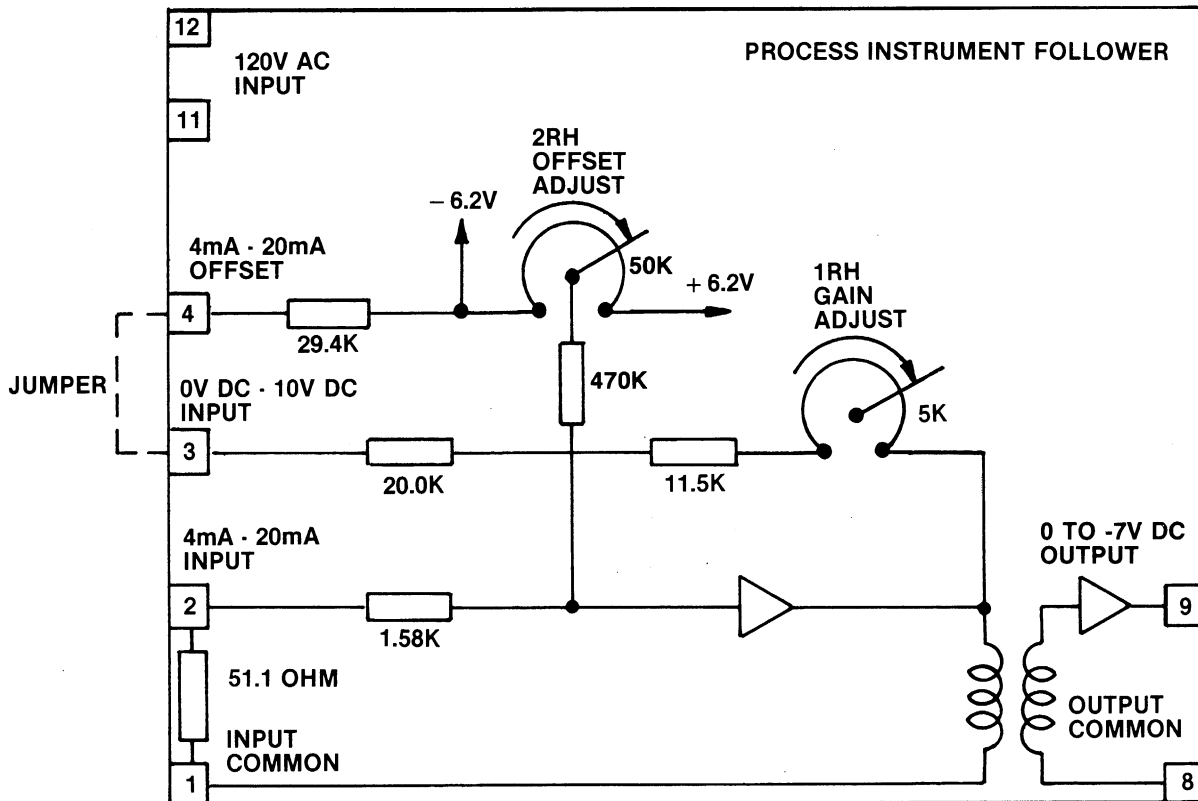




## PROCESS INSTRUMENT FOLLOWER • 1381-PIF

### BLOCK DIAGRAM



#### WARNING:

Before installing this option, disconnect and lock out control equipment from power sources to avoid hazards of electrical shock or unintended actuation of controlled equipment.

#### OPERATION

The Process Instrument Follower is connected in place of the Speed Potentiometer and is utilized in the Run mode of operation. The input signal is applied to terminals #1 and #2 (+) for 4mA to 20mA and to terminals #1 and #3 (+) for 0V DC to +10V DC and then directed to a scaling amplifier.

#### FUNCTIONAL DESCRIPTION

The unit serves as an interface between analog reference signals and the Bulletin 1379 Drive Module. The unit converts an input voltage signal (computer or other device) of 0V DC to +10V DC or an input current signal (transducer) of 4mA to 20mA to an output voltage level of 0V DC to -7V DC through the use of operational amplifiers. A transformer provides inherent isolation between input and output signals. The board contains individual  $\pm 6.2V$  DC power supplies for offset biasing.

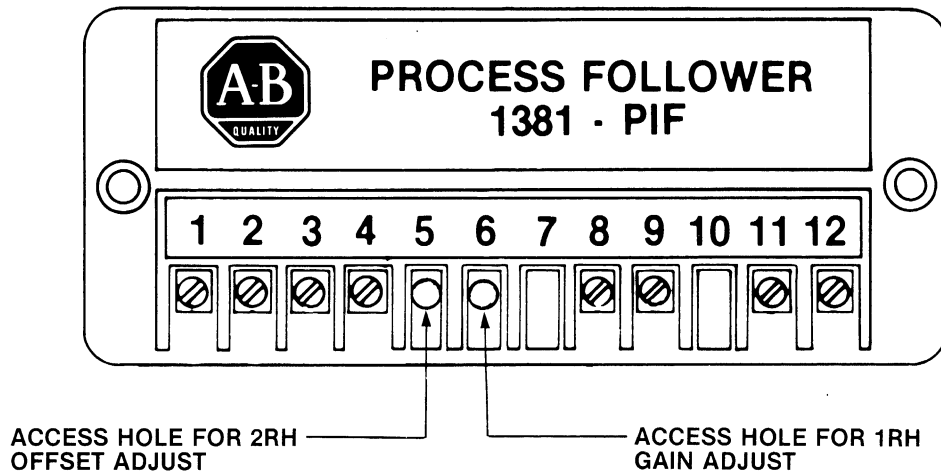
#### NOTE:

Jumper wire between terminals #3 and #4 **MUST** remain in place for operation with 4mA to 20mA signal. Jumper **MUST** be removed for voltage input signals.

Potentiometer 1RH varies the gain of the amplifier while 2RH permits nulling the output to zero to compensate for any amplifier offset. The succeeding amplifiers function as a triangle wave generator to produce a fixed frequency pulse train precisely clamped to  $\pm 6.2\text{V DC}$ . The pulse train is differentiated and directed to a transformer which electrically isolates the input and output circuitry. The resulting AC signal is de-

modulated at the secondary side of the transformer and again precisely clamped at  $\pm 6.2\text{V DC}$ . The pulse train is then averaged to a voltage level and filtered, producing an output from  $0\text{V DC}$  to  $-7\text{V DC}$ . In actual operation, the minimum speed pot is not functional. The Preset Speed and Jog modes function independently of the Process Instrument Follower.

## FRONT VIEW



### INSTALLATION

When installing, locate on a flat surface in an area reasonably free from vibrations, moisture, extremes of temperature and protected from physical damage.

Bulletin 1381 Package Drive panels are pre-drilled to accept this modification. Mount the Process Instrument Follower directly below 2PT with 8-32 mounting screws. 120V AC power may be obtained from the secondary of 2PT.

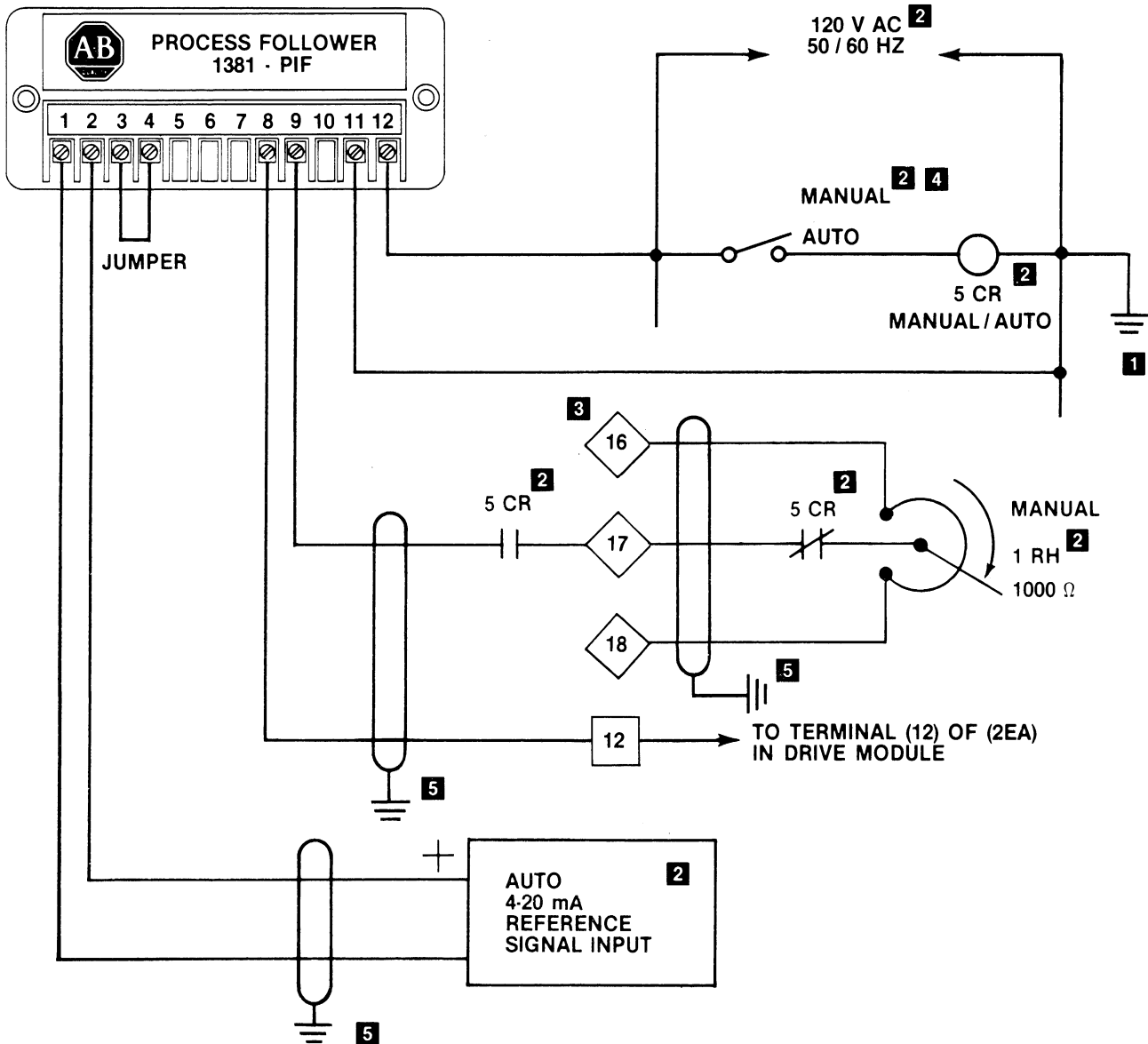
Wiring is to be done in accordance with local codes. Refer to interconnection diagrams for appropriate wiring and notes. Auto/Manual circuitry is provided for reference only.

### ADJUSTMENT



1. **REMOVE** power.
2. Connect a DC voltmeter across terminals (8) positive and (9) negative of the Process Instrument Follower.
3. Set voltmeter to the 1 volt range.
4. Set the Input Signal to minimum. (0V DC or 4mA DC)
5. Apply drive power, but **DO NOT** start the drive.
6. While monitoring the voltmeter, adjust the Offset Adjust Pot (2RH) until the voltmeter indicates 0.0 volts. Reset voltmeter to 10V DC range.
7. Select the RUN mode (AUTO).
8. Initiate a start.
9. Set the Input Signal to 100%. (+ 10V DC or 20mA DC)
10. Adjust the Gain Adjust Pot (1RH) until the voltmeter indicates  $-7\text{V DC}$ .
11. Initiate a STOP. **REMOVE** power.

# INTERCONNECTION FOR 4-20 mA DC INPUT SIGNAL

## BULLETIN 1379 DRIVE MODULE / BULLETIN 1381 PACKAGE DRIVE

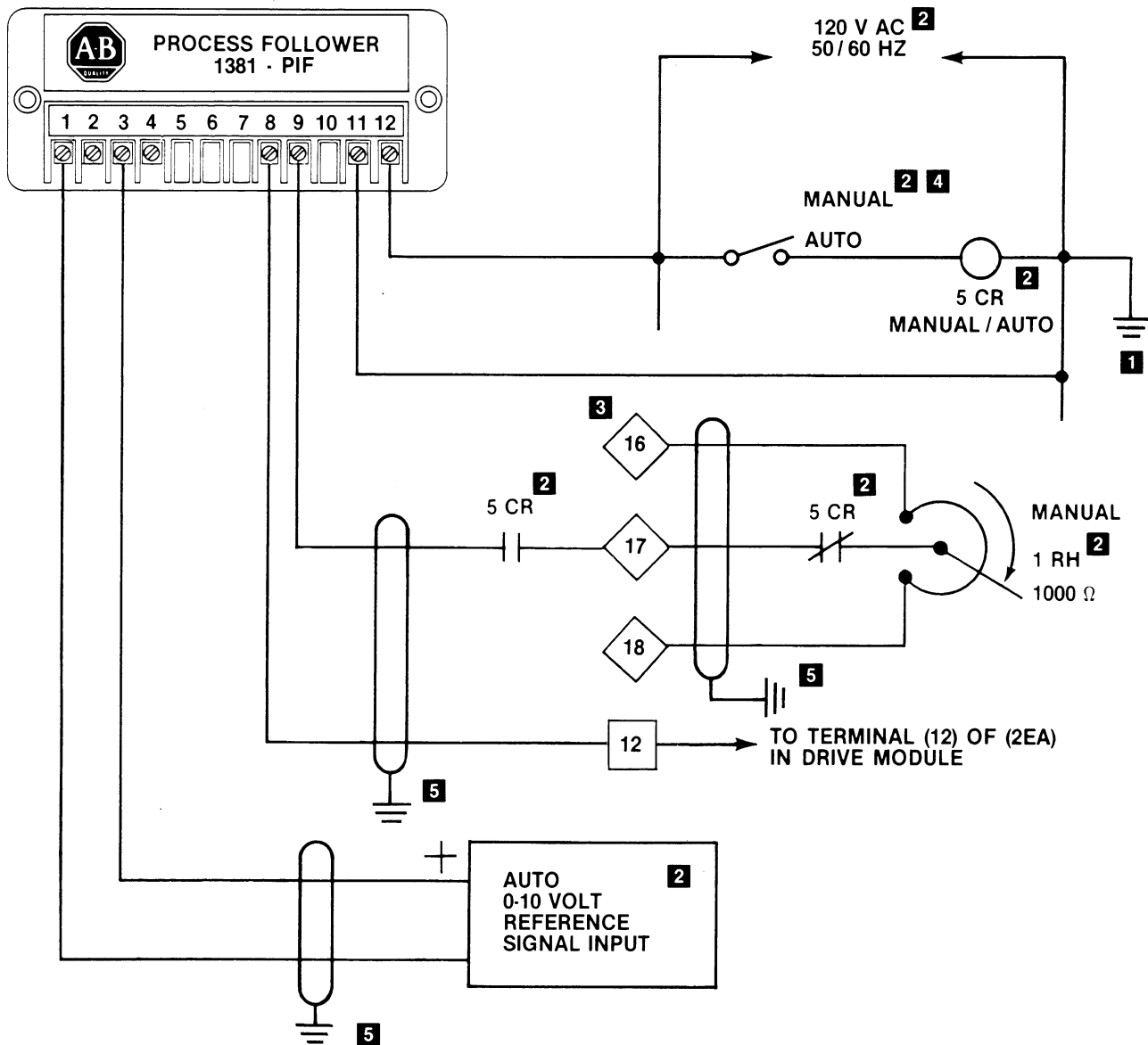


**NOTES:**

- 1** To be grounded by customer if conditions permit.
- 2** Indicates components supplied by others.
- 3**  Indicates outgoing terminal from the drive module terminal block (1 TB).
- 4** Typical manual / auto control circuit.
- 5**  Wire with insulated shield is required. Shield is to be grounded at the controller only. Wires interconnecting these terminals may be run in a common conduit. This conduit must not contain power, AC control, or field conductors.

# INTERCONNECTION FOR 0-10 VOLT DC INPUT SIGNAL

## BULLETIN 1379 DRIVE MODULE / BULLETIN 1381 PACKAGE DRIVE



- 1** To be grounded by customer if conditions permit.
- 2** Indicates components supplied by others.
- 3** Indicates outgoing terminal from the drive module terminal block (1 TB).
- 4** Typical manual / auto control circuit.
- 5** Wire with insulated shield is required. Shield is to be grounded at the controller only. Wires interconnecting these terminals may be run in a common conduit. This conduit must not contain power, AC control, or field conductors.



**Motion Control Division**

