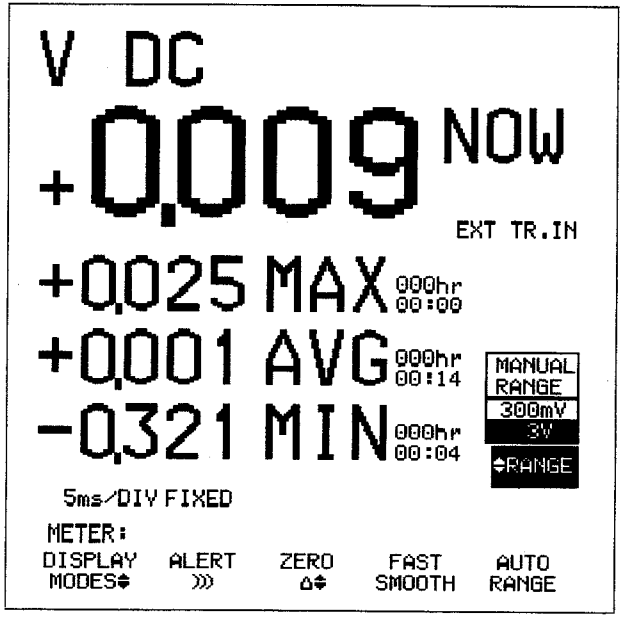
CURRENT MEASUREMENTS

The 80i-1010 DC/AC Current Probe is an optional accessory that can be used with ScopeMeter to measure current flow in automotive circuits. Readings in millivolts on ScopeMeter are directly proportional to readings in amps on the 80i-1010. For example, 225 mV would equal 225A. In this example, cranking amps are measured. Refer to the instruction sheet provided with the 80i-1010 for complete information.

1. Plug the 80i-1010 into the Ground and MV (RED) jacks.
2. Calibrate the 80i-1010 as follows:
3. [ON OFF] [METER] mV⎓ [SOFTKEY 3]

   Be sure the ON/OFF switch on the 80T-150U is in the OFF position. A reading of more than 100 mV indicates the battery is good.
4. Move the ON/OFF switch to the ON position.
5. Rotate the ZERO wheel to display ZEROs on the meter display.
6. Prepare ScopeMeter by pressing the following keys:
7. [ON OFF] [METER] mV⎓ [SOFTKEY 3] [▲] [▼] To select 3V.
8. [RECORD]
9. Clamp the 80i-1010 around all of the wires leading to the negative side of the battery. (With the arrow on the current clamp facing the battery.)
10. Crank the engine.
11. The results in the MIN display show the current draw of the starter.



Current Measurement

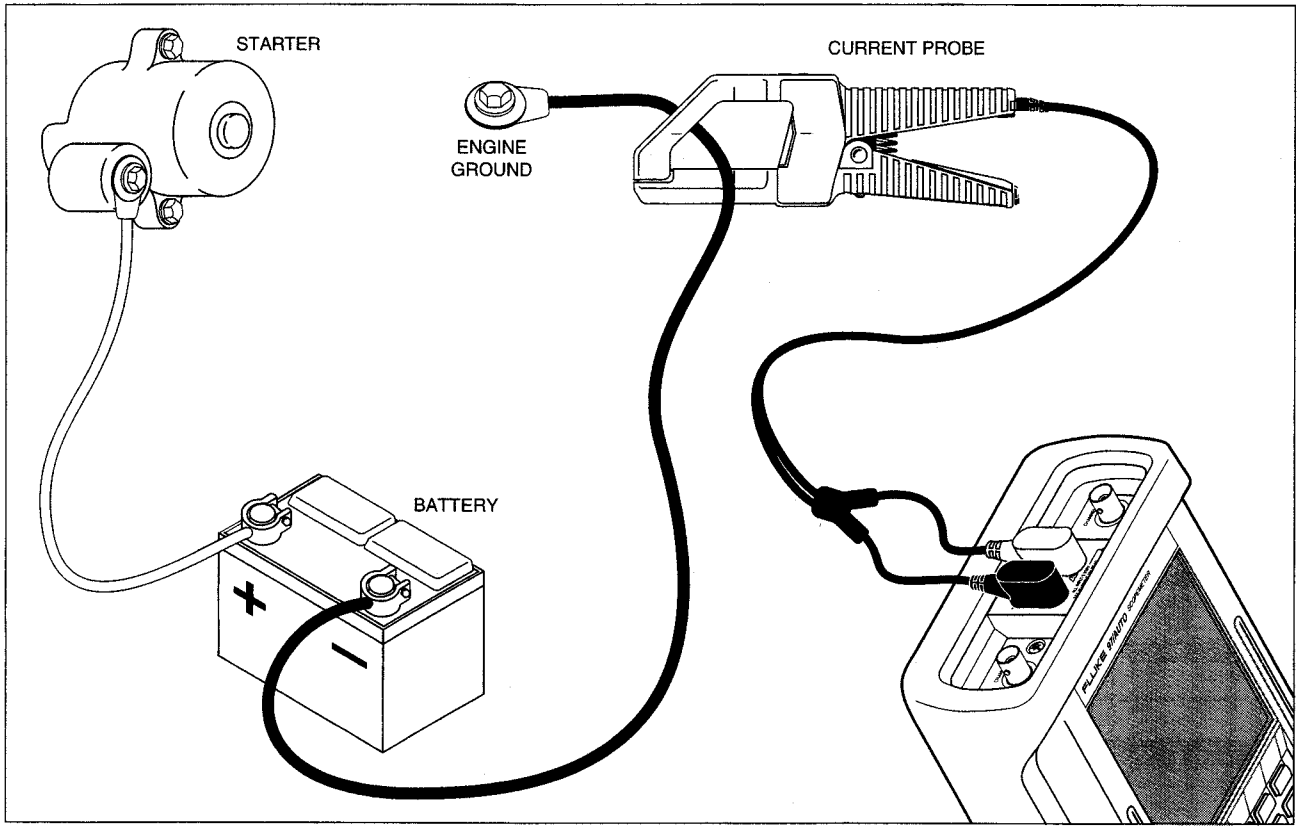


Figure 6-3. Current Measurements

TRANSMISSION PRESSURE COMPARED WITH ECM COMMANDS

You can use the PV500 optional accessory to make direct pressure or vacuum measurements with ScopeMeter. Readings in millivolts on ScopeMeter are directly proportional to readings in the pressure unit selected on the PV500. For example, 25 mV would equal 25 PSI. Vacuum is read as negative millivolts.

WARNING

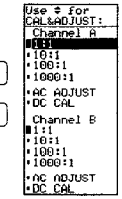
TO AVOID ELECTRICAL SHOCK, USE BACK PROBE PINS ONLY IN LOW VOLTAGE CIRCUITS. BACK PROBE PINS MUST NOT BE USED WHERE VOLTAGES GREATER THAN 30V AC OR 60V DC CAN BE ENCOUNTERED.

CAUTION

To avoid fire or damage to electrical circuits, ensure that back probe pins make electrical contact only with the low voltage test point. Do not allow back probe pins to contact any other conductive surface.

1. Calibrate the PV500 as follows:
   Plug the PV500 into the COM and MV (RED) jacks.
2. ON OFF — METER — mV⎓ SOFTKEY 3
3. With the PV500 switch set to OFF, a ScopeMeter display of 88 mV or greater indicates that the PV500 battery is good.

   Move the manual switch on the PV500 to the "cmHg inHg" position. Ensure that the METRIC/ENGLISH button is in ENGLISH position. Rotate the ZERO wheel to display ZEROs on the meter display.
4. Using the PM9082 Banana Jack to BNC Adapter, connect the PV500 to Channel B.
5. Prepare ScopeMeter by pressing the following keys:
6. ON OFF
7. SCOPE — SINGLE / RECURRENT (SOFTKEY 1) — FREE RUN (SOFTKEY 2) — CAPTURE 10 20 DIV (SOFTKEY 3)
8. LCD — PROBE CAL ⇕ (SOFTKEY 2) — ▲ ▼



ENTER: SOFTKEY 5

⑨ (Channels A and B.)
AC DC GROUND DC

⑩ CHANNEL A
mV / V
5V/DIV

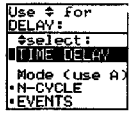
CHANNEL B
mV / V
100mV/DIV

⑪ s TIME ns 100ms/DIV

⑫ MOVE (Channel A and Channel B)

Move Channel A trace up and Channel B down to the bottom of the display.

⑬ TRIGGER ◆DELAY SOFTKEY 4



ENTER: SOFTKEY 5

⑭ ◆LEVEL -2

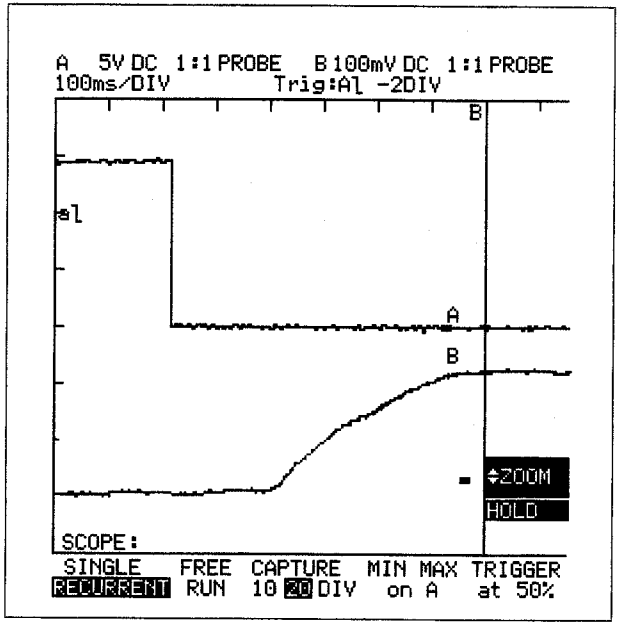
⑮ TRIGGER LEVEL SOFTKEY 3 ◆LEVEL +2.00V

⑯ +SLOPE -SLOPE SOFTKEY 2

⑰ EXT A B SOFTKEY 1

⑱ Drive the vehicle with the ScopeMeter connected to the transmission to obtain a display. Use the cursors to compare delay of the rise times from signal command to pressure change.

⑲ When analyzing the results with the cursors ON, excessive DELTA TIME or BASE TIME may indicate the need to increase or decrease orifice sizes in the transmission.



Transmission Pressure and ECM Command Test