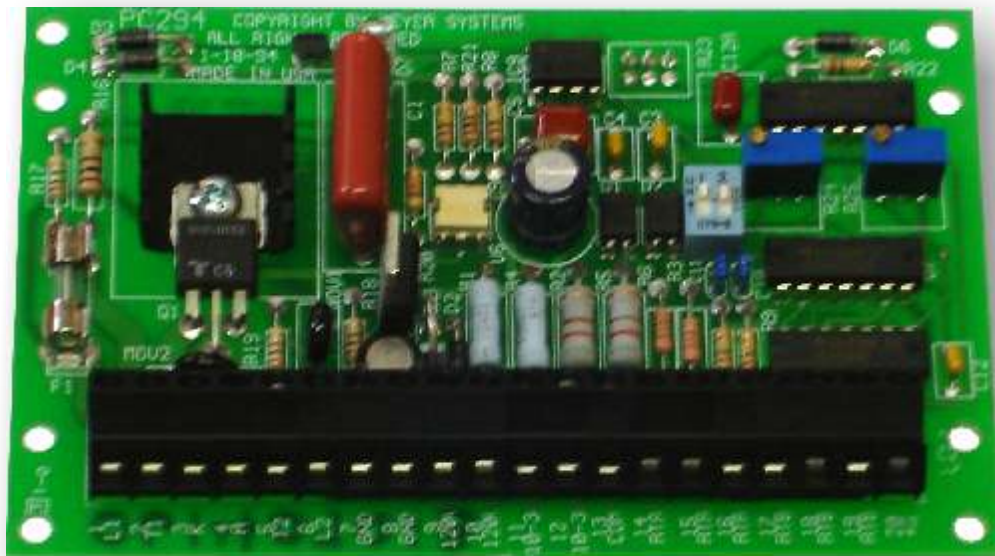


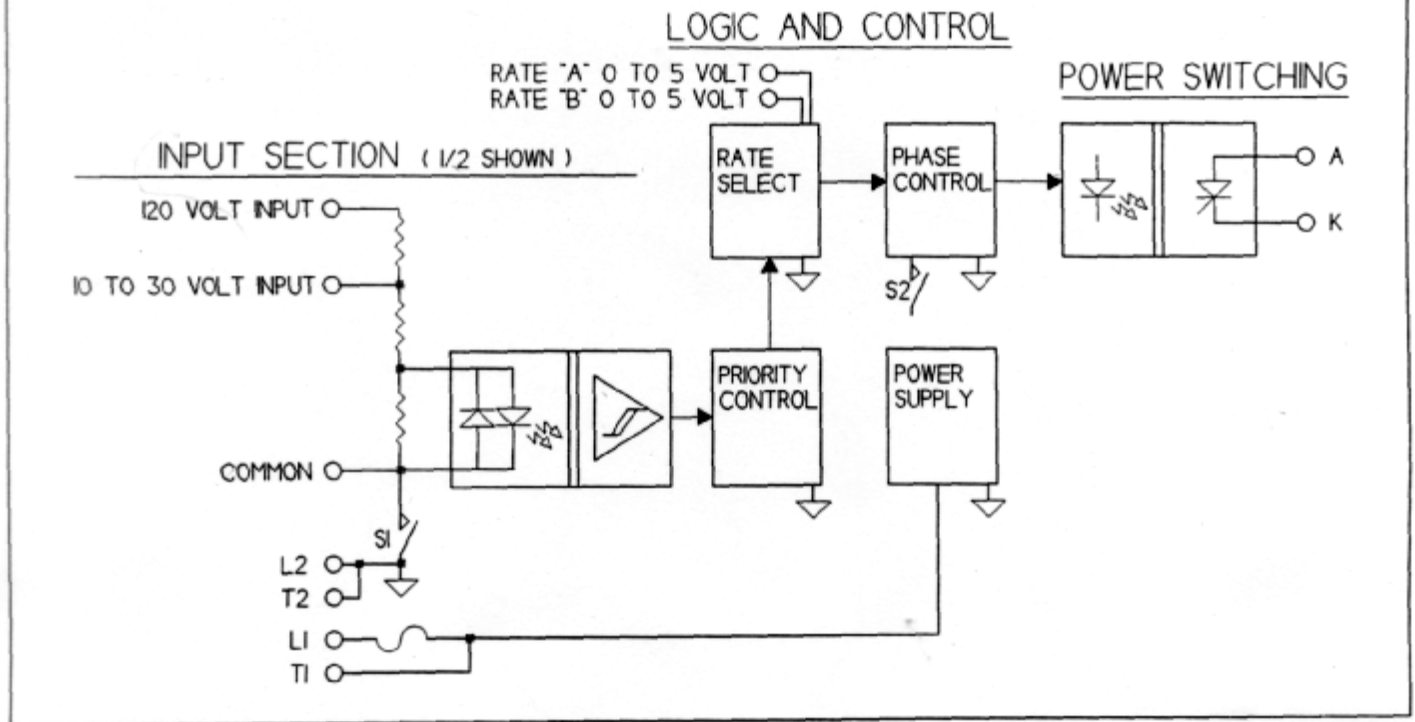
# PC294 Vibratory Feeder Controller

## Application Notes

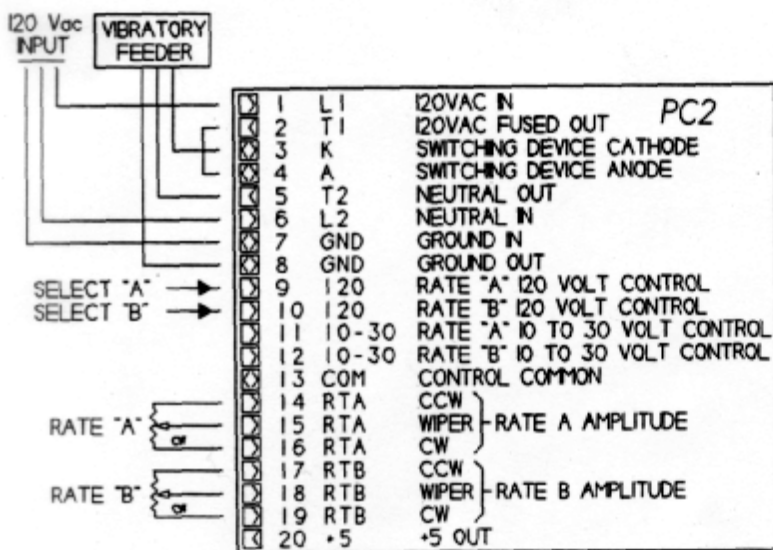


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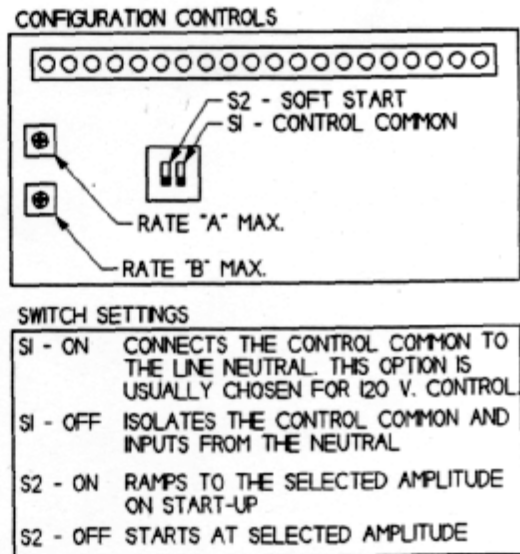
### BLOCK DIAGRAM



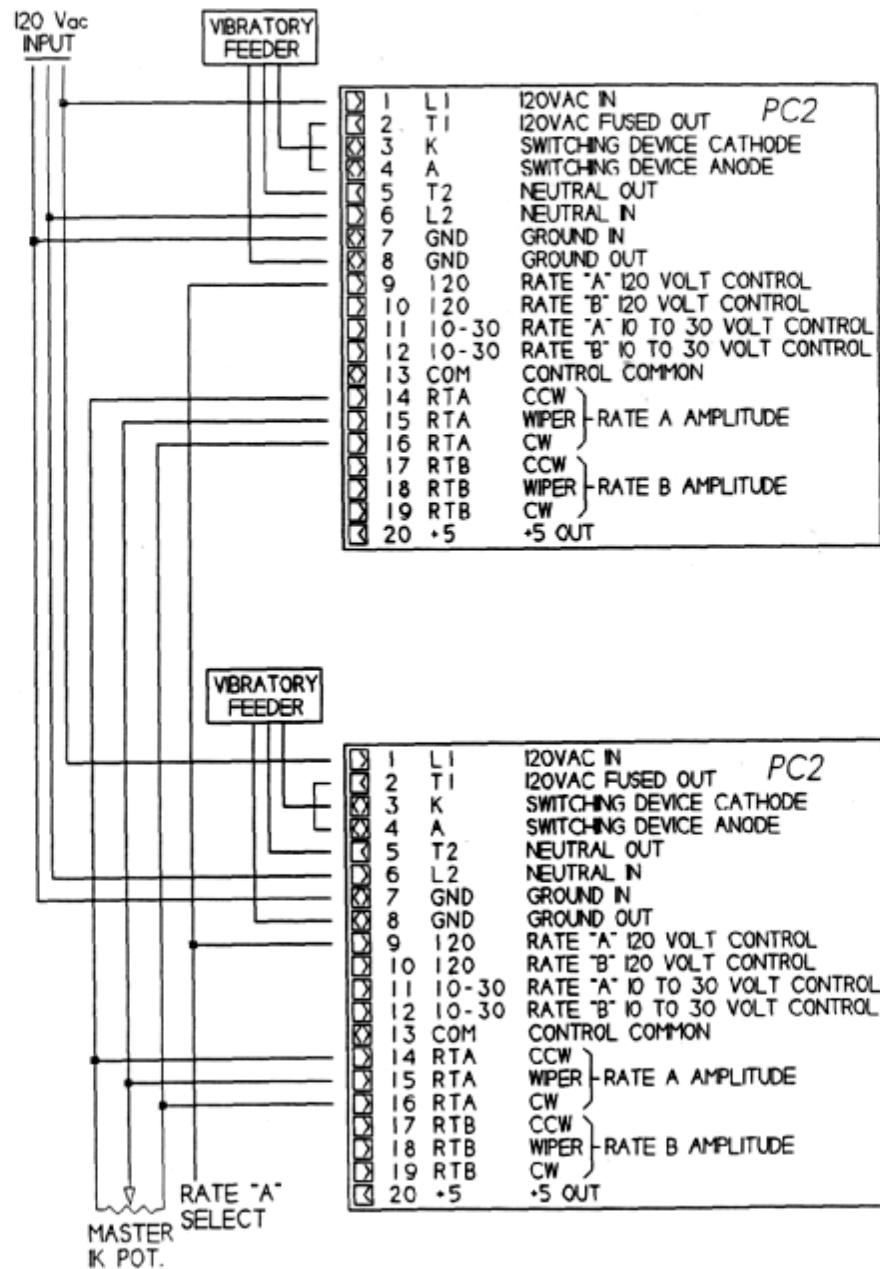
### TYPICAL 120 VOLT CONNECTION



## CONFIGURATION



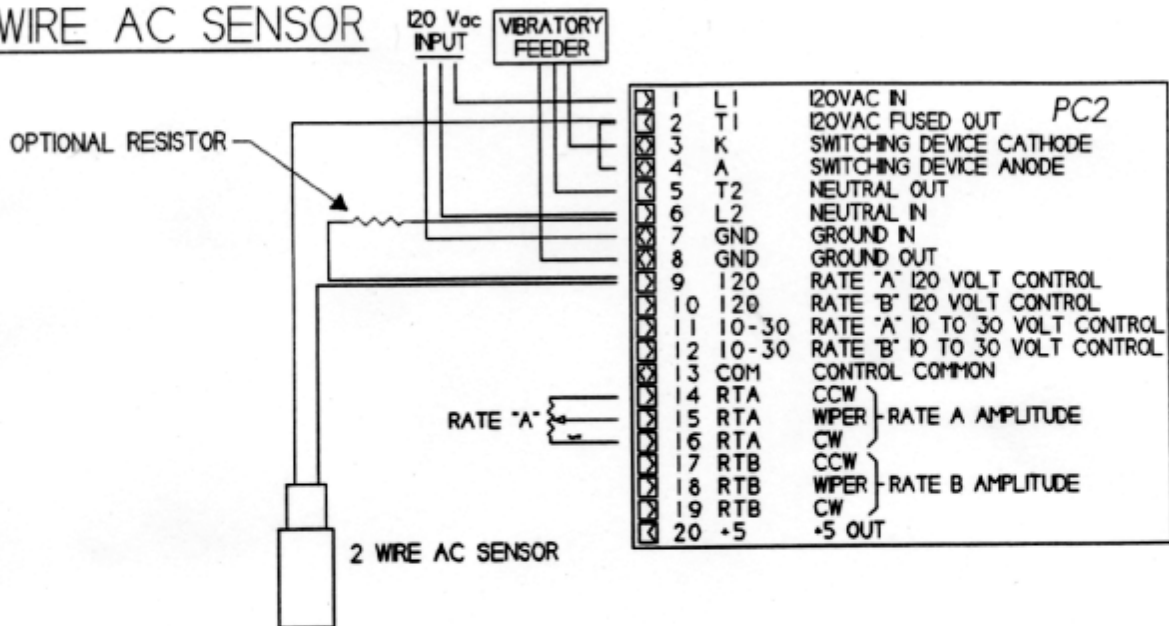
MASTER PROPORTIONING MAY BE EASILY IMPLEMENTED WITH THE SIMPLE PARALLEL CONNECTION SHOWN BELOW. THE ON-BOARD POTS (PROVIDED ON EACH PC2) MAY BE USED TO FINE TUNE EACH INDIVIDUAL FEEDER. FOR CLARITY, ONLY RATE "A" IS IMPLEMENTED IN THE DIAGRAM. HOWEVER RATE "B" MAY BE CONNECTED SIMILARLY FOR DUAL RATE CONTROL.



## SENSOR INTERFACING

TWO WIRE AC SENSORS MAY BE CONNECTED DIRECTLY TO THE PC2 CONTROL INPUTS. IN MOST CASES THE SENSOR OPERATING CURRENT IS NOT SUFFICIENT TO CAUSE FALSE TRIGGERING. WHEN NECESSARY, A RESISTOR MAY BE ADDED AS SHOWN TO ACCOMMODATE SENSORS WITH HIGHER "BLEED THROUGH" CURRENT. RATE 'B' MAY BE IMPLEMENTED SIMILARLY.

### 2 WIRE AC SENSOR



### DETERMINING THE SIZE OF AN OPTIONAL BLEEDER RESISTOR

THE VALUE OF THE RESISTOR MAY BE CALCULATED USING THE FOLLOWING FORMULA.

$$\frac{50}{(\text{SENSOR STANDBY CURRENT} - 3\text{ma})} = \text{VALUE IN OHMS}$$

THE WATTAGE OF THE RESISTOR MAY BE CALCULATED USING THE FOLLOWING FORMULA.

$$\frac{(120)^2}{\text{VALUE IN OHMS}} = \text{WATTAGE}$$

EXAMPLE:

SENSOR STANDBY CURRENT = 10.35 ma.

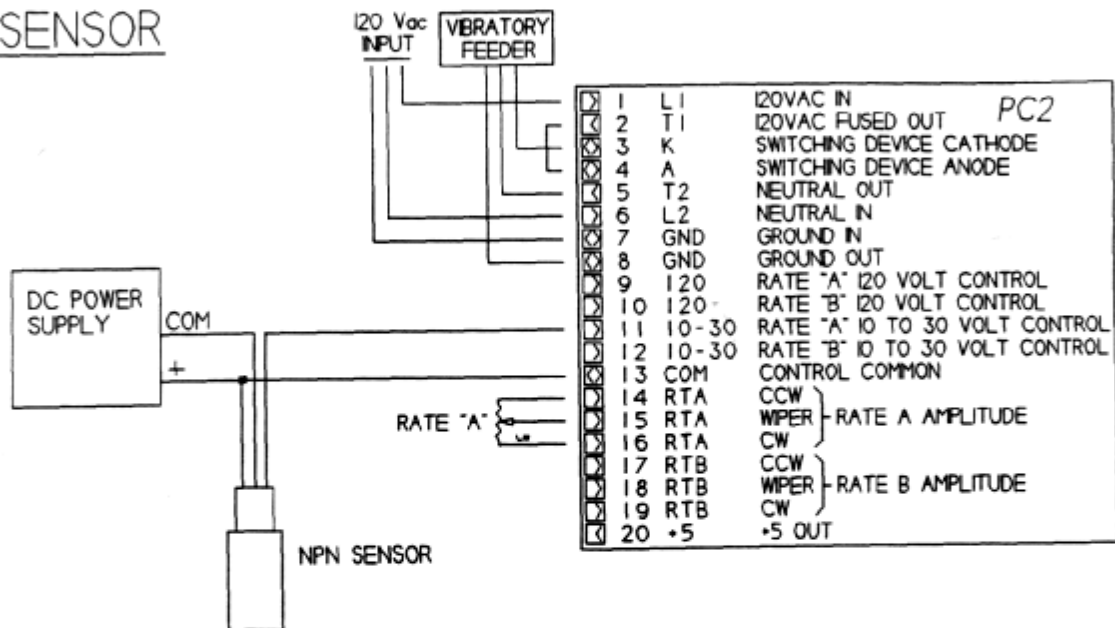
VALUE:  $\frac{50}{(10.35 - 0.03)} = 6.8 \text{ K}$

WATTAGE:  $\frac{14400}{6800} = 2.12 \text{ WATTS (3 WATT RECOMMENDED)}$

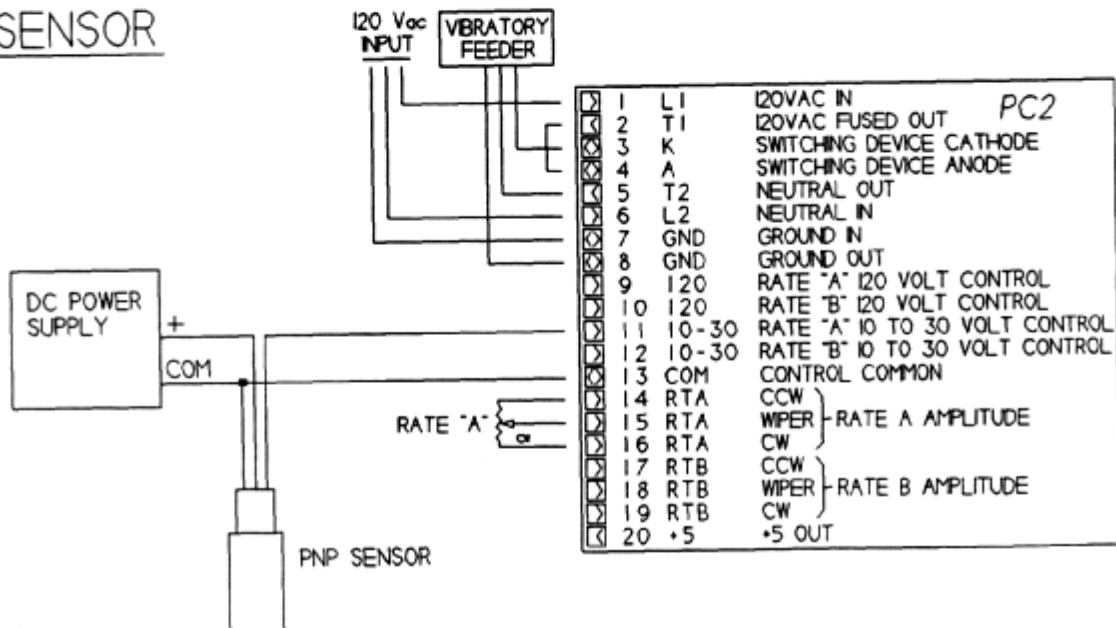
## SENSOR INTERFACING

SOLID STATE SENSORS MAY BE CONNECTED DIRECTLY TO PC2 OPTICALLY ISOLATED INPUTS. THE INPUTS MAY BE USED WITH SOURCING OR SINKING DEVICES AS SHOWN BELOW. NOTE THAT SWITCH #1 SHOULD BE OFF (OPEN) TO PROVIDE INPUT ISOLATION FROM L2. SENSORS MAY BE CONNECTED TO BOTH RATE "A" AND "B" CONTROL INPUTS. ONLY RATE "A" IS SHOWN FOR CLARITY.

### NPN SENSOR

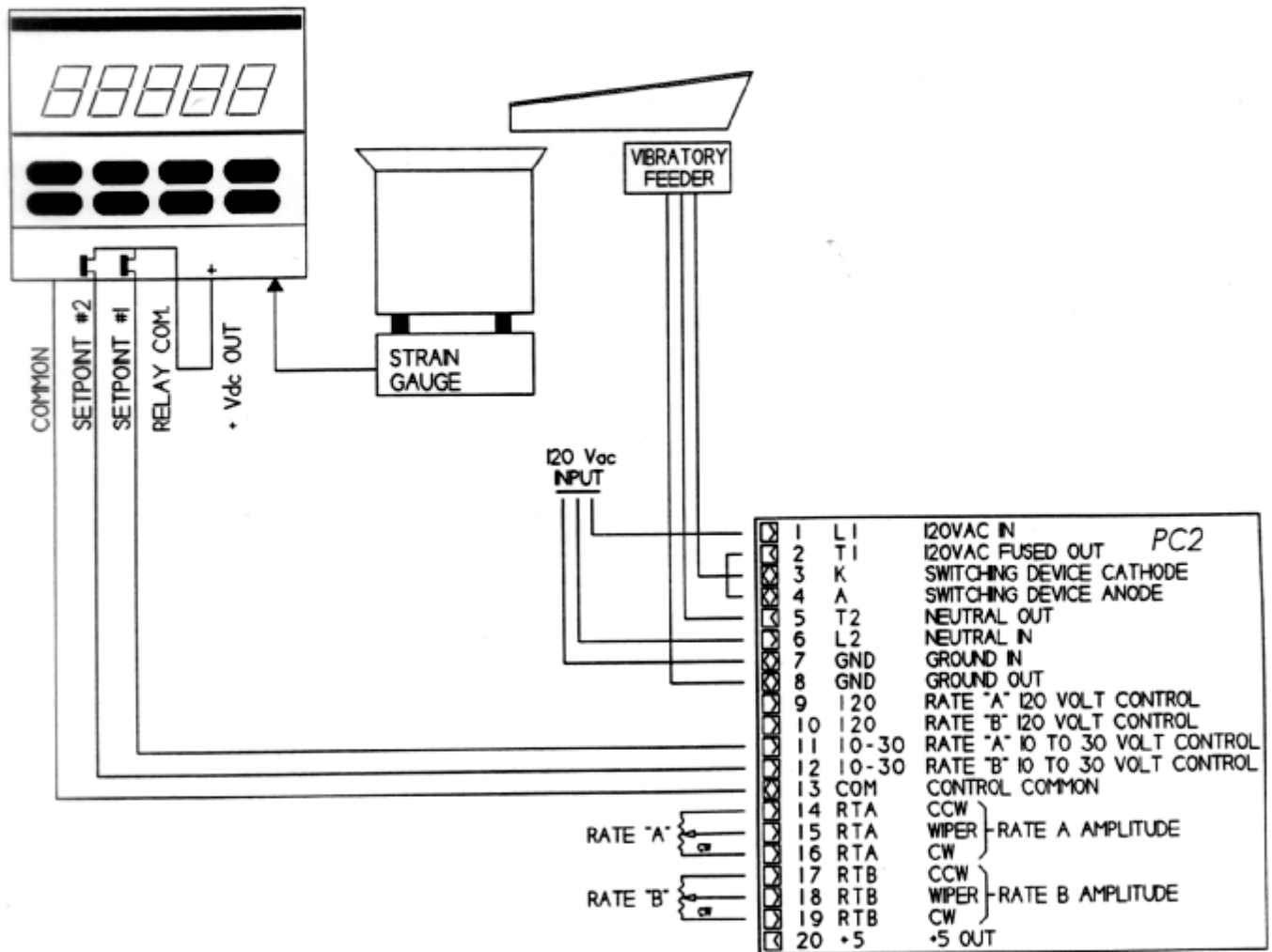


### PNP SENSOR



# DIGITAL WEIGHT INDICATOR

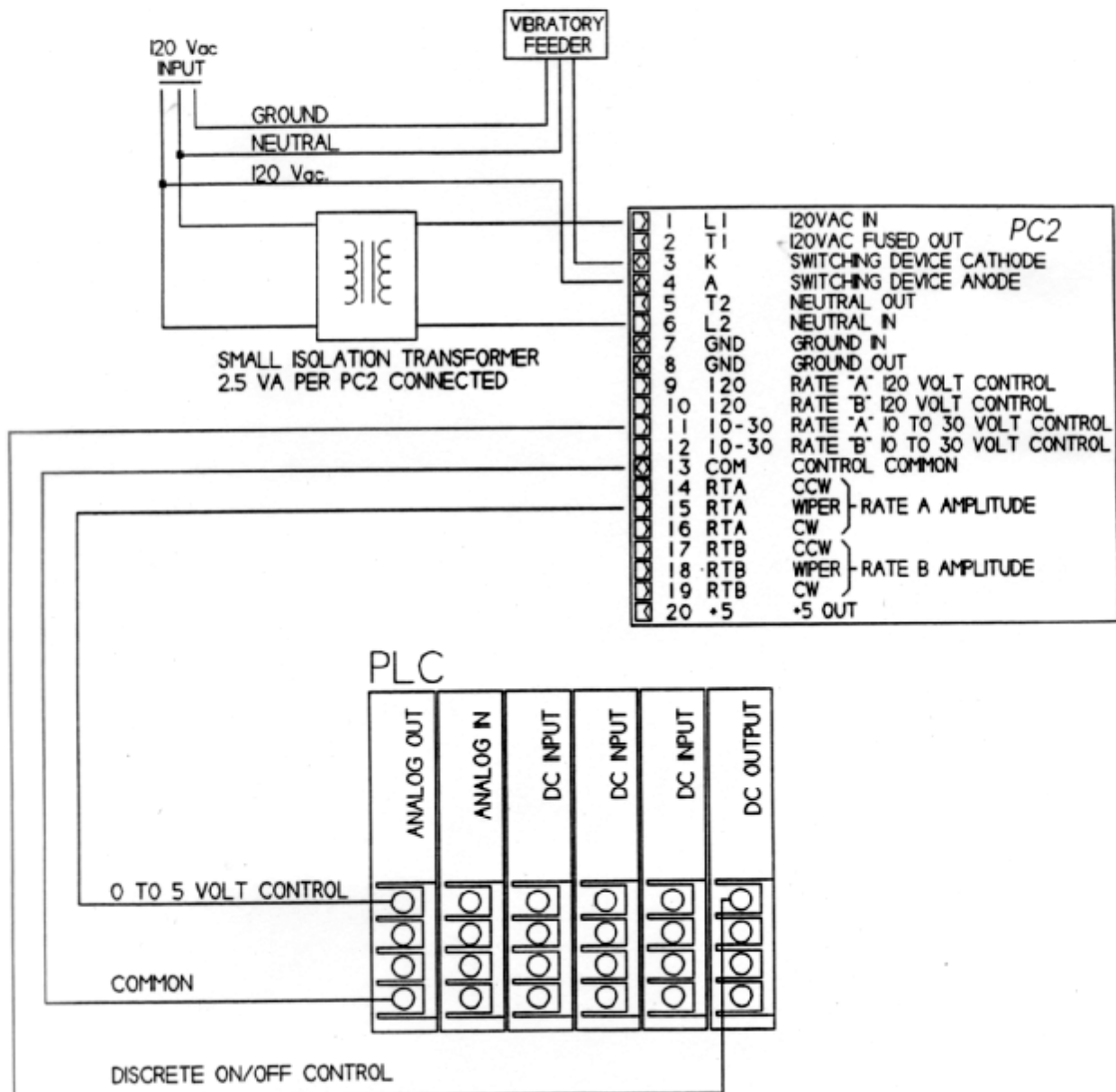
THIS CONFIGURATION PROVIDES "BULK AND DRIBBLE" FEEDER ACTION VIA DIRECT CONNECTION TO A DUAL SETPOINT DIGITAL WEIGHT INDICATOR. THE OPTICALLY ISOLATED INPUTS ARE IDEALLY SUITED TO SYSTEMS WHICH REQUIRE CONNECTION TO SENSITIVE ELECTRONIC EQUIPMENT.



## ISOLATED 0 TO 5 VOLT ANALOG CONTROL

USING THIS CONFIGURATION, THE CONTROL SYSTEM IS FULLY ISOLATED FROM THE LINE POWER. YOU WILL NOTE THAT THE ISOLATION TRANSFORMER IS SUPPLYING THE POWER TO OPERATE THE PC2 ELECTRONICS AND NOT THE CONNECTED VIBRATORY FEEDER. CONSEQUENTLY, THE TRANSFORMER IS QUITE SMALL. NUMEROUS PC2 CONTROLLERS MAY BE CONNECTED TO A SINGLE TRANSFORMER.

THE USE OF THE DISCRETE ON/OFF INPUT IS OPTIONAL AS THE 0 TO 5 VOLT INPUT MAY BE USED TO TURN OFF THE FEEDER AS WELL AS CONTROL ITS RATE.





## ISOLATED 0 TO 20 MA. ANALOG CONTROL

USING THIS CONFIGURATION, THE CONTROL SYSTEM IS FULLY ISOLATED FROM THE LINE POWER. YOU WILL NOTE THAT THE ISOLATION TRANSFORMER IS SUPPLYING THE POWER TO OPERATE THE PC2 ELECTRONICS AND NOT THE CONNECTED VIBRATORY FEEDER. CONSEQUENTLY, THE TRANSFORMER IS QUITE SMALL. NUMEROUS PC2 CONTROLLERS MAY BE CONNECTED TO A SINGLE TRANSFORMER.

THE USE OF THE DISCRETE ON/OFF INPUT IS OPTIONAL AS THE 0 TO 20 MA. INPUT MAY BE USED TO TURN OFF THE FEEDER AS WELL AS CONTROL ITS RATE.

