

# NOSHOK 2000 SERIES TECHNICAL MANUAL

## DUAL / QUAD RELAY OPTION CARD

### DESCRIPTION

The 2000 series of meters can be fitted with up to three option cards. The slot bays of the option cards are dedicated to a particular card function. The option

card functions are: serial communications, analog output and setpoint output. Only one card from each function category can be installed.

### INSTALLING AN OPTION CARD

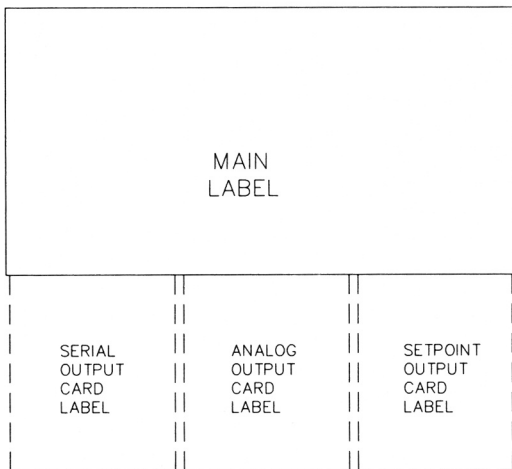
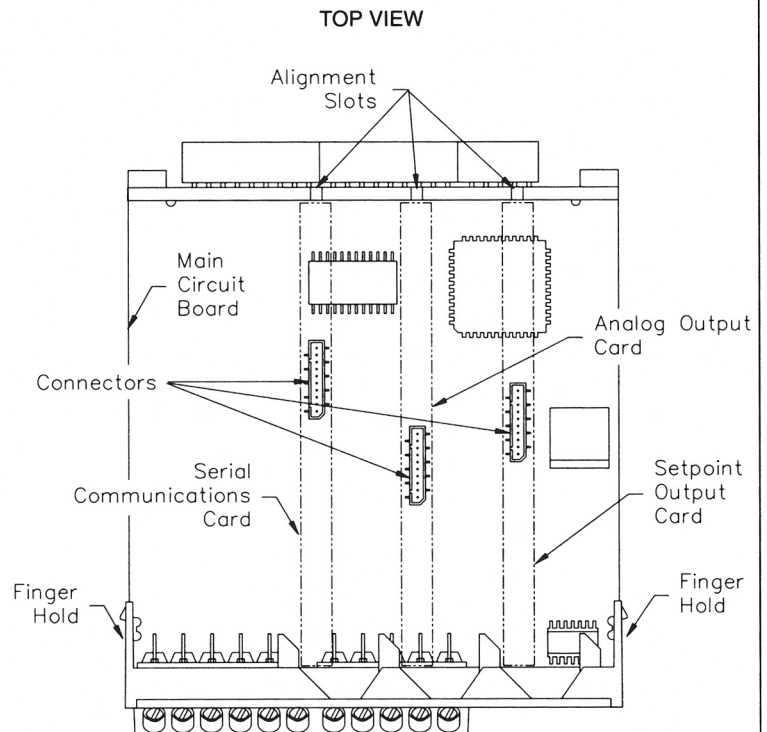


**Caution:** The option and main circuit cards contain static sensitive components. Before handling the cards, discharge static charges from your body by touching a grounded bare metal object. Ideally, handle the cards at a static controlled clean workstation. Also, only handle the cards by the edges. Dirt, oil or other contaminants that may contact the cards can adversely affect circuit operation.



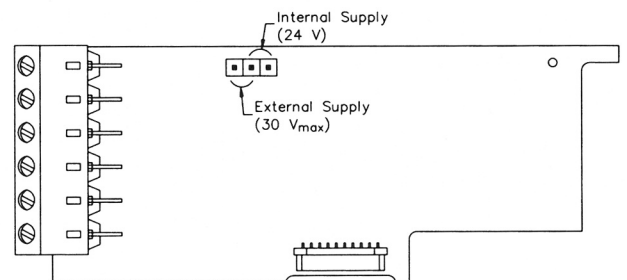
**Warning:** Exposed line voltage exists on the circuit boards. Remove all power to the meter AND load circuits before accessing the unit.

1. Remove the main assembly from the rear of the case. Squeeze the finger holds on the rear cover, or use a small screwdriver to depress the side latches to release it from the case. It is not necessary to separate the rear cover from the main circuit card.
2. Locate the option card connector for the type of option card to be installed. Hold the unit by the rear connector, not the display board, when installing an option card.
3. Install the option card by aligning the option card connector with the slot in the rear cover. The cards are keyed by position with different main board connector locations. Be sure the connector is fully engaged and the tab on the option card rests in the alignment slot on the display board.
4. Slide the assembly back into the case. Be sure the rear cover latches fully into the case.
5. Apply the option card label to the bottom side of the meter. Do not cover the vents on the top surface of the meter. The surface of the case must be clean for the label to adhere properly. Apply the label to the area designated by the large case label.
6. See manual for wiring connections and programming procedures.



### Quad Sourcing Open Collector Output Card Supply Select

For Quad Sourcing Open Collector Card, set the jumper internal or external supply operation before applying power.



## SPECIFICATIONS

**Setpoint Output Cards:** Four types of field installable cards

### Dual Relay Card:

**Type:** Two FORM-C relays

**Isolation To Sensor & User Input Commons:** 2000 Vrms for 1 min.

### Contact Rating:

One Relay Energized: 5 amps @ 120/240 VAC or 28 VDC (resistive load), 1/8 HP @ 120 VAC, inductive load

Total Current With Both Relays Energized not to exceed 5 amps

**Life expectancy:** 100K cycles min. at full load rating. External RC snubber extends relay life for operation with inductive loads

### Quad Relay Card:

**Type:** Four FORM-A relays

**Isolation To Sensor & User Input Commons:** 2300 Vrms for 1 min.

### Contact Rating:

One Relay Energized: 3 amps @ 250 VAC or 30 VDC (resistive load), 1/10 HP @ 120 VAC, inductive load

Total Current With All Four Relays Energized not to exceed 4 amps

**Life Expectancy:** 100K cycles min. at full load rating. External RC snubber extends relay life for operation with inductive loads

### Quad Sinking Open Collector:

**Type:** Four isolated sinking NPN transistors.

**Isolation To Sensor & User Input Commons:** 500 Vrms for 1 min.

Not Isolated from all other commons.

**Rating:** 100 mA max @  $V_{SAT} = 0.7$  V max.  $V_{MAX} = 30$  V

### Quad Sourcing Open Collector:

**Type:** Four isolated sourcing PNP transistors.

**Isolation To Sensor & User Input Commons:** 500 Vrms for 1 min.

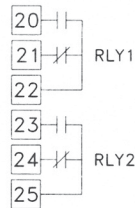
Not Isolated from all other commons.

**Rating:** Internal supply: 24 VDC  $\pm 10\%$ , 30 mA max. total all four outputs

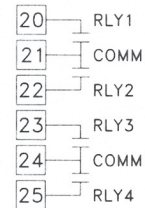
External supply: 30 VDC max., 100 mA max each output

## SETPOINT OPTION CARD FIELD TERMINALS

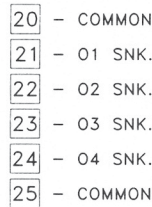
### DUAL RELAY OUTPUT FIELD TERMINALS



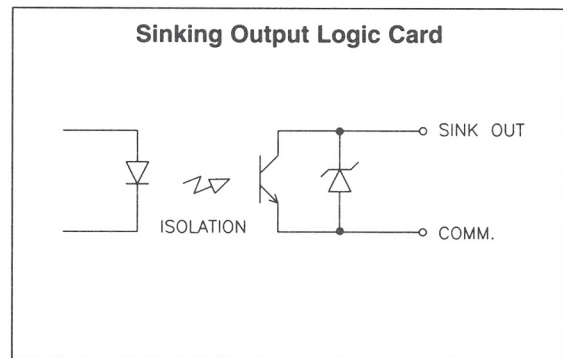
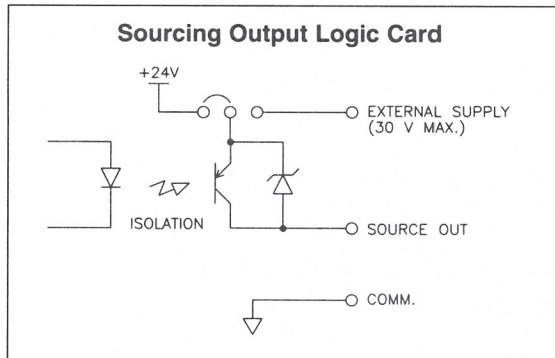
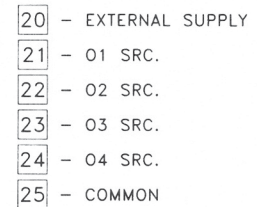
### QUAD RELAY OUTPUT FIELD TERMINALS



### QUAD SINKING OUTPUT FIELD TERMINALS



### QUAD SOURCING OUTPUT FIELD TERMINALS



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