



6-Digit Frequency Meter, Tachometer, Rate Meter, Timer, Pulse Totalizer, Process Meter & Totalizer with RS-232 PENTA P6000A



- ✓ Every 50 ms + 1 signal period
- ✓ Slower read rates for frequency averaging

PROGRAMMING FEATURES

- ✓ Scale factor from 99,999 to 999,999 (any decimal point, multiply or divide)
- ✓ Offset from 99,999 to 999,999 (any decimal point)
- ✓ HI and LO setpoints for control or alarm
- ✓ Programming via front-panel or RS-232
- ✓ Program stored in non-volatile memory
- ✓ Four levels of program lockout for security
- ✓ Fixed decimal point or autoranging

SIGNAL CONDITIONER CHOICES

- ✓ Dual-channel TTL with protection to 25 V
- ✓ Single-channel, isolated, with excitation
- ✓ Dual-channel, isolated, with excitation
- ✓ Single-channel, non-isolated, with excitation
- ✓ Analog input, isolated, 4-20 mA, 0-2 V, 0-10 V

COMMUNICATIONS & CONTROL

- ✓ RS-232 or 20 mA serial ASCII output (std)
- ✓ HI, LO, GO 150 mA open-collectors (std)
- ✓ Dual 8A Form C relays (opt)
- ✓ Parallel BCD output, isolated (opt)
- ✓ Analog output, isolated and scalable, 4-20 mA, 0-20 mA, 0-10 V (opt)

DISPLAY & MECHANICAL

- ✓ Six 0.56 in (14.2 mm) 7-segment LED characters
- ✓ Five-key programming front panel (std)
- ✓ Plain front panel (opt)
- ✓ Screw-clamp connectors for signal and power



In its base configuration, the **P6000A** is a microprocessor-based, 6-digit, 1/8 DIN counter which can be configured by front-panel keys or by a personal computer as a frequency meter/tachometer, frequency-ratio meter, period/period-average meter, time-interval/time-interval-average meter or totalizer. It combines these five operating modes with ease of setup, wide dynamic range, six-figure crystal-based accuracy, and software scaling.

With the addition of an optional analog-to-frequency signal conditioner, the **P6000A** can become a software-scalable process meter with two setpoints and exceptionally wide zero offset capability. It can also become a 6-digit analog integrating totalizer.

The **P6000A** provides a five-key front panel, which can be used to select mode of operation, scale factor, zero offset and two setpoints for ON/OFF control or alarm. Setup parameters can be saved in non-volatile memory with four levels of front-panel lockout for program security. In addition, the **P6000A** can be programmed via RS-232. It can also report its own setup data and transmit ongoing readings and alarm status via RS-232 or 20 mA ASCII current loop. Modem support is built in for remote operation.

FLEXIBLE SIGNAL CONDITIONING

0. TTL-LEVEL PULSE INPUTS

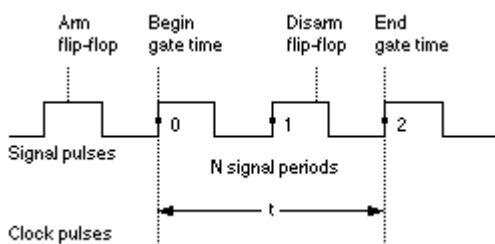
Dual non-isolated TTL/5 V CMOS-level input channels with protection to 25 V dc are standard and can accommodate frequencies up to 7 MHz. The inputs can be tied to contact closures by using a spare flip-flop available at the connector for debounce. They can also be tied to sensors with an open-collector NPN or PNP output if these are powered externally. Contact closures require an external 20 kOhm pull-up resistor. PNP sensors require an external 1 kOhm pull-down resistor.

1 & 2. ISOLATED SIGNAL CONDITIONER WITH EXCITATION OUTPUT

This almost universal signal conditioner is available in single- or dual-channel versions. It provides sensor excitation output plus AC or DC coupling, signal isolation to 350 Vp, and jumper-selectable low-pass filtering, debounce time and hysteresis. It allows the **P6000A** to be tied directly to passive magnetic pickups with output down to ± 10 mV, to AC line voltages up to 240 V rms, and to NPN, PNP, NAMUR or contact-closure sensors all with a high degree of input protection.

3. NON-ISOLATED SIGNAL CONDITIONER WITH EXCITATION OUTPUT

This is an economical single-channel non-isolated signal conditioner which supplies power up to 16 V at 25 mA for direct 3-wire connection to NPN sensors, or 2-wire connection to NAMUR sensors (<1 mA ON, >3 mA OFF) and contact closures. It can also be used with magnetic pickups and other active voltage sources from 0 to 200 mV up to 60 V rms.



The **P6000A** measures frequency or period by counting the number of 11.059 MHz clock pulses during an actual gate time t , which corresponds to an integral number of signal periods N . This technique allows high-accuracy low-frequency measurements. Frequency is calculated from N/t , period from t/N .

4. ISOLATED ANALOG-TO-FREQUENCY SIGNAL CONDITIONER

This signal conditioner accepts 4-20 mA, 0-5 V or 0-10 V analog signals and turns the **P6000A** into a process meter with isolated input, 6-digit scale and offset capability, two setpoints and RS-232. It also allows the **P6000A** to serve as an analog integrating totalizer, for instance to display volume based on the 4-20 mA signal from a flowmeter.

Part Number Builder

P6 **(1)** **(2)** **(3)** **A**
 4 **0** **0**

Option Descriptions

(1) Power

Select

0 for 115 Vac, 49/440 Hz

1 for 230 Vac, 49/440 Hz

4 for 9.5 to 32 Vdc

(2) Control Output Option

Select

0 for None

1 for Isolated, tri-state parallel BCD output

2 for Dual 8 A form "C" SPDT relays

3 for isolated and scalable analog output

(3) Signal Conditioner

Select

0 for TTL/5 Vcmos. Single input for frequency and totalize modes

1 for Isolated signal conditioner single-channel with sensor excitation output

2 for Isolated signal conditioner dual-channel with sensor excitation output

3 for Non-isolated signal conditioner single-channel with sensor excitation output

4 for isolated analog to frequency converter with 24 Vdc excitation output

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