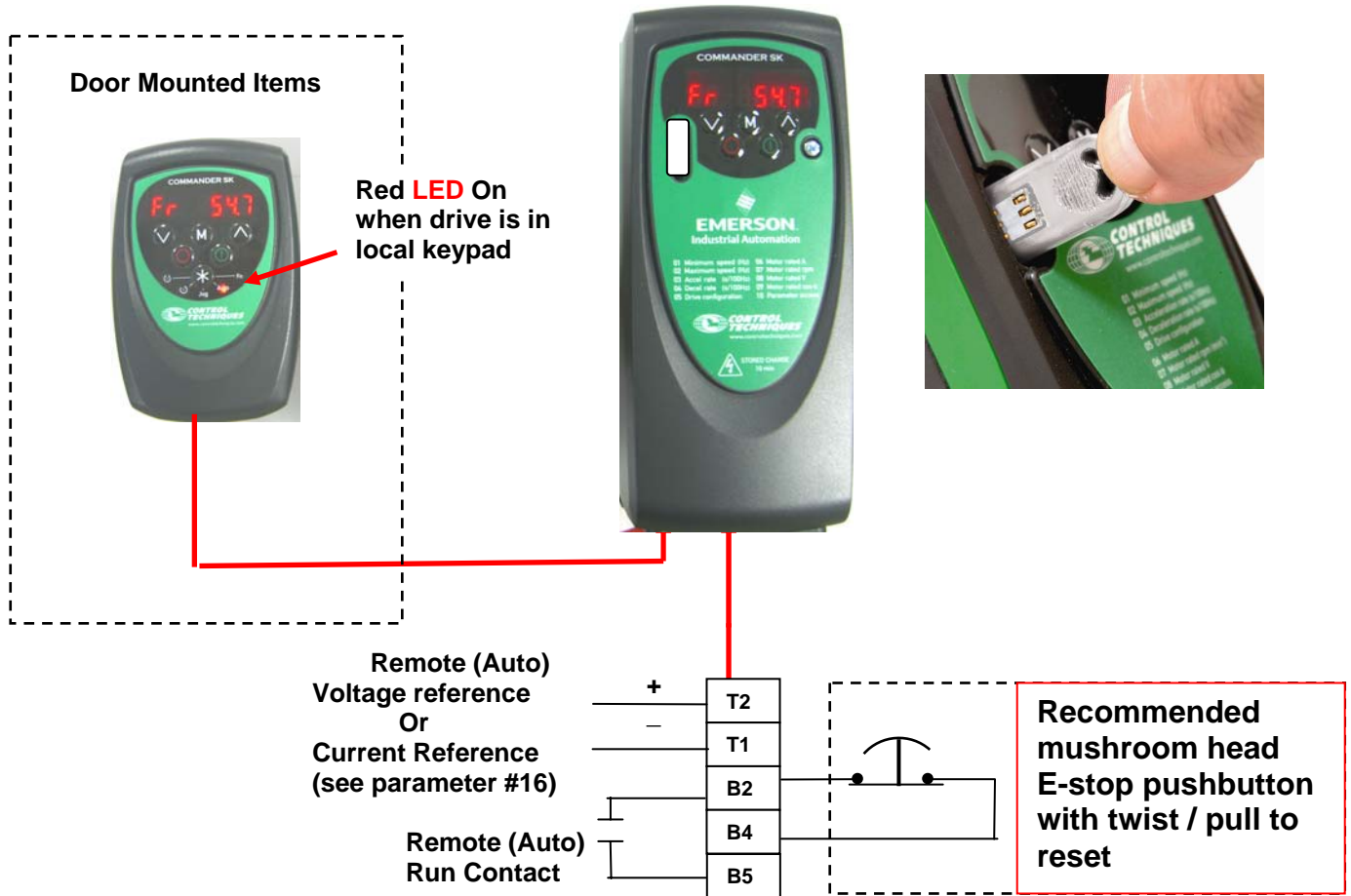


The Application Note is pertinent to the Commander SK Family

Commander SK with Local / Remote Control via Keypad only Logic Stick Required



This configuration provides two modes of operation:

1. Local Control by pressing the Stop and Up – Control of the drive using the drive's keypad or the remote keypad
2. Remote Control by pressing the Stop and Down -- Control of the drive by a remote run contact and speed command

System Safety

As with any system design where mechanical motion is involved, personnel safety should be of paramount importance. This application note is for basic guidance in providing various drive functions and does not address these issues as it is the sole responsibility of the control panel and machine designers to meet all applicable Machine Safety requirements.

There are many applications which require local / remote control of an ac drive. In this application, it is desirable to control the drive using the keypad controls when in local control and an analog speed reference (be it 0 to 10vdc or 4-20ma) and run contact when in the remote control mode. The picture below shows the Commander SK remote keypad mounted to the front door of the drive enclosure. The remote Keypad is not needed in the system if the drive is not in an enclosure. The only feature lost without it is that there is no indication of what mode you are in as there is with the remote keypad. The Logic Stick option is required to provide this functionality. The actual DPL program for this application note is available on our website -- [SyPTLite Program](#) (HVAC control _ local_remote_keypad.dpl V1.0). It was written using the free SyPTLite PLC programming toolkit which can also be found on our website.

To obtain SyPTLite click here → [SyPTLite](#)



System Specifications:

Mode Changing

The Stop, Up and Down arrows are used to switch from Local to Remote or vice versa

- Stop and UP switch to Remote
- Stop and Down switch to Local
- When in Local the Red Led will be illuminated on the Remote Keypad
- Parameter 70 sets the mode that the drive powers up in
 - #70 = on ---- Drives powers up in Remote
 - #70 = off ---- Drives powers up in Local

Local Mode

- In local control, the drive is started and stopped using the keys on the drives faceplate. The motor speed is set using the Up (to increase) and the Down (to decrease) keys while the drive is in the run mode.
- If the drive is **not** in run, the up / down button will have no function unless the mode button is pressed, and then they are used to adjust parameters.
- If the mode button is pressed while the drive is in run, the up / down buttons are locked out to allow parameters to be adjusted without affecting the speed of the motor. This lockout time is 30 seconds which can be changed in the program to any desired time. The lockout can be reset anytime by simply pressing the up and down arrows together.

Remote Mode

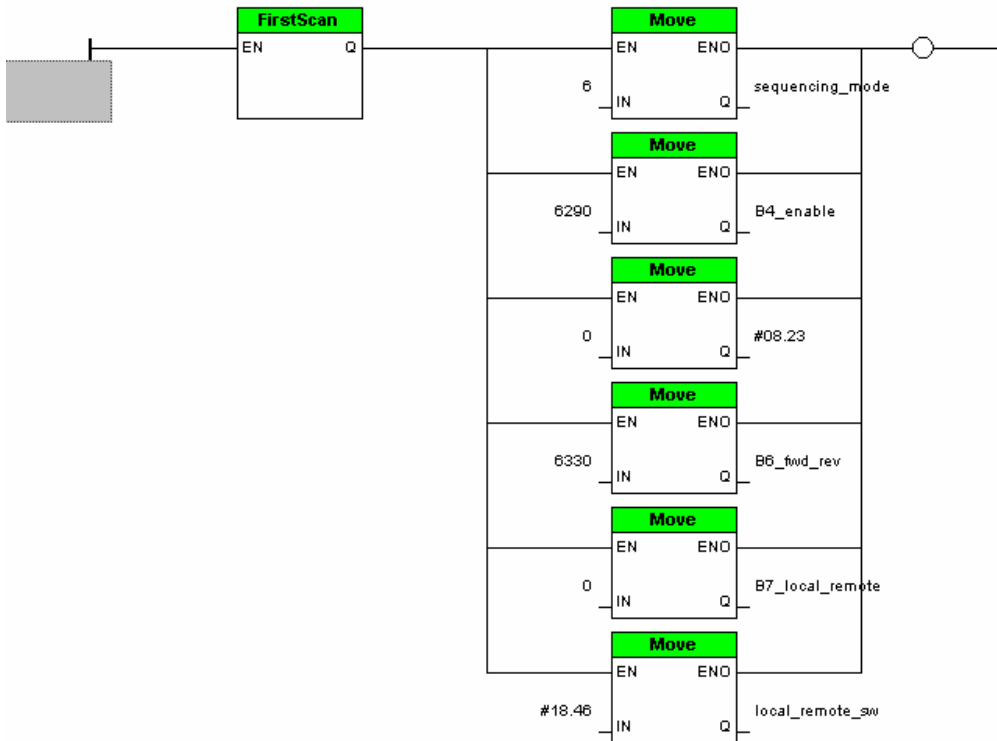
- In this mode, the speed is controlled by the analog reference and the remote run contact starts and stops the drive.
- If the drive is in run and the stop button is pressed on the drives faceplate, the drive will stop. To restart, the run contact must be opened and re-closed.

Syptlite Program

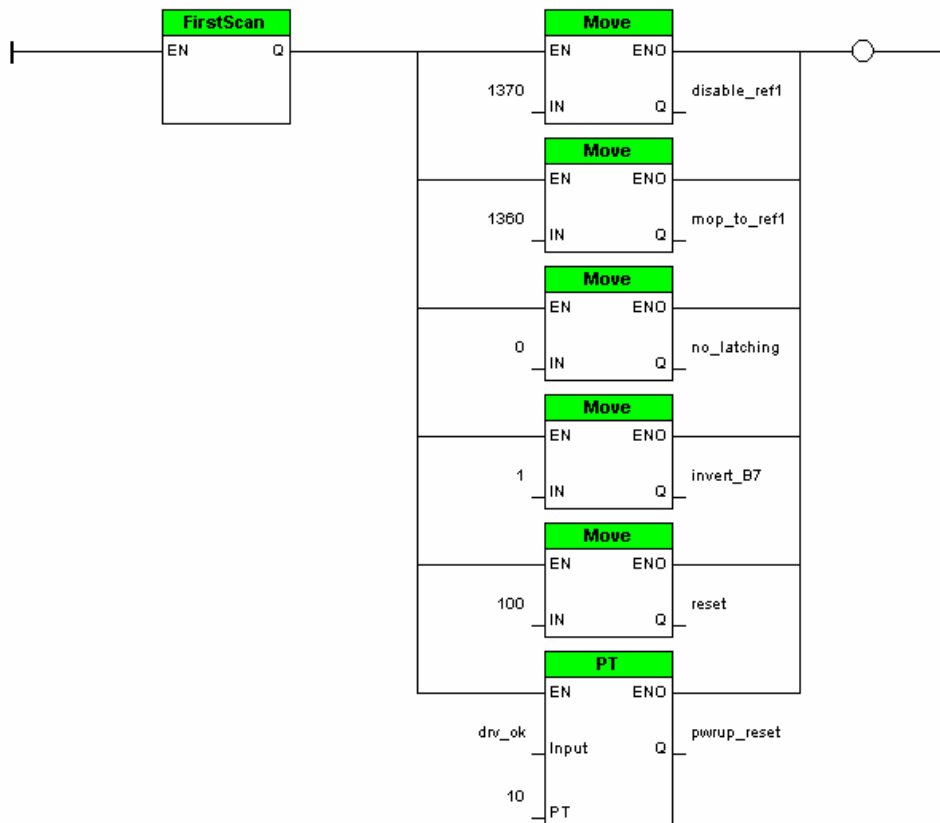
The Syptlite program, in its first scan, sets some of the required I/O functions like the non-latching sequencing mode which allows user modifications.

This section configures the drives I/O. Sequencing mode = 6 (user) , B4 = enable, B5 = remote run and B7 = local / remote

*)



(* This section sets the output of the mop function to #1.37, logic inputs to non-latching and then a reset *)

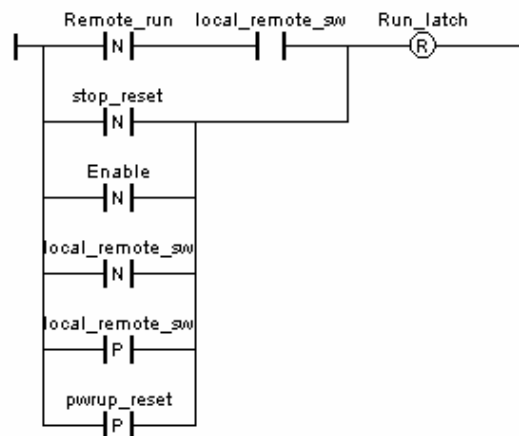


This section of the program sets up a run latch which can be set by either the keypad run button or the remote run contact. The latch can be reset by either the stop button on the drive, by opening the remote run contact, the enable or changing the state of the local/remote switch.

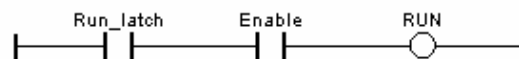
(This is the drive run command logic latch *)



(This logic de-latches the run latch on a stop, disable, local / remote switch state change *)



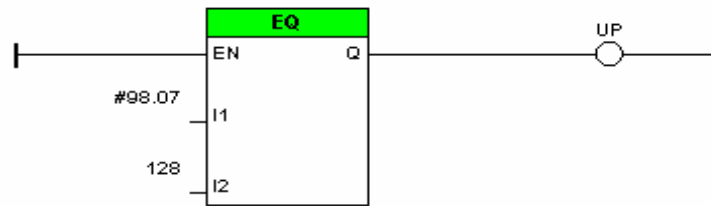
(Drive run command *)



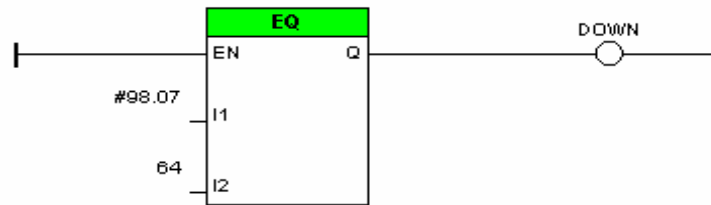
The run relay is picked up (or dropped out) by the run latch, but the enable must be closed.

This section of the program looks to see what buttons are being pressed.

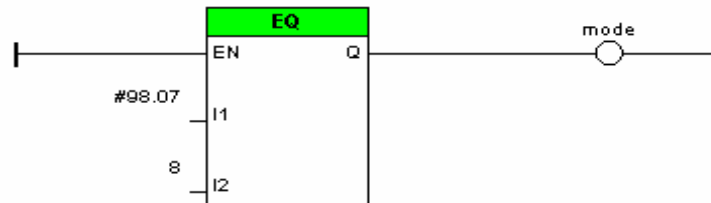
* Up button pressed? *)



* Down button pressed? *)



* Mode Button Pressed? *)



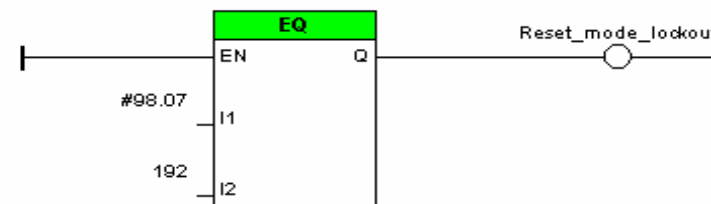
(* Keypad Stop button pressed? *)



(* Keypad Run depressed? *)

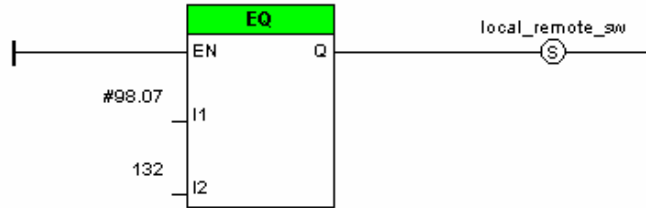


(* Reset mode lockout by pressing the Up and Down arrows together *)

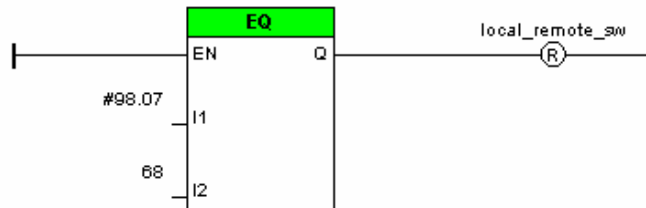


This section controls the local / remote selection and the indicator led on the remote keypad

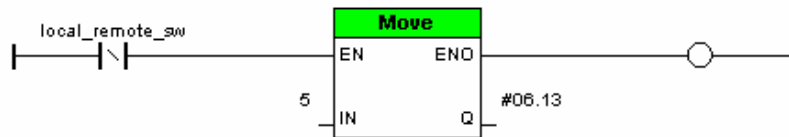
⌘ Stop and up = set 1.41 ⌘)



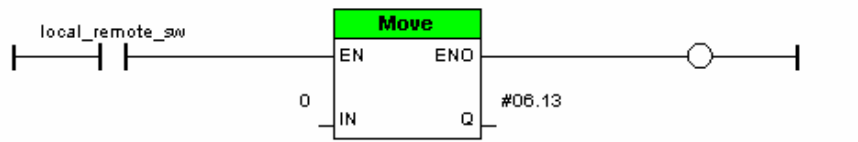
⌘ Stop and down = reset 1.41 ⌘)



⌘ This is used to turn on the led on the remote keypad ⌘)



⌘ This is used to turn off the led on the remote keypad ⌘)

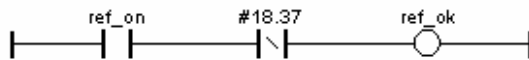


This section of the program controls the Up / Down inputs to the drives MOP function.

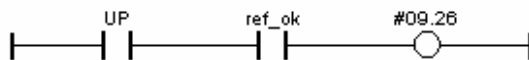
(Set #18.37 if the Mode button is pressed)



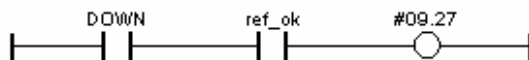
(If in run and mode is pressed, disable ref_ok)



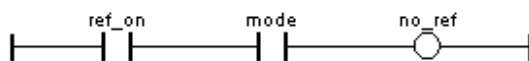
(If up button is pressed and ref_ok is enabled, allow mop up)



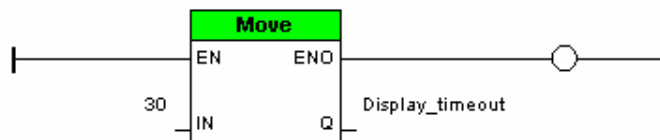
(If down button is pressed and ref_ok is enabled, allow mop down)



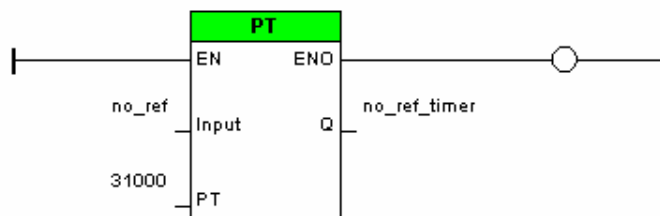
(If in run and the mode button is pressed, enable mode lockout timer)



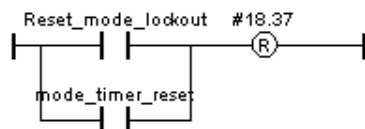
(set display timer to 30sec, 1 second less than mode lockout timer)



(Mode lockout timer)



(Reset up/down lockout if stop button pushed or mode lockout timer expires)



(Reset mode lockout after timer expires)

