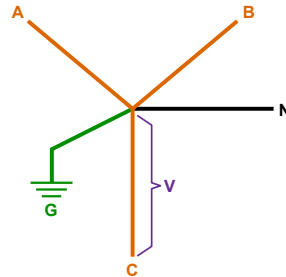


Wye

3-Phase, 4-Wire, Grounded

Neutral bonded to ground.
Neutral pulled into facility.

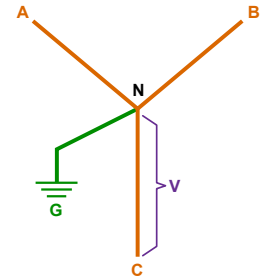
V = 120V (208Y/120V)
V = 277V (480Y/277V)
V = 347V (600Y/347V)
V = 127V (220Y/127V)*
V = 220V (380Y/220V)*



3-Phase, 4-Wire, Grounded without Neutral Pulled into Facility

Neutral bonded to ground.
Neutral NOT pulled into facility.

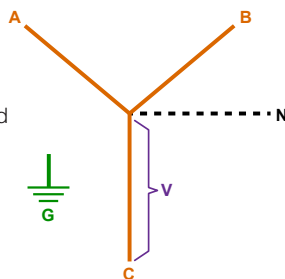
V = 120V (208Y/120V)
V = 277V (480Y/277V)
V = 347V (600Y/347V)
V = 127V (220Y/127V)*
V = 220V (380Y/220V)*



3-Phase, 4-Wire, Ungrounded Neutral Not Bonded to Ground

Neutral NOT bonded to ground.
Neutral may or may not be pulled into facility.
Note NEC 285.3(2).

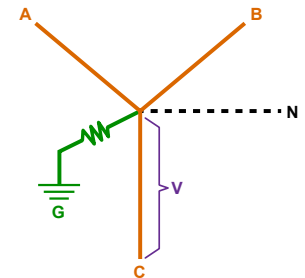
V = 120V (208Y/120V)**
V = 277V (480Y/277V)
V = 347V (600Y/347V)
V = 127V (220Y/127V)**
V = 220V (380Y/220V)**



Resistive/Impedance Grounded

Neutral bonded to ground via grounding resistor. Neutral may, or may not, be pulled into facility.

V = 120V (208Y/120V)
V = 277V (480Y/277V)
V = 347V (600Y/347V)
V = 127V (220Y/127V)*
V = 220V (380Y/220V)*

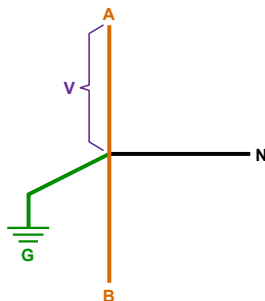


Split-Phase

'Single-Phase'

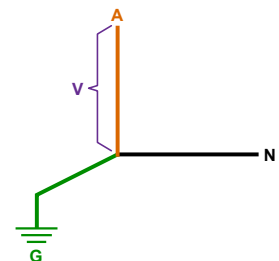
Neutral bonded to ground.
Neutral usually pulled into facility.

V = 120V (120/240V)
V = 240V (240/480V)**
V = 127V (127/254V)*



Verify where neutral and ground are!
Often this is used for one leg or one piece of equipment. Neutral is bonded to ground.

V = 120V V = 480V**
V = 240V V = 127V*
V = 277V V = 220V*



* non-USA ** Call ASCO

See Delta Systems on next page

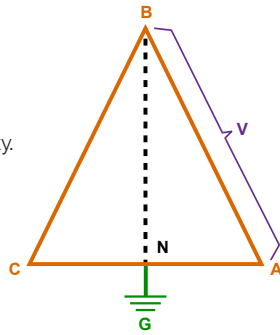
- Based on secondary side of upstream transformer, NOT by how load is connected.
- Most SPD/TVSS order errors are misunderstandings related to grounding or neutrals.
- Grounded system means that the system is referenced to ground, NOT that there is a safety ground.
- By convention, ground wires are not 'counted' as one of the wires (3-wire, 4-wire, etc.).

Delta

3-Phase, 3-Wire, Grounded

Neutral bonded to ground.
Neutral often pulled into facility.

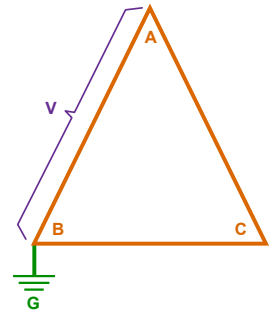
V = 120/240V
V = 240/480V**



3-Phase, 3-Wire, Corner-Grounded

System has reference to ground because B phase is grounded.

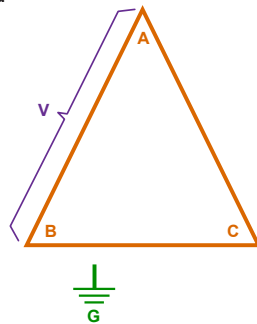
V = 240V
V = 480V
V = 600V
Note NEC 285.3(2)



3-Phase, 3-Wire, Ungrounded

System has NO reference to ground. L-L voltages fixed by transformer, but L-G voltages can vary.

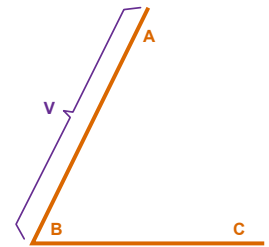
V = 240V
V = 480V
V = 600V
Note NEC 285.3(2)



Open

3-phase 3 or 4-wire. Could be ungrounded, corner grounded or Hi-leg.

Call ASCO for information.



* non-USA ** Call ASCO