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Product	MCW Star Delta Starters

Title	MCW Star Delta Starter Motor Connection Information
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Summary	This document gives information on connecting the motor terminals to the MCW star delta starter. It also gives information on the thermal overload trip class.
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A star delta starter can only be used with motors which have 400V delta and 690V star windings.

They cannot be used with motors that have 200V delta and 400V star windings (unless the mains supply is 200V 3 phase and the star delta starter is designed to work with this input voltage).

A star delta starter will have 3 contactors:

- Main contactor
- Star contactor
- Delta contactor

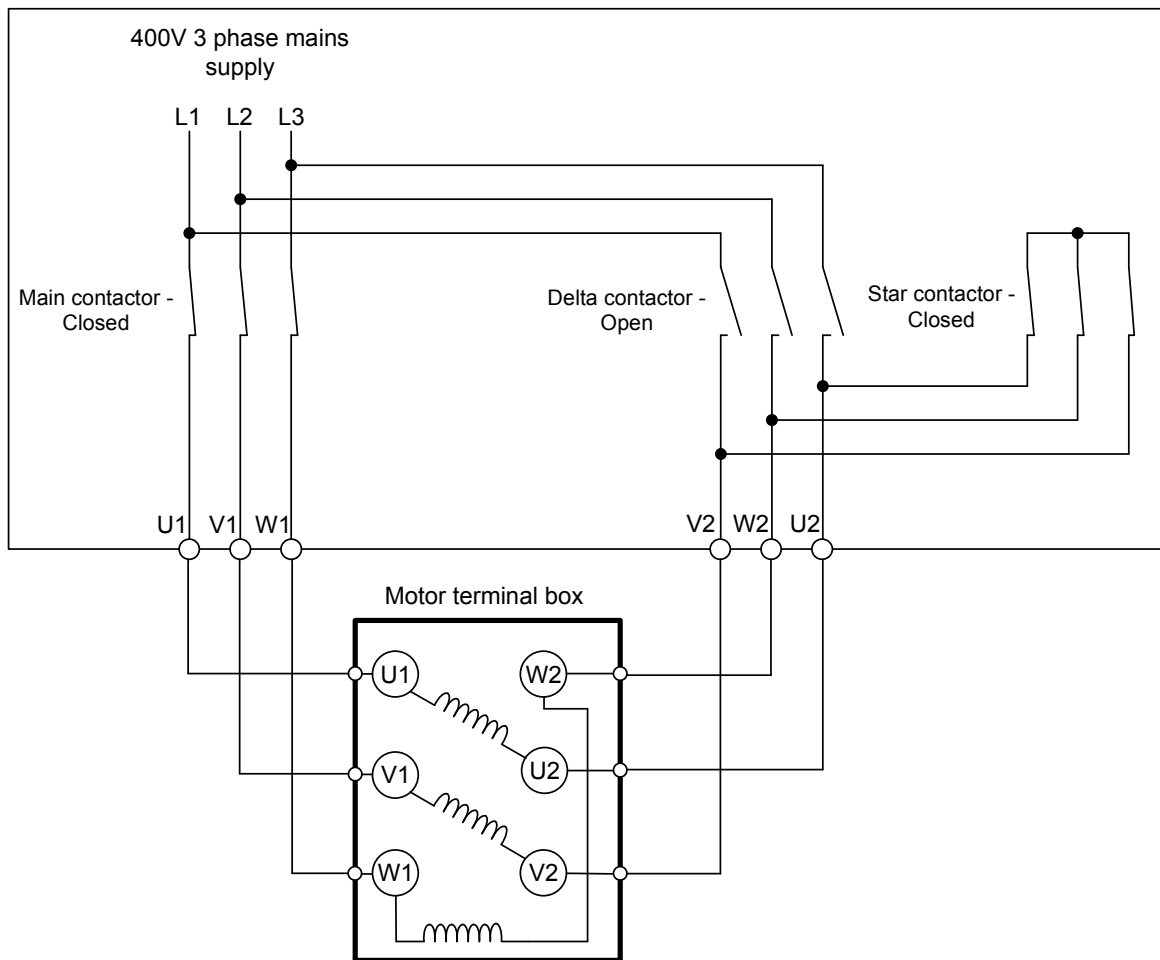
When the start button is pressed on the control panel, the control system will close the main and star contactors.

After a time has elapsed, controlled by the timer on top of the main contactor, the star contactor will open and the delta contactor will close.

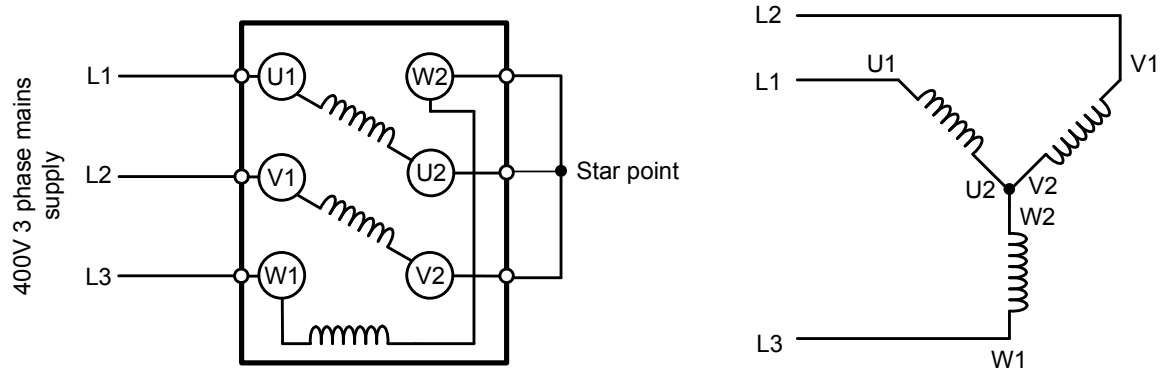
Note: With the connections as described below, the motor will rotate in the forward direction of rotation.

Circuit diagram with Main and Star contactors closed

This is equivalent to connecting the motor in the star 690V configuration. This is the start configuration for the motor. This configuration draws less current from the mains supply during starting then if the motor was started in the delta configuration.

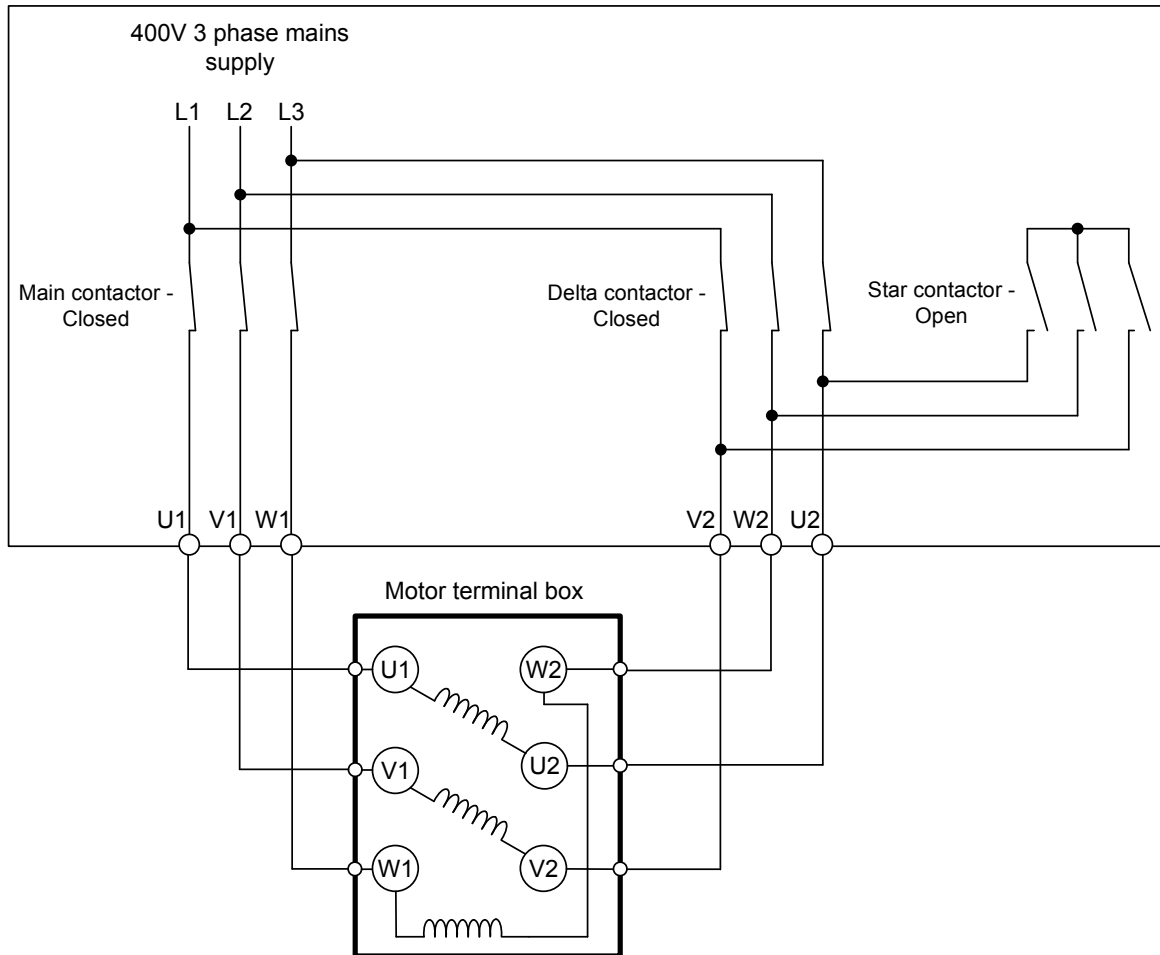


Equivalent to -

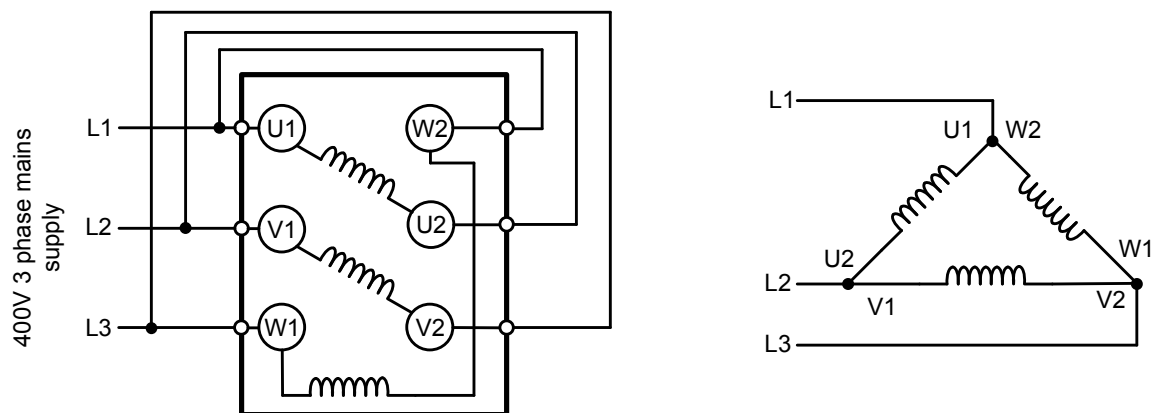


Circuit diagram with Main and Delta contactors closed

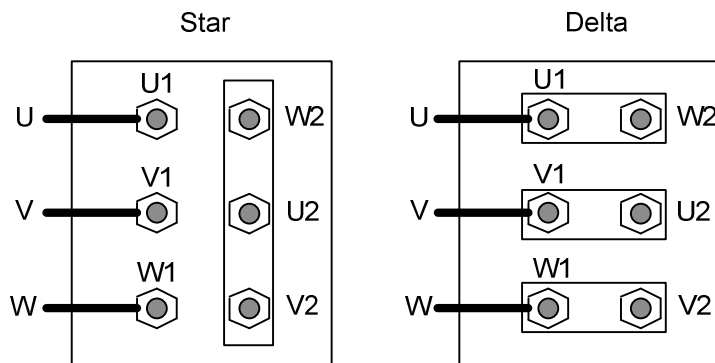
This is equivalent to connecting the motor in the delta 400V configuration. The delta connection is the running connection for the motor.



Equivalent to -



Standard motor terminal box connections for star and delta



Star Delta Starter Trip Class

The MCW star delta starter is fitted with a **Trip Class 10** thermal overload relay which is suitable for the majority of light to medium industrial type load applications.

The class number indicates the trip characteristics from cold state.

I_r = Current setting of overload relay. This should be the Full Load Current (FLC or FLA) shown on motor rating plate.

	$1.05 \times I_r$	$1.2 \times I_r$	$1.5 \times I_r$	$7.2 \times I_r$
	Time to trip from a cold start			
Class 10	>2 hours	<2 hours	<4 minutes	2s< to <10s

Trip Class 10 applications are low or medium starting load applications.

They are not suitable for applications that have a heavy load on start that takes greater than 10s to start or very high inertia loads such as high inertia fans, centrifuges and loaded crushers.