, X2, X3 and more

FIGURE 19

3-Phase Transformer –
WYE – DELTA Connection
Multi-Taps
Any combination of Hy



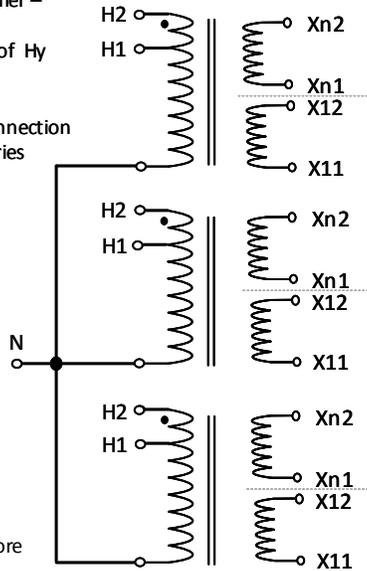
Taps:
H1, H2, H3 and more
X1, X2, X3 and more

3- Phase Transformers

FIGURE 20

3-Phase Transformer –
PRIMARY WYE –
Any combination of H_y

SECONDARY
WYE or DELTA Connection
multiple Secondaries



Taps:
H1, H2, H3 and more

FIGURE 21

3-Phase Transformer
DELTA – DELTA
Connection

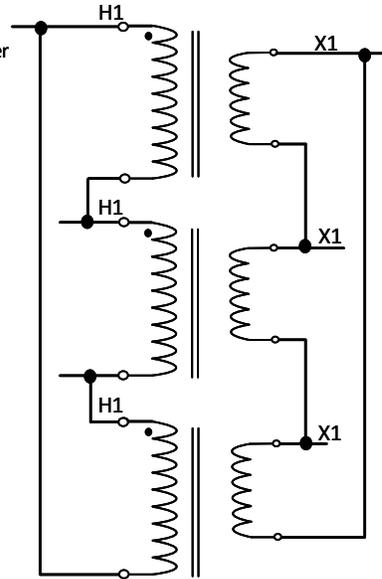
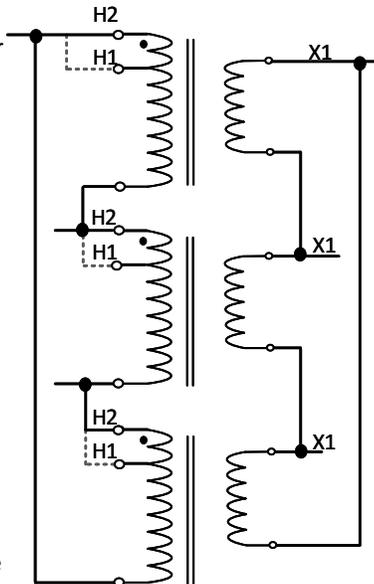


FIGURE 22

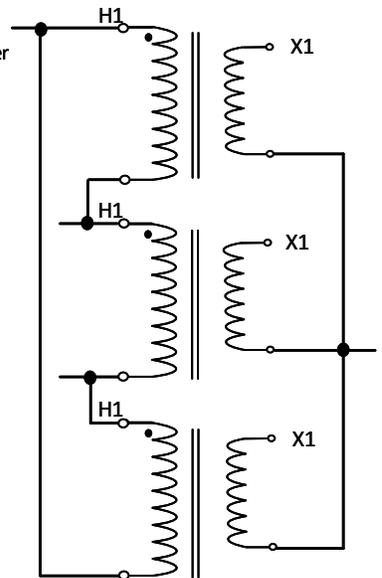
3-Phase Transformer
DELTA – DELTA
Connection
Multi- Taps
Any combination of
 H_y



Taps:
H1, H2, H3 and more
X1, X2, X3 and more

FIGURE 23

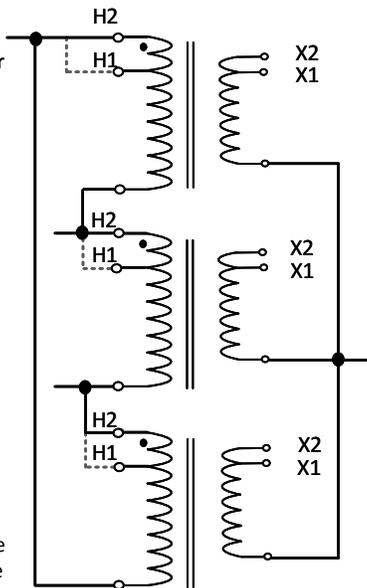
3-Phase Transformer
DELTA – WYE
Connection
Simple- Taps



3-Phase Transformers

FIGURE 24

3-Phase Transformer
DELTA - WYE
Connection
Multi-Taps

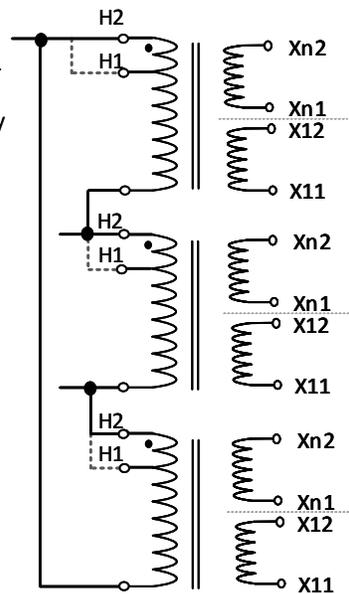


Taps:
H1, H2, H3 and more
X1, X2, X3 and more

FIGURE 25

3-Phase Transformer -
DELTA - WYE
Any combination of Hy

SECONDARY
WYE or DELTA
Connection
multiple Secondary

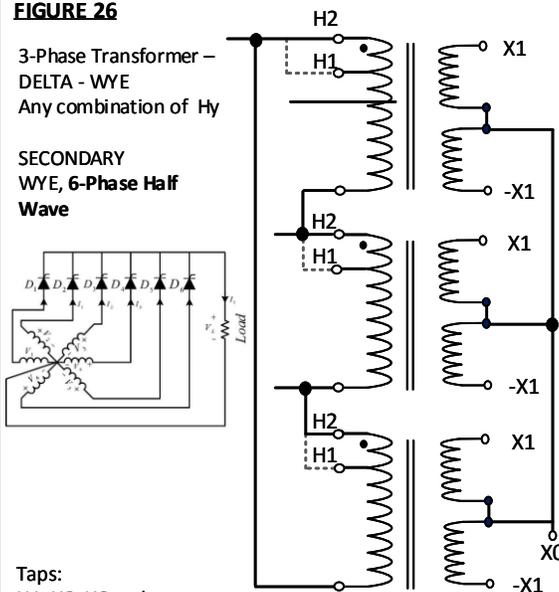


Taps:
H1, H2, H3 and more

FIGURE 26

3-Phase Transformer -
DELTA - WYE
Any combination of Hy

SECONDARY
WYE, 6-Phase Half
Wave

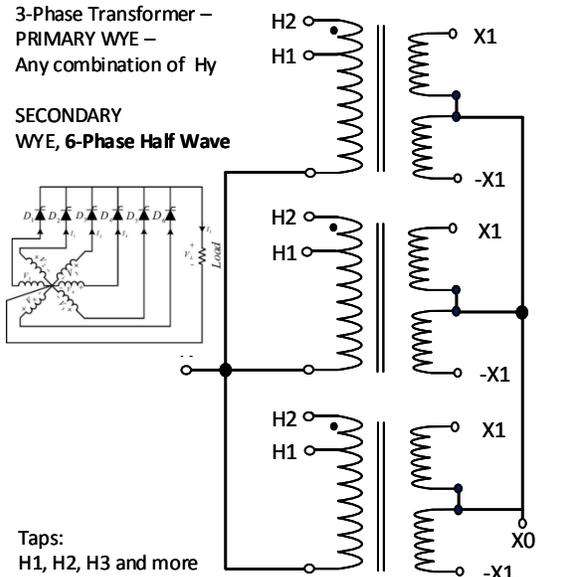


Taps:
H1, H2, H3 and more

FIGURE 27

3-Phase Transformer -
PRIMARY WYE -
Any combination of Hy

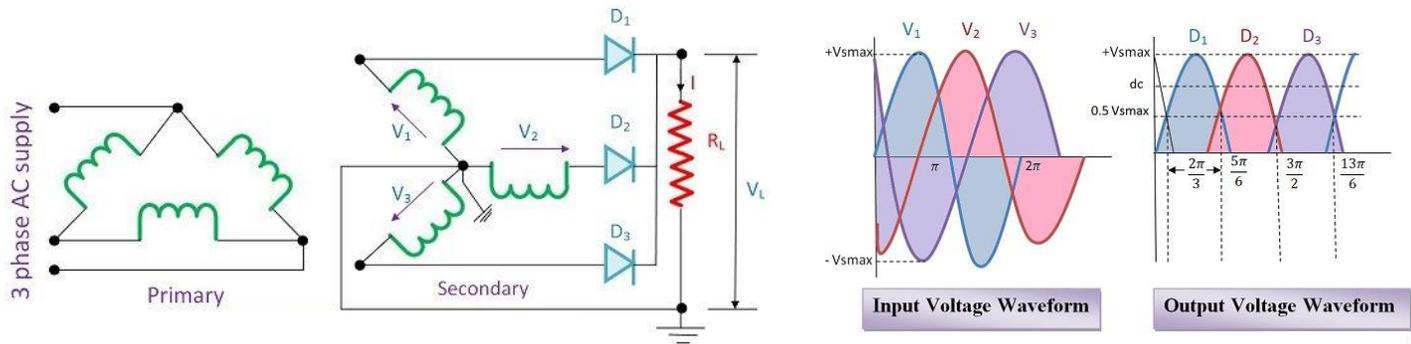
SECONDARY
WYE, 6-Phase Half
Wave



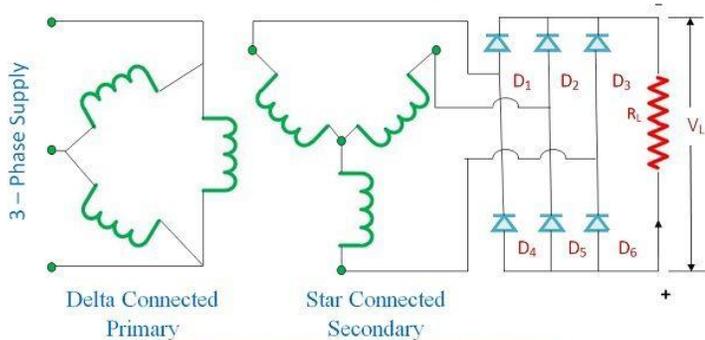
Taps:
H1, H2, H3 and more

3-Phase Rectifiers

3 Phase Half Wave Rectifier



3 Phase Full Wave Rectifier - Bridge Rectifier



3 Phase Full Wave Rectifier - 6-Phase Half Wave

