

# PM1340GT VFD Control Basic Single Relay Wiring Diagram for Hitachi WJ200

Note: VFD P24 Max. current is 100mA, the relay and LED PWR light is ~90mA. Incandescent bulbs draw too much power.

Relay: 784-4C-24D (4 pole, 24 VDC)

Relay Socket: 784-4C-SKT-1

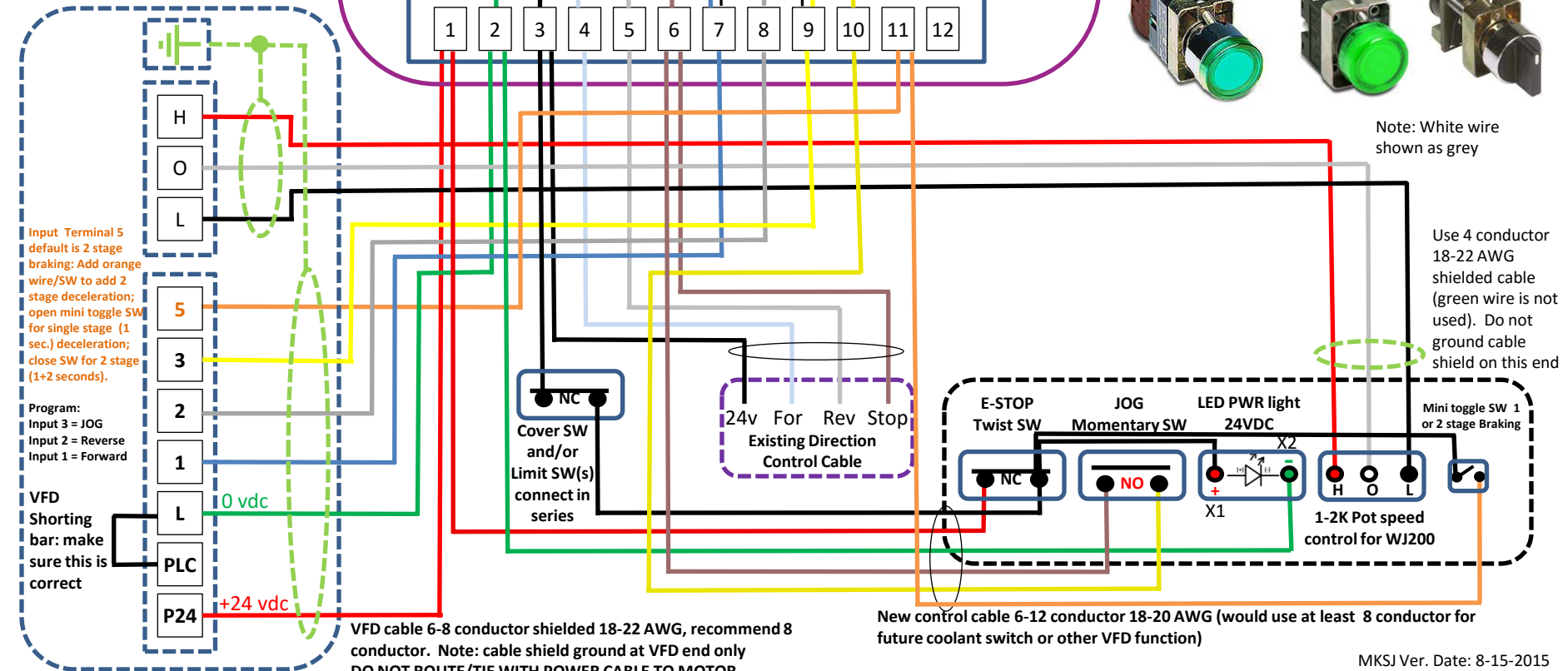
PWR light LED 24 VDC or use a lighted JOG Switch GCX1202-24L Green pushbutton, 22mm metal, momentary SW with guard

Or LED pilot light indicator: GCX1232-24L

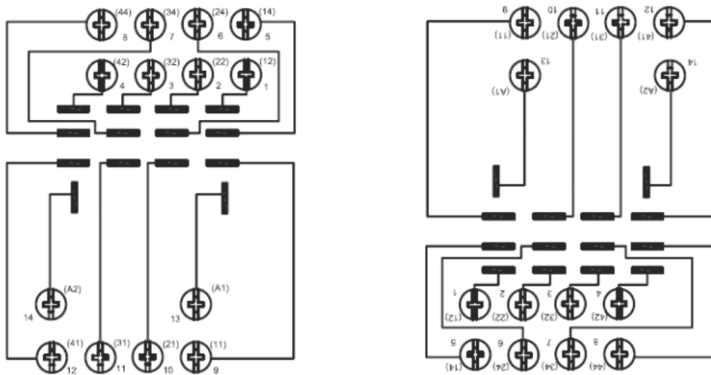
I use a 5KΩ Speed pot: ECX2300-5K



Note: White wire shown as grey

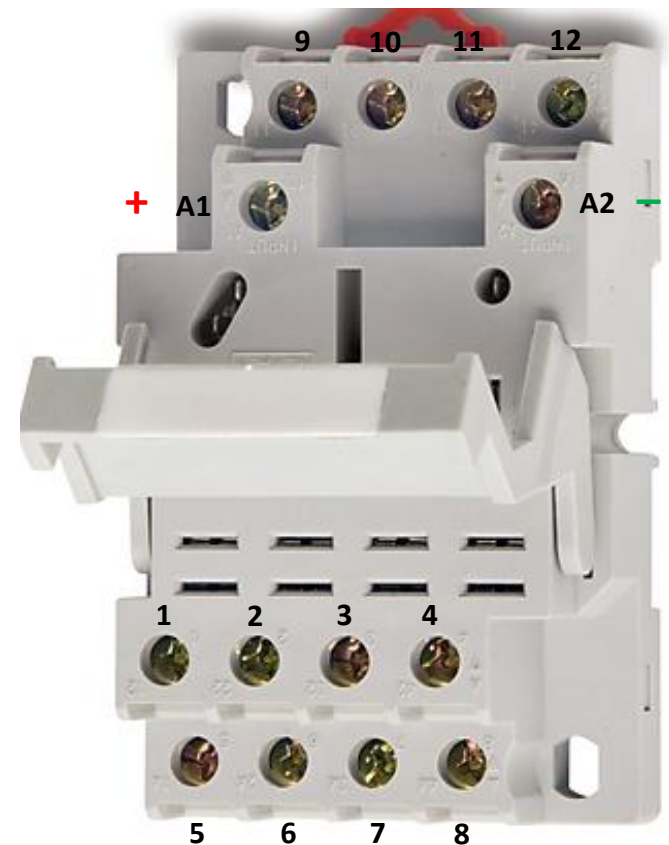
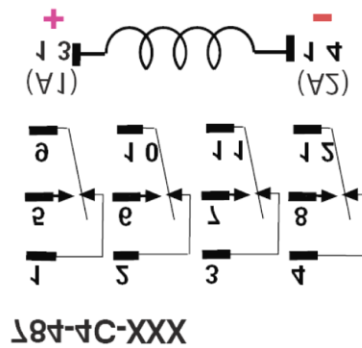
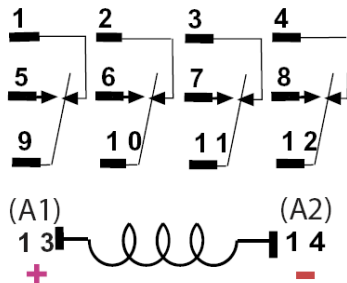


## Relay base/sockets views looking down



Note that relay connections in sockets is different then the relay, connect via the labeled numbers on the socket screw terminals. Note proper polarity and orientation of diodes and LEDs, the banded side is the (-) cathode

784-4C-XXX



## **AUTOMATION DIRECT**

### **E-Stop control panel #1**

**GCX1131** Pushbutton, 22mm metal, latch with twist-to-release, 40mm mushroom operator, 1 N.C. contact block. **\$12.50** (add separate NO or NC to control other functions, such as emergency stop or Unattended Start Protection input to VFD)

**Jog Button Green with clear guarded shield around the button, with separate green LED light used to indicate power #1**

(Can also use separate LED pilot light, do not use an incandescent bulb due to the high power draw.)

**GCX1202-24L** Pushbutton, 22mm metal, momentary, LED illuminated, green, 24 VAC/DC, flush operator with colored plastic ring, 1 N.O. contact block. F/R requires additional NC switch blocks. **\$19.50**

### **Speed potentiometer #1**

**ECX2300-5K** 22mm potentiometer with 5 Kohm resistance, black handle. Legend plate **ECX2640** sold separately **\$36.50**. I have plenty of spare small 5K pots if you want instead.

**ECX2640** 22mm legend plate for potentiometer with 0% to 100% marking **\$3.50**

Alternate is 1K or 2K 2-4W potentiometer with knob (eBay, Mouser Electronics, etc.), ~\$5-10

Additional Switch blocks if needed.

**ECX1040-5 CONTACT BLOCK** 22mm 5/PK N.O. GREEN FOR GCX SERIES ONLY **\$15**

**ECX1030-5 CONTACT BLOCK** 22mm 5/PK N.C. RED FOR GCX SERIES ONLY **\$15**

### **Relays and socket mount #1:**

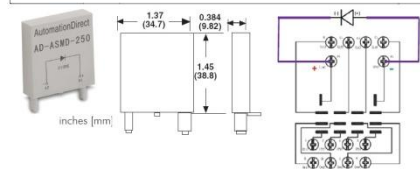
**783-4C-24D** Ice cube control relay, 24 VDC coil voltage, 4PDT, 15A contact rating, with LED indicator and push-to-test button. Purchase 783-4C-SKT mounting socket separately. **\$8.25**

**783-4C-SKT RELAY SOCKET** FOR 783 SERIES **\$4.50**

**Diodes: 1N4004 or 1N4007 (1A 400V min) for relay logic (prevents back feed of voltage)**

Relay protection diode as shown: AD-ASMD-250 plugs into relay socket (or use 1N4004 between A1 and A2 terminal as shown)

Protection Device Selection Guide					
Part Number	Price	Description	Nominal Input Voltage	Dimensions & Package	Mating Socket
AD-ASMD-250	\$9.75	Protection diode module for 784 and 75 series relays. Plug-in modules come in package of 5.	6-250VDC	Figure 1	783-SC-SKT 784-SC-SKT 754-SC-SKT 754-SC-SKT 754-SC-SKT



**Misc: Control cable 18-22 G 8 wire** (multi wire flexible, depends on the number of controls; 5-8 or more wires between control box and VFD for commands), **4 wire 18-24G shielded cable** to connect the speed pot (use 3 wires, red high side, white wiper, black low side 0V, green not used) to the VFD, and control box and VFD. **Motor cable** between VFD and motor, **14G 4 conductor** (3 wire + ground + shield), preferably shielded, but regular 4 conductor will work. Ground is connected at VFD and motor, shield for all cables only at VFD end. Should be 600V rating. **Power cable to VFD: SEOOW or SOOW** Flexible portable cord, Type SEOOW, 3 or 4 conductors, 12AWG (2HP 240 VAC) up to 25', 600V maximum, -50 to 105 degrees C, fully annealed stranded copper conductors, rated for outdoor use, oil-resistant and water-immersible, 20 foot coil **\$22.50**

You will need assorted connectors and spades. Additional terminal blocks may be needed.

Optional power supply for light: REIGNPOWER NL1100D-24 24VDC 4.2A Din Rail Power Supply (only one that will fit in control box), otherwise use stock 24VAC transformer