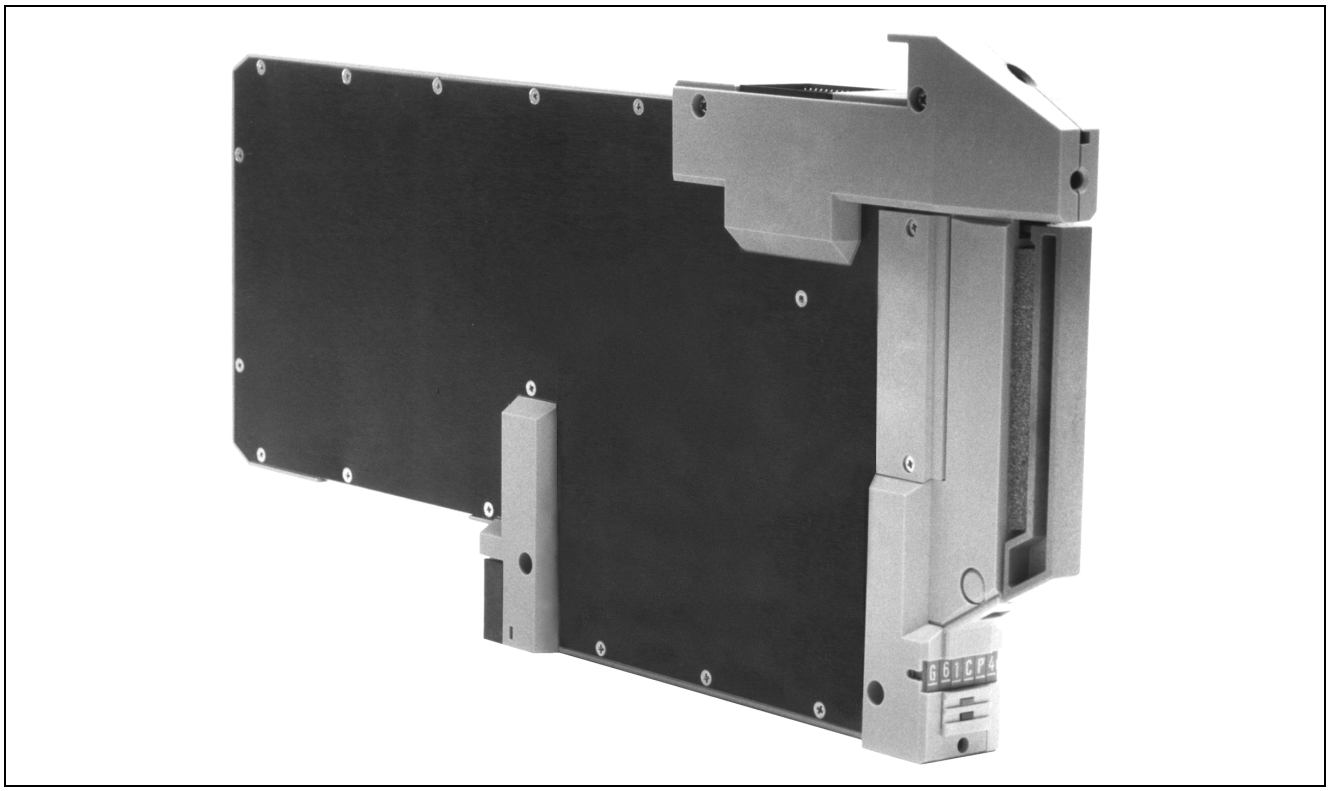
FOXBORO®

PSS 21H-1B7 B4

I/A Series® Hardware
Control Processor 60 and Control Processor 60 Simplex
Integrated Control Software



The Control Processor 60 (CP60) and Control Processor 60 Simplex (CP60S) software along with their connected Fieldbus Modules (FBMs) perform regulatory, logic, timing, and sequential control, as well as data acquisition, alarm detection, and alarm notification. The non-fault-tolerant version of the Control Processor 60 (CP60S) is a single-width processor module. The fault-tolerant version (CP60) consists of two single-width processor modules.

Process variables are controlled using time-proven algorithms (mathematical computations performing specific functions). The algorithms are contained in functional control blocks, which are configured by on-site process engineers to implement the desired control strategies.

The versatility of the algorithms, coupled with the variety of Fieldbus Modules available, provides control capabilities suited to a broad range of process applications. Control strategies ranging from simple feedback and cascade loops to highly sophisticated feedforward, nonlinear, and complex characterization control schemes are readily implemented.

Specific functions performed by the Control Processor 60 and Control Processor 60 Simplex software are listed in Table 1. For descriptions of the various block types, refer to PSS 21S-3B1 B3.

Display and adjustment of control parameters are implemented through operator interface devices (video monitors, keyboards, touchscreens, etc.) in the I/A Series system. The control processors interact with these devices by communicating with the workstation processors and/or application processors to which they are connected. Communication takes place via the I/A Series Nodebus, and via a higher level local area network (LAN), if implemented. Various other system stations also communicate with each other over these links.

Software Licensing

A flexible method of software licensing allows you to choose the number of I/O you need per process area.

You only have to define the number of Analog Inputs, Analog Outputs, Digital Inputs and Digital Outputs.

The license starts from 50 I/O points up to 100,000 I/O points per process area, with multiple CPs.

I/A Series system Control Software license provides you the functions (Monitoring, Control) and the level of availability (Single, Fault Tolerance) you need for your process application.

Table 1. Block Types for use with CP60 and CP60S

Block Type	Block Type
Input/Output	**Control (Cont.)**
AIN - Analog Input	PIDE - PID with EXACT Tuning
AINR - Redundant Analog Input	PIDX - PID Extended
AOUT - Analog Output	PIDXE - PID Extended, with EXACT Tuning
AOUTR - Redundant Analog Output	PTC - Proportional Time Control
CIN - Contact Input	OUTSEL - Output Select
COUT - Contact Output	RAMP - Multi-Ramp Sequence
MAIN - Multiple Analog Input	RATIO - Ratio Computation
MCIN - Multiple Contact Input	SIGSEL - Signal Selector
MCOUT - Multiple Contact Output	SWCH - Switch Position Selector
	STATE - State
Control	LLAG - Lead/Lag
ACCUM - Accumulator	
BIAS - Bias Computation	**Data**
CALC - Calculator	BOOL - Boolean Variable Block
CALCA - Advanced Calculator	LONG - Long Integer Variable
CHARC - Characterizer	PACK - Packed Boolean Variable
DGAP - Differential Gap	REAL - Real Variable
DPIDA - Distributed Advanced PID	STRING - String Variable
DTME - Dead Time	
LIM - Limiter	**Motor**
LOGIC - Logic	GDEV - General Device
MATH - Math	MTR - Motor Controller
MVC - Multivariable Controller	MOVLV - Motor-Operated Valve
MVL - Multivariable Loop	VLV - Valve On/Off Controller
PATTERN - Pattern	
PID - Proportional, Integral, Derivative	**Miscellaneous**
PIDA - Advanced PID used in conjunction with FBTUNE and FFTUNE	PLB - Programmable Logic Block
FBTUNE - Feedback Self-Tuner	EVENT - Sequence Of Events
FFTUNE - Feedforward Self-Tuner	

Table 1. Block Types for use with CP60 and CP60S (Continued)

Block Type	Block Type
Sequence	**Distributed Control Interface (DCI)**
DEP - Dependent	BIN - Binary Input
EXC - Exception	BINR - Binary Input, Redundant
IND - Independent	BOUT - Boolean Output
MON - Monitor	IIN - Integer Input
TIM - Timer	PAKIN - Packed Boolean Input
	PAKOUT - Packed Boolean Output
Alarm	RIN - Real Input
ALMPRI - Alarm Priority	RINR - Real Input, Redundant
BLNALM - Boolean Alarm	ROUT - Real Output
MEALM - Measurement Alarm	STRIN - String Input
MSG - Message Alarm	
PATALM - Pattern Alarm	
REALM - Real Alarm	
STALM - State Alarm	

PERFORMANCE SPECIFICATIONS

Memory Allocation for Blocks
2.6 MB

Number of Blocks
4,000 blocks maximum (The number of blocks used depends on scan periods and block type selection.)

Number of FBMs Supported
120 maximum (depending on selected scan periods)

Minimum Block Processing Cycle (BPC)
50 ms

Configurable Block Periods
.05, 0.1, 0.2, 0.5, 0.6, 1, 2, 5, 6, 10, 30 seconds
1, 10, 60 minutes

Basic Processing Cycle
0.05, 0.1, 0.2, 0.5, 1.0, 2.0 seconds, selectable at system configuration time

IPC Connections
51

Object Manager (OM) Lists (Maximum)
360

Block Execution Rate Per Second
3400 blocks/second, typical

Memory Allocation for OM Scanner Points
600 KB

Maximum OM Scanner Database
12,000 points

Sequence Block Size
32 KB maximum for each block

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