Honeywell

Application Module Parameter Reference Dictionary

AM09-640

TotalPlant

Implementation

Application Module - 2

Application Module Parameter Reference Dictionary

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Notices and Trademarks

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About This Publication

This publication supports **TotalPlant** Solution (TPS) System network Release 530. TPS is the evolution of TDC 3000X.

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 TPS 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:

PM Family Parameter Reference Dictionary in the *Implementation/Advanced 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

Computer Gateway Parameter Reference Dictionary in the *Implementation/Computer Gateway* binder.

Table of Contents

INTRODUCTION
Section 1

1.1 GENERAL

This publication contains reference information on the **TotalPlant** Solution (TPS) 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:

Title	Binder
Application Module Forms	Implementation/Configuration Forms
Application Module Form Instructions	Implementation/Application Module – 1
Application Module Control Functions	Implementation/Application Module – 1
Application Module Algorithm Engineering Data	Implementation/Application Module - 1
Engineer's Reference Manual	Implementation/Startup & Reconfiguration - 2
Data Entity Builder Manual	Implementation/Engineering Operations - 1

Programming in CL

Title	Binder
Control Language/Application Module Overview	Implementation/Application Module – 3
Control Language/Application Module Reference Manual	Implementation/Application Module – 3
Control Language/Application Module Data Entry	Implementation/Application Module – 3

In the alphabetical list in Section 3 of this publication, references are made to specific headings in *Application Module Control Functions.*

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.

Point Assignment Display	Algorithm Selection	Scheduling Display Display	US Display Options Display
NAME	PVALGID	$IPPASN	OVERVAL
UNIT	CTLALGID	PERIOD	SUPPIO
PTDESC		BEFAFT	
EUDESC		BEFAFTID	
KEYWORD		NORMCYCL	
ASSOCDSP			
$CDETAIL			
PRIMMOD			
PTDISCL			

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.

Alarming Display (PV Algos)	Alarming Display (CTL Algos)	I/O and Custom Display	
PVALDB	ALENBST	CLSLOTS	
PVHITP	$AUXUNIT	NOPKG	(Note 1)
PVLOTP	$MPROD1	NUMSWITCH	(Note 2)
PVHHTP	$MPROD2	NOGINPTS	(Note 3)
PVLLTP	$MPROD3	NOGOPTS	(Note 4)
PVROCPTP	$MPROD4		
PVROCNTP	CCINPT	Note 1 – If NOPKG >=0, CUSTOM PACKAGE display appears.	
PVSGCHTP	CCSRC		
DEVHITP	CCACTSTS	Note 2 – If NUMSWTCH >=0, SWITCH display appears.	
DEVLOTP			
ALENBST		Note 3 – If NOGINPTS >=0, GENERAL INPUT CONNECTIONS DISPLAY appears.	
$AUXUNIT			
$MPROD1		Note 4 – If NOGOPTS >=0, GENERAL OUTPUT CONNECTIONS DISPLAY appears.	
$MPROD2			
$MPROD3			
$MPROD4			
CCINPT			
CCSRC			
CCACTSTS			

Custom Package Display	Switch Display	General Input Connections Display	General Output Connections Display
PKGNAME(1)	S1NSTATE	GISRC(N)	GOSRC(N)
: :	S1STATES(0)	GIDSTN(N)	GODSTN(N)
PKGNAME(10)	: :	GIACTSTS(N)	GOACTSTS(N)
	S1STATES(4)		
	S1ACCLVL		
	S1CURSTS		
	S1REQSTS		
	S2NSTATE		
	S2STATES(0)		
	: :		
	S2STATES(4)		
	S2ACCLVL		
	S2CURSTS		
	S2REQSTS		

Control Common Display	Control Auao/Man Algo Display	Control Output Connections Display
NMODE NMODATTR MODEPERM EXTSWOPT	INITTYPE B RATE1 XEUHI XEULO NOCINPTS CISRC(N) CIDSTN(N) CIACTSTS(N)	NOCOPTS CODSTN(N) COACTSTS(N) OPHILM OPLOLM OPMCHLM OPROCLM $OPTOL

Counter Point

Counter Point Assignment Display	Counter Scheduling Display	Counter PV Configuration Display	Counter PV Alarming Display	Counter Alarm Configuration Display
NAME UNIT PTDESC EUDESC KEYWORD ASSOCDSP $CDETAIL PRIMMOD ACCUM PTDISCL CISRC CIACTSTS	$IPPASN PERIOD BEFAFT BEFAFTID NORMCYCL	PVEUHI PVEULO PVEXEUHI PVEXEULO PVCONV PVTV PVFORMAT PVCLAMP PVSRCOPT PVSOURCE OVERVAL	PVHITP PVLOTP PVROCPTP PVROCNTP PVHHTP PVLLTP DEVHITP DEVLOTP PVSGCHTP	PVALDB ALENBST $AUXUNIT $MPROD1 $MPROD2 $MPROD3 $MPROD4 ALPRIOR CCINPT CCSRC CCACTSTS

Counter Accumulation Display	General Input Connections	General Output Connections
AVCONV AVFORMAT AVTV CNTLLOCK AVTVLOCK AVDEV1TP AVDEV2TP	NOGINPTS GISRC(N) GIDSTN(N) GIACTSTS(N)	NOGOPTS GOSRC(N) GODSTN(N) GOACTSTS(N)

Custom Data Point

Custom Point Assignment Display	Scheduling Display
NAME UNIT PTDESC KEYWORD CLSLOTS NOPKG ASSOCDSP $CDETAIL PRIMMOD ALENBST $AUXUNIT $MPROD1 $MPROD2 $MPROD3 $MPROD4 PKGNAME (1) : : PKGNAME (10)	$IPPASN PERIOD BEFAFT BEFAFTID NORMCYCL

Flag Point

Flag Point Assignment Display	Flag Operating Display	Flag Alarming Display
NAME UNIT PTDESC KEYWORD ASSOCDSP $CDETAIL PRIMMOD	PVSTATES(1) PVSTATES(0) UBOXCLR LBOXCLR OFFNORMAL	PVNORMAL ALENBST $AUXUNIT $MPROD1 $MPROD2 $MPROD3 $MPROD4 OVERVAL

Numeric Point

Numeric Point Assignment Display	Flag Operating Display
NAME UNIT PTDESC KEYWORD ASSOCDSP $CDETAIL PRIMMOD	EUDESC RANGEHI RANGELO PVFORMAT PV

Switch Point

Switch Point Assignment Display	Switch Data Segment Display	Scheduling Display
NAME UNIT PTDESC KEYWORD CLSLOTS NOPKG NUMSWITCH ASSOCDSP $CDETAIL PRIMMOD SALMSDC1 SALMSDC2 SALMSDC3 ALENBST $AUXUNIT $MPROD1 $MPROD2 $MPROD3 $MPROD4 PKGNAME(1) : : PKGNAME(10)	S1NSTATE S1STATES[0] : : S1STATES[3] S1ACCLVL S1CURSTS S1REQSTS S2NSTATE S2STATES[0] : : S2STATES[4] S2ACCLVL S2CURSTS S2REQSTS	$IPPASN PERIOD BEFAFT BEFAFTID NORMCYCL

Timer Point

Timer Point Assignment Display	Timer Scheduling Display	Timer Operating Display	Timer Alarming Display	Control Input Connections Display
NAME UNIT PTDESC EUDESC KEYWORD ASSOCDSP $CDETAIL PRIMMOD PTDISCL	$IPPASN PERIOD BEFAFT BEFAFTID NORMCYCLE	TIMEBASE SP CNTLLOCK SPLOCK TIMOUTAL	ALENBST $AUXUNIT $MPROD1 $MPROD2 $MPROD3 $MPROD4 CCINPT CCSRC CCACTSTS	NOGINPTS GISRC(N) GIDSTN(N) GIACTSTS(N)

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, but the PSDP parameters are described in this document. However, certain 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 *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

PARAMETER AND ALGORITHM DEFINITIONS
Section 3

This section contains an integrated alphabetical listing of

- *the names of the* **TotalPlant** *Solution (TPS) system parameters that are associated with the AM,*
- *the names of the algorithms that are associated with the regulatory points in the AM.*

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.

Example

PARAMETER NAME

Point Type

(Number of Form used for configuration)

(Description of parameter) (References to headings in AM Control Functions [AM CF])

Source	**Default Value**	**Access Lock**

Value Type

Value Range

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:

Access Level	Used By
Oper	Operator
Supvr	Supervisor
Engr	Engineer
Cont	Continuous Control and CL/C
Prog	Sequence Programs and CIU
DEB	Data Entity Builder (Point Builder)

Access Lock	Access Levels Included
Oper	All
Supvr	All except Oper
Engr	All except Oper and Supvr
Prog	All except Oper, Supvr, and Engr
Engr-DEB	Engr and DEB
Read Only	Accessible to the user for viewing only: no write access available.

3.1.1 Parameter Names (continued)

Access Lock – (continued)
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

Value Type PVAUTOST enumeration

and **Value Range** Normal –
Uncertn –
Bad – –

<u>PVAUTOST</u> is the enumeration-value set that contains values Active, InActive, and NotConfg.

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]

Value Type IOACTSTS enumeration

and **Value Range** Active –
Inactive –
NotCnfg –

IOACTSTS contains the set of enumerated values Active, InActive, and NotConfg; 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

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.

-$-

$AUXUNIT

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

The Auxiliary Unit of an alarmable process point. If an Auxiliary Unit ID is specified, alarms from this point go to the Auxiliary Unit instead of the Primary Unit. If the $AUXUNIT parameter is set to null (--), alarms go to the Primary Unit. Available in Release 520 and later software.

Source System **Default Value** Null **Access Lock** Operator

Value Type Enum. of UNIT

Value Range Null (--)
or any valid unit ID as configured in the NCF

CAUTION

The LCN Alarms can contain incorrect AM Point Alarm Multiple Primmod fields when the AM point is already in-alarm and the $AUXUNIT and then $MPROD (X) values are changed from fast parameter store LCN interfaces, such as DEB Alter Parameters or AM/CL. The error is that the alarm display will contain the one $MPROD (X) value only, even when other $MPROD (X) values exist.

This error will not occur if the $MPROD (X) parameter value is stored first and the $AUXUNIT parameter value is stored second.

$BKGABRT

Point Type Custom, Regulatory, and Switch

$BKGABRT 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).

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

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.

$BKGPRTY(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).

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

Value Type 1..255 Array of $BKGPRTY enumeration

Value Range Low
Medium
High

$BKGQFUL

Point Type Custom, Regulatory, and Switch

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

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

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).

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

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).

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

Value Type Real

Value Range >= 0.0

$CDETAIL

Point Type All Points

Custom Detail Display Name — $CDETAIL defines the name of the custom schematic that is to be displayed instead of the standard detail display for this point.

If the $CDETAIL parameter is blank, the standard Detail Display call is made.

If the $CDETAIL parameter is not blank, and the schematic specified in that parameter cannot be invoked, then the standard Detail Display will be invoked with a message that informs the user that the invocation of the custom detail display failed.

Source User **Default Value** <8 space characters> **Access Lock** Engr

Value Type String 8 characters

Value Range Any 8-character string, valid for a schematic file name.

$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).

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

Value Type Array (1..255) of $CLCMPST(N) enumeration

Value Range

NOTCONFG: 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, and called an off node function. It is waiting for that function to complete (read only).
INA_RUN: The CL block is inactive and executing, but has not completed. It may not run because it is low priority (read only).
INA_DELY: The CL block is inactive and called a delay. It is waiting for the delay to complete (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):

$CLCMPST(N)	**CLACTIVE(N)**	**$BKGSTS(N)**
NOTCONFG	NOTCONFG	- - - - - - - -
INACTIVE	INACTIVE	OFF
INACTIVE	INACTIVE	QUEUED
ACTIVE	ACTIVE	OFF
QUEUED	ACTIVE	QUEUED
RUNNING	ACTIVE	RUNNING
DELAYED	ACTIVE	DELAYED
WAITING	ACTIVE	WAITING
INA_RUN	INACTIVE	RUNNING
INA_DELY	INACTIVE	DELAYED
INA_WAIT	INACTIVE	WAITING

$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 *AM88-501, 530*, *540,* and *550).*

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.

$MPROD1, $MPROD2, $MPROD3, $MPROD4

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

Multiple Primmods are optional user-defined strings that, when filled-in, replace the Primmod description field of the alarm event record when the point is in alarm. There is an NCF option that enables/disables the Multiple Primmod functionality. When the option is disabled, value stores are not allowed.

Source System **Default Value** FALSE **Access Lock** Engineer or DEB

Values All alpha-numeric characters, the characters $, _, –, /, and the backslash character. The backslash character, however, is not valid in the first three (3) characters of the string because of the predefined PIN restrictions. Trailing blanks are legal, but leading and embedded blanks are not. A string of all blanks is legal. The value is converted to upper case on entry and the maximum string size is 16 characters. The entered value must be unique on the same point, so a string value that is the same as the other $MPROD1–$MPROD4 or PRIMMOD is not allowed.

Value Type 16 character string

Value Range N/A

CAUTION

The LCN Alarms can contain incorrect AM Point Alarm Multiple Primmod fields when the AM point is already in-alarm and the $AUXUNIT and then $MPROD (X) values are changed from fast parameter store LCN interfaces, such as DEB Alter Parameters or AM/CL. The error is that the alarm display will contain the one $MPROD (X) value only, even when other $MPROD (X) values exist.

This error will not occur if the $MPROD (X) parameter value is stored first and the $AUXUNIT parameter value is stored second.

$OPTOL

Point Type Regulatory Control

Output Tolerance Parameter Definition—tolerance limit for a manually entered OP. The difference between a new OP and a current OP is compared against $OPTOL. If the tolerance is violated in either a positive or negative direction from the current value of the OP, operator confirmation is required before the value is stored. A value of 0.0 disables this check. A NaN or negative value is not allowed.

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

Value Type Real (in Percent)

Value Range 0.0 to 106.9

$SPTOL

Point Type Regulatory Control

Setpoint Tolerance Parameter Definition—tolerance limit for a manually entered SP. The difference between a new SP and a current SP is compared against $SPTOL. If the tolerance is violated in either a positive or negative direction from the current value of the SP, operator confirmation is required before the value is stored. A value of 0.0 disables this check. A NaN or negative value is not allowed.

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

Value Type Real (in Engineering Units)

Value Range >= 0.0

-A-

ACCUM

Point Type Counter

Selects the accumulation option for AM Counter points (3.3 in *AM Control Functions*) (Form *AM88-540*).

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

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).

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

Value Type Real

Value Range > = 0.0

ADAVGP

Point Type Processor Status

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

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

Value Type Real

Value Range > = 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 > = 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).

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

Value Type Integer

Value Range 0 through 32767

ADMINP

Point Type Processor Status

Minimum 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

ADVDEVPR

Point Type Regulatory.

Alarm priority parameter for the Advisory Deviation alarm (Form *AM88-570)* (3.1.6.3 and 3.1.7 in *AM Control Functions*).

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

Value Type ALPRIOR enumeration

Value Range No Action—Alarm is not displayed, printed, annunciated, or recorded in a journal.
Journal—Alarm is recorded only in the alarm journal. It is not displayed, printed, or annunciated.
Low, High, and Emergency—Alarm is displayed, printed, and recorded in the alarm journal with the Low, High, and Emergency priority shown.
Printer—Alarm is printed. It is not displayed, journaled, or annunciated.
Jnlprint—Alarm is journaled and printed. It is not displayed or annunciated.

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 *AM88-541*) (3.1.6.3 in *AM Control Functions*).

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

Value Type Real

Value Range >= 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

ADVSPP

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 *AM88-570, 510*, *530*, *540*, *550,* and *560*).

Source User **Default Value** Enable **Access Lock** Configurable in Network Configuration under System-Wide Values/Console Data to Engr, Supvr, or Oper.

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. Provides compatibility with previous software releases. In release R500, individual alarms have separate alarm priority parameters. See 4.3.1.3 in *System Control Functions*.

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

Value Type ALPRIOR enumeration

Value Range No Action—Alarm is not displayed, printed, annunciated, or recorded in a journal.
Journal—Alarm is recorded only in the alarm journal. It is not displayed, printed, or annunciated.
Low, High, and Emergency—Alarm is displayed, printed, and recorded in the alarm journal with the Low, High, and Emergency priority shown.
Printer—Alarm is printed. It is not displayed, journaled, or annunciated.
Jnlprint—Alarm is journaled and printed. It is not displayed or annunciated.

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 > = 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 *AM88-564*).

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 *AM88-570*).

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.

ASSOCDSP

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

Asscociated Display—Specifies a user-configured schematic that is accociated with this point.

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

Value Type String_8

Value Range N/A

Helpful Hint: At operating time, by pressing the ASSOC button, the specified associated display can be called up from a Point Detail Display, Group Display with a point selected, or any Summary Display with a point selected.

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 >= 0 but <= 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 *AM88-540*).

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 *AM88-519*).

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 Totalizr algorithm for Regulatory points (Section 7 in *AM Algorithm Engineering Data*). Does not cause an alarm on Regulatory points.

First deviation-alarm trip point for the accumulation value (3.3.7 in *AM Control Functions*)
(Forms *AM88-519* and *540*).

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

Value Type Real

Value Range >= 0 but <= 999999
NaN is a possible entry—when NaN is entered AVDEV1TP alarming is not performed.

AVDEV2FL

Point Type Regulatory, Counter

Applies to PV Totalizr 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 < = (AVTV – AVDEV2TP).

AVDEV2TP

Point Type Regulatory, Counter

Applies to PV Totalizr algorithm for Regulatory points (Section 7 in *AM Algorithm Engineering Data*). Does not cause an alarm on Regulatory points.

For AM Counter points second deviation-alarm trip point for the accumulation value (3.3.7 in *AM Control Functions*) (Forms *AM88-519* and *540*).

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

Value Type Real

Value Range >= 0 but <= 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 >= the Preset less the value entered for the pre-preset deviation point.

AVFORMAT

Point Type Counter

Accumulated Value display decimal point location (Form *AM88-540*) (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:
DO 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>= 0 or NaN
Default is 0 through AV/AVTV * 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 *AM88-540* and *519*).

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

Value Type Real

Value Range >= 0 but <= 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 *AM88-519*).

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

Value Type Logical

Value Range On—In alarm AV > AVTV
Off—Not in alarm AV <= AVTV

AVTVLOCK

Point Type Counter

Accumulation target-value lock. Permits or prevents operator changes to AVTV (3.3.9 in *AM Control Functions*) (Form *AM88-540*).

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

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-

B

Point Type Regulatory

Bias value for control algorithms (see *AM Algorithm Engineering Data*, Sections 14 through 26) (Forms *AM88-552*, *553, 554*, and *558*).

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 *AM88-554*).

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 *AM88-559*).

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

Value Type Real

Value Range Any real number

BADCTLFL

Point Type Regulatory, Counter, Timer

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

BADCTLPR

Point Type Counter, Regulatory.

Alarm priority parameter for the Bad Control Value alarm (Forms AM88-570 and 540)) (2.3.5, 3.1.7, and 3.3.4 in *AM Control Functions*).

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

Value Type ALPRIOR enumeration

Value Range No Action—Alarm is not displayed, printed, annunciated, or recorded in a journal.
Journal—Alarm is recorded only in the alarm journal. It is not displayed, printed, or annunciated.
Low, High, and Emergency—Alarm is displayed, printed, and recorded in the alarm journal with the Low, High, and Emergency priority shown.
Printer—Alarm is printed. It is not displayed, journaled, or annunciated.
Jnlprint—Alarm is journaled and printed. It is not displayed or annunciated.

BADPVFL

Point Type Regulatory, Counter

Bad PV alarm flag (Form *AM88-554*).

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

BADPVPR

Point Type Counter, Regulatory.

Alarm priority parameter for the Bad PV alarm (Forms *AM88-570 and 540*) (2.3.7 and 3.1.7 in *AM Control Functions*).

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

Value Type ALPRIOR enumeration

Value Range No Action—Alarm is not displayed, printed, annunciated, or recorded in a journal.
Journal—Alarm is recorded only in the alarm journal. It is not displayed, printed, or annunciated.
Low, High, and Emergency—Alarm is displayed, printed, and recorded in the alarm journal with the Low, High, and Emergency priority shown.
Printer—Alarm is printed. It is not displayed, journaled, or annunciated.
Jnlprint—Alarm is journaled and printed. It is not displayed or annunciated.

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

BCLEALPR

Point Type Custom, Regulatory, Switch.

Alarm priority parameter for the CL Background Error alarm (Forms AM88-570, 550, and 560) (2.3.8, 3.1.7, 3.6, 3.7, 3.7.3, and 4.1.4.9 in *AM Control Functions*).

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

Value Type ALPRIOR enumeration

Value Range No Action—Alarm is not displayed, printed, annunciated, or recorded in a journal.
Journal—Alarm is recorded only in the alarm journal. It is not displayed, printed, or annunciated.
Low, High, and Emergency—Alarm is displayed, printed, and recorded in the alarm journal with the Low, High, and Emergency priority shown.
Printer—Alarm is printed. It is not displayed, journaled, or annunciated.
Jnlprint—Alarm is journaled and printed. It is not displayed or annunciated.

BCLFALPR

Point Type Custom, Regulatory, Switch.

Alarm priority parameter for the CL Background Fail alarm (Forms AM88-570, 550, and 560) (2.3.9, 3.1.7, 3.6, 3.7, 3.7.3, and 4.1.4.9 in *AM Control Functions*).

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

Value Type ALPRIOR enumeration

Value Range No Action—Alarm is not displayed, printed, annunciated, or recorded in a journal.
Journal—Alarm is recorded only in the alarm journal. It is not displayed, printed, or annunciated.
Low, High, and Emergency—Alarm is displayed, printed, and recorded in the alarm journal with the Low, High, and Emergency priority shown.
Printer—Alarm is printed. It is not displayed, journaled, or annunciated.
Jnlprint—Alarm is journaled and printed. It is not displayed or annunciated.

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 *AM88-501, 530, 540, 550*, and *560*) (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 *AM88-501*, *530, 540, 550*, and *560*)

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 *AM88-556*).

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 *AM88-541*) (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 >=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 >=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 >=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 >=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

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

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

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

Value Type Real

Value Range >=0.0

BKGFMC

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 Real

Value Range >=0.0

BKGFMP

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 Real

Value Range >=0.0

BKGFMS

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 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)

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

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

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

Value Type Integer

Value Range 0-32767

BKGSTACK

Point Type Processor Status

Background task stack size

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

Value Type Integer

Value Range 0-32767

BKGTASKS

Point Type Processor Status

Number of background tasks

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

Value Type Integer

Value Range 0-32767

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 *AM88-541*.

Source User **Default Value** 50.00 **Access Lock** Supvr

Value Type Real

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

BSLOLM

Point Type Regulatory

Low limit value for BIAS (3.1.6.4 in *AM Control Functions*) (Form *AM88-541*).

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-

C

Point Type Regulatory

Overall scale factor in PV algorithms (Forms *AM88-512*, *515*, *516*, *517*, *518*, and *519*) 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).

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

Value Type Real

Value Range Any real number

C1 through C4 (Calcultr)

Point Type Regulatory

Intermediate results of calculations.

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

Value Type Real

Value Range N/A

C1 through C8

Point Type Regulatory

Scale factors for PV algorithms (Forms *AM88-512, 515*, *526*, *517,* and *518*) 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)

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

Value Type Real

Value Range >= 0.1 For Flow Compensation algorithm

CALCEXP

Point Type Regulatory

Allows the user to set up an equation that can be up to 68 characters in length, which is to be solved by the CALCULTR algorithm. Input values P1-P6 and intermediate values C1-C4 can be used in the equation.

Source User **Default Value** blank **Access Lock** Eng/PtBld

Value Type 68 character string

Value Range N/A

CCACCSTS

Point Type Regulatory, Counter, Timer

Cutout access status (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.

CCACTSTS

Point Type Regulatory, Counter, Timer

Contact cutout-activity status, which indicates the initial Active or Inactive alarm cutout connection status (Forms *AM88-570, 530*, and *540*) (3.1.4.7 in *AM Control Functions*).

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

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—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.

CCINPT

Point Type Regulatory, Counter, and Timer

Contact-cutout input option (3.1.4.7 in *AM Control Functions*) (Forms *AM88-570*, *530*, and *540*).

Source User **Default Value** No **Access Lock** Read Only

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 *AM88-570*, *530*, and *540*).

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.)

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

Value Type Real

Value Range > = 0.0

CIACCSTS

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 *AM88-551* through *559* and *561* through *563*).

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*).

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.

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 *AM88-551* through *559* and *561* through *563*).

Also input-connection access status for Counter Points (no index) (3.3 in *AM Control Functions*) (Form *AM88-540*).

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 *AM88-551* through *559* and *561* through *563*).

Source User **Default Value** PV for Ctl Pid **Access Lock** DEB
PV & FF for PidFF
PV, RFB, & TRFB for CTL PidErfb
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

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 *AM88-551* through *559* and *561* through *563*).

CISRC also is the counter point input-source connection (Form *AM88-540*).

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.

Control Common Display	Setpoint Display	Control CL Algo Display	Control Output Connections Display
NMODE NMODATTR MODEPERM EXTSWOPT	SPFORMAT SPEUHI SPEULO SPHILM SPLOLM $SPTOL SP SPOPT AVDEVTP	CVTYPE INITTYPE ARWDI	NOCOPTS CODSTN(N) COACTSTS(N) OPHILM OPLOLM OPMCHLM OPROCLM $OPTOL

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 PVCALC. 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 PVCALC by the CL block is processed just as PVCALC 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.

PV Common Display
PVFORMAT PVEUHI PVEULO PVEXEUHI PVEXEULO PVCLAMP PVSRCOPT PVSOURCE PVFLTOPT TF IN MIN PVTV

CLACTIVE(N)

Point Type Custom, Regulatory, and Switch

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

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

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

Value Range Active—The linked CL Block executes each time the point is executed.
Inactive—A CL Block is linked to this slot (N), but does not execute.
NotConfg—Indicates you have not linked a CL Block to this slot (N).

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 > = 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 > = 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 >= 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

CLEALMPR

Point Type Custom, Regulatory, Switch.

Alarm priority parameter for the CL Foreground Error alarm (Forms AM-88-570, 550, and 560) (2.3.8, 3.1.7, 3.6, 3.7, 3.7.3, and 4.1.4.9 in *AM Control Functions*).

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

Value Type ALPRIOR enumeration

Value Range No Action—Alarm is not displayed, printed, annunciated, or recorded in a journal.
Journal—Alarm is recorded only in the alarm journal. It is not displayed, printed, or annunciated.
Low, High, and Emergency—Alarm is displayed, printed, and recorded in the alarm journal with the Low, High, and Emergency priority shown.
Printer—Alarm is printed. It is not displayed, journaled, or annunciated.
Jnlprint—Alarm is journaled and printed. It is not displayed or annunciated.

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).

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

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*).

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

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*).

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

Value Type Boolean

Value Range True—CL Failure condition exists
False—CL Failure condition does not exist

CLFALMPR

Point Type Custom, Regulatory, Switch.

Alarm priority parameter for the CL Foreground Fail alarm (Forms AM-88-570, 550, and 560) (2.3.9, 3.1.7, 3.6, 3.7, 3.7.3, and 4.1.4.9 in *AM Control Functions*).

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

Value Type ALPRIOR enumeration

Value Range No Action—Alarm is not displayed, printed, annunciated, or recorded in a journal.
Journal—Alarm is recorded only in the alarm journal. It is not displayed, printed, or annunciated.
Low, High, and Emergency—Alarm is displayed, printed, and recorded in the alarm journal with the Low, High, and Emergency priority shown.
Printer—Alarm is printed. It is not displayed, journaled, or annunciated.
Jnlprint—Alarm is journaled and printed. It is not displayed or annunciated.

CLMAXC

Point Type Processor Status

Maximum number of CL instructions 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

CLMAXP

Point Type Processor Status

Maximum number of CL instructions 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

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 *AM88-550, 560,* and *580*).

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*).

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

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*).

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

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).

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

Value Type Boolean

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

CNFERRPR

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

Alarm priority parameter for the Configuration Error alarm (Forms AM88-570, 530, 540, 550, and 560) (2.3.6, 3.1.7, 3.5.5, 3.6, and 3.7 in *AM Control Functions*).

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

Value Type ALPRIOR enumeration

Value Range No Action—Alarm is not displayed, printed, annunciated, or recorded in a journal.
Journal—Alarm is recorded only in the alarm journal. It is not displayed, printed, or annunciated.
Low, High, and Emergency—Alarm is displayed, printed, and recorded in the alarm journal with the Low, High, and Emergency priority shown.
Printer—Alarm is printed. It is not displayed, journaled, or annunciated.
Jnlprint—Alarm is journaled and printed. It is not displayed or annunciated.

CNTLLOCK

Point Type Counter and Timer

Operator control change lock (Forms *AM88-530* and *540*) (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
Confg—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 *AM88-551* through *559* and *561* through *564*) (3.1.3 and 3.1.4.7 in *AM Control Functions*).

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

Value Type IOACTSTS enumeration

Value Range Active—Indicates the initial status for this connection
Inactive—Indicates your configured initial status for this connection
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.

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 *AM88-551* through *559* and *561* through *564)*).

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 *AM88-512*).

Source User **Default Value** 1.25 **Access Lock** Supvr

Value Type Real

Value Range COMPLOLM 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 *AM88-512*).

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 *AM88-512*).

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 >= 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 >= 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 *AM88-551, 555,* and *556*).

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

CTLALGID

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 *AM88-501*).

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

Value Type CTLALGO 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 *AM88-551, 553, 554, 555, 556, 561*, and *562*).

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 *AM88-518* and *519*).

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 *AM88-551* through *559* and *561* through *564*).

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 *AM88-551* through *559* and *561* through *564*).

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 *AM88-564*).

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-

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 *AM88-515* through *518*)

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

Value Type Real

Value Range >= 0.0

D1 through D6 (Calcultr)

Point Type Regulatory

For the CALCULTR algorithm, D1-D6 are the scaling factors for each of the six possible PV inputs, P1 through P6.

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

Value Type Real

Value Range Any real number

D1 through D7

Point Type Regulatory

Applies to PV algorithms.

D1 through D7 are the bias constants for inputs P1 through P7 as used in the PV Multiply Divide algorithm (Form *AM88-516)*.

Also, D1 is the value in minutes for the fixed part of the dead time in the PV Variable Dead Time with LeadLag algorithm (Form *AM88-518*).

In addition, D2 is the bias constant for input P2 as used in the PV Variable Dead Time with LeadLag algorithm (Form *AM88-518*).

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

Value Type Real

Value Range D1, 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.

PV Common Display	PV Data Acquisition Display
PVFORMAT PVEUHI PVEULO PVEXEUHI PVEXEULO PVCLAMP PVSRCOPT PVSOURCE PVFLTOPT TF IN MIN PVTV	NOPINPTS PISRC(N) PIDSTN(N) PIACTSTS(N)

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*)

Source User

Default Value (Counter) Deviation is calculated as (PV - PVTV), or NaN if PV or PVTV = NaN

Default Value (Regulatory) Deviation is calculated as (PV - SP), or NAN if PVALGID = null or CTLALGID • PID, PIDERFB, or PIDFF

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).

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

Value Type Boolean

Value Range On—A deviation high alarm is present
Off—No alarm is present

DEVHIPR

Point Type Counter, Regulatory.

Alarm priority parameter for the Deviation High alarm (Forms *AM88-570* and *540*) (4.3.1.8 in *System Control Functions*, and 3.1.7 and 3.3.5 in *AM Control Functions*).

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

Value Type ALPRIOR enumeration

Value Range No Action—Alarm is not displayed, printed, annunciated, or recorded in a journal.
Journal—Alarm is recorded only in the alarm journal. It is not displayed, printed, or annunciated.
Low, High, and Emergency—Alarm is displayed, printed, and recorded in the alarm journal with the Low, High, and Emergency priority shown.
Printer—Alarm is printed. It is not displayed, journaled, or annunciated.
Jnlprint—Alarm is journaled and printed. It is not displayed or annunciated.

DEVHITP

Point Type Regulatory, Counter

Deviation high-alarm trip point (4.3.1.8 in *System Control Functions*) (Forms *AM88-570* and *540*).

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

DEVLOPR

Point Type Counter, Regulatory.

Alarm priority parameter for the Deviation Low alarm (Forms *AM88-570* and *540*) (4.3.1.8 in *System Control Functions*, and 3.1.7 and 3.3.5 in *AM Control Functions*).

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

Value Type ALPRIOR enumeration

Value Range No Action—Alarm is not displayed, printed, annunciated, or recorded in a journal.
Journal—Alarm is recorded only in the alarm journal. It is not displayed, printed, or annunciated.
Low, High, and Emergency—Alarm is displayed, printed, and recorded in the alarm journal with the Low, High, and Emergency priority shown.
Printer—Alarm is printed. It is not displayed, journaled, or annunciated.
Jnlprint—Alarm is journaled and printed. It is not displayed or annunciated.

DEVLOTP

Point Type Regulatory and Counter

Deviation low-alarm trip point (4.3.1.8 in *System Control Functions*) (Forms *AM88-570* and *540*).

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

-E-

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).

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

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.

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

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*).

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

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 *AM88-501*, *520A*, *530*, 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 *AM88-541*).

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-

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 *AM88-556*).

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.

PV Common Display	PV Flow Comp Algo Display	Input Connections Display
PVFORMAT	PVEQN	NOPINPTS
PVEUHI	C	PISRC(N)
PVEULO	C1	PIDSTN(N)
PVEXEUHI	C2	PIACTSTS(N)
PVEXEULO	COMPHILM	
PVCLAMP	COMPLOLM	
PVSRCOPT	G	
PVSOURCE	P	
PVFLTOPT	T	
TF IN MIN	X	
PVTV	Q	
	RG	
	RP	
	RT	
	RX	
	RQ	
	P0	
	T0	

FORCE

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 cleanpoint 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.

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

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.

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

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 *AM88-514*).

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

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 *AM88-514*).

Source User **Default Value** 2 **Access Lock** Oper

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 *AM88-512*).

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

-G-

G

Point Type Regulatory

Applies to the PV Flow Compensation algorithm.

Specific gravity input to the algorithm (Form *AM88-512*).

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 *AM88-551*, *552*, and *556*).

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 = KLIN

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 = KLIN * KGAP if (SP - GAPLO) < PV < (SP + GAPHI)

K = KLIN 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 = KLIN * KNL

Where KNL = NLFM + (NLGAIN * |PVP - SPP| / 100)

Ext—The overall gain K is derived as follows:

K = KLIN * KEXT

Where KEXT 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 *AM88-551*, *555*, and *556*).

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 *AM88-551*, *555*, and *556*).

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.

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

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 >= 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 >= 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.

GIACTSTS(N)

Point Type Regulatory, Counter, and Timer

GIACTSTS(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 *AM88-580, 530*, and *540*) (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 *AM88-580*, *530*, and *540*).

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 *AM88-580*).

GISRC[N] also are the timer and counter general input source connections you designate (Forms *AM88-530* and *540*).

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) 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 *AM88-530*, *540,* and *580*) (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.
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 *AM88-580, 530* and *540*) (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 *AM88-580, 530*, and *540*).

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 *AM88-580, 530*, and *540*).

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

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

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 *AM88-512).*

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.

-H-

HEAPFREE

Point Type Processor Status

Current free heap memory (no form).

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

Value Type Real

Value Range > = 0.0

HEAPMAXP

Point Type Processor Status

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

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

Value Type Real

Value Range > = 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*).

Source System **Default Value** No Alarm **Access Lock** Read Only

Value Type ALMTYPE enumeration

Value Range Point dependent:

Flag—OffNrmFl
Timer—Timeout
Counter—BadCtl, BadPV, CComer, Cnferr, PVHi, PVHH, PVLo, PVLL, PVSgch, PVRocn, PVRocp, DevHi, Devlo, Preset, PrPreset, or PPPreset
Custom—NoAlarm, CnfErr, CLEAlm, and CLFA
Switch—NoAlarm, CnfErr, CLEAlm, CLFAlm, SwtAlm1, SwtAlm2, and SwTAlm3
Regulatory—AdvDev, BadCtl, BadPv, DevHi, DevLo, PVHH, PVHi, PVLL, PVLo, PVRocn, PVRocp, PVSgch

HIGHALPR

Point Type All point types except Numeric

Priority of the alarm value that is contained in the parameter HIGHAL (no form).

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

Value Type ALPRIOR enumeration

Value Range No Action—Alarm is not displayed, printed, annunciated, or recorded in a journal.
Journal—Alarm is recorded only in the alarm journal. It is not displayed, printed, or annunciated.
Low, High, and Emergency—Alarm is displayed, printed, and recorded in the alarm journal with the Low, High, and Emergency priority shown.
Printer—Alarm is printed. It is not displayed, journaled, or annunciated.
Jnlprint—Alarm is journaled and printed. It is not displayed or annunciated.

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.

PV Common Display	PV Hi/Lo/Average Display
PVFORMAT PVEUHI PVEULO PVEXEUHI PVEXEULO PVCLAMP PVSRCOPT PVSOURCE PVFLTOPT	PVEQN N NMIN FRCPERM FSELIN P2 : P8 NOIDSTN(N) PIACTSTS(N)

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).

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

Value Type Boolean

Value Range On—Hold at current segment
Off—Normal operation

-I-

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 *AM88-520)*.

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.

Control Common Display	Control Incr/Sum Algo Display	Control Input Connections Display	Control Output Connections Display
NMODE	INITTYPE	NOCINPTS	NOCOPTS
NMODATTR	ORBIAS	CISRC(N)	CODDSTN(N)
MODEPERM	M	CIDSTN(N)	COACTSTS(N)
EXTSWOPT	XEUHI	CIACTSTS(N)	OPHILM
	XEULO		OPLOLM
	K1		OPMCHLM
	K2		OPROCLM
	K3		$OPTOL
	K4		

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 *AM88-551* through *559* and *561* through *564*).

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).

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

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*).

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

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 >= 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 >= 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 >= 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 >= 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 >= 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 >= 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

-K-

K

Point Type Regulatory

Overall gain or scale factor applies to these control algorithms:

- LeadLag (in *AM Algorithm Engineering Data*) (Form *AM88-552*)
- MulDiv (in *AM Algorithm Engineering Data*) (Form *AM88-554*)
- Pid (in *AM Algorithm Engineering Data*) (Form *AM88-551*)
- PidErfb (in *AM Algorithm Engineering Data*) (Form *AM88-555*)
- PidFf (in *AM Algorithm Engineering Data*) (Form *AM88-556*
- Summer (in *AM Algorithm Engineering Data*) (Form *AM88-553*)

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

Value Type Real

Value Range For Pid, PidErfb, PidFf 0.0 < = K < = 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 *AM88-553, 554*, *555,* and *559*):

- 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.

Source User **Default Value** 1.0
0.0 for IncSum K2, 3, & 4 **Access Lock** Supvr

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).

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

Value Type Real

Value Range 0.0 <= KEXT <= 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 *AM88-501*, *510, 520A*, *530, 540*, *550,* and *560*).

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

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 *AM88-556*).

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

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 *AM88-551*, *555*, and *556*).

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 *AM88-551*, *555*, and *556*).

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

-L-

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 > = 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 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 *AM88-510*).

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.

Control Common Display	Setpoint Display	Control Lead Lag Algo Display	Control Output Connections Display
NMODE NMODATTR MODEPERM EXTSWOPT	SPFORMAT SPEUHI SPEUL SPHILM SPLOLM $SPTOL SP SPOPT AVDEVTP	INITTYPE B K T1 IN MIN T3 IN MIN T2 IN MIN NOCINPTS CISRC(N) CIDSTN(N) CIACTSTS(N)	NOCOPTS CODSTN(N) COACTSTS(N) OPHILM OPLOLM OPMCHLM OPROCLM $OPTOL

-M-

M

Point Type Regulatory

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

Number of inputs (Forms *AM88-553*, *557*, *561*, and *562*).

Source User **Default Value** 2 **Access Lock** Prog

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.

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

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).

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

Value Type Integer

Value Range 0 through MEMCVBLM

MCVBAVGP

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 MEMCVBLM

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 MEMCVBLM

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 > = 0.0

MCVBMNCP

Point Type Processor Status

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

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

Value Type Real

Value Range > = 0.0

MCVBMXCC

Point Type Processor Status

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

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

Value Type Real

Value Range > = 0.0

MCVBMXCP

Point Type Processor Status

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

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

Value Type Real

Value Range > = 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).

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

Value Type Array (1..100) of Real

Value Range > = 0.0

MEMCKPT

Point Type Processor Status

Memory used for the checkpoint buffer (no form).

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

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).

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

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.

Source User **Default Value** 1600 **Access Lock** Oper

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).

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

Value Type Real

Value Range > = 0.0

MEMIOLM

Point Type Processor Status

Total memory reserved for prefetch/poststore I/O (no form).

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

Value Type Real

Value Range > 1 0.0 * 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.

PV Common Display	Middle Of3 Algo Display
PVFORMAT PVEUHI PVEULO PVEXEUHI PVEXEULO PVCLAMP PVSRCOPT PVSOURCE PVFLTOPT TF IN MIN PVTV	PVEQN P2 P3 NOPINPTS PISRC(N) PIDSTN(N) PIACTSTS

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 *AM88-541*).

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).

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

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).

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

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.

Control Common Display	Setpoint Display	Mul/Div Algo Display	Control Input Connections Display	Control Output Connections Display
NMODE NMODATTR MODEPERM EXTSWOPT	SPFORMAT SPEUHI SPEULO SPHILM SPLOLM $SPTOL SP SPOPT AVDEVTP	CTLEQN INITTYPE K B K1 K2 K3 K4 B1 B2 B3 B4 X2 X3 X4	NOCINPTS CISRC(N) CIDSTN(N) CIACTSTS(N) COPCTYPE	NOCOPTS CODSTN(N) COACTSTS(N) OPHILM OPLOLM OPMCHLM OPROCLM $OPTOL

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.

PV Common Display	AM-Reg PV Mul/Div Display	Input Connections Display
PVFORMAT PVEUHI PVEULO PVEXEUHI PVEXEULO PVCLAMP PVSRCOPT PVSOURCE PVFLTOPT TF IN MIN PVTV	PVEQN C D (Scaling Constant): INPUT1 : —* INPUT7 (Bias Constant): INPUT1 : —** INPUT7 P2 : P7	NOPINPTS PISRC(N) PIDSTN(N) PIACTSTS(N)

* 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 *AM88-563*).

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

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 *AM88-563*).

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

Value Type Real

Value Range NaN, > = 0.0

-N-

N

Point Type Regulatory

Applies to the PV algorithms Hi/Lo Average Selector and Summer.

Number of inputs (Forms *AM88-514* and *515*).

Source User **Default Value** 2 **Access Lock** Prog

Value Type Integer

Value Range 2 through 8

N (Calcultr)

Point Type Regulatory

Defines the number of inputs to the CALCULTR algorithm.

Source User **Default Value** 2 **Access Lock** PtBld

Value Type Integer

Value Range 1 through 6

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.

Source User **Access Lock** Read Only

Default Value On forms, not applicable; on Parameter Entry Displays, eight underscores, which must be cleared and a valid tag name entered.

Value Type String

Value Range One through eight characters. Permissible characters are: 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.

NLFM

Point Type Regulatory

Nonlinear gain form for Pid control algorithms (18.4.6 in *AM Algorithm Engineering Data* (Forms *AM88-551*, *555*, and *556*).

Source User **Default Value** 1 **Access Lock** Supvr

Value Type Integer

Value Range 0 or 1

NLGAIN

Point Type Regulatory

Applies to Pid algorithms.

Nonlinear gain (Forms *AM88-551*, *555*, and *556*).

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 *AM88-514*).

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 *AM88-541*).

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 *AM88-541*).

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 *AM88-551* through *559* and *561* through *563*).

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 *AM88-551* through *559* and *561* through *564*).

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 *AM88-580*, *530*, and *540*).

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 *AM88-580*, *530*, and *540*).

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 *AM88-511* through *520*).

Source User **Default Value** All blanks **Access Lock** Engr

Value Type Integer

Value Range 0 through 8

NOPINPTS (Calcultr)

Point Type Regulatory

Number of PV input connections (Form *AM88-511* through *520*).

Source User **Default Value** 2 **Access Lock** View-only

Value Type Integer

Value Range 1 through 6

NOTE
View-only for CALCULTR Algorithm.

NOPKG

Point Type Regulatory, Custom, and Switch

Number of CDS packages to be attached to this point (3.6 in *AM Control Functions*) (Forms *AM88-580*, *550*, and *560*).

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 *AM88-501*, *530*, *540*, *550*, and *560*) (2.2.1.3, 3.3.6, 4.2 in *AM Control Functions*, and Section 5 in the *AM Implementation Guidelines*).

Source User **Default Value** -1 **Access Lock** DEB

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).

Period (Line 30)	Time Base	Cycle Range or Data Entry (Integers)		
Fast Processor				
1 SEC	1/2 Second	0 or	1	If, for example, you select 1 MIN in PERIOD, an offset can be entered in the cycle range of 0 through 119. Cycles then repeat every minute.
2 SEC		0 thru	3	
5 SEC		0 thru	9	
10 SEC		0 thru	19	
15 SEC		0 thru	29	
30 SEC		0 thru	59	
1 MIN		0 thru	119	
2 MIN		0 thru	239	
Internetwork Processor				
5 SEC	5 seconds	0		
10 SEC		0 or	1	
15 SEC		0 thru	2	
30 SEC		0 thru	5	
1 MIN		0 thru	11	
2 MIN		0 thru	23	
Slow Processor				
1S MIN	1 Minute	0		
2S MIN		0 or	1	
Slow or Internetwork Processor				
5 MIN	1-Minute	0 thru	4	
10 MIN		0 thru	9	
15 MIN		0 thru	14	
30 MIN		0 thru	29	
1 HR		0 thru	59	
Slow or Internetwork Processor				
8 HR	1 Hour	0 thru	7	
12 HR		0	11	
24 HR		0 thru	23	

NORSSEQ

Point Type Regulatory

Number of ramp/soak pairs for a RampSoak control algorithm (22.5 in *AM Algorithm Engineering Data*) (Form *AM88-563*).

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

NUMSWTCH

Point Type Switch and Regulatory

Configure on Forms *AM88-550* and 580.

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

-O-

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).

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

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).

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

Value Type Boolean

Value Range Off—Normal
On—There is an initialization request.

OFFNRMAL

Point Type Flag

Configure on Form *AM88-410*.

Off-normal alarm configuration; alarming enable/disable (3.4.3 in *AM Control Functions*).

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

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.

OFFNRMPR

Point Type Flag.

Alarm priority parameter for the Off Normal alarm (Forms *AM88-510*) (3.4.3 and 3.4.5 in *AM Control Functions*).

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

Value Type ALPRIOR enumeration

Value Range No Action—Alarm is not displayed, printed, annunciated, or recorded in a journal.
Journal—Alarm is recorded only in the alarm journal. It is not displayed, printed, or annunciated.
Low, High, and Emergency—Alarm is displayed, printed, and recorded in the alarm journal with the Low, High, and Emergency priority shown.
Printer—Alarm is printed. It is not displayed, journaled, or annunciated.
Jnlprint—Alarm is journaled and printed. It is not displayed or annunciated.

OP

Point Type Regulatory

The output of a regulatory control algorithm, in %, after control-output processing (3.1.12 in *AM Control Functions*) (Forms *AM88-551* through *559* and *561* through *564*.)

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

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).

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

Value Type Real

Value Range Any real number

OPHIFL

Point Type Regulatory

Output high limit flag (no form).

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

Value Type Boolean

Value Range Off—OP < OPHILM
On—OP >= OPHILM

OPHILM

Point Type Regulatory

Configure on Forms *AM88-551*through *559* and *561* through *564*.

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 *AM88-551*through *559* and *561* through *564*.

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 *AM88-551*through *559* and *561* through *564*.

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 *AM88-551*through *559* and *561* through *564*.

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 *AM88-557).*

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

Value Type Real

Value Range > = 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 *AM88-561*).

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.

Control Common Display	Control Over/Sel Algo Display	Control Output Connections Display
NMODE MODATTR MODEPERM EXTSWOPT	NITTYPE CTLEQN M OROPT XEUHI XEULO NOCINPTS CISRC(N) CIDSTN(N) CIACTSTS(N)	NOCOPTS CODSTN(N) COACTSTS(N) OPHILM OPLOLM OPMCHLM OPROCLM $OPTOL

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 *AM88-520*).

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

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 > = 0.0

Note: A small negative number (-1 or -2) is sometimes seen in OVERRUNS. This value may be interpreted to mean “zero overruns.”

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 *AM88-501*).

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 *AM88-510*).

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 *AM88-540*).

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-

P

Point Type Regulatory

Configure on Form *AM88-512*.

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.)

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

Value Type Real

Value Range Any real number

P0

Point Type Regulatory

Configure on Form *AM88-512*.

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.)

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

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.

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

Value Type Real

Value Range Any real number

P1 through P6 (Calcultr)

Point Type Regulatory

Indicates the current values at the inputs for the CALCULTR algorithm.

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

Value Type Real

Value Range N/A, NaN

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.

Source User **Default Value** See below **Access Lock** Read Only

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: Bad default: Normal
PV General Linearization algorithm	P1STS	default: Bad
PV Calculator algorithm	P1STS - P6STS	default: Normal

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 *AM88-513*, *514*, *516*, and *517*.

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>
<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>
<tr><td colspan="8">PV Multiply/Divide</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 colspan="8">PV Hi Lo Average</td></tr>
<tr><td>Default Values:</td><td colspan="7">← NaN →</td></tr>
<tr><td colspan="8">PV Middle of 3</td></tr>
<tr><td>Default Values:</td><td>NaN</td><td>NaN</td><td colspan="5">(Not Used)</td></tr>
<tr><td colspan="8">PV Sum of Products</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>
<tr><td colspan="8">PV Calculator</td></tr>
<tr><td>Default Values:</td><td colspan="5">← NaN →</td><td>(Not Used)</td><td>(Not Used)</td></tr>
</table>

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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*, and Section 5 in the *AM Implementation Guidelines*) (Forms *AM88-501*, *530*, *540*, *550, and 560*).

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

Value Type PERIOD enumeration

Value Range When $IPPASN = OFF

1sec	2sec	5sec	10sec	1Smin, 2Smin = 1 minute,
15sec	30sec	1min	2min	2 minutes, respectively, assigned to the
1Smin	2Smin	5min	10min	Slow processor.
15min	30min	1hr	8hr	
12hr	24hr	NoPeriod		

Value Range When $IPPASN = ON

5sec	10sec	15sec	30sec
1min	2min	5min	10min
15min	30min	1hr	8hr
12hr	24hr	NoPeriod	

PFAVGC

Point Type Processor Status

Average number of prefetches per second in the current hour (no form).

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

Value Type Real

Value Range > = 0.0

PFAVGP

Point Type Processor Status

Average number of prefetches per second in the previous hour.

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

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 > = 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 > = 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 > = 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 > = 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).

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

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).

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

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).

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

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.
Confg—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 *AM88-511* through *AM88-520*.

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*).

NOTE

N is 1 through 6 for the CALCULTR Algorithm.

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.

PV Common Display	Control Common Display	Setpoint Display	Control Pid Algo Display	Control Input Connections Display
PVFORMAT	NMODE	SPHILM	PIDFORM	NOCINPTS
PVEUHI	NMODATTR	SPLOLM	CTLEQN	CISRC(N)
PVEULO	MODEPERM	$SPTOL	INITTYPE	CIDSTN(N)
PVEXEUHI	EXTSWOPT	SP	CTLACTN	CIACTSTS(N)
PVEXEULO		SPOPT	GAINOPT	
PVCLAMP		AVDEVTP	K	
PVSRCOPT		RBOPT	KLIN	
PVSOURCE		RTHILM	KGAP	
PVFLTOPT		RTLOLM	GAPHI	
TF IN MIN		BSHILM	GAPLO	
PVTV		BSLOLM	NLGAIN	
		RATIO	NLFM	
		BIAS	T1 IN MIN	
			T2 IN MIN	
			PVTRACK	

Output Connection Display
NOCOPTS CODSTN(N) COACTSTS(N) OPHILM OPLOLM OPMCHLM OPROCLM $OPTOL

PidErfb

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.

PV Common Display	Control Common Display	Setpoint Display	Control Erfb Pid Algo Display	Control Input Connections Display
PVFORMAT	NMODE	SPHILM	PIDFORM	NOCINPTS
PVEUHI	NMODATTR	SPLOLM	CTLEQN	CISRC(N)
PVEULO	MODEPERM	$SPTOL	INITTYPE	CIDSTN(N)
PVEXEUHI	EXTSWOPT	SP	CTLACTN	CIACTSTS(N)
PVEXEULO		SPOPT	GAINOPT	
PVCLAMP		AVDEVTP	K	
PVSRCOPT		RBOPT	KLIN	
PVSOURCE		SPOPT	KGAP	
PVFLTOPT		RTHILM	GAPHI	
TF IN MIN		RTLOLM	GAPLO	
PVTV		BSHILM	NLGAIN	
		BSLOLM	NLFM	
		RATIO	T1 IN MIN	
		BIAS	T2 IN MIN	
			KI	
			PVTRACK	

Output Connections Display
CVEUHI
CVEULO
OPHILM
OPLOLM
OPMCHLM
OPROCLM
$OPTOL

PidFF

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.

PV Common Display	Control Common Display	Setpoint Display	Ffwd Pid Control Algo Display	Control Input Connections Display
PVFORMAT	NMODE	SPHILM	PIDFORM	NOCINPTS
PVEUHI	NMODATTR	SPLOLM	CTLEQN	CISRC(N)
PVEULO	MODEPERM	$SPTOL	INITTYPE	CIDSTN(N)
PVEXEUHI	EXTSWOPT	SP	CTLACTN	CIACTSTS(N)
PVEXEULO		SPOPT	GAINOPT	
PVCLAMP		AVDEVTP	K	
PVSRCOPT		RBOPT	KLIN	
PVSOURCE		RTHILM	KGAP	
PVFLTOPT		RLOLM	GAPHI	
TF IN MIN		BSHILM	GAPLO	
PVTV		BSLOLM	NLGAIN	
		RATIO	NLFM	
		BIAS		
		T1 IN MIN		
		T2 IN MIN		
		FFOPT		
		BFF		
		KFF		
		PVTRACK		

Output Connections Display
NOCOPTS
CODSTN(N)
COACTSTS(N)
OPHILM
OPLOLM
OPMCHLM
OPROCLM
$OPTOL

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 *AM88-551*, *555*, and *556*).

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) * 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.

PIDSTN(N)

Point Type Regulatory

Configure on Forms *AM88-511* through *AM88-520*.

Destination parameter for PV input connection number 1.

> **NOTE**
>
> N is 1 through 6 for the CALCULTR Algorithm.

Source User **Default Value** Blanks **Access Lock** DEB (CALCULTR) View-only

Value Type Par_Id

Value Range

PISRC (1) through PISRC (6) (Calcultr)

Point Type Regulatory

Define the parameters whose current values are to be fetched and then written to up to six algorithm inputs. The source parameter name can be specified using the "Tagname.Parameter" format.

Source User **Default Value** null.null **Access Lock** PtBLd

Value Type Entity.Parameter

Value Range Use Tagname.Parameter for tagged points where the Tagname can be any legal system tagname.

An * is used to default to this point's tagname.
"- - -" can be used for null point id.

The parameter name can be up to eight characters and must be a legitimate parameter name.
"- - -" can be used for null parameter id.

PISRC(N)

Point Type Regulatory

Configure on Forms *AM88-511* through *AM88-520*.

Source point.parameter for PV input connection number N, where N is 1 through 8.

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

Value Type Point.Parameter

Value Range Any valid point.parameter combination

> **NOTE**
>
> N is 1 through 6 for the CALCULTR Algorithm.

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 *AM88-580*, *550*, and *560*).

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

Value Type Array (1..10) of String (8)

Value Range Up to 8 characters per string

PPPRSTPR

Point Type Counter.

Alarm priority parameter for the Pre-Pre-Preset alarm (Form *AM88-540*) (3.3.7 in *AM Control Functions*).

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

Value Type ALPRIOR enumeration

Value Range No Action—Alarm is not displayed, printed, annunciated, or recorded in a journal.
Journal—Alarm is recorded only in the alarm journal. It is not displayed, printed, or annunciated.
Low, High, and Emergency—Alarm is displayed, printed, and recorded in the alarm journal with the Low, High, and Emergency priority shown.
Printer—Alarm is printed. It is not displayed, journaled, or annunciated.
Jnlprint—Alarm is journaled and printed. It is not displayed or annunciated.

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

CAUTION

AM Parameter Store of "PPS = OFF" May Stop Future Point Processing:

Storing the "OFF" value to the "PPS" parameter of an AM point with the points process special currently executing will stop the point's current execution, but may prevent the point from being processed when requested by the next store of "PPS = ON." No error is reported, but the point and its CLs do not execute on the next request.

To prevent the problem from happening, do not store "PPS = OFF" if you suspect the point and its CLs are executing (instead, set the point inactive to stop the processing).

The problem will clear after the next scheduled point execution or when the point is inactivated and DEB reconstitute and reload with overwrite is performed.

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

PPSREQ

Point Type Regulatory, Counter, Custom, and Switch

Process Special Request (no form) (3.6.2 and 2.2.1.2 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 2.2.1.2 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 > = 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 > = 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 >= 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.

PRESETPR

Point Type Counter.

Alarm priority parameter for the Preset alarm (Form *AM88-540*) (3.3.7 in *AM Control Functions*).

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

Value Type ALPRIOR enumeration

Value Range No Action—Alarm is not displayed, printed, annunciated, or recorded in a journal.
Journal—Alarm is recorded only in the alarm journal. It is not displayed, printed, or annunciated.
Low, High, and Emergency—Alarm is displayed, printed, and recorded in the alarm journal with the Low, High, and Emergency priority shown.
Printer—Alarm is printed. It is not displayed, journaled, or annunciated.
Jnlprint—Alarm is journaled and printed. It is not displayed or annunciated.

PRIMMOD

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

The tag name of the point that is the primary module for this point. When storing to the PRIMOD parameter from a schematic or foreground CL, both points must be on the same node. When storing to the PRIMOD parameter from background CL, the DEB, AXM access, or other CM access, the store can be to any system entity ID. (Forms *AM88-501, 510*, *520A*, *530*, *540, 550, and 560*).

Source User | **Default Value** Blanks (Reg)
---- (Non-Reg) | **Access Lock** Engr

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 > = 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).

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

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.

PRPRSTPR

Point Type Counter.

Alarm priority parameter for the Pre-Preset alarm (Form *AM88-540*) (3.3.7 in *AM Control Functions*).

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

Value Type ALPRIOR enumeration

Value Range No Action—Alarm is not displayed, printed, annunciated, or recorded in a journal.
Journal—Alarm is recorded only in the alarm journal. It is not displayed, printed, or annunciated.
Low, High, and Emergency—Alarm is displayed, printed, and recorded in the alarm journal with the Low, High, and Emergency priority shown.
Printer—Alarm is printed. It is not displayed, journaled, or annunciated.
Jnlprint—Alarm is journaled and printed. It is not displayed or annunciated.

PSAVGC

Point Type Processor Status

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

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

Value Type Real

Value Range 0 through 32767

PSAVGP

Point Type Processor Status

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

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

Value Type Real

Value Range 0 through 32767

PVEUHI

Point Type Regulatory, Counter

Configure on Forms *AM88-502* and *540*.

PV engineering unit high range. PVEUHI must be greater than PVEULO and must be less than or equal to PVEXEUHI (3.1.5.5 and 3.1.5.6 in *AM Control Functions*).

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

Value Type Real

Value Range PVEULO to PVEXEUHI; NaN not allowed

PVEULO

Point Type Regulatory, Counter

Configure on Forms *AM88-502* and *540*.

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*).

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

Value Type Real

Value Range PVEXEULO to PVEUHI; NaN not allowed

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).

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

Value Type Integer

Value Range 0 through 32767

PSMINP

Point Type Processor Status

Minimum 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

PSMNCYCC

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 > = 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 > = 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 > = 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 > = 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

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

PTDESC

Point Type All Point Types

Configure on Forms *AM88-501*, *510*, *520A*, *530*, *540*, *550*, and *560*.

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*).

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

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 *AM88-501*, *530*, and *540*).

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

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 *AM Control Functions*).

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

Value Type PTEXECST enumeration

Value Range NotConfg—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 *AM Control Functions*).

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

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 *AM Control Functions*).

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

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 *AM88-520A*).

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 *AM88-570* and *540*.

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 *AM88-570* and *540*.

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 • PVALDBEU • (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 *AM88-501*).

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 *AM88-502* and *540*.

PV clamping option (3.1.5.5 in *AM Control Functions*).

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

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 *AM88-540*).

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

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 <u>DataAcq</u>, and <u>GenLin</u> (Sections 4 and 6 through 13 in *AM Algorithm Engineering Data*) (Forms *AM88-512* through *519*).

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

Value Type ALGOEQN enumeration

Value Range

<u>For PV Flow Compensation Algorithm</u>

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.

<u>For PV Middle of 3 Algorithm</u>
EqA—The output is the higher of the good inputs.
EqB—The <u>PVCALC</u> is the lower of the good inputs.
EqC—The <u>PVCALC</u> is the average of the good inputs.

<u>ForPV Hi Lo Average Selector Algorithm</u>
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.

<u>For PV Summer Algorithm</u>
EqA—<u>PVCALC</u> is computed by simply scaling and biasing the P1 input.
EqB—<u>PVCALC</u> is computed as the sum of up to 8 individually scaled inputs with an overall bias.

<u>For PV Multiply Divide Algorithm</u>
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.

<u>For PV Sum of Products Algorithm</u>
EqA—<u>PVCALC</u> is the sum of two scaled and biased inputs.
EqB—<u>PVCALC</u> is the sum of three scaled and biased inputs.

<u>For PV Variable Deadtime with LeadLag Algorithm</u>
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.

<u>For PV Totalizer Algorithm</u>

Warm Restart	Bad Input Handling
EqA—Continue	Use zero
EqB—Continue	Use last good value
EqC—Continue	Set Bad, and stop
EqD—Set Bad, and stop	Use zero
EqE—Set Bad, and stop	Use last good value
EqF—Set Bad, and stop	Set Bad, and stop

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 PVEXEUHI (3.1.5.5 and 3.1.5.6 in *AM Control Functions*).

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

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*).

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

Value Type Real

Value Range PVEXEULO to PVEUHI; NaN not allowed

PVEXEUHI

Point Type Regulatory, Counter

Configure on Form *AM88-502* and *540*.

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*).

Source User **Default Value** 102.9 **Access Lock** Engr-DEB

Value Type Real

Value Range > = PVEUHI; NaN not allowed

PVEXEULO

Point Type Regulatory, Counter

Configure on Form *AM88-502* and *540*.

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 >= PVEULO; 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 PV =< PVEXEUHI
On—If PV > 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 PV => PVEXEULO
On—If PV < PVEXEULO

PVFLTOPT

Point Type Regulatory

Configure on Form *AM88-502*.

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 *AM88-502, 520A,* and *540*.

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)
D0 (others) **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 six digits after the decimal point

PVHHFL

Point/Algo Type Regulatory and Counter

PV high-high alarm flag (4.3.1.8.4 in *System Control Functions*) (no form).

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

Value Type Boolean

Value Range Off—If PV >= PVHHTP
On—PV < PVHHTP

PVHHPR

Point Type Counter, Regulatory.

Alarm priority parameter for the PV high-high alarm (Forms *AM88-570* and *540*) (4.3.1.8.4 in *System Control Functions*, and 3.1.7 and 3.3.4 in *AM Control Functions*).

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

Value Type ALPRIOR enumeration

Value Range No Action—Alarm is not displayed, printed, annunciated, or recorded in a journal.
Journal—Alarm is recorded only in the alarm journal. It is not displayed, printed, or annunciated.
Low, High, and Emergency—Alarm is displayed, printed, and recorded in the alarm journal with the Low, High, and Emergency priority shown.
Printer—Alarm is printed. It is not displayed, journaled, or annunciated.
Jnlprint—Alarm is journaled and printed. It is not displayed or annunciated.

PVHHTP

Point Type Regulatory and Counter

PV high-high alarm trip point value (4.3.1.8.4 in *System Control Functions*) (Form *AM88-570* and *540*).

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

Value Type Real

Value Range PVHITP to PVEXEUHI and NaN
Configuring PVHHTP as NaN disables the alarm; HM storage only if PVHITP is NaN.

PVHHTR

Point Type Regulatory

PV high-high alarm transition—indicates a transition in the PV high-high alarm state (PVHHFL, PVHHTP) (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

PVHIFL

Point Type Regulatory and Counter

PV high alarm flag (4.3.1.8.3 in *System Control Functions*) (no form).

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

Value Type Boolean

Value Range Off—f PV <= PVHITP
On—If PV > PVHITP

PVHIPR

Point Type Counter, Regulatory.

Alarm priority parameter for the PV high alarm (Forms *AM88-570* and *540*) (4.3.1.8.3 in *System Control Functions*, and 3.1.7 and 3.3.4 in *AM Control Functions*).

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

Value Type ALPRIOR enumeration

Value Range No Action—Alarm is not displayed, printed, annunciated, or recorded in a journal.
Journal—Alarm is recorded only in the alarm journal. It is not displayed, printed, or annunciated.
Low, High, and Emergency—Alarm is displayed, printed, and recorded in the alarm journal with the Low, High, and Emergency priority shown.
Printer—Alarm is printed. It is not displayed, journaled, or annunciated.
Jnlprint—Alarm is journaled and printed. It is not displayed or annunciated.

PVHITP

Point Type Regulatory and Counter

PV high alarm trip point value (4.3.1.8.3 in *System Control Functions*) (Form *AM88-570* and *540*).

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

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).

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

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

PVLLPR

Point Type Counter, Regulatory.

Alarm priority parameter for the PV low-low alarm (Forms *AM88-570* and *540*) (4.3.1.8.6 in *System Control Functions*, and 3.1.7 and 3.3.4 in *AM Control Functions*).

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

Value Type ALPRIOR enumeration

Value Range No Action—Alarm is not displayed, printed, annunciated, or recorded in a journal.
Journal—Alarm is recorded only in the alarm journal. It is not displayed, printed, or annunciated.
Low, High, and Emergency—Alarm is displayed, printed, and recorded in the alarm journal with the Low, High, and Emergency priority shown.
Printer—Alarm is printed. It is not displayed, journaled, or annunciated.
Jnlprint—Alarm is journaled and printed. It is not displayed or annunciated.

PVLLTP

Point Type Regulatory and Counter

PV low-low alarm trip point value (4.3.1.8.6 in *System Control Functions*) (Forms *AM88-570* and *540*).

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

PVLOPR

Point Type Counter, Regulatory.

Alarm priority parameter for the PV low alarm (Forms *AM88-570* and *540*) (4.3.1.8.5 in *System Control Functions*, and 3.1.7 and 3.3.4 in *AM Control Functions*).

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

Value Type ALPRIOR enumeration

Value Range No Action—Alarm is not displayed, printed, annunciated, or recorded in a journal.
Journal—Alarm is recorded only in the alarm journal. It is not displayed, printed, or annunciated.
Low, High, and Emergency—Alarm is displayed, printed, and recorded in the alarm journal with the Low, High, and Emergency priority shown.
Printer—Alarm is printed. It is not displayed, journaled, or annunciated.
Jnlprint—Alarm is journaled and printed. It is not displayed or annunciated.

PVLOTP

Point Type Regulatory and Counter

PV low alarm trip point value (4.3.1.8.5 in *System Control Functions*) (Forms *AM88-570* and *540*).

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 *AM88-510*).

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*).

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

PVROCNPR

Point Type Counter, Regulatory.

Alarm priority parameter for the PV negative rate-of-change alarm (Forms *AM88-570* and *540*) (4.3.1.8.9 in *System Control Functions*, and 3.1.7 and 3.3.4 in *AM Control Functions*).

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

Value Type ALPRIOR enumeration

Value Range No Action—Alarm is not displayed, printed, annunciated, or recorded in a journal.
Journal—Alarm is recorded only in the alarm journal. It is not displayed, printed, or annunciated.
Low, High, and Emergency—Alarm is displayed, printed, and recorded in the alarm journal with the Low, High, and Emergency priority shown.
Printer—Alarm is printed. It is not displayed, journaled, or annunciated.
Jnlprint—Alarm is journaled and printed. It is not displayed or annunciated.

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 *AM88-570* and *540*).

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

Value Type Real, NaN

Value Range >= 0.0, NaN
Configuring <u>PVROCNTP</u> 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 PVRONFL 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 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

PVROCPPR

Point Type Counter, Regulatory.

Alarm priority parameter for the PV positive rate-of-change alarm (Forms *AM88-570* and *540*) (4.3.1.8.8 in *System Control Functions*, and 3.1.7 and 3.3.4 in *AM Control Functions*).

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

Value Type ALPRIOR enumeration

Value Range No Action—Alarm is not displayed, printed, annunciated, or recorded in a journal.
Journal—Alarm is recorded only in the alarm journal. It is not displayed, printed, or annunciated.
Low, High, and Emergency—Alarm is displayed, printed, and recorded in the alarm journal with the Low, High, and Emergency priority shown.
Printer—Alarm is printed. It is not displayed, journaled, or annunciated.
Jnlprint—Alarm is journaled and printed. It is not displayed or annunciated.

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 *AM88-570* and *540*).

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

Value Type Real

Value Range >= 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 meiainingful only for use by CL blocks on this point. It indicates whether the alarm flag state in PVRONFL 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.
On—PV is out of the significant change limit.

PVSGCHPR

Point Type Counter, Regulatory.

Alarm priority parameter for the PV significant change alarm (Forms *AM88-570* and *540*) (4.3.1.8.7 in *System Control Functions*, and 3.1.7 and 3.3.4 in *AM Control Functions*).

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

Value Type ALPRIOR enumeration

Value Range No Action—Alarm is not displayed, printed, annunciated, or recorded in a journal.
Journal—Alarm is recorded only in the alarm journal. It is not displayed, printed, or annunciated.
Low, High, and Emergency—Alarm is displayed, printed, and recorded in the alarm journal with the Low, High, and Emergency priority shown.
Printer—Alarm is printed. It is not displayed, journaled, or annunciated.
Jnlprint—Alarm is journaled and printed. It is not displayed or annunciated.

PVSGCHTP

Point Type Regulatory and Counter

Significant PV-change alarm trip-point value (4.3.1.8.7 in *System Control Functions*) (Forms *AM88-570* and *540*).

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 *AM88-502* and *540*.

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 *AM88-502* and *540* (3.1.5.4 in *AM Control Functions*).

PV source option.

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

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 *AM88-510.*

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*).

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

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 *AM88-551*, *555*, and *556*).

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 *AM88-502* and *540*.

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*).

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

Value Type Real, NaN

Value Range PVEXEULO to PVEXEUHI or NaN

PVTVP

Point Type Regulatory

PV target value in percent (no form).

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

Value Type Real

Value Range Any real number

-Q-

Q

Point Type Regulatory

Measured actual steam-quality factor for FlowComp PV algorithm (Section 4 in *AM Algorithm Engineering Data*) (Form *AM88-512*).

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.

-R-

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.

Control Common Display	Setpoint Display	Ramp/Soak Control Algo Display	Control Output Connections Display
NMODE NMODATTR MODEPERM EXTSWOPT	SPFORMAT SPEUHI SPEULO SPHILM SPLOLM $SPTOL SP SPOPT ADVDEVTP	INITTYPE MXRMPDEV MXSOKDEV NORSSEQ RATEX (1-6) SOAKTX(1-6) SOAKVX(1-6) S1SEGID S1BGNTIM S1ENDTIM S2SEGID S2BGNTIM S2ENDTIM NOCINPTS CISRC(N) CIDSTN(N) CIACTSTS(N)	NOCOPTS CODSTN(N) COACTSTS(N) OPHILM OPLOLM OPMCHLM OPROCLM $OPTOL

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 >= 0.0

RANGEHI

Point Type Numeric

Configure on Form *AM88-520A*.

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 *AM88-520A*.

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 *AM88-558*.

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 BI 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 >= 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 *AM88-563*).

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 *AM88-541*).

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.

Control Common Display	Setpoint Display	Control Ratio Algorithm Display	Control Output Connections Display
NMODE	SPFORMAT	NITTYPE	NOCOPTS
NMODATTR	SPEUHI	B1	CODSTN(N)
MODEPERM	SPEULO	B2	COACTSTS(N)
EXTSWOPT	SPHILM	K1	OPHILM
	SPLOLM	K2	OPLOLM
	$SPTOL	NOCINPTS	OPMCHLM
	SP	CISRC(N)	OPROCLM
	SPOPT	CIDSTN(N)	$OPTOL
	AVDEVTP	CIACTSTS(N)	

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 *AM88-541*).

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.

REDBFMIN

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.

REMSOAKT

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*).

Source User **Default Value** NotReset (Timer)
---- (Counter) **Access Lock** Oper

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 *AM88-519*).

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

Value Type Real

Value Range Any real number

RESRVMEM

Point Type Processor Status

Reserved user memory expressed in 32 kw blocks.

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

Value Type Integer

Value Range 0-12 (Note that the total value of RESERVMEM 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 PidErFb 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 *AM88-512*).

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 *AM88-512*).

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 *AM88-512*).

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 *AM88-512*).

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

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*).

Source User **Default Value** 100.0 **Access Lock** Supvr

Value Type Real

Value Range >= RTLOLM, =< 100.0; NaN not allowed

RTLOLM

Point Type Regulatory

Configure on Form *AM88-541*.

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*).

Source User **Default Value** 0.01 **Access Lock** Supvr

Value Type Real

Value Range 0.01 to RTHILM; NaN not allowed

RX

Point Type Regulatory

Configure on Form *AM88-512*.

Applies to Flow Compensation algorithm.

Reference steam compressibility at designed flowing conditions.

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

Value Type Real

Value Range Any real number

-S-

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*

Algorithm	Description	Default Value	Access Lock
PidErFb	Tracking Switch Control	Off	Prog
RampSoak	Mark-Timer Flag	Off	Read Only
Switch	Select X1	On	Oper (EqA) Prog (EqB)

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 *AM88-550* and *580*.

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*).

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

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 *AM88-563*).

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

Value Type Real

Value Range >= 0.0

S1CURSTS

Point Type Switch and Regulatory

Configure on Form *AM88-550* and *580*.

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 • 1.

Source User **Default Value** first state **Access Lock** Prog

Value Type Sd Enum – S1STATES
Value Range Up to 5 Self-Defined Enumeration states (Refer to S1NSTATE, 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 *AM88-563*).

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

Value Type Real

Value Range >= 0.0

S1NSTATE

Point Type Regulatory and Switch

Configure on Form *AM88-550* and *580*.

Number of valid states for Switch 1 (4.2 in *AM Control Functions*).

Source User **Default Value** 2 **Access Lock** DEB

Value Type Integer

Value Range 1 through 5

S1REQSTS

Point Type Regulatory and Switch

Configure on Form *AM88-550* and *580*.

Requested state for Switch 1 (4.2 in *AM Control Functions*).

Source User **Default Value** first state **Access Lock** Oper*
* Further checked against S1ACCLVL by data owner.

Value Type Sd Enum – S1STATES

Value Range Up to 5 self-defined enumeration states (Refer to S1NSTATE, S1STATES)

> **NOTE**
>
> Storing to the S1REQSTS and S2REQSTS parameters, from a CL block on the same switch point, results in a process special of the switch point. This could result in continuous switch point execution if the parameters are stored on each execution cycle.

S1SEGID

Point Type Regulatory

Mark time 1 segment identity for RampSoak PV algorithm (22.4.5 in *AM Algorithm Engineering Data*) (Form *AM88-563*).

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 *AM88-550* and *580*).

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*

Algorithm	Description	Default Value	Access Lock
RampSoak	Mark-Timer Flag	Off	Read Only
Switch	Select X2	Off	Operator

Value Type Boolean

Value Range Off—Normal Operation
On—select X2 input (Switch)

S2ACCLVL

Point Type Switch and Regulatory

Configure on Form *AM88-550* and *580.*

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*).

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

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 *AM88-563*).

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

Value Type Real

Value Range >= 0.0

S2CURSTS

Point Type Switch and Regulatory

Configure on Form *AM88-550* and *580.*

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.

Source User **Default Value** first state **Access Lock** Prog

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 *AM88-563*).

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 *AM88-550* and *580*.

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 *AM88-550* and *580*.

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 *AM88-563*).

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 Regultory

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 *AM88-550* and *580*).

WARNING

Because of linked CL blocks, changing state names can have possible unforeseen consequences.

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 <u>Switch</u> 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 <u>Switch</u> 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 *AM88-550.*

Switch alarm 1 to 3 descriptions (3.7.3 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

Switch alarm flags 1 to 3. Alarm level is lowest for switch alarm 1 to highest for switch alarm 3 (no form) (3.7.3 in *AM Control Functions*).

Source System **Default Value** Off **Access Lock** Prog

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) (3.7.3 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 *AM88-520*).

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)
1 (HiLoAvg) **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).

Source User

Default Value 1

Access Lock Oper–EqA
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).

Source User

Default Value 0

Access Lock Read Only

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*).

Source User

Default Value 0.0

Access Lock Supvr

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 >= SPEXEUHI

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.

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

Value Type Boolean

Value Range Off—If SP <= SPHILM
On—If SP > SPHILM

SPHILM

Point Type Regulatory

Configure on Form *AM88-441*.

Applies to Control algorithms.

Setpoint high limit in Engineering Units of PV.

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

Value Type Real, NaN

Value Range SPLOLM to SPEXEUHI, or NaN (causes the value in SPEXEUHI to be stored in 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*).

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

Value Type MODEPERM enumeration

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 >= 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 SPEXEULO to SPHILM, or NaN (causes the value in SPEXEULO 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 SPEXEULO to SPEXEUHI

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 Totalizr 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

STATE2

Point Type Flag

Configure on Form *AM88-410*.

State 2 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

STRAVGC

Point Type Processor Status

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

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

Value Type Real

Value Range >= 0.0

STRAVGP

Point Type Processor Status

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

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

Value Type Real

Value Range >= 0.0

STRAVGS

Point Type Processor Status

Average number of parameter stores 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

STRTSTOP

Point Type Timer

Start/Stop Timer Control (no form) (3.3.8 and 3.3.10 in *AM Control Functions*).

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

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.

Control Common Display	Setpoint Display	Mul/Div Algo Display	Control Input Connections Display	Control Output Connections Display
NMODE NMODATTR MODEPERM EXTSWOPT	SPFORMAT SPEUHI SPEULO SPHILM SPLOLM $SPTOL SP SPOPT AVDEVTP	CTLEQN INITTYPE K B K M K1 K2 K3 K4	NOCINPTS CISRC(N) CIDSTN(N) CIACTSTS(N)	NOCOPTS CODSTN(N) COACTSTS(N) OPHILM OPLOLM OPMCHLM OPROCLM $OPTOL

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.

PV Common Display	AM-Reg PV Summer Display	Input Connections Display
PVFORMAT PVEUHI PVEULO PVEXEUHI PVEXEULO PVCLAMP PVSRCOPT PVSOURCE PVFLTOPT TF IN MIN PVTV	PVEQN C D N C1 : C8	NOPINPTS PISRC(N) PIDSTN(N) PIACTSTS(N)

SumProd (PV Algorithm)

This algorithm calculates a PV (PVCALC) 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.

PV Common Display	AM-Reg PV Sumprod Display	Input Connections Display
PV FORMAT	PVEQN	NOPIMPTS
PVEUHI	C	PISRC(N)
PVEULO	D	PIDSTN(N)
PVEXEUHI PVEXEULO	(Scaling Constant):	PIACTSTS(N)
PVCLAMP PVSRCOPT PVSOURCE	INPUT1 : INPUT7 *	
PVFLTOPT TFINMIN	(Bias Constant):	
PVTV	INPUT1 : INPUT7 **	
	P2	
	:	
	P7	

* 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.

Control Common Display	Control Switch Algo Display	Control Output Connections Display
NMODE NMODATTR MODEPERM EXTSWOPT	CTLEQN INITTYPE M XEUHI XEULO TRACKING NOCINPTS CISRC(N) CIDSTN(N) CIACTSTS(N)	NOCOPTS CODSTN(N) COACTSTS(N) OPHILM OPLOLM OPMCHLM OPROCLM $OPTOL

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

SWALM1PR – SWALM3PR

Point Type Switch.

Alarm priority parameters for Switch Alarms 1, 2, and 3 (Form AM88-550) (3.7 in *AM Control Functions*).

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

Value Type ALPRIOR enumeration

Value Range No Action—Alarm is not displayed, printed, annunciated, or recorded in a journal.
Journal—Alarm is recorded only in the alarm journal. It is not displayed, printed, or annunciated.
Low, High, and Emergency—Alarm is displayed, printed, and recorded in the alarm journal with the Low, High, and Emergency priority shown.
Printer—Alarm is printed. It is not displayed, journaled, or annunciated.
Jnlprint—Alarm is journaled and printed. It is not displayed or annunciated.

-T-

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 *AM88-512*).

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

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 *AM88-512*).

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

Value Type Real

Value Range Any real number

T1

Point Type Regulatory

Configure on Forms *AM88-551*, *552*, *555*, and *556*.

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 to 0.0.

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

Value Type Real

Value Range 0.0 to 2880.0

T2

Point Type Regulatory

Configure on Forms *AM88-551*, *552*, *555*, and *556*.

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 *AM88-552*).

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 *AM88-518*).

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 *AM88-502*).

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 Totalizr PV algorithm (7.5 in *AM Algorithm Engineering Data*), and for Timer points (3.5.1 in *AM Control Functions*) (Form *AM88-519* and *530*).

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** * **Access Lock** Read Only

*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 *AM88-530*.

Timeout Alarm Configuration (3.5.1 and 3.5.2 in *AM Control Functions*).

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

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 >= SP

TIMOUTPR

Point Type Timer.

Alarm priority parameter for the Timeout alarm (Form AM88-530) (3.5.2, and 3.5.5 in *AM Control Functions*).

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

Value Type ALPRIOR enumeration

Value Range No Action—Alarm is not displayed, printed, annunciated, or recorded in a journal.
Journal—Alarm is recorded only in the alarm journal. It is not displayed, printed, or annunciated.
Low, High, and Emergency—Alarm is displayed, printed, and recorded in the alarm journal with the Low, High, and Emergency priority shown.
Printer—Alarm is printed. It is not displayed, journaled, or annunciated.
Jnlprint—Alarm is journaled and printed. It is not displayed or annunciated.

TLD

Point Type Regulatory

Lead-compensation time constant in minutes for the VdtLdLag PV algorithm (Section 12 in *AM Algorithm Engineering Data*) (Form *AM88-518*).

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 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 *AM88-518*).

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 VdtLdLag PV algorithm (Section 12 in *AM Algorithm Engineering Data*) (Form *AM88-518*).

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, the lag component is eliminated.
TLG2 must be equal to or greater than two times PERIOD (in minutes).

TMEMCDPN

Point Type Processor Status

Total memory used for Custom Data Descriptions and for point names in the AM (no form).

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

Value Type Real

Value Range > = 0.0

TMEMCL

Point Type Processor Status

Total memory used for CL storage in the AM (no form).

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

Value Type Real

Value Range > = 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 > = 0.0

Totalizr (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.

PV Common Display	AM-Reg PV Totalizer Display
PVFORMAT PVEUHI PVEULO PVEXEUHI PVEXEULO PVCLAMP PVSRCOPT PVSOURCE PVFLTOPT TF IN MIN PVTV	PVEQN TIMEBASE C COMMAND RESETVAL CUTOFFLM AVTV AVDEV1TP AVDEV2TP NOPINTPTS PISRC(N) PIDSTN(N) PIACTSTS(N)

TRACKING

Point Type Regulatory

Tracking option for the Switch control algorithm (25.4.3 in *AM Algorithm Engineering Data*) (Form *AM88-562*).

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, Counter, Timer

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

-U-

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 *AM88-510*).

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:

- Alphabetics 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 LeadLag Compensation) calculates a PV (PVCALC) in which value changes may be delayed from the time that the corresponding change occurred in the P1 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.

PV Common Display	AM-Reg PV VDT Lead/Lag Display	Input Connections Display
PVFORMAT	PVEQN	NOPINPTS
PVEUHI	C	PISRC(N)
PVEULO	D	PIDSTS(N)
PVEXEUHI	TLG1 IN MIN	PIACTSTS(N)
PVEXEULO	TLG2 IN MIN	
PVCLAMP	TLD IN MIN	
PVSRCOPT	TD IN MIN	
PVSOURCE	CUTOFFLM	
PVFLTOPT	C1	
TF IN MIN	C2	
PVTV	D1	
	D2	

-X-

X

Point Type Regulatory

Measured, actual steam compressibility input to the FlowComp PV algorithm (4.5 in *AM Algorithm Engineering Data*) (Form *AM88-512*).

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:

Control Algorithm	X1STS	X2STS	X3STS	X4STS
Incremental Summer	X	X	X	X
Auto Manual Station	X			
Summer		X	X	X
Multiply Divide		X	X	X
Ratio		X		
Override Selector	X	X	X	X
Switch	X	X	X	X

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).

Control Algorithm	Default Value	Access Lock	Value Type/Range	Applies To
IncrSum	NaN	Prog	Real, NaN	X2, X3, X4
MulDiv	1.0	Engr-DEB*	Real	X2, X3, X4
OrSel	NaN	Prog	Real, NaN	X2, X3, X4
Ratio	NaN	Read Only	Real, NaN	X2
Summer	NaN	Read Only	Real	X2, X3, X4
Switch	NaN	Prog	Real, NaN	X2, X3, X4

*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 *AM88-557*, *558*, *561*, and *562*.

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 >= XEULO
(NaN) cannot be stored

XEULO

Point Type Regulatory

Configure on Forms *AM88-557*, *558*, *561*, and *562*.

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 =< 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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Reader Comments

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Application Module Parameter Reference Dictionary, AM09-640

Release UIS R620, 2/01

Comments:

You may also call 800-343-0228 (available in the 48 contiguous states), or write to:

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