

**FEATURES**

- Adjustable output voltage
- Thermal overload protected
- Accepts either 24VAC or DC
- Snap track mounted

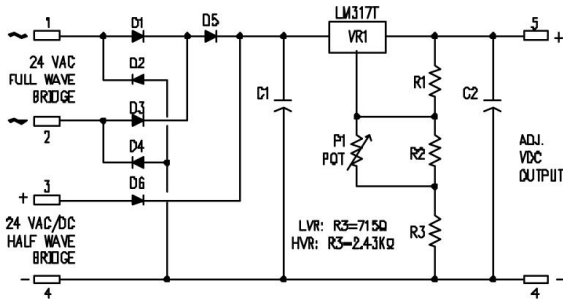
**APPLICATIONS**

- Power standalone sensors
- Power 4 to 20mA transmitters
- Power panel meters

**DESCRIPTION**

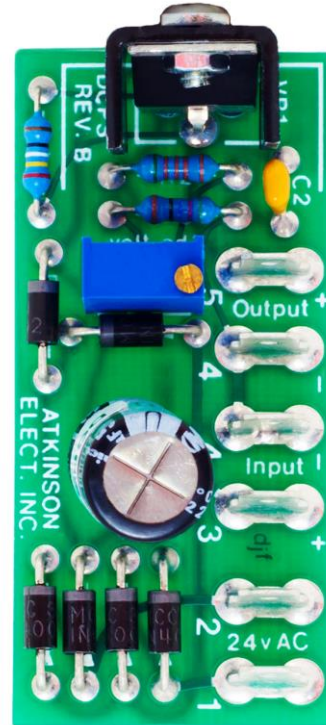
The DCPS is a DC power supply with an adjustable voltage regulator. It offers both half-wave and full-wave bridge rectification circuits as standard features. There are two versions of the DCPS, LVR which is adjustable between 4.5V and 17VDC, and the HVR which is adjustable between 13V and 26VDC. Both versions use a heat-sync on the voltage regulator to provide sufficient heat dissipation for higher output current.

**OPERATION**



**DCPS SCHEMATIC**

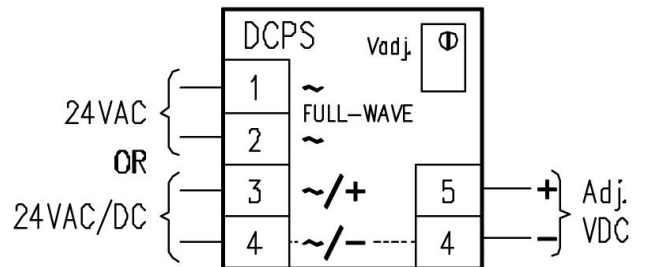
A 24VAC power source is applied to either the full-wave AC input or the half-wave AC/DC input depending on the type of system it's connected too. The AC voltage is rectified, filtered by C1, and then regulated by the LM317T. 24VDC can be applied to the half-wave AC/DC input, for those applications where a lower DC voltage is required. The voltage is regulated by a current feedback signal created by resistors R1, R2, & R3. The potentiometer in parallel with R2 provides the adjustment for the DC voltage output. The LM317T voltage regulator is equipped with internal overcurrent limiting and thermal-shutdown circuitry providing short circuit protection.



**SPECIFICATIONS**

|                      |   |
|----------------------|---|
| Size:                | 1.0"L x 2.19"W x 1.25"H   |
| Mounting:            | 2.187" snap track included  |
| Power:               | 24VAC ± 15%, 50/60Hz<br>24VDC 100mA (LVR only)  |
| Output Power:        | LVR rated @ 100mA<br>Adjusted from 4.5V-17VDC<br>HVR rated @ 250mA<br>Adjusted from 13V-26VDC |
| Rectifier:           | Full-wave mode, standard and<br>Half-wave mode, standard                                      |
| Regulation:          | ± 10 millivolts   |
| Ambient Temperature: | 0 TO 50°C   |

**WIRING CONFIGURATION**



OUTPUT CODE OPTIONS

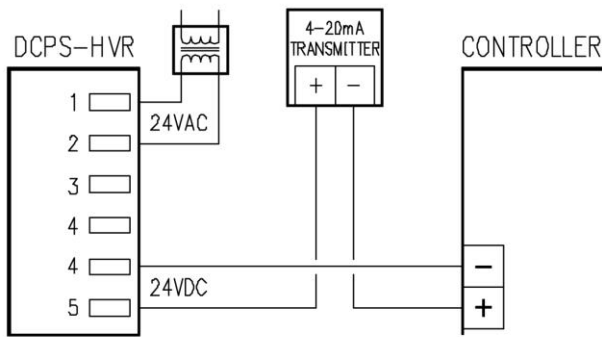
DCPS/XXX

└─ Output Voltage Range Code

OUTPUT RANGE OPTIONS

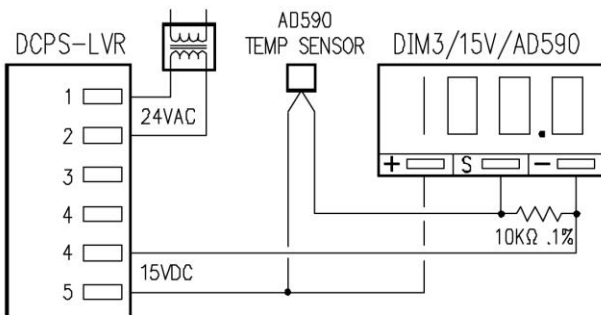
- LVR Low Voltage Range  
Adjustable from 4.5V to 17VDC
- HVR High Voltage Range  
Adjustable from 13.5V to 24VDC

APPLICATION 1  
POWERING 4 TO 20MA TRANSMITTER



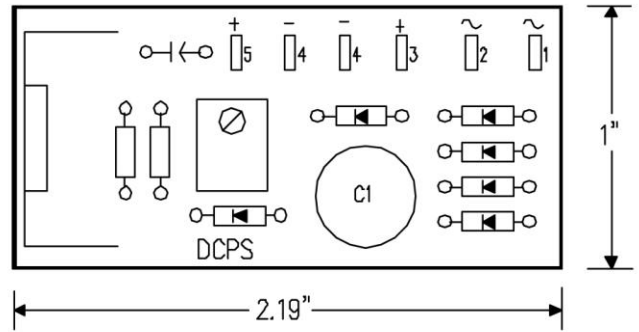
The DCPS is adjusted for 24VDC to power multiple (up to 12), 4 to 20 mA transmitters such as the UMATR, DWYER, TCI's or ACI's %RH sensors. The DCPS-HVR is adjustable between 13 and 26VDC and rated for 250mA load with 24VAC applied to full wave bridge rectifier input (terminals 1 & 2)

APPLICATION 3  
POWERING DIM 2 AND SENSOR

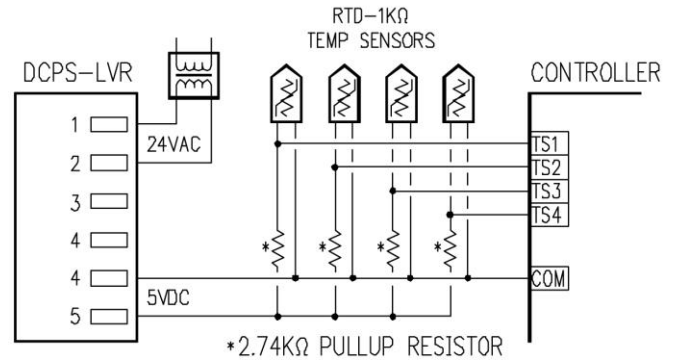


The DCPS is used to power an analog devices temperature sensor (AD590) and a DIM2/15V/AD590 digital display setup for the 15V DC power supply.

PHYSICAL CONFIGURATION

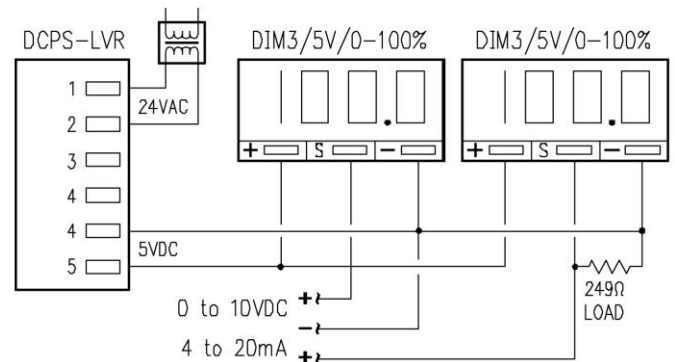


APPLICATION 2  
POWERING 1KΩ RTD SENSORS



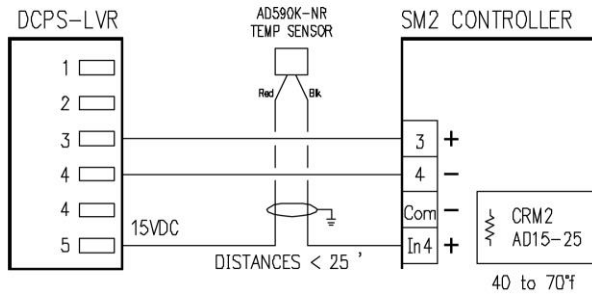
The DCPS is adjusted for 5VDC output to provide the reference voltage for the 1000Ω RTD temperature sensors. A 2.74KΩ pullup resistor is used for each sensor, this voltage divider provides a differential of 1.267 to 1.475VDC for a 0 to 100°F temperature differential.

APPLICATION 4  
POWERING MULTIPLE DIM3



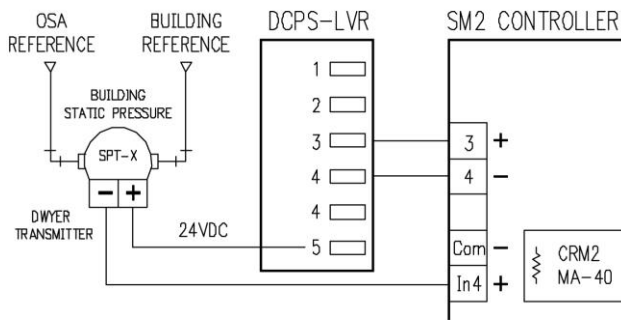
The DCPS is used to power multiple panel mounted digital panel meters (DIM2/5v/xxx). The DCPS-LVR is adjusted for 5VDC to power the DIM2 panel meters.

**APPLICATION 5  
POWERING AD590NR TEMPATURE SENSOR**



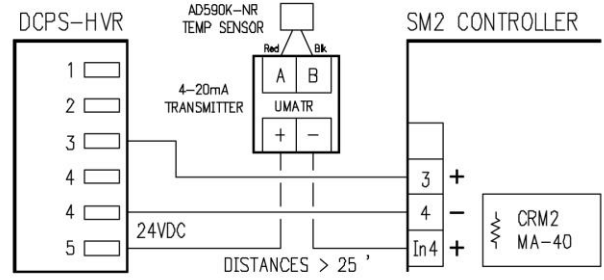
The DCPS, powered by the Smart II AUX 24VAC output, is adjusted for 14VDC to power multiple (up to 20) AD590 temperature sensors. The 15VDC supply enables the AD590 to drive into a high enough load resistor on the CRM2 range module to allow very narrow temperature ranges ( $\Delta 20^{\circ}\text{F}$ ) to be read by the Smart II controller.

**APPLICATION 7  
POWERING 2 WIRE TRANSMITTERS**



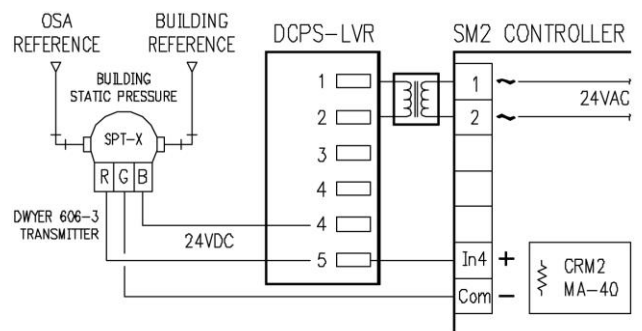
The DCPS, powered by the Smart II AUX 24VAC output, is adjusted for 24VDC to power (up to four) DWYER 2 wire, 4 to 20mA loop transmitters. CRM2-mA-40 provides the 249 Ohm load resistor and biases the input op-Amp to rescale the 1 to 5VDC signal to 0 to 5VDC.

**APPLICATION 6  
POWERING UMATR TRANSMITTER**



The DCPS, powered by the Smart II AUX 24VAC output, is adjusted for 24VDC to power (up to four) UMATR, 4 to 20mA loop transmitters. The UMATR is configured for an AD590 temperature sensor and can be set for temperature ranges as narrow as  $20^{\circ}\text{F}$ . This application is recommended for distances greater than 25 feet to avoid noise problems.

**APPLICATION 8  
POWERING 3 WIRE TRANSMITTERS**



The DCPS, powered by an isolation transformer, is adjusted for 24VDC to power one DWYER 3 wire, positive referenced, 4 to 20mA loop transmitter.