

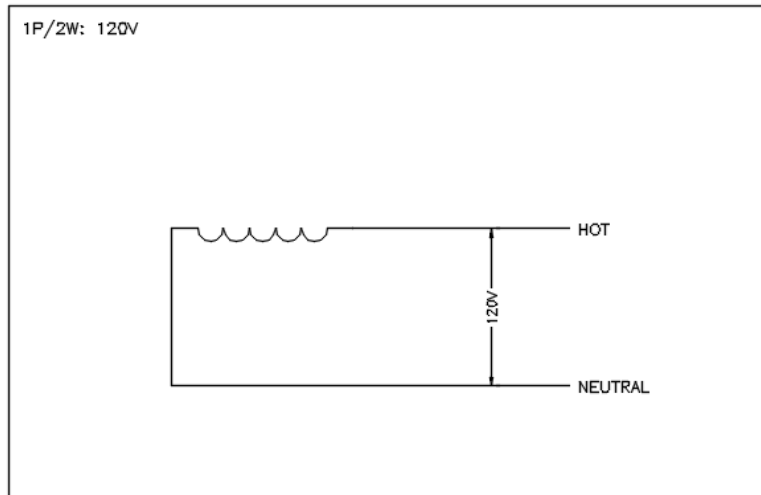
Technote 106 – Electrical Service Types - US

Purpose:

The following is a compilation of the different electrical service types an installer may see in the field. Included are definitions of each type and a drawing of what that service would look like, as well as, the voltages that might be present for that type of service.

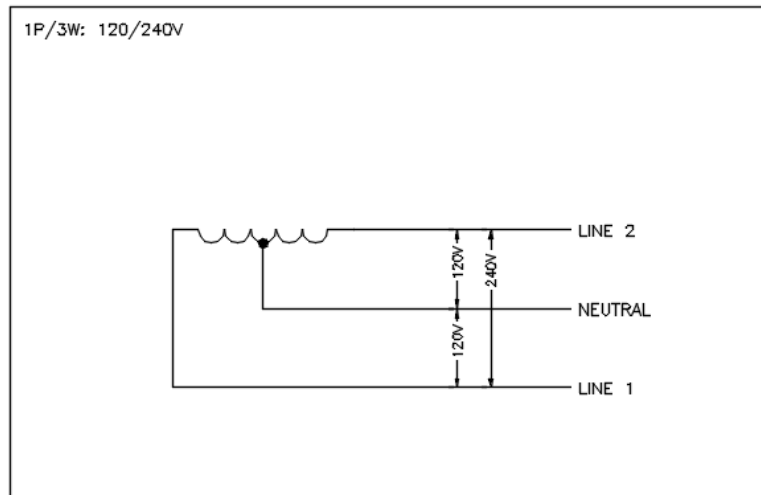
One Hot + Neutral (1P/2W) Services: 120V

This service is typical for residential as well as commercial buildings where there is one line (hot) and a neutral.



Split Phase (1P/3W) Services: 120/240V

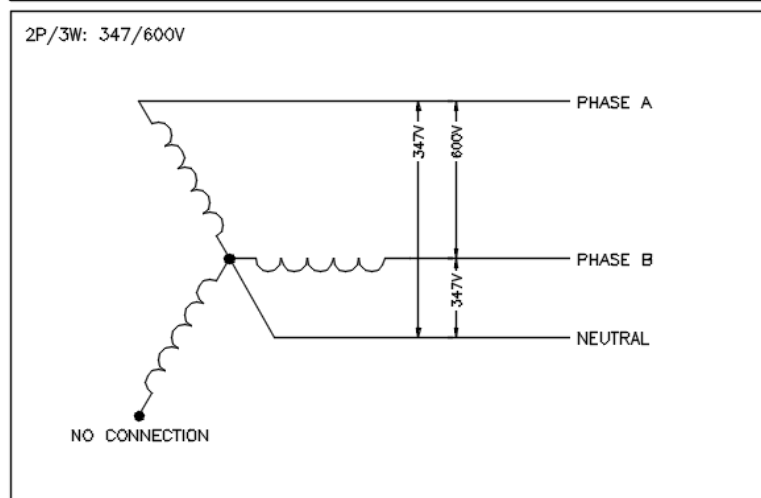
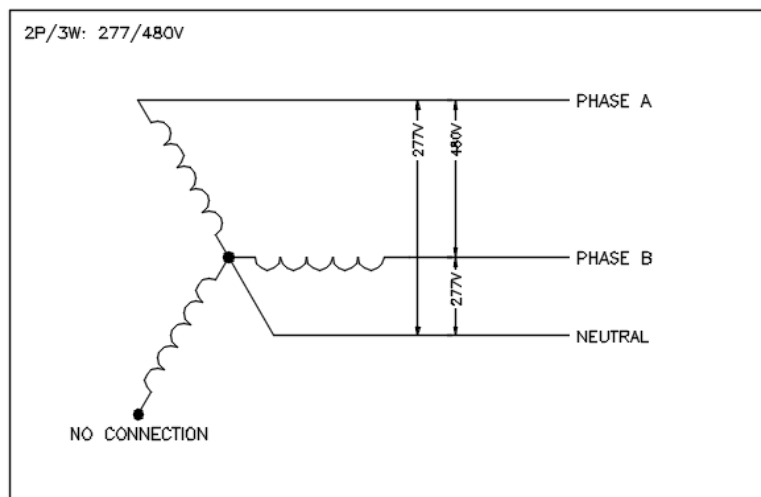
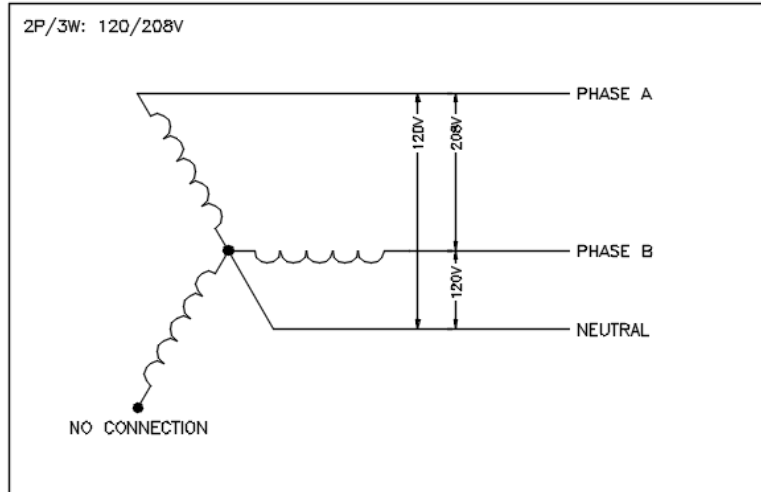
This is a typical service for residential areas and some commercial buildings. This is 1-phase, with two lines. Each line is 180 degrees out of phase from the other.



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Two Hot with Neutral (2P/3W) Services: 120/208V, 277/480V and 347/600V

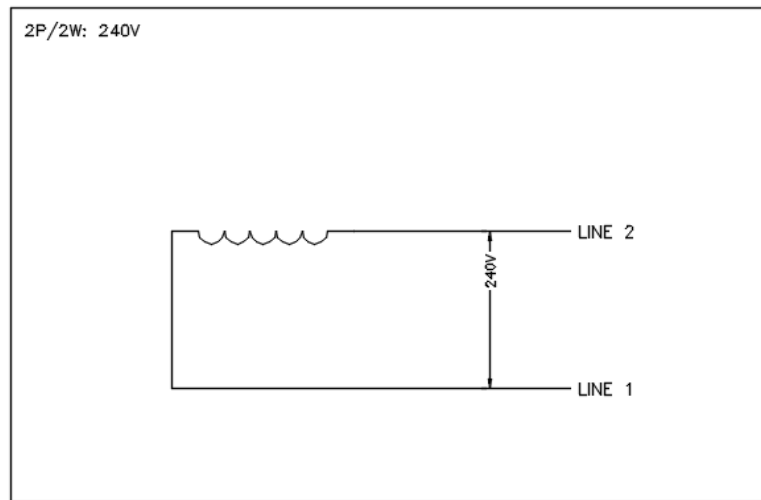
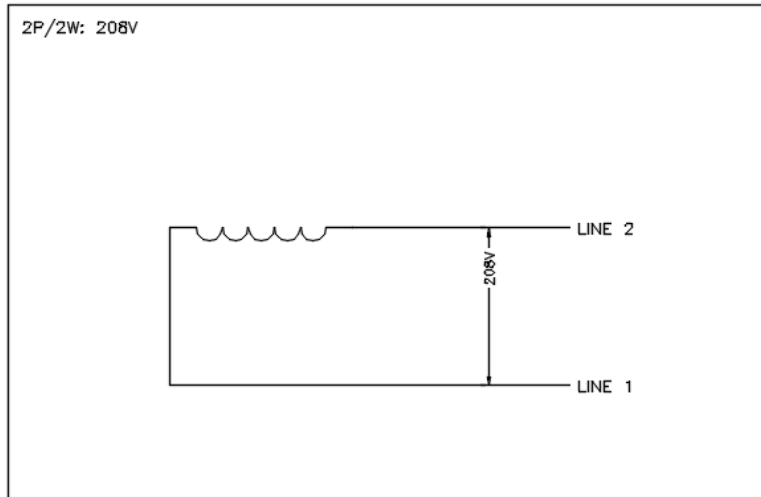
This is a service mostly seen in commercial applications. This is two phases of a Three-Phase service, with a neutral. Each line is 120 degrees out of phase from each other with respect to neutral.



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Two Hot – No Neutral (2P/2W) Services: 208V and 240V

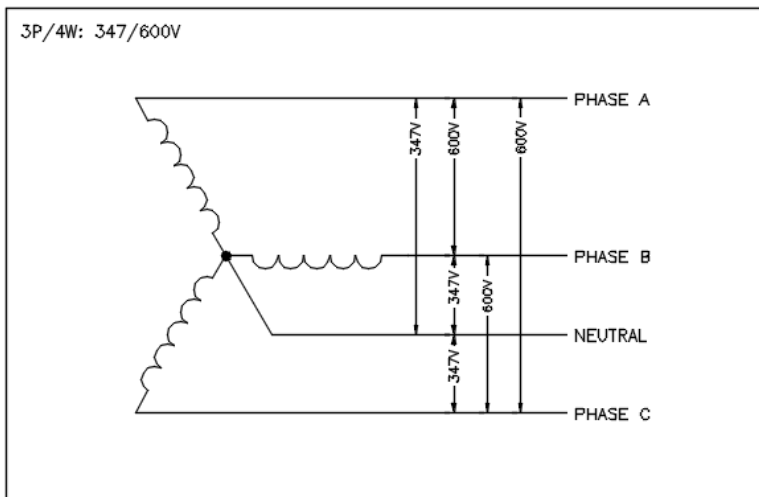
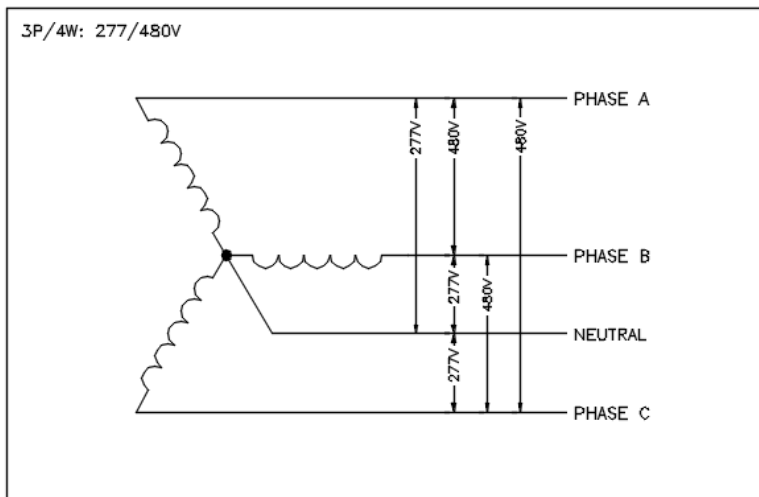
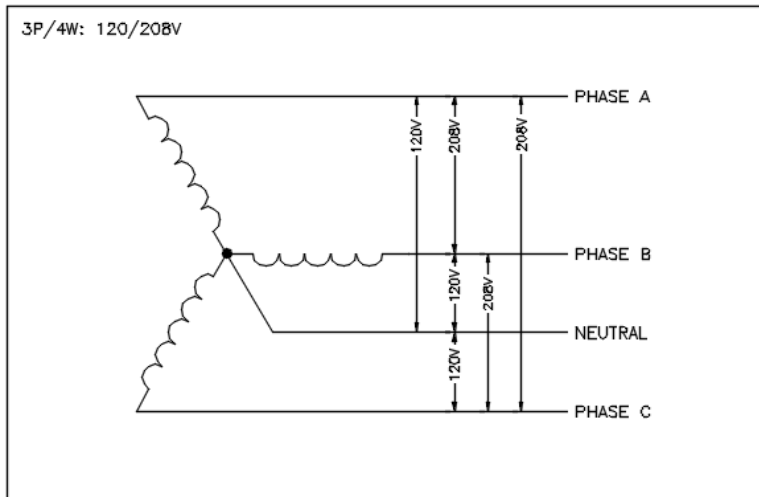
This is a service mostly seen in commercial applications. This is two lines (hot) without a neutral.



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3-Phase Wye (3P/4W Wye) Services: 120/208V, 277/480V and 347/600V

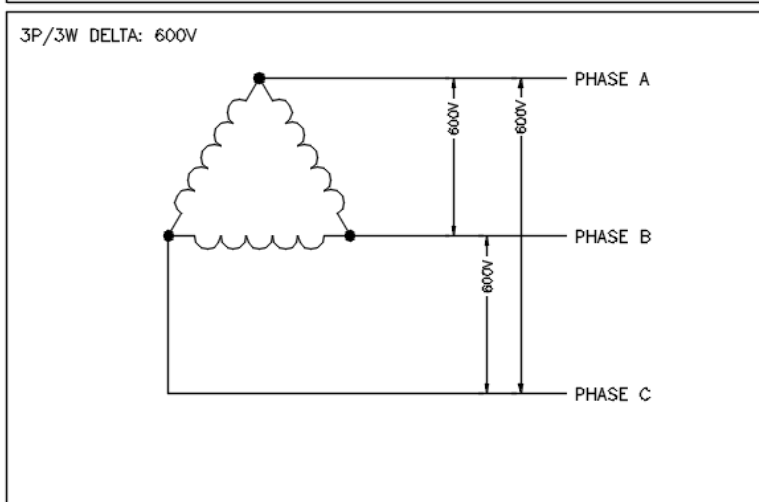
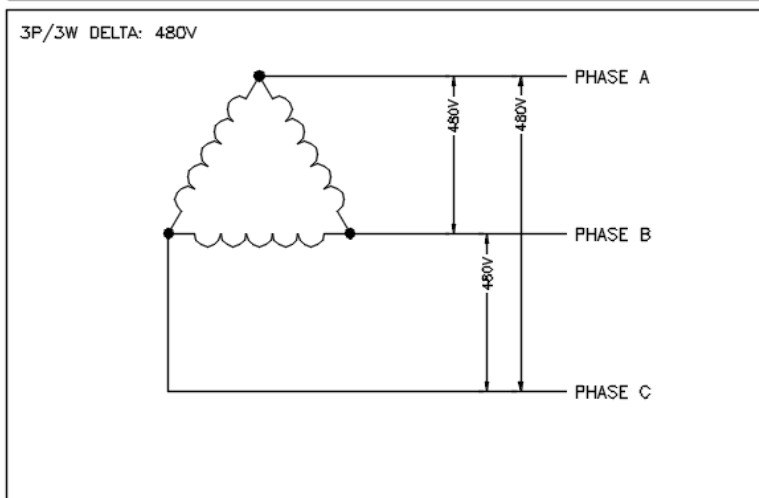
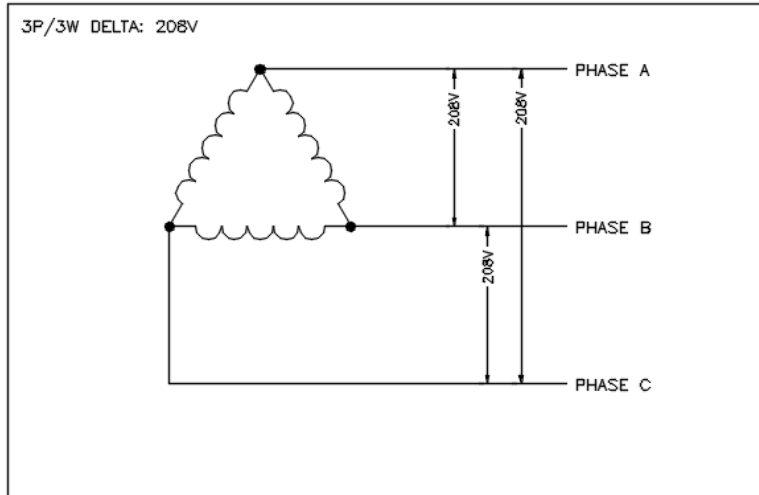
This is the most common commercial service. This a 3-phase system, with a neutral. Each phase (hot) is 120 degrees out of phase from each other with respect to Neutral.



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3-Phase Delta (3P/3W Delta) Services: 208V, 480V and 600V

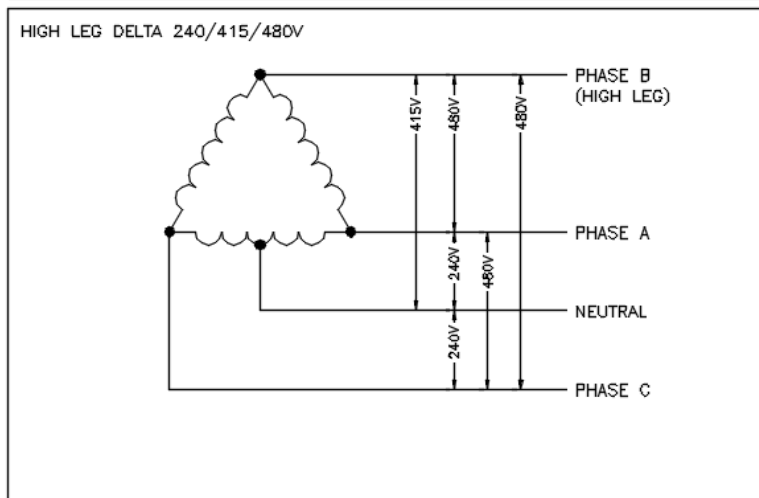
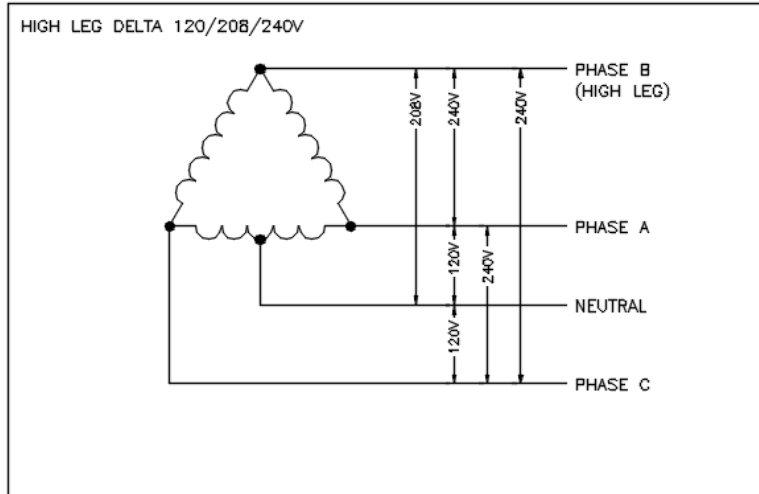
This service is mostly used in commercial services. This unlike Wye, there is no neutral wire.



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High Leg Delta (High Leg Delta) Services: 120/208/240V and 240/415/480V

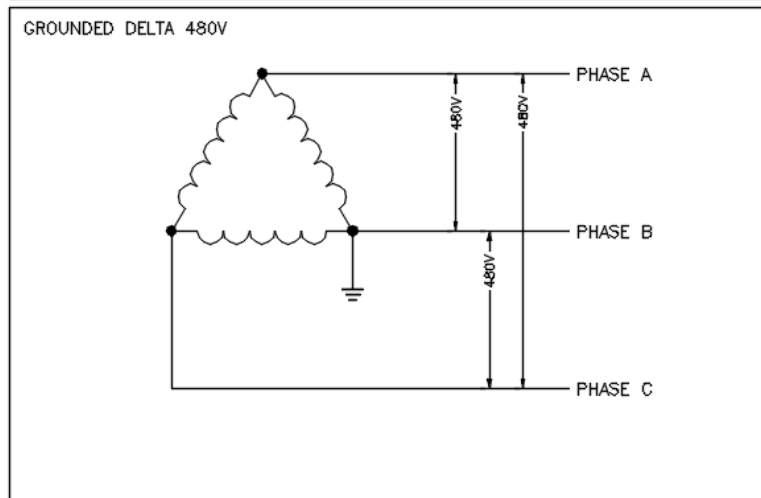
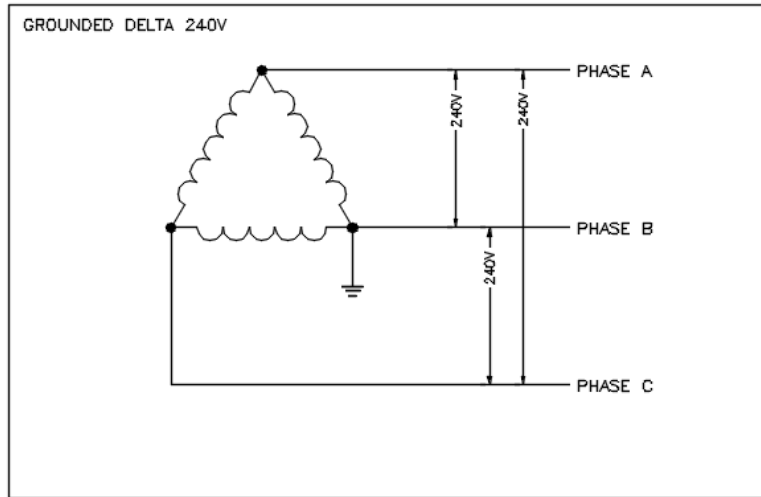
This is a less-common service seen in some older commercial areas. This is a 3-phase Delta service, but one of the windings is center-tapped. The center tap may be grounded or labeled as a Neutral. This also provides an additional voltage reference.



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Grounded Leg Delta (Grounded Delta) Services: 240V and 480V

This is a less-common service seen in some older commercial areas. This is a 3-phase Delta service, but one of the phases is grounded.



Rev	Date	Author	Description of Changes
1	07/15/2018	TJG	Initial document
2	09/17/2018	LEP	Added draft watermark, revision table, and updated Obvius logo in the footer
3	10/03/2018	SLD	Removed watermark; approved for publishing