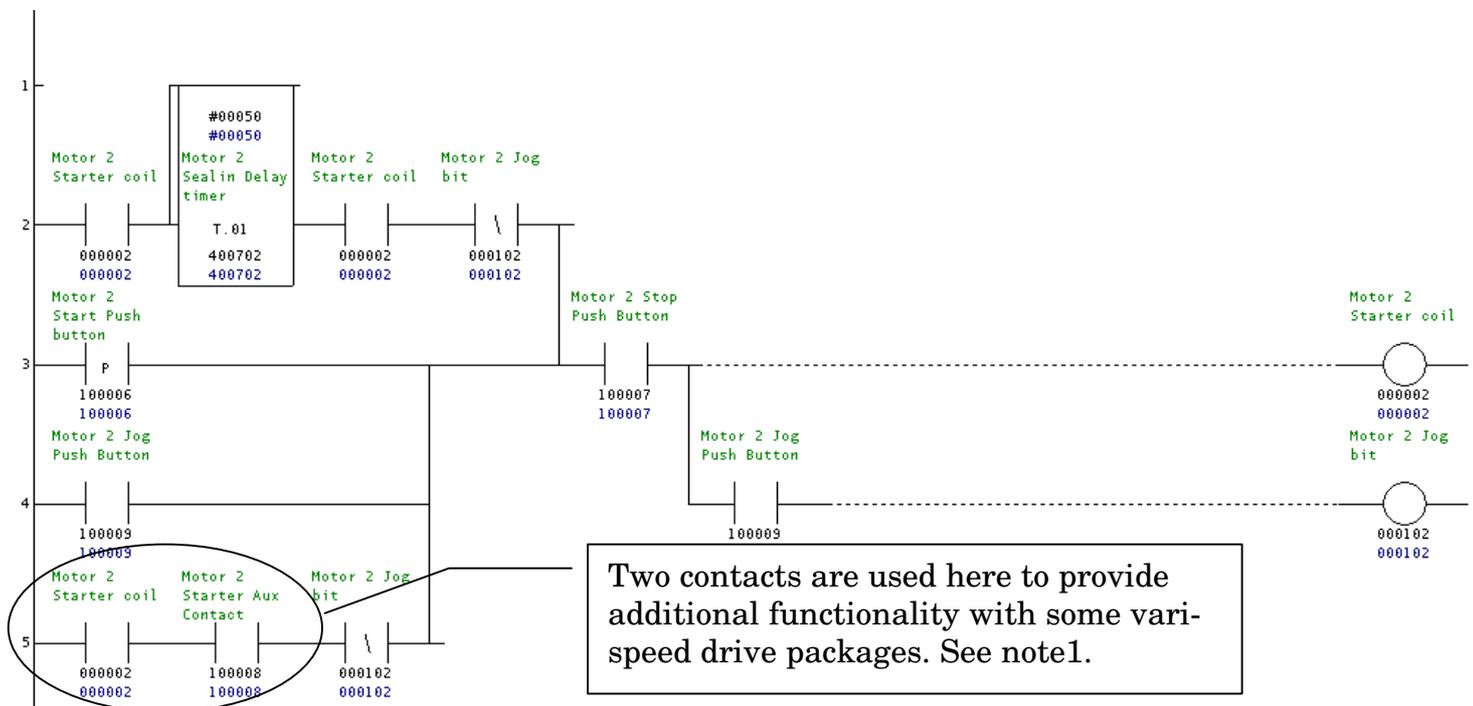


Modicon (984LL)

Motor Start/Stop with Jog Circuit

Motor Start/Stop Circuit with Jog switch. Designed to turn an output on and off that can in turn be wired to a motor starter to start/stop a motor. Circuit includes a momentary start pulse and an auxiliary contact sealin delay timer. Circuit also provides a motor jog function. Jog switch must be a physical, wired, non-maintained switch for safe operation.

The -|P|- contact is a positive going transitional contact used to provide a momentary start pulse. Required for safe operation of this logic diagram.



Functional Description:

Normal operation - When the start button, switch, input or bit is turned ON (bit=1) and the stop button, switch, input or bit is ON (bit=1) then the Motor starter output will turn ON (bit=1). The sealin delay timer will maintain power to the Motor starter output until the Aux contact input from the motor starter provides an input (bit=1). If the Aux contact input fails to turn on (bit=1) the timer will time out and the output will de-energize (bit=0). If the Aux contact input is turned on (bit=1), indicating that the starter has engaged, then the output to the motor starter will be maintained and the output will stay ON (bit=1). The output will stay on until the stop button, switch, input or bit is turned OFF (bit=0).

Jog function – Provides the ability to bump the motor for maintenance purposes. (Check rotation direction etc...). The jog function requires a Momentary (non maintained) switch for the jog switch. As long as the jog input is ON (bit=1) the motor will run. The stop button is also active during Jog operation, for added safety.

Address	Description	Function
100006	Start Switch	Provides start action. Input can be maintained or momentary because of the use of the transitional contact.
100007	Stop Switch	Provides stop action. Using the normally open (- -) contact requires wiring through the normally closed contacts (- / -) on the physical switch.
100008	Jog Switch	Provides a jog capability independent of the motor start switch. Jog switch must be a non-maintained switch. Motor will run as long as Jog switch is ON (bit=1)
000002	Starter Output	Output is turned on/and off by the start and stop bits.
000102	Jog bit	Internal bit is used to defeat Motor start capability when Jog Switch is used. Bit is ON (bit=1) when Jog is used.
400702	Sealin Delay timer	Provides a short time duration to wait for the Aux Contact from the starter to close. Needed because of the fast scan time of the PLC and the slow action of the starter. Preset value of the timer should be set according to the size and operational characteristics of the individual starter being used. Preset value should always be as short as possible for safety reasons.

Note1: Some variable speed (frequency) drive packages do not drop the motor running contact until the motor has physically stopped spinning. If the Aux or Drive running contact was used, by itself, in the sealin path the motor would restart when the stop button was released. Using the output address and the Aux or Drive running contact in series eliminates the problem. For consistency I now write all start/stop circuits using both contacts.