Application Module

Parameter Reference Dictionary

AM09-440
3/93
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About This Publication

This publication is a reference for process engineers, control system engineers, and application engineers who design and implement data acquisition and control strategies that are to be accomplished through a TDC 3000 System with a Local Control Network. This publication provides reference information about the parameters and algorithms that are in Application Modules (AMs).

This publication is part of a set of publications that provide parameter reference information for nodes on the LCN. The other members of this set are:

- *Process Manager Parameter Reference Dictionary* in the Implementation/Process Manager - 2 binder
- *Logic Manager Parameter Reference Dictionary* in the Implementation/Logic Manager binder
- *Hiway Gateway Parameter Reference Dictionary* in the Implementation/Hiway Gateway - 1 binder
- *Programmable Logic Controller Gateway Parameter Reference Dictionary* in the Implementation/PLC Gateway binder

This publication supports TDC 3000 software release 400.

Change bars are used to indicate paragraphs, tables, or illustrations containing changes that have been made by Document Change Notices or an update. Pages revised only to correct minor typographical errors contain no change bars. All changes made by previous Document Change Notices have been incorporated in this update.
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1.1 GENERAL

This publication contains reference information on the TDC 3000 System parameters that are associated with the Application Module (AM). The reference information includes two types of data:

1. **Lists of parameter names** that are associated with the configuration of each point type in the AM—These lists are arranged so that the parameter names appear in the same order as they would appear in the configuration displays (in the Engineering Personality of the Universal Station).

   All of the lists except those for regulatory points are shown in Section 2 of this publication. For regulatory points, the lists that are common to all regulatory algorithms are in Section 2; lists that are unique to a given algorithm are in Section 3, in an alphabetical listing under the algorithm name.

2. A **dictionary** that includes all the parameter names associated with the AM and all of the algorithm names associated with regulatory points in the AM—For each parameter name listed, related data is given (such as a description, default value and permissible range of values). For each algorithm name listed, the algorithm is described briefly and parameters that are unique to the algorithm are listed in the same order as they appear in the Parameter Entry Displays (PEDs).

1.2 USE OF THIS PUBLICATION

This publication should be used for reference when

- building AM data points
- planning and writing CL programs associated with the AM
- parameter names appear on the Universal Station displays when the system is in operation.
1.3 NOTATION

To enable parameter names to be easily distinguished from algorithm names, the following notation is used in the alphabetical listing:

a. parameter names

All parameter names are all capital letters.

Examples: PVAUTO

PVEULO

Some parameter names appear in the list with a suffix (N). The numeral N denotes an index number that identifies an element of an array.

Example: The parameter MODEAPPL(N) is an identifier of any of four elements in an array. MODEAPPL(2) identifies the second element in the array.

b. algorithm names

When they appear in the alphabetical listing, algorithm names are printed in both upper- and lower-case characters.

Examples: DataAcq, MidOf3, HiLoAvg.

When they appear in text, algorithm names are in upper-case and lower-case characters and are underlined.

Example: The MidOf3 algorithm selects ....

Any item that is underlined in text can be found in the dictionary, Section 3.
1.4 REFERENCES

The following are related publications that should be used when configuring the AM

<table>
<thead>
<tr>
<th>Title</th>
<th>Publication No.</th>
<th>Binder</th>
</tr>
</thead>
<tbody>
<tr>
<td>Application Module Forms</td>
<td>AM88-400</td>
<td>Implementation/Configuration Forms</td>
</tr>
<tr>
<td>Application Module Form Instructions</td>
<td>AM12-400</td>
<td>Implementation/Application Module - 1</td>
</tr>
<tr>
<td>Application Module Control Functions</td>
<td>AM09-402</td>
<td>Implementation/Application Module - 1</td>
</tr>
<tr>
<td>Application Module Algorithm Engineering Data</td>
<td>AM09-401</td>
<td>Implementation/Application Module - 1</td>
</tr>
<tr>
<td>Engineer's Reference Manual</td>
<td>SW09-405</td>
<td>Implementation/Startup &amp; Reconfiguration - 2</td>
</tr>
<tr>
<td>Data Entity Builder Manual</td>
<td>SW11-411</td>
<td>Implementation/Engineering Operations - 1</td>
</tr>
</tbody>
</table>

**Programming in CL**

<table>
<thead>
<tr>
<th>Title</th>
<th>Publication No.</th>
<th>Binder</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control Language/Application Module Overview</td>
<td>SW27-400</td>
<td>Implementation/Application Module - 2</td>
</tr>
<tr>
<td>Control Language/Application Module Reference Manual</td>
<td>AM27-410</td>
<td>Implementation/Application Module - 2</td>
</tr>
<tr>
<td>Control Language/Application Module Data Entry</td>
<td>AM11-485</td>
<td>Implementation/Application Module - 2</td>
</tr>
</tbody>
</table>

In the alphabetical list in Section 3 of this publication, references are made to specific headings in *Application Module Control Functions, AM09-402.*
PARAMETERS LISTED BY POINT TYPE
Section 2

This section contains lists of data point parameter names for each Point Type.

The lists correspond to the Data Entity Builder's Parameter Entry Displays (PEDs). They include the names of all the parameters that can be configured for each point type. To provide comprehensive coverage, we assume that full disclosure is selected (i.e., PTDISCL = Full); also, the listings include all names of parameters whose exposure depends on entries previously made for other parameters.

Except for Regulatory points, all parameters associated with configuration of each point type in the AM are given in this Section of this publication. For Regulatory points, parameters that are common to all regulatory points are in this section and parameters that are unique to an algorithm are listed under the algorithm name, which is listed alphabetically (along with parameter names) in Section 3 of this publication.

Regulatory Point

The parameters included in the following list must be configured for each regulatory point before configuring the parameters listed under the parameter name(s) in the alphabetical list given in Section 3 of this publication.

<table>
<thead>
<tr>
<th>Point Assignment Display</th>
<th>Algorithm Selection</th>
<th>Scheduling Display</th>
<th>US Display Options Display</th>
</tr>
</thead>
<tbody>
<tr>
<td>NAME</td>
<td>PVALGID</td>
<td>PERIOD</td>
<td>OVERVAL</td>
</tr>
<tr>
<td>UNIT</td>
<td>CTLALGID</td>
<td>BEFAFT</td>
<td>SUPPIO</td>
</tr>
<tr>
<td>PTDDESC</td>
<td></td>
<td>BEFAFTID</td>
<td></td>
</tr>
<tr>
<td>EUDESC</td>
<td></td>
<td>NORMCYCL</td>
<td></td>
</tr>
<tr>
<td>KEYWORD</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PRIMMOD</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PTDISCL</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Regulatory Point (continued)

The parameters included in the following lists are configured as applicable after configuring those listed under the algorithm name(s) in the alphabetical list given in Section 3 of this publication.

<table>
<thead>
<tr>
<th>Alarming Display (PV Algos)</th>
<th>Alarming Display (CTL Algos)</th>
<th>I/O and Custom Display</th>
</tr>
</thead>
<tbody>
<tr>
<td>PVALDB</td>
<td>ALENBST</td>
<td>CLSLOTS</td>
</tr>
<tr>
<td>PVHITP</td>
<td>ALPRIOR</td>
<td>NOPKG</td>
</tr>
<tr>
<td>PVLOTOP</td>
<td>CCINPT</td>
<td>NUMSWITCH</td>
</tr>
<tr>
<td>PVHHTP</td>
<td>CCSRC</td>
<td>NOGINPTS</td>
</tr>
<tr>
<td>PVLLTP</td>
<td>CCACTSTS</td>
<td>NOGOPTS</td>
</tr>
<tr>
<td>PVROCPTP</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PVROCNTP</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PVSGCHTP</td>
<td>CCINPT</td>
<td></td>
</tr>
<tr>
<td>DEVHITP</td>
<td>CCSRC</td>
<td></td>
</tr>
<tr>
<td>DEVLOTP</td>
<td>CCACTSTS</td>
<td></td>
</tr>
<tr>
<td>ALENBST</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ALPRIOR</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CCINPT</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CCSRC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CCACTSTS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Note 1 — If NOPKG &gt;= 0, CUSTOM PACKAGE display appears</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Note 2 — If NUMSWITCH &gt;= 0, SWITCH display appears</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Note 3 — If NOGINPTS &gt;= 0, GENERAL INPUT CONNECTIONS DISPLAY appears</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Note 4 — If NOGOPTS &gt;= 0, GENERAL OUTPUT CONNECTIONS DISPLAY appears</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Custom Package Display</th>
<th>Switch Display</th>
<th>General Input Connections Display</th>
<th>General Output Connections Display</th>
</tr>
</thead>
<tbody>
<tr>
<td>PKGNAME[1]</td>
<td>S1NSTATE</td>
<td>GISRC(N)</td>
<td>GOSRC(N)</td>
</tr>
<tr>
<td>: :</td>
<td>S1STATES(0)</td>
<td>GIDSTN(N)</td>
<td>GODSTN(N)</td>
</tr>
<tr>
<td>PKGNAME[10]</td>
<td>S1STATES(4)</td>
<td>GIACTSTS(N)</td>
<td>GOACTSTS(N)</td>
</tr>
<tr>
<td>: :</td>
<td>S1ACCLVL</td>
<td>: :</td>
<td>: :</td>
</tr>
<tr>
<td>: :</td>
<td>S1CURSTS</td>
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<td>S1REQSTS</td>
<td>: :</td>
<td>: :</td>
</tr>
<tr>
<td>: :</td>
<td>S2NSTATE</td>
<td>: :</td>
<td>: :</td>
</tr>
<tr>
<td>: :</td>
<td>S2STATES(0)</td>
<td>: :</td>
<td>: :</td>
</tr>
<tr>
<td>: :</td>
<td>S2ACCLVL</td>
<td>: :</td>
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<tr>
<td>: :</td>
<td>S2REQSTS</td>
<td>: :</td>
<td>: :</td>
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</tbody>
</table>
### Counter Point

<table>
<thead>
<tr>
<th>Counter Point Assignment Display</th>
<th>Counter Scheduling Display</th>
<th>Counter PV Configuration Display</th>
<th>Counter PV Alarming Display</th>
<th>Counter Alarm Configuration Display</th>
</tr>
</thead>
<tbody>
<tr>
<td>NAME</td>
<td>PERIOD</td>
<td>PVEUHI</td>
<td>PVHITP</td>
<td>PVALDB</td>
</tr>
<tr>
<td>UNIT</td>
<td>Befaft</td>
<td>PVEULO</td>
<td>PVLOTSP</td>
<td>ALENBST</td>
</tr>
<tr>
<td>PTDESC</td>
<td>Befaftid</td>
<td>PVXEUHI</td>
<td>PVROCPTP</td>
<td>ALPRIOR</td>
</tr>
<tr>
<td>EUDESC</td>
<td>NornCycl</td>
<td>PVXEULO</td>
<td>PVRCNTP</td>
<td>CCINPT</td>
</tr>
<tr>
<td>KEYWORD</td>
<td></td>
<td>PVCONV</td>
<td>PVHHTP</td>
<td>CCSRC</td>
</tr>
<tr>
<td>PRIMMOD</td>
<td></td>
<td>PVTV</td>
<td>PVLLTP</td>
<td>CCACTSTS</td>
</tr>
<tr>
<td>ACCUM</td>
<td></td>
<td>PVFORMAT</td>
<td>DEVIHITP</td>
<td></td>
</tr>
<tr>
<td>PTDISCL</td>
<td></td>
<td>PVCLAMP</td>
<td>DEVLOTP</td>
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</tr>
<tr>
<td>CISRC</td>
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<td>PVSRCOPT</td>
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<tr>
<td>CIACSTTS</td>
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<td>PVSOURCE</td>
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<tr>
<td></td>
<td></td>
<td>OVERVAL</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Counter Accumulation Display

<table>
<thead>
<tr>
<th>Counter Accumulation Display</th>
<th>General Input Connections</th>
<th>General Output Connections</th>
</tr>
</thead>
<tbody>
<tr>
<td>AVCONV</td>
<td>NOGINPTS</td>
<td>NOGOPTS</td>
</tr>
<tr>
<td>AVCONV</td>
<td>GISRC(N)</td>
<td>GOSRC(N)</td>
</tr>
<tr>
<td>AVFORMAT</td>
<td>GIDSTN(N)</td>
<td>GODSTN(N)</td>
</tr>
<tr>
<td>AVTV</td>
<td>GIAACTSTS(N)</td>
<td>GOACTSTS(N)</td>
</tr>
<tr>
<td>CNTLLOCK</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AVTVLOCK</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AVDEV1TP</td>
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<td></td>
</tr>
<tr>
<td>AVDEV2TP</td>
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<td></td>
</tr>
</tbody>
</table>

### Custom Data Point

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>NAME</td>
<td>PERIOD</td>
</tr>
<tr>
<td>UNIT</td>
<td>BEFAFT</td>
</tr>
<tr>
<td>PTDESC</td>
<td>BEFAFTID</td>
</tr>
<tr>
<td>KEYWORD</td>
<td>NornCycl</td>
</tr>
<tr>
<td>CLSLOTS</td>
<td></td>
</tr>
<tr>
<td>NOPKG</td>
<td></td>
</tr>
<tr>
<td>PRIMMOD</td>
<td></td>
</tr>
<tr>
<td>ALPRIOR</td>
<td></td>
</tr>
<tr>
<td>ALENBST</td>
<td></td>
</tr>
<tr>
<td>PKGNAME[1]</td>
<td></td>
</tr>
<tr>
<td>:</td>
<td></td>
</tr>
<tr>
<td>PKGNAME[10]</td>
<td></td>
</tr>
</tbody>
</table>
### Flag Point

<table>
<thead>
<tr>
<th>Flag Point Assignment Display</th>
<th>Flag Operating Display</th>
<th>Flag Alarming Display</th>
</tr>
</thead>
<tbody>
<tr>
<td>NAME</td>
<td>PVSTATES(1)</td>
<td>PVNORMAL</td>
</tr>
<tr>
<td>UNIT</td>
<td>PVSTATES(0)</td>
<td>ALPRIOR</td>
</tr>
<tr>
<td>PTDESC</td>
<td>UBOXCLR</td>
<td>ALENBST</td>
</tr>
<tr>
<td>KEYWORD</td>
<td>LBOXCLR</td>
<td>OVERVAL</td>
</tr>
<tr>
<td>PRIMMOD</td>
<td>OFFNORMAL</td>
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</tr>
</tbody>
</table>

### Numeric Point

<table>
<thead>
<tr>
<th>Numeric Point Assignment Display</th>
<th>Flag Operating Display</th>
</tr>
</thead>
<tbody>
<tr>
<td>NAME</td>
<td>EUDESC</td>
</tr>
<tr>
<td>UNIT</td>
<td>RANGEHI</td>
</tr>
<tr>
<td>PTDESC</td>
<td>RANGELO</td>
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<td>PVFORMAT</td>
</tr>
<tr>
<td>PRIMMOD</td>
<td>PV</td>
</tr>
</tbody>
</table>

### Switch Point

<table>
<thead>
<tr>
<th>Switch Point Assignment Display</th>
<th>Switch Data Segment Display</th>
<th>Scheduling Display</th>
</tr>
</thead>
<tbody>
<tr>
<td>NAME</td>
<td>S1NSTATE</td>
<td>PERIOD</td>
</tr>
<tr>
<td>UNIT</td>
<td>S1STATES[0]</td>
<td>BEFAFT</td>
</tr>
<tr>
<td>PTDESC</td>
<td>:</td>
<td>BEFAFTID</td>
</tr>
<tr>
<td>KEYWORD</td>
<td>S1STATES[3]</td>
<td>NORMCYCL</td>
</tr>
<tr>
<td>CLSLOTS</td>
<td>S1ACCLVL</td>
<td></td>
</tr>
<tr>
<td>NOPKG</td>
<td>S1CURSTS</td>
<td></td>
</tr>
<tr>
<td>NUMSWITCH</td>
<td>S1REQSTS</td>
<td></td>
</tr>
<tr>
<td>PRIMMOD</td>
<td>S2NSTATE</td>
<td></td>
</tr>
<tr>
<td>SALMSDC1</td>
<td>S2STATES[0]</td>
<td></td>
</tr>
<tr>
<td>SALMSDC2</td>
<td>:</td>
<td></td>
</tr>
<tr>
<td>SALMSDC3</td>
<td>S2STATES[4]</td>
<td></td>
</tr>
<tr>
<td>ALPRIOR</td>
<td>S2ACCLVL</td>
<td></td>
</tr>
<tr>
<td>ALENBST</td>
<td>S2CURSTS</td>
<td></td>
</tr>
<tr>
<td>PKGNAME[1]</td>
<td>S2REQSTS</td>
<td></td>
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<td>:</td>
<td>:</td>
<td></td>
</tr>
<tr>
<td>PKGNAME[10]</td>
<td>:</td>
<td></td>
</tr>
</tbody>
</table>
Timer Point

<table>
<thead>
<tr>
<th>Timer Point Assignment Display</th>
<th>Timer Scheduling Display</th>
<th>Timer Operating Display</th>
<th>Timer Alarming Display</th>
<th>Control Input Connections Display</th>
</tr>
</thead>
<tbody>
<tr>
<td>NAME</td>
<td>PERIOD</td>
<td>TIMEBASE</td>
<td>ALENBST</td>
<td>NOGINPTS</td>
</tr>
<tr>
<td>UNIT</td>
<td>BEFAFT</td>
<td>SP</td>
<td>ALPRIOR</td>
<td>GISRC(N)</td>
</tr>
<tr>
<td>PTDESC</td>
<td>BEFAFTID</td>
<td>CNTLLOCK</td>
<td>CCINPT</td>
<td>GIDSTN(N)</td>
</tr>
<tr>
<td>EUDESC</td>
<td>NORMCYCL</td>
<td>SPLOCK</td>
<td>CCSRC</td>
<td>GOACTSTS(N)</td>
</tr>
<tr>
<td>KEYWORD</td>
<td></td>
<td>TIMOUTAL</td>
<td>CCACRSTS</td>
<td></td>
</tr>
<tr>
<td>PRIMMOD</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PTDISCL</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

General Output Connections Display

| NOGOPTS                        |
| GOSRC(N)                       |
| GODSTN(N)                      |
| GOACTSTS(N)                    |

Processor Status Data Point (PSDP)

Processor Status Data Points are not configured, so they have no configuration forms and do not appear on PEDs. However, certain of the AM PSDP parameters can be changed directly or indirectly by the user.

The following AM PSDP parameters can be changed indirectly during AM node configuration (or reconfiguration): MEMCVBLM, MIPCVBLM, and AMDATA(48).

Those AM PSDP parameters that have “Access Lock” of Engr or Opr can be changed directly by the use of custom schematics. See heading 2.6.2 in Application Module Implementation Guidelines for more information.

A complete list of AM PSDP parameters can be found in the Engineer’s Reference Manual in the Implementation/Startup & Reconfiguration - 2 binder.
### 3.1 FORMAT

The alphabetical listing given in this section is presented in the formats described under the following headings.

#### 3.1.1 Parameter Names

A parameter name is a character string (of one-to-eight alphabetic or alphanumeric characters), reserved in the system, that is a mnemonic which identifies a value used in the system. The form of each parameter description and a description of the information provided in that form is shown below.

<table>
<thead>
<tr>
<th>PARAMETER NAME</th>
<th>Point Type</th>
<th>(Number of Form used for configuration)</th>
<th>(Description of parameter)</th>
<th>(References to headings in AM Control Functions [AM CF])</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Source</td>
<td>Default Value</td>
<td>Access Lock</td>
</tr>
<tr>
<td>Value Type</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Value Range</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
3.1.1 Parameter Names (continued)

The data given in the format shown above has the following significance:

**Source** – The source that causes a parameter to be set to a particular value. The source can be either the user (through configuration or other keyboard entry) or the system.

**Default Value** – The value of a parameter that is automatically assigned by the system and is used when a different value is not assigned by the user. Valid entries can include values of the type and range described in this section, or can include:

- NaN—not a number, which appears in displays as three or more dashes (---). In some cases, NaN is a valid entry; in others (where noted), a valid number value must be assigned by the user.

- Underbars—all underbars (_ _ _ _), when they appear on displays, denote a null entity. The notation "all blanks" is used in the Default Value box to denote the null entity.

**Access Lock** – The access lock, which is defined for each parameter, specifies which personnel or system functions can store to the parameter. Each store request carries an "Access Level" that identifies the requester of a store to the parameter. Access Levels and access locks are arranged hierarchically as follows:

<table>
<thead>
<tr>
<th>Access Level</th>
<th>Used By</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oper</td>
<td>Operator</td>
</tr>
<tr>
<td>Supvr</td>
<td>Supervisor</td>
</tr>
<tr>
<td>Engr</td>
<td>Engineer</td>
</tr>
<tr>
<td>Cont</td>
<td>Continuous Control and CL/C</td>
</tr>
<tr>
<td>Prog</td>
<td>Sequence Programs and CIU</td>
</tr>
<tr>
<td>DEB</td>
<td>Data Entity Builder (Point Builder)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Access Lock</th>
<th>Access Levels Included</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oper</td>
<td>All</td>
</tr>
<tr>
<td>Supvr</td>
<td>All except Oper</td>
</tr>
<tr>
<td>Engr</td>
<td>All except Oper and Supvr</td>
</tr>
<tr>
<td>Prog</td>
<td>All except Oper, Supvr, and Engr</td>
</tr>
<tr>
<td>Engr-DEB</td>
<td>Engr and DEB</td>
</tr>
<tr>
<td>Read Only</td>
<td>Accessible to the user for viewing only: no write access available.</td>
</tr>
</tbody>
</table>
3.1.1 Parameter Names (continued)

**Access Lock**
A parameter with a given Access Level can be stored to by a requester of the same or higher Access Lock designator. For example, if the Access Lock is specified as Engr, a requester with an Access Level of Engr, Prog, or Engr-DEB can store to the parameter, but a requester of the access level of Supvr or Oper cannot.

**Value Type**
Indicates the type of data format in which the value of the parameter must be stored. The system does not permit the value of the parameter to be set to any other type of data format. Each parameter listed in this publication has one of the following value types:

- **Integer**—The value of the parameter is a whole number.
- **Real**—The value of the parameter is a Real Number; that is, a decimal number, with an integer part, a decimal point, and a decimal-fraction part. The decimal point must be included.
- **String**—The value of the parameter is a string of characters, which can include the alphabetic characters a through z, the numeric characters 0 through 9, and the characters tilde (~) and underbar (_).
- **Ent_Id**—The value of the parameter is an entity identifier; that is, the value of the parameter is the Tag Name of a data point.
- **Par_Id**—The value of the parameter is the name of an external parameter.
- **Point.Parameter**—The value in the parameter specifies a parameter in a named point in Point.Parameter form, where "Point" represents a valid tag name (NAME) or reserved-entity name, “Parameter” represents a valid parameter name, and “.” separates those elements. For example, FC101.PV specifies parameter PV in data point FC101.
- **Boolean**—The value of the parameter is one of a complementary binary pair (such as On or Off).
- **Enumeration**—a set of predefined values expressed as character strings. These sets of values are stored in standard enumeration-value sets.

Example: Under the parameter name PVAUTOST

<table>
<thead>
<tr>
<th>Value Type</th>
<th>PVAUTOST enumeration</th>
</tr>
</thead>
</table>

and

<table>
<thead>
<tr>
<th>Value Range</th>
<th>Normal –</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Uncertn –</td>
</tr>
<tr>
<td></td>
<td>Bad –</td>
</tr>
</tbody>
</table>

PVAUTOST is the enumeration-value set that contains values Active, InActive, and NotConfig.
3.1.1 Parameter Names (continued)

**Value Type** – Enumeration (continued)

In some cases, the enumeration-value set name is different than that of the parameter name.

Example: Under the parameter name PIACTSTS[N]

<table>
<thead>
<tr>
<th>Value Type</th>
<th>Value Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>IOACTSTS</td>
<td>Active –</td>
</tr>
<tr>
<td></td>
<td>InActive –</td>
</tr>
<tr>
<td></td>
<td>NotCnfg –</td>
</tr>
</tbody>
</table>

IOACTSTS contains the set of enumerated values Active, InActive, and NotCnfg; these elements, then, are also enumerations of the elements of parameter PIACTSTS.

Sd_Enum—Self-defining enumeration; the value of the parameter is one of an array of string values that has been defined by the user, and the array index associated with a given string value is used as the string's enumeration value.

Type_Id Array (Maximum Index Value)—The value of this parameter is an element of an array of values of the specified type. The index type can be an integer, an enumeration, or a self-defined enumeration.

(Example): Array (1..16) of Boolean—denotes that the parameter value is a binary value of one of 16 pairs of binary values.

**Value Range** defines the set of valid values for the parameter, either by enumeration, or in terms of the boundaries of the set and exceptions to those boundaries.

3.1.2 Algorithm Names

Algorithm names given in the alphabetical list are mnemonics that are enumerations of the parameters PVALGID (process variable algorithm identifier) and CTLALGID (control algorithm identifier). They can be distinguished from parameter names in that they appear in the alphabetical list with both upper-case and lower-case alphabetic characters, and are underlined.

Under each algorithm name

– The algorithm is briefly described. Refer to Application Module Algorithm Engineering Data, in the Implementation/Application Module - 1 binder for additional information.

– Lists of the parameters related to the algorithm are given. Lists of other parameters involved in configuring a regulatory point (before and after configuring algorithm-unique parameters) are given in Section 2 of this publication.
**$SBKGABRT**

**Point Type**  Custom, Regulatory, and Switch

$SBKGABRT is set to true when a background CL block is aborted, and is set to false after the next execution of background CLs on the point (no form).

<table>
<thead>
<tr>
<th>Source</th>
<th>System</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Default Value</strong></td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Access Lock</strong></td>
<td>Read Only</td>
</tr>
</tbody>
</table>

**Value Type**  Boolean

**Value Range**  
- **FALSE**: Normal processing of the background CL on the point occurred the last time the point was executed.
- **TRUE**: The queued or running background CL on the point was aborted the last time the point was executed.

**$SBKGRTY(N)**

**Point Type**  Custom, Regulatory, and Switch

Relative priorities of running background CLs within the background priority range. The initial value is high. The value of this parameter is changed by the CL block call to BKG_Change_Priority subroutine (no form).

<table>
<thead>
<tr>
<th>Source</th>
<th>System</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Default Value</strong></td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Access Lock</strong></td>
<td>Read Only</td>
</tr>
</tbody>
</table>

**Value Type**  1..255  Array of $BKGPRTY enumeration

**Value Range**  
- **Low**
- **Medium**
- **High**

**$SBKGQFUL**

**Point Type**  Custom, Regulatory, and Switch

$SBKGQFUL is set to true when background CLs cannot be put into the background execution queue (no form).

<table>
<thead>
<tr>
<th>Source</th>
<th>System</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Default Value</strong></td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Access Lock</strong></td>
<td>Read Only</td>
</tr>
</tbody>
</table>

**Value Type**  Boolean

**Value Range**  
- **TRUE**: Background CL is not able to be placed in the execution queue.
- **FALSE**: Background CL is able to be placed into the execution queue.
$BKGSTS(N)$

**Point Type** Custom, Regulatory, and Switch

The background status for the CL slot on a point (no form).

<table>
<thead>
<tr>
<th>Source</th>
<th>System</th>
<th>Default Value</th>
<th>N/A</th>
<th>Access Lock</th>
<th>Read Only</th>
</tr>
</thead>
</table>

**Value Type** Array (1..255) of $BKGSTS$ enumeration

**Value Range**

- OFF: The CL block is available for execution.
- QUEUED: The CL block is in the queue waiting to be executed.
- RUNNING: The CL block has started executing and has not yet completed. It may not actually run because it is low priority.
- DELAYED: The CL block has called a delay and is waiting for the delay to complete.
- WAITING: The CL block has called an off node function and is waiting for completion of that function.

---

$BKGTIME$

**Point Type** Custom, Regulatory, and Switch

Length of time background CL blocks on this point are in the queue, or in the running state. The value is 0 if no blocks are in the queue or running. The value is expressed in seconds (no form).

<table>
<thead>
<tr>
<th>Source</th>
<th>System</th>
<th>Default Value</th>
<th>N/A</th>
<th>Access Lock</th>
<th>Read Only</th>
</tr>
</thead>
</table>

**Value Type** Real

**Value Range** $\geq 0.0$
$CLCMPST(N)

**Point Type**  Custom, Regulatory, and Switch

Composite CL block activity status displayed on the CL page of the Detail Display for this point. The parameter's status combines the foreground and background CL status. It is derived from the parameters $BKGSTS(N) and CLACTIVE(N) (no form).

<table>
<thead>
<tr>
<th>Source</th>
<th>Default Value</th>
<th>Access Lock</th>
</tr>
</thead>
<tbody>
<tr>
<td>User</td>
<td>NotConfg</td>
<td>Engr</td>
</tr>
</tbody>
</table>

**Value Type**  Array (1..255) of $CLCMPSTN enumeration

**Value Range**

- **NOTCONF**: The CL block is not linked to this slot (read only).
- **ACTIVE**: The CL block is inactive, but not running. Store is used to activate the CL (read/write).
- **INACTIVE**: The CL block is inactive. Store used to inactivate the CL (read/write).
- **ABORT**: This state is not displayed. It is used only to allow store TRUE to the abort flag, and to $BKGABRT when the CL is aborted (write only).
- **QUEUED**: The CL block is active and in the queue waiting to be executed (read only).
- **RUNNING**: The CL block is active and executing, but has not completed. It may not run because it is low priority (read only).
- **DELAYED**: The CL block is active. It has called a delay, and is waiting for the delay to complete (read only).
- **WAITING**: The CL block is active. It has called an off node function. It is waiting for that function to complete (read only).
- **INA_RUN**: The CL block is active, and called an off node function. It is waiting for that function to complete (read only).
- **INA_DELY**: The CL block is inactive and executing. It may not run because it is low priority (read only).
- **INA_WAIT**: The CL block is inactive and called an off node function. It is waiting for that function to complete (read only).

The following table shows the displayed values of $CLCMPST(N):

<table>
<thead>
<tr>
<th>$CLCMPST(N)</th>
<th>CLACTIVE(N)</th>
<th>$BKGSTS(N)</th>
</tr>
</thead>
<tbody>
<tr>
<td>NOTCONF</td>
<td>NOTCONF</td>
<td>- - - - - -</td>
</tr>
<tr>
<td>INACTIVE</td>
<td>INACTIVE</td>
<td>OFF</td>
</tr>
<tr>
<td>INACTIVE</td>
<td>INACTIVE</td>
<td>QUEUED</td>
</tr>
<tr>
<td>ACTIVE</td>
<td>ACTIVE</td>
<td>OFF</td>
</tr>
<tr>
<td>QUEUED</td>
<td>QUEUED</td>
<td>QUEUED</td>
</tr>
<tr>
<td>RUNNING</td>
<td>ACTIVE</td>
<td>RUNNING</td>
</tr>
<tr>
<td>DELAYED</td>
<td>ACTIVE</td>
<td>DELAYED</td>
</tr>
<tr>
<td>WAITING</td>
<td>ACTIVE</td>
<td>WAITING</td>
</tr>
<tr>
<td>INA_RUN</td>
<td>INACTIVE</td>
<td>RUNNING</td>
</tr>
<tr>
<td>INA_DELY</td>
<td>INACTIVE</td>
<td>DELAYED</td>
</tr>
<tr>
<td>INA_WAIT</td>
<td>INACTIVE</td>
<td>WAITING</td>
</tr>
</tbody>
</table>
$IPPASN

Point Type  Regulatory, Custom, Counter, Timer, and Switch

When TRUE, defines that a point is assigned to the IPP. It appears on the point builder scheduling display before any other schedule segment parameters. Its status appears on the initial point detail display page with other point schedule data (Forms AM88-401, 430, 440, and 450).

Source  User  Default Value  FALSE  Access Lock  DEB

Value Type  Boolean

Value Range  FALSE—Point is assigned to either FPP or SPP depending on processing period. TRUE—Point is assigned to IPP.
### ACCUM

**Point Type**  Counter  

Selects the accumulation option for AM Counter points (3.3 in *AM Control Functions*) (Form AM88-440).  

<table>
<thead>
<tr>
<th>Source</th>
<th>User</th>
<th><strong>Default Value</strong></th>
<th>Off</th>
<th><strong>Access Lock</strong></th>
<th>DEB</th>
</tr>
</thead>
</table>

**Value Type**  Boolean  

**Value Range**  On—selects the accumulation option.  
Off—selects no accumulation by the counter.

### ADAVGC

**Point Type**  Processor Status  

Average alarms distributed per second in the current hour (no form).  

<table>
<thead>
<tr>
<th>Source</th>
<th>System</th>
<th><strong>Default Value</strong></th>
<th>N/A</th>
<th><strong>Access Lock</strong></th>
<th>Read Only</th>
</tr>
</thead>
</table>

**Value Type**  Real  

**Value Range**  $\geq 0.0$

### ADAVGP

**Point Type**  Processor Status  

Average alarms distributed per second in the previous hour (no form).  

<table>
<thead>
<tr>
<th>Source</th>
<th>System</th>
<th><strong>Default Value</strong></th>
<th>N/A</th>
<th><strong>Access Lock</strong></th>
<th>Read Only</th>
</tr>
</thead>
</table>

**Value Type**  Real  

**Value Range**  $\geq 0.0$
ADAVGS

**Point Type**  Processor Status

Average alarms distributed per second during the last snapshot period (normally 10 seconds).

**Source**  System  **Default Value**  N/A  **Access Lock**  Read Only

**Value Type**  Real

**Value Range**  $\geq 0.0$

ADMAXC

**Point Type**  Processor Status

Maximum alarms distributed per cycle in the current hour (no form).

**Source**  System  **Default Value**  N/A  **Access Lock**  Read Only

**Value Type**  Integer

**Value Range**  0 through 32767

ADMAXP

**Point Type**  Processor Status

Maximum alarms distributed per cycle in the previous hour (no form).

**Source**  System  **Default Value**  N/A  **Access Lock**  Read Only

**Value Type**  Integer

**Value Range**  0 through 32767
**ADMINC**

**Point Type**  Processor Status

Minimum alarms distributed per cycle in the current hour (no form).

<table>
<thead>
<tr>
<th>Source</th>
<th>System</th>
<th>Default Value</th>
<th>N/A</th>
<th>Access Lock</th>
<th>Read Only</th>
</tr>
</thead>
</table>

**Value Type**  Integer

**Value Range**  0 through 32767

**ADMINP**

**Point Type**  Processor Status

Minimum alarms distributed per cycle in the previous hour (no form).

<table>
<thead>
<tr>
<th>Source</th>
<th>System</th>
<th>Default Value</th>
<th>N/A</th>
<th>Access Lock</th>
<th>Read Only</th>
</tr>
</thead>
</table>

**Value Type**  Integer

**Value Range**  0 through 32767

**ADVDEVTP**

**Point Type**  Regulatory

Advisory-deviation-alarm trip point. When SPOPT = Asp, if the difference between the value in PV and the value in ADVSP is greater than the value in ADVDEVTP, an alarm is generated (Form AM88-441) (3.1.6.3 in AM Control Functions).

<table>
<thead>
<tr>
<th>Source</th>
<th>User</th>
<th>Default Value</th>
<th>NaN</th>
<th>Access Lock</th>
<th>Supvr</th>
</tr>
</thead>
</table>

**Value Type**  Real

**Value Range**  

- $\geq 0.0$
- NaN is a possible entry
ADVDEVTR

Point Type  Regulatory

Advisory-deviation-alarm transition (3.1.6.3 in AM Control Functions) (no form).

Source  User  Default Value  NoChange  Access Lock  Read Only

Value Type  ALTRAN enumeration

Value Range  NoChange—No change from previous state
Rtn—First time return from alarm
Alarm—First time in alarm

ADVSP

Point Type  Regulatory

Advisory-deviation-alarm setpoint. The predetermined SP value used in advisory deviation alarming. To use advisory deviation alarming, SPOPT = Asp, ASPPROC = Enable, and ADVDEVTP contains the alarm trip point. When the difference between the value in PV and the value in ADVSP is greater than the value in ADVDEVTP, an alarm is generated. When the difference is less than the value in ADVDEVTP minus a deadband, the alarm returns to normal. When ASPPROC = Disable, the value in ADVSP = the value in SP (3.1.6.3 in AM Control Functions) (no form).

Source  User  Default Value  ----  Access Lock  Supvr

Value Type  Real

Value Range  SPHILM to SPLOLM

ADVSPPP

Point Type  Regulatory

Advisory deviation alarm setpoint (ADVSP) in % (no form) (3.1.6.3 in AM Control Functions).

Source  User  Default Value  ----  Access Lock  Read Only

Value Type  Real

Value Range  >= 0.0
ALENBST

**Point Type**  Regulatory, Flag, Timer, Counter, Custom, and Switch.

Point alarm-enable status that affects the detecting and reporting of alarms (4.3.1.5 and 4.3.1.6 in *System Control Functions*) (Forms AM88-470, 410, 430, 440, 450, and 460).

<table>
<thead>
<tr>
<th>Source</th>
<th>Default Value</th>
<th>Access Lock</th>
</tr>
</thead>
<tbody>
<tr>
<td>User</td>
<td>Enable</td>
<td>Configurable in Network Configuration under System-Wide Values/Console Data to Engr, Supvr, or Oper.</td>
</tr>
</tbody>
</table>

**Value Type**  ALENBST enumeration

**Value Range**  Enable—When selected, alarms are detected, reported in the Alarm Journal, and printed and displayed on the Alarm Summary.

Disable—When selected, alarms are detected and reported in the Alarm Journal, but not printed or displayed on the Alarm Summary. Alarm indicators appear on Group and Detail displays.

Inhibit—When selected, neither alarm detection nor reporting occurs.

ALPRIOR

**Point Type**  Regulatory, Flag, Timer, Counter, Custom, and Switch.

Point alarm priority. Does not effect alarm detection (4.3.1.3 in *System Control Functions*) (Forms AM88-470, 410, 430, 440, 450, and 460).

<table>
<thead>
<tr>
<th>Source</th>
<th>Default Value</th>
<th>Access Lock</th>
</tr>
</thead>
<tbody>
<tr>
<td>User</td>
<td>Low</td>
<td>Engr</td>
</tr>
</tbody>
</table>

**Value Type**  ALPRIOR enumeration

**Value Range**  No Action—No alarm is displayed, printed, nor recorded in a journal.

Journal—Alarm is recorded only in the alarm journal, and alarm indicators appear on the Group and Detail displays.

Low, High, and Emergency—Alarm is displayed, printed, and recorded in the alarm journal with the Low, High, and Emergency priority shown.
AMDATA(45)

**Point Type**  Processor Status

Duration in minutes of the last primary-secondary synchronization. Value is available in the secondary AM.

**Source**  System  **Default Value**  N/A  **Access Lock**  Read Only

**Value Type**  Real

**Value Range**  >0.0

AMDATA(46)

**Point Type**  Processor Status

After a failover, the time in seconds from when data access was last known to be functioning in the original primary until data access is functioning in the new primary. Value is available in the new primary AM.

**Source**  System  **Default Value**  N/A  **Access Lock**  Read Only

**Value Type**  Real

**Value Range**  >0.0

AMDATA(47)

**Point Type**  Processor Status

After a failover, the time in seconds until control is resumed in the new primary. Value is available in the new primary AM.

**Source**  System  **Default Value**  N/A  **Access Lock**  Read Only

**Value Type**  Real

**Value Range**  >0.0
**AMDATA(48)**

**Point Type**  Processor Status

Contains an integer value that determines the amount of memory (in 32 kw blocks) added to the redundancy buffer. For more information, see 7.3.1 in *AM Implementation Guidelines*.

**Source**  User (NCF)  **Default Value**  0  **Access Lock**  Read Only

**Value Type**  Integer

**Value Range**  0-12  (Note that the total value of AMDATA(48) plus the value of RESERVMEM cannot exceed 12.)

**AMDATA(49)**

**Point Type**  Processor Status

The number of times that failover has occurred since this AM was started. Value is available in both the primary and secondary AM.

**Source**  System  **Default Value**  N/A  **Access Lock**  Read Only

**Value Type**  Real

**Value Range**  =>0.0

**AMDATA(52)**

**Point Type**  Processor Status

Same data as AMDATA(48).
**AMMEMTOT**

**Point Type**  Processor Status

Total AM memory used for data points, CLs, Custom Data Descriptors, Checkpoint, and Prefetch/Poststore I/O Buffers. Value is affected by choice made during AM node configuration (no form).

**Source**  System  **Default Value**  0.0  **Access Lock**  Read Only

**Value Type**  Real

**Value Range**  \( \geq 0.0 \)

---

**AMOVRABT**

**Point Type**  Processor Status

Number of Fast Point Processor Overrun cycles at which to abort the AM (no form) (2.2.1.6 in *AM Control Functions*).

**Source**  User  **Default Value**  100  **Access Lock**  Engr

**Value Type**  Integer

**Value Range**  -1 = Do not abort the AM
0 through 32767

---

**AMOVRTHR**

**Point Type**  Processor Status

Alarm trip-point for the Fast Point Processor Overruns in number of cycles (no form) (2.2.1.6 in *AM Control Functions*).

**Source**  User  **Default Value**  50  **Access Lock**  Engr

**Value Type**  Integer

**Value Range**  -1 = No alarming on overruns is to be done.
0 through 32767
**AMSCHDMP(N)**

**Point Type**  Processor Status

A write-only parameter used to request a schedule dump for unit N in an AM. Instructions for the use of this parameter are in Section 5 of *AM Implementation Guidelines* (no form).

- **Source:** User
- **Default Value:** (no default)
- **Access Lock:** Oper

**Value Type:** Array (1..100) of string

**Value Range:** String of up to 80 characters that specifies the pathname of the file for the schedule dump for Unit (N).

---

**ARWDI**

**Point Type**  Regulatory

Applies to CL Control Algorithm

Anti-reset-windup direction indicator. Defines the directional relationship between CV and SP (26.4.2 in *AM Algorithm Engineering Data*) (Form AM88-464).

- **Source:** User
- **Default Value:** Direct
- **Access Lock:** Prog

**Value Type:** POLARITY enumeration

**Value Range:**
- Direct—Output increases as the input increases.
- Reverse—Output decreases as the input increases.

---

**ARWNET**

**Point Type**  Regulatory

Windup state of the input (control processing) (3.1.10.1, 3.1.10.2, and 3.1.6.2 in *AM Control Functions*).

- **Source:** User
- **Default Value:** Normal
- **Access Lock:** Read Only

**Value Type:** WINDUP enumeration

**Value Range:**
- Normal—Free to move in either direction.
- Hi—Free to move in the lower direction.
- Lo—Free to move in the higher direction.
- HiLo—Not free to move in any direction.
ARWOP

Point Type  Regulatory

Windup state of the output (control processing) (no form) (3.1.10.1 and 3.1.10.2 in AM Control Functions).

Source  User  Default Value  Normal  Access Lock  Read Only

Value Type  WINDUP enumeration

Value Range  Normal—Free to move in either direction.
Hi—Free to move in the lower direction.
Lo—Free to move in the higher direction.
HiLo—Not free to move in any direction.

ASPPROC

Point Type  Regulatory

Advisory-deviation-alarm state.  See ADVSP (3.1.6.3 in AM Control Functions) (Form AM88-470).

Source  User  Default Value  Disable  Access Lock  Supvr

Value Type  ASPPROC enumeration

Value Range  Disable—Advisory deviation alarming does not take place.
Enable—Advisory deviation alarming can take place.
AutoMan (Control Algorithm)

This algorithm (Control Multiply/Divide) calculates a control output by multiplying two input variables and dividing the resulting product by a third input variable. Scale factors and bias can be applied to the input variables, and an overall scale factor and bias can be specified.

Three equations are provided. One provides only multiplication, and the other two provide multiplication and division.

One of the input variables, \((SP)\) is initializable. This variable appears in the numerator of one of the fractions and in the denominator of the other.

Parameters involved in configuring this algorithm are the following and those listed in Section 2 under Regulatory Points.

<table>
<thead>
<tr>
<th>Control Common Display</th>
<th>Control Auto/Man Algo Display</th>
<th>Control Output Connections Display</th>
</tr>
</thead>
<tbody>
<tr>
<td>NMODE</td>
<td>INITTYPE</td>
<td>NOCOPTS</td>
</tr>
<tr>
<td>NMODATTR</td>
<td>B</td>
<td>CODSTN(N)</td>
</tr>
<tr>
<td>MODEPERM</td>
<td>RATE1</td>
<td>COACTSTS(N)</td>
</tr>
<tr>
<td>EXTSWOPT</td>
<td>XEUHI</td>
<td>OPHILM</td>
</tr>
<tr>
<td></td>
<td>XEUULO</td>
<td>OPLOLM</td>
</tr>
<tr>
<td></td>
<td>NOCINPTS</td>
<td>OPMCHLM</td>
</tr>
<tr>
<td></td>
<td>CISRC(N)</td>
<td>OPROCLM</td>
</tr>
<tr>
<td></td>
<td>CIDSTN(N)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>CIACTSTS(N)</td>
<td></td>
</tr>
</tbody>
</table>

**AV**

**Point Type**  Counter

Accumulation value in EU (no form) (3.3, 3.3.8, and 3.3.10 in *AM Control Functions*).

**Source**  User  
**Default Value**  0.0  
**Access Lock**  Oper

**Value Type**  Real

**Value Range**  
\[ AV \geq 0 \text{ but } \leq 999999 \]

NaN is a possible entry.
AVCONV

**Point Type**  Counter

Factor to convert AVCOUNTS to engineering units (EU) (3.3.6 in *AM Control Functions*) (Form *AM88-440*).

- **Source**  User
- **Default Value**  1.0
- **Access Lock**  Engr

**Value Type**  Real

**Value Range**  3.55271E-09 <= AVCONV <= 999999.0

AVCOUNTS

**Point Type**  Counter

Accumulation value in EU (no form) (3.3.6, 3.3.8, and 3.3.11 in *AM Control Functions*).

- **Source**  User
- **Default Value**  0.0
- **Access Lock**  Read Only

**Value Type**  Real

**Value Range**  >= 0

- NaN is not a valid entry.

AVDEV1FL

**Point Type**  Regulatory, Counter

For the PV Totalizr algorithm for Regulatory points, first deviation-alarm flag for the accumulation value (Section 7 in *AM Algorithm Engineering Data*) (no form).

For Counter points, first deviation-alarm flag for the accumulation value (3.3.8 in *AM Control Functions*) (Form *AM88-419*).

- **Source**  User
- **Default Value**  Off
- **Access Lock**  Read Only

**Value Type**  Logical

**Value Range**  On— if AV > (AVTV – AVDEV1TP)

- Off—not in alarm AV <= AVDEV1TP
AVDEV1TP

**Point Type**  Regulatory, Counter

Applies to PV Totaliz algorithm for Regulatory points (Section 7 in AM Algorithm Engineering Data).

First deviation-alarm trip point for the accumulation value (3.3.7 in AM Control Functions) (Forms AM88-419 and 440).

**Source**  User  **Default Value**  NaN  **Access Lock**  Supvr

**Value Type**  Real

**Value Range**  
$$\geq 0 \text{ but } \leq 999999$$  
NaN is a possible entry—when NaN is entered AVDEV1TP alarming is not performed.

AVDEV2FL

**Point Type**  Regulatory, Counter

Applies to PV Totaliz algorithm for Regulatory points (Section 7 in AM Algorithm Engineering Data).

For AM Counter points, second deviation-alarm flag for the accumulation value (3.3.8 in AM Control Functions) (no form).

**Source**  User  **Default Value**  Off  **Access Lock**  Read Only

**Value Type**  Boolean

**Value Range**  
Off—if $AV > (AVTV - AVDEV1TP)$.  
On—if $AV \leq (AVTV - AVDEV2TP)$. 
AVDEV2TP

**Point Type**  Regulatory, Counter

Applies to PV Totaliz algorithm for Regulatory points (Section 7 in AM Algorithm Engineering Data).

For AM Counter points second deviation-alarm trip point for the accumulation value (3.3.7 in AM Control Functions) (Forms AM88-419 and 440).

**Source**  User  **Default Value**  NaN  **Access Lock**  Supvr

**Value Type**  Real

**Value Range**  \( \geq 0 \) but \( \leq 999999 \)

- NaN can be an entry; when NaN is entered, AVDEV2TP alarming is not performed, otherwise, a pre-preset alarm is detected when the accumulation value \( AV \) is \( \geq \) the Preset less the value entered for the pre-preset deviation point.

AVFORMAT

**Point Type**  Counter

Accumulated Value display decimal point location (Form AM88-440) (3.3.10 in AM Control Functions).

**Source**  User  **Default Value**  D0  **Access Lock**  Engr-DEB

**Value Type**  VALFORMT enumeration

**Value Range**  Specifies the PV decimal place in the standard displays:

- D0 is sNumber, where s is sign, Number is data value, and "." is the decimal point
- D1 is sNumbe.r
- D2 is sNumb.er
- D3 is sNum ber
- D4 is sNu.mber
- D5 is sN.umber
- D6 is s.Number
AVP

Point Type  Counter

Accumulated Value in % of range (no form).

Source  User  Default Value  see Range  Access Lock  Read Only

Value Type  Real

Value Range  \( \geq 0 \) or NaN

Default is 0 through \( \frac{AV}{AVTV} \times 100 \)

AVTV

Point Type  Regulatory, Counter

Accumulation target-value for PV Totalizr algorithm in Regulatory points (Section 7 in AM Algorithm Engineering Data).

Accumulation target-value for counter points (3.3.7 and 3.3.8 in AM Control Functions) (Forms AM88-440 and 419).

Source  User  Default Value  NaN  Access Lock  Oper

Value Type  Real

Value Range  \( \geq 0 \) but \( \leq 999999 \)

NaN value can be inserted by operator entry, but not by CL program.

AVTVFL

Point Type  Regulatory, Counter

Accumulation target-value alarm flag; applies to PV Totalizr algorithm for Regulatory points (Section 7 in AM Algorithm Engineering Data) and to Counter points (3.3.7 and 3.3.8 in AM Control Functions) (Form AM88-419).

Source  User  Default Value  Off  Access Lock  Read Only

Value Type  Logical

Value Range  On—In alarm \( AV > AVTV \)

Off—Not in alarm \( AV \leq AVTV \)
### AVTLOCK

**Point Type**  Counter

Accumulation target-value lock. Permits or prevents operator changes to **AVTV** (3.3.9 in *AM Control Functions*) (Form *AM88-440*).

<table>
<thead>
<tr>
<th><strong>Source</strong></th>
<th><strong>User</strong></th>
<th><strong>Default Value</strong></th>
<th><strong>Permit</strong></th>
<th><strong>Access Lock</strong></th>
<th><strong>Engr-DEB</strong></th>
</tr>
</thead>
</table>

**Value Type**  MODEPERM enumeration

**Value Range**  Permit—when selected, you enable the operator to change the AV target value (**AVTV**). Notperm—when selected, you keep the operator from changing the AV target value (**AVTV**).
**B**

**Point Type**  Regulatory

Bias value for control algorithms (see *AM Algorithm Engineering Data*, Sections 14 through 26) (Forms AM88-452, 453, 454, and 458).

**Source**  User  **Default Value**  0.0  **Access Lock**  Supvr

**Value Type**  Real

**Value Range**  Any real number

**BO**

**Point Type**  Regulatory

Applies to the Auto Manual Station algorithm.

Output bias constant entered by the operator, and applies only if **INITTYPE** is Ext (no form).

**Source**  User  **Default Value**  0.0  **Access Lock**  Read Only

**Value Type**  Real

**Value Range**  Any real number
B1 through B4

Point Type: Regulatory

Applies to Control algorithms.

B1 is the CTL Multiply/Divide algorithm input SP bias constant (Form AM88-454).

B2 is the CTL Multiply/Divide algorithm input X2 bias constant.

B3 is the CTL Multiply/Divide algorithm input X3 bias constant.

B4 is the CTL Multiply/Divide algorithm input X4 bias constant.

B1 and B2 are also the CTL Ratio algorithm bias constants (Form AM88-459).

Source: User
Default Value: 0.0
Access Lock: Supvr

Value Type: Real

Value Range: Any real number

BADCTLFL

Point Type: Regulatory, Counter

Bad-control alarm flag (no form).

Source: User
Default Value: Off
Access Lock: Read Only

Value Type: Logical

Value Range: On—A bad control alarm is present
Off—A bad control alarm is not present
BADPVFL

**Point Type**  Regulatory, Counter

Bad PV alarm flag (Form AM88-454).

**Source**  User  
**Default Value**  Off  
**Access Lock**  Read Only

**Value Type**  Boolean

**Value Range**  On—A bad PV alarm is present  
                 Off—A bad PV alarm is not present

BADPVTR

**Point Type**  Regulatory

PV alarm transition (no form).

**Source**  User  
**Default Value**  NoChange  
**Access Lock**  Read Only

**Value Type**  ALTRAN enumeration

**Value Range**  NoChange—No change from previous state  
                 Rtn—First time return from alarm  
                 Alarm—First time in alarm
BEFAFT

**Point Type**  Regulatory, Timer, Counter, Switch, and Custom

BEFAFT is the before/after scheduling option that defines the processing time for this data point (as related to other points on the same schedule and usually in the same control strategy); or it defines the cycle within the AM processing in which the point is configured (Forms AM88-401, 430, 440, 450, and 460) (2.2.1.3, 3.6, and 4.2 in *AM Control Functions*).

**Source**  User  **Default Value**  No  **Access Lock**  DEB

**Value Type**  BEFAFT enumeration

**Value Range**  No  –  no Before/After or Cycle relationship; instead, the data point is automatically assigned to the least-loaded cycle in the schedule.

Before  –  exposes BEFAFTID

–  process this point before the NAME you enter in BEFAFTID.

After  –  exposes BEFAFTID.

–  process this point after the NAME you enter in BEFAFTID.

Cycle  –  exposes NORMCYCL.

–  process this point during the cycle you enter in NORMCYCL.

BEFAFTID

**Point Type**  Regulatory, Timer, Counter, Switch, and Custom

(Forms AM88-401, 430, 440, 450, and 460)

Name of point before or after which this point is to be configured (3.6 and 4.2 in *AM Control Functions*).

**Source**  User  **Default Value**  All underbars  **Access Lock**  DEB

**Value Type**  Ent_Id

**Value Range**  Ent_Id notation
BFF

**Point Type**  Regulatory

Applies to Pid with Feed Forward algorithms.

Feedforward input bias (Form AM88-456).

- **Source**  User
- **Default Value**  0.0
- **Access Lock**  Supvr

**Value Type**  Real

**Value Range**  Any real number

BIAS

**Point Type**  Regulatory

Bias constant in the control setpoint processing (Form AM88-441) (3.1.6.4, 3.1.8.3, and 4.1.4.1 in AM Control Functions).

- **Source**  User
- **Default Value**  0.0
- **Access Lock**  Oper

**Value Type**  Real

**Value Range**  BSLOLM through BSHILM

BKGCLBC

**Point Type**  Processor Status

Number of background CL blocks unable to be queued per second (current hour)

- **Source**  System
- **Default Value**  N/A
- **Access Lock**  Lock Read Only

**Value Type**  Real

**Value Range**  $\geq 0.0$
**BKGCLBP**

**Point Type**  Processor Status

Number of background CL blocks unable to be queued per second (previous hour)

**Source**  System  
**Default Value**  N/A  
**Access Lock**  Lock Read Only

**Value Type**  Real  

**Value Range**  \(\geq 0.0\)

**BKGCLBS**

**Point Type**  Processor Status

Number of background CL blocks unable to be queued per second (snapshot interval)

**Source**  System  
**Default Value**  N/A  
**Access Lock**  Lock Read Only

**Value Type**  Real  

**Value Range**  \(\geq 0.0\)

**BKGCLC**

**Point Type**  Processor Status

Number of background CL blocks run per second (current hour)

**Source**  System  
**Default Value**  N/A  
**Access Lock**  Lock Read Only

**Value Type**  Real  

**Value Range**  \(\geq 0.0\)
BKGCLP

**Point Type**  Processor Status

Number of background CL blocks run per second (previous hour)

| Source | System | Default Value | N/A | Access Lock | Lock Read Only |

| Value Type | Real |

| Value Range | >=0.0 |

BKGCLS

**Point Type**  Processor Status

Number of background CL blocks run per second (snapshot interval)

| Source | System | Default Value | N/A | Access Lock | Lock Read Only |

| Value Type | Real |

| Value Range | >=0.0 |

BKGCLNR(I)

**Point Type**  Processor Status

Name of CL block running as background task (I)

| Source | System | Default Value | N/A | Access Lock | Lock Read Only |

| Value Type | String |

| Value Range | 8 character string maximum |
**BKGDANC**

**Point Type**  Processor Status

Number of Background data access off node requests per second (current hour)

**Source**  System  **Default Value**  N/A  **Access Lock**  Lock Read Only

**Value Type**  Real

**Value Range**  >=0.0

**BKGDANP**

**Point Type**  Processor Status

Number of Background data access off node requests per second (previous hour)

**Source**  System  **Default Value**  N/A  **Access Lock**  Lock Read Only

**Value Type**  Real

**Value Range**  >=0.0

**BKGDANS**

**Point Type**  Processor Status

Number of Background data access off node requests per second (snapshot interval)

**Source**  System  **Default Value**  N/A  **Access Lock**  Lock Read Only

**Value Type**  Real

**Value Range**  >=0.0
**BKGDAREQ**

**Point Type**  Processor Status

Number of Background Data Access Requestors

<table>
<thead>
<tr>
<th>Source</th>
<th>Default Value</th>
<th>Access Lock</th>
</tr>
</thead>
<tbody>
<tr>
<td>System</td>
<td>N/A</td>
<td>Lock Read Only</td>
</tr>
</tbody>
</table>

**Value Type**  Integer

**Value Range**  0-32767

**BKGELTIM(I)**

**Point Type**  Processor Status

Elapsed time the CL running as background task (I) has been in the run state

<table>
<thead>
<tr>
<th>Source</th>
<th>Default Value</th>
<th>Access Lock</th>
</tr>
</thead>
<tbody>
<tr>
<td>System</td>
<td>N/A</td>
<td>Lock Read Only</td>
</tr>
</tbody>
</table>

**Value Type**  Real

**Value Range**  >=0.0

**BKGFMC**

**Point Type**  Processor Status

Number of Background requests to the File Manager per second (current hour)

<table>
<thead>
<tr>
<th>Source</th>
<th>Default Value</th>
<th>Access Lock</th>
</tr>
</thead>
<tbody>
<tr>
<td>System</td>
<td>N/A</td>
<td>Lock Read Only</td>
</tr>
</tbody>
</table>

**Value Type**  Real

**Value Range**  >=0.0
BKGFMP

**Point Type**  Processor Status

Number of Background requests to the File Manager per second (current hour)

<table>
<thead>
<tr>
<th>Source</th>
<th>System</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Default Value</strong></td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Access Lock</strong></td>
<td>Lock Read Only</td>
</tr>
</tbody>
</table>

**Value Type**  Real

**Value Range**  >=0.0

BKGFMS

**Point Type**  Processor Status

Number of Background requests to the File Manager per second (current hour)

<table>
<thead>
<tr>
<th>Source</th>
<th>System</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Default Value</strong></td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Access Lock</strong></td>
<td>Lock Read Only</td>
</tr>
</tbody>
</table>

**Value Type**  Real

**Value Range**  >=0.0

| BKGPNTRN(I) |

**Point Type**  Processor Status

Name of the point associated with the CL block running as a background task (I)

<table>
<thead>
<tr>
<th>Source</th>
<th>System</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Default Value</strong></td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Access Lock</strong></td>
<td>Lock Read Only</td>
</tr>
</tbody>
</table>

**Value Type**  Real

**Value Range**  8 or 16 character string maximum
**BKGQFUL**

**Point Type**  Processor Status

Background queue status

| Source  | System        | Default Value | N/A | Access Lock | Lock Read Only |

**Value Type**  Boolean

**Value Range**  False - background CL queue is not full
True - background CL queue is full

**BKGQTIME**

**Point Type**  Processor Status

Amount of time the last background CL block was in the queue

| Source  | System        | Default Value | N/A | Access Lock | Lock Read Only |

**Value Type**  Real

**Value Range**  >=0.0

**BKGQUEUE**

**Point Type**  Processor Status

Number of Background requests to the File Manager per second (current hour).

| Source  | System        | Default Value | N/A | Access Lock | Lock Read Only |

**Value Type**  Integer

**Value Range**  0-32767
### BKGRUN

**Point Type**  Processor Status  
Number of background tasks active  

<table>
<thead>
<tr>
<th>Source</th>
<th>System</th>
<th>Default Value</th>
<th>N/A</th>
<th>Access Lock</th>
<th>Lock Read Only</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value Type</td>
<td>Integer</td>
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</tr>
<tr>
<td>Value Range</td>
<td>0-32767</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### BKGSTACK

**Point Type**  Processor Status  
Background task stack size  

<table>
<thead>
<tr>
<th>Source</th>
<th>System</th>
<th>Default Value</th>
<th>N/A</th>
<th>Access Lock</th>
<th>Lock Read Only</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value Type</td>
<td>Integer</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Value Range</td>
<td>0-32767</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### BKGTASKS

**Point Type**  Processor Status  
Number of background tasks  

<table>
<thead>
<tr>
<th>Source</th>
<th>System</th>
<th>Default Value</th>
<th>N/A</th>
<th>Access Lock</th>
<th>Lock Read Only</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value Type</td>
<td>Integer</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Value Range</td>
<td>0-32767</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**BLKNAME(N)**

- **Point Type**: Custom, Regulatory, and Switch
- **Linked CL block Name (no form)** (3.6, 4.1.5.1, and 4.2 in *AM Control Functions*).
- **Source**: User
- **Default Value**: Blanks
- **Access Lock**: Read Only

**Value Type**: Array (1..255) of String (8)

**Value Range**: Any alphanumeric string up to 8 characters in length

---

**BLKTIME(N)**

- **Point Type**: Custom and Regulatory
- **Time and Date when the CL Block was compiled (no form)** (3.6, 4.1, 5.1, and 4.2 in *AM Control Functions*).
- **Source**: System
- **Default Value**: 0
- **Access Lock**: Read Only

**Value Type**: Array (1..255) of Time/Date

**Value Range**: Time/Date is taken from the system Time/Date at the time of the compile

---

**BRANCHES(N)**

- **Point Type**: Custom, Regulatory, and Switch
- **Number of backward branches taken the last time the CL Block was executed (no form)** (4.1.5.1 in *AM Control Functions*).
- **Source**: System
- **Default Value**: 0
- **Access Lock**: Read Only

**Value Type**: Array (1..255) of Integer

**Value Range**: 0 through 330167
BSHILM

Point Type  Regulatory

High limit value for BIAS (3.1.6.4 in AM Control Functions) (Form AM88-441).

Source  User  Default Value  50.00  Access Lock  Supvr

Value Type  Real

Value Range  Real, >= BSILOLM
NaN is a possible entry

BSILOLM

Point Type  Regulatory

Low limit value for BIAS (3.1.6.4 in AM Control Functions) (Form AM88-441).

Source  User  Default Value  -50.0  Access Lock  Supvr

Value Type  Real

Value Range  Real, <= BSHILM
NaN is a possible entry

BYPASS

Point Type  Regulatory

Select use of high/low selection or bypassing high/low selection with the OrSel control algorithm (3.1.11 in AM Control Functions) (no form).

Source  User  Default Value  Off  Access Lock  Engr-DEB

Value Type  Boolean

Value Range  Off—Do not bypass high/low selection
On—Bypass high/low selection
C

**Point Type**  Regulatory

Overall scale factor in PV algorithms (Forms AM88-412, 415, 416, 417, 418, and 419) applies to these algorithms:

- Flow Compensation (*FlowComp*) *(AM Algorithm Engineering Data, Section 4)*
- Totalizer (*Totalizr*) *(AM Algorithm Engineering Data, Section 7)*
- Multiply/Divide (*MulDiv*) *(AM Algorithm Engineering Data, Section 9)*
- Sum of Products (*SumProd*) *(AM Algorithm Engineering Data, Section 11)*
- VDT with Lead/Lag (*VdtLdLag*) *(AM Algorithm Engineering Data, Section 12)*

Also, overall gain for the Summer PV algorithm *(AM Algorithm Engineering Data, Section 10).*

<table>
<thead>
<tr>
<th>Source</th>
<th>User</th>
<th>Default Value</th>
<th>1.0</th>
<th>Access Lock</th>
<th>Supvr</th>
</tr>
</thead>
</table>

**Value Type**  Real

**Value Range**  Any real number

C1 through C8

**Point Type**  Regulatory

Scale factors for PV algorithms (Forms AM88-412, 415, 426, 417, and 418) applies to these algorithms:

- Flow Compensation (*FlowComp*) (C1, C2) *(AM Algorithm Engineering Data, Section 4)*
- Multiply/Divide (*MulDiv*) (C1-C7) *(AM Algorithm Engineering Data, Section 9)*
- Sum of Products (*SumProd*) (C1-C7) *(AM Algorithm Engineering Data, Section 11)*
- VDT with Lead/Lag (*VdtLdLag*) (C1, C2) *(AM Algorithm Engineering Data, Section 12)*
- Summer (*Summer*) (C1-C8) *(AM Algorithm Engineering Data, Section 10)*

<table>
<thead>
<tr>
<th>Source</th>
<th>User</th>
<th>Default Value</th>
<th>1.0</th>
<th>Access Lock</th>
<th>Supvr</th>
</tr>
</thead>
</table>

**Value Type**  Real

**Value Range**  >= 0.1 For Flow Compensation algorithm
CCACCSTS

**Point Type**  Regulatory, Counter, Timer

Cutout access status (no form) (3.1.1 and 3.1.4.8 in *AM Control Functions*).

<table>
<thead>
<tr>
<th>Source</th>
<th>Default Value</th>
<th>Access Lock</th>
</tr>
</thead>
<tbody>
<tr>
<td>User</td>
<td>NoError</td>
<td>Read Only</td>
</tr>
</tbody>
</table>

**Value Type**  PASTATUS enumeration

**Value Range**
- NoError—The source parameter was fetched with no error.
- Comm—The source parameter could not be fetched because of a communication error.
- Config—The source parameter could not be fetched because of a configuration error.
- Software—An unexpected error occurred. Notify Honeywell TAC.

CCACTSTS

**Point Type**  Regulatory, Counter, Timer

Contact cutout-activity status, which indicates the initial Active or Inactive alarm cutout connection status (Forms AM88-470, 430, and 440) (3.1.4.7 in *AM Control Functions*).

If the contact cutout-source point, or source parameter is null, the activity status is automatically set to NotConfig during loading. Because of this, NotConfig need not be entered.

<table>
<thead>
<tr>
<th>Source</th>
<th>Default Value</th>
<th>Access Lock</th>
</tr>
</thead>
<tbody>
<tr>
<td>User</td>
<td>Active</td>
<td>Supvr</td>
</tr>
</tbody>
</table>

**Value Type**  IOACTSTS enumeration

**Value Range**
- Active—Indicates the connection will be processed.
- Inactive—Indicates the connection will not be processed.
- NotConfig—If you select NotConfig, an error will be reported as the point is loaded. However, NotConfig can be selected with no error if a Null Entity ID or a Null parameter has been entered for the connection source or destination.

CCINPT

**Point Type**  Regulatory, Counter, and Timer

Contact-cutout input option (3.1.4.7 in *AM Control Functions*) (Forms AM88-470, 430, and 440).

<table>
<thead>
<tr>
<th>Source</th>
<th>Default Value</th>
<th>Access Lock</th>
</tr>
</thead>
<tbody>
<tr>
<td>User</td>
<td>No</td>
<td>Read Only</td>
</tr>
</tbody>
</table>

**Value Type**  CCINPT enumeration

**Value Range**
- Yes—A contact cutout connection is required.
- No—No contact cutout connection is required.
CCSRC

Point Type  Regulatory, Counter, Timer

Contact-cutout connection source (3.1.4.7 in AM Control Functions) (Forms AM88-470, 430, and 440).

Source     User            Default Value  Blanks            Access Lock  DEB

Value Type  Point.parm

Value Range  Up-to-27 characters

CDSAVGC

Point Type  Processor Status

Average normal Custom Data parameter accesses per second during the current hour (CL accesses to the same point are fast CDS accesses and are not considered normal). (No form.)

Source     System            Default Value  N/A            Access Lock  Read Only

Value Type  Real

Value Range  > = 0.0

CDSAVGP

Point Type  Processor Status

Average normal Custom Data parameter accesses per second during the previous hour (CL accesses to the same point are fast CDS accesses and are not considered normal). (No form.)

Source     System            Default Value  N/A            Access Lock  Read Only

Value Type  Real

Value Range  > = 0.0
CDSAVGS

**Point Type**  Processor Status

Average normal Custom Data parameter accesses per second during the last snapshot period (normally 10 seconds) (CL accesses to the same point are fast CDS accesses and are not considered normal). (No form.)

<table>
<thead>
<tr>
<th>Source</th>
<th>System</th>
<th>Default Value</th>
<th>N/A</th>
<th>Access Lock</th>
<th>Read Only</th>
</tr>
</thead>
</table>

**Value Type**  Real

**Value Range**  $\geq 0.0$

CIACSTS

**Point Type**  Regulatory, Counter

Control input-connection activity status [(N) is an index from 0 through 8] (3.1.4.2 in AM Control Functions) (Forms AM88-451 through 459 and 461 through 463).

Counter input access status (no form) (3.1.1, 3.1.4.7, 3.1.4.8, 3.3.3, and 3.3.6 in AM Control Functions).

<table>
<thead>
<tr>
<th>Source</th>
<th>User</th>
<th>Default Value</th>
<th>NoError</th>
<th>Access Lock</th>
<th>Read Only</th>
</tr>
</thead>
</table>

**Value Type**  PASTATUS enumeration

**Value Range**  NoError—The source parameter was fetched with no error.
Comm—The source parameter could not be fetched because of a communication error.
Config—The source parameter could not be fetched because of a configuration error.
Software—An unexpected error occurred. Notify Honeywell TAC.
StorWErr—Unable to store value as received—value clamped by effect of another parameter.
StorFail—Value cannot be stored to destination parameter because of state of operator-controlled interlock.
CIACTSTS(N)

**Point Type**  Regulatory, Counter

Control input-connection activity status [(N) is an index from 0 through 8] (3.1.4.2 in AM Control Functions) (Forms AM88-451 through 459 and 461 through 463).

Also input-connection access status for Counter Points (no index) (3.3 in AM Control Functions) (Form AM88-440).

**Source**  User  **Default Value**  Active  **Access Lock**  Supvr

**Value Type**  IOACTSTS enumeration

**Value Range**  
- Active—Indicates the connection will be processed.
- Inactive—Indicates the connection will not be processed.
- NotConfg—After loading, indicates the connections are not configured.
  —DO NOT ENTER NotConfg.

CIDSTN(N)

**Point Type**  Regulatory

CIDSTN[N] are the regulatory control algorithm input destinations, where [N] is the index that can vary from 0 through 8, depending on the algorithm you use (Forms AM88-451 through 459 and 461 through 463).

**Source**  User  **Default Value**  
- PV for Ctl Pid
- PV & FF for PidFF
- PV, RFB, & TRFB for CTL PidErrf
- Null for Ctl Lead/Lag, OrSel,& Switch
- X2, X3, & X4 for Ctl Summer, Mul/Div, and IncrSum
- X1 for Ctl Auto/Man
- X2 for Ctl Ratio

**Access Lock**  DEB

**Value Range**  
- Parmtr_ID
- 8 characters maximum
CISRC(N)

Point Type  Regulatory

CISRC[N] are the regulatory control algorithm input-source connections, where [N] is the index that can vary from 0 through 8, depending on the algorithm you use (Forms AM88-451 through 459 and 461 through 463).

CISRC also is the counter point input-source connection (Form AM88-440).

Source  User  Default Value  Null  Access Lock  DEB

Value Type  Source Point.Parameter notation

Value Range  Source Point.Parameter—usually up to 17 characters long, with optional index (N) up to 10 additional characters, or 27 characters maximum.

CL (Control Algorithm)

This algorithm is a user-written CL block that is like any other CL block, except that it is inserted at the control-algorithm insertion point in the processing sequence, and it is executed instead of a standard control algorithm.

The CL block must calculate and store a control-algorithm output value in CV. Inputs to the CL block are usually acquired by direct references in CL, but can be acquired through general inputs to a Custom Data Segment (CDS) that is included in the data point. The value placed in CV by the CL block is processed just as CV is processed for any other point that uses a control algorithm.

The CL block must also compute and store antiwindup direction in ARWDI. Propagation of windup status to the primaries is automatic. If this data point is part of an override strategy, the CL block must include appropriate override functions.

Parameters involved in configuring this algorithm are the following and those listed in Section 2 under Regulatory Point.

<table>
<thead>
<tr>
<th>Control Common Display</th>
<th>Setpoint Display</th>
<th>Control CL Algo Display</th>
<th>Control Output Connections Display</th>
</tr>
</thead>
<tbody>
<tr>
<td>NMODE</td>
<td>SPFORMAT</td>
<td>CVTYPE</td>
<td>NOCOPTS</td>
</tr>
<tr>
<td>NMODATR</td>
<td>SPEUHI</td>
<td>INITTYPE</td>
<td>CODSTN(N)</td>
</tr>
<tr>
<td>MODEPERM</td>
<td>SPEULO</td>
<td>ARWDI</td>
<td>COACTSTS(N)</td>
</tr>
<tr>
<td>EXTSWOPT</td>
<td>SPHILM</td>
<td></td>
<td>OPHILM</td>
</tr>
<tr>
<td></td>
<td>SPOLOM</td>
<td></td>
<td>OPLLOM</td>
</tr>
<tr>
<td></td>
<td>SP</td>
<td></td>
<td>OPMCHLM</td>
</tr>
<tr>
<td></td>
<td>SPOPT</td>
<td></td>
<td>OPROCLM</td>
</tr>
<tr>
<td></td>
<td>AVDEVTP</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
CL (PV Algorithm)

This algorithm is a user-written CL block that is like any other CL block, except that it is inserted at the PV-algorithm insertion point in the processing sequence, and it is executed instead of one of the standard PV algorithms.

The CL block must calculate and store a value in \texttt{PV\_CALC}. Inputs to the CL block are usually acquired by direct references in CL, but they can also be acquired through general inputs to a Custom Data segment (CDS) that are included in the data point. The value placed in \texttt{PV\_CALC} by the CL block is processed just as \texttt{PV\_CALC} is processed for any other data point that uses a PV algorithm.

Parameters involved in configuring this algorithm are the following and those listed in Section 2 under Regulatory Point.

<table>
<thead>
<tr>
<th>PV Common Display</th>
</tr>
</thead>
<tbody>
<tr>
<td>PVFORMAT</td>
</tr>
<tr>
<td>PVEUHI</td>
</tr>
<tr>
<td>PVEULO</td>
</tr>
<tr>
<td>PVEXEUHI</td>
</tr>
<tr>
<td>PVEXEULO</td>
</tr>
<tr>
<td>PVLCLAMP</td>
</tr>
<tr>
<td>PV_SRC_OPT</td>
</tr>
<tr>
<td>PV_SOURCE</td>
</tr>
<tr>
<td>PV_FLT_OPT</td>
</tr>
<tr>
<td>TF IN MIN</td>
</tr>
<tr>
<td>PVTV</td>
</tr>
</tbody>
</table>

\textbf{CLACTIVE(N)}

\textbf{Point Type} Custom, Regulatory, and Switch

CL block activity status (no form) (3.6, 4.1.5.1, and 4.2 in \textit{AM Control Functions}).

<table>
<thead>
<tr>
<th>Source</th>
<th>User</th>
<th>Default Value</th>
<th>Not_Config</th>
<th>Access Lock</th>
<th>Engr</th>
</tr>
</thead>
</table>

| Value Type | Array (1..255) of CLACTSTS enumeration |

<table>
<thead>
<tr>
<th>Value Range</th>
<th>Active—The linked CL Block executes each time the point is executed.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Inactive—A CL Block is linked to this slot (N), but does not execute.</td>
</tr>
<tr>
<td></td>
<td>Not_Config—Indicates you have not linked a CL Block to this slot (N).</td>
</tr>
</tbody>
</table>
CLAVGC

Point Type  Processor Status

Average number of CL blocks executed per second in the current hour (no form).

Source  System  Default Value  N/A  Access Lock  Read Only

Value Type  Real

Value Range  \( \geq 0.0 \)

CLAVGP

Point Type  Processor Status

Average number of CL blocks executed per second in the previous hour (no form).

Source  System  Default Value  N/A  Access Lock  Read Only

Value Type  Real

Value Range  \( \geq 0.0 \)

CLAVGS

Point Type  Processor Status

Average number of CL blocks executed per second during the last snapshot period (nominally 10 seconds) (no form).

Source  User  Default Value  0  Access Lock  Read Only

Value Type  Real

Value Range  \( \geq 0.0 \)
CLBACKF

Point Type  Processor Status

Number of branches allowed on a foreground CL block linked to a point assigned to the fast point processor (no form) (4.1.4.7 in AM Control Functions).

Source  User  Default Value  100  Access Lock  Engr

Value Type  Integer

Value Range  0 through 32767

CLBACKIP

Point Type  Processor Status

Specifies point execution limits in terms of foreground CL backward branches for IPP points. If exceeded, the CL aborts. It is saved by database checkpoint.

Source  User  Default Value  500  Access Lock  Engr

Value Type  Integer

Value Range  0 through 32767

CLBACKS

Point Type  Processor Status

Number of back branches for a foreground CL block linked to a point assigned to the slow point processor (no form) (4.1.4.7 in AM Control Functions).

Source  User  Default Value  500  Access Lock  Engr

Value Type  Integer

Value Range  0 through 32767
CLBLKERR(N)

**Point Type**  Custom, Regulatory, and Switch

CL block error status (no form) (3.6, 4.1.5.1, and 4.2 in *AM Control Functions*).

**Source**  System  **Default Value**  NoError  **Access Lock**  Read Only

**Value Type**  Array (1..255) of CLErrSts enumeration

**Value Range**  CLErrSts:
- 0  NoError—No error detected
- 1  Error3—Should not happen—Notify Honeywell TAC
- 2  LimViol—Limit Violation (minor error)
- 3  Rights—Access rights violation (minor error)
- 4  CommErr—Communication Error (minor error)
- 5  Error2—Should not happen—Notify Honeywell TAC
- 6  BadValst—Bad Value Store (CL Failure condition)
- 7  ComAbort—Communication Error abort (CL Failure condition)
- 8  Abort—Abort statement executed (CL Failure condition)
- 9  Error1—Should not happen—Notify Honeywell TAC
- 10  BranchV—Backward Branch Violation (CL Error condition)
- 11  ArithErr—Arithmetic Error (CL Error condition)
- 12  ArrayLim—Array Limit Violation (CL Error condition)
- 13  Range—Range Limit Violation (CL Error condition)
- 14  ProgErr—Programming Error (CL Error condition)
- 15  Key Level—Key Level Restriction (CL Error condition)
- 16  CnfErr—Configuration Error (CL Error condition)

CLEALMFL

**Point Type**  Regulatory, Custom, and Switch

CL error alarm flag (no form) (3.6, 3.7, and 3.7.3 in *AM Control Functions*).

**Source**  System  **Default Value**  False  **Access Lock**  Read Only

**Value Type**  Boolean

**Value Range**  True—CL Error condition exists
False—CL Error condition does not exist
CLERRLOC(N)

**Point Type** Custom, Regulatory, and Switch

Location at which an error was detected during the last execution of a CL block (6.3 in *CL Data Entry*) (4.1.4.7 and 4.1.5.1 in *AM Control Functions*) (no form).

<table>
<thead>
<tr>
<th>Source</th>
<th>System</th>
<th>Default Value</th>
<th>0</th>
<th>Access Lock</th>
<th>Read Only</th>
</tr>
</thead>
</table>

**Value Type** Array (1..255) of Integer

**Value Range** 0 through 32767

CLERRSUM

**Point Type** Custom, Regulatory, and Switch

Summary of all **CLBLKERR** statuses. This represents the most severe error status of all CLs on the point (no form) (3.6, 4.1.5.1, and 4.2 in *AM Control Functions*).

<table>
<thead>
<tr>
<th>Source</th>
<th>System</th>
<th>Default Value</th>
<th>NoError</th>
<th>Access Lock</th>
<th>Read Only</th>
</tr>
</thead>
</table>

**Value Type** CLErrSts enumeration

**Value Range** CLErrSts:
- 0 NoError—No error detected
- 1 Error3—Should not happen—Notify Honeywell TAC
- 2 LimViol—Limit Violation (minor error)
- 3 Rights—Access rights violation (minor error)
- 4 CommErr—Communication Error (minor error)
- 5 Error2—Should not happen—Notify Honeywell TAC
- 6 BadValst—Bad Value Store (CL Failure condition)
- 7 ComAbort—Communication Error abort (CL Failure condition)
- 8 Abort—Abort statement executed (CL Failure condition)
- 9 Error1—Should not happen—Notify Honeywell TAC
- 10 BranchV—Backward Branch Violation (CL Error condition)
- 11 ArithErr—Arithmetic Error (CL Error condition)
- 12 ArrayLim—Array Limit Violation (CL Error condition)
- 13 Range—Range Limit Violation (CL Error condition)
- 14 ProgErr—Programming Error (CL Error condition)
- 15 Key Level—Key Level Restriction (CL Error condition)
- 16 CnfErr—Configuration Error (CL Error condition)
### CLFALMFL

**Point Type** Regulatory, Custom, and Switch

CL fatal error alarm flag (no form) (3.6, 3.7, and 3.7.3 in *AM Control Functions*).

<table>
<thead>
<tr>
<th>Source</th>
<th>Default Value</th>
<th>Access Lock</th>
</tr>
</thead>
<tbody>
<tr>
<td>System</td>
<td>False</td>
<td>Read Only</td>
</tr>
</tbody>
</table>

**Value Type** Boolean

**Value Range**

- True—CL Failure condition exists
- False—CL Failure condition does not exist

### CLMAXC

**Point Type** Processor Status

Maximum number of CL instructions executed per cycle in the current hour (no form).

<table>
<thead>
<tr>
<th>Source</th>
<th>Default Value</th>
<th>Access Lock</th>
</tr>
</thead>
<tbody>
<tr>
<td>System</td>
<td>N/A</td>
<td>Read Only</td>
</tr>
</tbody>
</table>

**Value Type** Integer

**Value Range** 0 through 32767

### CLMAXP

**Point Type** Processor Status

Maximum number of CL instructions executed per cycle in the previous hour (no form).

<table>
<thead>
<tr>
<th>Source</th>
<th>Default Value</th>
<th>Access Lock</th>
</tr>
</thead>
<tbody>
<tr>
<td>System</td>
<td>N/A</td>
<td>Read Only</td>
</tr>
</tbody>
</table>

**Value Type** Integer

**Value Range** 0 through 32767
CLMINC

Point Type  Processor Status

Minimum number of CL blocks executed per cycle in the current hour (no form).

Source  System  Default Value  N/A  Access Lock  Read Only

Value Type  Integer

Value Range  0 through 32767

CLMINP

Point Type  Processor Status

Minimum number of CL blocks executed per cycle in the previous hour (no form).

Source  System  Default Value  N/A  Access Lock  Read Only

Value Type  Integer

Value Range  0 through 32767

CLREVISN(N)

Point Type  Custom, Regulatory, and Switch

Version number of the CL compiler in operation when the CL block was compiled (no form) (4.1.5.1 in AM Control Functions).

Source  System  Default Value  N/A  Access Lock  Read Only

Value Type  Array (1..255) of Integer

Value Range  0 through 32767
CLSLOTS

**Point Type** Custom, Regulatory, and Switch

Number of CL slots allocated for this point (4.1.5.2 in AM Control Functions) (Forms AM88-450, 460, and 480).

**Source** User  
**Default Value** 0  
**Access Lock** DEB

**Value Type** Integer

**Value Range** 0 through 255

CLTIMEF

**Point Type** Processor Status

CL backward-branch timeout in milliseconds (fast processor) (4.1.4.7 in AM Control Functions) (no form).

**Source** User  
**Default Value** N/A  
**Access Lock** DEB

**Value Type** Integer

**Value Range** 0 through 999

CLTIMES

**Point Type** Processor Status

CL backward-branch timeout in milliseconds (slow processor) (4.1.4.7 in AM Control Functions) (no form).

**Source** User  
**Default Value** N/A  
**Access Lock** DEB

**Value Type** Integer

**Value Range** 0 through 999
**CLUSECNT(N)**

**Point Type** Custom, Regulatory, and Switch

Number of points to which the CL block is linked within a given unit (no form) (4.1.5.1 in AM Control Functions).

<table>
<thead>
<tr>
<th>Source</th>
<th>Default Value</th>
<th>Access Lock</th>
</tr>
</thead>
<tbody>
<tr>
<td>System</td>
<td>N/A</td>
<td>Read Only</td>
</tr>
</tbody>
</table>

**Value Type** Array (1..255) of Integer

**Value Range** 0 through 32767

**CLVERSIN(N)**

**Point Type** Custom, Regulatory, and Switch

Revision number of the CL Compiler in operation when the CL block was compiled (no form) (4.1.5.1 in AM Control Functions).

<table>
<thead>
<tr>
<th>Source</th>
<th>Default Value</th>
<th>Access Lock</th>
</tr>
</thead>
<tbody>
<tr>
<td>System</td>
<td>N/A</td>
<td>Read Only</td>
</tr>
</tbody>
</table>

**Value Type** Array (1..255) of Integer

**Value Range** 0 through 32767

**CNFERRFL**

**Point Type** Regulatory, Timer, Counter, Custom, and Switch

Configuration error alarm flag (no form).

<table>
<thead>
<tr>
<th>Source</th>
<th>Default Value</th>
<th>Access Lock</th>
</tr>
</thead>
<tbody>
<tr>
<td>System</td>
<td>Off</td>
<td>Read Only</td>
</tr>
</tbody>
</table>

**Value Type** Boolean

**Value Range** Off—No configuration error is present
On—A configuration error is present
CNTLLOCK

Point Type Counter and Timer

Operator control change lock (Forms AM88-430 and 440) (3.3.8, 3.3.9, and 3.5.1 in AM Control Functions).

Source User Default Value Permit Access Lock DEB

Value Type MODEPERM enumeration

Value Range Permit—This selection allows the operator to make state changes.
NotPerm—This selection stops the operator from making state changes.

COACCSTS(N)

Point Type Regulatory

Control output-connection access status [(N) is an index from 0 through 8] (3.1.4.5 in AM Control Functions) (no form).

Source User Default Value NoError Access Lock Read Only

Value Type PASTATUS enumeration

Value Range NoError—No access error
Comm—Source parameter value not fetched because of a communication error
Conf—Source parameter value not fetched because of a configuration error
StorWErr—Unable to store value as received—value clamped by effect of another parameter.
StorFail—Value cannot be stored to destination parameter because of state of operator-controlled interlock.

COACTSTS(N)

Point Type Regulatory

COACTSTS(N) is the initial status for this output connection (Forms AM88-451 through 459 and 461 through 464) (3.1.3 and 3.1.4.7 in AM Control Functions).

Source User Default Value Active Access Lock DEB

Value Type IOACTSTS enumeration

Value Range Active—Indicates the initial status for this connection
Inactive—Indicates your configured initial status for this connection
NotConf—If you select NotConf, an error will be reported as the point is loaded.
However, NotConf can be selected with no error if a Null Entity ID or a Null parameter has been entered for the connection source or destination.
CODSTN(N)

Point Type  Regulatory

CODSTN(N) are the regulatory control algorithm output destinations, where (N) is the index which can vary from 0 through 8, depending on the algorithm you use (Forms AM88-451 through 459 and 461 through 464).

Source  User  Default Value  Blanks  Access Lock  DEB

Value Type  Destination Point_ID.Parameter

Value Range  Destination Point_ID.Parameter notation
  13 characters maximum

COMMAND

Point Type  Regulatory

Selects the current operating state of the Totalizr PV algorithm (Section 7 of AM Algorithm Engineering Data) (no form).

Source  User  Default Value  NaN  Access Lock  Oper

Value Type  COMMAND enumeration

Value Range  None—No operation
  Start—Start totalizer, STATE goes to Running
  Stop—Stop totalizer, STATE goes to Stopped
  Reset—Reset command, places the value in RESETVAL in PVCALC

COMPHILM

Point Type  Regulatory

High limit value for COMPTERM in the PV Flow Compensation algorithm (FlowComp) (AM Algorithm Engineering Data, Section 4) (Form AM88-412).

Source  User  Default Value  1.25  Access Lock  Supvr

Value Type  Real

Value Range  COMPLLOM TO 10.0
COMPLOLM

Point Type  Regulatory

Low limit value for COMPTERM in the PV Flow Compensation algorithm (FlowComp) (AM Algorithm Engineering Data, Section 4) (Form AM88-412).

Source  User  Default Value  0.8  Access Lock  Supvr

Value Type  Real

Value Range  0.0 to COMPHILM

COMPTERM

Point Type  Regulatory

Compensation term for the PV Flow Compensation algorithm (FlowComp) (AM Algorithm Engineering Data, Section 4) (Form AM88-412).

Source  User  Default Value  1.0  Access Lock  Read Only

Value Type  Real

Value Range  >= 0.0

CONTCUT

Point Type  Regulatory, Flag, Timer, Counter, Custom, and Switch

Contact cutout flag—indicates the status of alarm cutout from the secondary cutout point (4.3.1.7 in System Control Functions) (no form).

Source  User  Default Value  Off  Access Lock  Prog

Value Type  Boolean

Value Range  On—Alarms from the secondary cutout point are cut out.
           Off—Alarms from the secondary cutout point are not cut out.
CPFMERR

**Point Type**  Processor Status

Contains the secondary status return code when a File Manager error occurs during AM checkpoint.

**Source**  System  **Default Value**  0  **Access Lock**  Read Only

**Value Type**  Integer

**Value Range**  0 through 32767  
See heading 4.10 in the *CL/AM Reference Manual* for a listing of all File Manager error codes.

CPTIMEC(I)

**Point Type**  Processor Status

Time required to checkpoint a Unit where I is the Unit number (no form).

**Source**  System  **Default Value**  0  **Access Lock**  Read Only

**Value Type**  Integer

**Value Range**  0 through 32767

CPTIMEFL

**Point Type**  Processor Status

Time required to checkpoint all units to floppy (no form).

**Source**  User  **Default Value**  0  **Access Lock**  Read Only

**Value Type**  Real

**Value Range**  \( \geq 0.0 \)
CPTIMEHM

**Point Type**  Processor Status

Time required to checkpoint all units to the History Module (no form).

**Source**  User  **Default Value**  0  **Access Lock**  Read Only

**Value Type**  Real

**Value Range**  $\geq 0.0$

**CTLACTN**

**Point Type**  Regulatory

Control action—For PID algorithms, specifies the direction the output ($CV$) moves as the error changes (18.4.4 in *AM Algorithm Engineering Data*) (Forms *AM88-451, 455, and 456*).

**Source**  User  **Default Value**  Reverse  **Access Lock**  Engr

**Value Type**  POLARITY enumeration

**Value Range**  Direct—as the error increase, the $CV$ value increases
Reverse—as the error increase, the $CV$ value decreases
CTALGID

**Point Type**  Regulatory

The control algorithm used by this data point (refer to Sections 13 through 26 in *AM Algorithm Engineering Data* for a description of each algorithm) (Form AM88-401).

**Source**  User  **Default Value**  Null  **Access Lock**  Prog

**Value Type**  CTALALGO enumeration

**Value Range**  Null—This point doesn't use a control algorithm; therefore, it doesn't use control-algorithm processing.  
    Pid—Selects proportional, integral, and derivative control algorithm.  
    PidErfb—Selects proportional, integral, and derivative control with error feedback.  
    PidFF—Selects proportional, integral, and derivative control with feedforward.  
    IncrSum—Selects incremental summer control algorithm.  
    LeadLag—Selects lead-lag control algorithm.  
    AutoMan—Selects auto-manual control algorithm.  
    Summer—Selects summer control algorithm.  
    MulDiv—Selects multiply-divide control algorithm.  
    RatioCtl—Selects ratio control algorithm.  
    ORSel—Selects override selector control algorithm.  
    Switch—Selects switch control algorithm.  
    RampSoak—Selects ramp and soak control algorithm.  
    CL—Selects CL algorithm.

CTLEQN

**Point Type**  Regulatory

Control equation selection (Forms AM88-451, 453, 454, 455, 456, 461, and 462).

**Source**  User  **Default Value**  EqA  **Access Lock**  Prog

**Value Type**  ALGOEQN enumeration

**Value Range**  EqA  EqB  EqC  EqD  for control PID algorithm  
    EqA  EqB  for control Summer, Orsel, and Switch algorithms  
    EqA  EqB  EqC  for control Mul/Div algorithm
CTRLINIT

Point Type  Regulatory

Control initialization request (no form) (3.1.3 and 3.1.9.2 in AM Control Functions).

Source  User  Default Value  No  Access Lock  Prog

Value Type  Boolean

Value Range  On—Force initialization to take place
Off—Normal operation

CURSEGID

Point Type  Regulatory

Current segment for the Ramp and Soak (RampSoak) algorithm (Section 22 in AM Algorithm Engineering Data) (no form).

Source  User  Default Value  Ramp1  Access Lock  Oper

Value Type  CURSEGID enumeration

Value Range  Ramp1 through Ramp6 or Soak1 through Soak6

CUTOFFLM

Point Type  Regulatory

Cutoff limit for the Totalizer and VDT with LeadLag (VdtLdLag) algorithms (7.4.4 and 12.4.1 in AM Algorithm Engineering Data) (Forms AM88-418 and 419).

Source  User  Default Value  0.0  Access Lock  Supvr

Value Type  Real

Value Range  >= 0.0
NaN is a possible entry
CV

**Point Type**  Regulatory

The result of control algorithm procession prior to output processing (3.1.12 in *AM Control Functions*) (No Form).

**Source**  User  **Default Value**  NaN  **Access Lock**  Prog

**Value Type**  Real

**Value Range**  Any real number

CVBAVGS

**Point Type**  Processor Status

Average Current value buffer memory used during the last snapshot period (nominally 10 seconds) (no form).

**Source**  User  **Default Value**  0  **Access Lock**  Read Only

**Value Type**  Real

**Value Range**  0.0 through **MEMCVBLM**

CVEUHI

**Point Type**  Regulatory

**CV** output range in EU that corresponds to the 100% value of **OP** (3.1.1 in *AM Control Functions*) (Forms AM88-451 through 459 and 461 through 464).

**Source**  User  **Default Value**  100.0  **Access Lock**  Engr-DEB

**Value Type**  Real

**Value Range**  > **CVEULO**
**CVEULO**

**Point Type**  Regulatory

CV output range in EU that corresponds to the 0% value of OP (3.1.1 in *AM Control Functions*) (Form AM88-451 through 459 and 461 through 464).

**Source**  User  
**Default Value**  0.0  
**Access Lock**  Engr-DEB

**Value Type**  Real

**Value Range**  < CVEUHI

---

**CVTYPE**

**Point Type**  Regulatory

Type of value in CV (3.1.12 in *AM Control Functions*) (Form AM88-464).

**Source**  User  
**Default Value**  Percent  
**Access Lock**  DEB

**Value Type**  CVTYPE enumeration

**Value Range**  Percent—Assigns % units to the computed result  
EngrUnit—Assigns engineering units to the computed result
D

Point Type  Regulatory

Overall bias for the following PV algorithms:

- **Summer** (Section 10 in *AM Algorithm Engineering Data*)
- **Multiply/Divide** (**MulDiv**) (Section 9 in *AM Algorithm Engineering Data*)
- **Sum of Products** (**SumProd**) (Section 11 in *AM Algorithm Engineering Data*)

(Forms *AM88-415* through *418*)

<table>
<thead>
<tr>
<th>Source</th>
<th>User</th>
<th>Default Value</th>
<th>0.0</th>
<th>Access Lock</th>
<th>Supvr</th>
</tr>
</thead>
</table>

Value Type  Real

Value Range  \( \geq 0.0 \)

D1 through D7

Point Type  Regulatory

Applies to PV algorithms.

\( \text{D1 through D7} \) are the bias constants for inputs \( \text{P1 through P7} \) as used in the PV Multiply Divide algorithm (Form *AM88-416*).

Also, \( \text{D1} \) is the value in minutes for the fixed part of the dead time in the PV Variable Dead Time with **LeadLag** algorithm (Form *AM88-418*).

In addition, \( \text{D2} \) is the bias constant for input \( \text{P2} \) as used in the PV Variable Dead Time with **LeadLag** algorithm (Form *AM88-418*).

<table>
<thead>
<tr>
<th>Source</th>
<th>User</th>
<th>Default Value</th>
<th>0.0</th>
<th>Access Lock</th>
<th>Supvr</th>
</tr>
</thead>
</table>

Value Type  Real

Value Range  \( \text{D1}, \text{D2}: 0.0 \) through 400.0 for the PV VDT with **LeadLag** algorithm
DataAcq (PV algorithm)

This algorithm (Data Acquisition) normally accepts the input and places it, unchanged, in PVCALC. All of the other PV algorithms alter the input(s) in some way.

Parameters involved in configuring this algorithm are the following and those listed in Section 2 under Regulatory Point.

<table>
<thead>
<tr>
<th>PV Common Display</th>
<th>PV Data Acquisition Display</th>
</tr>
</thead>
<tbody>
<tr>
<td>PVFORMAT</td>
<td>NOPINPTS</td>
</tr>
<tr>
<td>PVEUHI</td>
<td>PISRC(N)</td>
</tr>
<tr>
<td>PVEULO</td>
<td>PIDSTN(N)</td>
</tr>
<tr>
<td>PVEXEUHI</td>
<td>PIACTSTS(N)</td>
</tr>
<tr>
<td>PVEXEULO</td>
<td></td>
</tr>
<tr>
<td>PVCLAMP</td>
<td></td>
</tr>
<tr>
<td>PVSRCOPT</td>
<td></td>
</tr>
<tr>
<td>PVSOURCE</td>
<td></td>
</tr>
<tr>
<td>PVFLTOPT</td>
<td></td>
</tr>
<tr>
<td>TF IN MIN</td>
<td></td>
</tr>
<tr>
<td>PVTVD</td>
<td></td>
</tr>
</tbody>
</table>

---

DEV

**Point Type**  Counter, Regulatory

**Counter:** Target-value deviation (no form) (3.3.5 in AM Control Functions).

**Regulatory:** Deviation (no form) (4.3.1.8 in System Control Functions)

<table>
<thead>
<tr>
<th>Source</th>
<th>User</th>
<th>Default Value</th>
<th>Access Lock</th>
<th>Value Type</th>
<th>Value Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Counter) Deviation is calculated as (PV - PVTVD), or NaN if PV or PVTVD = NaN</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Regulatory) Deviation is calculated as (PV - SP), or NaN if PVALGID = null or CTLALGID ≠ PID, PIDERFB, or PIDFF</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Default Value**

**Source**  User

**Default Value**  Off

**Access Lock**  Read Only

**Value Type**  Real

**Value Range**  < the range defined in PVEXEUHI and PVEXEULO.

---

DEVHIFL

**Point Type**  Regulatory, Counter

Deviation high-alarm flag (no forms).

<table>
<thead>
<tr>
<th>Source</th>
<th>User</th>
<th>Default Value</th>
<th>Access Lock</th>
<th>Value Type</th>
<th>Value Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Counter) Deviation is calculated as (PV - PVTVD), or NaN if PV or PVTVD = NaN</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Regulatory) Deviation is calculated as (PV - SP), or NaN if PVALGID = null or CTLALGID ≠ PID, PIDERFB, or PIDFF</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Default Value**  Off

**Access Lock**  Read Only

**Value Type**  Boolean

**Value Range**  On—A deviation high alarm is present

Off—No alarm is present

---

AM Parameter Reference Dictionary 3-64 3/93
DEVHITP

Point Type  Regulatory, Counter

Deviation high-alarm trip point (4.3.1.8 in System Control Functions) (Forms AM88-470 and 440).

Source  User  Default Value  NaN  Access Lock  Supvr

Value Type  Real

Value Range  NaN, >= 0.0 for control related processing
NaN, >= 0.0 but <= trip point upper limit defined by the absolute value of (PVEXEUHI - PVEXEULO) for counter operational rate (PV)

DEVHITR

Point Type  Regulatory

Deviation high-alarm transition (no form).

Source  User  Default Value  NoChange  Access Lock  Read Only

Value Type  ALTRAN enumeration

Value Range  NoChange—No change from previous state
Rtn—First time return from alarm
Alarm—First time in alarm

DEVLOFL

Point Type  Regulatory and Counter

Deviation low-alarm flag (no form).

Source  User  Default Value  Off  Access Lock  Read Only

Value Type  Boolean

Value Range  On—Low alarm is present
Off—No alarm is present
DEVLOTP

**Point Type**  Regulatory and Counter

Deviation low-alarm trip point (4.3.1.8 in *System Control Functions*) (Forms AM88-470 and 440).

**Source**  User  **Default Value**  NaN  **Access Lock**  Supvr

**Value Type**  Real

**Value Range**  NaN, >= 0.0 for control related processing
NaN, >= 0.0 but <= trip point upper limit defined by the absolute value of
(PVEXEUHI - PVEXEULO) for counter operational rate (PV)

DEVLOTR

**Point Type**  Regulatory

Deviation low-alarm transition (no form).

**Source**  User  **Default Value**  NoChange  **Access Lock**  Read Only

**Value Type**  ALTRAN enumeration

**Value Range**  NoChange—No change from previous state
Rtn—First time return from alarm
Alarm—First time in alarm
DISPTYPE

Point Type  Regulatory, Timer, Counter, Numeric, Flag, Custom, and Switch

Operator Personality, History, and Point Building display type for internal use (no form) (3.3.10, 3.4.2, 3.6, and 4.2 in *AM Control Functions*).

Source  System  Default Value  Null  Access Lock  Read Only

Value Type  DISPTYPE enumeration

Value Range  Flag—Digin  
Timer—Timer  
Counter—CountrEU  
Numeric—Numeric  
Custom—default is Custom  
Switch—default is Switch

Regulatory—If PVALGID is Null and CTALGID is

- **Pid**: Pid display type
- **OrSel, IncSum, Switch, AutoMan**: Output display type
- **LeadLag, Rate Comp, Summer, MulDiv**: Non PV display type
- **Rampsoak**: Rampsoak display type

—If PVALGID is not Null and CTLALGID is

- **Pid, PidFF, PidErfb, CL, or RatioCtl**: Pid display type
- **OrSel, IncSum, Switch, or AutoMan**: then PV Output display type
- **LeadLag, RateComp, Summer, or MulDiv**: then DAS display type
EIPAVGC

Point Type  Processor Status

Average number of process specials serviced per second in the current hour (no form).

Source  System  Default Value  0  Access Lock  Read Only

Value Type  Integer

Value Range  0 through maximum possible points per second

EIPAVGP

Point Type  Processor Status

Average number of process specials serviced per second in the previous hour (no form).

Source  System  Default Value  0  Access Lock  Read Only

Value Type  Real

Value Range  0.0 through maximum possible points per second

EIPAVGS

Point Type  Processor Status

Average number of process specials serviced during the last snapshot period (nominally 10 seconds) (no form).

Source  User  Default Value  0  Access Lock  Read Only

Value Type  Real

Value Range  0.0 through maximum possible points per second
EIPMAXC

**Point Type**: Processor Status

Maximum number of process specials serviced per cycle in the current hour (no form).

**Source**: System  **Default Value**: 0  **Access Lock**: Read Only

**Value Type**: Integer

**Value Range**: 0 through maximum possible points per second

---

EIPMAXP

**Point Type**: Processor Status

Maximum number of process specials serviced per second in the previous cycle (no form).

**Source**: System  **Default Value**: 0  **Access Lock**: Read Only

**Value Type**: Integer

**Value Range**: 0 through maximum possible points per second

---

EIPMINC

**Point Type**: Processor Status

Minimum number of process specials serviced per cycle in the current hour (no form).

**Source**: System  **Default Value**: 32767  **Access Lock**: Read Only

**Value Type**: Integer

**Value Range**: 0 through maximum possible points per second
EIPMINP

**Point Type**  Processor Status

Minimum number of process specials serviced per cycle in the previous hour (no form).

<table>
<thead>
<tr>
<th>Source</th>
<th>System</th>
<th>Default Value</th>
<th>0</th>
<th>Access Lock</th>
<th>Read Only</th>
</tr>
</thead>
</table>

**Value Type**  Integer

**Value Range**  0 through maximum possible points per second

ENT_TYPE

**Point Type**  Data Point

Defines this data point’s type and the type of node where the point resides. Can be used by CL programs to determine what type of data point this point is.

<table>
<thead>
<tr>
<th>Source</th>
<th>System</th>
<th>Default Value</th>
<th>System</th>
<th>Access Lock</th>
<th>Read Only</th>
</tr>
</thead>
</table>

**Value Type**  Enum. of ENTYTYPE

**Value Range**  Countam—AM counter point
Customam—AM custom point
Flagam—AM flag point
Logicam—AM logic point
Numercam—AM numeric point
Regam—AM regulatory point
Switcham—AM switch point
Timeram—AM timer point

ESWAUTO

**Point Type**  Regulatory

Auto mode external switching flag (no form) (2.5, 2.5.1, and 2.5.2 in AM Control Functions).

<table>
<thead>
<tr>
<th>Source</th>
<th>User</th>
<th>Default Value</th>
<th>False</th>
<th>Access Lock</th>
<th>Prog</th>
</tr>
</thead>
</table>

**Value Type**  Boolean

**Value Range**  On—Switch to auto mode
Off—Normal operation
ESWCAS

Point Type  Regulatory

Cascade mode external switching flag (no form) (2.5, 2.5.1, and 2.5.2 in AM Control Functions).

Source  User  Default Value  False  Access Lock  Prog

Value Type  Boolean

Value Range  On—Switch to cascade mode
             Off—Normal operation

ESWENBST

Point Type  Regulatory

External-mode-switching status (2.5 in AM Control Functions) (no form).

Source  User  Default Value  Disable  Access Lock  Prog

Value Type  ESWENBST Enumeration

Value Range  Enable—Enable external mode switching
             Disable—Disable external mode switching

ESWMAN

Point Type  Regulatory

Manual mode external switching flag (no form) (2.5, 2.5.1, and 2.5.2 in AM Control Functions).

Source  User  Default Value  False  Access Lock  Prog

Value Type  Boolean

Value Range  On—Switch to manual mode
             Off—Normal operation
EUDESC

**Point Type**  Regulatory, Counter, Timer, and Numeric

The engineering-units descriptor (for example, °C, PSIA, gal/hr, kPa, ltr-min) for this data point, that appears on displays, logs, and reports (Forms AM88-401, 420A, 430, and 440).

**Source**  User  **Default Value**  Blank  **Access Lock**  Engr-DEB

**Value Type**  Character String

**Value Range**  8-character string maximum

EXTSWOPT

**Point Type**  Regulatory

External-mode-switching option (2.5 in *AM Control Functions*) (Form AM88-441).

**Source**  User  **Default Value**  None  **Access Lock**  Engr-DEB

**Value Type**  EXTSWOPT enumeration

**Value Range**  None—No external mode switching  
EMS—External mode switching  
EMP—External mode permissives
**F**

**Point Type**  Regulatory

Flow input to Flow Compensation PV algorithm (FlowComp) (Section 4 in AM Algorithm Engineering Data) (no form).

- **Source**  User
- **Default Value**  NaN
- **Access Lock**  Read Only

- **Value Type**  Real
- **Value Range**  NaN, any real number

**FF**

**Point Type**  Regulatory

Feedforward input to PID with Feedforward algorithm (PidFF) (Section 19 in AM Algorithm Engineering Data) (no form).

- **Source**  User
- **Default Value**  NaN
- **Access Lock**  Read Only

- **Value Type**  Real
- **Value Range**  NaN, any real number

**FFOPT**

**Point Type**  Regulatory

Feedforward option for the PID with Feedforward algorithm (PidFF) (Section 19 in AM Algorithm Engineering Data) (Form AM88-456).

- **Source**  User
- **Default Value**  Multiply
- **Access Lock**  DEB

- **Value Type**  FFOPT enumeration

- **Value Range**  Add—The feedforward signal is scaled and then added to the feedback signal. Multiply—The feedback signal is multiplied with the scaled and biased feedforward signal.
FFSTS

**Point Type**  Regulatory

Status of the FF input to the PID with Feedforward algorithm (PidFF) (Section 19 in *AM Algorithm Engineering Data*) (no form).

**Source**  User  **Default Value**  BAD  **Access Lock**  Read Only

**Value Type**  PVSTS enumeration

**Value Range**
- Normal—The value is good
- Uncertn—The value is uncertain
- Bad—The value is NaN

**FlowComp (PV algorithm)**

This algorithm (Flow Compensation) compensates a flow measurement for variations in temperature, specific gravity, or molecular weight. The measured flow can be that of a gas, a vapor, or a liquid. An extended equation is provided for industrial steam-flow compensation, which includes factors that compensate for steam quality and compressibility.

Parameters involved in configuring this algorithm are the following and those listed in Section 2 under Regulatory Point.

<table>
<thead>
<tr>
<th>PV Common Display</th>
<th>PV Flow Comp Algo Display</th>
<th>Input Connections Display</th>
</tr>
</thead>
<tbody>
<tr>
<td>PVFORMAT</td>
<td>PVEQN</td>
<td>NOPINPTS</td>
</tr>
<tr>
<td>PVEUHI</td>
<td>C</td>
<td>PISRC(N)</td>
</tr>
<tr>
<td>PVEULO</td>
<td>C1</td>
<td>PIDSTN(N)</td>
</tr>
<tr>
<td>PVExEUHI</td>
<td>C2</td>
<td>PIACTSTS(N)</td>
</tr>
<tr>
<td>PVExEULO</td>
<td>COMPHILM</td>
<td></td>
</tr>
<tr>
<td>PVCLAMP</td>
<td>COMPLOLM</td>
<td></td>
</tr>
<tr>
<td>PVSrcOPT</td>
<td>G</td>
<td></td>
</tr>
<tr>
<td>PVsource</td>
<td>P</td>
<td></td>
</tr>
<tr>
<td>PVFlTOPT</td>
<td>T</td>
<td></td>
</tr>
<tr>
<td>TF IN MIN</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>PVTv</td>
<td>Q</td>
<td></td>
</tr>
<tr>
<td></td>
<td>RG</td>
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<tr>
<td></td>
<td>RP</td>
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<td>RX</td>
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<td></td>
<td>RQ</td>
<td></td>
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<tr>
<td></td>
<td>P0</td>
<td></td>
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<tr>
<td></td>
<td>T0</td>
<td></td>
</tr>
</tbody>
</table>
FORC

Point Type  Regulatory

For the High Selector, Low Selector, Average PV algorithm (HiLoAvg), force selection of the input defined by FSELIN (Section 6 of AM Algorithm Engineering Data) (no form).

Source  User  Default Value  Off  Access Lock  Oper

Value Type  Boolean

Value Range  On—PVCALC is set equal to the selected input
Off—Normal operation

FPTMAVGC

Point Type  Processor Status

Average duration in milliseconds of Fast Point Processor or point processing cycle, measured using redundancy clean point intervals, in the current hour. Value is available in the secondary AM only.

Source  System  Default Value  N/A  Access Lock  Read Only

Value Type  Real

Value Range  >0.0

FPTMAVCP

Point Type  Processor Status

Average duration in milliseconds of Fast Point Processor or point processing cycle, measured using redundancy clean point intervals, in the preceding hour. Value is available in the secondary AM only.

Source  System  Default Value  N/A  Access Lock  Read Only

Value Type  Real

Value Range  >0.0
**FPTMS**

**Point Type**  Processor Status

Duration in milliseconds of the most recently completed Fast Point Processor or point processing cycle, measured using redundancy cleanpoint intervals. Value is available in the secondary AM only.

<table>
<thead>
<tr>
<th>Source</th>
<th>System</th>
<th>Default Value</th>
<th>N/A</th>
<th>Access Lock</th>
<th>Read Only</th>
</tr>
</thead>
</table>

Value Type  Real

Value Range  >0.0

**FPTMSP**

**Point Type**  Processor Status

Duration in milliseconds of the second most recently completed Fast Point Processor or point processing cycle, measured using redundancy cleanpoint intervals. Value is available in the secondary AM only.

<table>
<thead>
<tr>
<th>Source</th>
<th>System</th>
<th>Default Value</th>
<th>N/A</th>
<th>Access Lock</th>
<th>Read Only</th>
</tr>
</thead>
</table>

Value Type  Real

Value Range  >0.0

**FRCPerM**

**Point Type**  Regulatory

For the High Selector, Low Selector, Average PV algorithm (HiLoAvg), permission to force selection via **FORCE** (6.4.1 in *AM Algorithm Engineering Data*) (Form AM88-414).

<table>
<thead>
<tr>
<th>Source</th>
<th>User</th>
<th>Default Value</th>
<th>No</th>
<th>Access Lock</th>
<th>Engr-DEB</th>
</tr>
</thead>
</table>

Value Type  Boolean

Value Range  On—Enable forced input selection
             Off—Do not allow force input selection
FSELIN

**Point Type**  Regulatory

For the High Selector, Low Selector, Average PV algorithm (HiLoAvg), defines the input to be selected by **FORCE** (6.4.1 in *AM Algorithm Engineering Data*) (Form AM88-414).

<table>
<thead>
<tr>
<th>Source</th>
<th>Default Value</th>
<th>Access Lock</th>
</tr>
</thead>
<tbody>
<tr>
<td>User</td>
<td>2</td>
<td>Oper</td>
</tr>
</tbody>
</table>

**Value Type**  PINP enumeration

**Value Range**  SelectP1 through SelectP8

FSTS

**Point Type**  Regulatory

For the Flow Compensation PV algorithm (FlowComp), defines the status of the F input (Section 4 in *AM Algorithm Engineering Data*) (Form AM88-412).

<table>
<thead>
<tr>
<th>Source</th>
<th>Default Value</th>
<th>Access Lock</th>
</tr>
</thead>
<tbody>
<tr>
<td>User</td>
<td>Bad</td>
<td>Read Only</td>
</tr>
</tbody>
</table>

**Value Type**  PVSTS enumeration

**Value Range**  Normal—The value is good  
Uncertn—The value is uncertain  
Bad—The value is NaN
**G**

**Point Type**  Regulatory

Applies to the PV Flow Compensation algorithm.

Specific gravity input to the algorithm (Form AM88-412).

**Source**  User  
**Default Value**  1.0  
**Access Lock**  DEB

**Value Type**  Real

**Value Range**  NaN, any real number

---

**GAINOPT**

**Point Type**  Regulatory

Selects the gain option for Pid algorithms (18.4.6 in AM Algorithm Engineering Data) (Forms AM88-451, 452, and 456).

**Source**  User  
**Default Value**  Lin  
**Access Lock**  Engr-DEB

**Value Type**  GAINOPT enumeration

**Value Range**  Lin—The overall gain K is derived as follows:

\[ K = K_{LIN} \]

Gap—This option is used to reduce the sensitivity of control action when the PV is within a narrow band around the setpoint. The overall gain K is derived as follows:

\[ K = K_{LIN} * K_{GAP} \text{ if } (SP - GAPLO) < PV < (SP + GAPHI) \]

\[ K = K_{LIN} \text{ if PV is outside the gap} \]

NonLin—This option is used when control action is required to be proportional to the square of the error. The overall gain K is derived as follows:

\[ K = K_{LIN} * K_{NL} \]

Where \( K_{NL} = NLFM + (NLGAIN * |PVP - SPP| / 100) \)

Ext—The overall gain K is derived as follows:

\[ K = K_{LIN} * K_{EXT} \]

Where \( K_{EXT} \) is the positive external gain modifier
**GAPHI**

**Point Type**  Regulatory

The upper limit of the gap in gap-gain modification for Pid algorithms (18.4.6 in *AM Algorithm Engineering Data*) (Forms AM88-451, 455, and 456).

**Source**  User  **Default Value**  0.0  **Access Lock**  Supvr

**Value Type**  Real

**Value Range**  >= 0.0

---

**GAPLO**

**Point Type**  Regulatory

The bottom limit of the gap in gap-gain modification for Pid algorithms (18.4.6 in *AM Algorithm Engineering Data*) (Forms AM88-451, 455, and 456).

**Source**  User  **Default Value**  0.0  **Access Lock**  Supvr

**Value Type**  Real

**Value Range**  >= 0.0
GenLin (PV Algorithm)

This algorithm (General Linearization) calculates a PV that is a function of the input. The function can be any that can be represented by up to 12 continuous, linear segments. You specify the base value and slope of each segment. The input is compared with the input range of each segment and the output is set at the intersection of the input with the appropriate segment (section 5 in AM Algorithm Engineering Data).

Parameters involved in configuring this algorithm are the following and those listed in Section 2 under Regulatory Point.

<table>
<thead>
<tr>
<th>PV Common Display</th>
<th>AM-Reg PV General/Linear Display</th>
</tr>
</thead>
<tbody>
<tr>
<td>PVFORMAT</td>
<td>SEGTOT</td>
</tr>
<tr>
<td>PVEUHI</td>
<td>INO</td>
</tr>
<tr>
<td>PVEULO</td>
<td>:</td>
</tr>
<tr>
<td>PVEXEUHI</td>
<td>IN12</td>
</tr>
<tr>
<td>PVEXEULO</td>
<td>OUT0</td>
</tr>
<tr>
<td>PVCLAMP</td>
<td>:</td>
</tr>
<tr>
<td>PVSRCOPT</td>
<td>OUT12</td>
</tr>
<tr>
<td>PVSOURCE</td>
<td>NOPINPTS</td>
</tr>
<tr>
<td>PVFLTOPT</td>
<td>PISRC(N)</td>
</tr>
<tr>
<td>TF IN MIN</td>
<td>PIDSTN(N)</td>
</tr>
<tr>
<td>PVTV</td>
<td>PIACTSTS(N)</td>
</tr>
</tbody>
</table>

GETAVGC

**Point Type**  Processor Status

Average number of parameter fetches per second during the current hour (no form).

**Source**  User  **Default Value**  0  **Access Lock**  Read Only

**Value Type**  Real

**Value Range**  >= 0.0
GETAVGP

**Point Type**  Processor Status

Average number of parameter fetches per second during the previous hour (no form).

**Source**  User  
**Default Value**  0  
**Access Lock**  Read Only

**Value Type**  Real

**Value Range**  \( \geq 0.0 \)

GETAVGS

**Point Type**  Processor Status

Average number of parameter fetches per second during the last snapshot period (nominally 10 seconds).

**Source**  User  
**Default Value**  0  
**Access Lock**  Read Only

**Value Type**  Real

**Value Range**  \( \geq 0.0 \)

GIACCSTS(N)

**Point Type**  Regulatory, Counter, and Timer

GIACCSTS[N] is the general input connection N access status, where index N varies from 1 through 8, depending on the number of connections you designate (no form) (3.1.1 and 3.1.4.8 in AM Control Functions).

**Source**  User  
**Default Value**  NoError  
**Access Lock**  Read Only

**Value Type**  PASTATUS enumeration

**Value Range**  NoError—The source parameter was fetched with no error.  
Comm—The source parameter could not be fetched because of a communication error.  
Confg—The source parameter could not be fetched because of a configuration error.  
Software—An unexpected error occurred. Notify Honeywell TAC.  
StorWERr—Unable to store value as received—value clamped by effect of another parameter.  
StorFail—Value cannot be stored to destination parameter because of state of operator-controlled interlock.
**GIACSTS(N)**

**Point Type**  Regulatory, Counter, and Timer

GIACSTS(N) is the general input connection N activity status, where index N varies from 1 through 8, depending on the number of connections you designate (Forms AM88-480, 430, and 440) (3.1.1 and 3.1.4.7 in AM Control Functions).

**Source** User  
**Default Value** Active  
**Access Lock** Supvr

**Value Type** IOACTSTS enumeration

**Value Range**  
Active—Indicates the connection is to be processed.  
Inactive—Indicates the connection is not be processed.  
NotConfg—If you select NotConfg, an error will be reported as the point is loaded. However, NotConfg can be selected with no error if a Null Entity ID or a Null parameter has been entered for the connection source or destination.

**GIDSTN(N)**

**Point Type**  Regulatory, Counter, and Timer

GIDSTN[N] are the regulatory control general-input destinations, where [N] is the index that can vary from 0 through 8, depending on the number of connections you designate (Forms AM88-480, 430, and 440).

GIDSTN[N] also are the timer and counter general input destinations you designate.

**CONSTRAINT:** The destination parameter needs to be the same type as the referenced source parameter.

**Source** User  
**Default Value** Null  
**Access Lock** DEB

**Value Type** Parameter Notation

**Value Range** Parameter—usually 8 characters, but with an optional index [N] having up to 10 additional characters, or 18 maximum characters you can designate.
GISRC[N]

**Point Type**  Regulatory, Counter, and Timer

GISRC[N] are the regulatory control general-input source connections, where [N] is the index that can vary from 0 through 8, depending on the number of connections you designate (Form AM88-480).

GISRC[N] also are the timer and counter general input source connections you designate (Forms AM88-430 and 440).

<table>
<thead>
<tr>
<th>Source</th>
<th>User</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Default Value</strong></td>
<td>Null</td>
</tr>
<tr>
<td><strong>Access Lock</strong></td>
<td>DEB</td>
</tr>
</tbody>
</table>

**Value Type**  Source Point.Parameter notation

**Value Range**  Source Point.Parameter—usually up to 17 characters long, with optional index (N) having up to 10 additional characters, or 27 maximum characters

GOACCSTS(N)

**Point Type**  Regulatory, Counter, Timer

GOACCSTS[N] is the counter general output N access status, where index (N) varies from 1 through 8, depending on the number of connections you designate (Forms AM88-430, 440, and 480) (3.1.4.8 in AM Control Functions).

<table>
<thead>
<tr>
<th>Source</th>
<th>User</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Default Value</strong></td>
<td>NoError</td>
</tr>
<tr>
<td><strong>Access Lock</strong></td>
<td>Read Only</td>
</tr>
</tbody>
</table>

**Value Type**  PASTATUS enumeration

**Value Range**  
NoError—The source parameter was fetched with no error.
Comm—The source parameter could not be fetched because of a communication error.
Conf—The source parameter could not be fetched because of a configuration error.
StorWErr—Unable to store value as received—value clamped by effect of another parameter.
StorFail—Value cannot be stored to destination parameter because of state of operator-controlled interlock.
GOACTSTS(N)

**Point Type**  Regulatory, Counter, and Timer

GOACTSTS[N] is the general-output connection N activity status, where index N varies from 1 through 8, depending on the number of connections you designate (Forms AM88-480, 430 and 440) (3.1.4.7 in AM Control Functions).

**Source**  User  
**Default Value**  Active  
**Access Lock**  Supvr

**Value Type**  IOACTSTS enumeration

**Value Range**  
- Active—Indicates the connection will be processed.
- Inactive—Indicates the connection will not be processed.
- NotConfg—After loading, indicates the connections are not configured.
  —DO NOT ENTER NotConfg.

GODSTN(N)

**Point Type**  Regulatory, Counter, Timer

GODSTN[N] are the regulatory control general-output destinations, where [N] is the index that can vary from 1 through 8, depending on the number of connections you designate (Forms AM88-480, 430, and 440).

GODSTN[N] also are the timer and counter general-output destinations.

**Source**  User  
**Default Value**  Null  
**Access Lock**  DEB

**Value Type**  Destination Point ID.Parameter notation

**Value Range**  
Destination_ID.Parameter—usually up to 17 characters long, with optional index (N) having up to 10 additional characters, or 27 maximum characters you can designate.
GOSRC(N)  

**Point Type**  Regulatory, Counter, and Timer

GOSRC[N] are the regulatory control general-output source connections, where [N] is the index that can vary from 1 through 8, depending on the number of connections you designate (Forms AM88-480, 430, and 440).

GOSRC[N] also are the nonregulatory timer and counter general-output source connections.

<table>
<thead>
<tr>
<th>Source</th>
<th>User</th>
<th>Default Value</th>
<th>Null</th>
<th>Access Lock</th>
<th>DEB</th>
</tr>
</thead>
</table>

**Value Type**  Parameter notation

**Value Range**  Parameter—usually 8 characters long, with optional index (N) having up to 10 additional characters, or 18 maximum characters.

GSTS  

**Point Type**  Regulatory

For the Flow Compensation PV algorithm (FlowComp), defines the status of the G input (Section 4 in AM Algorithm Engineering Data) (Form AM88-412).

<table>
<thead>
<tr>
<th>Source</th>
<th>User</th>
<th>Default Value</th>
<th>Normal</th>
<th>Access Lock</th>
<th>Read Only</th>
</tr>
</thead>
</table>

**Value Type**  PVSTS enumeration

**Value Range**  Normal—The value is good.  
Uncertn—The value is uncertain.  
Bad—The value is NaN.
HEAPFREE

**Point Type** Processor Status

Current free heap memory (no form).

<table>
<thead>
<tr>
<th>Source</th>
<th>Default Value</th>
<th>Access Lock</th>
</tr>
</thead>
<tbody>
<tr>
<td>User</td>
<td>N/A</td>
<td>Read Only</td>
</tr>
</tbody>
</table>

**Value Type** Real

**Value Range** $\geq 0.0$

HEAPMAXP

**Point Type** Processor Status

Maximum allowed heap memory for permanent data use (no form).

<table>
<thead>
<tr>
<th>Source</th>
<th>Default Value</th>
<th>Access Lock</th>
</tr>
</thead>
<tbody>
<tr>
<td>System</td>
<td>N/A</td>
<td>Read Only</td>
</tr>
</tbody>
</table>

**Value Type** Real

**Value Range** $\geq 0.0$

HIGHAL

**Point Type** All point types except Numeric

Highest point alarm value, depending on the point type you configure (no form) (3.3.10, 3.4.2, 3.6, 3.6.3, and 4.2 in AM Control Functions).

<table>
<thead>
<tr>
<th>Source</th>
<th>Default Value</th>
<th>Access Lock</th>
</tr>
</thead>
<tbody>
<tr>
<td>System</td>
<td>No Alarm</td>
<td>Read Only</td>
</tr>
</tbody>
</table>

**Value Type** ALMTYPE enumeration

**Value Range** Point dependent:

- Flag—OffNrmFl
- Timer—Timeout
- Counter—BadCtl, BadPv, CCmer, Cnferr, PVHi, PVHH, PVLo, PVLL, PVSgch, PVRocn, PVRocp, DevHi, Devlo, Preset, PrPreset, or PpPreset
- Batch History prototype—NoAlarm, CnfErr, CleAlm, CLFAIm, BHAlm2, BHAlm3, BHAlm4, BHAlm5, BHAlm6, BHAlm7, BHAlm8, and BHAlm9
- Custom—NoAlarm, CnfErr, CLEAlm, and CLFA
- Switch—NoAlarm, CnfErr, CLEAlm, CLFAIm, SwtAlm1, SwtAlm2, and SWTAIm3
- Regulatory—AdvDev, BadCtl, BadPv, DevHi, Devlo, PVHH, PVHi, PVLL, PVLo, PVRocn, PVRocp, PVSgch
HiLoAvg (PV algorithm)

This algorithm (High Selector, Low Selector, Average) does one of the following:

- Selects the input with the highest value
- Selects the input with the lowest value
- Calculates the average value of all valid inputs.

It can accept up to eight inputs. Valid inputs are those whose status is "Normal" or "Uncertain." When the input selection functions are used, the number of the input that is selected is contained in an accessible parameter (SELINP).

Parameters involved in configuring this algorithm are the following and those listed in Section 2 under Regulatory Point.

<table>
<thead>
<tr>
<th>PV Common Display</th>
<th>PV Hi/Lo/Average Display</th>
</tr>
</thead>
<tbody>
<tr>
<td>PVFORMAT</td>
<td>PVEQN</td>
</tr>
<tr>
<td>PVEUHI</td>
<td>N</td>
</tr>
<tr>
<td>PVEULO</td>
<td>NMIN</td>
</tr>
<tr>
<td>PVEXEUHI</td>
<td>FRCPERM</td>
</tr>
<tr>
<td>PVEXEULO</td>
<td>FSELIN</td>
</tr>
<tr>
<td>PVCLAMP</td>
<td>P2</td>
</tr>
<tr>
<td>PVSCROPT</td>
<td>:</td>
</tr>
<tr>
<td>PVSOURCE</td>
<td>P8</td>
</tr>
<tr>
<td>PVFLTOPT</td>
<td>NOIDSTN(N)</td>
</tr>
<tr>
<td></td>
<td>PIACTSTS(N)</td>
</tr>
</tbody>
</table>

HOLDCMD

Point Type  Regulatory

For the Ramp and Soak control algorithm (RampSoak), command to hold the current ramp at the present value (22.4.4 in AM Algorithm Engineering Data) (no form).

<table>
<thead>
<tr>
<th>Source</th>
<th>User</th>
<th>Default Value</th>
<th>No</th>
<th>Access Lock</th>
<th>Prog</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value Type</td>
<td>Boolean</td>
<td>Value Range</td>
<td>On—Hold at current segment</td>
<td>Off—Normal operation</td>
<td></td>
</tr>
</tbody>
</table>
IDLAVGC

**Point Type**  Processor Status

Average percentage of idle time during the current hour.

**Source**  User  
**Default Value**  N/A  
**Access Lock**  Read Only

**Value Type**  Real

**Value Range**  0.0 through 100.0

IDLAVGP

**Point Type**  Processor Status

Average percentage of idle time during the previous hour (no form).

**Source**  User  
**Default Value**  N/A  
**Access Lock**  Read Only

**Value Type**  Real

**Value Range**  0.0 through 100.0

IDLAVGS

**Point Type**  Processor Status

Average percentage of idle time during the last snapshot period (nominally 10 seconds) (no form).

**Source**  User  
**Default Value**  N/A  
**Access Lock**  Read Only

**Value Type**  Real

**Value Range**  0.0 through 100.0
IDLAVGSP

Point Type  Processor Status

Average percentage of idle time during the previous snapshot period (nominally 10 seconds) (no form).

Source  User  Default Value  N/A  Access Lock  Read Only

Value Type  Real

Value Range  0.0 through 100.0

IN0 through IN12

Point Type  Regulatory

Input coordinate-value parameters for the General Linearization PV algorithm (Section 5 in AM Algorithm Engineering Data) (Form AM88-420).

Source  User  Default Value  NaN  Access Lock  Supvr

Value Type  Real

Value Range  IN1 through IN12
IN0 <= IN2 <= IN3 ... <= IN11 <= IN12

IncrSum  (Control Algorithm)

This algorithm (Control Incremental Summer) calculates the sum of the incremental changes in up-to-four input values. The output is obtained by adding the sum of the changes in all inputs, after each input is multiplied by a scale factor.

Parameters involved in configuring this algorithm are the following and those listed in Section 2 under Regulatory Point.

<table>
<thead>
<tr>
<th>Control Common Display</th>
<th>Control Incr/Sum Algo Display</th>
<th>Control Input Connections Display</th>
<th>Control Output Connections Display</th>
</tr>
</thead>
<tbody>
<tr>
<td>NMODE</td>
<td>INITTYPE</td>
<td>NOCINPTS</td>
<td>NOCOPTS</td>
</tr>
<tr>
<td>NMODATTR</td>
<td>ORBIAS</td>
<td>CISRC(N)</td>
<td>CODDSTN(N)</td>
</tr>
<tr>
<td>MODEPERM</td>
<td>M</td>
<td>CIDSTN(N)</td>
<td>COACTSTS(N)</td>
</tr>
<tr>
<td>EXTSWOPT</td>
<td>XEUHI</td>
<td>CIACTSTS(N)</td>
<td>OPHILM</td>
</tr>
<tr>
<td></td>
<td>XEULO</td>
<td></td>
<td>OPLOLM</td>
</tr>
<tr>
<td></td>
<td>K1</td>
<td></td>
<td>OPMCHLM</td>
</tr>
<tr>
<td></td>
<td>K2</td>
<td></td>
<td>OPROCLM</td>
</tr>
</tbody>
</table>
INITMAN

Point Type  Regulatory

Initialization manual flag (no form) (3.1.2, 3.1.3, and 3.1.6.2 in AM Control Functions).

Source  User  Default Value  Off  Access Lock  Read Only

Value Type  Boolean

Value Range  On—The point is in initialization manual.
Off—The point is not in initialization manual.

INITREQ(N)

Point Type  Regulatory

Initialization request for primaries 1 through 4 (no form) (3.1.3 in AM Control Functions).

Source  User  Default Value  Off  Access Lock  Prog

Value Type  Boolean

Value Range  On—The secondary (1.4) is requesting the primary to initialize.
Off—Normal operation

INITTYPE

Point Type  Regulatory

Initialization type (3.1.9.2 in AM Control Functions) (Form AM88-451 through 459 and 461 through 464).

Source  User  Default Value  Ext  Access Lock  Engr-DEB

Value Type  INITTYPE enumeration

Value Range  Ext—Initialization requests are propagated to all primaries that are pushing to SP.
Int—Initialization request is not propagated to the primaries; during initialization, the bias is adjusted based upon the equation.
None—Initialization requests are ignored.
INITVAL

**Point Type**  Regulatory

Initialization value

Program (CL block) specified initialization value (no form).

<table>
<thead>
<tr>
<th>Source</th>
<th>User</th>
</tr>
</thead>
<tbody>
<tr>
<td>Default Value</td>
<td>NaN</td>
</tr>
<tr>
<td>Access Lock</td>
<td>Prog</td>
</tr>
</tbody>
</table>

**Value Type**  Real

**Value Range**  NaN, any real number

INSORDER(N)

**Point Type**  Custom, Regulatory, and Switch

CL block insertion order (no form) (3.6, 4.1.5.1, and 4.2 in *AM Control Functions*).

<table>
<thead>
<tr>
<th>Source</th>
<th>User</th>
</tr>
</thead>
<tbody>
<tr>
<td>Default Value</td>
<td>0</td>
</tr>
<tr>
<td>Access Lock</td>
<td>Read Only</td>
</tr>
</tbody>
</table>

**Value Type**  Array (1..255) of Integer

**Value Range**  0 through 32767
INSPOINT(N)

Point Type  Custom, Regulatory, and Switch

CL block insertion point (no form) (3.6, 4.1.5.1, and 4.2 in *AM Control Functions*).

| Source | User | Default Value | N/A | Access Lock | Read Only |

Value Type  Array (1..255) of INSPOINT enumeration

Value Range  Regulatory:  
- CTL_ALG—Cl Control Algorithm
- PRE_GI—Pre General Inputs
- PRE_PVRP—Pre PV Processing
- PRE_PVAG—Pre PV Algorithm
- PST_PVAG—Post PV Algorithm
- PST_PVFL—Post PV Filter
- PRE_PVA—Pre PV Alarming
- PST_PVPR—Post PV Processing
- PRE_CTPR—Pre Control Processing
- PRE_SP—Pre Setpoint Processing
- PRE_CTAG—Pre Control Algorithm
- PST_CTAG—Post Control Algorithm
- PST_CTPR—Post Control Processing
- PST_GO—Post General Outputs
- BACKGRND—Background Executive (Custom, Switch, and Regulatory)

Custom:  General—General usage insertion point

Switch:  General—General usage insertion point

IPCVBOVC

Point Type  Processor Status

The number of CVB overflow occurrences from IPP in the current hour.

| Source | System | Default Value | N/A | Access Lock | Read Only |

Value Type  Integer

Value Range  0 through 32767
IPCVBOVP

**Point Type** Processor Status

The number of CVB overflow occurrences from IPP in the previous hour.

**Source** System  **Default Value** N/A  **Access Lock** Read Only

**Value Type** Integer

**Value Range** 0 through 32767

IPDAOVER

**Point Type** Processor Status

IPP prefetch/poststore data access current overruns. Increments when the return time is > 5 seconds. Decrement (to 0) when return time <= 5 seconds.

**Source** System  **Default Value** 0  **Access Lock** Read Only

**Value Type** Integer

**Value Range** 0 through 32767

IPDAOVRC

**Point Type** Processor Status

IPP prefetch/poststore data access overruns in the current hour.

**Source** System  **Default Value** 0  **Access Lock** Read Only

**Value Type** Integer

**Value Range** 0 through 720

IPDAOVRP

**Point Type** Processor Status

IPP prefetch/poststore data access overruns in the previous hour.

**Source** System  **Default Value** 0  **Access Lock** Read Only

**Value Type** Integer

**Value Range** 0 through 720
IPOVRRNC

**Point Type**  Processor Status
IPP overruns in the current hour.

**Source**  System  **Default Value**  0  **Access Lock**  Read Only

**Value Type**  Integer

**Value Range**  0 through 720

IPOVRRNP

**Point Type**  Processor Status
IPP overruns in the prior hour.

**Source**  System  **Default Value**  0  **Access Lock**  Read Only

**Value Type**  Integer

**Value Range**  0 through 720

IPOVRRUN

**Point Type**  Processor Status
The IPP overrun count expressed as the difference between system cycles and IPP processing cycles.

**Source**  System  **Default Value**  0  **Access Lock**  Read Only

**Value Type**  Integer

**Value Range**  0 through 32767

IPOVRTHR

**Point Type**  Processor Status
The IPP overruns alarm threshold. Disabled when the value <= 0. Saved by database checkpoint.

**Source**  User  **Default Value**  50  **Access Lock**  Engr

**Value Type**  Integer

**Value Range**  any integer
IPPFAVGC

**Point Type**  Processor Status

The average number of prefetches per second from IPP in the current hour.

**Source**  System  **Default Value**  N/A  **Access Lock**  Read Only

**Value Type**  Real

**Value Range**  \( \geq 0.0 \)

IPPFAVGP

**Point Type**  Processor Status

The average number of prefetches per second from IPP in the previous hour.

**Source**  System  **Default Value**  N/A  **Access Lock**  Read Only

**Value Type**  Real

**Value Range**  \( \geq 0.0 \)

IPPFAVGS

**Point Type**  Processor Status

The average number of prefetches per second from IPP in snapshot period.

**Source**  System  **Default Value**  N/A  **Access Lock**  Read Only

**Value Type**  Real

**Value Range**  \( \geq 0.0 \)

IPPFMAXC

**Point Type**  Processor Status

The maximum number of prefetches per cycle from IPP in the current hour.

**Source**  System  **Default Value**  N/A  **Access Lock**  Read Only

**Value Type**  Integer

**Value Range**  0 through 32767
IPPFMAXP

**Point Type**  Processor Status

The maximum number of prefetches per cycle from IPP in the previous hour.

**Source**  System  **Default Value**  N/A  **Access Lock**  Read Only

**Value Type**  Integer

**Value Range**  0 through 32767

IPPRAVGC

**Point Type**  Processor Status

The average number of points processed per second from IPP in the current hour (includes EIP).

**Source**  System  **Default Value**  N/A  **Access Lock**  Read Only

**Value Type**  Real

**Value Range**  \( \geq 0.0 \)

IPPRAVGP

**Point Type**  Processor Status

The average number of points processed per second from IPP in the previous hour (includes EIP).

**Source**  System  **Default Value**  N/A  **Access Lock**  Read Only

**Value Type**  Real

**Value Range**  \( \geq 0.0 \)

IPPRAVGS

**Point Type**  Processor Status

The average number of points processed per second from IPP in snapshot period (includes EIP).

**Source**  System  **Default Value**  N/A  **Access Lock**  Read Only

**Value Type**  Real

**Value Range**  \( \geq 0.0 \)
IPPRCYCC

**Point Type**  Processor Status

The number of processing cycles lost due to overrun catch up in the current hour.

**Source**  System  **Default Value**  N/A  **Access Lock**  Read Only

**Value Type**  Integer

**Value Range**  0 through 32767

IPPRCYCP

**Point Type**  Processor Status

The number of processing cycles lost due to overrun catchup in the previous hour.

**Source**  System  **Default Value**  N/A  **Access Lock**  Read Only

**Value Type**  Integer

**Value Range**  0 through 32767

IPPRMAXC

**Point Type**  Processor Status

The maximum number of points processed per cycle from IPP in the current hour (includes EIP).

**Source**  System  **Default Value**  N/A  **Access Lock**  Read Only

**Value Type**  Integer

**Value Range**  0 through 32767

IPPRMAXP

**Point Type**  Processor Status

The maximum number of points processed per cycle from IPP in the previous hour (includes EIP).

**Source**  System  **Default Value**  N/A  **Access Lock**  Read Only

**Value Type**  Integer

**Value Range**  0 through 32767
IPPSAVGC

Point Type  Processor Status
The average number of poststores per second from IPP in the current hour.

Source  System  Default Value  N/A  Access Lock  Read Only

Value Type  Real

Value Range  >= 0.0

IPPSAVGP

Point Type  Processor Status
The average number of poststore per second from IPP in the previous hour.

Source  System  Default Value  N/A  Access Lock  Read Only

Value Type  Real

Value Range  >= 0.0

IPPSAVGS

Point Type  Processor Status
The average number of poststore per second from IPP in snapshot period.

Source  System  Default Value  N/A  Access Lock  Read Only

Value Type  Real

Value Range  >= 0.0

IPPSMAXC

Point Type  Processor Status
The maximum number of poststores per cycle from IPP in the current hour.

Source  System  Default Value  N/A  Access Lock  Read Only

Value Type  Integer

Value Range  0 through 32767
IPPSMAXP

Point Type  Processor Status
The maximum number of poststores per cycle from IPP in the previous hour.

Source  System  Default Value  N/A  Access Lock  Read Only

Value Type  Integer

Value Range  0 through 32767
**Point Type**  Regulatory

Overall gain or scale factor applies to these control algorithms:

- **LeadLag** (Section 16 in *AM Algorithm Engineering Data*) (Form AM88-452)
- **MulDiv** (Section 17 in *AM Algorithm Engineering Data*) (Form AM88-454)
- **Pid** (Section 18 in *AM Algorithm Engineering Data*) (Form AM88-451)
- **PidErfb** (Section 20 in *AM Algorithm Engineering Data*) (Form AM88-455)
- **PidFf** (Section 19 in *AM Algorithm Engineering Data*) (Form AM88-456)
- **Summer** (Section 24 in *AM Algorithm Engineering Data*) (Form AM88-453)

**Source** User  
**Default Value** 1  
**Access Lock** Read Only

**Value Type** Real

**Value Range** For Pid, PidErfb, PidFf  $0.0 \leq K \leq 240.0$
K1 through K4

**Point Type** Regulatory

Applies to Control algorithms.

K1 through K4 are the gain factors used in various control algorithms (Forms AM88-453, 454, 455, and 459):

- **K1**—input SP gain factor for control algorithms Summer, Mul/Div.
- **K1**—also is the external reset feedback gain factor for control algorithm Pid with External Reset Feedback.
- **K1**—in addition, is the input X1 gain factor for the IncrSum control algorithm.
- **K1**—also is the gain constant for the Ratio control algorithm.
- **K2**—input X2 gain factor for control algorithms Summer, Mul/Div, and IncrSum.
- **K2**—also is the gain constant for the Ratio control algorithm.
- **K3**—input X3 gain factor for control algorithms Summer, Mul/Div, and IncrSum.
- **K4**—input X4 gain factor for control algorithms Summer, Mul/Div, and IncrSum.

<table>
<thead>
<tr>
<th>Source</th>
<th>Default Value</th>
<th>Access Lock</th>
</tr>
</thead>
<tbody>
<tr>
<td>User</td>
<td>1.0</td>
<td>Supvr</td>
</tr>
</tbody>
</table>

**Value Type** Real

**Value Range** Any real number
### KEXT

**Point Type**  Regulatory

External gain modifier, entered by a program (CL block) or through a general-input connection (18.4.6 in *AM Algorithm Engineering Data*) (no form).

<table>
<thead>
<tr>
<th>Source</th>
<th>Default Value</th>
<th>Access Lock</th>
</tr>
</thead>
<tbody>
<tr>
<td>User</td>
<td>1.0</td>
<td>Prog</td>
</tr>
</tbody>
</table>

**Value Type**  Real

**Value Range**  $0.0 \leq KEXT \leq 240.0$

### KEYWORD

**Point Type**  Regulatory, Flag, Numeric, Timer, Counter, Custom, and Switch

Describes the keyword for this point that appears on displays and in printed logs and reports (Forms *AM88-401, 410, 420A, 430, 440, 450,* and 460).

<table>
<thead>
<tr>
<th>Source</th>
<th>Default Value</th>
<th>Access Lock</th>
</tr>
</thead>
<tbody>
<tr>
<td>User</td>
<td>blank</td>
<td>Engr-DEB</td>
</tr>
</tbody>
</table>

**Value Type**  String

**Value Range**  String—up to 8 characters maximum

### KFF

**Point Type**  Regulatory

Scale factor for FF in *PidFf* control algorithm (19.5 in *AM Algorithm Engineering Data*) (Form *AM88-456*).

<table>
<thead>
<tr>
<th>Source</th>
<th>Default Value</th>
<th>Access Lock</th>
</tr>
</thead>
<tbody>
<tr>
<td>User</td>
<td>1.0</td>
<td>Supvr</td>
</tr>
</tbody>
</table>

**Value Type**  Real

**Value Range**  Any real number
KGAP

Point Type  Regulatory

Gap gain-modification factor for Pid control algorithms (18.4.6 in AM Algorithm Engineering Data) (Forms AM88-451, 455, and 456).

Source  User  Default Value  1.0  Access Lock  Supvr

Value Type  Real

Value Range  0.0 <= (KGAP) <= 1.0

KLIN

Point Type  Regulatory

Linear-gain factor for Pid control algorithms (18.4.6 in AM Algorithm Engineering Data) (Form AM88-451, 455, and 456).

Source  User  Default Value  1.0  Access Lock  Supvr

Value Type  Real

Value Range  0.0 <= KLIN <= 240.0

KNL

Point Type  Regulatory

Nonlinear-gain modifier for Pid control algorithms (18.4.6 in AM Algorithm Engineering Data) (no form).

Source  User  Default Value  NaN  Access Lock  Read Only

Value Type  Real

Value Range  0.0 to 240.0
LASTAV

**Point Type**  Counter

Last good accumulated value before becoming bad or changing the AV (3.3.6 and 3.3.11 in *AM Control Functions*).

**Source**  User  **Default Value**  NaN  **Access Lock**  Read Only

**Value Type**  Real

**Value Range**  \( \geq 0.0 \)

LASTPV

**Point Type**  Regulatory, Counter

Last good PV value before becoming bad or changing the PV (no form) (3.1.3, 3.1.5.5 and 3.3.3 in *AM Control Functions*).

**Source**  User  **Default Value**  NaN  **Access Lock**  Read Only

**Value Type**  Real

**Value Range**  \( \text{PVEXEUHI to PVEXEULO} \)

LBOXCLR

**Point Type**  Flag

Color of the lower box on Group and Detail displays for a Flag point (3.4.2 in *AM Control Functions*) (Form AM88-410).

**Source**  User  **Default Value**  Red  **Access Lock**  DEB

**Value Type**  BOXCOLOR enumeration

**Value Range**  Lower box appears in one of the following colors on Operating displays:

Red, Green, White, Black, Cyan, Yellow, Blue, Magenta
LeadLag (Control Algorithm)

This algorithm provides dynamic lead and lag compensation to a feedforward signal. A scale factor can be applied to the input and a bias value can be added.

Parameters involved in configuring this algorithm are the following and those listed in Section 2 under Regulatory Point.

<table>
<thead>
<tr>
<th>Control Common Display</th>
<th>Setpoint Display</th>
<th>Control Lead Lag Algo Display</th>
<th>Control Output Connections Display</th>
</tr>
</thead>
<tbody>
<tr>
<td>NMODE</td>
<td>SPFORMAT</td>
<td>INITTYPE</td>
<td>NOCOPTS</td>
</tr>
<tr>
<td>NMODATTR</td>
<td>SPEUHI</td>
<td>B</td>
<td>CODSTN(N)</td>
</tr>
<tr>
<td>MODEPERM</td>
<td>SPEULO</td>
<td>K</td>
<td>COACTSTS(N)</td>
</tr>
<tr>
<td>EXTSWOPT</td>
<td>SPHILM</td>
<td>T1 IN MIN</td>
<td>OPHILM</td>
</tr>
<tr>
<td></td>
<td>SPOLOM</td>
<td>T3 IN MIN</td>
<td>OPLLOLM</td>
</tr>
<tr>
<td></td>
<td>SP</td>
<td>T2 IN MIN</td>
<td>OPMCHLM</td>
</tr>
<tr>
<td></td>
<td>SPOPT</td>
<td></td>
<td>OPROCLM</td>
</tr>
<tr>
<td></td>
<td>AVDEVTP</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
-M-

**Point Type**  Regulatory

Applies to the Control algorithms: Summer, Incremental Summer, Override Selector, and Switch.

Number of inputs (Forms AM88-453, 457, 461, and 462).

<table>
<thead>
<tr>
<th>Source</th>
<th>User</th>
<th>Default Value</th>
<th>2</th>
<th>Access Lock</th>
<th>Prog</th>
</tr>
</thead>
</table>

**Value Type**  Integer

**Value Range**  2 through 4

**MAILBOX**

**Point Type**  Batch History Prototype

Reserved for possible future use in a Batch History Prototype data point.

<table>
<thead>
<tr>
<th>Source</th>
<th>User</th>
<th>Default Value</th>
<th>N/A</th>
<th>Access Lock</th>
<th>Oper</th>
</tr>
</thead>
</table>

**Value Type**  Array (1..100) of Blind Record (165)

**Value Range**  N/A

**MCVBAVGC**

**Point Type**  Processor Status

Average current value buffer memory used during the current hour (no form).

<table>
<thead>
<tr>
<th>Source</th>
<th>System</th>
<th>Default Value</th>
<th>N/A</th>
<th>Access Lock</th>
<th>Read Only</th>
</tr>
</thead>
</table>

**Value Type**  Integer

**Value Range**  0 through MEMCVBLM
MCVBAVG

Point Type  Processor Status

Average current value buffer memory used during the previous hour (no form).

Source  System  Default Value  N/A  Access Lock  Read Only

Value Type  Integer

Value Range  0 through MEMCVBLM

MCVBMAXC

Maximum current value buffer memory used during the current hour (no form).

Source  System  Default Value  0  Access Lock  Read Only

Value Type  Integer

Value Range  0 through MEMCVBLM

MCVBMAXP

Point Type  Processor Status

Maximum current value buffer memory used during the previous hour (no form).

Source  System  Default Value  0  Access Lock  Read Only

Value Type  Integer

Value Range  0 through MEMCVBLM
MCVBMINC

Point Type  Processor Status

Minimum current value buffer (CVB) memory used during the current hour (no form).

**Source**  System  **Default Value**  32767  **Access Lock**  Read Only

**Value Type**  Integer

**Value Range**  0 through MEMCVBMLM

MCVBMINP

Point Type  Processor Status

Minimum CVB memory used during the previous hour (no form).

**Source**  System  **Default Value**  0  **Access Lock**  Read Only

**Value Type**  Integer

**Value Range**  0 through MEMCVBMLM

MCVBMNCC

Point Type  Processor Status

Absolute cycle during which minimum CVB memory was used in the current hour (no form).

**Source**  System  **Default Value**  N/A  **Access Lock**  Read Only

**Value Type**  Real

**Value Range**  $\geq 0.0$
**MCVBMNCP**

**Point Type**  Processor Status

Absolute cycle during which minimum CVB memory was used in the previous hour (no form).

<table>
<thead>
<tr>
<th>Source</th>
<th>System</th>
<th>Default Value</th>
<th>N/A</th>
<th>Access Lock</th>
<th>Read Only</th>
</tr>
</thead>
</table>

**Value Type**  Real

**Value Range**  \( \geq 0.0 \)

**MCVBMXCC**

**Point Type**  Processor Status

Absolute cycle during which maximum CVB memory was used in the current cycle (no form).

<table>
<thead>
<tr>
<th>Source</th>
<th>System</th>
<th>Default Value</th>
<th>0</th>
<th>Access Lock</th>
<th>Read Only</th>
</tr>
</thead>
</table>

**Value Type**  Real

**Value Range**  \( \geq 0.0 \)

**MCVBMXCP**

**Point Type**  Processor Status

Absolute cycle during which maximum CVB memory was used in the previous hour (no form).

<table>
<thead>
<tr>
<th>Source</th>
<th>System</th>
<th>Default Value</th>
<th>0</th>
<th>Access Lock</th>
<th>Read Only</th>
</tr>
</thead>
</table>

**Value Type**  Real

**Value Range**  \( \geq 0.0 \)
### MEMCDPN(I)

**Point Type**  Processor Status

Memory required for custom data segment (CDS) description and point name storage (where I = Unit index) (no form).

<table>
<thead>
<tr>
<th>Source</th>
<th>Default Value</th>
<th>Access Lock</th>
</tr>
</thead>
<tbody>
<tr>
<td>System</td>
<td>N/A</td>
<td>Read Only</td>
</tr>
</tbody>
</table>

**Value Type**  Array (1..100) of Real

**Value Range**  $> = 0.0$

### MEMCKPT

**Point Type**  Processor Status

Memory used for the checkpoint buffer (no form).

<table>
<thead>
<tr>
<th>Source</th>
<th>Default Value</th>
<th>Access Lock</th>
</tr>
</thead>
<tbody>
<tr>
<td>System</td>
<td>N/A</td>
<td>Read Only</td>
</tr>
</tbody>
</table>

**Value Type**  Real

**Value Range**  $> = 0.0$

### MEMCL(I)

**Point Type**  Processor Status

Memory required for CL block storage, where (I) is the Unit index (no form).

<table>
<thead>
<tr>
<th>Source</th>
<th>Default Value</th>
<th>Access Lock</th>
</tr>
</thead>
<tbody>
<tr>
<td>System</td>
<td>N/A</td>
<td>Read Only</td>
</tr>
</tbody>
</table>

**Value Type**  Array (1..100) of Real

**Value Range**  $> = 0.0$
MEMCVBLM

**Point Type**  Processor Status

Memory reserved for each prefetch/poststore Current Value Buffer. Value is established through AM node configuration (no form).

**Source**  User (NCF)  **Default Value**  2000  **Access Lock**  Read Only

**Value Type**  Integer

**Value Range**  500 through 15000

MEMCVBMX

**Point Type**  Processor Status

Maximum memory used for prefetch/poststore Current Value Buffer since the AM was last loaded/started or the parameter was reinitialized by the Engineer. Storing any value reinitializes the parameter and forces it to the default value. (no form)

**Source**  System  **Default Value**  0  **Access Lock**  Engineer

**Value Type**  Integer

**Value Range**  0 through 15000

MEMCVBNX

**Point Type**  Processor Status

Source for MEMCVBLM value.

**Source**  User (NCF)  **Default Value**  2000  **Access Lock**  Read Only

**Value Type**  Integer

**Value Range**  500 through 15000
**MEMCVBTH**

**Point Type**  Processor Status

Alarm threshold. If memory used by Current Value Buffer exceeds this limit, an alarm is generated for each unit assigned to the AM.

<table>
<thead>
<tr>
<th>Source</th>
<th>User</th>
<th>Default Value</th>
<th>1600</th>
<th>Access Lock</th>
<th>Oper</th>
</tr>
</thead>
</table>

**Value Type**  Integer

**Value Range**  -1 through **MEMCVBLM**  -1 indicates no alarming is to be done

**MEMFREE**

**Point Type**  Processor Status

Total memory currently available for Points, CLs, Custom Data Descriptors, Check Points, and Prefetch/Poststore I/O Buffers (no form).

<table>
<thead>
<tr>
<th>Source</th>
<th>System</th>
<th>Default Value</th>
<th>N/A</th>
<th>Access Lock</th>
<th>Read Only</th>
</tr>
</thead>
</table>

**Value Type**  Real

**Value Range**  \( \geq 0.0 \)

**MEMIOLM**

**Point Type**  Processor Status

Total memory reserved for prefetch/poststore I/O (no form).

<table>
<thead>
<tr>
<th>Source</th>
<th>System</th>
<th>Default Value</th>
<th>N/A</th>
<th>Access Lock</th>
<th>Read Only</th>
</tr>
</thead>
</table>

**Value Type**  Real

**Value Range**  \( > 1.0 \times \text{MEMCVBLM} \)
MEMPTS(I)

Point Type  Processor Status

Memory required for data point storage, where \((I)\) is the Unit index (no form).

Source  User  Default Value  N/A  Access Lock  Read Only

Value Type  Array \((1..100)\) of Real

Value Range  \(> 0.0\)

MidOf3  (PV algorithm)

This algorithm (Middle Of Three Selector) provides a calculated PV  \((PVCALC)\) that is normally the middle value of three values from active PV-input connections. The PVAUTO status goes bad only if all three inputs to this algorithm are bad. If at least one input is valid (normal or uncertain), this algorithm provides a valid value in PVCALC.

Parameters involved in configuring this algorithm are the following and those listed in Section 2 under Regulatory Point.

<table>
<thead>
<tr>
<th>PV Common Display</th>
<th>Middle Of3 Algo Display</th>
</tr>
</thead>
<tbody>
<tr>
<td>PVFORMAT</td>
<td>PVEQN</td>
</tr>
<tr>
<td>PVEUHI</td>
<td>P2</td>
</tr>
<tr>
<td>PVEULO</td>
<td>P3</td>
</tr>
<tr>
<td>PVEXEUHI</td>
<td>NOPINPTS</td>
</tr>
<tr>
<td>PVEXEULO</td>
<td>PISRC(N)</td>
</tr>
<tr>
<td>PVCLAMP</td>
<td>PIDSTN(N)</td>
</tr>
<tr>
<td>PVSRCOPT</td>
<td>PIACTSTS</td>
</tr>
<tr>
<td>PVSOURCE</td>
<td></td>
</tr>
<tr>
<td>PVFLTOPT</td>
<td></td>
</tr>
<tr>
<td>TF IN MIN</td>
<td></td>
</tr>
<tr>
<td>PVTIV</td>
<td></td>
</tr>
</tbody>
</table>
MIPCVBLM

Point Type  Processor Status
Current memory reserved for the IPP CVB. Value is established through AM node configuration (no form).
Source  User (NCF)  Default Value  2000  Access Lock  Read Only

Value Type  Integer

Value Range  2000 through 15000

MIPCVBMX

Point Type  Processor Status
Maximum memory used for the IPP CVB (without overflow) since the AM was last loaded/started or the parameter was reinitialized by the Engineer. Storing any value reinitializes the parameter and forces it to the default value. (no form)
Source  System  Default Value  0  Access Lock  Engr

Value Type  Integer

Value Range  0 through 15000

MIPIOTOT

Point Type  Processor Status
The total memory reserved for IPP prefetch/poststore I/O.
Source  System  Default Value  N/A  Access Lock  Read Only

Value Type  Real

Value Range  >= 0.0
MODATTR

**Point Type**  Regulatory

Mode attribute for control algorithms (4.4.3 in *System Control Functions*) (no form).

- **Source**  User
- **Default Value**  Oper
- **Access Lock**  Oper

**Value Type**  MODATTR enumeration

**Value Range**  None—The NORM key has no effect on returning to normal mode (see MODE, NMODE, NMODATTR).

  Operator—In discontinuous control, enables the operator to set SP, OP, MODE, RATIO, and BIAS, and disables setting by user-written programs. In continuous control, enables the operator to set RATIO and BIAS in Pid Ratio/Bias algorithm.

  Program—In discontinuous control, enables the user-written programs to set OP, SP, MODE, RATIO, and BIAS and disables setting by the operator.

MODE

**Point Type**  Regulatory

Current mode for a control algorithm (4.4.1 in *System Control Functions*) (no form).

- **Source**  User
- **Default Value**  Man
- **Access Lock**  Oper

**Value Type**  MODE enumeration

**Value Range**  Man—Manual mode

  Auto—Automatic mode

  Cas—Cascade Mode

  Normal—Mode is set equal to the value of NMODE when the NORM key is pressed.

MODEAPPL(N)

**Point Type**  Regulatory

Mode applicability selection for internal and MMI (no form).

- **Source**  User
- **Default Value**  Off
- **Access Lock**  Read Only

**Value Type**  Boolean Array (1..4)

**Value Range**  Mode appl(1)—Manual mode applies

  Mode appl(2)—Auto mode applies

  Mode appl(3)—Cascade mode applies

  Mode appl(4)—Normal mode applies
MODEPERM

Point Type  Regulatory

Mode permissive selection (2.5 in *AM Control Functions*) (Form AM88-441).

Source  User  Default Value  Permit  Access Lock  Engr or DEB

Value Type  MODEPERM enumeration

Value Range  Permit—Permits operator to change the mode
              NotPerm—Inhibits operator from changing the mode

MSAVGC

Point Type  Processor Status

Average CL messages serviced per second in the current hour (no form).

Source  System  Default Value  0  Access Lock  Read Only

Value Type  Integer

Value Range  0 through maximum CL messages per second

MSAVGP

Point Type  Processor Status

Average CL messages serviced per second in the previous hour (no form).

Source  System  Default Value  0  Access Lock  Read Only

Value Type  Integer

Value Range  0 through maximum CL messages per second
MSAVGS

**Point Type**  Processor Status

Average CL messages serviced per second during the last snapshot period (nominally 10 seconds) (no form).

**Source**  User  
**Default Value**  0  
**Access Lock**  Read Only

**Value Type**  Real

**Value Range**  0.0 through maximum CL messages per second.

MSMAXC

**Point Type**  Processor Status

Maximum CL messages serviced per cycle in the current hour (no form).

**Source**  System  
**Default Value**  0  
**Access Lock**  Read Only

**Value Type**  Integer

**Value Range**  0 through maximum CL messages per cycle.

MSMAXP

**Point Type**  Processor Status

Maximum CL messages serviced per cycle in the previous hour (no form).

**Source**  User  
**Default Value**  N/A  
**Access Lock**  Read Only

**Value Type**  Integer

**Value Range**  0 through maximum CL messages per cycle.
**MSMINC**

**Point Type**  Processor Status

Minimum CL messages serviced per cycle in the current hour (no form).

<table>
<thead>
<tr>
<th>Source</th>
<th>Default Value</th>
<th>Access Lock</th>
</tr>
</thead>
<tbody>
<tr>
<td>System</td>
<td>32767</td>
<td>Read Only</td>
</tr>
</tbody>
</table>

**Value Type**  Integer

**Value Range**  0 through maximum CL messages per cycle.

---

**MSMINP**

**Point Type**  Processor Status

Minimum CL messages serviced per cycle in the previous hour (no form).

<table>
<thead>
<tr>
<th>Source</th>
<th>Default Value</th>
<th>Access Lock</th>
</tr>
</thead>
<tbody>
<tr>
<td>System</td>
<td>0</td>
<td>Read Only</td>
</tr>
</tbody>
</table>

**Value Type**  Integer

**Value Range**  0 through maximum CL messages per cycle.
**MulDiv (Control Algorithm)**

This algorithm (Control Multiply Divide) calculates a control output by multiplying two input variables and dividing the resulting product by a third input variable. Scale factors and bias can be applied to the input variables, and an overall scale factor and bias can be specified.

Three equations are provided. One provides only multiplication, and the other two provide multiplication and division.

One of the input variables, (SP) is initializable. This variable appears in the numerator of one of the fractions and in the denominator of the other.

This algorithm is similar to PV algorithm MulDiv.

Parameters involved in configuring this algorithm are the following and those listed in Section 2 under Regulatory Point.

<table>
<thead>
<tr>
<th>Control Common Display</th>
<th>Setpoint Display</th>
<th>Mul/Div Algo Display</th>
<th>Control Input Connections Display</th>
<th>Control Output Connections Display</th>
</tr>
</thead>
<tbody>
<tr>
<td>NMODE</td>
<td>SPFORMAT</td>
<td>CTLEQN</td>
<td>NOCINPTS</td>
<td>NOCOPTS</td>
</tr>
<tr>
<td>NMODATTR</td>
<td>SPEUHI</td>
<td>INITTYPE</td>
<td>CISRC(N)</td>
<td>CODSTN(N)</td>
</tr>
<tr>
<td>MODEPERM</td>
<td>SPEULO</td>
<td>K</td>
<td>CIDSTN(N)</td>
<td>COACTSTS(N)</td>
</tr>
<tr>
<td>extswopt</td>
<td>SPHLM</td>
<td>B</td>
<td>OPHILM</td>
<td>OPHILM</td>
</tr>
<tr>
<td></td>
<td>spolom</td>
<td>K1</td>
<td>OPLOLM</td>
<td>OPLOLM</td>
</tr>
<tr>
<td></td>
<td>sp</td>
<td>K2</td>
<td>OPMCHLM</td>
<td>OPMCHLM</td>
</tr>
<tr>
<td></td>
<td>spopt</td>
<td>K3</td>
<td>OPROCLM</td>
<td>OPROCLM</td>
</tr>
<tr>
<td></td>
<td>avdevtp</td>
<td>K4</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>B1</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>B2</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>B3</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>B4</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>X2</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>X3</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>X4</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
MulDiv (PV Algorithm)

This algorithm (PV Multiply/Divide) calculates a PV (PVCALC) that is either the product of two inputs (Equation A), a quotient of two inputs (Equation B), or the product of three quotients (Equation C). The products and quotients can be scaled and bias values can be added to them.

Parameters involved in configuring this algorithm are the following and those listed in Section 2 under Regulatory Point.

<table>
<thead>
<tr>
<th>PV Common Display</th>
<th>AM-Reg PV Mul/Div Display</th>
<th>Input Connections Display</th>
</tr>
</thead>
<tbody>
<tr>
<td>PVFORMAT</td>
<td>PVEQN</td>
<td>NOPINPTS</td>
</tr>
<tr>
<td>PVEUHI</td>
<td>C</td>
<td>PISRC(N)</td>
</tr>
<tr>
<td>PVEULO</td>
<td>D</td>
<td>PIDSTN(N)</td>
</tr>
<tr>
<td>PVEXEUHI</td>
<td>(Scaling Constant):</td>
<td>PIACTSTS(N)</td>
</tr>
<tr>
<td>PVEXEULO</td>
<td>INPUT1</td>
<td></td>
</tr>
<tr>
<td>PVCLAMP</td>
<td>:</td>
<td></td>
</tr>
<tr>
<td>PVSRCOPT</td>
<td>INPUT7</td>
<td></td>
</tr>
<tr>
<td>PVEXEUHI</td>
<td>(Bias Constant):</td>
<td></td>
</tr>
<tr>
<td>PVEULO</td>
<td>INPUT1</td>
<td></td>
</tr>
<tr>
<td>TF IN MIN</td>
<td>:</td>
<td>**</td>
</tr>
<tr>
<td>PVTU</td>
<td>P2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>P7</td>
<td></td>
</tr>
</tbody>
</table>

* Appears on Detail display as C1-C7.
** Appears on Detail display as D1-D7.

MXRMPDEV

Point Type  Regulatory

Maximum ramp-rate deviation for RampSoak algorithm (22.4.4 in AM Algorithm Engineering Data) (Form AM88-463).

<table>
<thead>
<tr>
<th>Source</th>
<th>Default Value</th>
<th>Access Lock</th>
</tr>
</thead>
<tbody>
<tr>
<td>User</td>
<td>NaN</td>
<td>Supvr</td>
</tr>
</tbody>
</table>

Value Type  Real

Value Range  NaN, >= 0.0
**MXSOKDEV**

**Point Type**  Regulatory

Maximum soak-value deviation for RampSoak algorithm (22.4.4 in AM Algorithm Engineering Data) (Form AM88-463).

**Source**  User  **Default Value**  NaN  **Access Lock**  Prog

**Value Type**  Real

**Value Range**  NaN, \( \geq 0.0 \)
Point Type  Regulatory

Applies to the PV algorithms Hi/Lo Average Selector and Summer.

Number of inputs (Forms AM88-414 and 415).

<table>
<thead>
<tr>
<th>Source</th>
<th>User</th>
<th>Default Value</th>
<th>2</th>
<th>Access Lock</th>
<th>Prog</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Value Type</th>
<th>Integer</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Value Range</th>
<th>2 through 8</th>
</tr>
</thead>
</table>

NAME

Point Type  All AM data points

Tag name for this data point—the name that identifies the point to the system and on displays, reports, and logs.

<table>
<thead>
<tr>
<th>Source</th>
<th>User</th>
<th>Access Lock</th>
<th>Read Only</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Default Value</th>
<th>On forms, not applicable; on Parameter Entry Displays, eight underscores, which must be cleared and a valid tag name entered.</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Value Type</th>
<th>String</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Value Range</th>
<th>One through eight characters. Permissible characters: Alphabet (enter either upper- or lowercase characters—all will be converted to uppercase), 0 through 9 (all numeric NAME not allowed), underscore (not first character nor last character), spaces not allowed.</th>
</tr>
</thead>
</table>

NLFM

Point Type  Regulatory

Nonlinear gain form for Pid control algorithms (18.4.6 in AM Algorithm Engineering Data (Forms AM88-451, 455, and 456).

<table>
<thead>
<tr>
<th>Source</th>
<th>User</th>
<th>Default Value</th>
<th>1</th>
<th>Access Lock</th>
<th>Supvr</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Value Type</th>
<th>Integer</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Value Range</th>
<th>0 or 1</th>
</tr>
</thead>
</table>
NLGAIN

Point Type  Regulatory

Applies to Pid algorithms.

Nonlinear gain (Forms AM88-451, 455, and 456).

Source  User  Default Value  0.0  Access Lock  Supvr

Value Type  Real

Value Range  0.0 through 10.0

NMIN

Point Type  Regulatory

Minimum number of good inputs for HiLoAvg PV algorithm (6.4.2 in AM Algorithm Engineering Data) (Form AM88-414).

Source  User  Default Value  1  Access Lock  Supvr

Value Type  Integer

Value Range  1 through (N)

NMODATTR

Point Type  Regulatory

Normal mode attribute for this data point (4.4.4 in System Control Functions) (Form AM88-441).

Source  User  Default Value  None  Access Lock  Engr

Value Type  MODATTR enumeration

Value Range  None—The NORM key has no effect on returning to normal mode.
Operator—Pressing the NORM key returns the point to the Operator mode (see MODE, MODATTR, NMODE).
Program—Pressing the NORM key returns the point to the Program mode (see MODE, MODATTR, NMODE).
NMODE

Point Type  Regulatory

Normal mode for this data point (4.4.4 in System Control Functions) (Form AM88-441).

Source  User  Default Value  None  Access Lock  Supvr

Value Type  MODE enumeration

Value Range  None—The NORM key has no effect on returning to normal mode.
Man—Pressing the NORM key causes a return to Manual mode.
Auto—Pressing the NORM key causes a return to Automatic mode.
Cas—Pressing the NORM key causes a return to Cascade mode.

NOCINPTS

Point Type  Regulatory

Applies to control algorithms.

Number of control input connections (Forms AM88-451 through 459 and 461 through 463).

NOCINPTS designates the number of input connections you configure: Normally, this is 0 if any PV algorithm is specified. If no PV algorithm is specified, at least one connection is required to the PV parameter (true for all Pid algorithms).

Source  User  Default Value  0  Access Lock  Prog
3 If PVALGID = for Ctl Pid
2 If PVALGID = not for Ctl Pid

Value Type  Integer

Value Range  0 through 8
NOCOPTS

**Point Type**  Regulatory

Number of control output connections (Forms *AM88-451* through *459* and *461* through *464*).

**Source**  User  
**Default Value**  0  
**Access Lock**  Prog

**Value Type**  Integer

**Value Range**  0 through 8

NOGINPTS

**Point Type**  Regulatory, Counter, and Timer

Number of general-input connections to this point (Forms *AM88-480*, *430*, and *440*).

**Source**  User  
**Default Value**  0  
**Access Lock**  Prog

**Value Type**  Integer

**Value Range**  0 through 8

NOGOPTS

**Point Type**  Regulatory, Counter, and Timer

Number of general-output connections from this point (Forms *AM88-480*, *430*, and *440*).

**Source**  User  
**Default Value**  0  
**Access Lock**  Prog

**Value Type**  Integer

**Value Range**  0 through 8
NOPINPTS

Point Type  Regulatory

Number of PV input connections (Form AM88-411 through 420).

Source  User  Default Value  All blanks  Access Lock  Engr

Value Type  Integer

Value Range  0 through 8

NOPKG

Point Type  Regulatory, Custom, and Switch

Number of CL packages to be linked to this Custom Data Point or AM Switch Point (3.6 in AM Control Functions) (Forms AM88-480, 450, and 460).

Source  User  Default Value  0  Access Lock  DEB

Value Type  Integer

Value Range  0 through 10
### NORMCYCL

**Point Type**  Custom, Counter, Regulatory, Switch, and Timer

Point cycle on which the point normally is processed (Forms AM88-401, 430, 440, 450, and 460) (2.2.1.3, 3.3.6, and 4.2 in AM Control Functions).

<table>
<thead>
<tr>
<th><strong>Source</strong></th>
<th>User</th>
<th><strong>Default Value</strong></th>
<th>-1</th>
<th><strong>Access Lock</strong></th>
<th>DEB</th>
</tr>
</thead>
</table>

**Value Type**  Integer

**Value Range**

Your entry depends on the (PERIOD) selected, or you enter the desired Cycle Number within the processing period you entered for (PERIOD).

<table>
<thead>
<tr>
<th>Period (Line 30)</th>
<th>Time Base</th>
<th>Cycle Range or Data Entry (Integers)</th>
</tr>
</thead>
</table>

#### Fast Processor

<table>
<thead>
<tr>
<th>1 SEC 1/2 Second</th>
<th>0 or 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 SEC 0 thru 3</td>
<td>3</td>
</tr>
<tr>
<td>5 SEC 0 thru 9</td>
<td>9</td>
</tr>
<tr>
<td>10 SEC 0 thru 19</td>
<td>19</td>
</tr>
<tr>
<td>15 SEC 0 thru 29</td>
<td>29</td>
</tr>
<tr>
<td>30 SEC 0 thru 59</td>
<td>59</td>
</tr>
<tr>
<td>1 MIN 0 thru 119</td>
<td>119</td>
</tr>
<tr>
<td>2 MIN 0 thru 239</td>
<td>239</td>
</tr>
</tbody>
</table>

#### Internetwork Processor

<table>
<thead>
<tr>
<th>5 SEC 5 seconds</th>
<th>0</th>
</tr>
</thead>
<tbody>
<tr>
<td>10 SEC 0 or 1</td>
<td>1</td>
</tr>
<tr>
<td>15 SEC 0 thru 2</td>
<td>2</td>
</tr>
<tr>
<td>30 SEC 0 thru 5</td>
<td>5</td>
</tr>
<tr>
<td>1 MIN 0 thru 11</td>
<td>11</td>
</tr>
<tr>
<td>2 MIN 0 thru 23</td>
<td>23</td>
</tr>
</tbody>
</table>

#### Slow Processor

<table>
<thead>
<tr>
<th>1S MIN 1 Minute</th>
<th>0</th>
</tr>
</thead>
<tbody>
<tr>
<td>2S MIN 0 or 1</td>
<td>1</td>
</tr>
</tbody>
</table>

#### Slow or Internetwork Processor

<table>
<thead>
<tr>
<th>5 MIN 1-Minute</th>
<th>0 thru 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>10 MIN 0 thru 9</td>
<td>9</td>
</tr>
<tr>
<td>15 MIN 0 thru 14</td>
<td>14</td>
</tr>
<tr>
<td>30 MIN 0 thru 29</td>
<td>29</td>
</tr>
<tr>
<td>1 HR 0 thru 59</td>
<td>59</td>
</tr>
</tbody>
</table>

#### Slow or Internetwork Processor

<table>
<thead>
<tr>
<th>8 HR 1 Hour</th>
<th>0 thru 7</th>
</tr>
</thead>
<tbody>
<tr>
<td>12 HR 0 thru 11</td>
<td>11</td>
</tr>
<tr>
<td>24 HR 0 thru 23</td>
<td>23</td>
</tr>
</tbody>
</table>
NORSSEQ

Point Type  Regulatory

Number of ramp/soak pairs for a RampSoak control algorithm (22.5 in AM Algorithm Engineering Data) (Form AM88-463).

Source  User  Default Value  2  Access Lock  Engr-DEB

Value Type  Integer

Value Range  2 through 6

NUMPTS(I)

Point Type  Processor Status

Number of points within a given Unit.  I = unit index (no form).

Source  System  Default Value  0  Access Lock  Read Only

Value Type  Array (1..100) of Integer

Value Range  0 through 32767

NUMSWITCH

Point Type  Switch and Regulatory

Configure on Forms AM88-450 and 480.

Number of switches (4.2 in AM Control Functions).

Source  User  Default Value  1 for Switch 0 for Regulatory  Access Lock  DEB

Value Type  Integer

Value Range  0 through 2
NXTSOAKV

Point Type  Regulatory

Next soak value (RampSoak algorithm) (no form) (Section 22 in AM Algorithm Engineering Data).

Source  User  Default Value  ----  Access Lock  Read Only

Value Type  Real

Value Range  Any real number
OFFNDIAK

**Point Type**  Regulatory

Initialization acknowledgement for off-node primary. "Off-node" means, "in another logical node." Each unit in an AM is a logical node, so this is a request for initialization of a primary point in another unit in this or another AM (no form).

<table>
<thead>
<tr>
<th>Source</th>
<th>Default Value</th>
<th>Access Lock</th>
</tr>
</thead>
<tbody>
<tr>
<td>User</td>
<td>Off</td>
<td>Prog</td>
</tr>
</tbody>
</table>

**Value Type**  Boolean

- **Value Range**
  - Off—Normal operation
  - On—The initialization request has been acknowledged.

OFFNDIRQ

**Point Type**  Regulatory

Initialization request for off-node primary. "Off-node" means, "in another logical node." Each unit in an AM is a logical node, so this is a request for initialization of a primary point in another unit in this or another AM (no form).

<table>
<thead>
<tr>
<th>Source</th>
<th>Default Value</th>
<th>Access Lock</th>
</tr>
</thead>
<tbody>
<tr>
<td>User</td>
<td>Off</td>
<td>Prog</td>
</tr>
</tbody>
</table>

**Value Type**  Boolean

- **Value Range**
  - Off—Normal
  - On—There is an initialization request.

OFFNRNRMAL

**Point Type**  Flag

Configure on Form AM88-410.

Off-normal alarm configuration; alarming enable/disable (3.4.3 in *AM Control Functions*).

<table>
<thead>
<tr>
<th>Source</th>
<th>Default Value</th>
<th>Access Lock</th>
</tr>
</thead>
<tbody>
<tr>
<td>User</td>
<td>Off</td>
<td>Supvr</td>
</tr>
</tbody>
</table>

**Value Type**  Boolean

- **Value Range**
  - Off—Off-normal alarming disabled. No alarm is generated when PV ≠ PVNORMAL.
  - On—Off-normal alarming enabled. An alarm is generated when PV ≠ PVNORMAL. If On is selected, also configure PVNORMAL, ALPRIOR, ALENBST, and OVERVAL.
**OP**

**Point Type**  Regulatory

The output of a regulatory control algorithm, in %, after control-output processing (3.1.12 in *AM Control Functions*) (Forms AM88-451 through 459 and 461 through 464.)

<table>
<thead>
<tr>
<th>Source</th>
<th>User</th>
<th>Default Value</th>
<th>0.0</th>
<th>Access Lock</th>
<th>Oper</th>
</tr>
</thead>
</table>

**Value Type**  Real

**Value Range**  -6.9 to 106.9

'----' (NaN) cannot be stored

**OPEU**

**Point Type**  Regulatory

The output of a regulatory control algorithm, in engineering units, after control-output processing (3.1.12 in *AM Control Functions*) (no form).

<table>
<thead>
<tr>
<th>Source</th>
<th>User</th>
<th>Default Value</th>
<th>----</th>
<th>Access Lock</th>
<th>Read Only</th>
</tr>
</thead>
</table>

**Value Type**  Real

**Value Range**  Any real number

**OPHIFL**

**Point Type**  Regulatory

Output high limit flag (no form).

<table>
<thead>
<tr>
<th>Source</th>
<th>User</th>
<th>Default Value</th>
<th>Off</th>
<th>Access Lock</th>
<th>Read Only</th>
</tr>
</thead>
</table>

**Value Type**  Boolean

**Value Range**  Off—OP < OPHILM

On—OP >= OPHILM
OPHILM

Point Type  Regulatory

Configure on Forms AM88-451 through 459 and 461 through 464.

Output high limit in percent.

Source User  Default Value 105.0  Access Lock Supvr

Value Type Real

Value Range OPLOLM to 106.9
NaN cannot be stored

OPLOFL

Point Type  Regulatory

Output low limit flag (no form).

Source User  Default Value Off  Access Lock Read Only

Value Type Boolean

Value Range Off—OP > OPLOLM
On—OP <= OPLOLM

OPLOLM

Point Type  Regulatory

Configure on Forms AM88-451 through 459 and 461 through 464.

Output low limit in percent (no form).

Source User  Default Value -5.0  Access Lock Supvr

Value Type Real

Value Range -6.9 to OPHILM
'----' cannot be stored
OPMCHLM

Point Type  Regulatory

Configure on Forms AM88-451 through 459 and 461 through 464.

Output minimum change limit in percent. The output changes only if the absolute value of new output minus the past output is greater than the OPMCHLM. This limit is disabled if set to 0.0 or NaN.

Source  User  Default Value  0.0  Access Lock  Supvr

Value Type  Real, NaN

Value Range  > = 0.0

OPROCFL

Point Type  Regulatory

Output rate-of-change limit flag.

Source  User  Default Value  Off  Access Lock  Read Only

Value Type  Boolean

Value Range  Off—Normal operation
On—The output exceeded the OPROCLM.

OPROCLM

Point Type  Regulatory

Configure on Forms AM88-451 through 459 and 461 through 464.

Output rate-of-change limit in percent. The output change limit is specified as a change of the control output in percent per minute. This limit check is disabled if set to NaN.

Source  User  Default Value  NaN  Access Lock  Supvr

Value Type  Real, NaN

Value Range  > = 0.0
ORBIAS

Point Type  Regulatory

For IncrSum algorithm, overrange (bias) value applied to feedback value in ORFBSEC from Override-Selector secondary (15.4.4 in AM Algorithm Engineering Data) (Form AM88-457).

Source  User  Default Value  0.0  Access Lock  Supvr

Value Type  Real

Value Range  \( \geq 0.0 \)

ORFBSEC

Point Type  Regulatory

Override feedback value from an Override Selector (OrSel) control algorithm (Section 23 in AM Algorithm Engineering Data) (no form).

Source  User  Default Value  NaN  Access Lock  Prog

Value Type  Real, NaN

Value Range  Any real number

OROPT

Point Type  Regulatory

Override option for Override Selector (OrSel) control algorithm (Section 23 in AM Algorithm Engineering Data) (Form AM88-461).

Source  User  Default Value  Off  Access Lock  Engr-DEB

Value Type  Boolean

Value Range  Off—The control algorithm functions as a simple Hi or Lo selector.
               On—The control algorithm functions as a Hi or Lo selector with override feedback to prevent the PIDs connected to nonselected inputs from winding up.
OrSel (Control Algorithm)

This algorithm (Control Override Selector) causes the input with the highest value or the input with the lowest value to be selected and passed on to the output of this data point. There can be up to four inputs, all of which are initializable. This algorithm can operate as a simple selector, or an override option can be configured that prevents PID points in an override-control strategy from winding up. If the override option is configured, an operator can put the OrSel point in a bypass state, where the first input is selected and all other inputs are initialized.

Parameters involved in configuring this algorithm are the following and those listed in Section 2 under Regulatory Point.

<table>
<thead>
<tr>
<th>Control Common Display</th>
<th>Control Over/Sel Algo Display</th>
<th>Control Output Connections Display</th>
</tr>
</thead>
<tbody>
<tr>
<td>NMODE</td>
<td>NITTYPE</td>
<td>NOCOPTS</td>
</tr>
<tr>
<td>MODATTR</td>
<td>CTLEQN</td>
<td>CODSTN(N)</td>
</tr>
<tr>
<td>MODEPERM</td>
<td>M</td>
<td>COACTSTS(N)</td>
</tr>
<tr>
<td>EXTSWOPT</td>
<td>OROPT</td>
<td>OPHILM</td>
</tr>
<tr>
<td></td>
<td>XEUHI</td>
<td>OPLOLM</td>
</tr>
<tr>
<td></td>
<td>XEUULO</td>
<td>OPMCHLM</td>
</tr>
<tr>
<td></td>
<td>NOCINPTS</td>
<td>OPROCLM</td>
</tr>
<tr>
<td></td>
<td>CISRC(N)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>CIDSTN(N)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>CIACTSTS(N)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>OUT0 – OUT12</td>
<td></td>
</tr>
</tbody>
</table>

**OUT0 – OUT12**

**Point Type**  Regulatory

Output coordinate-value parameter for GenLin PV algorithm. The value in SEGTOT defines the number of OUTn parameters that are exposed on the PED (Section 5 in AM Algorithm Engineering Data) (Form AM88-420).

<table>
<thead>
<tr>
<th>Source</th>
<th>Default Value</th>
<th>Access Lock</th>
</tr>
</thead>
<tbody>
<tr>
<td>User</td>
<td>NaN</td>
<td>Supvr</td>
</tr>
</tbody>
</table>

**Value Type**  Real, NaN

**Value Range**  Any real number
OVERRUNS

Point Type  Processor Status

Current number Fast Processor cycles behind (no form) (2.2.1.6 in AM Control Functions).

Source  System  Default Value  0  Access Lock  Read Only

Value Type  Real

Value Range  $\geq 0.0$
OVERVAL

Point Type  Regulatory

Overvalue index. Defines the amount of deviation in % that causes the PV to reach the Overview Limit on the Detail display (Form AM88-401).

Source  User  Default Value  25  Access Lock  Engr-DEB

Value Type  Integer

Value Range  0 through 100

Point Type  Flag

Overview Display Switch—controls the display of an off-normal alarm in the Overview display (Form AM88-410).

Source  User  Default Value  Off  Access Lock  Engr-DEB

Value Type  Boolean

Value Range  Off—Alarm is not displayed in the Overview display.
On—If selected, Off Normal alarms are displayed in the Overview display.

Point Type  Counter

Overview value index. Percentage of full scale used for the Overview display (Form AM88-440).

Source  User  Default Value  25  Access Lock  Engr-DEB

Value Type  Integer

Value Range  0 through 100
**OVRFASTC**

**Point Type**  Processor Status

Number of Fast Processor overruns in the current hour. (For each cycle processed late, count 1) (2.2.1.6 in *AM Control Functions*).

**Source**  System  
**Default Value**  0  
**Access Lock**  Read Only

**Value Type**  Integer

**Value Range**  0 through 32767

---

**OVRFASTP**

**Point Type**  Processor Status

Number of Fast Processor overruns in the previous hour. (For each cycle processed late, count one) (no form).

**Source**  System  
**Default Value**  0  
**Access Lock**  Read Only

**Value Type**  Integer

**Value Range**  0 through 32767
OVRSLOWC

Point Type  Processor Status

Number of Slow Processor overruns in current hour. (For each cycle processed late, count one) (no form) (2.2.1.6 in AM Control Functions).

Source  System  Default Value  0  Access Lock  Read Only

Value Type  Integer

Value Range  0 through 32767

OVRSLOWP

Point Type  Processor Status

Number of Slow Processor overruns in the previous hour. (For each cycle processed late, count one) (no form).

Source  System  Default Value  0  Access Lock  Read Only

Value Type  Integer

Value Range  0 through 32767
P

**Point Type**  Regulatory

Configure on Form AM88-412.

Applies to Flow Compensation algorithm (Section 4 in *AM Algorithm Engineering Data*).

Pressure input. Measured actual gauge pressure input, typically fetched with an input connection. Any default value can be specified instead of the connection if a constant is required. (Applies to only EqB, EqC, EqD, or EqE.)

**Value Type**  Real

**Value Range**  Any real number

---

$P_0$

**Point Type**  Regulatory

Configure on Form AM88-412.

Applies to Flow Compensation algorithm (Section 4 in *AM Algorithm Engineering Data*).

Zero reference for pressure. Typically 14.696 if $P$ is in PSIG or 101.325 if $P$ is in Kilo Pascals. (Applies to only EqB, EqC, EqD, or EqE.)

**Value Type**  Real

**Value Range**  Any real number
P1

**Point Type**  Regulatory

Applies to all PV algorithms except flow Compensation (no form).

Input number 1.

<table>
<thead>
<tr>
<th>Source</th>
<th>Default Value</th>
<th>Access Lock</th>
</tr>
</thead>
<tbody>
<tr>
<td>User</td>
<td>NaN</td>
<td>Read Only</td>
</tr>
</tbody>
</table>

**Value Type**  Real

**Value Range**  Any real number

P1STS – P8STS

**Point Type**  Regulatory

Applies to all PV algorithms except flow Compensation.

Value status of inputs P1 through P8. The number of inputs for which value status is available and the default values vary with algorithm type, as described below.

<table>
<thead>
<tr>
<th>Source</th>
<th>Default Value</th>
<th>Access Lock</th>
</tr>
</thead>
<tbody>
<tr>
<td>User</td>
<td>See below</td>
<td>Read Only</td>
</tr>
</tbody>
</table>

- PV Data Acquisition algorithm: P1STS default: Bad
- PV Middle of 3 algorithm: P1STS – P3STS default: Bad
- PV Hi Lo Average algorithm: P1STS – P8STS default: Bad
- PV Summer algorithm: P1STS default: Bad
- PV Multiply/Divide algorithm and PV Sum of Products algorithm: P1STS – P2STS – P7STS default: Normal
- PV General Linearization algorithm: P1STS default: Bad

**Value Type**  PVALST enumeration

**Value Range**  Normal—The value is good.
                 Uncertn—The value is uncertain.
                 Bad—The value is NaN.
P2 – P8

Point/Algo Type  Regulatory

Configure on Forms AM88-413, 414, 416, and 417.

Applies to PV algorithms Multiply Divide, Hi Lo Average, Middle of 3, and Sum of Products.

Input number. Typically, inputs are fetched with an input connection. Any default value can be specified instead of an input connection if constant value is required.

Source  User  Default Value  See table  Access Lock  Engr-DEB

Value Type  Real

Value Range  Any real number

<table>
<thead>
<tr>
<th>Input:</th>
<th>P2</th>
<th>P3</th>
<th>P4</th>
<th>P5</th>
<th>P6</th>
<th>P7</th>
<th>P8</th>
</tr>
</thead>
<tbody>
<tr>
<td>PV Multiply/Divide</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Default Values:</td>
<td>1.0</td>
<td>1.0</td>
<td>1.0</td>
<td>1.0</td>
<td>1.0</td>
<td>0.0</td>
<td>(Not Used)</td>
</tr>
<tr>
<td>PV Hi Lo Average</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Default Values:</td>
<td>NaN</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PV Middle of 3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Default Values:</td>
<td>NaN</td>
<td>NaN</td>
<td>(Not Used)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PV Sum of Products</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Default Values:</td>
<td>1.0</td>
<td>1.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>(Not Used)</td>
</tr>
</tbody>
</table>

PATHIND

Point Type  Regulatory

Control-path indicator. Indicates whether control information is currently propagated normally, on hold, in initialization, or an override path is selected.

Source  User  Default Value  Man  Access Lock  Read Only

Value Type  PATHIND enumeration

Value Range  Fwd—Normal Operation
Hold—Hold Path
Init—Man—Initialization path
OR—Override path
PERIOD

**Point Type**  Regulatory, Timer, Counter, Custom, and Switch

The interval on which this point is scheduled for processing. Also determines if the point is assigned to the Fast Processor or the Slow Processor. If NoPeriod is selected, the point is not scheduled, and processing must be requested by PPS or PPSCYCLE (2.2 in AM Control Functions) (Forms AM88-401, 430, 440, 450, and 460).

<table>
<thead>
<tr>
<th>Source</th>
<th>User</th>
<th>Default Value</th>
<th>NoPeriod</th>
<th>Access Lock</th>
<th>DEB</th>
</tr>
</thead>
</table>

**Value Type**  PERIOD enumeration

**Value Range When $IPPASN = OFF**

<table>
<thead>
<tr>
<th>1sec</th>
<th>2sec</th>
<th>5sec</th>
<th>10sec</th>
<th>1Smin</th>
<th>2Smin = 1 minute, 2 minutes, respectively, assigned to the Slow processor.</th>
</tr>
</thead>
<tbody>
<tr>
<td>15sec</td>
<td>30sec</td>
<td>1min</td>
<td>2min</td>
<td>1Smin</td>
<td>2Smin</td>
</tr>
<tr>
<td>12hr</td>
<td>24hr</td>
<td>NoPeriod</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Value Range When $IPPASN = ON**

<table>
<thead>
<tr>
<th>5sec</th>
<th>10sec</th>
<th>15sec</th>
<th>30sec</th>
</tr>
</thead>
<tbody>
<tr>
<td>1min</td>
<td>2min</td>
<td>5min</td>
<td>10min</td>
</tr>
<tr>
<td>15min</td>
<td>30min</td>
<td>1hr</td>
<td>8hr</td>
</tr>
<tr>
<td>12hr</td>
<td>24hr</td>
<td>NoPeriod</td>
<td></td>
</tr>
</tbody>
</table>

PFAVGC

**Point Type**  Processor Status

Average number of prefetches per second in the current hour (no form).

<table>
<thead>
<tr>
<th>Source</th>
<th>System</th>
<th>Default Value</th>
<th>0</th>
<th>Access Lock</th>
<th>Read Only</th>
</tr>
</thead>
</table>

**Value Type**  Real

**Value Range**  \( \geq 0.0 \)

PFAVGP

**Point Type**  Processor Status

Average number of prefetches per second in the previous hour.

<table>
<thead>
<tr>
<th>Source</th>
<th>System</th>
<th>Default Value</th>
<th>0</th>
<th>Access Lock</th>
<th>Read Only</th>
</tr>
</thead>
</table>

**Value Type**  Real

**Value Range**  \( > 0.0 \)
PFAVGS

Point Type  Processor Status

Average number of prefetches serviced per second during the last snapshot period (nominally 10 seconds) (no form).

Source  User  Default Value  0  Access Lock  Read Only

Value Type  Real

Value Range  >= 0.0

PFMAXC

Point Type  Processor Status

Maximum number of prefetches per cycle in the current hour (no form).

Source  System  Default Value  0  Access Lock  Read Only

Value Type  Integer

Value Range  0 through 32767

PFMAXP

Point Type  Processor Status

Maximum number of prefetches per cycle in the previous hour (no form).

Source  System  Default Value  0  Access Lock  Read Only

Value Type  Integer

Value Range  0 through 32767
PFMINC

**Point Type**  Processor Status

Minimum number of prefetches per cycle in the current hour.

**Source**  System  **Default Value**  32767  **Access Lock**  Read Only

**Value Type**  Integer

**Value Range**  0 through 32767

PFMINP

**Point Type**  Processor Status

Minimum number of prefetches per cycle in the previous hour (no form).

**Source**  System  **Default Value**  0  **Access Lock**  Read Only

**Value Type**  Integer

**Value Range**  0 through 32767

PFMNCYCC

**Point Type**  Processor Status

Cycle in current hour at which prefetches were minimum (no form).

**Source**  System  **Default Value**  0.0  **Access Lock**  Read Only

**Value Type**  Real

**Value Range**  \( \geq 0.0 \)
PFMNCYCP

Point Type  Processor Status
Cycle in previous hour at which prefetches were minimum.
Source  User  Default Value  0.0  Access Lock  Read Only
Value Type  Real
Value Range  \( \geq 0.0 \)

PFMXCYCC

Point Type  Processor Status
Cycle in current hour at which prefetches were maximum (no form).
Source  System  Default Value  0.0  Access Lock  Read Only
Value Type  Real
Value Range  \( \geq 0.0 \)

PFMXCYCP

Point Type  Processor Status
Cycle in previous hour at which prefetches were maximum (no form).
Source  System  Default Value  0.0  Access Lock  Read Only
Value Type  Real
Value Range  \( \geq 0.0 \)
**PFPSOVER**

**Point Type**  Processor Status

Current prefetch/poststore overrun count. Count one for each time a prefetch/poststore is not completed within 1/2 second. Decrement one for each time a prefetch/poststore is completed within 1/2 second (with lower bound of 0) (no form).

<table>
<thead>
<tr>
<th>Source</th>
<th>Default Value</th>
<th>Access Lock</th>
</tr>
</thead>
<tbody>
<tr>
<td>User</td>
<td>0</td>
<td>Read Only</td>
</tr>
</tbody>
</table>

**Value Type**  Integer

**Value Range**  0 through 7200

**PFPSOVRC**

**Point Type**  Processor Status

Prefetch/poststore overruns during the current hour. Count one for each time a prefetch/poststore is not completed within 1/2 second (no form).

<table>
<thead>
<tr>
<th>Source</th>
<th>Default Value</th>
<th>Access Lock</th>
</tr>
</thead>
<tbody>
<tr>
<td>User</td>
<td>0</td>
<td>Read Only</td>
</tr>
</tbody>
</table>

**Value Type**  Integer

**Value Range**  0 through 7200

**PFPSOVRP**

**Point Type**  Processor Status

Prefetch/poststore overruns during the previous hour. Count one for each time a prefetch/poststore is not completed within 1/2 second (no form).

<table>
<thead>
<tr>
<th>Source</th>
<th>Default Value</th>
<th>Access Lock</th>
</tr>
</thead>
<tbody>
<tr>
<td>User</td>
<td>0</td>
<td>Read Only</td>
</tr>
</tbody>
</table>

**Value Type**  Integer

**Value Range**  0 through 7200
PIACCSTS[N]

**Point Type** Regulatory

Access status for PV input number N, where N is 1 through 8 (no form) (3.1.1 and 3.1.4.8 in *AM Control Functions*).

**Source** User  
**Default Value** NoError  
**Access Lock** Read Only

**Value Type** PASTATUS enumeration

**Value Range**  
NoError—The parameter was fetched with no error.  
Comm—Because of a communication error, the parameter could not be fetched.  
Config—Because of a configuration error, the parameter could not be fetched.  
Software—An unexpected error occurred. Notify Honeywell TAC.

PIACTSTS[N]

**Point Type** Regulatory

Configure on Forms *AM88-411* through *AM88-420*.

Activity status of PV input connection number N, where N is 1 through 8 (3.1.1 and 3.1.4.7 in *AM Control Functions*)

**Source** User  
**Default Value** Active  
**Access Lock** Supvr

**Value Type** IOACTSTS enumeration

**Value Range**  
Active—Indicates that the connection will be processed.  
Inactive—Indicates that the connection will not be processed.  
NotConfg—If you select NotConfg, an error will be reported as the point is loaded. However, NotConfg can be selected with no error if a Null Entity ID or a Null parameter has been entered for the connection source or destination.
Pid

This algorithm operates as a 3-mode (proportional, integral, and derivative) controller. You can choose one of two forms of this algorithm: the interactive (or real) form, or the noninteractive (or ideal) form.

The output of this algorithm is normally "floating," because of the dynamics of the integral and derivative terms. Internally, the output is calculated as increments of output change, but the increments are accumulated to provide a full-value output, thus simplifying the techniques used to achieve "bumpless" outputs when modes or tuning constants are changed.

This algorithm operates to reduce error in the control loop to zero. Error is represented by the difference between the process variable in percent (PVP) and the setpoint in percent (SPP). The control algorithm output value (CV) is also calculated as a percentage of the configured engineering-units range for the data point that uses this algorithm.

Parameters involved in configuring this algorithm are the following and those listed in Section 2 under Regulatory Point.

<table>
<thead>
<tr>
<th>PV Common Display</th>
<th>Control Common Display</th>
<th>Setpoint Display</th>
<th>Control Pid Algo Display</th>
<th>Control Input Connections Display</th>
</tr>
</thead>
<tbody>
<tr>
<td>PVFORMAT</td>
<td>NMODE</td>
<td>SPHILM</td>
<td>PIDFORM</td>
<td>NOCINPTS</td>
</tr>
<tr>
<td>PVEUHI</td>
<td>NMODATTR</td>
<td>SPLOLM</td>
<td>CTEQN</td>
<td>CISRC(N)</td>
</tr>
<tr>
<td>PVEULO</td>
<td>MODEPERM</td>
<td>SPOPT</td>
<td>INITTYPE</td>
<td>CIDSTN(N)</td>
</tr>
<tr>
<td>PVEXEUHI</td>
<td>EXTSWOPT</td>
<td>AVDEVTP</td>
<td>CTLACTN</td>
<td>CIACTSTS(N)</td>
</tr>
<tr>
<td>PVEXEULO</td>
<td>RBOPT</td>
<td>GAINOPT</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PVCLAMP</td>
<td>RTHILM</td>
<td>K</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PVSCOPT</td>
<td>RTLOLM</td>
<td>KLIN</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PVSOURCE</td>
<td>BSHILM</td>
<td>KGAP</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PVFLTOPT</td>
<td>BSLOLM</td>
<td>GAPLO</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TF IN MIN</td>
<td>RATIO</td>
<td>NLGAIN</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PVTV</td>
<td>BIAS</td>
<td>NLFM</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Output Connection Display</th>
</tr>
</thead>
<tbody>
<tr>
<td>NOCOPTS</td>
</tr>
<tr>
<td>CODSTN(N)</td>
</tr>
<tr>
<td>COACTSTS(N)</td>
</tr>
<tr>
<td>OPHILM</td>
</tr>
<tr>
<td>OPLOLM</td>
</tr>
<tr>
<td>OPMCHLM</td>
</tr>
<tr>
<td>OPROCLM</td>
</tr>
</tbody>
</table>
This algorithm (Pid with External Reset Feedback) operates as a 3-mode (proportional, integral, and derivative) controller. It is identical to the Pid algorithm, except that it accepts a reset feedback signal to be compared with this algorithm's incremental output, before the full-value output is accumulated. It also accepts a tracking-value signal.

The intent of this algorithm is to prevent windup when it has a secondary data point (typically a Pid point) that may or may not be responding to the output of this data point.

Parameters involved in configuring this algorithm are the following and those listed in Section 2 under Regulatory Point.

<table>
<thead>
<tr>
<th>PV Common Display</th>
<th>Control Common Display</th>
<th>Setpoint Display</th>
<th>Control Erfb Pid Algo Display</th>
<th>Control Input Connections Display</th>
</tr>
</thead>
<tbody>
<tr>
<td>PVFORMAT</td>
<td>NMODE</td>
<td>SPHILM</td>
<td>PIDFORM</td>
<td>NOCINPTS</td>
</tr>
<tr>
<td>PVEUHI</td>
<td>NMODATTR</td>
<td>SPLOLM</td>
<td>CTLEQN</td>
<td>CISRC(N)</td>
</tr>
<tr>
<td>PVEULO</td>
<td>MODEPERM</td>
<td>SPOPT</td>
<td>INITTYPE</td>
<td>CIDSTN(N)</td>
</tr>
<tr>
<td>PVEXEUHI</td>
<td>EXTSWOPT</td>
<td>AVDEVTOP</td>
<td>CTLACTN</td>
<td>CIACTSTS(N)</td>
</tr>
<tr>
<td>PVEXEURO</td>
<td></td>
<td>RBOPT</td>
<td>GAINOPT</td>
<td></td>
</tr>
<tr>
<td>PVCLAMP</td>
<td></td>
<td>SPOPT</td>
<td>K</td>
<td></td>
</tr>
<tr>
<td>PVSRSCOPT</td>
<td></td>
<td>RTHILM</td>
<td>KLIN</td>
<td></td>
</tr>
<tr>
<td>PVSOURCE</td>
<td></td>
<td>RTLOLM</td>
<td>KGAP</td>
<td></td>
</tr>
<tr>
<td>PVFLTOPT</td>
<td></td>
<td>BSHILM</td>
<td>GAPHI</td>
<td></td>
</tr>
<tr>
<td>TF IN MIN</td>
<td></td>
<td>BSLOLM</td>
<td>GAPLO</td>
<td></td>
</tr>
<tr>
<td>PVTV</td>
<td></td>
<td>RATIO</td>
<td>NLGAIN</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>BIAS</td>
<td>NLFM</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>T1 IN MIN</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>T2 IN MIN</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>KI</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>PVTRACK</td>
<td></td>
</tr>
</tbody>
</table>

Output Connections Display

| CVEUHI                     |                          |
| CVEULO                     |                          |
| OPHILM                     |                          |
| OPLOLOM                    |                          |
| OPMCHLM                    |                          |
| OPROCLM                    |                          |
This algorithm operates as a 3-mode (proportional, integral, and derivative) controller. It is identical to the Pid algorithm, except that it accepts a feedforward signal to be added to, or multiplied by, the algorithm's incremental output, before the full-value output is accumulated. This algorithm lets you combine a feedforward signal with the Pid output without using another data point or algorithm to do it.

Parameters involved in configuring this algorithm are the following and those listed in Section 2 under Regulatory Point.

<table>
<thead>
<tr>
<th>PV Common Display</th>
<th>Control Common Display</th>
<th>Setpoint Display</th>
<th>Ffwd Pid Control Algo Display</th>
<th>Control Input Connections Display</th>
</tr>
</thead>
<tbody>
<tr>
<td>PVFORMAT</td>
<td>NMODE</td>
<td>SPHILM</td>
<td>PIDFORM</td>
<td>NOCINPTS</td>
</tr>
<tr>
<td>PVEUHI</td>
<td>NMODATTR</td>
<td>SPLOLM</td>
<td>CTLEQN</td>
<td>CISRC(N)</td>
</tr>
<tr>
<td>PVEULO</td>
<td>MODEPERM</td>
<td>SP</td>
<td>INITTYPE</td>
<td>CIDSTN(N)</td>
</tr>
<tr>
<td>PVEXEUHI</td>
<td>EXTSWOPT</td>
<td>SPOPT</td>
<td>CTLACTN</td>
<td>CIACTSTS(N)</td>
</tr>
<tr>
<td>PVEXEULO</td>
<td></td>
<td>AVDEVT</td>
<td>GAINOPT</td>
<td>COPCTYPE</td>
</tr>
<tr>
<td>PVCLAMP</td>
<td></td>
<td>RBOPT</td>
<td>K</td>
<td></td>
</tr>
<tr>
<td>PVSRCOPT</td>
<td></td>
<td>RTHILM</td>
<td>KLIN</td>
<td></td>
</tr>
<tr>
<td>PVSOURCE</td>
<td></td>
<td>RLOLM</td>
<td>KGAP</td>
<td></td>
</tr>
<tr>
<td>PVFLTOPT</td>
<td></td>
<td>BSLOLM</td>
<td>GAPHI</td>
<td></td>
</tr>
<tr>
<td>TF IN MIN</td>
<td></td>
<td>RATIO</td>
<td>GAPLO</td>
<td></td>
</tr>
<tr>
<td>PVTV</td>
<td></td>
<td>BIAS</td>
<td>NLGAIN</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>T1 IN MIN</td>
<td>NLFM</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>T2 IN MIN</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>FFOPPT</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>BFF</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>KFF</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>PVTRACK</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Output Connections Display

NOCOPTS
CODSTN(N)
COACTSTS(N)
OPHILM
OPLOLM
OPMCHLM
OPROCLM
PIDFORM

**Point Type**  Regulatory

Selects whether the Interactive (real) or Noninteractive (ideal) form of the Pid control algorithm is to be used (18.4.1 in *AM Algorithm Engineering Data*) (Forms *AM88-451*, *455*, and *456*).

**Source**  User  **Default Value**  Interact  **Access Lock**  Engr-DEB

**Value Type**  PIDFORM enumeration

**Value Range**  Interact—Interactive; this form duplicates the traditional pneumatic Pid controller. The three control components are implemented as the sum of the proportional and integral multiplied by the derivative component; that is, \((P + I) \times D\).

Ideal—This form provides a noninteractive version of the PID controller. The three control components proportional, integral, and derivative are additive; that is, \(P + I + D\).

PISRC[N]

**Point Type**  Regulatory

Configure on Forms *AM88-411* through *AM88-420*.

Destination parameter for PV input connection number N, where N is 1 through 8.

**Source**  User  **Default Value**  Blanks  **Access Lock**  DEB

**Value Type**  Par_Id

**Value Range**  Any valid point.parameter combination
PKGNAME(N)

**Point Type** Regulatory, Custom, and Switch

Package name—the name of a CL source file that is to be bound to this point after it is compiled (3.6 and Section 4 in *AM Control Functions*) (Forms AM88-480, 450, and 460).

**Source** User

**Default Value** Blanks

**Access Lock** DEB

**Value Type** Array (1..10) of String (8)

**Value Range** Up to 8 characters per string

PPS

**Point Type** Regulatory, Counter, Custom, Switch, and Timer

Point Process Special. Process the point immediately (no form) (2.2.1.2, 3.6, 4.2, and 4.2.1 in *AM Control Functions*).

**Source** User

**Default Value** N/A

**Access Lock** Oper

**Value Type** Boolean

**Value Range** Off—Normal operation
On—Process the point immediately

PPSCYCLE

**Point Type** Regulatory, Counter, Custom, and Switch

Relative cycle to Process Special. Process Special Request (delay time in seconds) (no form) (2.2.1.2 and 3.3.9 in *AM Control Functions*).

**Source** User

**Default Value** N/A

**Access Lock** Prog

**Value Type** Real

**Value Range** 0 through 86400
PPREQ

Point Type  Regulatory, Counter, Custom, and Switch

Process Special Request (no form) (3.6.2 and 4.2 in AM Control Functions).

Source  User  Default Value  N/A  Access Lock  Prog

Value Type  PPSTYPE enumeration

Value Range  None—There is no process special request.
Normal—Process special request for full processing
The following are generated indirectly or as a result of storing to another parameter…
 Init—Process special for initialization
 Man—Process special for manual output
 Or—Process special for override

PPSTYPE

Point Type  Regulatory, Custom, and Switch

Process Point Special Type (no form) (3.1.3, 3.6, and 4.2 in AM Control Functions).

Source  System  Default Value  None  Access Lock  Read Only

Value Type  PPSTYPE enumeration

Value Range  None—Normal operation
 Normal—Normal operation
 Init—Initialization
 Man—Manual Output
 OR—Override

PRAVGC

Point Type  Processor Status

Average points per second in current hour (no form).

Source  System  Default Value  N/A  Access Lock  Read Only

Value Type  Real

Value Range  $\geq 0.0$
PRAVGP

**Point Type**  Processor Status

Average points per second in previous hour (no form).

- **Source**  System  
- **Default Value**  0.0  
- **Access Lock**  Read Only

- **Value Type**  Real

- **Value Range**  $\geq 0.0$

PRAVGS

**Point Type**  Processor Status

Average number of points processed per second during the last snapshot period (nominally 10 seconds) (no form).

- **Source**  User  
- **Default Value**  0  
- **Access Lock**  Read Only

- **Value Type**  Real

- **Value Range**  $\geq 0.0$

PRCSTATE

**Point Type**  Processor Status

Processor state (no form)

- **Source**  System  
- **Default Value**  N/A  
- **Access Lock**  Read Only

- **Value Type**  PRCSTATE enumeration

- **Value Range**  NoProc—The AM is not processing points.  
  Process—The AM is processing points.
Point Type  Regulatory, Flag, Counter, Numeric, Timer, Custom, and Switch

The tag name of the point (normally a Process Module point in an MC) that is the primary module for this point (3.8 in *HG Control Functions*) (Forms AM88-401, 410, 420A, 430, 440, 450, and 460).

Source  User

Default Value  Blanks (Reg)

Access Lock  DEB

Value Type  Entity ID

Value Range  Length: zero-to-eight characters

PRMAXC

Point Type  Processor Status

Maximum points per cycle in current hour (no form).

Source  System

Default Value  0

Access Lock  Read Only

Value Type  Integer

Value Range  0 through 32767

PRMAXP

Point Type  Processor Status

Maximum points per cycle in previous hour (no form).

Source  System

Default Value  0

Access Lock  Read Only

Value Type  Integer

Value Range  0 through 32767
PRMINC

**Point Type**  Processor Status

Minimum points processed per cycle in the current hour (no form).

**Source**  System  **Default Value**  32767  **Access Lock**  Read Only

**Value Type**  Integer

**Value Range**  0 through 32767

PRMINP

**Point Type**  Processor Status

Minimum points processed per cycle in previous hour (no form).

**Source**  User  **Default Value**  0  **Access Lock**  Read Only

**Value Type**  Integer

**Value Range**  0 through 32767

PRMNCYCC

**Point Type**  Processor Status

Cycle on which minimum points per cycle occurred in the current hour (no form).

**Source**  User  **Default Value**  0.0  **Access Lock**  Read Only

**Value Type**  Real

**Value Range**  \( \geq 0.0 \)
PRMNCYCP

Point Type  Processor Status
Cycle on which minimum points per cycle occurred in the previous hour (no form).
Source  User  Default Value  0.0  Access Lock  Read Only

Value Type  Real
Value Range  >= 0.0

PRMXCYCC

Point Type  Processor Status
Cycle on which maximum points per cycle occurred in the current hour (no form).
Source  User  Default Value  0.0  Access Lock  Read Only

Value Type  Real
Value Range  >= 0.0

PRMXCYCP

Point Type  Processor Status
Cycle on which maximum points per cycle occurred in the previous hour (no form).
Source  User  Default Value  0.0  Access Lock  Read Only

Value Type  Real
Value Range  >= 0.0
### PROUNT(I)

**Point Type**  Processor Status

Unit is assigned to the AM.  I = Unit index (no form).

<table>
<thead>
<tr>
<th>Source</th>
<th>System</th>
<th>Default Value</th>
<th>N/A</th>
<th>Access Lock</th>
<th>Read Only</th>
</tr>
</thead>
</table>

**Value Type**  Array (1..100) of Boolean

**Value Range**  True—Unit is assigned to the given AM.  
False—Unit is not assigned to the given AM.

### PSAVGC

**Point Type**  Processor Status

Average poststores per second in the current hour (no form).

<table>
<thead>
<tr>
<th>Source</th>
<th>System</th>
<th>Default Value</th>
<th>0</th>
<th>Access Lock</th>
<th>Read Only</th>
</tr>
</thead>
</table>

**Value Type**  Real

**Value Range**  0 through 32767

### PSAVGP

**Point Type**  Processor Status

Average poststores per second in the previous hour (no form).

<table>
<thead>
<tr>
<th>Source</th>
<th>System</th>
<th>Default Value</th>
<th>0</th>
<th>Access Lock</th>
<th>Read Only</th>
</tr>
</thead>
</table>

**Value Type**  Real

**Value Range**  0 through 32767
PSAVGS

Point Type  Processor Status
Average number of poststores serviced during the last snapshot period (nominally 10 seconds) (no form).

Source  User  Default Value  0  Access Lock  Read Only

Value Type  Real

Value Range  >= 0.0

PSMAXC

Point Type  Processor Status
Maximum poststores per cycle in the current hour (no form).

Source  System  Default Value  0  Access Lock  Read Only

Value Type  Integer

Value Range  0 through 32767

PSMAXP

Point Type  Processor Status
Maximum poststores per cycle in the previous hour (no form).

Source  System  Default Value  0  Access Lock  Read Only

Value Type  Integer

Value Range  0 through 32767
### PSMINC

**Point Type**  Processor Status

Minimum poststores per cycle in the current hour (no form).

<table>
<thead>
<tr>
<th>Source</th>
<th>Default Value</th>
<th>Access Lock</th>
</tr>
</thead>
<tbody>
<tr>
<td>System</td>
<td>32767</td>
<td>Read Only</td>
</tr>
</tbody>
</table>

**Value Type**  Integer

**Value Range**  0 through 32767

### PSMINP

**Point Type**  Processor Status

Minimum poststores per cycle in the previous hour (no form).

<table>
<thead>
<tr>
<th>Source</th>
<th>Default Value</th>
<th>Access Lock</th>
</tr>
</thead>
<tbody>
<tr>
<td>System</td>
<td>0</td>
<td>Read Only</td>
</tr>
</tbody>
</table>

**Value Type**  Integer

**Value Range**  0 through 32767

### PSMNCYCC

**Point Type**  Processor Status

Cycle on which minimum poststores occurred during the current hour (no form).

<table>
<thead>
<tr>
<th>Source</th>
<th>Default Value</th>
<th>Access Lock</th>
</tr>
</thead>
<tbody>
<tr>
<td>System</td>
<td>0.0</td>
<td>Read Only</td>
</tr>
</tbody>
</table>

**Value Type**  Real

**Value Range**  \( \geq 0.0 \)
PSMNCYCP

**Point Type**  Processor Status

Cycle on which minimum poststores occurred during the current hour (no form).

| Source | System  | Default Value | 0.0 | Access Lock | Read Only |

**Value Type**  Real

**Value Range**  \( \geq 0.0 \)

PSMXCYCC

**Point Type**  Processor Status

Cycle on which maximum poststores occurred during the current hour (no form).

| Source | System  | Default Value | 0.0 | Access Lock | Read Only |

**Value Type**  Real

**Value Range**  \( \geq 0.0 \)

PSMXCYCP

**Point Type**  Processor Status

Cycle on which maximum poststores occurred during the previous hour (no form).

| Source | System  | Default Value | 0.0 | Access Lock | Read Only |

**Value Type**  Real

**Value Range**  \( \geq 0.0 \)
PSTS

Point Type  Regulatory

Applies to Flow Compensation algorithm (no form) (Section 4 in AM Algorithm Engineering Data).

Value status of P input

<table>
<thead>
<tr>
<th>Source</th>
<th>User</th>
<th>Default Value</th>
<th>Normal</th>
<th>Access Lock</th>
<th>Read Only</th>
</tr>
</thead>
</table>

Value Type  PVVALST enumeration

Value Range  Normal—The value is good
              Uncertn—The value is uncertain
              Bad—The value is NaN

PTDESC

Point Type  All Point Types

Configure on Forms AM88-401, 410, 420A, 430, 440, 450, and 460.

Point descriptor. Textual description of the point for use in standard Group and Detail displays (3.4.2, 3.6, and 4.2 in AM Control Functions).

<table>
<thead>
<tr>
<th>Source</th>
<th>User</th>
<th>Default Value</th>
<th>blank</th>
<th>Access Lock</th>
<th>Engr-DEB</th>
</tr>
</thead>
</table>

Value Type  String

Value Range  Up to 24 characters

PTDISCL

Point Type  All point types except Numeric

Selects full disclosure of all applicable parameters in the Parameter Entry Display (PED); or only a subset of those parameters, leaving those not disclosed at their default values (Forms AM88-401, 430, and 440).

<table>
<thead>
<tr>
<th>Source</th>
<th>User</th>
<th>Default Value</th>
<th>Brief</th>
<th>Access Lock</th>
<th>Engr-DEB</th>
</tr>
</thead>
</table>

Value Type  PTDISCL enumeration

Value Range  Brief—only a subset of the point build options are available
              Full—all point build options are available
PTEXECST

Point Type  All point types except Numeric and Flag

Point execution status (no form) (3.1.2, 3.3.1, 3.3.8, 3.5.3, 3.6, 3.6.2, and 4.2 in \textit{AM Control Functions}).

\begin{tabular}{llll}
Source & User & Default Value & InActive & Access Lock & Supvr
\end{tabular}

Value Type  PTEXECST enumeration

Value Range  NotConfig—Used only as an intermediate stage of point loading. Put to Inactive at the end of point load. InActive—Point will not be processed. Active—Point will be processed.

PTINAL

Point Type  All point types except Numeric

Point in Alarm (no form) (3.3.9, 3.6, 3.6.3, and 4.2 in \textit{AM Control Functions}).

\begin{tabular}{llll}
Source & System & Default Value & Off & Access Lock & Read Only
\end{tabular}

Value Type  Boolean

Value Range  Off—The point is not in alarm. On—The point is in alarm.

PTORST

Point Type  Regulatory

Point override state (no form) (3.1.11.1 and 3.1.3 in \textit{AM Control Functions}).

\begin{tabular}{llll}
Source & User & Default Value & NotCon & Access Lock & Prog
\end{tabular}

Value Type  ORSTATUS enumeration

Value Range  NotCon—The point is not connected to an override selector. Sel—The point is part of an override strategy and is selected. NotSel—The point is part of an override strategy and is not selected.
PV

Point Type Regulatory, Timer, Numeric, Counter, Flag

Process variable value. In regulatory points, PV is the output of the range-violation checks (3.1.5 in AM Control Functions). (For Numeric, Counter, Flag, and Timer points, refer to 3.2, 3.3, 3.4, and 3.5 in AM Control Functions.) (Form AM88-420A).

Source User  Default Value State1 (Flag) NaN (others)  Access Lock Supvr (Timer) Oper (others)

Value Type Real, Enum for Flag

Value Range Regulatory Points PVEXEUHI to PVEXEULO and NaN
Timer point 0 to 999999; current time
Numeric point RANGELO (if configured) to RANGEHI (if configured) or NaN
Counter algorithm PVEXEUHI to PVEXEULO or NaN
Flag STATE1 or STATE2

PVALDB

Point Type Regulatory, Counter

Configure on Forms AM88-470 and 440.

PV alarm deadband, in percent of the PV Engineering Unit range, or in engineering units. Deadband affects only the return to normal.

The alarm deadband expresses the percentage of the normal operating range (PVEUHI to PVEULO).

Note that a PV-related alarm returns to its normal state when the PV is less than the alarm trip point minus the alarm deadband.

Source User  Default Value One  Access Lock Engr-DEB

Value Type PVALDB enumeration

Value Range Half—deadband is one-half of one percent of Engineering Unit range.
One—deadband is one percent of Engineering Unit range.
Two—deadband is two percent of Engineering Unit range.
Three—deadband is three percent of Engineering Unit range.
Four—deadband is four percent of Engineering Unit range.
Five—deadband is five percent of Engineering Unit range.
Eu—dead band is the engineering-units value in parameter PVALDBEU.
PVALDBEU

**Point Type**  Regulatory, Counter

Configure on Forms AM88-470 and 440.

PV alarm deadband in engineering units. The value in PVALDBEU is effective when the enumeration in PVALDB is Eu.

**Source**  User  
**Default Value**  1.0  
**Access Lock**  Engr-DEB

**Value Type**  Real

**Value Range**  $0 \leq PVALDBEU \leq (PVEUHI - PVEULO)$. NaN is not an acceptable value.

PVALGID

**Point Type**  Regulatory

PV algorithm identifier—selects the PV algorithm for this data point. If PVALGID contains Nul, PV processing doesn't occur (3.1.5 in AM Control Functions and Sections 2 through 13 in AM Algorithm Engineering Data) (Form AM88-401).

**Source**  User  
**Default Value**  Null  
**Access Lock**  Prog

**Value Type**  PVALGO enumeration

**Value Range**  Null—No PV algorithm selection  
DataAcq—PV Data Acquisition algorithm selection  
FlowComp—PV Flow Compensation algorithm  
Midof3—PV Middle of 3 algorithm  
HiLoAvg—PV High Low Average algorithm  
Summer—PV Summer algorithm  
MulDiv—PV Multiply Divide algorithm  
SumProd—PV Sum of Products algorithm  
Totalizr—PV Totalizer algorithm  
VdtLdLag—PV Variable Delay Time with LeadLag algorithm

PVAUTO

**Point Type**  Regulatory, Counter

The PV value after processing by the PV algorithm and after filtering. The value in PVAUTO is the input to the PV range violation checks when PVSOURCE contains Auto (3.1.5 in AM Control Functions) (no form).

**Source**  User  
**Default Value**  NaN  
**Access Lock**  Prog (Reg'y)  
Read Only (Counter)

**Value Type**  Real

**Value Range**  Any real number
PVAUTOST

Point Type  Regulatory, Counter

The status of the value in PVAUTO (3.1.5.6 in AM Control Functions) (no form).

Source  User  Default Value  Bad  Access Lock  Read Only

Value Type  PVVALST enumeration

Value Range  Normal—The value is good.
Uncertn—The value is uncertain.
Bad—The value is NaN.

PVAVGC

Point Type  Processor Status

Average number of prefetches per second in the current hour (no form).

Source  User  Default Value  NA  Access Lock  Read Only

Value Type  Real

Value Range  Any real number

PVCALC

Point Type  Regulatory and Counter

The value calculated by the PV algorithm (Sections 3 through 13 in AM Algorithm Engineering Data) (no form).

Source  User  Default Value  NaN  Access Lock  Prog

Value Type  Real, NaN

Value Range  Any real number
PVCLAMP

**Point Type**  Regulatory, Counter

Configure on Forms AM88-402 and 440.

PV clamping option (3.1.5.5 in *AM Control Functions*).

<table>
<thead>
<tr>
<th>Source</th>
<th>User</th>
<th>Default Value</th>
<th>NoClamp</th>
<th>Access Lock</th>
<th>Engr-DEB</th>
</tr>
</thead>
</table>

**Value Type**  PVCLAMP enumeration

**Value Range**  Regulatory points
- NoClamp—PV is bad if out of the extended range.
- Clamp—Clamp PV if out of the extended range Counter points.
- NoClamp—If a range violation occurs, PV is set to NaN and PVSTS becomes Bad.
- Clamp—Clamp PV if exceeding the PV extended range (PVEXEUHI...PVEXEULO) to the violated range, and the PVSTS becomes Uncertn.

PVCONV

**Point Type**  Counter

PV engineering unit conversion factor (3.3.3 in *AM Control Functions*) (Form AM88-440).

<table>
<thead>
<tr>
<th>Source</th>
<th>User</th>
<th>Default Value</th>
<th>1.0</th>
<th>Access Lock</th>
<th>Engr-DEB</th>
</tr>
</thead>
</table>

**Value Type**  Real

**Value Range**  ≥0, NaN not allowed

PVEQN

**Point Type**  Regulatory

The PV equation for the PV algorithm. Applies to all PV algorithms except DataAcq and GenLin (Sections 4 and 6 through 13 in *AM Algorithm Engineering Data*) (Forms AM88-412 through 419).

<table>
<thead>
<tr>
<th>Source</th>
<th>User</th>
<th>Default Value</th>
<th>EqA</th>
<th>Access Lock</th>
<th>Engr-DEB</th>
</tr>
</thead>
</table>

**Value Type**  ALGOEQN enumeration

**Value Range**

For PV Flow Compensation Algorithm
- EqA—Primarily used for mass or volumetric flow compensation of liquids. Actual specific gravity at flowing condition is used as the compensation input.
- EqB—Primarily used for mass flow compensation with actual absolute temperature and pressure for gases and vapors. Actual temperature and pressure are used as compensation inputs.
PVEQN (continued)

Value Range (continued)

EqC—Primarily used for mass flow compensation with actual specific gravity, absolute temperature, and pressure for gases or vapors. Actual temperature, pressure, and specific gravity are used as the compensation inputs.

EqD—Primarily used for volumetric flow compensation for gases or vapors. Actual temperature, pressure, and molecular weight are used as the compensation inputs.

EqE—Primarily used for mass flow compensation of steam. Actual temperature, pressure, specific gravity, steam compressibility, and steam quality are used as the compensation inputs.

For PV Middle of 3 Algorithm

EqA—The output is the higher of the good inputs.
EqB—The PVCALC is the lower of the good inputs.
EqC—The PVCALC is the average of the good inputs.

For PV Hi Lo Average Selector Algorithm

EqA—Hi Selector; selects the highest of up to 8 inputs and identifies the selected input.
EqB—Lo selector; selects the lowest of up to 8 inputs and identifies the selected input.
EqC—Average selector; calculates the average of up to 8 inputs.

For PV Summer Algorithm

EqA—PVCALC is computed by simply scaling and biasing the P1 input.
EqB—PVCALC is computed as the sum of up to 8 individually scaled inputs with an overall bias.

For PV Multiply Divide Algorithm

EqA—PVCALC is generated as a product of two individually scaled and biased inputs.
EqB—PVCALC is generated as a ratio of two individually scaled and biased inputs.
EqC—PVCALC is generated as a ratio/product of up to 6 individually scaled and biased inputs, plus a remotely adjustable bias plus a fixed bias.

For PV Sum of Products Algorithm

EqA—PVCALC is the sum of two scaled and biased inputs.
EqB—PVCALC is the sum of three scaled and biased inputs.

For PV Variable Deadtime with LeadLag Algorithm

EqA—LeadLag; the input signal is subjected to one lead and two lags.
EqB—Fixed deadtime; the input signal is delayed by a fixed, user-specified delay period.
EqC—Variable deadtime; the input signal is delayed by a variable delay period consisting of two parts: a fixed user-specified part and a variable part based on an input signal.
EqD—Variable deadtime with two lags; the input signal is delayed by the variable deadtime (the same as in EqC) and is then processed by up to two lags.

For PV Totalizer Algorithm

<table>
<thead>
<tr>
<th>Warm Restart</th>
<th>Bad Input Handling</th>
</tr>
</thead>
<tbody>
<tr>
<td>EqA—Continue</td>
<td>Use zero</td>
</tr>
<tr>
<td>EqB—Continue</td>
<td>Use last good value</td>
</tr>
<tr>
<td>EqC—Continue</td>
<td>Set Bad, and stop</td>
</tr>
<tr>
<td>EqD—Set Bad, and stop</td>
<td>Use zero</td>
</tr>
<tr>
<td>EqE—Set Bad, and stop</td>
<td>Use last good value</td>
</tr>
<tr>
<td>EqF—Set Bad, and stop</td>
<td>Set Bad, and stop</td>
</tr>
</tbody>
</table>
**PVEUHI**

**Point Type**  Regulatory, Counter

Configure on Forms AM88-402 and 440.

PV engineering unit high range.  PVEUHI must be greater than PVEULO and must be less than or equal to PVEXEUKHI (3.1.5.5 and 3.1.5.6 in AM Control Functions).

<table>
<thead>
<tr>
<th>Source</th>
<th>User</th>
<th>Default Value</th>
<th>100.0</th>
<th>Access Lock</th>
<th>Engr-DEB</th>
</tr>
</thead>
</table>

**Value Type**  Real

**Value Range**  PVEULO to PVEXEUHI; NaN not allowed

---

**PVEULO**

**Point Type**  Regulatory, Counter

Configure on Forms AM88-402 and 440.

PV engineering unit low range.  PVEULO must be greater than PVEXEULO and less than PVEUHI (3.1.5.5 and 3.1.5.6 in AM Control Functions).

<table>
<thead>
<tr>
<th>Source</th>
<th>User</th>
<th>Default Value</th>
<th>0.0</th>
<th>Access Lock</th>
<th>Engr-DEB</th>
</tr>
</thead>
</table>

**Value Type**  Real

**Value Range**  PVEXEULO to PVEUHI; NaN not allowed

---

**PVEXEUHI**

**Point Type**  Regulatory, Counter

Configure on Form AM88-402 and 440.

PV extended engineering unit high range.  Defines the highest value the PV can reach before clamping or becoming NaN, depending on the clamping action (PVCLAMP) (3.1.5.5 and 3.3.3 in AM Control Functions).

<table>
<thead>
<tr>
<th>Source</th>
<th>User</th>
<th>Default Value</th>
<th>102.9</th>
<th>Access Lock</th>
<th>Engr-DEB</th>
</tr>
</thead>
</table>

**Value Type**  Real

**Value Range**  > = PVEUHI; NaN not allowed
PVEXEULO

**Point Type**  Regulatory, Counter

Configure on Form AM88-402 and 440.

PV extended engineering unit low range. Defines the lowest value the PV can reach before clamping or becoming NaN, depending on the clamping action (PVCLAMP) (3.1.5.5 and 3.3.3 in AM Control Functions).

**Source**  User  **Default Value**  -2.9  **Access Lock**  Engr-DEB

**Value Type**  Real

**Value Range**  \( \geq \text{PVEXEULO}; \text{NaN not allowed} \)

PVEXHIFL

**Point Type**  Regulatory, Counter

Indicates if the PV has reached the extended high-range value (3.1.5.5 in AM Control Functions) (no form).

**Source**  User  **Default Value**  Off  **Access Lock**  Read Only

**Value Type**  Boolean

**Value Range**  
Off—If \( \text{PV} \leq \text{PVEXEUHI} \)
On—If \( \text{PV} > \text{PVEXEUHI} \)

PVEXLOFL

**Point Type**  Regulatory, Counter

Indicates if the PV has reached the extended low-range value (3.1.5.5 in AM Control Functions) (no form).

**Source**  User  **Default Value**  Off  **Access Lock**  Read Only

**Value Type**  Boolean

**Value Range**  
Off—If \( \text{PV} \geq \text{PVEXEULO} \)
On—If \( \text{PV} < \text{PVEXEULO} \)
PVFLTOPT

Point Type  Regulatory

Configure on Form AM88-402.

PV filter option (3.1.5.3 in AM Control Functions).

Source  User  Default Value  None  Access Lock  Prog

Value Type  PVFLTOPT enumeration

Value Range  None—no PV filter  
Singllag—Single lag PV filter

PVFORMAT

Point Type  Regulatory, Counter, and Numeric

Configure on Forms AM88-402, 420A, and 440.

PV format controls the number of decimal places displayed for the PV on the Operator Station. The number after the 'D' in the PVFORMAT selection determines how many digits after the decimal point are displayed (3.2.1 in AM Control Functions).

Example: If the PV is 84.501 and PVFORMAT is D2, the value is displayed as 84.50.

Source  User  Default Value  D1 (PV algos)  Access Lock  Engr-DEB

D0 (others)

Value Type  VALFORMT enumeration

Value Range  D0—display no digits after the decimal point  
D1—display one digit after the decimal point  
D2—display two digits after the decimal point  
D3—display three digits after the decimal point  
D4—display four digits after the decimal point  
D5—display five digits after the decimal point  
D6—display six digits after the decimal point
PVHFL

**Point/Algo Type**  Regulatory and Counter

PV high-high alarm flag (4.3.1.8.4 in *System Control Functions*) (no form).

<table>
<thead>
<tr>
<th>Source</th>
<th>User</th>
<th>Default Value</th>
<th>Off</th>
<th>Access Lock</th>
<th>Read Only</th>
</tr>
</thead>
</table>

**Value Type**  Boolean

**Value Range**  Off—If PV >= PVHHTP

On—PV < PVHHTP

PVHHTP

**Point Type**  Regulatory and Counter

PV high-high alarm trip point value (4.3.1.8.4 in *System Control Functions*) (Form AM88-470 and 440).

<table>
<thead>
<tr>
<th>Source</th>
<th>User</th>
<th>Default Value</th>
<th>NaN</th>
<th>Access Lock</th>
<th>Supvr</th>
</tr>
</thead>
</table>

**Value Type**  Real

**Value Range**  PVHHTP to PVEXEUHI and NaN

Configuring PVHHTP as NaN disables the alarm; HM storage only if PVHHTP is NaN.

PVHHTR

**Point Type**  Regulatory

PV high-high alarm transition—indicates a transition in the PV high-high alarm state (PVHFL, PVHHTP) (no form).

<table>
<thead>
<tr>
<th>Source</th>
<th>User</th>
<th>Default Value</th>
<th>NoChange</th>
<th>Access Lock</th>
<th>Read Only</th>
</tr>
</thead>
</table>

**Value Type**  ALTRAN enumeration

**Value Range**  NoChange—No change from previous state

Rtn—First time return from alarm

Alarm—First time in alarm
PVHIFL

**Point Type**  Regulatory and Counter

PV high alarm flag (4.3.1.8.3 in *System Control Functions*) (no form).

<table>
<thead>
<tr>
<th>Source</th>
<th>Default Value</th>
<th>Access Lock</th>
</tr>
</thead>
<tbody>
<tr>
<td>User</td>
<td>Off</td>
<td>Read Only</td>
</tr>
</tbody>
</table>

**Value Type**  Boolean

**Value Range**  
- Off—If $PV \leq PVHITP$
- On—If $PV > PVHITP$

PVHITP

**Point Type**  Regulatory and Counter

PV high alarm trip point value (4.3.1.8.3 in *System Control Functions*) (Form AM88-470 and 440).

<table>
<thead>
<tr>
<th>Source</th>
<th>Default Value</th>
<th>Access Lock</th>
</tr>
</thead>
<tbody>
<tr>
<td>User</td>
<td>NaN</td>
<td>Supvr</td>
</tr>
</tbody>
</table>

**Value Type**  Real

**Value Range**  
- PVLOTP to PVHHTP and NaN; configuring as NaN disables alarm

PVHITR

**Point Type**  Regulatory

PV high alarm transition—indicates a transition in the PV high alarm state (PVHIFL, PVHITP) (no form).

<table>
<thead>
<tr>
<th>Source</th>
<th>Default Value</th>
<th>Access Lock</th>
</tr>
</thead>
<tbody>
<tr>
<td>User</td>
<td>NoChange</td>
<td>Read Only</td>
</tr>
</tbody>
</table>

**Value Type**  ALTRAN enumeration

**Value Range**  
- NoChange—No change from previous state
- Rtn—First time return from alarm
- Alarm—First time in alarm
PVINIT

Point Type  Regulatory

Program (CL block) request for PV initialization (13.3 in AM Algorithm Engineering Data) (no form).

Source  User  Default Value  Off  Access Lock  Prog

Value Type  Boolean

Value Range  Off—Normal operation
On—PV initialization is requested

PVLLFL

Point Type  Regulatory and Counter

PV low-low alarm flag (4.3.1.8.6 in System Control Functions) (no form).

Source  User  Default Value  Off  Access Lock  Read Only

Value Type  Boolean

Value Range  Off—If PV >= PVLLTP
On - If PV < PVLLTP

PVLLTP

Point Type  Regulatory and Counter

PV low-low alarm trip point value (4.3.1.8.6 in System Control Functions) (Forms AM88-470 and 440).

Source  User  Default Value  NaN  Access Lock  Supvr

Value Type  Real, NaN

Value Range  PVEXEULO to PVLOTP and NaN. Configuring as NaN disables the alarm. HM storage only if PVLOTP is NaN.
PVLLTR

Point Type  Regulatory

PV low-low alarm transition—indicates a transition in the PV low-low alarm state (PVLLFL, PVLLTP) (no form).

Source  User  Default Value  NoChange  Access Lock  Read Only

Value Type  ALTRAN enumeration

Value Range  NoChange—No change from previous state
             Rtn—First time return from alarm
             Alarm—First time in alarm

PVLOFL

Point Type  Regulatory and Counter

PV low alarm flag (4.3.1.8.5 in System Control Functions) (no form).

Source  User  Default Value  Off  Access Lock  Read Only

Value Type  Boolean

Value Range  Off - If PV >= PVLOTP
             On - If PV < PVLOTP

PVLOTTP

Point Type  Regulatory and Counter

PV low alarm trip point value (4.3.1.8.5 in System Control Functions) (Forms AM88-470 and 440).

Source  User  Default Value  NaN  Access Lock  Supvr

Value Type  Real, NaN

Value Range  PVLLTP to PVHITP and NaN. Configuring as NaN disables alarm.
PVLOTR

Point Type  Regulatory

PV low alarm transition—indicates a transition in the PV low alarm state (PVLOFL, PVLOTP) (no form).

Source  User  Default Value  NoChange  Access Lock  Read Only

Value Type  ALTRAN enumeration

Value Range  NoChange—No change from previous state  
Rtn—First time return from alarm  
Alarm—First time in alarm

PVNORMAL

Point Type  Flag

Contains a character string that represents the normal state of this Flag data point (3.4.3 in AM Control Functions) (Form AM88-410).

Source  User  Default Value  Blanks  Access Lock  Engr-DEB

Value Type  SD Enum

Value Range  Up to 8 characters

PVP

Point Type  Regulatory and Counter

The PV value expressed as a percentage of the PV range.

Source  User  Default Value  ----  Access Lock  Read Only

Value Type  Real

Value Range  Any real number
PVROCNFL

**Point Type**  Regulatory and Counter

PV decreasing (negative) rate-of-change alarm flag (4.3.1.8.9 in *System Control Functions*).

<table>
<thead>
<tr>
<th>Source</th>
<th>User</th>
<th>Default Value</th>
<th>Off</th>
<th>Access Lock</th>
<th>Read Only</th>
</tr>
</thead>
</table>

**Value Type**  Boolean

**Value Range**  Off—PV is within Rate of Change limit  
On—PV is out of the Rate of Change limit

PVROCNTP

**Point Type**  Regulatory, Counter

PV decreasing (negative) rate-of-change alarm trip-point value (4.3.1.8.9 in *System Control Functions*) (Forms AM88-470 and 440).

<table>
<thead>
<tr>
<th>Source</th>
<th>User</th>
<th>Default Value</th>
<th>NaN</th>
<th>Access Lock</th>
<th>Supvr</th>
</tr>
</thead>
</table>

**Value Type**  Real, NaN

**Value Range**  >= 0.0, NaN  
Configuring PVROCNTP as NaN disables the alarm

PVROCNTR

**Point Type**  Regulatory

PV decreasing (negative) rate-of-change alarm transition. The value in this parameter is meaningful only for use by CL blocks on this point. It indicates whether the alarm flag state in PVROCNFL changed during the present execution of this point.

<table>
<thead>
<tr>
<th>Source</th>
<th>User</th>
<th>Default Value</th>
<th>NoChange</th>
<th>Access Lock</th>
<th>Read Only</th>
</tr>
</thead>
</table>

**Value Type**  ALTRAN enumeration

**Value Range**  NoChange—No change from previous state  
Rtn—First time return from alarm  
Alarm—First time in alarm
PVROCPFL

Point Type  Regulatory and Counter

PV increasing (positive) rate-of-change alarm flag (4.3.1.8.8 in System Control Functions).

Source  User  Default Value  Off  Access Lock  Read Only

Value Type  Boolean

Value Range  Off—PV is within Rate of Change limit
              On—PV is out of the Rate of Change limit

PVROCPTP

Point Type  Regulatory and Counter

PV increasing (positive) rate-of-change alarm trip-point value (4.3.1.8.8 in System Control Functions) (Forms AM88-470 and 440).

Source  User  Default Value  NaN  Access Lock  Supvr

Value Type  Real

Value Range  \( \geq 0.0 \), NaN
            Configuring PVROCPTP as NaN disables this alarm.

PVROCPTR

Point Type  Regulatory

PV increasing (positive) rate-of-change alarm transition. The value in this parameter is meaningful only for use by CL blocks on this point. It indicates whether the alarm flag state in PVROCPFL changed during the present execution of this point.

Source  User  Default Value  NoChange  Access Lock  Read Only

Value Type  ALTRAN enumeration

Value Range  NoChange—No change from previous state
              Rtn—First time return from previous state
              Alarm—First time in alarm
PVSGCHFL

Point Type  Regulatory and Counter

Significant PV-change alarm flag (4.3.1.8.7 in System Control Functions) (no form).

Source  User  Default Value  Off  Access Lock  Read Only

Value Type  Boolean

Value Range  Off—PV is within the significant change limit.
PV is out of the significant change limit.

PVSGCHTP

Point Type  Regulatory and Counter

Significant PV-change alarm trip-point value (4.3.1.8.7 in System Control Functions)
(Forms AM88-470 and 440).

Source  User  Default Value  NaN  Access Lock  Supvr

Value Type  Real, NaN

Value Range  >= 0.0, or NaN
Configuring PVSGCHTP as NaN disables this alarm.

PVSOURCE

Point Type  Regulatory and Counter

Configure on Forms AM88-402 and 440.

PV source defines the PV source initial value (3.1.2, 3.1.3, 3.1.5.4, 3.1.5.5, 3.1.5.6,
3.3.8, and 4.1.4.7 in AM Control Functions).

Source  User  Default Value  Auto  Access Lock  Oper

Value Type  PVSOURCE enumeration

Value Range  Auto—Automatic PV—for Counter point, PV is calculated from the Counter input source.
Man—Manual PV—for Counter point, the user enters PV from Point Builder keys.
Sub—Substituted PV.
PVSRCOPT

**Point Type**  Regulatory and Counter

Configure on Forms *AM88-402* and *440* (3.1.5.4 in *AM Control Functions*).

PV source option.

<table>
<thead>
<tr>
<th>Source</th>
<th>User</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Default Value</strong></td>
<td>OnlyAuto</td>
</tr>
<tr>
<td><strong>Access Lock</strong></td>
<td>Engr-DEB</td>
</tr>
</tbody>
</table>

**Value Type**  PVSRCOPT enumeration

**Value Range**  
- **OnlyAuto**—The PV source is always AUTO. The values of Man and Sub are not permitted for this point. For Counter points, PV is calculated from the counter input source. 
- **All**—The PV source can be Man, Auto, or Sub. For Counter points, the PV can be entered by either the Manual or Substituted sources.

---

**PVSTATES[0], PVSTATES[1]**

**Point Type**  Flag

Configure on Form *AM88-410*.

One-by-two array of state descriptor string parameter/description. PVSTATES(0) is a state descriptor for the PV corresponding to STATE1, and is displayed with the lower box on the standard displays. The Value of PVSTATES(0) is equivalent to the parameter STATE1. PVSTATES(1) is the state descriptor for the PV corresponding to STATE2, and is displayed with the upper box on the standard displays. The value of PVSTATES(1) is equivalent to the parameter STATE2 (3.4 in *AM Control Functions*).

<table>
<thead>
<tr>
<th>Source</th>
<th>User</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Default Value</strong></td>
<td>Blanks</td>
</tr>
<tr>
<td><strong>Access Lock</strong></td>
<td>Engr-DEB</td>
</tr>
</tbody>
</table>

**Value Type**  String

**Value Range**  Up to 8 characters
PVSTS

Point Type  Regulatory

Value status of PV (3.1.3, 3.1.5.4, 3.1.5.5, 3.1.5.6, 3.3.3, and 3.3.11 in AM Control Functions).

Source  User    Default Value  Bad    Access Lock  Read Only

Value Type  PVVALST enumeration

Value Range  Normal—The value is good.
Uncertn—The value is uncertain.
Bad—The value is NaN.

PVTRACK

Point Type  Regulatory

PV tracking option (18.4.5 in AM Algorithm Engineering Data). Applies to Pid, PidFf, and PidErFb control algorithms (Forms AM88-451, 455, and 456).

Source  User    Default Value  NoTrack    Access Lock  Engr-DEB

Value Type  TRACKING enumeration

Value Range  NoTrack—The setpoint does not track the PV.
Track—The setpoint tracks the PV when any of the following conditions occur:
• the point is in the manual mode
• the point is being initialized from a secondary
• the first time through after becoming active
• cold or warm restart and the point is configured for external initialization
PVTV

**Point Type**  Regulatory and Counter

Configure on Forms AM88-402 and 440.

Target value for PV (used if no control algorithm is selected). For Counter algorithm, defines PV target initial value, or calculates a deviation $PV - PVTV$ used in deviation alarm processing (3.3.5 in *AM Control Functions*).

<table>
<thead>
<tr>
<th>Source</th>
<th>Default Value</th>
<th>Access Lock</th>
</tr>
</thead>
<tbody>
<tr>
<td>User</td>
<td>NaN</td>
<td>Oper</td>
</tr>
</tbody>
</table>

**Value Type**  Real, NaN

**Value Range**  $PVEXEULO$ to $PVEXEUHI$ or NaN

PVTP

**Point Type**  Regulatory

PV target value in percent (no form).

<table>
<thead>
<tr>
<th>Source</th>
<th>Default Value</th>
<th>Access Lock</th>
</tr>
</thead>
<tbody>
<tr>
<td>User</td>
<td>----</td>
<td>Read Only</td>
</tr>
</tbody>
</table>

**Value Type**  Real

**Value Range**  Any real number
### Q

**Point Type**: Regulatory

Measured actual steam-quality factor for FlowComp PV algorithm (Section 4 in *AM Algorithm Engineering Data*) (Form AM88-412).

**Source**: User  
**Default Value**: 1.0  
**Access Lock**: Engr-DEB

**Value Type**: Real  
**Value Range**: Any real number

### QSTS

**Point Type**: Regulatory

Status of the FlowComp Q value.

**Source**: User  
**Default Value**: Normal  
**Access Lock**: Read Only

**Value Type**: PVSTS enumeration

**Value Range**: Normal—The value is good.  
Uncertn—The value is uncertain.  
Bad—The value is NaN.
RampSoak (Control Algorithm)

This algorithm produces an output that consists of up to six alternate ramp-and-soak periods—a total of 12 segments. The output is usually used as the setpoint for a secondary data point that uses a Pid algorithm to control a process variable, according to the ramp-and-soak periods. The PV of a data point that uses the RampSoak algorithm is normally the PV of the Pid point.

Parameters involved in configuring this algorithm are the following and those listed in Section 2 under Regulatory Point.

<table>
<thead>
<tr>
<th>Control Common Display</th>
<th>Setpoint Display</th>
<th>Ramp/Soak Control Algo Display</th>
<th>Control Output Connections Display</th>
</tr>
</thead>
<tbody>
<tr>
<td>NMODE</td>
<td>SPFORMAT</td>
<td>INITTYPE</td>
<td>NOCOPTS</td>
</tr>
<tr>
<td>NMODATTR</td>
<td>SPEUHI</td>
<td>MXRMPDEV</td>
<td>CODSTN(N)</td>
</tr>
<tr>
<td>MODEPERM</td>
<td>SPEULO</td>
<td>MXSOKDEV</td>
<td>COACTSTS(N)</td>
</tr>
<tr>
<td>EXTSWOPT</td>
<td>SPHILM</td>
<td>NORSSEQ</td>
<td>OPHILM</td>
</tr>
<tr>
<td></td>
<td>SPOLOM</td>
<td>RATEX (1-6)</td>
<td>OPLOLM</td>
</tr>
<tr>
<td></td>
<td>SP</td>
<td>SOAKTX(1-6)</td>
<td>OPMCHLM</td>
</tr>
<tr>
<td></td>
<td>SPOPT</td>
<td>SOAKVX(1-6)</td>
<td>OPROCLM</td>
</tr>
<tr>
<td></td>
<td>ADVDEVTP</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>RAMPTIME</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**RAMPTIME**

**Point Type**  Regulatory

Remaining ramp time for SP target-value processing (3.1.6.2 in AM Control Functions) (no form).

**Source**  User  **Default Value**  0.0  **Access Lock**  Oper

**Value Type**  Real

**Value Range**  $\geq 0.0$
RANGEHI

Point Type  Numeric

Configure on Form AM88-420A.

PV High Range (3.2.2 in AM Control Functions).

Source  User  Default Value  NaN  Access Lock  Engr-DEB

Value Type  Real, NaN

Value Range  Configure RANGEHI as NaN for a PV unbounded in the positive direction.

RANGELO

Point Type  Numeric

Configure on Form AM88-420A.

PV Low Range (3.2.2 in AM Control Functions).

Source  User  Default Value  NaN  Access Lock  Engr-DEB

Value Type  Real

Value Range  Configure RANGELO as NaN for a PV unbounded in the negative direction.

RATE1

Point Type  Regulatory

Configure on Form AM88-458.

Applies to Auto Manual Station algorithm (14.4.1 in AM Algorithm Engineering Data).

Ramp rate for output bias in change per minute. The rate at which the bias $B$ ramps down from the initialization value to the last user set value. The ramp-down of $B$ is disabled if RATE1 is set to zero.

Source  User  Default Value  0.0  Access Lock  Supvr

Value Type  Real

Value Range  $\geq 0.0$. NaN cannot be stored
RATE1–RATE6

Point Type  Regulatory

Ramp rate in engineering-units per minute for RampSoak control algorithm (Section 22 in AM Algorithm Engineering Data) (Form AM88-463).

Source  User  Default Value  NaN  Access Lock  Supvr

Value Type  Real, NaN

Value Range  > 0.0 or < 0.0. NaN cannot be stored

RATIO

Point Type  Regulatory

Ratio value for Pid, PidFf, and PidErFb control algorithms (3.1.6.4 in AM Control Functions and 18.4.11 in AM Algorithm Engineering Data) (Form AM88-441).

Source  User  Default Value  1.0  Access Lock  Oper

Value Type  Real

Value Range  RTLOLM to RTHILM
**RatioCtl (Control Algorithm)**

This algorithm calculates a setpoint for a Pid algorithm that is the desired ratio of a controlled variable to an uncontrolled variable. The value of the controlled variable is maintained at a specified ratio of the value of the uncontrolled variable. The data point that uses this algorithm uses Equation B of the PV Multiplier/Divider algorithm to calculate the measured value of the ratio for displays and reports.

Ratio control can be accomplished with the ratio-control options of the PID or PID Feedforward control algorithms. This ratio-control algorithm has several advantages, including the display of the actual ratio attained (as calculated by the PV Multiplier/Divider algorithm), and direct control of the ratio through the SP of the Ratio algorithm.

Parameters involved in configuring this algorithm are the following and those listed in Section 2 under Regulatory Point.

<table>
<thead>
<tr>
<th>Control Common Display</th>
<th>Setpoint Display</th>
<th>Control Ratio Algorithm Display</th>
<th>Control Output Connections Display</th>
</tr>
</thead>
<tbody>
<tr>
<td>NMODE</td>
<td>SPFORMAT</td>
<td>NITYPE</td>
<td>NOCOPTS</td>
</tr>
<tr>
<td>NMODATTR</td>
<td>SPEUHI</td>
<td>B1</td>
<td>CODSTN(N)</td>
</tr>
<tr>
<td>MODEPERM</td>
<td>SPEULO</td>
<td>B2</td>
<td>COACTSTS(N)</td>
</tr>
<tr>
<td>EXTSWOPT</td>
<td>SPHILM</td>
<td>K1</td>
<td>OPHILM</td>
</tr>
<tr>
<td></td>
<td>SPLOLM</td>
<td>K2</td>
<td>OPLOLM</td>
</tr>
<tr>
<td></td>
<td>SP</td>
<td>NOCINPTS</td>
<td>OPMCHLM</td>
</tr>
<tr>
<td></td>
<td>SPOPT</td>
<td>CIRSRC(N)</td>
<td>OPROCLM</td>
</tr>
<tr>
<td></td>
<td>AVDEVTP</td>
<td>CIDSTN(N)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>CIACTSTS(N)</td>
<td></td>
</tr>
</tbody>
</table>

**RBOPT**

**Point Type**  Regulatory

Ratio and Bias option for Pid, PidFf, and PidErFb control algorithms (3.1.6.4 in AM Control Functions and 18.4.11 in AM Algorithm Engineering Data) (Form AM88-441).

**Source**  User  
**Default Value**  NoRatBi  
**Access Lock**  Prog

**Value Type**  RBOPT enumeration

**Value Range**  
NoRatBi—No ratio/bias is used to calculate setpoint.  
FixRaBi—Fixed ratio and bias.  
AutoRat—Automatic ratio. Ratio is back-calculated during initialization.  
AutoBi—Automatic bias. Bias is back-calculated during initialization.
**REDBFMN**

**Point Type**  Processor Status

The minimum amount of space available (in words) in the redundancy buffer since the last startup, resynchronization, or failover. Value is available in the secondary AM only.

**Source**  System  **Default Value**  N/A  **Access Lock**  Read Only

**Value Type**  Real

**Value Range**  >0.0

**REDBFZ**

**Point Type**  Processor Status

Redundancy buffer size total in words. Value is available in the secondary AM only.

**Source**  System  **Default Value**  N/A  **Access Lock**  Read Only

**Value Type**  Real

**Value Range**  >0.0

**REDCONFG**

**Point Type**  Processor Status

Indicates whether or not this AM is configured for redundancy. Value is available in both primary and secondary AM.

**Source**  User (NCF)  **Default Value**  N/A  **Access Lock**  Read Only

**Value Type**  Boolean

**Value Range**  True/False
REDINOP

Point Type  Processor Status

Indicates whether or not redundancy is operating in this AM. Value is available in both primary and secondary AM.

Source  System  Default Value  N/A  Access Lock  Read Only

Value Type  Boolean

Value Range  True/False

REDTAG

Point Type  Regulatory

Applies to control algorithms (no form).

Red tagging parameter.

Source  User  Default Value  Off  Access Lock  Supvr/Eng

Value Type  REDTAG enumeration

Value Range  Off—Normal operation
On—To set On, the MODE must be Manual and the MODATTR must be Operator. Once On, the output MODE and MODATTR cannot be changed.

REM SOAK T

Point Type  Regulatory

Remaining soak time in minutes for the RampSoak control algorithm (Section 22 in AM Algorithm Engineering Data) (no form).

Source  User  Default Value  0.0  Access Lock  Oper

Value Type  Real

Value Range  0.0 through 720.0
**RESETCMD**

**Point Type**  Timer and Counter

Reset Timer Control (Timer) (no form).

Reset Accumulation Control (Counter) (no form) (3.3.8, 3.3.9, and 3.5.1 in *AM Control Functions*).

<table>
<thead>
<tr>
<th>Source</th>
<th>Default Value</th>
<th>Access Lock</th>
</tr>
</thead>
<tbody>
<tr>
<td>User</td>
<td>NotReset (Timer)</td>
<td>Oper</td>
</tr>
<tr>
<td></td>
<td>---- (Counter)</td>
<td></td>
</tr>
</tbody>
</table>

**Value Type**  RST enumeration

**Value Range**  Reset—Reset the PV in timers to 0.0.
                 Reset the PV in counters to 0.0.
                 NotReset—Normal operation

**RESETVAL**

**Point Type**  Regulatory

Reset value for Totalizr PV algorithm. The accumulation value in PVCALC is set equal to this value when Reset is placed in the COMMAND parameter (7.4.1 in *AM Algorithm Engineering Data* (Form AM88-419)).

<table>
<thead>
<tr>
<th>Source</th>
<th>Default Value</th>
<th>Access Lock</th>
</tr>
</thead>
<tbody>
<tr>
<td>User</td>
<td>0.0</td>
<td>Oper</td>
</tr>
</tbody>
</table>

**Value Type**  Real

**Value Range**  Any real number

**RESRVMEM**

**Point Type**  Processor Status

Reserved user memory expressed in 32 kw blocks.

<table>
<thead>
<tr>
<th>Source</th>
<th>Default Value</th>
<th>Access Lock</th>
</tr>
</thead>
<tbody>
<tr>
<td>User (NCF)</td>
<td>0</td>
<td>Read Only</td>
</tr>
</tbody>
</table>

**Value Type**  Integer

**Value Range**  0-12 (Note that the total value of RESRVMEM plus the value of AMDATA(48) cannot exceed 12.)
RESTART

Point Type  All point types except Numeric and Flag

Restart type (no form) (2.7 in AM Control Functions).

Source  User  Default Value  None  Access Lock  Read Only

Value Type  RESTART enumeration

Value Range  None—No restart
Hot—Point is running the first time after a Hot Restart.
Warm—Point is running the first time after a Warm Restart.
Cold—Point is running the first time after a Cold Restart.
PtActvn—Point is running the first time after becoming active.
NoProc—AM has been restarted with no point processing.

RESYNCS(n)

Point Type  Processor Status

An array of six values that contain the number of resynchronizations since this AM was started due to a given cause, as follows:

RESYNCS(1)  Total number of all resynchronizations
RESYNCS(2)  Number of redundant bus parity resynchronizations
RESYNCS(3)  Number of insufficient room resynchronizations
RESYNCS(4)  Number of clean-point-too-large resynchronizations
RESYNCS(5)  Number of transient-backdoor-failure resynchronizations
RESYNCS(6)  Number of transient-LCN-failure resynchronizations

Source  System  Default Value  N/A  Access Lock  Read Only

Value Type  Real

Value Range  =>0.0

RFB

Reset feedback input, in %, to PidErFd control algorithm (Section 20 in AM Algorithm Engineering Data) (no form).

Source  User  Default Value  -----  Access Lock  Read Only

Value Type  Real

Value Range  Any real number
RFBSTS

Point Type  Regulatory

Status of the RFB value.

Source  User  Default Value  Bad  Access Lock  Read Only

Value Type  PVSTS enumeration

Value Range  Normal—The value is good.
Uncertn—The value is uncertain.
Bad—The value is NaN.

RG

Point Type  Regulatory

Reference specific gravity input or reference molecular weight input to FlowComp PV algorithm, in the same engineering units as the G input (4.5 in AM Algorithm Engineering Data) (Form AM88-412).

Source  User  Default Value  1.0  Access Lock  Supvr

Value Type  Real

Value Range  Any real number

ROLLOVER

Point Type  Counter

AV Rollover value (no form) (3.3.6, 3.3.8, and 3.3.11 in AM Control Functions).

Source  User  Default Value  0  Access Lock  Oper

Value Type  Integer

Value Range  0 through 32767
RP

Point Type  Regulatory

Reference pressure input to FlowComp PV algorithm, in the same engineering units a the P input (4.5 in AM Algorithm Engineering Data) (Form AM88-412).

Source  User  Default Value  1.0  Access Lock  Supvr

Value Type  Real

Value Range  Any real number

RQ

Point Type  Regulatory

Reference steam-quality input to FlowComp PV algorithm, in the same engineering units a the Q input (4.5 in AM Algorithm Engineering Data) (Form AM88-412).

Source  User  Default Value  1.0  Access Lock  Supvr

Value Type  Real

Value Range  Any real number

RSPBGP$

Point Type  Regulatory

Applies to Ramp Soak algorithm (no form).

**For MMI use only** If ramp segment, return value of next soak in %. If soak segment, return REMSOAKT as % of total soak time.

Source  User  Default Value  ----  Access Lock  Read Only

Value Type  Real

Value Range  Any real number
RT

**Point Type**  Regulatory

Reference temperature input to FlowComp PV algorithm, in the same engineering units as the \( T \) input (4.5 in *AM Algorithm Engineering Data*) (Form AM88-412).

<table>
<thead>
<tr>
<th>Source</th>
<th>User</th>
<th>Default Value</th>
<th>1.0</th>
<th>Access Lock</th>
<th>Supvr</th>
</tr>
</thead>
</table>

**Value Type**  Real

**Value Range**  Any real number

RTHILM

Configure on Form AM88-441.

Applies to Control algorithms except Switch, Override Selector, Incremental Summer, and Auto Manual Station.

Ratio high limit. Ratios above this limit are clamped (3.1.6.4 in *AM Control Functions*).

<table>
<thead>
<tr>
<th>Source</th>
<th>User</th>
<th>Default Value</th>
<th>100.0</th>
<th>Access Lock</th>
<th>Supvr</th>
</tr>
</thead>
</table>

**Value Type**  Real

**Value Range**  \( \geq \text{RTHILM} \), \(< 100.0; \text{NaN not allowed}

RTHLOLM

**Point Type**  Regulatory

Configure on Form AM88-441.

Applies to Control algorithms except Switch, Override Selector, Incremental Summer, and Auto Manual Station.

Ratio low limit. Ratios below this limit are clamped (3.1.6.4 in *AM Control Functions*).

<table>
<thead>
<tr>
<th>Source</th>
<th>User</th>
<th>Default Value</th>
<th>0.01</th>
<th>Access Lock</th>
<th>Supvr</th>
</tr>
</thead>
</table>

**Value Type**  Real

**Value Range**  0.01 to \( \text{RTHILM} \); NaN not allowed
RX

**Point Type**  Regulatory

Configure on Form *AM88-412*.

Applies to Flow Compensation algorithm.

Reference steam compressibility at designed flowing conditions.

<table>
<thead>
<tr>
<th>Source</th>
<th>User</th>
<th>Default Value</th>
<th>1.0</th>
<th>Access Lock</th>
<th>Supvr</th>
</tr>
</thead>
</table>

**Value Type**  Real

**Value Range**  Any real number
S1

**Point Type**  Regulatory

Switch or flag value for PidErFb, RampSoak, and Switch control algorithms. Use and meaning vary according to the algorithm (see the table below) (no form).

- **PidErFb**—See Section 20 in *AM Algorithm Engineering Data*
- **RampSoak**—See Section 22 in *AM Algorithm Engineering Data*
- **Switch**—See Section 25 in *AM Algorithm Engineering Data*

<table>
<thead>
<tr>
<th>Algorithm</th>
<th>Description</th>
<th>Default Value</th>
<th>Access Lock</th>
</tr>
</thead>
<tbody>
<tr>
<td>PidErFb</td>
<td>Tracking Switch Control</td>
<td>Off</td>
<td>Prog</td>
</tr>
<tr>
<td></td>
<td>Mark-Timer Flag</td>
<td>Off</td>
<td>Read Only</td>
</tr>
<tr>
<td></td>
<td>Select X1</td>
<td>On</td>
<td>Oper (EqA)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Prog (EqB)</td>
</tr>
<tr>
<td>RampSoak</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Switch</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Value Type**  Boolean

**Value Range**  Off—Normal operation
On—Initialization request flag (for PidErFb)
—Select X1 input (for Switch)

S1ACCLVL

**Point Type**  Regulatory and Switch

Configure on Form AM88-450 and 480.

Access level choice for who can store to the S1REQSTS parameter. A choice automatically guarantees that those of higher access level can perform the store (4.2 in *AM Control Functions*)

<table>
<thead>
<tr>
<th>Source</th>
<th>Default Value</th>
<th>Access Lock</th>
</tr>
</thead>
<tbody>
<tr>
<td>User</td>
<td>Engr</td>
<td>Engr-DEB</td>
</tr>
</tbody>
</table>

**Value Type**  ACCLVL enumeration

**Value Range**  Operator—The operator, supervisor, engineer, or program continuous control has access. 
Supervise—The supervisor, engineer, or program continuous control has access. 
Engineer—The engineer or program continuous control has access. 
Program—Only the program continuous control has access.
S1BGNTIM

**Point Type**  Regulatory

Beginning time, in minutes, for mark-time flag 1 of RampSoak PV algorithm (22.4.5 in AM Algorithm Engineering Data) (Form AM88-463).

<table>
<thead>
<tr>
<th>Source</th>
<th>User</th>
<th>Default Value</th>
<th>0.0</th>
<th>Access Lock</th>
<th>Supvr</th>
</tr>
</thead>
</table>

**Value Type**  Real

**Value Range**  $\geq 0.0$

S1CURSTS

**Point Type**  Switch and Regulatory

Configure on Form AM88-450 and 480.

Initial state of Switch 1 (DEB), or current state of Switch 1 (operating) (4.2 in AM Control Functions.) This parameter is present only when NUMSWITCH $\geq 1$.

<table>
<thead>
<tr>
<th>Source</th>
<th>User</th>
<th>Default Value</th>
<th>first state</th>
<th>Access Lock</th>
<th>Prog</th>
</tr>
</thead>
</table>

**Value Type**  Sd Enum – S1STATES

**Value Range**  Up to 5 Self-Defined Enumeration states (Refer to S1INSTATE, S1STATES)

S1ENDTIM

**Point Type**  Regulatory

Ending time, in minutes, for mark-time flag 1 of RampSoak PV algorithm (22.4.5 in AM Algorithm Engineering Data) (Form AM88-463).

<table>
<thead>
<tr>
<th>Source</th>
<th>User</th>
<th>Default Value</th>
<th>0.0</th>
<th>Access Lock</th>
<th>Supvr</th>
</tr>
</thead>
</table>

**Value Type**  Real

**Value Range**  $\geq 0.0$
**S1INSTATE**

**Point Type**  Regulatory and Switch
Configure on Form AM88-450 and 480.
Number of valid states for Switch 1 (4.2 in *AM Control Functions*).

<table>
<thead>
<tr>
<th>Source</th>
<th>User</th>
<th>Default Value</th>
<th>2</th>
<th>Access Lock</th>
<th>DEB</th>
</tr>
</thead>
</table>

**Value Type**  Integer

**Value Range**  1 through 5

**S1REQSTS**

**Point Type**  Regulatory and Switch
Configure on Form AM88-450 and 480.
Requested state for Switch 1 (4.2 in *AM Control Functions*).

<table>
<thead>
<tr>
<th>Source</th>
<th>User</th>
<th>Default Value</th>
<th>first state</th>
<th>Access Lock</th>
<th>Oper*</th>
</tr>
</thead>
</table>

* Further checked against S1ACCLVL by data owner.

**Value Type**  Sd Enum – S1STATES

**Value Range**  Up to 5 self-defined enumeration states (Refer to S1INSTATE, S1STATES)

**S1SEGID**

**Point Type**  Regulatory
Mark time 1 segment identity for RampSoak PV algorithm (22.4.5 in *AM Algorithm Engineering Data*) (Form AM88-463).

| Source  | User  | Default Value | Ramp1 | Access Lock | Supvr |

**Value Type**  S1SEGID enumeration

**Value Range**  Ramp1 Soak1
Ramp2 Soak2
Ramp3 Soak3
Ramp4 Soak4
Ramp5 Soak5
Ramp6 Soak6
S1STATES(0) – S1STATES(4)

Point Type  Switch and Regulatory

State names for CL Switch states (4.2 in AM Control Functions). These parameters exist only when NUMSWITCH ≥1 (Forms AM88-450 and 480).

Source  User  Default Value  Blanks  Access Lock  DEB

Value Type  Array of 8-character strings. The size of the array for each of these parameters is equal to the value in S1NSTATES.

Value Range  Alphanumeric strings up to 8 characters in length

S2

Point Type  Regulatory

Flag or switch value for RampSoak and Switch control algorithms. Function varies with the algorithm (see table below).

- RampSoak—See Section 22 in AM Algorithm Engineering Data
- Switch—See Section 25 in AM Algorithm Engineering Data

<table>
<thead>
<tr>
<th>Algorithm</th>
<th>Description</th>
<th>Default Value</th>
<th>Access Lock</th>
</tr>
</thead>
<tbody>
<tr>
<td>RampSoak</td>
<td>Mark-Timer Flag</td>
<td>Off</td>
<td>Read Only</td>
</tr>
<tr>
<td>Switch</td>
<td>Select X2</td>
<td>Off</td>
<td>Operator</td>
</tr>
</tbody>
</table>

Value Type  Boolean

Value Range  Off—Normal Operation
On—select X2 input (Switch)
S2ACCLVL

**Point Type**  Switch and Regulatory

Configure on Form *AM88-450* and *480*.

Switch 2 access level. Defines which access level can start a new value in the *S2REQSTS* parameter. A choice automatically guarantees that those of higher access can perform the store (3.7.1 and 4.2 in *AM Control Functions*).

<table>
<thead>
<tr>
<th>Source</th>
<th>Default Value</th>
<th>Access Lock</th>
</tr>
</thead>
<tbody>
<tr>
<td>User</td>
<td>Engr</td>
<td>Engr-DEB</td>
</tr>
</tbody>
</table>

**Value Type**  ACCLVL enumeration

**Value Range**  Operator—The operator, supervisor, engineer, or program continuous control has access. Supervis—The supervisor, engineer, or program continuous control has access. Program—Only the program continuous control has access.

S2BGNTIM

**Point Type**  Regulatory

Beginning time, in minutes, for mark-time flag 2 of RampSoak PV algorithm (22.4.5 in *AM Algorithm Engineering Data*) (Form *AM88-463*).

<table>
<thead>
<tr>
<th>Source</th>
<th>Default Value</th>
<th>Access Lock</th>
</tr>
</thead>
<tbody>
<tr>
<td>User</td>
<td>0.0</td>
<td>Supvr</td>
</tr>
</tbody>
</table>

**Value Type**  Real

**Value Range**  >= 0.0

S2CURSTS

**Point Type**  Switch and Regulatory

Configure on Form *AM88-450* and *480*.

Initial state of Switch 2 (DEB), or current state of Switch 1 (operating) (4.2 in *AM Control Functions*). This parameter is present only when NUMSWITCH =2.

<table>
<thead>
<tr>
<th>Source</th>
<th>Default Value</th>
<th>Access Lock</th>
</tr>
</thead>
<tbody>
<tr>
<td>User</td>
<td>first state</td>
<td>Prog</td>
</tr>
</tbody>
</table>

**Value Type**  Sd-Enum – S2STATES

**Value Range**  Up-to-5 self-defined enumeration states (refer to *S2NSTATE*, *S2STATES*).
**S2ENDTIM**

**Point Type**  Regulatory

Ending time, in minutes, for mark-time 2 of RampSoak PV algorithm (22.4.5 in AM Algorithm Engineering Data) (Form AM88-463).

**Source**  User  **Default Value**  0.0  **Access Lock**  Supvr

**Value Type**  Real

**Value Range**  >= 0.0

**S2NSTATE**

**Point Type**  Switch and Regulatory

Configure on Form AM88-450 and 480.

Number of valid states for Switch 2 (3.7.1 and 4.2 in AM Control Functions).

**Source**  User  **Default Value**  2  **Access Lock**  DEB

**Value Type**  Integer

**Value Range**  1 through 5

**S2REQSTS**

**Point Type**  Switch and Regulatory

Configure on Form AM88-450 and 480.

Requested state for Switch 2 (3.7.1 and 4.2 in AM Control Functions).

**Source**  User  **Default Value**  First state  **Access Lock**  Oper*

* Further checked against S2ACCLVL by data owner

**Value Type**  Sd Enum S2STATES

**Value Range**  Up to 5 self-defined enumeration states (ref S2NSTATE, S2STATES).
**S2SEGID**

**Point Type**  Regulatory

Mark time 2 segment identity for RampSoak PV algorithm (22.4.5 in AM Algorithm Engineering Data) (Form AM88-463).

**Source**  User  **Default Value**  Ramp1  **Access Lock**  Supvr

**Value Type**  S2SEGID enumeration

**Value Range**  Ramp1 Soak1  
Ramp2 Soak2  
Ramp3 Soak3  
Ramp4 Soak4  
Ramp5 Soak5  
Ramp6 Soak6

---

**S2STATES(0) – S2STATES(4)**

**Point Type**  Switch and Regulatory

Character string representations of each valid/current requested state for Switch 2 (4.2 in AM Control Functions). These parameters are present only when NUMSWTCH =2. (Forms AM88-450 and 480).

**Source**  User  **Default Value**  None  **Access Lock**  Engr-DEB

**Value Type**  Array of 8-character strings. The size of the array for each of these parameters is equal to the value in S2NSTATES.

**Value Range**  Alphanumeric string up to 8 characters in length
S3

**Point Type**  Switch

Switch value for Switch control algorithm (25.4.2 in *AM Algorithm Engineering Data*) (no form).

**Source**  User  
**Default Value**  Off  
**Access Lock**  Oper

**Value Type**  Boolean

**Value Range**  Off—Normal operation  
On—Select X3 input

S4

**Point Type**  Switch

Switch value for Switch control algorithm (25.4.2 in *AM Algorithm Engineering Data*) (no form).

**Source**  User  
**Default Value**  Off  
**Access Lock**  Oper

**Value Type**  Boolean

**Value Range**  Off—Normal operation  
On—Select X4 input

SALMDSC1 – SALMDSC3

**Point Type**  Switch

Configure on Form AM88-450.

Switch alarm 1 to 3 descriptions (4.2 in *AM Control Functions*).

**Source**  User  
**Default Value**  Blanks  
**Access Lock**  Engr

**Value Type**  String

**Value Range**  Up to 8 characters
SALMFL1 – SALMFL3

**Point Type** Switch and Regulatory

Switch alarm flags 1 to 3. Alarm level is lowest for switch alarm 1 to highest for switch alarm 3 (no form) (4.2 in *AM Control Functions*).

**Source** System  
**Default Value** Off  
**Access Lock** View

**Value Type** Boolean

**Value Range**  
Off—Not in alarm  
On—in alarm

SALMTR1 – SALMTR3

**Point Type** Switch

Switch alarm transition 1 to 3, corresponding to switch alarm Flags 1 to 3, respectively (no form) (4.2 in *AM Control Functions*).

**Source** System  
**Default Value** No Change  
**Access Lock** Read Only

**Value Type** ALTRAN enumeration

**Value Range**  
No Change—Alarm state has not changed, is same as previous execution cycle.  
Rtn—Alarm state has returned to normal.  
Alarm—Alarm state changed to "In Alarm."

SECARW(N)

**Point Type** Regulatory

Windup status of the secondary as designated by the control output connection (N), where index (N) varies from 1 through 8 depending on your configuration entry (no form) (3.1.10.1 and 3.1.10.2 in *AM Control Functions*).

**Source** User  
**Default Value** Normal  
**Access Lock** Read Only

**Value Type** WINDDUP enumeration

**Value Range**  
Normal—Free to move in either direction  
Hi—Free to move in the lower direction  
Lo—Free to move in the higher direction  
HiLo—Not free to move in any direction
SEGTOT

**Point Type**  Regulatory

Total number of segments configured for the GenLin PV algorithm (Section 4 in *AM Algorithm Engineering Data*) (Form AM88-420).

- **Source**  User
- **Default Value**  1
- **Access Lock**  Supvr

**Value Type**  Integer

**Value Range**  1 through 12

SEGTYPE

**Point Type**  Regulatory

Current segment-type for RampSoak PV algorithm (Section 22 in *AM Algorithm Engineering Data*) (no form).

- **Source**  User
- **Default Value**  ****
- **Access Lock**  Read Only

**Value Type**  SEGTYPE enumeration

**Value Range**  Ramp—Currently in a ramp segment
Soak—Currently in a soak segment

SELINP

**Point Type**  Regulatory

The selected input for a HiLoAvg or a Midof3 PV algorithm (6.5 and 8.5 in *AM Algorithm Engineering Data*) (no form).

- **Source**  User
- **Default Value**  0 (Midof3)
- **Access Lock**  Read Only

**Value Type**  PINP enumeration

**Value Range**  SelectP1 through SelectP8
## SELXINP

**Point Type**  Regulatory

Selected X input for OrSel or Switch control algorithms (Sections 23 and 25 in AM Algorithm Engineering Data) (no form).

<table>
<thead>
<tr>
<th>Source</th>
<th>User</th>
<th>Default Value</th>
<th>1</th>
<th>Access Lock</th>
<th>Oper–EqA</th>
</tr>
</thead>
</table>

| Access Lock | Read Only–EqB |

**Value Type**  XINP enumeration

**Value Range**  SelectX1 through SelectX4

## SNAPTIME

**Point Type**  Processor Status

Time in seconds for the snapshot period for various processor-status data-point parameters; for example, PFAVGS, PRAVGS, PSAVGS (no form).

<table>
<thead>
<tr>
<th>Source</th>
<th>User</th>
<th>Default Value</th>
<th>0</th>
<th>Access Lock</th>
<th>Read Only</th>
</tr>
</thead>
</table>

**Value Type**  Integer

**Value Range**  0 through 32767

## SOAKT1 through SOAKT6

**Point Type**  Regulatory

For the RampSoak PV algorithm, soak time for segment SOAK(n), in minutes (Section 22 in AM Algorithm Engineering Data) (Form AM88-463).

<table>
<thead>
<tr>
<th>Source</th>
<th>User</th>
<th>Default Value</th>
<th>0.0</th>
<th>Access Lock</th>
<th>Supvr</th>
</tr>
</thead>
</table>

**Value Type**  Real

**Value Range**  0.0 to 720.0 minutes
SOAKV1 through SOAKV6

Point Type  Regulatory

For the RampSoak PV algorithm, soak value for segment SOAK(n), in engineering units (Section 22 in AM Algorithm Engineering Data) (Form AM88-463).

Source  User  Default Value  0.0  Access Lock  Supvr

Value Type  Real

Value Range  Any real number

SP

Point Type  Regulatory

Configure on Form AM88-441.

Applies to Control algorithms.

Setpoint in Engineering Units (3.1.3, 3.1.4.5, 3.1.6.4, 3.5.1, 4.1.4.1, and 4.1.4.2 in AM Control Functions).

Source  User  Default Value  ----  Access Lock  Oper

Value Type  Real

Value Range  SPLOLM to SPHILM; NaN not allowed

SP

Point Type  Timer

Set Time.  (Form AM88-430)

Source  User  Default Value  NaN  Access Lock  Oper

Value Range  0 to 999999, NaN
If SP for timer is configured as NaN, PV recycles from 0 to 999999.  
If SP ≠ NaN, the timer automatically stops when PV >= SP.
SPEUHI

Point Type  Regulatory
Configure on Form AM88-441.
Applies to Control algorithms.
Setpoint Engineering Unit high range corresponding to 100% (3.1.8.1 in AM Control Functions).

Source  User  Default Value  100.0  Access Lock  Engr-DEB

Value Type  Real

Value Range  >=  SPEULO; NaN not allowed

SPEULO

Point Type  Regulatory
Configure on Form AM88-441.
Applies to Control algorithms.
Setpoint Engineering Unit low range corresponding to 0% (3.1.8.1 in AM Control Functions).

Source  User  Default Value  0.0  Access Lock  Engr-DEB

Value Type  Real

Value Range  =<  SPEUHI; NaN not allowed

SPEXEUHI

Point Type  Regulatory
Applies to Control algorithms (no form).
Setpoint extended Engineering Unit high range.

Source  User  Default Value  ----  Access Lock  Read Only

Value Type  Real

Value Range  >=  SPEXEULO
SPEXEULO

Point Type  Regulatory

Applies to Control algorithms (no form).

Setpoint extended Engineering Unit low range.

Source  User  Default Value  ----  Access Lock  Read Only

Value Type  Real

Value Range  >= SPIXEUHI

SPFORMAT

Point Type  Regulatory

Configure on Form AM88-441.

Applies to Control algorithms.

Setpoint decimal place format. Controls the on-process MMI display format for the SP and SP-related parameters. The number “D” in each selection indicates how many digits after the decimal point are displayed.

Example: Selecting D2 causes the number 8.237245 to be displayed as 8.23.

Source  User  Default Value  D1  Access Lock  Engr-DEB

Value Type  VALFORMT enumeration

Value Range  D0—display no digits after the decimal point  
D1—display one digit after the decimal point  
D2—display two digits after the decimal point  
D3—display three digits after the decimal point  
D4—display four digits after the decimal point  
D5—display five digits after the decimal point  
D6—display decimal point
**SPHIFL**

**Point Type**  Regulatory  
Applies to Control algorithms (no form).  
SP high limit violation flag.  

<table>
<thead>
<tr>
<th>Source</th>
<th>User</th>
<th>Default Value</th>
<th>Off</th>
<th>Access Lock</th>
<th>Read Only</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value Type</td>
<td>Boolean</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Value Range | Off—If $\text{SP} \leq \text{SPHILM}$  
On—If $\text{SP} > \text{SPHILM}$ |

**SPHILM**

**Point Type**  Regulatory  
Configure on Form AM88-441.  
Applies to Control algorithms.  
Setpoint high limit in Engineering Units of PV.  

<table>
<thead>
<tr>
<th>Source</th>
<th>User</th>
<th>Default Value</th>
<th>NaN</th>
<th>Access Lock</th>
<th>Supvr</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value Type</td>
<td>Real, NaN</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Value Range | $\text{SPLOLM}$ to $\text{SPEXEUHI}$, or NaN (causes the value in $\text{SPEXEUHI}$ to be stored in $\text{SPHILM}$) |

**SPLOCK**

**Point Type**  Timer  
Configure on Form AM88-430.  
Setpoint lock for Timer data points. Prohibits or permits a US operator to change the set-time value in SP (3.5 in *AM Control Functions*) (Form AM88-430).  

<table>
<thead>
<tr>
<th>Source</th>
<th>User</th>
<th>Default Value</th>
<th>Permit</th>
<th>Access Lock</th>
<th>Engr-DEB</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value Type</td>
<td>MODEPERM enumeration</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Value Range | Permit—Allow operator to change the timer's set-time parameter  
NotPerm—Do not allow the operator to change the timer's set-time parameter |
SPLOFL

Point Type  Regulatory
Applies to Control algorithms (no form).
Setpoint low limit violation flag.

Source  User  Default Value  Off  Access Lock  Read Only

Value Type  Boolean

Value Range  Off—$SP \geq SPLOLM$
On—$SP < SPLOLM$

SPLOLM

Point Type  Regulatory
Configure on Form AM88-441.
Applies to Control algorithms.
Setpoint low limit.

Source  User  Default Value  NaN  Access Lock  Supvr

Value Type  Real, NaN

Value Range  SPEXEURO to SPHILM, or NaN (causes the value in SPEXEURO to be stored in SPLOLM)

SPOPT

Point Type  Regulatory
Setpoint-processing option for regulatory data points (3.1.6 in AM Control Functions) (Form AM88-441). 

Source  User  Default Value  None  Access Lock  Prog

Value Type  SPOPT enumeration

Value Range  None—normal setpoint processing
Tv—target-value processing (3.1.6.2 in AM Control Functions).
Asp—advisory-deviation alarming (3.1.6.3 in AM Control Functions).
SPP

Point Type  Regulatory

Applies to Control algorithms (no form).

Setpoint in percent.

Source  User  Default Value  ----  Access Lock  Read Only

Value Type  Real

Value Range  SPLOLM to SPHRLM

SPSTS

Point Type  Regulatory

Applies to Control algorithms (no form).

Setpoint value status.

Source  User  Default Value  Normal  Access Lock  Read Only

Value Type  PVVALST enumeration

Value Range  Normal—The value is good
Uncertn—The value is uncertain
Bad—The value is NaN

SPTV

Point Type  Regulatory

Applies to Control algorithms (no form).

Setpoint target value in Engineering Units (3.1.6.2 in AM Control Functions).

Source  User  Default Value  ----  Access Lock  Oper

Value Type  Real

Value Range  SPXEULO to SPXEUHI
SPTVP

**Point Type**  Regulatory

SPTV value expressed in % of range.

**Source**  User  
**Default Value**  ----  
**Access Lock**  Read Only

**Value Type**  Real

**Value Range**  SPLOLM to SPHILM

STATE

**Point Type**  Regulatory, Timer, and Counter

Applies to Totaliz algorithm (no form).

State of the totalizer (3.3.6, 3.3.8, 3.3.11, 3.5.1, and 3.5.4 in *AM Control Functions*).

**Source**  User  
**Default Value**  Stopped  
**Access Lock**  Read Only

**Value Type**  STATE enumeration

**Value Range**  Running—Normal running operation  
                   Stopped—The timer or accumulation has stopped.

STATE1

**Point Type**  Flag

Configure on Form AM88-410.

State 1 descriptor. (See PVSTATES[0], PVSTATES[1] (3.4 in *AM Control Functions*).

**Source**  User  
**Default Value**  Blanks  
**Access Lock**  Engr-DEB

**Value Type**  String

**Value Range**  Up to 8 characters

AM Parameter Reference Dictionary 3-218 3/93
**STATE2**

**Point Type** Flag

Configure on Form AM88-410.

State 2 descriptor (see PVSTATES[0], PVSTATES[1]) (3.4 in AM Control Functions).

<table>
<thead>
<tr>
<th>Source</th>
<th>User</th>
<th>Default Value</th>
<th>Blanks</th>
<th>Access Lock</th>
<th>Engr-DEB</th>
</tr>
</thead>
</table>

**Value Type** String

**Value Range** Up to 8 characters

**STRAVGC**

**Point Type** Processor Status

Average number of parameter stores per second during the current hour (no form).

<table>
<thead>
<tr>
<th>Source</th>
<th>User</th>
<th>Default Value</th>
<th>0</th>
<th>Access Lock</th>
<th>Read Only</th>
</tr>
</thead>
</table>

**Value Type** Real

**Value Range** $\geq 0.0$

**STRAVGP**

**Point Type** Processor Status

Average number of parameter stores per second during the previous hour (no form).

<table>
<thead>
<tr>
<th>Source</th>
<th>User</th>
<th>Default Value</th>
<th>0</th>
<th>Access Lock</th>
<th>Read Only</th>
</tr>
</thead>
</table>

**Value Type** Real

**Value Range** $\geq 0.0$
**STRAVGS**

**Point Type**  Processor Status

Average number of parameter stores per second during the last snapshot period (nominally 10 seconds) (no form).

<table>
<thead>
<tr>
<th>Source</th>
<th>User</th>
<th>Default Value</th>
<th>0</th>
<th>Access Lock</th>
<th>Read Only</th>
</tr>
</thead>
</table>

**Value Type**  Real

**Value Range**  $\geq 0.0$

**STRTSTOP**

**Point Type**  Timer

Start/Stop Timer Control (no form) (3.3.8 and 3.3.10 in *AM Control Functions*).

<table>
<thead>
<tr>
<th>Source</th>
<th>User</th>
<th>Default Value</th>
<th>Stop</th>
<th>Access Lock</th>
<th>Oper</th>
</tr>
</thead>
</table>

**Value Type**  STRTSTOP enumeration

**Value Range**  Start—Start timer operation  
Stop—Stop timer operation
Summer (Control Algorithm)

This algorithm is similar to PV-algorithm Summer.

This algorithm calculates an output that is the scaled sum of up to three input variables. A bias value can be included in the sum.

Two equations are available. One adds a single scaled input to the bias value. The other adds up to four scaled inputs, multiplies the result by an overall scale factor, and adds the bias value.

Parameters involved in configuring this algorithm are the following and those listed in Section 2 under Regulatory Point.

### Summer (Control Algorithm)

<table>
<thead>
<tr>
<th>Control Common Display</th>
<th>Setpoint Display</th>
<th>Mul/Div Algo Display</th>
<th>Control Input Connections Display</th>
<th>Control Output Connections Display</th>
</tr>
</thead>
<tbody>
<tr>
<td>NMODE</td>
<td>SPFORMAT</td>
<td>CTELEQN</td>
<td>NOCINPTS</td>
<td>NOCOPTS</td>
</tr>
<tr>
<td>NMODATTR</td>
<td>SPEUHI</td>
<td>INITTYPE</td>
<td>CISRC(N)</td>
<td>CODSTN(N)</td>
</tr>
<tr>
<td>MODEPERM</td>
<td>SPEULO</td>
<td>K</td>
<td>CIDSTN(N)</td>
<td>COACTSTS(N)</td>
</tr>
<tr>
<td>EXTSWOPT</td>
<td>SPHILM</td>
<td>B</td>
<td>OPHILM</td>
<td>OPLLOM</td>
</tr>
<tr>
<td></td>
<td>SPOLOM</td>
<td>M</td>
<td>OPLOLM</td>
<td>OPMCHLM</td>
</tr>
<tr>
<td></td>
<td>SP</td>
<td>K1</td>
<td>OPMCHLM</td>
<td>OPROCLM</td>
</tr>
<tr>
<td></td>
<td>SPOPT</td>
<td>K2</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>AVDEVTP</td>
<td>K3</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>K4</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Summer (PV Algorithm)

This algorithm calculates a PV (PVCALC) that is one of up to eight input values. The input values can be scaled, the combined inputs can be scaled, and a bias value can be added to the result.

Parameters involved in configuring this algorithm are the following and those listed in Section 2 under Regulatory Point.

### Summer (PV Algorithm)

<table>
<thead>
<tr>
<th>PV Common Display</th>
<th>AM-Reg PV Summer Display</th>
<th>Input Connections Display</th>
</tr>
</thead>
<tbody>
<tr>
<td>PVFORMAT</td>
<td>PVEQN</td>
<td>NOPINPTS</td>
</tr>
<tr>
<td>PVEUHI</td>
<td>C</td>
<td>PISRC(N)</td>
</tr>
<tr>
<td>PVEULO</td>
<td>D</td>
<td>PIDSTN(N)</td>
</tr>
<tr>
<td>PVEXEUHI</td>
<td>N</td>
<td>PIACTSTS(N)</td>
</tr>
<tr>
<td>PVEXEULO</td>
<td>C1</td>
<td></td>
</tr>
<tr>
<td>PVCLAMP</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PVSRCOPT</td>
<td>C8</td>
<td></td>
</tr>
<tr>
<td>PVSOURCE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PVFLTOPT</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TF IN MIN</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PVTV</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
SumProd (PV Algorithm)

This algorithm calculates a PV (PV\text{CALC}) that is either the sum of two 2-term products (Equation A) or the sum of two 3-term products (Equation B). The individual inputs and the whole calculation can be scaled, bias values can be added to the inputs, and a bias can be added to the whole calculation.

Parameters involved in configuring this algorithm are the following and those listed in Section 2 under Regulatory Point.

<table>
<thead>
<tr>
<th>PV Common Display</th>
<th>AM-Reg PV Sumprod Display</th>
<th>Input Connections Display</th>
</tr>
</thead>
<tbody>
<tr>
<td>PV FORMAT</td>
<td>PVEQN</td>
<td>NOPIMPTS</td>
</tr>
<tr>
<td>PVEUHI</td>
<td>C</td>
<td>PISRC(N)</td>
</tr>
<tr>
<td>PVEULO</td>
<td>D</td>
<td>PIDSTN(N)</td>
</tr>
<tr>
<td>PVEXEUHI</td>
<td>(Scaling Constant):</td>
<td>PIACTSTS(N)</td>
</tr>
<tr>
<td>PVEXEULO</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PVCLAMP</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PVSRCOPT</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PVSOURCE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PVFLTOPT</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TFINMIN</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PVTV</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Appears on Detail display as C1-C7.
** Appears on Detail display as D1-C7.
Switch (Control Algorithm)

This algorithm operates as a single-pole, 4-position rotary switch. An operator at a Universal Station, a user-written program, or user-configured logic can change the position of the switch, thereby selecting any one of the four inputs to be the control-algorithm output value, CV.

Parameters involved in configuring this algorithm are the following and those listed in Section 2 under Regulatory Point.

<table>
<thead>
<tr>
<th>Control Common Display</th>
<th>Control Switch Algo Display</th>
<th>Control Output Connections Display</th>
</tr>
</thead>
<tbody>
<tr>
<td>NMODE</td>
<td>CTLEQN</td>
<td>NOCOPTS</td>
</tr>
<tr>
<td>NMODATTR</td>
<td>INITTYPE</td>
<td>CODSTN(N)</td>
</tr>
<tr>
<td>MODEPERM</td>
<td>M</td>
<td>COACTSTS(N)</td>
</tr>
<tr>
<td>EXTSWOPT</td>
<td>XEUHI</td>
<td>OPHILM</td>
</tr>
<tr>
<td></td>
<td>XEULO</td>
<td>OPLOLM</td>
</tr>
<tr>
<td></td>
<td>TRACKING</td>
<td>OPMCHLM</td>
</tr>
<tr>
<td></td>
<td>NOCINPTS</td>
<td>OROCLM</td>
</tr>
<tr>
<td></td>
<td>CISRC(N)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>CIDSTN(N)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>CIACTSTS(N)</td>
<td></td>
</tr>
</tbody>
</table>

SUPPIO

**Point Type**  Regulatory

Permits or suppresses display of the PV input and output (OP) for this point on its Overview and Group displays (Form AM88-401).

**Source**  User

**Default Value**  NoSuppr

**Access Lock**  Engr-DEB

**Value Type**  SUPPIO enumeration

**Value Range**  NoSuppr—No display suppression

InpSuppr—Suppress PV-input display

OutSuppr—Suppress OP display
**T**

**Point Type**  Regulatory

Measured, actual temperature input to the FlowComp PV algorithm. Typically acquired with a general-input connection, but can be configured with a constant value (4.5 in AM Algorithm Engineering Data) (Form AM88-412).

<table>
<thead>
<tr>
<th>Source</th>
<th>User</th>
<th>Default Value</th>
<th>1.0</th>
<th>Access Lock</th>
<th>Engr-DEB</th>
</tr>
</thead>
</table>

**Value Type**  Real

**Value Range**  Any real number

**T0**

**Point Type**  Regulatory

Zero reference for temperature for the FlowComp PV algorithm. In the same engineering units as T, typically 459.69 for °F or 273.15 for °C (minus sign is omitted—the algorithm assumes it) (4.5 in AM Algorithm Engineering Data) (Form AM88-412).

<table>
<thead>
<tr>
<th>Source</th>
<th>User</th>
<th>Default Value</th>
<th>0.0</th>
<th>Access Lock</th>
<th>Supvr</th>
</tr>
</thead>
</table>

**Value Type**  Real

**Value Range**  Any real number

**T1**

**Point Type**  Regulatory

Configure on Forms AM88-451, 452, 455, and 456.

Applies to Control algorithms Pid, Pid External Reset Feedback, Pid Feedforward, and LeadLag.

For Pid algorithms, T1 is integral (or reset) time in minutes. Integral action can be disabled by setting T1 to 0.0.

<table>
<thead>
<tr>
<th>Source</th>
<th>User</th>
<th>Default Value</th>
<th>0.0</th>
<th>Access Lock</th>
<th>Supvr</th>
</tr>
</thead>
</table>

**Value Type**  Real

**Value Range**  0.0 to 2880.0
**T2**

**Point Type**  Regulatory

Configure on Forms *AM88-451, 452, 455, and 456*.

Applies to Control algorithms Pid, Pid External reset Feedback, Pid Feedforward, and LeadLag.

For Pid algorithms, **T2** is derivative time in minutes. Derivative action can be disabled by setting T2 to 0.0.

For **LeadLag** algorithm, **T2** is Lead Time constant in minutes. **T1** must be nonzero to specify **T2**.

**Source**  User  
**Default Value**  0.0  
**Access Lock**  Supvr

**Value Type**  Real

**Value Range**  For PID algorithms, 0.0 to 1440.0  
For Lag algorithm, -1440.0 to 1440.0

---

**T3**

**Point Type**  Regulatory

Second lag-time constant for **LeadLag** control algorithm (Section 16 in *AM Algorithm Engineering Data*) (Form *AM88-452*).

**Source**  User  
**Default Value**  0.0  
**Access Lock**  Supvr

**Value Type**  Real

**Value Range**  0.0 to 1440.0

---

**TD**

**Point Type**  Regulatory

Dead-time value for the **VdtLdLag** PV algorithm (Section 12 in *AM Algorithm Engineering Data*) (Form *AM88-418*).

**Source**  User  
**Default Value**  0.0  
**Access Lock**  Supvr

**Value Type**  Real

**Value Range**  >= 0.0
TESTSTAT(N)

Point Type  Regulatory, Custom, and Switch

CL block test status (no form).

Source  User  Default Value  False  Access Lock  Engr-DEB

Value Type  Array (1..255) of Boolean

Value Range  True—CL block is under test
False—CL block is not under test

TF

Point Type  Regulatory

Lag time-constant, in minutes, for PV filtering (3.1.5.3 in AM Control Functions) (Form AM88-402).

Source  User  Default Value  0.0  Access Lock  Supvr

Value Type  Real

Value Range  0.0 to 1440.0

TIMEBASE

Point Type  Regulatory and Timer

Timebase for Totaliz PV algorithm (7.5 in AM Algorithm Engineering Data), and for Timer points (3.5.1 in AM Control Functions) (Form AM88-419 and 430).

Source  User  Default Value  Minutes  Access Lock  Engr-DEB

Value Type  TIMEBASE enumeration

Value Range  Seconds
Minutes
Hours
**TIMEDOWN(I)**

**Point Type**  Processor Status

Number of seconds the Unit was down before the last startup (no form).

- **Source**: System
- **Default Value**: N/A
- **Access Lock**: Read Only

- **Value Type**: Array (1..100) of Time/Date
- **Value Range**: >= 0.0

**TIMELEFT**

**Point Type**  Timer

Remaining time (no form) (3.5.1 in *AM Control Functions*).

- **Source**: User
- **Default Value**: *
  *Calculated as (SP-PV)*  
  *if SP ≠ NaN; else = NaN.*

- **Value Type**: Real, NaN
- **Value Range**: 0 to 999999 or NaN

**TIMOUTAL**

**Point Type**  Timer

Configure on Form AM88-430.

Timeout Alarm Configuration (3.5.1 and 3.5.2 in *AM Control Functions*).

- **Source**: User
- **Default Value**: Off

- **Value Type**: Boolean
- **Value Range**: Off—No Time-Out alarm configuration.  
  On—Time-out alarm is detected when PV is greater than or equal to SP (and SP is not NaN).
**TIMOUTFL**

**Point Type**  Timer

Time Out Alarm Flag (no form) (3.5.1, 3.5.2, and 3.5.4 in *AM Control Functions*).

**Source**  User  
**Default Value**  Off  
**Access Lock**  Read Only

**Value Type**  Boolean

**Value Range**  
Off—If $PV < SP$  
On—If $PV \geq SP$

**TLD**

**Point Type**  Regulatory

Lead-compensation time constant in minutes for the $VdtLdLag$ PV algorithm (Section 12 in *AM Algorithm Engineering Data* (Form AM88-418)).

**Source**  User  
**Default Value**  0.0  
**Access Lock**  Supvr

**Value Type**  Real

**Value Range**  
-1440.0 to +1440.0  
When set to zero, the lead component is eliminated.  
$TLD$ must satisfy the following inequality:  
$(10 \times PERIOD)$ (in minutes) is equal to or less than $\text{ABS}(TLD)$ is equal to or less than $(10 \times TLG1)$.

**TLG1**

**Point Type**  Regulatory

Lag-compensation time constant 1, in minutes for the $VdtLdLag$ PV algorithm (Section 12 in *AM Algorithm Engineering Data* (Form AM88-418)).

**Source**  User  
**Default Value**  0.0  
**Access Lock**  Supvr

**Value Type**  Real

**Value Range**  
0.0 to 1440.0; when set to 0.0, the lag component is eliminated.  
$TLG1$ must be equal to or greater than two times $PERIOD$ (in minutes).
TLG2

Point Type  Regulatory

Lag-compensation time constant 2, in minutes for the \textit{VdtLdLag} PV algorithm (Section 12 in \textit{AM Algorithm Engineering Data}) (Form AM88-418).

\textbf{Source}  User  \textbf{Default Value}  0.0  \textbf{Access Lock}  Supvr

\textbf{Value Type}  Real

\textbf{Value Range}  0.0 to 1440.0

When set to 0.0, the lag component is eliminated. \textbf{TLG2} must be equal to or greater than two times \textit{PERIOD} (in minutes).

TMEMCDPN

Point Type  Processor Status

Total memory used for Custom Data Descriptions and for point names in the AM (no form).

\textbf{Source}  System  \textbf{Default Value}  0.0  \textbf{Access Lock}  Read Only

\textbf{Value Type}  Real

\textbf{Value Range}  \( \geq 0.0 \)

TMEMCL

Point Type  Processor Status

Total memory used for CL storage in the AM (no form).

\textbf{Source}  System  \textbf{Default Value}  N/A  \textbf{Access Lock}  Read Only

\textbf{Value Type}  Real

\textbf{Value Range}  \( \geq 0.0 \)
**TMEMPTS**

**Point Type**  Processor Status

Total memory used for data points in the AM (no form).

**Source**  System  
**Default Value**  N/A  
**Access Lock**  Read Only

**Value Type**  Real

**Value Range**  $\geq 0.0$

---

**Totalizer (PV algorithm)**

This algorithm provides a time-scaled accumulation of a single-input value. The input value is typically a flow measurement. The time-base can be seconds, minutes, or hours.

A data point that uses this algorithm cannot use a control algorithm.

The accumulation can be started, stopped, and reset by commands from a Universal Station operator or from a user-written program. An operator or user-written program can establish a target value for the accumulation. Status indicators are available to indicate that the accumulation is near the target value, nearer to the target value, or is complete (has reached or exceeded the target value).

For situations where the flow transmitter may not be precisely calibrated near the zero-flow value, a zero-flow cutoff feature is provided that avoids accumulating negative-flow values. When the flow is below a user-specified cutoff value, the input is clamped to zero.

Parameters involved in configuring this algorithm are the following and those listed in Section 2 under Regulatory Point.

<table>
<thead>
<tr>
<th>PV Common Display</th>
<th>AM-Reg PV Totalizer Display</th>
</tr>
</thead>
<tbody>
<tr>
<td>PVFORMAT</td>
<td>PVEON</td>
</tr>
<tr>
<td>PVEUHI</td>
<td>TIMEBASE</td>
</tr>
<tr>
<td>PVEULO</td>
<td>C</td>
</tr>
<tr>
<td>PVEXEUHI</td>
<td>COMMAND</td>
</tr>
<tr>
<td>PVEXEULO</td>
<td>RESETVAL</td>
</tr>
<tr>
<td>PVCLAMP</td>
<td>CUTOFFLM</td>
</tr>
<tr>
<td>PVSRCOPT</td>
<td>AVTV</td>
</tr>
<tr>
<td>PVSOURCE</td>
<td>AVDEV1TP</td>
</tr>
<tr>
<td>PVFTLOPT</td>
<td>AVDEV2TP</td>
</tr>
<tr>
<td>TF IN MIN</td>
<td>NOPINTPTS</td>
</tr>
<tr>
<td>PVTV</td>
<td>PISRC(N)</td>
</tr>
<tr>
<td></td>
<td>PIDSTN(N)</td>
</tr>
<tr>
<td></td>
<td>PIACTSTS(N)</td>
</tr>
</tbody>
</table>
TRACKING

Point Type  Regulatory

Tracking option for the Switch control algorithm (25.4.3 in AM Algorithm Engineering Data) (Form AM88-462).

Source  User
Default Value  Off
Access Lock  Engr-DEB

Value Type  Boolean

Value Range  Off—The nonselected inputs are not initialized to track the selected input.
On—The nonselected inputs are initialized to track the selected input to be changed without a bump on the output.

TRFB

Point Type  Regulatory

Applies to Pid External Reset Feedback algorithm (no form).

The tracking feedback input must be in percent.

Source  User
Default Value  NaN
Access Lock  Read Only

Value Type  Real

Value Range  Any real number

TRFBSTS

Point Type  Regulatory

Applies to Pid External Reset Feedback algorithm (no form).

Value status of RFB input.

Source  User
Default Value  Bad
Access Lock  Read Only

Value Type  PVSTS enumeration

Value Range  Normal—The value is good.
Uncertn—The value is uncertain.
Bad—The value is NaN.
**TS**

**Point Type**  Regulatory

All scheduled points (2.2.1 in *AM Control Functions*).

Time scale—The interval in PERIOD converted to minutes. For example, if PERIOD contains 30 sec, TS contains 0.5 minutes; if PERIOD contains 1 hr, TS contains 60.0 minutes.

Source  User  Default Value  0.0 *  Access Lock  Read Only

**Value Type**  Real

**Value Range**  * Parameter value is calculated from the assigned scheduled period.

**TSTS**

**Point Type**  Regulatory

Status of the value in T for the *FlowComp* PV algorithm (4.5 in *AM Algorithm Engineering Data*) (no form).

Source  User  Default Value  Normal  Access Lock  Read Only

**Value Type**  PVSTS enumeration

**Value Range**  Normal—The value is good.
Uncertn—The value is uncertain.
Bad—The value is NaN.

**TVPROC**

**Point Type**  Regulatory

**SP** Target-value processor state (3.1.6.2 in *AM Control Functions*).

Source  User  Default Value  Off  Access Lock  Oper

**Value Type**  TVPROC enumeration

**Value Range**  Off—Normal operation
Preset—Set up SPTV and Ramptime
Run—Ramping function
UBOXCLR

**Point Type**  Flag

Color of the upper box on Group and Detail displays for a Flag point (3.4.2 in *AM Control Functions*) (Form AM88-410).

| Source | User | Default Value | Red | Access Lock | Engr-DEB |

**Value Type**  BOXCOLOR enumeration

**Value Range**  Red, Green, White, Black, Cyan, Yellow, Blue, Magenta

**UNIT-- Unit ID**

This parameter defines the unit to which this data point is assigned. The unit identifier appears on the Detail Display for this data point as shown in Figure N-1, and in other displays and listings throughout the system. In the example shown in Figure N-1, the unit identifier is XX. (The unit identifiers are originally defined during network configuration).

| Source | User | Default Value | All Blanks | Access Lock | DEB |

**Value Type:**  String

**Value Range:**  The unit identifier can consist of one or two characters and the valid character set is as follows:

- Alphabets A through Z (uppercase only).
- Numerics 0 through 9 (an all numeric identifier is permissible).
- Underscores are not permitted.
- No leading blanks (spaces).
- A single character with a trailing space is not permitted.

Restriction: After a unit identifier has been defined, it should be written exactly the same way each time when the same identifier is to be used. As an example, if the unit identifier was defined as 03, it should be written as 03 and not as 3 for each usage of this unit identifier.

**NOTE**

A Real number is returned for this parameter by the Picture Editor and by CL. This number is equivalent to the ordinal number in the enumeration list of units.
UNMEMTOT(I)

Point Type  Processor Status

Total memory required for point, CL, Custom Data description, Checkpoint, and off-node I/O buffers for the given unit. I = Unit index.

Source  User  Default Value  N/A  Access Lock  Read Only

Value Type  Array (1..100) of Real

Value Range  >= 0.0
VDTLdLag (PV Algorithm)

This algorithm (PV Variable Dead Time With Lead_Lag Compensation) calculates a PV (PVCALC) in which value changes may be delayed from the time that the corresponding change occurred in the PI input. Dynamic lead-lag compensation to the PV can also be provided. Lag compensation is available in combination with the delay or with no delay. The delay time can be fixed or can be varied as the value of an input varies.

Parameters involved in configuring this algorithm are the following and those listed in Section 2 under Regulatory Point.

<table>
<thead>
<tr>
<th>PV Common Display</th>
<th>AM-Reg PV VDT Lead/Lag Display</th>
<th>Input Connections Display</th>
</tr>
</thead>
<tbody>
<tr>
<td>PIFORMAT</td>
<td>PVEQN</td>
<td>NOPINPTS</td>
</tr>
<tr>
<td>PVEUHI</td>
<td>C</td>
<td>PISRCE(N)</td>
</tr>
<tr>
<td>PVEULO</td>
<td>D</td>
<td>PIDSTS(N)</td>
</tr>
<tr>
<td>PVEXEUHI</td>
<td>TLG1 IN MIN</td>
<td>PIACST(N)</td>
</tr>
<tr>
<td>PVEXEOLO</td>
<td>TLG2 IN MIN</td>
<td></td>
</tr>
<tr>
<td>PVCLAMP</td>
<td>TLD IN MIN</td>
<td></td>
</tr>
<tr>
<td>PVSRCOPT</td>
<td>TD IN MIN</td>
<td></td>
</tr>
<tr>
<td>PVSOURCE</td>
<td>CUTOFFLM</td>
<td></td>
</tr>
<tr>
<td>PVFLTOPT</td>
<td>C1</td>
<td></td>
</tr>
<tr>
<td>TF IN MIN</td>
<td>C2</td>
<td></td>
</tr>
<tr>
<td>PVTV</td>
<td>D1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>D2</td>
<td></td>
</tr>
</tbody>
</table>
Point Type  Regulatory

Measured, actual steam compressibility input to the FlowComp PV algorithm (4.5 in AM Algorithm Engineering Data) (Form AM88-412).

Source  User  Default Value  1.0  Access Lock  Engr-DEB

Value Type  Real

Value Range  Any real number or NaN

X1

Point Type  Regulatory

X input number 1 to an AutoMan, IncrSum, OrSel, or Switch control algorithm.

References:

AutoMan—Section 14 in AM Algorithm Engineering Data

IncrSum—Section 15 in AM Algorithm Engineering Data

OrSel—Section 23 in AM Algorithm Engineering Data

Switch—Section 25 in AM Algorithm Engineering Data

Source  User  Default Value  NaN  Access Lock  Engr-DEB

Value Type  Real, NaN

Value Range  Any real, NaN
**X1STS – X4STS**

**Point Type**  Regulatory

Applies to Control algorithms Incremental Summer, Auto Manual Station, Multiply Divide, Ratio, Override Selector, and Switch (no form).

Value status of X1 through X4 inputs, where X1STS through X4STS applies as follows:

<table>
<thead>
<tr>
<th>Control Algorithm</th>
<th>X1STS</th>
<th>X2STS</th>
<th>X3STS</th>
<th>X4STS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incremental Summer</td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Auto Manual Station</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Summer</td>
<td></td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Multiply Divide</td>
<td></td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Ratio</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Override Selector</td>
<td>X</td>
<td></td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Switch</td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

**Source**  User  
**Default Value**  Bad  
**Access Lock**  Read Only

**Value Type**  PVVALST enumeration

**Value Range**  
Normal—The value is good.  
Uncertn—The value is uncertain.  
Bad—The value is NaN.
**X2 through X4**

**Point Type**  Regulatory

X input number 2, 3, or 4 to one of the control algorithms listed in the table below. Except for the MulDiv algorithm, the Xn parameter name doesn't appear on a configuration form, instead you enter the Xn parameter name as the destination parameter when you configure the input source (in TagName.Param form).

<table>
<thead>
<tr>
<th>Control Algorithm</th>
<th>Default Value</th>
<th>Access Lock</th>
<th>Value Type/Range</th>
<th>Applies To</th>
</tr>
</thead>
<tbody>
<tr>
<td>IncrSum</td>
<td>NaN</td>
<td>Prog</td>
<td>Real, NaN</td>
<td>X2, X3, X4</td>
</tr>
<tr>
<td>MulDiv</td>
<td>1.0</td>
<td>Engr-DEB*</td>
<td>Real</td>
<td>X2, X3, X4</td>
</tr>
<tr>
<td>OrSel</td>
<td>NaN</td>
<td>Prog</td>
<td>Real, NaN</td>
<td>X2, X3, X4</td>
</tr>
<tr>
<td>Ratio</td>
<td>NaN</td>
<td>Read Only</td>
<td>Real, NaN</td>
<td>X2</td>
</tr>
<tr>
<td>Summer</td>
<td>NaN</td>
<td>Read Only</td>
<td>Real</td>
<td>X2, X3, X4</td>
</tr>
<tr>
<td>Switch</td>
<td>NaN</td>
<td>Prog</td>
<td>Real, NaN</td>
<td>X2, X3, X4</td>
</tr>
</tbody>
</table>

*Configure on Form AM88-454.

References:

- **IncrSum**—Section 15 in *AM Algorithm Engineering Data*
- **MulDiv**—Section 17 in *AM Algorithm Engineering Data*
- **OrSel**—Section 23 in *AM Algorithm Engineering Data*
- **Ratio**—Section 21 in *AM Algorithm Engineering Data*
- **Summer**—Section 24 in *AM Algorithm Engineering Data*
- **Switch**—Section 25 in *AM Algorithm Engineering Data*

**Source**  User  
**Default Value**  See table  
**Access Lock**  See table

**Value Type**  Real, NaN  
**Value Range**  See table
XEUHI

Point Type  Regulatory

Configure on Forms AM88-457, 458, 461, and 462.

Applies to these Control algorithms: Incremental Summer, Auto Manual Station, Override Selector, and Switch.

X-input Engineering Units high-range value corresponding to 100%.

Source  User  Default Value  100.0  Access Lock  Engr-DEB

Value Type  Real

Value Range  \( \geq \) XEULO

(NaN) cannot be stored

XEULO

Point Type  Regulatory

Configure on Forms AM88-457, 458, 461, and 462.

Applies to these Control algorithms: Incremental Summer, Auto Manual Station, Override Selector, and Switch.

X-input Engineering Units low-range value corresponding to 0%.

Source  User  Default Value  0.0  Access Lock  Engr-DEB

Value Type  Real, NaN

Value Range  \( \leq \) XEUHI

(NaN) cannot be stored

XSTS

Point Type  Regulatory

Applies to Flow Compensation algorithm (no form).

Source  User  Default Value  Normal  Access Lock  Read Only

Value Type  PVVALST enumeration

Value Range  Normal—The value is good.

Uncertn—The value is uncertain.

Bad—The value is NaN.
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Writer: J. Kennedy

COMMENTS: _____________________________________________________________
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RECOMMENDATIONS: ____________________________________________________
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TITLE __________________________________________________________
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