# Introduction

The Process Manager (PM), Advanced Process Manager (APM) and High Performance Process Manager (HPM) are Honeywell's leading **TotalPlant** Solution (TPS) system control and data acquisition devices for industrial process applications. They represent a powerful combination of cost-effective Honeywell controllers which can be applied to solve a broad range of industrial process control problems.

The PM, APM, and HPM offer highly flexible I/O (input/output) functions for both data monitoring and control. One of the unique features of this family of controllers is its common set of Input/Output Processors (IOPs) and Field Termination Assemblies (FTAs). All IOPs and FTAs are usable by all three controllers (with only minor exceptions).

This specification and technical data sheet provides information on PM, APM, and HPM IOPs and FTAs. Please refer to the following specification and technical data sheets for information about each controller:

- **PM03-400** - Process Manager Specification and Technical Data

- **AP03-500** - Advanced Process Manager Specification and Technical Data

- **HP03-500** - High Performance Process Manager Specification and Technical Data

Figure 1 — PM/APM/HPM Input Output Processor
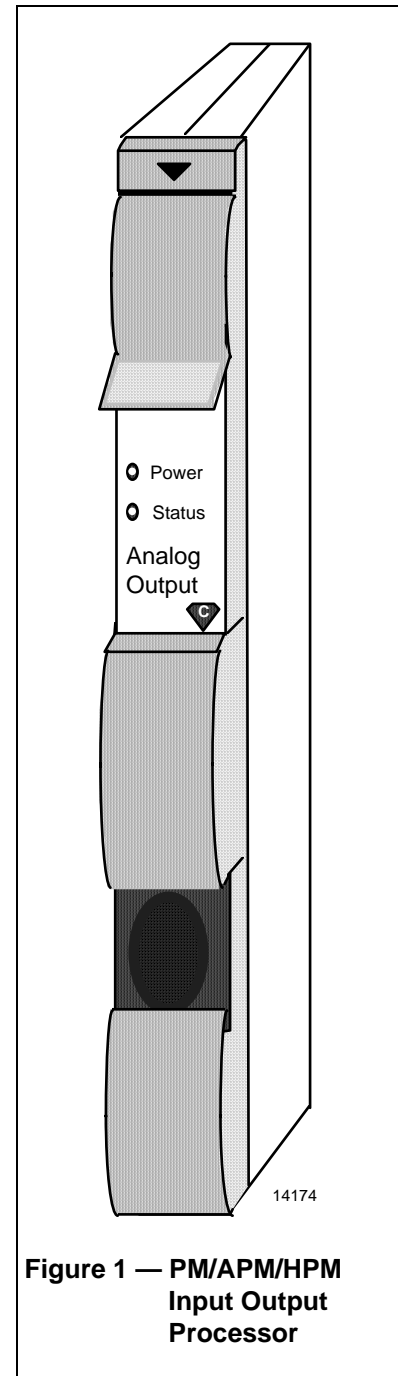
Functional Description

Functional Overview

I/O Processors, along with Field Termination Assemblies (FTAs), perform input and output scanning and processing on all field PM/APM/HPM I/O (Figure 2).

Figure 2 — PM/APM/HPM I/O Functions
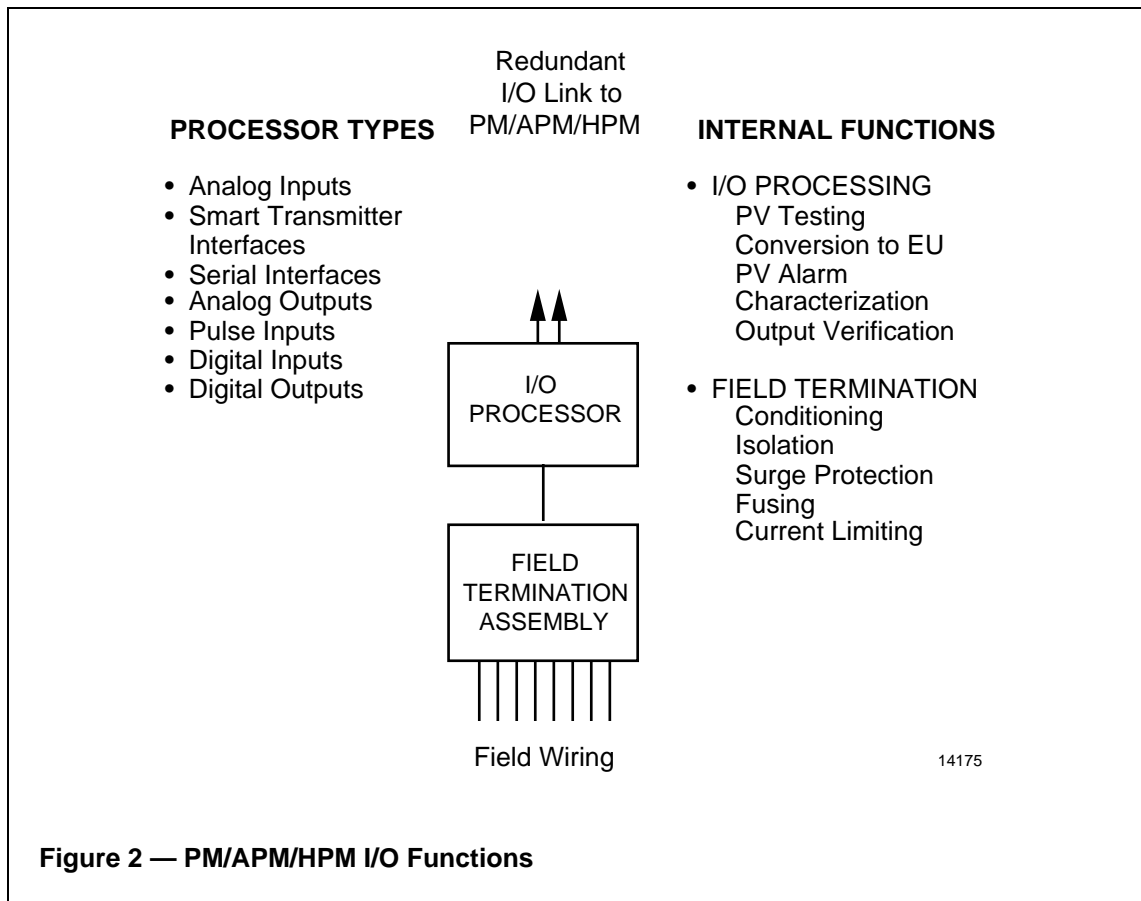
A redundant I/O Link is standard for maximum security. Optionally, High Level Analog Input, Smart Transmitter Interface, Analog Output, Digital Input and Digital Output processors can be redundant. I/O processing is performed separately from control processing functions so that I/O scan rates are completely independent of I/O quantity, controller loading, processing, and alarming. This partitioning of functions allows more efficient use of advanced Control Processor capability and provides for future I/O expansion.

High Level Analog Input Processor - 16 Inputs   **MC-PAIH03**

Parameter	Specification
FTA Models	MU-TAIH02, TAIH12, TAIH52, TAIH03, TAIH13, TAIH23, TAIH53, TAIH22, TAIH62
Input Type	Voltage, current (2-wire or self-powered transmitters)
Input Channels	16 differential input channels
Common Mode Rejection Ratio, dc to 60 Hz (500 Ω source imbalance)	70 dB
Common Mode Voltage, dc to 60 Hz[1]	-6 to +5 V peak
A/D Converter Resolution	16 bits (14 bits used)
Input Range	0 to 5 V 1 to 5 V 0.4 to 2 V 4-20 mA (through 250 Ω)
Normal Mode Rejection Ratio, at 60 Hz	32 dB
Normal Mode Filter Response	Single-pole RC, -3 dB @ 1 Hz
Maximum Normal Mode Input (differential inputs, no damage)	± 30 Volts
Crosstalk, dc to 60 Hz (channel-to-channel)	60 dB
Input Impedance (Voltage Inputs)	> 10 MΩ powered
Maximum Input Voltage (any input referenced to common, no damage)	± 30 Volts
Input Scan Rate	4 samples per second per channel. All channels sampled within a 250 ms window.
Hardware Accuracy (@ CMV = 0 V)	± 0.075% full-scale (23.5°± 2°C) ± 0.15% full-scale (0 to 50°C)
Transmitter Power Conditioning MU-TAIH02, TAIH52, TAIH12, TAIH03, TAIH13, TAIH53	Resistor Current Limited, 145 Ω (not fused) for Class 1, Div 2 interfacing
MU-TAIH22, TAIH23, & TAIH62	Individually Protected Current Limiting Circuits for Class 1, Div 2 interfacing Maximum current: 30 ma Minimum voltage 23 V
Surge withstand capability (Common mode)	ANSI/IEEE C37.90.1-1978
(1) The low-side input connection is normally connected to system common by a wire jumper on the FTA. This can be removed by the user, subject to operating within the CMV specification.	