ANEXO IV
ENTRADAS DE CONFIGURACIÓN DEL CONTROLADOR

A continuación se listan las entradas disponibles en DMCplus para la configuración del controlador. El listado ha sido tomado directamente del soporte documental de Aspen Technologies.

Descripción de la información mostrada

Applies to: describe el área o el tipo de variable a la cual se aplica la entrada. La sección correspondinte de DMCplus Build se muestra entre paréntesis.
Data Type: tipo de datos origiales.
Access: método I/O permitido a la entrada respecto a la aplicación de control.
Range: rango de valores válidos.
Default: valor por defecto suponiendo que no se especifica la entrada en la CCF.
Keywords: palabras clave disponibles para la entrada.
Note: información adicional.
Related Topics: lista de entradas relacionadas.

ACPRER

Dependent variable accumulated (integrated) prediction error. This entry is the integrated value of prediction errors (predicted minus actual) since the last prediction initialization.
Changes in this value indicate either a mismatch between the model predicted response and the actual process response, or that an unmeasured process disturbance has occurred.
Monitoring ACPRER is recommended over PREDER as time correlated controller disturbances (prediction errors) are better detected by observing the integrated value.
This value ultimately represents the current bias, since the last prediction reset, that must be added to the model predicted dependent value to match the response of the process.
When this value is trending upward, a disturbance (or model error) that is decreasing the actual dependent variable value is occurring. When this value is trending downward, a disturbance that increases the actual dependent variable value is occurring.
The controller updates ACPRER during each cycle. ACPRER gets reset to the current cycle's PREDER value whenever one of the following conditions occurs:
(a) the dependent variable predictions are initialized (PRDIND = 1).
(b) the absolute value of ACPRER becomes greater than 9000.0 (to avoid exceeding any numerical tolerances for the system).

In both cases, accumulation resumes from that point.

Applies to: All CVs (Dependent Section)
Data Type: Float
Access: Write Only
Range: No Restrictions
Default: 0
Keywords: (None) WRITE LOCAL
Related Topics: AVPRER, PREDER

AVPFIL

Average absolute prediction error filter factor.

Applies to: Controller Configuration variables (Configure Section)
Data Type: Float
Access: Read Only
Range: 0.0 to 1.0
Default: 0.965
Keywords: (None) CONSTANT
Note: For AspenTech use only.

AVPRER

Dependent variable filtered average prediction error. This value is the heavily-filtered average of the absolute value of the prediction error. Use it to determine, on average, how big errors are in the model. The controller updates AVPRER during each cycle. AVPRER is reset to 0.0 when the controller initializes the dependent variable predictions.

Applies to: All CVs (Dependent Section)
Data Type: Float
Access: Write Only
Range: No Restrictions
Default: 0
Keywords: (None) WRITE LOCAL
Related Topics: ACPRER, PREDER

AWSCOD

Manipulated variable anti-windup code:
0 (NONE) Can move output in either direction
1 (LOW) Can only move output in a positive direction
2 (HIGH) Can only move output in a negative direction

3 (BOTH) Cannot move output

In order to prevent PID controller windup, AWSCOD is read by the controller on each cycle. If it is not possible to provide the controller with meaningful anti-windup information, set AWSCOD to 0 in the CCF; then, warn operations and engineering that there is no anti-windup protection on manipulated variables.
As a work-around for cases where wind-up information is not available, you can consider making the regulatory loop output an explicitly controlled dependent variable to ensure limits are honored.

Applies to: MVs only (Independent Section)
Data Type: Integer
Access: Read Only
Range: 0 to 3
Default: 0 (Although not required, AspenTech recommends defining this entry)
Keywords: (None) READ LOCAL CONSTANT
Related Topics: IREVRS

BARDL

In DMCplus View, this value is used to set the lower display limit of bar graphs that show information about the current dependent variable.
In the Production Control Web viewer, this value is the dependent variable detail plot lower limit (when the auto-scale option is not in use - see BARDSC).

Applies to: All CVs (Dependent Section)
Data Type: Float
Access: Read Only
Range: No Restrictions
Default: 0 (Required Entry)
Keywords: LOCAL CONSTANT READ
Note: This entry is only used for display limit settings and has no affect on controller performance.
Related Topics: BARDSC, BARDU, BARIL, BARIU

BARDSC

This entry is used to select whether a dependent variable detail plot is scaled manually using the BARDL and BARDU values or auto scaled. This entry is used by the Web Server to generate plot images in detail pages.
Valid entries are:
0 MANUAL- Use BARDL and BARDU values as the minimum and maximum to scale the plot.
1 AUTO - (Default) Auto-scale the plot based on the range of plot data.

Applies to: All CVs (Dependent Section)
Data Type: Integer
Access: Read Only
Range: 0 to 1

Default: 1 (Required Entry)
Keywords: LOCAL READ CONSTANT
Related Topics: BARISC, BARDL, BARDU

BARDU

In DMCplus View, this value is used to set the upper display limit of bar graphs that show information about the current dependent variable.
In the Production Control Web viewer, this value is the dependent variable detail plot upper limit (when the auto-scale option is not in use - see BARDSC).

Applies to: All CVs (Dependent Section)
Data Type: Float
Access: Read Only
Range: No Restrictions
Default: 0 (Required Entry)
Keywords: LOCAL CONSTANT READ
Note: This entry is only used for display limit settings and has no affect on controller performance.
Related Topics: BARDSC, BARDL, BARIL, BARIU

BARIL

In DMCplus View, this value is used to set the lower display limit of bar graphs that show information about the current independent variable.
In the Production Control Web viewer, this value is the independent variable detail plot lower limit (when the auto-scale option is not in use - see BARISC).

Applies to: MVs and FFs (Independent Section)
Data Type: Float
Access: Read Only
Range: No Restrictions
Default: 0 (Required Entry)
Keywords: LOCAL CONSTANT READ
Note: This entry is only used for display limit settings and has no affect on controller performance.
Related Topics: BARISC, BARDL, BARDU, BARIU

BARISC

This entry is used to select whether an independent variable detail plot is scaled manually using the BARIL and BARIU values or auto scaled. This entry is used by the Web Server to generate plot images in detail pages. Valid entries are:
0 MANUAL- Use BARIL and BARIU values as the minimum and maximum to scale the plot.
1 AUTO - (Default) Auto-scale the plot based on the range of plot data.

Applies to: MVs and FFs (Independent Section)
Data Type: Integer
Access: Read Only
Range: 0 to 1
Default: 1 (Required Entry)
Keywords: LOCAL READ CONSTANT
Related Topics: BARDSC, BARIL, BARIU

BARIU

In DMCplus View, this value is used to set the upper display limit of bar graphs that show information about the current independent variable.
In the Production Control Web viewer, this value is the independent variable detail plot upper limit (when the auto-scale option is not in use - see BARISC).

Applies to: MVs and FFs (Independent Section)
Data Type: Float
Access: Read Only
Range: No Restrictions
Default: 0 (Required Entry)
Keywords: LOCAL CONSTANT READ
Note: This entry is only used for display limit settings and has no affect on controller performance.
Related Topics: BARISC, BARDL, BARDU, BARIL

BLDTEMP

Template file name used by DMCplus Build when creating the current CCF.

Applies to: Controller Configuration variables (Configure Section)
Data Type: Variable Length String
Access: Read Only
Range: No Restrictions
Default: Build automatically sets this value based on your selections.
Keywords: BUILD
Note: Used by DMCplus Build.

BLDVERS

DMCplus Build version used to create the current CCF.

Applies to: Controller Configuration variables (Configure Section)
Data Type: Float
Access: Read Only

Range: No Restrictions
Default: Build automatically sets this value based on your selections.
Keywords: BUILD
Note: Used by DMCplus Build.

CDEPAC

Composite dependent variable active constraint indicator. CDEPAC indicates which dependent variable constraints are active and which are violated in the Composite solution.
0 NOT CONSTRAINED. Composite does not plan to move the variable to either its upper or lower limit.
1 UPPER LIMIT. Composite plans to move the variable to its upper limit.
2 LOWER LIMIT. Composite plans to move the variable to its lower limit.
4 CVSTEP IN UP DIRECTION. Composite plans to move the variable up toward the upper limit, but that limit is more than CVSTEP away from the current value.
5 CVSTEP IN DOWN DIRECTION. Composite plans to move the variable down toward the lower limit, but that limit is more than CVSTEP away from the current value.
7 SETPOINT. Composite plans to move the variable to either the upper or lower limit, and both limits are the same value (within some tolerance).
9 RAMP. The value depends on the value of MXNIMB:
When MXNIMB > 0 then
CDEPAC = 1 when Composite is planning to move the ramp to URDPTG;
CDEPAC = 2 when Composite is planning to move the ramp to LRDPTG;
CDEPAC = 11 when Composite had to allow the ramp to become unbalanced above URDPTG in order to produce a solution;
CDEPAC = 12 when Composite had to allow the ramp to become unbalanced below LRDPTG in order to produce a solution.
When MXNIMB = 0 then
CDEPAC = 9 when the Composite is at or between LRDPTG and URDPTG;
CDEPAC = 11 when Composite had to allow the ramp to become unbalanced above URDPTG in order to produce a solution;
CDEPAC = 12 when Composite had to allow the ramp to become unbalanced below LRDPTG in order to produce a solution.
11 GAVE UP ON THE UPPER LIMIT. Composite had to allow the variable to move above the upper limit in order to produce a solution.
12 GAVE UP ON THE LOWER LIMIT. Composite had to allow the variable to move below the lower limit in order to produce a solution.
20 ACTIVE AT EXTERNAL TARGET. Composite is planning to move the variable to the external target value.
21 GAVE UP ABOVE EXTERNAL TARGET. Composite had to allow the variable to move above the external target, but below the upper limit, in order to produce a solution.
22 GAVE UP BELOW EXTERNAL TARGET. Composite had to allow the variable to move below the external target, but above the lower limit, in order to produce a solution.

Applies to: All CVs if Composite option enabled (Dependent Section)

Data Type: Integer
Access: Write Only
Range: No Restrictions
Default: 0
Keywords: (None) WRITE LOCAL
Related Topics: CLPDEP, CLPRNKL, CLPRNKU, CLPTRK, CVSTEP, ETCV, LRDPTG, CMANAC, MXNIMB, URDPTG

CLOMSG

This flag is part of the Optional Message Buffer (OMSG) facility. It is used to clear the message buffer of any previous messages before adding the messages for the next control cycle. This flag only affects the Optional Message Buffer (if you have selected this option). It has no effect on messages saved in the message history file. The flag is reset to zero after each control cycle.
0 Do not clear the optional message buffer, just add to it.
1 Clear the contents of the optional message buffer before adding current messages.

Applies to: Controller General variables (General Section)
Data Type: Integer
Access: Read/Write
Range: 0 to 1
Default: 0
Keywords: (None) RDWRT LOCAL
Related Topics: OMSGLN, OMSGSG, OMSGnnn, SBOMSG, SWHYOnnn, WHYOnnn

CLPCRI

Composite manipulated variable criterion (applies only to the Composite solution):
0 (COST) Minimum Cost
1 (MOVE) Minimum Movement
This entry determines the Composite objective for this manipulated variable. If CLPCRI is 0, Composite tries to minimize the actual cost of this variable. The variable will be driven up if the unit cost (CLPCST) is negative, or driven down if the unit cost is positive. If CLPCRI is set to 1, then minimizing movement in either direction is the objective for this MV. In this case, CLPCST is defined as the penalty for movement away from the current value and must be specified as a non-negative number.

Applies to: MVs only if Composite option enabled (Independent Section)
Data Type: Integer
Access: Read Only
Range: 0 to 1
Default: 0 (Required Entry)
Keywords: LOCAL READ CONSTANT
Related Topics: CLPCST, CLPMAN, CMANAC, LPCRIT

CLPCST

Composite cost for this manipulated variable (applies only to the Composite solution):
If CLPCRI = 0 (Economic criterion), CLPCST is the cost
If CLPCRI = 1 (Minimum movement criterion), ABS(CLPCST) is the movement penalty
This value represents the cost of increasing a manipulated variable by one unit.

Applies to: MVs only if Composite option enabled (Independent Section)
Data Type: Float
Access: Read Only
Range: -9998 to (No Maximum)
Default: 1 (Required Entry)
Keywords: LOCAL READ CONSTANT
Related Topics: CLPCRI, CLPMAN, CMANAC, CST

CLPDEP

Dependent variable Composite steady-state target. The DMCplus control move calculation is constrained to drive the variable to this value at the end of the controller time horizon (IPXCTH).

Applies to: All CVs if Composite option enabled (Dependent Section)
Data Type: Float
Access: Write Only
Range: No Restrictions
Default: 0
Keywords: (None) WRITE LOCAL
Related Topics: CDEPAC, CLPMAN, CLPRNKL, CLPRNKU, CLPTRK, IPXCTH

CLPENB

Composite enabling switch:
0 (NO) Disabled
1 (YES) Enabled

Applies to: Controller Configuration variables (Configure Section)
Data Type: Integer
Access: Read Only
Range: 0 to 1
Default: 0 (Required Entry)
Keywords: CONSTANT
Note: Only required if Composite steady-state optimizer is used for a DMCplus controller. This setting has no effect in SmartStep but serves to alert the user that the SmartStep tester CCF was taken from a DMCplus Composite application. The Composite information is preserved by SmartStep but never used.
Related Topics: CLPSHOW

CLPLIC

Minutes remaining until Composite license expiration. Set to 14400 when running controller is not part of a Composite suite. Set to 14400 (10 days) when Composite is running with a valid license and controller has joined the Composite suite. Modified downward by a running Composite when license is lost. Set to zero by a running Composite when no valid license has been obtained within the previous 10 days.

Applies to: Composite General variables (Composite Section)
Data Type: Integer
Access: Write Only
Range: No Restrictions
Default: 14400 (Required Entry)
Keywords: LOCAL AWRITE WRITE
Note: This variable is provided so that a Composite license expiration alarm can be configured on the DCS.
Related Topics: LICSTS

CLPMAN

Manipulated variable Composite steady-state target. The DMCplus control move calculation is constrained to drive the variable to this value at the end of the controller time horizon (IPXCTH).
If CLPSTA = PASSIVE, this value is for display only. If CLPSTA = ACTIVE, this value is used as the target for the move calculation.

Applies to: MVs only if Composite option enabled (Independent Section)
Data Type: Float
Access: Write Only
Range: No Restrictions
Default: 0
Keywords: (None) WRITE LOCAL
Related Topics: CLPCRI, CLPCST, CLPDEP, CLPSTA, CMANAC, IPXCTH

CLPNAM

Composite steady-state optimizer program name.

Applies to: Composite General variables (Composite Section)
Data Type: String*16
Access: Read Only
Range: No Restrictions
Default: (Required Entry)
Keywords: CONSTANT
Note: This entry is only used when Composite is enabled.
Related Topics: CLPENB, CLPREQ, CLPSTA, CLPTIME

CLPREQ

Request to participate in Composite steady-state solution:
0 (OFF) Do not participate in the Composite steady-state solution
1 (ON) Participate in the Composite steady-state solution

Applies to: Composite General variables (Composite Section)
Data Type: Integer
Access: Read/Write
Range: 0 to 1
Default: 0 (Required Entry)
Keywords: RDWRT LOCAL
Related Topics: CLPENB, CLPNAM, CLPSTA, CLPTIME

CLPRNKL

Composite rank for the lower limit of this dependent variable:
0 CV Composite ranking is not used. When this value is specified for all the CVs, it will generate the same behavior as the DMC 5.02 control engine. This option is all or none. All CV Composite ranks must be zero or none of the CV Composite ranks can be zero.
1 - 999 Valid CV Composite ranks. The lower the rank, the more important the ranking.
1000 Special BIAS ranking indicating a soft limit.
9999 CV not in the Composite solution.

Applies to: All CVs if Composite option enabled (Dependent Section)
Data Type: Integer
Access: Read Only
Range: 0 to 9999
Default: 10 (Required Entry)
Keywords: LOCAL READ CONSTANT
Note: If any CV Composite rank is non-zero, both CV Composite ranks for all dependents must be non-zero.
Related Topics: CDEPAC, CLPDEP, CLPRNKU, CLPTRK, CVRANKL

CLPRNKU

Composite rank for the upper limit of this dependent variable:
0 CV Composite ranking is not used. When this value is specified for all the CVs, it will generate the same behavior as the DMC 5.02 control engine. This option is all or none. All CV Composite ranks must be zero or none of the CV Composite ranks can be zero.
1 - 999 Valid CV Composite ranks. The lower the rank, the more important the ranking.
1000 Special BIAS ranking indicating a soft limit.
9999 CV not in the Composite solution.

Applies to: All CVs if Composite option enabled (Dependent Section)
Data Type: Integer
Access: Read Only
Range: 0 to 9999
Default: 10 (Required Entry)
Keywords: LOCAL READ CONSTANT
Note: If any CV Composite rank is non-zero, both CV Composite ranks for all dependents must be non-zero.
Related Topics: CDEPAC, CLPDEP, CLPRNKL, CLPTRK, CVRANKU

CLPSHOW

Include Composite information in the CCF:
0 Do not include Composite information in the CCF
1 Include Composite information in the CCF

Applies to: Controller Configuration variables (Configure Section)
Data Type: Integer
Access: Read Only
Range: 0 to 1
Default: Build automatically sets this value based on your selections.
Keywords: CONSTANT
Note: This setting has no effect in SmartStep but serves to alert the user that the SmartStep tester CCF was taken from a DMCplus Composite application. The Composite information is preserved by SmartStep but never used.
Related Topics: CLPENB

CLPSTA

Composite status supplied to the controller each cycle. Can be used to display the status of this controller with respect to the Composite steady-state optimizer:
-1 (IGNORE) Controllers ignore Composite
0 (PASSIVE) Solution provided; do not implement solution
1 (ACTIVE) Implement solution

Applies to: Composite General variables (Composite Section)
Data Type: Integer
Access: Write Only
Range: No Restrictions
Default: 0 (Required Entry)
Keywords: WRITE LOCAL
Related Topics: CLPENB, CLPNAM, CLPREQ, CLPTIME

CLPTIME

Time-out tolerance for Composite interaction in seconds.

Applies to: Composite General variables (Composite Section)
Data Type: Integer
Access: Read Only
Range: 1 to (No Maximum)
Default: 15 (Required Entry)
Keywords: CONSTANT LOCAL
Related Topics: CLPENB, CLPNAM, CLPREQ, CLPSTA

CLPTRK

This entry enables dependent variable tracking when the Composite status (CLPSTA) transitions from ON to OFF (sheds). It determines what the controller does if a dependent variable value (DEP) is outside its operating limits (UDEPTG/LDEPTG) when Composite sheds. It can be used to reduce the disturbance to the process when transitioning from the Composite steady-state solver to the individual controller steady-state solvers.
Dependent variable tracking has two forms: one for target ranges and one for setpoints:
0 (NONE) No tracking. The dependent variable limits are not altered.
1 (LIMIT) Track violated limit. If one of the limits is violated, the violated operating limit will be reset to the current dependent variable value.
2 (BOTH) Track both limits (setpoint tracking). If one of the limits is violated, both limits will be reset to the current dependent variable value.
In both options 1 and 2, a check is made to see if the current value is outside the engineering limits (UDPENG/LDPENG). If it is, the operating limit (or limits for option 2) will be reset to the violated engineering limit.
Tracking for MVs can also be done using the Composite tracking but only with the use of special CVs that have been added to mirror the MVs. For example, a CV with a unit gain and fast dynamics with respect to an MV could be added to the controller. Normally, the Composite CV rank (CLPRNKU/CLPRNKL) for this special CV would be set to 9999 to allow the Composite to ignore this CV during operation, while a normal CV rank (CVRANKU/CVRANKL) would be assigned to the CV at the controller level.

Applies to: All CVs if Composite option enabled (Dependent Section)
Data Type: Integer
Access: Read Only
Range: 0 to 2
Default: 0
Keywords: (None) LOCAL CONSTANT READ
Related Topics: CDEPAC, CLPDEP, CLPRNKL, CLPRNKU

CMANAC

Composite manipulated variable active constraint indicator. CMANAC indicates which manipulated variable constraint is active in the steady-state CLP solution.
0 NOT CONSTRAINED. Composite does not plan to move the variable to either its upper

or lower limit.
1 UPPER LIMIT. Composite plans to move the variable to its upper limit.
2 LOWER LIMIT. Composite plans to move the variable to its lower limit.
4 SSSTEP IN UP DIRECTION. Composite plans to move the variable up toward the upper limit, but that limit is more than SSSTEP away from the current value.
5 SSSTEP IN DOWN DIRECTION. Composite plans to move the variable down toward the lower limit, but that limit is more than SSSTEP away from the current value.
6 ZERO MOVE DUE TO ZERO COST OR MINIMUM MOVE CRITERION.
7 SETPOINT. Composite plans to move the variable to either the upper or lower limit, and both limits are the same value (within some tolerance). Since an independent variable cannot be moved outside the limits, then the variable is considered to be "clamped".
8 INACTIVE. The variable is not used for control.
20 ACTIVE AT EXTERNAL TARGET. Composite is planning to move the variable to the external target value.
21 GAVE UP ABOVE EXTERNAL TARGET. Composite had to allow the variable to move above the external target, but below the upper limit, in order to produce a solution.
22 GAVE UP BELOW EXTERNAL TARGET. Composite had to allow the variable to move below the external target, but above the lower limit, in order to produce a solution.

Applies to: MVs only if Composite option enabled (Independent Section)
Data Type: Integer
Access: Write Only
Range: No Restrictions
Default: 0
Keywords: (None) WRITE LOCAL
Related Topics: CLPCRI, CLPCST, CLPMAN, MANACT, SSMAN, SSSTEP

CMOV

Manipulated variable current move. If the controller is OFF, CMOV is the proposed move.
CMOV is calculated via move normalization as:
CMOV = (FMOV(1) - VINDSP) / IPSKIP

Applies to: MVs only (Independent Section)
Data Type: Float
Access: Write Only
Range: No Restrictions
Default: 0 (Required Entry)
Keywords: LOCAL WRITE
Related Topics: IPSKIP, NORMOV, VINDSP, XTDMOV

CNCDEV

The default logical device name that DMCplus Connect uses when accessing values through Cim-IO. This entry is only valid when using the Cim-IO Connect protocol.

For more information on what a Cim-IO logical device is, see the Cim-IO User's Guide. For information on how to select the default logical device in DMCplus Build, select Help on DMCplus Build.

Applies to: Controller Configuration variables (Configure Section)
Data Type: String*31
Access: Read Only
Range: No Restrictions
Default: Build automatically sets this value based on your selections.
Keywords: CONSTANT
Note: Used by DMCplus Build and Connect.
Related Topics: CNCFMT, CNCUNIT

CNCFMT

The default formatting code that DMCplus Connect uses when validating tag names through Cim-IO. This entry is a two character string:
First character: How to treat character case in tag names:
U Force all characters in tag name to UPPER CASE.
L Force all characters in tag name to lower case.
N No change. Leave all characters as entered in the tag name.
Second character: How to treat spaces in tag names:
C Compress all extra spaces in tag name.
T Trim leading and trailing spaces only.
N No change. Leave all spaces as entered in the tag name.
This entry is only valid when using the Cim-IO Connect protocol. A unique format code is maintained for each Cim-IO logical device name you specify in DMCplus Build. Selecting a particular Cim-IO logical device to be used with a tag name automatically causes Connect to use the format code for that logical device. Therefore, CNCFMT will always be set to the format code for the Cim-IO logical device set in the CNCDEV entry.

Applies to: Controller Configuration variables (Configure Section)
Data Type: String*2
Access: Read Only
Range: No Restrictions
Default: Build automatically sets this value based on your selections.
Keywords: CONSTANT
Note: Used by DMCplus Build and Connect.
Related Topics: CNCDEV, CNCUNIT

CNCHOST

The DMCplus Connect protocol in use for the current CCF. This value determines the available list of sources that can be used when specifying an entity in the entry editor of DMCplus Build. As of version 2.0 of DMCplus, the only supported value for this entry is CIMIO:
CIMIO Connect for Cim-IO

As of version 2.0 of DMCplus, Direct-Connect interfaces are no longer supported. As a result, the following values for CNCHOST are not allowed:
IPX [OBSOLETE] Direct-Connect for InfoPlus-X, InfoPlus.21 and SETCIM
SETCON [OBSOLETE] Direct-Connect for SETCON and InfoPlus
If you upgrade from a Direct-Connect interface to Cim-IO, you may be required to make syntax changes to tag names and sources.

Applies to: Controller Configuration variables (Configure Section)
Data Type: String*20
Access: Read Only
Range: No Restrictions
Default: Build automatically sets this value based on your selections.
Keywords: CONSTANT
Note: Used by DMCplus Build and Connect.

CNCUNIT

The default "unit number" to be used along with the default logical device name that DMCplus Connect uses when accessing values through Cim-IO. This entry is only valid when using the Cim-IO Connect protocol. For more information on what a Cim-IO unit number is, see the Cim-IO User's Guide. For information on how to select the default unit number in DMCplus Build, select Help on DMCplus Build.

Applies to: Controller Configuration variables (Configure Section)
Data Type: Integer
Access: Read Only
Range: Positive Integer values (including zero)
Default: Build automatically sets this value based on your selections.
Keywords: CONSTANT
Note: Used by DMCplus Build and Connect.
Related Topics: CNCDEV, CNCFMT

CNTDWN

Countdown timer reset. Written out by on every cycle to reset a watchdog timer. The timer permits the process control system to verify that the controller is running. The controller always writes a value equal to 2.5 times the controller interval, CTLINT (in seconds).
If the watchdog timer decrements once per minute on the process control system, the timer would expire if more than two consecutive one minute cycles were skipped. It is strongly recommended that you implement a watchdog timer on every controller application, tied to an operator alarm.

Applies to: Controller General variables (General Section)
Data Type: Float
Access: Write Only
Range: Positive Floating-point values (including zero)
Default: 0 (Required Entry)

Keywords: WRITE LOCAL
Related Topics: CTLINT

CRIDEP

Dependent variable critical switch:
0 (N) Not critical for DMCplus controller operation
1 (Y) Critical for DMCplus controller operation (and for Composite if Composite option is used)
2 (C) Critical for Composite participation (but not for controller operation)
Identifies critical dependent variables in the controller with respect to control operation and with respect to participation in a Composite suite. If for any reason a variable deemed critical for control (CRIDEP = 1) is not available to the controller and the controller is ON, it will turn OFF. Similarly, if a variable is critical for Composite and not available, then the Composite participation switch (CLPREQ) will be set to OFF.

Applies to: All CVs (Dependent Section)
Data Type: Integer
Access: Read Only
Range: 0 to 2
Default: 0
Keywords: (None) LOCAL CONSTANT READ
Related Topics: CRIIND, NGDDEP

CRIIND

Independent variable critical switch:
0 (N) Not critical for DMCplus controller operation
1 (Y) Critical for DMCplus controller operation (and Composite if Composite option is used)
2 (C) Critical for Composite participation (but not for controller operation)
Identifies critical independent variables in the controller with respect to control operation and with respect to participation in a Composite suite. If for any reason a variable deemed critical for control (CRIIND = 1) is not available to the controller and the controller is ON, it will turn OFF. Similarly, if a variable is critical for Composite and not available, then the Composite participation switch (CLPREQ) will be set to OFF.

Applies to: MVs and FFs (Independent Section)
Data Type: Integer
Access: Read Only
Range: 0 to 2
Default: 0
Keywords: (None) LOCAL CONSTANT READ
Related Topics: CRIDEP, NGDMAN

CST

Manipulated variable cost factor:

If LPCRIT = 0 (Economic criterion), CST is the cost

IF LPCRIT = 1 (Minimum movement criterion), ABS(CST) is the movement penalty

This value represents the cost of increasing a manipulated variable by one unit.

Applies to: MVs only (Independent Section)
Data Type: Float
Access: Read Only
Range: -9998 to (No Maximum)
Default: 1 (Required Entry)
Keywords: LOCAL READ CONSTANT
Related Topics: LPCRIT

CTLINT

This entry is a write-only value that DMCplus Build sets automatically based on the Model file. The controller uses the control interval to verify that it is running on the correct control period. Missed-cycle checking uses this value to check for missed cycles. It is calculated (in seconds) as follows:

CTLINT = (SSMINS / IPXNCI) * 60

where,

SSMINS = model time to steady state

IPXNCI = number of coefficients used in the model.

When scheduling your controller, this value is the interval that should be used to periodically issue a command for the controller to run one cycle.

Applies to: Controller Configuration variables (Configure Section)
Data Type: Integer
Access: Write Only
Range: Positive Integer values (including zero)
Default: Build automatically sets this value based on your selections.
Keywords: CONSTANT INIT
Related Topics: IPXNCI, MCTOL, SSMINS

CTOFF

Controller cycle time offset in seconds for internal scheduling (WTMODE=1). Sets the amount of delay to introduce at the beginning of each controller cycle, before the controller actually begins operation. When multiple controllers are running on the same computer system with the same control interval, this parameter can be used to balance the load by spacing out their execution.

By default, the control cycle begins at the top of the minute. Use CTOFF to force an offset to this behavior. For example setting CTOFF to 15 will force the controller to run at 15 seconds past the top of the minute.

Applies to: Controller General variables (General Section)
Data Type: Integer
Access: Read Only
Range: Positive Integer values (including zero)

Default: 0
Keywords: (None) CONSTANT LOCAL READ
Related Topics: WTMODE

CVINSB

Character string indicating to which subcontrollers this dependent variable is assigned. This entry is only valid if the controller incorporates subcontrollers. Dependent variables can be made to participate in multiple subcontrollers by specifying each subcontroller name, separated by the ampersand character, "&".
For example, "SUBUNITA&SUBUNITC".

Applies to: All CVs if Subcontrollers option enabled (Dependent Section)
Data Type: String*64
Access: Read Only
Range: No Restrictions
Default: Build automatically sets this value based on your selections.
Keywords: CONSTANT
Related Topics: MVINSB

CVLPQL

Solution type for the lower limit for this dependent variable:
0 LP - linear
1 QP - quadratic or least squares
The solution type determines how equally ranked constraints behave in the presence of infeasibilities. If the solution type is LP, then the weighted sum of the absolute values of the infeasibilities is minimized. If the solution type is QP, then the weighted sum of the squared infeasibilities is minimized. The weighting is also squared in the QP case. In both cases, the weighting is the inverse of the lower limit equal concern: ECELPL.

Applies to: All CVs (Dependent Section)
Data Type: Integer
Access: Read Only
Range: 0 to 1
Default: Build automatically sets this value based on your selections.
Keywords: LOCAL READ CONSTANT
Related Topics: CVLPQU, ECELPL

CVLPQU

Solution type for the upper limit for this dependent variable:
0 LP - linear
1 QP - quadratic or least squares
The solution type determines how equally ranked constraints behave in the presence of infeasibilities. If the solution type is LP, then the weighted sum of the absolute values of the infeasibilities is minimized. If the

solution type is QP, then the weighted sum of the squared infeasibilities is minimized. The weighting is also squared in the QP case. In both cases, the weighting is the inverse of the upper limit equal concern: ECELPU.

Applies to: All CVs (Dependent Section)
Data Type: Integer
Access: Read Only
Range: 0 to 1
Default: Build automatically sets this value based on your selections.
Keywords: LOCAL READ CONSTANT
Related Topics: CVLPQL, ECELPU

CVRANKL

Steady-state rank for the lower limit for this dependent variable:
0 CV ranking is not used in this controller. When this value is specified for all the CVs, it will generate the same behavior as the DMC 5.02 control engine. This option is all or none. All CV ranks must be zero or none of the CV ranks can be zero.
1 - 999 Valid CV ranks. The lower the rank, the more important the ranking.
1000 Special BIAS ranking indicating a soft limit.
9999 CV not in the steady-state solution. This value is equivalent to an ECELPL of 1,000,000

Applies to: All CVs (Dependent Section)
Data Type: Integer
Access: Read Only
Range: 0 to 9999
Default: 10
Keywords: (None) LOCAL READ CONSTANT
Note: If any CV rank is non zero, both CV ranks for all dependents must be non-zero.
Related Topics: CVRANKU, ECELPL

CVRANKU

Steady-state rank for the upper limit for this dependent variable:
0 CV ranking is not used in this controller. When this value is specified for all the CVs, it will generate the same behavior as the DMC 5.02 control engine. This option is all or none. All CV ranks must be zero or none of the CV ranks can be zero.
1 - 999 Valid CV ranks. The lower the rank, the more important the ranking.
1000 Special BIAS ranking indicating a soft limit.
9999 CV not in the steady-state solution. This value is equivalent to an ECELPU of 1,000,000

Applies to: All CVs (Dependent Section)
Data Type: Integer
Access: Read Only
Range: 0 to 9999

Default: 10
Keywords: (None) LOCAL READ CONSTANT
Note: If any CV rank is non zero, both CV ranks for all dependents must be non-zero.
Related Topics: CVRANKL, ECELPU

VSTEP

Maximum dependent variable steady-state target change allowed in a single control cycle:
0.0 (Default) No checking, use operator limit
> 0.0 Value in engineering units to limit steady-state target changes
Use CVSTEP to limit the size of a steady-state target change per control cycle for a non-ramp dependent variable.
For example, on an operator limit change (LDEPTG/UDEPTG), the controller will consider:
(a) the distance from DEP to the operator limit it is driving toward
(b) CVSTEP (if > 0.0)
and use the more restrictive of the two values to calculate the steady-state target (SSDEP) for the dependent variable. If CVSTEP is the more limiting, then the effect is that of limiting the size of the operator limit change in a single control cycle. Finally, as the dependent value DEP begins to approach the new limit (on subsequent control cycles), CVSTEP will no longer be limiting and SSDEP can be set at the operator limit.

Applies to: All CVs (Dependent Section)
Data Type: Float
Access: Read Only
Range: Positive Floating-point values (including zero)
Default: 0.0
Keywords: (None) READ LOCAL CONSTANT
Note: This entry does not apply to RAMP CVs.
Related Topics: LDEPTG, SSDEP, SSSTEP, UDEPTG

DEFSOLT

Default rank group solution type. When adding a new rank group to CV's or ET's, the value of this parameter will be used to define that rank group's solution type. Either LP or QP.

Applies to: Controller Configuration variables (Configure Section)
Data Type: Integer
Access: Read Only
Range: No Restrictions
Default: Build automatically sets this value based on your selections.
Keywords: BUILD

DENSFR

Model density fraction.

Applies to: Controller Configuration variables (Configure Section)
Data Type: Float
Access: Read Only
Range: 0.0 to 1.0
Default: 0.6
Keywords: (None) CONSTANT
Note: For AspenTech use only.

DEP

Dependent variable current process value.

Applies to: All CVs (Dependent Section)
Data Type: Float
Access: Read Only
Range: No Restrictions
Default: 0 (Required Entry)
Keywords: READ LOCAL
Related Topics: VIND

DEPA

Dependent variable current process value used in the internal calculations of the controller. This is the transformed value of DEP.

Applies to: All CVs (Dependent Section)
Data Type: Float
Access: Write Only
Range: No Restrictions
Default: 0
Keywords: (None) LOCAL WRITE
Related Topics: DEP

DEPACT

Dependent variable active constraint indicator. DEPACT indicates which dependent variable constraints are active and which are violated in the steady-state solution. Characters in square brackets ([ ]) are characters displayed on the View operator screens for the specified condition.
0 [ ] NOT CONSTRAINED. The controller does not plan to move the variable to either its upper or lower limit.
1 [U] UPPER LIMIT. The controller plans to move the variable to its upper limit.
2 [L] LOWER LIMIT. The controller plans to move the variable to its lower limit.
4 [^] CVSTEP IN UP DIRECTION. The controller plans to move the variable up toward the upper limit, but that limit is more than CVSTEP away from the current value.
5 [v] CVSTEP IN DOWN DIRECTION. The controller plans to move the variable down toward

the lower limit, but that limit is more than CVSTEP away from the current value.
7 [S] SETPOINT. The controller plans to move the variable to either the upper or lower limit, and both limits are the same value (within some tolerance).
9 [R] RAMP. The value depends on the value of MXNIMB:
When MXNIMB > 0 then
DEPACT = 1 when the controller is planning to move the ramp to URDPTG;
DEPACT = 2 when the controller is planning to move the ramp to LRDPTG;
DEPACT = 11 when the controller had to allow the ramp to become unbalanced above URDPTG in order to produce a steady-state solution;
DEPACT = 12 when the controller had to allow the ramp to become unbalanced below LRDPTG in order to produce a steady-state solution.
When MXNIMB = 0 then
DEPACT = 9 when the controller is at or between LRDPTG and URDPTG;
DEPACT = 11 when the controller had to allow the ramp to become unbalanced above URDPTG in order to produce a steady-state solution;
DEPACT = 12 when the controller had to allow the ramp to become unbalanced below LRDPTG in order to produce a steady-state solution.
11 [UU] GAVE UP ON THE EFFECTIVE UPPER LIMIT. The steady-state solution had to allow the variable to move above the upper limit in order to produce a solution. The violated limit is the more restrictive of the operator limit, engineering limit or the CVSTEP limit.
12 [LL] GAVE UP ON THE EFFECTIVE LOWER LIMIT. The steady-state solution had to allow the variable to move below the lower limit in order to produce a solution. The violated limit is the more restrictive of the operator limit, engineering limit or the CVSTEP limit.
20 [X] ACTIVE AT EXTERNAL TARGET. The controller is planning to move the variable to the external target value.
21 [XU] GAVE UP ABOVE EXTERNAL TARGET. The steady-state solution had to allow the variable to move above the external target, but below the upper limit, in order to produce a solution.
22 [XL] GAVE UP BELOW EXTERNAL TARGET. The steady-state solution had to allow the variable to move below the external target, but above the lower limit, in order to produce a solution.
Limit Highlighting in the Web Interface:
Depending on the value of DEPACT, the Web interface will highlight appropriate limits, ramp setpoint or steady-state targets to show active constraints.
SmartStep Only -- In test modes (TEST, TEST-NOPULSE) SmartStep highlights one constraint per test group. The SmartStep move calculation routine determines the most restrictive constraint (MV max test step, MV upper limit, MV lower limit, CV test upper limit, CV test lower limit, CV ramp SP limit, etc.) that limits the MV step size, and highlights only this constraint for the duration of the MV step. For example, if the step size is limited by the CV lower test limit, then that value will be highlighted until the step is completed, canceled, or superceded by a test group mode change. In control modes (CONTROL, REPOSITION, LAB) SmartStep uses the DMCplus engine to calculate steady-state targets and the highlighting reflects the constraints that are active for the target calculation.

Applies to: All CVs (Dependent Section)
Data Type: Integer
Access: Write Only
Range: No Restrictions

Default: 0 (Although not required, AspenTech recommends defining this entry)
Keywords: (None) WRITE LOCAL
Note: Extremely useful for operations display to illustrate to the operators and engineers against which constraints the controller is pushing.
Related Topics: CVSTEP, LRDPTG, MANACT, MXNIMB, URDPTG

DEPFLG

Dependent variable condition flag. Holds the most recent warning or error code detected for each dependent variable. DEPFLG is included for debugging and for systems where the full functionality of the message queues cannot be supported.
The values displayed by INDFLG and DEPFLG are the message numbers found in the message.dat file.

Applies to: All CVs (Dependent Section)
Data Type: Integer
Access: Write Only
Range: No Restrictions
Default: 0
Keywords: (None) LOCAL WRITE
Related Topics: INDFLG

DEPMLT

Dependent LP multiplier used by the DMC 5.02 engine.

Applies to: Controller Configuration variables (Configure Section)
Data Type: Float
Access: Read Only
Range: 10.0 to 1.0E8
Default: 1000.0
Keywords: (None) CONSTANT
Note: For AspenTech use only.

DEPSTA

Dependent variable DMCplus status:
-2 (ENG_OFF) Engineer has turned this variable off via SREDEP
-1 (BAD) Bad for Prediction and Control. Cannot use at all. Either the measurement status is bad, the value is outside a validity limit, or the operator has turned this variable off via SRVDEP.
0 (GOOD) Good for both Prediction and Control. Normal state.
1 (PRED_ONLY) Prediction Only. Good for Prediction, Bad for Control.
2 (USE_PRED) Use Predicted Value. Used for discrete signals between measurements.
3 (MAINT_PRED) Maintain prediction for intermittent variables, use neither the value nor the prediction for control.
DEPSTA is set by the controller validation routines and used by the controller to determine which variables

are included in the controller calculation for this cycle.

Applies to: All CVs (Dependent Section)
Data Type: Integer
Access: Write Only
Range: No Restrictions
Default: 0 (Although not required, AspenTech recommends defining this entry)
Keywords: (None) WRITE LOCAL
Note: Recommended that DEPSTA be displayed to operations.
Related Topics: INDSTA, SREDEP, SRVDEP

DEPW

Dependent variable process value, possibly calculated, written back to database.

Applies to: All CVs (Dependent Section)
Data Type: Float
Access: Write Only
Range: No Restrictions
Default: 0
Keywords: (None) LOCAL WRITE
Related Topics: DEP

DESCDEP

Dependent variable description. The purpose of this entry is to provide operators with a useful description (up to 40 characters) for Dependent variables in the web interface. The value is blank by default. It is recommended that the description be kept short to prevent wide columns when shown in a table in the web interface. The description appears in the tool tip text for the variable name (MDLDEP) in the web interface but it can also be added as its own column in the column sets.
One possible method for populating the descriptions is to define them using the READ keyword, pointing to the process value's description field in the DCS. CAUTION: It may pose unacceptable load on the I/O interface if you define this entry as a permanent READ value. ASCII values, in general, require longer times to resolve and fetch. One option is to allow the application to run one cycle (to acquire the descriptions), save the CCF using Manage, then change all the description entries to use the CONSTANT or LOCAL keyword and reload the controller.

Applies to: All CVs (Dependent Section)
Data Type: String*40
Access: Read Only
Range: No Restrictions
Default: (Required Entry)
Keywords: LOCAL READ CONSTANT
Related Topics: DESCIND, MDLDEP, MTGDEP

DESCIND

Independent variable description. The purpose of this entry is to provide operators with a useful description (up to 40 characters) for Independent variables in the web interface. The value is blank by default. It is recommended that the description be kept short to prevent wide columns when shown in a table in the web interface. The description appears in the tool tip text for the variable name (MDLIND) in the web interface but it can also be added as its own column in the column sets.
One possible method for populating the descriptions is to define them using the READ keyword, pointing to the process value's description field in the DCS. CAUTION: It may pose unacceptable load on the I/O interface if you define this entry as a permanent READ value. ASCII values, in general, require longer times to resolve and fetch. One option is to allow the application to run one cycle (to acquire the descriptions), save the CCF using Manage, then change all the description entries to use the CONSTANT or LOCAL keyword and reload the controller.

Applies to: MVs and FFs (Independent Section)
Data Type: String*40
Access: Read Only
Range: No Restrictions
Default: (Required Entry)
Keywords: LOCAL READ CONSTANT
Related Topics: DESCDEP, MDLIND, MTGIND

DMCFLG

General controller condition flag. Holds the most recent warning or error code detected for the DMCplus general variables.
DMCFLG is included for debugging and for systems where the full functionality of the message queues can not be supported.
Applies to: Controller General variables (General Section)
Data Type: Integer
Access: Write Only
Range: No Restrictions
Default: 0
Keywords: (None) WRITE LOCAL

DMCXIT

DMCplus controller orderly exit switch. Enacts an orderly shutdown of the controller program:
0 Run
1 Exit at end of cycle
2 Exit immediately
The value of this switch is acquired each cycle, and is re-set to zero by the DMCplus controller.
‘One Pass’ mode can be simulated by ensuring that DMCXIT is set to 1.

Applies to: Controller General variables (General Section)
Data Type: Integer
Access: Read/Write
Range: 0 to 2
Default: 0
Keywords: (None) RDWRT LOCAL

DSTSWC

A switch to allow the controller to ignore a one hour time shift at daylight saving time transitions. This switch is cleared and a message issued when the time shift is detected:
0 (NO) Do not ignore a one hour time shift at daylight saving time transitions.
1 (YES) Ignore a one hour time shift at daylight saving time transitions.

Applies to: Controller General variables (General Section)
Data Type: Integer
Access: Read/Write
Range: 0 to 1
Default: 0 (Although not required, AspenTech recommends defining this entry)
Keywords: (None) LOCAL RDWRT
Note: The time must be changed by exactly one hour. Do not compensate for small time offsets during this time.

ECECML

Dependent variable equal concern errors:
ECELPL Steady-state lower equal concern error (DEP < Low Limit)
ECELPU Steady-state upper equal concern error (DEP > High Limit)
ECECML Control calculation lower equal concern error (DEP < Low Limit)
ECECMM Control calculation middle equal concern error (Low Limit < DEP < High Limit)
ECECMU Control calculation upper equal concern error (DEP >High Limit)
Equal concern errors for the steady-state solution influence which constraints the steady-state optimizer will give up on first when it cannot find a feasible steady-state solution.
Equal concern errors for the control calculation determine how aggressively the dependent variables will be driven to their steady-state targets.
Equal concern errors are supplied to the controller each cycle.

Applies to: All CVs (Dependent Section)
Data Type: Float
Access: Read Only
Range: 1.0E-6 to 1.0E6
Default: 1 (Required Entry)
Keywords: LOCAL READ CONSTANT
Related Topics: TRANZL, TRANZU

ECECMM

See ECECML.

Applies to: All CVs (Dependent Section)
Data Type: Float
Access: Read Only
Range: 1.0E-6 to 1.0E6
Default: 1 (Required Entry)
Keywords: LOCAL READ CONSTANT
Related Topics: ECECML

ECECMU

See ECECML.

Applies to: All CVs (Dependent Section)
Data Type: Float
Access: Read Only
Range: 1.0E-6 to 1.0E6
Default: 1 (Required Entry)
Keywords: LOCAL READ CONSTANT
Related Topics: ECECML

ECELPL

See ECECML.

Applies to: All CVs (Dependent Section)
Data Type: Float
Access: Read Only
Range: 1.0E-6 to 1.0E6
Default: 1 (Required Entry)
Keywords: LOCAL READ CONSTANT
Related Topics: ECECML

ECELPU

See ECECML.

Applies to: All CVs (Dependent Section)
Data Type: Float
Access: Read Only
Range: 1.0E-6 to 1.0E6

Default: 1 (Required Entry)
Keywords: LOCAL READ CONSTANT
Related Topics: ECECML

ENGDEP

Dependent variable engineering units. This value is obtained from the model file and is made available for display purposes. It can only be changed in the model file.

Applies to: All CVs (Dependent Section)
Data Type: String*12
Access: Read Only
Range: No Restrictions
Default: (Required Entry)
Keywords: CONSTANT
Related Topics: ENGIND

ENGIND

Independent variable engineering units. This value is obtained from the model file and is made available for display purposes. It can only be changed in the model file.

Applies to: MVs and FFs (Independent Section)
Data Type: String*12
Access: Read Only
Range: No Restrictions
Default: (Required Entry)
Keywords: CONSTANT
Related Topics: ENGDEP

EPSCND

Used as a check on the condition of the dynamic control matrix.

Applies to: Controller Configuration variables (Configure Section)
Data Type: Float
Access: Read Only
Range: 0.0 to 0.01
Default: 0.001
Keywords: (None) CONSTANT
Note: For AspenTech use only.

EPSCST

LP matrix cost tolerance. This tolerance is used by the LP to differentiate a significant change to the LP

objective function when choosing a basis variable. If the reduced cost changes by less than this value, then the change is considered insignificant.

Applies to: Controller Configuration variables (Configure Section)
Data Type: Float
Access: Read Only
Range: 0.0 to 0.001
Default: 1.00E-08
Keywords: (None) CONSTANT
Note: For AspenTech use only.

EPSDV0

Divide by zero tolerance. This tolerance is used by the LP to ensure that division by zero does not occur during the calculation of the variable that must leave the basis.

Applies to: Controller Configuration variables (Configure Section)
Data Type: Float
Access: Read Only
Range: 0.0 to 0.001
Default: 1.00E-08
Keywords: (None) CONSTANT
Note: For AspenTech use only.

EPSFEA

Steady-state solution feasibility tolerance. The LP uses this value to check that the LP constraints are feasible. The linear constraints are considered feasible if the difference between the calculated constraint and the actual constraint is less than this value.

Applies to: Controller Configuration variables (Configure Section)
Data Type: Float
Access: Read Only
Range: 0.0 to 0.01
Default: 1.00E-05
Keywords: (None) CONSTANT
Note: For AspenTech use only.

EPSINV

Matrix inversion tolerance. This value has a role similar to EPSDV0. It is used to check for zero pivoting and divide by zero in the dynamic controller calculations.

Applies to: Controller Configuration variables (Configure Section)
Data Type: Float

Access: Read Only
Range: 0.0 to 0.001
Default: 1.00E-15
Keywords: (None) CONSTANT
Note: For AspenTech use only.

EPSMVPMN

The minimum move penalty is used as a tuning factor to improve the numerical performance of the steadystate QP. It must be set to a value less than the maximum move penalty (EPSMVPMX). It should be increased very carefully since large values may suppress movement in the MVs at the expense of constraint violations. Decreasing the value should also be done very carefully since this may cause numerical problems.

Applies to: Controller Configuration variables (Configure Section)
Data Type: Float
Access: Read Only
Range: 1.0E-8 to 1.0E8
Default: .0001
Keywords: (None) CONSTANT
Note: For AspenTech use only.
Related Topics: EPSMVPMX

EPSMVPMX

Maximum Move Penalty. This entry is used to select and/or tune the steady-state QP algorithm.
To enable the original DMCplus 2.x QP engine, set this value less than or equal to 1.
To enable the interior point QP engine (recommended) set this value to 2. This is now the default value (as of DMCplus 6.0).
A value of 3 will use the interior point QP algorithm and also generates a QP diagnostic file every cycle. This value is not recommended as it can quickly fill up the disk.
For the original QP engine (EPSMVPMX <= 1) this parameter is used as the maximum move penalty to improve numerical performance. It must be set to a value greater than the minimum move penalty (EPSMVPMN). The maximum value allowed for the original QP engine is 1.0.

Applies to: Controller Configuration variables (Configure Section)
Data Type: Float
Access: Read Only
Range: 1.0E-8 to 1.0E8
Default: 2
Keywords: (None) CONSTANT
Note: For AspenTech use only.
Related Topics: EPSMVPMN

EPSRES

LP solution resolution tolerance. This value is used in the LP as a check on solution accuracy, and for determining the variable that must leave the basis.

Applies to: Controller Configuration variables (Configure Section)
Data Type: Float
Access: Read Only
Range: 0.0 to 0.00001
Default: 1.00E-08
Keywords: (None) CONSTANT
Note: For AspenTech use only.

EPSSPR

Matrix sparseness tolerance. This entry is used to evaluate non-zero values. If the absolute value of a double precision floating point number is larger than this tolerance, then the value is considered significant. If not, then the value is considered to be zero.

Applies to: Controller Configuration variables (Configure Section)
Data Type: Float
Access: Read Only
Range: 0.0 to 0.001
Default: 1.00E-15
Keywords: (None) CONSTANT
Note: For AspenTech use only.

ETCAGE

ETCAGE is calculated in seconds as (current time - ET update time), where ET update time is the time when the external target was last updated. The ET update time can be determined from the combined values of ETCSEC and ETCDAY. If ETCAGE indicates that the target is too old (compared to ETSTT), the External Target status (ETCSTA) for this variable will be set to stale.

Applies to: CVs with External Targets (Dependent Section)
Data Type: Float
Access: Write Only
Range: No Restrictions
Default: 0 (Required Entry)
Keywords: LOCAL WRITE
Related Topics: ETSTT, ETCSTA, ETCAGE, ETCSEC, ETCDAY

ETCDAY

External Target time in days for this dependent variable in DMCplus internal time format (see LSTDAY). The External Target solution time is validated using the combined values of ETCSEC and ETCDAY. These values are combined and the age of the ET (ETCAGE) is calculated. If ETCAGE indicates that the target is

too old (compared to ETSTT), the External Target status (ETCSTA) for this variable will be set to stale.

Applies to: CVs with External Targets (Dependent Section)
Data Type: Integer
Access: Read Only
Range: No Restrictions
Default: 0 (Required Entry)
Keywords: READ LOCAL
Related Topics: ETCSEC, ETCAGE, ETCSTA, ETSTT, LSTDAY, LSTSEC

ETCECEL

The dependent variable lower external target equal concern error is used to weight the amount of violation for equally ranked external targets. If the solution type ETCLPQL is LP then the weighted sum of the absolute value of the violations is minimized. If the solution type is QP, then the weighted sum of the squared violations is minimized.

Applies to: CVs with External Targets (Dependent Section)
Data Type: Float
Access: Read Only
Range: 1.0E-6 to 1.0E6
Default: 1 (Required Entry)
Keywords: LOCAL READ CONSTANT
Related Topics: ETCECEU, ETCLPQL, ETCRL

ETCECEU

The dependent variable upper external target equal concern error is used to weight the amount of violation for equally ranked external targets. If the solution type ETCLPQU is LP then the weighted sum of the absolute value of the violations is minimized. If the solution type is QP, then the weighted sum of the squared violations is minimized.

Applies to: CVs with External Targets (Dependent Section)
Data Type: Float
Access: Read Only
Range: 1.0E-6 to 1.0E6
Default: 1 (Required Entry)
Keywords: LOCAL READ CONSTANT
Related Topics: ETCECEL, ETCLPQU, ETCRU

ETCLPQL

Solution type for the lower external target for this dependent variable:
0 LP - linear
1 QP - quadratic or least squares

The solution type determines how equally ranked constraints behave in the presence of infeasibilities. If the solution type is LP, then the weighted sum of the absolute values of the infeasibilities is minimized. If the solution type is QP, then the weighted sum of the squared infeasibilities is minimized. The weighting is also squared in the QP case. In both cases, the weighting is the inverse of the lower external target equal concern: ETCECEL.

Applies to: CVs with External Targets (Dependent Section)
Data Type: Integer
Access: Read Only
Range: 0 to 1
Default: Build automatically sets this value based on your selections.
Keywords: LOCAL READ CONSTANT
Related Topics: ETCLPQU

ETCLPQU

Solution type for the upper external target for this dependent variable:
0 LP - linear
1 QP - quadratic or least squares
The solution type determines how equally ranked constraints behave in the presence of infeasibilities. If the solution type is LP, then the weighted sum of the absolute values of the infeasibilities is minimized. If the solution type is QP, then the weighted sum of the squared infeasibilities is minimized. The weighting is also squared in the QP case. In both cases, the weighting is the inverse of the upper external target equal concern: ETCECEU.

Applies to: CVs with External Targets (Dependent Section)
Data Type: Integer
Access: Read Only
Range: 0 to 1
Default: Build automatically sets this value based on your selections.
Keywords: LOCAL READ CONSTANT
Related Topics: ETCLPQL

ETCNEW

The ETCNEW switch signals the controller that a new external target value has been posted. If the switch is set to 1, the controller sets ETCDAY and ETCSEC to the current time, resets ETCAGE to 0, and resets ETCNEW to 0 after execution.
0 A new external target is not yet available.
1 A new external target has been posted.

Applies to: CVs with External Targets (Dependent Section)
Data Type: Integer
Access: Read/Write
Range: 0 to 1

Default: 0 (Required Entry)
Keywords: RDWRT LOCAL
Related Topics: ETCDAY, ETCSEC, ETCAGE, ETMNEW

ETCRL

External Target rank for the lower limit for this dependent variable. This entry is only used when there is an external target for this variable.
1 - 999 Valid CV External Target ranks. The lower the rank, the more important the ranking.
1000 Special BIAS ranking indicating a soft limit.
9999 External Target disabled for this CV.
As of DMCplus version 4.0, the ET and CV rank groups are no longer considered distinct. In addition, valid values for external target ranks now include both 1000 and 9999. Rank 1000 constraints are considered in the economic optimization only (not in the feasibility calculations) and rank 9999 constraints are disregarded in the steady-state solver. In order to preserve old controller behavior, the ET rank groups need to have higher numbers than the CV rank groups. If you are upgrading a controller with external targets enabled, you must open your CCF in DMCplus Build and manually set the ranks to values that reflect your optimization strategy. Failure to do so could result in unexpected controller behavior.

Applies to: CVs with External Targets (Dependent Section)
Data Type: Integer
Access: Read Only
Range: 1 to 9999
Default: 0 (Required Entry)
Keywords: LOCAL CONSTANT READ
Related Topics: CVRANKL, ETCRU, ETMRL, ETMRU

ETCRNG

ETCRNG specifies a range for the external target. The upper limit for the external target is set to ETCV+ETCRNG/2. The lower limit for the external target is set to ETCV-ETCRNG/2. Any value within these ranges will be considered a feasible value by the steady-state solver.

Applies to: CVs with External Targets (Dependent Section)
Data Type: Float
Access: Read Only
Range: No Restrictions
Default: 0 (Required Entry)
Keywords: LOCAL READ CONSTANT
Related Topics: ETMRNG, ETCV

ETCRU

External Target rank for the upper limit for this dependent variable. This entry is only used when there is an external target for this variable.

1 - 999 Valid CV External Target ranks. The lower the rank, the more important the ranking.
1000 Special BIAS ranking indicating a soft limit.
9999 External Target disabled for this CV.
As of DMCplus version 4.0, the ET and CV rank groups are no longer considered distinct. In addition, valid values for external target ranks now include both 1000 and 9999. Rank 1000 constraints are considered in the economic optimization only (not in the feasibility calculations) and rank 9999 constraints are disregarded in the steady-state solver. In order to preserve old controller behavior, the ET rank groups need to have higher numbers than the CV rank groups. If you are upgrading a controller with external targets enabled, you must open your CCF in DMCplus Build and manually set the ranks to values that reflect your optimization strategy. Failure to do so could result in unexpected controller behavior.

Applies to: CVs with External Targets (Dependent Section)
Data Type: Integer
Access: Read Only
Range: 1 to 9999
Default: 0 (Required Entry)
Keywords: LOCAL CONSTANT READ
Related Topics: CVRANKU, ETCRL, ETMRL, ETMRU

ETCSEC

External Target time in seconds for this dependent variable in DMCplus internal time format (see LSTSEC). The External Target solution time is validated using the combined values of ETCSEC and ETCDAY. If this combined value indicates that the target is too old (compared to ETSTT), the External Target status (ETCSTA) for this variable will be set to stale.

Applies to: CVs with External Targets (Dependent Section)
Data Type: Integer
Access: Read Only
Range: No Restrictions
Default: 0 (Required Entry)
Keywords: READ LOCAL
Related Topics: ETCDAY, ETCSTA, ETSTT, LSTDAY, LSTSEC

ETCSRV

External Target dependent variable operations service switch:
0 (OFF) Disable External Target for this dependent variable
1 (ON) Enable External Target for this dependent variable

Applies to: CVs with External Targets (Dependent Section)
Data Type: Integer
Access: Read Only
Range: 0 to 1
Default: 0 (Required Entry)

Keywords: READ LOCAL CONSTANT
Related Topics: ETCSWC

ETCSTA

Status of this dependent variable to be supplied to the External Targeting agent. Colors in square brackets ([ ]) indicate the color displayed on the View operator screens for the specified condition:
-1 (BAD) Bad status [red]
0 (GOOD) Variable is in service and can accept an external target [green]
1 (STALE) Last update time for this external target is too old (defined by comparing ETCDAY and ETCSEC with ETSTT) [yellow]
2 (READY) Accepting External Target but is not implementing the current value of ETCV [blue]
When ETENB=1 (RTO Mode) the external target facility provides full RT-OPT support including checks for the ETCSTA=2 condition that indicates that the ET is not being used currently due to staleness but a "new" ETCV value will be used when received. This state is a "Ready" state for the ET. The facility also provides for accurate prediction mode solution and shedding of stale ETs only when one of the ET switches (ETREQ,ETCSRV,ETCSWC) has been turned off.
Note to RT-OPT users: RT-OPT will only need to look at ONSTS for the controller and ETCSTA for the optimizer target to know if a target is on control and on optimization.
When ETENB=2 (IRV Mode) the external target facility operates in a simplified manner designed for applications where only IRVs will be implemented. ETSTT, ETCDAY, ETCSEC are all ignored. ETREQ is locked ON and no staleness checking is done.
Also, the ET messaging is suppressed except for ETCV validation messages. If an ETCSWC is inadvertently set to 1, it is adjusted to 2 and messaged. The only possible statuses are BAD (-1) and GOOD (0).

Applies to: CVs with External Targets (Dependent Section)
Data Type: Integer
Access: Write Only
Range: No Restrictions
Default: 0 (Required Entry)
Keywords: WRITE LOCAL
Related Topics: ETCDAY, ETCSEC, ETCV, ETENB, ETSTT, ETREQ

ETCSWC

External Target dependent variable switch. Allows the engineer or a transform to:
0 (OFF) Do not supply an external target for this variable
1 (RTO) Use as an external target (e. g. RTO target) with staleness checking (defined by comparing ETCDAY and ETCSEC with ETSTT)
2 (IRV) Use as an IRV (no staleness checking)

Applies to: CVs with External Targets (Dependent Section)
Data Type: Integer
Access: Read Only

Range: 0 to 2
Default: 0 (Required Entry)
Keywords: LOCAL READ CONSTANT
Related Topics: ETCDAY, ETCSEC, ETCSRV, ETCSTA, ETSTT

ETCTRK

If the ET Track switch is ON and ETSTS is transitioning from OFF to ON, (or the variable's ETCSRV is transitioning from OFF to ON) a tracked stale ETCV will be set to SSDEP and a tracked stale ETMV will be set to SSMAN.
IRV's will always track if this switch is set, but RTO Timer ET's will only track if they are stale.

Applies to: CVs with External Targets (Dependent Section)
Data Type: Integer
Access: Read Only
Range: 0 to 1
Default: 0 (Required Entry)
Keywords: LOCAL READ CONSTANT
Related Topics: ETCV, SSDEP, SSMAN, ETMV, ETSTS, ETCSRV

ETCV

External Target for this dependent variable. It is only used when External Targeting is enabled and active and this CV is able to accept External Targets.

Applies to: CVs with External Targets (Dependent Section)
Data Type: Float
Access: Read/Write
Range: No Restrictions
Default: 0 (Required Entry)
Keywords: RDWRT READ LOCAL CONSTANT
Related Topics: ETCDAY, ETCSEC, ETCSRV, ETCSWC, ETMV

ETENB

Master External Target interaction enabling switch:
0 (OFF) External Target facility is Disabled.
1 (RTO) Enabled for full RT-OPT support.
2 (IRV) Enabled for IRV type External Targets only.
If enabled, then the individual variable parameters govern their interaction with the source of External Targets. If disabled, all ET parameters are ignored.
When ETENB=1 (RTO Mode) the external target facility provides full RT-OPT support including checks for the ETxSTA=2 (where x can be M or C for MV or CV) condition that indicates that the ET is not being used currently due to staleness but a "new" ETxV value will be used when received. This state is a "Ready" state for the ET. The facility also provides for accurate prediction mode solution and shedding of stale ETs only

when one of the ET switches (ETREQ,ETxSRV,ETxSWC) has been turned off.
Note to RT-OPT users: RT-OPT will only need to look at ONSTS for the controller and ETxSTA for the optimizer target to know if a target is on control and on optimization (where "x" will either be M or C for Manipulated or Controlled variables).
When ETENB=2 (IRV Mode) the external target facility operates in a simplified manner designed for applications where only IRVs will be implemented. ETSTT, ETMCST, ETMCRT, ETxDAY, ETxSEC are all ignored. ETREQ is locked ON, no staleness checking is done and no swapping of steady-state costs is performed. Also, the ET messaging is suppressed except for ETxV validation messages. If an ETxSWC is inadvertently set to 1, it is adjusted to 2 and messaged. The only possible statuses are BAD (-1) and GOOD (0).

Applies to: Controller Configuration variables (Configure Section)
Data Type: Integer
Access: Read Only
Range: 0 to 2
Default: 0 (Required Entry)
Keywords: CONSTANT
Note: This setting has no effect in SmartStep but serves to alert the user that the SmartStep tester CCF was taken from a DMCplus application that uses External Targets. The External Target information is preserved by SmartStep but never used.
Related Topics: ETSHOW

ETMAGE

ETMAGE is calculated in seconds as (current time - ET update time), where ET update time is the time when the external target was last updated. The ET update time can be determined from the combined values of ETMSEC and ETMDAY. If ETMAGE indicates that the target is too old (compared to ETSTT), the External Target status (ETMSTA) for this variable will be set to stale.

Applies to: MVs with External Targets (Independent Section)
Data Type: Float
Access: Write Only
Range: No Restrictions
Default: 0 (Required Entry)
Keywords: LOCAL WRITE
Related Topics: ETSTT, ETMSTA, ETMAGE, ETMSEC, ETMDAY

ETMCLCRT

Manipulated variable steady-state cost criterion for use when an external target is being used for this variable and the Composite is also being used:
If ETMCLCRT = 0 (Economic criterion) ETMCLCST is the cost,
If ETMCLCRT = 1 (Minimum movement criterion) ABS(ETMCLCST) is the movement penalty.
This value represents the cost of increasing a manipulated variable by one unit.

Applies to: MVs with External Targets (Independent Section)
Data Type: Integer
Access: Read Only
Range: 0 to 1
Default: 0 (Required Entry)
Keywords: LOCAL READ
Related Topics: CST, LPCRIT, ETMCRT, ETMCLCST

ETMCLCST

Manipulated variable steady-state cost factor for use when an external target is being used for this variable and the Composite is also being used:
If ETMCLCRT = 0 (Economic criterion) ETMCLCST is the cost,
If ETMCLCRT = 1 (Minimum movement criterion) ABS(ETMCLCST) is the movement penalty.
This value represents the cost of increasing a manipulated variable by one unit.

Applies to: MVs with External Targets (Independent Section)
Data Type: Float
Access: Read Only
Range: -9998 to (No Maximum)
Default: 1 (Required Entry)
Keywords: LOCAL READ
Related Topics: CST, LPCRIT, ETMCST, ETMCLCRT

ETMCRT

Manipulated variable steady-state cost criterion for use when an external target is being used for this variable:
0 (COST) Minimum Cost
1 (MOVE) Minimum Movement

Applies to: MVs with External Targets (Independent Section)
Data Type: Integer
Access: Read Only
Range: 0 to 1
Default: 0 (Required Entry)
Keywords: LOCAL READ
Related Topics: ETMCST, LPCRIT, CST

ETMCST

Manipulated variable steady-state cost factor for use when an external target is being used for this variable:
If ETMCRT = 0 (Economic criterion) ETMCST is the cost,

If ETMCRT = 1 (Minimum movement criterion) ABS(ETMCST) is the movement penalty.
This value represents the cost of increasing a manipulated variable by one unit.

Applies to: MVs with External Targets (Independent Section)
Data Type: Float
Access: Read Only
Range: -9998 to (No Maximum)
Default: 1 (Required Entry)
Keywords: LOCAL READ
Related Topics: CST, ETMCRT

ETMDAY

External Target time in days for this manipulated variable in DMCplus internal time format (see LSTDAY). The External Target solution time is validated using the combined values of ETMSEC and ETMDAY. If this combined value indicates that the target is too old (compared to ETSTT), the External Target status (ETMSTA) for this variable will be set to stale.

Applies to: MVs with External Targets (Independent Section)
Data Type: Integer
Access: Read Only
Range: No Restrictions
Default: 0 (Required Entry)
Keywords: READ LOCAL
Related Topics: ETMSEC, ETMSTA, ETSTT, LSTDAY, LSTSEC

ETMECEL

The independent variable lower external target equal concern error is used to weight the amount of violation for equally ranked external targets. If the solution type ETMLPQL is LP then the weighted sum of the absolute value of the violations is minimized. If the solution type is QP, then the weighted sum of the squared violations is minimized.

Applies to: MVs with External Targets (Independent Section)
Data Type: Float
Access: Read Only
Range: 1.0E-6 to 1.0E6
Default: 1 (Required Entry)
Keywords: LOCAL READ CONSTANT
Related Topics: ETMECEU, ETMLPQL, ETMRL

ETMECEU

The independent variable upper external target equal concern error is used to weight the amount of violation for equally ranked external targets. If the solution type ETMLPQU is LP then the weighted sum of the

absolute value of the violations is minimized. If the solution type is QP, then the weighted sum of the squared violations is minimized.

Applies to: MVs with External Targets (Independent Section)
Data Type: Float
Access: Read Only
Range: 1.0E-6 to 1.0E6
Default: 1 (Required Entry)
Keywords: LOCAL READ CONSTANT
Related Topics: ETMECEL, ETMLPQU, ETMRU

ETMLPQL

Solution type for the lower external target for this independent variable:
0 LP - linear
1 QP - quadratic or least squares
The solution type determines how equally ranked constraints behave in the presence of infeasibilities. If the solution type is LP, then the weighted sum of the absolute values of the infeasibilities is minimized. If the solution type is QP, then the weighted sum of the squared infeasibilities is minimized. The weighting is also squared in the QP case. In both cases, the weighting is the inverse of the lower external target equal concern: ETMECEL.

Applies to: MVs with External Targets (Independent Section)
Data Type: Integer
Access: Read Only
Range: 0 to 1
Default: Build automatically sets this value based on your selections.
Keywords: LOCAL READ CONSTANT
Related Topics: ETMLPQU, ETMRL

ETMLPQU

Solution type for the upper external target for this independent variable:
0 LP - linear
1 QP - quadratic or least squares
The solution type determines how equally ranked constraints behave in the presence of infeasibilities. If the solution type is LP, then the weighted sum of the absolute values of the infeasibilities is minimized. If the solution type is QP, then the weighted sum of the squared infeasibilities is minimized. The weighting is also squared in the QP case. In both cases, the weighting is the inverse of the upper external target equal concern: ETMECEU.

Applies to: MVs with External Targets (Independent Section)
Data Type: Integer
Access: Read Only
Range: 0 to 1

Default: Build automatically sets this value based on your selections.
Keywords: LOCAL READ CONSTANT
Related Topics: ETMLPQL

ETMNEW

The ETMNEW switch signals the controller that a new external target value has been posted. If the switch is set to 1, the controller sets ETMDAY and ETMSEC to the current time, resets ETMAGE to 0, and resets ETMNEW to 0 after execution.
0 A new external target is not yet available.
1 A new external target has been posted.

Applies to: MVs with External Targets (Independent Section)
Data Type: Integer
Access: Read/Write
Range: 0 to 1
Default: 0 (Required Entry)
Keywords: RDWRT LOCAL
Related Topics: ETMDAY, ETMSEC, ETMAGE, ETCNEW

ETMRL

External Target rank for the lower limit for this manipulated variable. This entry is only used when there is an external target for this variable.
1 - 999 Valid MV External Target ranks. The lower the rank, the more important the ranking.
1000 Special BIAS ranking indicating a soft limit.
9999 External Target disabled for this MV.
As of DMCplus version 4.0, the ET and CV rank groups are no longer considered distinct. In addition, valid values for external target ranks now include both 1000 and 9999. Rank 1000 constraints are considered in the economic optimization only (not in the feasibility calculations) and rank 9999 constraints are disregarded in the steady-state solver. In order to preserve old controller behavior, the ET rank groups need to have higher numbers than the CV rank groups. If you are upgrading a controller with external targets enabled, you must open your CCF in DMCplus Build and manually set the ranks to values that reflect your optimization strategy. Failure to do so could result in unexpected controller behavior.

Applies to: MVs with External Targets (Independent Section)
Data Type: Integer
Access: Read Only
Range: 1 to 9999
Default: 0 (Required Entry)
Keywords: LOCAL READ CONSTANT
Related Topics: ETCRL, ETCRU, ETMRU

ETMRNG

ETMRNG specifies a range for the external target. The upper limit for the external target is set to ETMV+ETMRNG/2. The lower limit for the external target is set to ETMV-ETMRNG/2. Any value within these ranges will be considered a feasible value by the steady-state solver.

Applies to: MVs with External Targets (Independent Section)
Data Type: Float
Access: Read Only
Range: No Restrictions
Default: 0 (Required Entry)
Keywords: LOCAL READ CONSTANT
Related Topics: ETCRNG, ETMV

ETMRU

External Target rank for the upper limit for this manipulated variable. This entry is only used when there is an external target for this variable.
1 - 999 Valid MV External Target ranks. The lower the rank, the more important the ranking.
1000 Special BIAS ranking indicating a soft limit.
9999 External Target disabled for this MV.
As of DMCplus version 4.0, the ET and CV rank groups are no longer considered distinct. In addition, valid values for external target ranks now include both 1000 and 9999. Rank 1000 constraints are considered in the economic optimization only (not in the feasibility calculations) and rank 9999 constraints are disregarded in the steady-state solver. In order to preserve old controller behavior, the ET rank groups need to have higher numbers than the CV rank groups. If you are upgrading a controller with external targets enabled, you must open your CCF in DMCplus Build and manually set the ranks to values that reflect your optimization strategy. Failure to do so could result in unexpected controller behavior.

Applies to: MVs with External Targets (Independent Section)
Data Type: Integer
Access: Read Only
Range: 1 to 9999
Default: 0 (Required Entry)
Keywords: LOCAL READ CONSTANT
Related Topics: ETCRL, ETCRU, ETMRL

ETMSEC

External Target time in seconds for this manipulated variable in DMCplus internal time format (see LSTSEC). The External Target solution time is validated using the combined values of ETMSEC and ETMDAY. If this combined value indicates that the target is too old (compared to ETSTT), the External Target status for this variable will be set to stale.

Applies to: MVs with External Targets (Independent Section)
Data Type: Integer
Access: Read Only

Range: No Restrictions
Default: 0 (Required Entry)
Keywords: READ LOCAL
Related Topics: ETMDAY, ETMSTA, ETSTT, LSTDAY, LSTSEC

ETMSRV

ET manipulated variable operations service switch:
0 (OFF) Disable External Target for this manipulated variable
1 (ON) Enable External Target for this manipulated variable

Applies to: MVs with External Targets (Independent Section)
Data Type: Integer
Access: Read Only
Range: 0 to 1
Default: 0 (Required Entry)
Keywords: READ LOCAL
Related Topics: ETMSWC

ETMSTA

Status of this manipulated variable to be supplied to the External Targeting agent. Colors in square brackets ([ ]) indicate the color displayed on the View operator screens for the specified condition:
-1 (BAD) Bad status [red]
0 (GOOD) Variable is in service and can accept an external target [green]
1 (STALE) Last update time for this external target is too old (defined by comparing ETMDAY and ETMSEC with ETSTT) [yellow]
2 (READY) Accepting External Target but is not implementing the current values of ETMV [blue]
When ETENB=1 (RTO Mode) the external target facility provides full RT-OPT support including checks for the ETMSTA=2 condition that indicates that the ET is not being used currently due to staleness but a "new" ETMV value will be used when received. This state is a "Ready" state for the ET. The facility also provides for accurate prediction mode solution and shedding of stale ETs only when one of the ET switches (ETREQ,ETMSRV,ETMSWC) has been turned off.
Note to RT-OPT users: RT-OPT will only need to look at ONSTS for the controller and ETMSTA for the optimizer target to know if a target is on control and on optimization.
When ETENB=2 (IRV Mode) the external target facility operates in a simplified manner designed for applications where only IRVs will be implemented. ETSTT, ETMCST, ETMCRT, ETMDAY, ETMSEC are all ignored. ETREQ is locked ON, no staleness checking is done and no swapping of MV steady-state costs is performed.
Also, the ET messaging is suppressed except for ETMV validation messages. If an ETMSWC is inadvertently set to 1, it is adjusted to 2 and messaged. The only possible statuses are BAD (-1) and GOOD (0).

Applies to: MVs with External Targets (Independent Section)

Data Type: Integer
Access: Write Only
Range: No Restrictions
Default: 0 (Required Entry)
Keywords: WRITE LOCAL
Related Topics: ETCSTA, ETENB, ETMDAY, ETMSEC, ETMV, ETSTT

ETMSWC

External Target manipulated variable switch. Allows the engineer or a transform to:
0 (OFF) Do not supply an external target for this variable
1 (RTO) Use as an external target (e. g. RTO target) with staleness checking (defined by comparing ETMDAY and ETMSEC with ETSTT)
2 (IRV) Use as an IRV (no staleness checking)

Applies to: MVs with External Targets (Independent Section)
Data Type: Integer
Access: Read Only
Range: 0 to 2
Default: 0 (Required Entry)
Keywords: LOCAL READ CONSTANT
Related Topics: ETMDAY, ETMSEC, ETMSRV, ETSTT

ETMTRK

If the ET Track switch is ON and ETSTS is transitioning from OFF to ON, (or the variable's ETMSRV is transitioning from OFF to ON) a tracked stale ETMV will be set to SSMAN and a tracked stale ETCV will be set to SSDEP.
IRV's will always track if this switch is set, but RTO Timer ET's will only track if they are stale.

Applies to: MVs with External Targets (Independent Section)
Data Type: Integer
Access: Read Only
Range: 0 to 1
Default: 0 (Required Entry)
Keywords: LOCAL READ CONSTANT
Related Topics: ETMV, SSDEP, SSMAN, ETCV, ETSTS, ETMSRV

ETMV

External Target for this manipulated variable. It is only used when external targeting is enabled and active and this MV is able to accept External Targets.

Applies to: MVs with External Targets (Independent Section)
Data Type: Float

Access: Read/Write
Range: No Restrictions
Default: 0 (Required Entry)
Keywords: RDWRT READ LOCAL CONSTANT
Related Topics: ETMDAY, ETMSEC, ETMSRV, ETMSWC, ETCV

ETREQ

A switch implementation that allows the DMCplus controller to differentiate between the requested ET state and the actual ET state. In practice the user will request that ET processing be turned ON by setting the ETREQ to ON. DMCplus will examine the ETREQ switch and will perform validity check on the ET data fields when the switch is in the ON state.
DMCplus will delay one cycle in order to generate a current steady-state solution. It then will set any ETMTRK and ETCTRK variables, set the ETSTS to ON, complete ET data validation, and -- if the data passes all the validitity checks -- begin using ET's.
If the ET's shed, the value of both ETREQ and ETSTS will be set to OFF and an appropriate message will be issued to the operator log. ETSTS being set to OFF will disable all ET's, including the IRVs.

Applies to: External Target General variables (ET Section)
Data Type: Integer
Access: Read/Write
Range: 0 to 1
Default: 0 (Required Entry)
Keywords: RDWRT LOCAL READ CONSTANT
Note: This switch together with ETSTS replace the parameter ETON found in previous versions of DMCplus.
Related Topics: ETSTS

ETSHED

ETSHED is the shed time for external targets expressed in minutes. Staleness checking and shed checking are only performed on the ET's of type ETMSWC=1 and ETCSWC=1. If all the ETMSWC=1 and ETCSWC=1 ET's are more than ETSHED old then the ET's will SHED. This will result in the ETREQ and ETSTS being set to OFF disabling all ET's, including the IRVs.

Applies to: External Target General variables (ET Section)
Data Type: Integer
Access: Read Only
Range: 0 to (No Maximum)
Default: 3000 (Required Entry)
Keywords: LOCAL READ CONSTANT
Related Topics: ETMSWC, ETCSWC, ETREQ, ETSTS

ETSHOW

Include ET information in the CCF.

0 Do not include ET information in the CCF

1 Include ET information in the CCF

Applies to: Controller Configuration variables (Configure Section)

Data Type: Integer

Access: Read Only

Range: 0 to 1

Default: Build automatically sets this value based on your selections.

Keywords: CONSTANT

Note: This setting has no effect in SmartStep but serves to alert the user that the SmartStep tester CCF was taken from a DMCplus application that uses External Targets. The External Target information is preserved by SmartStep but never used.

Related Topics: ETENB

ETSTS

Master External Target ON/OFF Status

0 OFF

1 ON

An ON status indicates that the Master External Target Request switch (ETREQ) has been enabled, validity checks have passed, and external targets will be implemented for those variables whose individual External Target dependent and independent variable switches have been enabled. If the status is OFF, implementation of External Targets for all variables is ignored.

Applies to: External Target General variables (ET Section)

Data Type: Integer

Access: Write Only

Range: 0 to 1

Default: 0 (Required Entry)

Keywords: LOCAL WRITE

Related Topics: ETREQ, ETMSWC, ETCSWC

ETSTT

External Target time tolerance in minutes. Used to determine when an external target is too old. This tolerance is compared to the last update time (defined by ETCDAY, ETCSEC for CVs and ETMDAY, ETMSEC for MVs) each cycle and, if the targets are recent enough (see LSTDAY and LSTSEC), they are allowed to be considered.

Applies to: External Target General variables (ET Section)

Data Type: Integer

Access: Read Only

Range: No Restrictions

Default: 3000 (Required Entry)

Keywords: CONSTANT LOCAL
Note: Only used by External Targets with staleness checking enabled.
Related Topics: ETCDAY, ETCSEC, ETMDAY, ETMSEC, LSTDAY, LSTSEC

FMOV

Manipulated variable calculated future moves. FMOV holds the projected future manipulated variable values at selected future intervals.
We recommend that FMOV values be available for display at least during commissioning for engineering, if not for operations.

Applies to: MVs only if Output Future Moves and Predictions to Process Control System option enabled (Independent Section)
Data Type: Float
Access: Write Only
Range: No Restrictions
Default: 0 (Required Entry)
Keywords: LOCAL WRITE
Note: FMOV can be output to the process control system by checking the "Output future moves and predictions to PCS Tags" option (FPENB) in Build, where PCS stands for Process Control System.
Related Topics: FMOVT, FPENB

FMOVT

Time in minutes into the future of each of the Manipulated variable calculated future moves. These values are sent only on a DMCplus controller initialization. They are available for configuring in the Configure section of DMCplus Build.

Applies to: Controller Configuration variables (Configure Section)
Data Type: Float
Access: Write Only
Range: Positive Floating-point values (including zero)
Default: 0
Keywords: (None) INIT
Related Topics: FMOV, FPENB, PDEPT

FPENB

This entry is an internal flag that DMCplus Build uses to display future move and prediction entries so you can define entities for those values (to send to the process control system).

Applies to: Controller Configuration variables (Configure Section)
Data Type: Integer
Access: Read Only

Range: 0 to 1
Default: Build automatically sets this value based on your selections.
Keywords: (None) CONSTANT
Note: Used by DMCplus Build only.
Related Topics: FMOV, FMOVT, PDEPC, PDEPT, PFMDEP

GMULT

Some situations require the use of variable model gains. With DMCplus, you can manually adjust the gain using a multiplier (gain multiplier) applied to a response curve for a dependent/independent variable pair. You may apply a gain multiplier to any or all of the response curves in the model. The multiplier is applied to the entire curve, not just the steady-state gain. This needs to be implemented with greater care than a staticgain model because the validation routines in the controller do not protect against bad or nonsensical gain changes. The gain changes need to be done "smoothly" or the controller may not react properly. The only check made is that the absolute value of GMULT specified must be between a lower limit GMULTL and upper limit GMULTU.
The following steps should be performed using DMCplus Build to enable the use of GMULT.
1. Add an entry, GMULTE, to the Configure section as a User-Defined, Integer constant with a value of 1.
2. By default the controller will only accept gain multipliers with absolute values between 0.5 and 2.0. To change this, you will need to add two additional User-Defined entries for GMULTU and GMULTL in the Configure section for defining the upper and lower bounds for the model gain multiplier. Configure the entry data types as Real, use a keyword of LOCAL, and set the default values to the desired number. The absolute value of GMULT is limited between GMULTL and GMULTU. GMULTL and GMULTU should be expressed as non-negative real values. If any of the GMULT values exceeds either GMULTL or GMULTU, then the controller turns off so that the predictions are not destroyed.
The values for Gain Multipliers can be viewed and set from the Model View in the Web Interface. To set the values in Simulate, you must use the "Internal Variables" dialog. When you save a CCF from DMCplus Manage or Simulate, the GMULT entries for individual model curves that have a value other than 1.0 get created in the CCF and their values saved. Therefore, there is no need to manually create these entries using DMCplus Build unless a calculation specifically references them. To manually add a Gain Multiplier entry for a model curve in the CCF, do the following:
1. Add GMULT as a User-Defined Real entry in the appropriate independent variable section. Use a keyword of READ or LOCAL. It MUST be placed in the independent variable section for the curve that is to be affected. Use the following format to name the entry:
GMULTxxx
where xxx is the dependent variable number.
In older versions of DMCplus, users were allowed to define GMULT entries in the General section. As of AMS 4.1, if DMCplus Build finds such entries, they will be moved automatically to the respective MV section when loading, validating or saving the CCF.

Applies to: MVs and FFs (Independent Section)
Data Type: Float
Access: Read Only
Range: No Restrictions
Default:

Keywords: (None) READ LOCAL
Note: If you add, remove, or reorder the dependent variables in your model, DMCplus Build will not automatically renumber the GMULTxxx parameters. This must be done manually.
Related Topics: GMULTE, GMULTL, GMULTU

GMULTE

Flag that enables use of Gain Multipliers (GMULT).

Applies to: Controller Configuration variables (Configure Section)
Data Type: Integer
Access: Read Only
Range: 0 to 1
Default: 0
Keywords: (None) CONSTANT
Related Topics: GMULT, GMULTL, GMULTU

GMULTL

Sets lower limit for the absolute value of GMULT.

Applies to: Controller Configuration variables (Configure Section)
Data Type: Float
Access: Read Only
Range: Positive Floating-point values (including zero)
Default: 0.5
Keywords: (None) CONSTANT LOCAL
Related Topics: GMULT, GMULTE, GMULTU

GMULTU

Sets upper limit for the absolute value of GMULT.

Applies to: Controller Configuration variables (Configure Section)
Data Type: Float
Access: Read Only
Range: Positive Floating-point values (including zero)
Default: 2.0
Keywords: (None) CONSTANT LOCAL
Related Topics: GMULT, GMULTE, GMULTL

IABORT

DMCplus controller error indicator:
0 No errors

1 Controller OFF, moves not implemented

5 Controller OFF, moves not calculated

9 Controller OFF, only ONREQ and ONSTS updated in process control system

10 Fatal Error -- exit controller program

IABORT indicates the status of the most recent controller cycle.

Applies to: Controller General variables (General Section)
Data Type: Integer
Access: Write Only
Range: No Restrictions
Default: 0
Keywords: (None) WRITE LOCAL

IMBCNT

Actual number of imbalance counts. This value is compared against MXNIMB.

Applies to: All CVs (Dependent Section)
Data Type: Integer
Access: Write Only
Range: No Restrictions
Default: 0
Keywords: (None) LOCAL WRITE
Related Topics: MXNIMB

IMBMLT

Ramp imbalance multiplier.

Applies to: Controller Configuration variables (Configure Section)
Data Type: Float
Access: Read Only
Range: 1.0 to 1000.0
Default: 3.0
Keywords: (None) CONSTANT
Note: For AspenTech use only.

IMBTOL

Ramp imbalance tolerance.

Applies to: Controller Configuration variables (Configure Section)
Data Type: Float
Access: Read Only
Range: 0.0 to 0.01

Default: 1.00E-05
Keywords: (None) CONSTANT
Note: For AspenTech use only.

IMISS

IMISS is the actual number of missed cycles. It is calculated as the delta time minus half a control interval (CTLINT) divided by the control interval:
IMISS = INT((DELTAT - CTLINT/2) / CTLINT)
where the delta time DELTAT is calculated as the current time minus the last time (LSTTIM) and INT means that the value is truncated to an integer.

Applies to: Controller General variables (General Section)
Data Type: Integer
Access: Write Only
Range: No Restrictions
Default: 0
Keywords: (None) LOCAL WRITE
Related Topics: LSTTIM, CTLINT

INDFLG

Independent variable condition flag. Holds the most recent warning or error code detected for each independent variable. INDFLG is included for debugging and for systems where the full functionality of the message queues cannot be supported.
The values displayed by INDFLG and DEPFLG are the message numbers found in the message.dat file.

Applies to: MVs and FFs (Independent Section)
Data Type: Integer
Access: Write Only
Range: No Restrictions
Default: 0
Keywords: (None) WRITE LOCAL
Related Topics: DEPFLG

INDSTA

Independent variable DMCplus status:
For manipulated variables:
-2 (ENG_OFF) Engineer has turned this variable off via SREIND
-1 (BAD) Bad for Prediction and Control. Cannot use at all. Either the measurement status is bad, the value is outside a validity limit, or the operator has turned this variable off via SRVIND.
0 (GOOD) Good for both Prediction and Control. Normal state.
1 (PRED_ONLY) Prediction Only. Good for Prediction, Bad for Control. Will be used as a feedforward variable.

2 (READY) Conditional GOOD Status. Set only when DMCplus controller is OFF. Indicates that although LOOPST is OFF, all other requirements for a GOOD status have been satisfied. The controller will calculate moves for this MV as if its status were GOOD.

For feedforward variables:

-2 (ENG_OFF) Engineer has turned this variable off via SREIND

-1 (BAD) Bad for Prediction. Cannot use at all. Either the measurement status is bad, the value is outside a validity limit, or the operator has turned this variable off via SRVIND.

0 (GOOD) Good for Prediction. Normal state.

INDSTA is set by the controller validation routines and used to determine which variables are included in the controller calculation for this cycle

Applies to: MVs and FFs (Independent Section)
Data Type: Integer
Access: Write Only
Range: No Restrictions
Default: 0
Keywords: (None) WRITE LOCAL
Related Topics: DEPSTA, LOOPST, SREIND, SRVIND

INTSUM

Internal move accumulation switch:

0 OFF

1 ON

Defaulted to OFF, this switch allows the controller to maintain its own copy of setpoints in a higher resolution than the process control system.

When INTSUM is set to 1, the controller sums the changes to the MV setpoints (VINDSP) and maintains an internal copy of the setpoint that is written out. This calculation prevents the loss of the small moves that are not read back from the process control system. The controller actually writes out each move, however the process control system may lose the small moves (less than MVTOL). DMCplus keeps up with what was written out and adds the new moves to that value each time so that the small moves are not lost permanently.

Applies to: Controller Configuration variables (Configure Section)
Data Type: Integer
Access: Read Only
Range: 0 to 1
Default: 0 (Required Entry)
Keywords: CONSTANT
Note: For AspenTech use only.
Related Topics: MVTOL

IPMIND

Actual number of manipulated variables (excluding feedforward variables) in the controller.

Applies to: Controller Configuration variables (Configure Section)
Data Type: Integer
Access: Write Only
Range: Positive Integer values (including zero)
Default: Build automatically sets this value based on your selections.
Keywords: CONSTANT INIT
Related Topics: IPNDEP, IPTIND

IPNCI

Number of intervals to steady state.

Applies to: Controller Configuration variables (Configure Section)
Data Type: Integer
Access: Read Only
Range: Positive Integer values (including zero)
Default: Build automatically sets this value based on your selections.
Keywords: CONSTANT

IPNDEP

Actual number of dependent variables in the controller.

Applies to: Controller Configuration variables (Configure Section)
Data Type: Integer
Access: Write Only
Range: Positive Integer values (including zero)
Default: Build automatically sets this value based on your selections.
Keywords: CONSTANT INIT
Related Topics: IPMIND, IPTIND

IPNEQ

Actual number of equations in the control matrix. Valid range:
15 <= IPNEQ <= 21

Applies to: Controller Configuration variables (Configure Section)
Data Type: Integer
Access: Write Only
Range: 15 to 21
Default: Build automatically sets this value based on your selections.
Keywords: CONSTANT INIT

IPNMOV

Actual number of calculated control moves. Valid range:
8 <= IPNMOV <= 14

Applies to: Controller Configuration variables (Configure Section)
Data Type: Integer
Access: Write Only
Range: 8 to 14
Default: Build automatically sets this value based on your selections.
Keywords: CONSTANT INIT

IPNSUB

Number of subcontrollers. If zero, subcontroller logic is ignored. Cannot be negative or one.

Applies to: Controller Configuration variables (Configure Section)
Data Type: Integer
Access: Read Only
Range: Positive Integer values (including zero)
Default: Build automatically sets this value based on your selections.
Keywords: (None) CONSTANT

IPSKIP

Ratio of model coefficients (IPXNCI) to controller coefficients (IPNCI). Must be an integer. Valid range:
1 <= IPSKIP
Values greater than 5 are not recommended.
In order to reduce the computational resources required to solve the dynamic move calculation, DMCplus is able to solve the move calculation at a lower resolution than that used for the model prediction. In other words, the control calculation may be performed using a time interval that is longer than the time interval used in the prediction. IPSKIP is the number of prediction intervals in one control interval.
IPSKIP and IPNCI are determined automatically based on IPXNCI, which is a property of the model. The procedure is as follows:
If extended moves (XTDMOV) has been requested, IPNCI will be the largest legal value which is evenly divisible into IPXNCI. Legal values for IPNCI are 30, 45, 60, 75, 90, 105, 120.
If extended moves has not been requested, IPNCI is assigned the value of 30.
In either case IPSKIP is set equal to the integer ratio of IPXNCI to IPNCI.
Note that IPXNCI must be an integer multiple of one of the legal values of IPNCI. Any model not meeting this criterion cannot be used for control by DMCplus.

Applies to: Controller Configuration variables (Configure Section)
Data Type: Integer
Access: Read Only
Range: 1 to (No Maximum)
Default: Build automatically sets this value based on your selections.
Keywords: CONSTANT

Related Topics: XTDMOV, IPNCI, IPXNCI

IPTIND

Actual number of independent variables (MVs + FFs) in the controller.

Applies to: Controller Configuration variables (Configure Section)
Data Type: Integer
Access: Write Only
Range: Positive Integer values (including zero)
Default: Build automatically sets this value based on your selections.
Keywords: CONSTANT INIT
Related Topics: IPMIND, IPNDEP

IPXCTH

Number of intervals in DMCplus controller time horizon.

Applies to: Controller Configuration variables (Configure Section)
Data Type: Integer
Access: Read Only
Range: Positive Integer values (including zero)
Default: Build automatically sets this value based on your selections.
Keywords: CONSTANT

IPXNCI

Number of coefficients used in the model for this DMCplus controller.

Applies to: Controller Configuration variables (Configure Section)
Data Type: Integer
Access: Read Only
Range: 30 to (No Maximum)
Default: Build automatically sets this value based on your selections.
Keywords: CONSTANT
Related Topics: MAXMIS, MCTOL

IREVRS

Manipulated variable reverse action indicator:
0 (NO) Direct acting (increase setpoint, output increases)
1 (YES) Reverse acting (increase setpoint, output decreases)
IREVRS is used solely to determine setpoint movement restrictions based on output movement restrictions indicated by the anti-windup code, AWSCOD. It has the effect of reversing states 1 and 2 of AWSCOD.

Applies to: MVs only (Independent Section)
Data Type: Integer
Access: Read Only
Range: 0 to 1
Default: 0
Keywords: (None) CONSTANT LOCAL READ
Related Topics: AWSCOD

ISCET

Dependent variable External Target information indicator:
0 (FALSE) CV does not have ET information associated with it
1 (TRUE) CV does have ET information associated with it
This value is independent of the mode of ET behavior (ETCSWC). This parameter is generally used only by Build to determine what information is displayed to the user.

Applies to: All CVs (Dependent Section)
Data Type: Integer
Access: Read Only
Range: 0 to 1
Default: Build automatically sets this value based on your selections.
Keywords: CONSTANT
Related Topics: ETENB, ISFF, ISMET, ISRAMP, ISSIG

ISFF

Independent variable feedforward indicator:
0 (FALSE) Independent variable is potentially a manipulated variable
1 (TRUE) Independent variable is only a feedforward variable

Applies to: MVs and FFs (Independent Section)
Data Type: Integer
Access: Read Only
Range: 0 to 1
Default: Build automatically sets this value based on your selections.
Keywords: CONSTANT
Related Topics: ISRAMP, ISSIG

ISMET

Manipulated variable External Target information indicator:
0 (FALSE) MV does not have ET information associated with it
1 (TRUE) MV does have ET information associated with it
This value is independent of the mode of ET behavior (ETMSWC). This parameter is generally used only by Build to determine what information is displayed to the user.

Applies to: MVs only (Independent Section)
Data Type: Integer
Access: Read Only
Range: 0 to 1
Default: Build automatically sets this value based on your selections.
Keywords: CONSTANT
Related Topics: ETENB, ISCET, ISFF, ISRAMP, ISSIG

ISRAMP

Dependent variable ramp indicator:
0 (NONE) Not a Ramp variable
1 (RAMP) A true Ramp variable
2 (PSEUDO) A Pseudo-Ramp variable

Applies to: All CVs (Dependent Section)
Data Type: Integer
Access: Read Only
Range: 0 to 2
Default: Build automatically sets this value based on your selections.
Keywords: CONSTANT
Related Topics: ISFF, ISSIG

ISSIG

Dependent variable intermittent signal indicator:
0 (FALSE) Normal continuously updated value
1 (TRUE) Intermittent signal (e.g. an analyzer)

Applies to: All CVs (Dependent Section)
Data Type: Integer
Access: Read Only
Range: 0 to 1
Default: Build automatically sets this value based on your selections.
Keywords: CONSTANT
Related Topics: ISFF, ISRAMP

LDEPTG

Dependent variable lower operating target used in control calculations. This value must be at or within the validity and engineering limits for the dependent variable and less than or equal to the upper target (UDEPTG).
If dependent variable tracking is enabled (TRKDEP), the controller will adjust LDEPTG if it is greater than the current dependent variable value when the controller is turned ON.

This value will highlight in the Production Control Web interface if it is considered to be an active constraint. For more information see DEPACT.

Applies to: All CVs (Dependent Section)
Data Type: Float
Access: Read/Write
Range: No Restrictions
Default: 0 (Required Entry)
Keywords: RDWRT LOCAL READ
Related Topics: LDPENG, LVLDEP, TRKDEP, UDEPTG, UDPENG, UVLDEP

LDPENG

Dependent variable lower engineering limit. This value must be at or within the validity limits for the dependent variable and less than or equal to the upper engineering limit (UDPENG).
If dependent variable tracking is enabled (TRKDEP), LDPENG is the lower bound on the dependent variable targets (UDEPTG/LDEPTG) which can be written back to the process control system when the controller is turned ON. LDPENG should be set by engineering to define the minimum allowable lower target for the dependent variable.

Applies to: All CVs (Dependent Section)
Data Type: Float
Access: Read Only
Range: No Restrictions
Default: 0 (Required Entry)
Keywords: READ LOCAL CONSTANT
Related Topics: LDEPTG, LVLDEP, TRKDEP, UDEPTG, UDPENG, UVLDEP

LICSTS

Minutes remaining until Control license expiration. Set to 14400 (10 days) when controller is running with a valid license. Modified downward by a running controller when license is lost. Set to zero by a running controller when no valid license has been obtained within the previous 10 days.

Applies to: Controller General variables (General Section)
Data Type: Integer
Access: Write Only
Range: No Restrictions
Default: 14400 (Required Entry)
Keywords: LOCAL AWRITE WRITE
Note: This variable is provided so that a Control license expiration alarm can be configured on the DCS.

LISTSZ

List size maximum for Connect:
-1 (Default) Connect doesn't break up lists into multiple Cim-IO lists.
> 0 Connect will break up lists into multiple Cim-IO lists of maximum size LISTSZ.

Applies to: Controller Configuration variables (Configure Section)
Data Type: Integer
Access: Read Only
Range: -1 to (No Maximum)
Default: -1
Keywords: (None) CONSTANT
Related Topics: WFAILM

LLINDM

Manipulated variable lower operating limit used in control calculations. This value must be at or within the validity and engineering limits for the manipulated variable and less than or equal to the upper limit (ULINDM).
If manipulated variable tracking is enabled (TRKMAN), the controller will adjust LLINDM if it is greater than the current manipulated variable value when the controller is turned ON.
This value will highlight in the Production Control Web interface if it is considered to be an active constraint. For more information see MANACT.

Applies to: MVs only (Independent Section)
Data Type: Float
Access: Read/Write
Range: No Restrictions
Default: 0 (Required Entry)
Keywords: READ LOCAL RDWRT
Related Topics: LMVENG, LVLIND, TRKMAN, ULINDM, UMVENG, UVLIND

LMVENG

Manipulated variable lower engineering limit. This value must be less than or equal to the upper engineering limit (UMVENG).
If manipulated variable tracking is enabled (TRKMAN), LMVENG is the lower bound on the adjustment of manipulated variable limits (ULINDM/LLINDM). LMVENG should be set by engineering to define the minimum allowable lower limit for the manipulated variable.

Applies to: MVs only (Independent Section)
Data Type: Float
Access: Read Only
Range: No Restrictions
Default: 0 (Required Entry)
Keywords: LOCAL READ CONSTANT
Related Topics: LLINDM, LVLIND, TRKMAN, ULINDM, UMVENG, UVLIND

LOOPST

Manipulated variable control loop status:
0 (FF) DMCplus controller cannot adjust this variable
1 (MV) DMCplus controller can adjust this variable
LOOPST identifies which manipulated variables the controller can move. If the controller is ON, a manipulated variable with LOOPST = 0 will be treated as a feedforward variable (INDSTA = 1). If the variable is critical (CRIIND = 1) the controller will be turned OFF.
If there is no process control system parameter analogous to LOOPST, you may have to write an input calculation to derive this value. If using Cim-IO, the CBST "Smart Data Type" may be available for this purpose. However, not all Cim-IO servers implement the smart data types (consult the Cim-IO server documentation).

Applies to: MVs only (Independent Section)
Data Type: Integer
Access: Read Only
Range: 0 to 1
Default: 1 (Required Entry)
Keywords: READ LOCAL
Related Topics: CRIIND, INDSTA

LPCRIT

Steady-state manipulated variable criterion:
0 (COST) Minimum Cost
1 (MOVE) Minimum Movement
This entry determines the steady-state objective for this manipulated variable. If LPCRIT is 0, the steadystate solver tries to minimize the actual cost of this variable. The variable will be driven up if the unit cost (CST) is negative, or driven down if the unit cost is positive. If LPCRIT is set to 1, then minimizing movement in either direction is the steady-state objective for this MV. In this case, CST is defined as the penalty for movement away from the current value and must be specified as a non-negative number.

Applies to: MVs only (Independent Section)
Data Type: Integer
Access: Read Only
Range: 0 to 1
Default: 0 (Required Entry)
Keywords: LOCAL READ CONSTANT
Related Topics: CST

LPOBJ

Steady-state objective function. This entry is the current value of the economic portion of the steady-state objective function, based on the manipulated variable costs (CST) and cost criteria (LPCRIT). The steadystate

solver searches for the solution which minimizes LPOBJ.

Applies to: Controller General variables (General Section)
Data Type: Float
Access: Write Only
Range: No Restrictions
Default: 0
Keywords: (None) WRITE LOCAL
Related Topics: CST, LPCRIT

LPSTOL

LP Solution tolerance. LPSTOL is used to ensure that the dynamic moves calculated by the controller will place the MVs at the desired steady-state values calculated by the LP (within a tolerance of LPSTOL).

Applies to: Controller Configuration variables (Configure Section)
Data Type: Float
Access: Read Only
Range: 0.0 to 0.01
Default: 0.01
Keywords: (None) CONSTANT
Note: For AspenTech use only.
Related Topics: LPTGRT

LPTGRT

Calculated by the controller. LPTGRT is a measure of how close the move trajectory is to the steady-state target. Small numbers (<0.001) indicate that the move plan successfully implements the steady-state targets. If the value calculated is greater than 1.0, an error message is generated stating: "5060:Sum of MV moves not equal (<>) to steady-state solution."

Applies to: MVs and FFs (Independent Section)
Data Type: Float
Access: Read Only
Range: No Restrictions
Default:
Keywords: (None) READ LOCAL
Related Topics: SUPMOV, LPSTOL

LRDPTG

Ramp dependent variable lower imbalance target. For ramps with a programmed imbalance (MXNIMB = -1), LRDPTG is the lower limit on the allowed ramp imbalance, based on the ramp horizon (RHORIZ), the

current dependent variable targets (UDEPTG/LDEPTG), and the current value of the dependent variable.

Applies to: Ramp CVs only (Dependent Section)
Data Type: Float
Access: Write Only
Range: No Restrictions
Default: 0
Keywords: (None) LOCAL WRITE
Related Topics: LDEPTG, MXNIMB, RHORIZ, UDEPTG, URDPTG

LSTDAY

Integer representation of the time of the last controller cycle in days since a fixed reference point (DMCplus internal time).

Applies to: Controller General variables (General Section)
Data Type: Integer
Access: Write Only
Range: No Restrictions
Default: 0
Keywords: (None) LOCAL WRITE
Related Topics: LSTSEC, LSTTIM, THISTM

LSTSEC

Integer representation of the time of the last controller cycle in seconds since midnight of the day specified in LSTDAY.

Applies to: Controller General variables (General Section)
Data Type: Integer
Access: Write Only
Range: No Restrictions
Default: 0
Keywords: (None) LOCAL WRITE
Related Topics: LSTDAY, LSTTIM, THISTM

LSTTIM

Floating point representation of the time of the last controller cycle in the form HHMMSS.0. If the process control system cannot display THISTM, LSTTIM can provide assurances to operations that the controller is running on time.
LSTTIM is no longer written automatically from the controller, so to output this value you must set a variable equal to LSTTIM in a CALC and then write that variable to the process control system.
Following are sample lines that update the LSTTIM field:
[CALC]

.MYTIME~~~AWRITE~~~R4~~~0.~~~"":"MAINPT.LSTTIM":DBVL:
.CALC0001~~~CALPUT~~~CH(15)~~~MYTIME = LSTTIM~~~

Applies to: Controller General variables (General Section)
Data Type: Float
Access: Write Only
Range: No Restrictions
Default: 0
Keywords: (None) LOCAL WRITE
Related Topics: LSTDAY, LSTSEC, THISTM

LVLDEP

Dependent variable lower validity limit. If a dependent variable current value, operating limit, or engineering limit is less than LVLDEP, the controller will treat it as a bad value. LVLDEP should be set by engineering to define the acceptable range of values the dependent variable can assume.

Applies to: All CVs (Dependent Section)
Data Type: Float
Access: Read Only
Range: No Restrictions
Default: 0 (Required Entry)
Keywords: READ LOCAL CONSTANT
Related Topics: LDEPTG, LDPENG, TRKDEP, UDEPTG, UDPENG, UVLDEP

LVLIND

Independent variable lower validity limit. If an independent variable current value, manipulated variable operating limit, or manipulated variable engineering limit is less than LVLIND, it will be treated as a bad value by the controller. LVLIND should be set by engineering to define the acceptable range of values the independent variable can assume.

Applies to: MVs and FFs (Independent Section)
Data Type: Float
Access: Read Only
Range: No Restrictions
Default: 0 (Required Entry)
Keywords: READ LOCAL CONSTANT
Related Topics: LLINDM, LMVENG, TRKMAN, ULINDM, UMVENG, UVLIND

MANACT

Manipulated variable active constraint indicator. MANACT indicates which manipulated variable constraint is active in the steady-state solution. Characters in square brackets ([ ]) are characters displayed on the View operator screens for the specified condition.

0 [ ] NOT CONSTRAINED. The controller does not plan to move the variable to either its upper or lower limit.
1 [U] UPPER LIMIT. The controller plans to move the variable to its upper limit.
2 [L] LOWER LIMIT. The controller plans to move the variable to its lower limit.
4 [^] SSSTEP IN UP DIRECTION. The controller plans to move the variable up toward the upper limit, but that limit is more than SSSTEP away from the current value.
5 [v] SSSTEP IN DOWN DIRECTION. The controller plans to move the variable down toward the lower limit, but that limit is more than SSSTEP away from the current value.
6 [0] ZERO MOVE DUE TO ZERO COST OR MINIMUM MOVE CRITERION.
7 [S] SETPOINT. The controller plans to move the variable to either the upper or lower limit, and both limits are the same value (within some tolerance). Since an independent variable cannot be moved outside the limits, then the variable is considered to be "clamped".
8 [-] INACTIVE. The variable is not used for control.
20 [X] ACTIVE AT EXTERNAL TARGET. The controller is planning to move the variable to the external target value.
21 [XU] GAVE UP ABOVE EXTERNAL TARGET. The steady-state solver had to allow the variable to move above the external target, but below the upper limit, in order to produce a solution.
22 [XL] GAVE UP BELOW EXTERNAL TARGET. The steady-state solver had to allow the variable to move below the external target, but above the lower limit, in order to produce a solution.
Limit Highlighting in the Web Interface:
Depending on the value of DEPACT, the Web interface will highlight appropriate limits or steady-state targets to show active constraints.
SmartStep Only -- In test modes (TEST, TEST-NOPULSE) SmartStep highlights one constraint per test group. The SmartStep move calculation routine determines the most restrictive constraint (MV max test step, MV upper limit, MV lower limit, CV test upper limit, CV test lower limit, CV ramp SP limit, etc.) that limits the MV step size, and highlights only this constraint for the duration of the MV step. For example, if the step size is limited by the CV lower test limit, then that value will be highlighted until the step is completed, canceled, or superceded by a test group mode change. In control modes (CONTROL, REPOSITION, LAB) SmartStep uses the DMCplus engine to calculate steady-state targets and the highlighting reflects the constraints that are active for the target calculation.

Applies to: MVs only (Independent Section)
Data Type: Integer
Access: Write Only
Range: No Restrictions
Default: 0 (Required Entry)
Keywords: LOCAL WRITE
Note: Extremely useful for operations display to illustrate to the operators and engineers against which constraints the controller is pushing.
Related Topics: DEPACT, SSSTEP

MAXMIS

This entry is a read-only value that DMCplus Build sets automatically based on the Model file. The online controller uses MAXMIS in the missed-cycle checking to determine whether to initialize predictions when

missed cycles are detected. It is calculated as follows:
MAXMIS = IPXNCI / 10
where,
IPXNCI = Number of coefficients used in the model.

Applies to: Controller Configuration variables (Configure Section)
Data Type: Integer
Access: Read Only
Range: Positive Integer values (including zero)
Default: 0
Keywords: (None) CONSTANT
Related Topics: IPXNCI, MCTOL

MAXMOV

Manipulated variable maximum move. The largest change (in engineering units) the controller is allowed to make in the manipulated variable setpoint in one cycle.

Applies to: MVs only (Independent Section)
Data Type: Float
Access: Read Only
Range: 0 to (No Maximum)
Default: 0 (Required Entry)
Keywords: LOCAL READ CONSTANT
Note: If MAXMOV = 0 and the variable is critical (CRIIND = 1), then the controller will be turned off (ONSTS = 0).
Related Topics: CRIIND, ONSTS, SSSTEP

MCTOL

Missed cycle tolerance. Fraction of controller frequency that can be used for tolerance checking:
-1 Missed cycle checking is disabled. See messages.
>0 to 1 The percentage of the cycle frequency that the missed cycle check in the controller will use to determine off-schedule runs and missed cycles.
For example, an MCTOL value of 0.8 for a controller scheduled to run every 60 seconds at the top of the minute will provide 20% ((1 - 0.8)*100) of 60 seconds (12 seconds) around the top of the minute (6 seconds either way) as the missed cycle tolerance window.
The tolerance check can fail only MAXMIS number of times before predictions are initialized. The tolerance check is based on the scheduled time of execution.

Applies to: Controller Configuration variables (Configure Section)
Data Type: Float
Access: Read Only
Range: -1.0 to 1.0
Default: 0.8

Keywords: (None) CONSTANT
Note: For AspenTech use only.
Related Topics: IPXNCI, MAXMIS

MDLDEP

Dependent variable Model Tag. This name is used to perform validation between the CCF and the Model file. It ensures that the order of dependent variables found in the model match that of the CCF.

Applies to: All CVs (Dependent Section)
Data Type: String*12
Access: Read Only
Range: No Restrictions
Default: Build automatically sets this value based on your selections.
Keywords: CONSTANT
Related Topics: MDLIND, MTGDEP

MDLIND

Independent variable Model Tag. This name is used to perform validation between the CCF and the Model file. It ensures that the order of independent variables found in the model match that of the CCF.

Applies to: MVs and FFs (Independent Section)
Data Type: String*12
Access: Read Only
Range: No Restrictions
Default: Build automatically sets this value based on your selections.
Keywords: CONSTANT
Related Topics: MDLDEP, MTGIND

MDLNAM

Model file name to use with the current CCF. DMCplus Build, Simulate and Manage use this file name when loading a CCF and model file. The CCF is read first, then the model file is loaded. The model file should be in the same directory as the CCF.
IMPORTANT: If you are changing the model file associated with a CCF, be sure to first load the CCF into Build along with the new model file and save before trying to simulate or load using Manage. Build calculates many internal variables in the CCF based on the model file and must pass those on to the controller engine in a consistent manner.

Applies to: Controller Configuration variables (Configure Section)
Data Type: String*132
Access: Write Only
Range: No Restrictions
Default: Build automatically sets this value based on your selections.

Keywords: CONSTANT INIT

MNGCVS

Minimum number of good dependent variables for this subcontroller. Defaulted and ignored when subcontrollers are not being used. When subcontrollers are in use, the valid range for this entry is:
1 <= MNGCVS <= (Number of CVs in the subcontroller)

Applies to: Subcontroller General variables (Subcontrollers Section)
Data Type: Integer
Access: Read Only
Range: 1 to (No Maximum)
Default: 1 (Although not required, AspenTech recommends defining this entry)
Keywords: (None) LOCAL CONSTANT READ
Related Topics: MNGMVS, NGDDEP, SUBCRT

MNGMVS

Minimum number of good manipulated variables for this subcontroller. Defaulted and ignored when subcontrollers are not being used. When subcontrollers are in use, the valid range for this entry is:
1 <= MNGMVS <= (Number of MVs in the subcontroller)

Applies to: Subcontroller General variables (Subcontrollers Section)
Data Type: Integer
Access: Read Only
Range: 1 to (No Maximum)
Default: 1 (Although not required, AspenTech recommends defining this entry)
Keywords: (None) LOCAL CONSTANT READ
Related Topics: MNGCVS, NGDMAN, SUBCRT

MOVACC

Manipulated variable accumulated moves (in engineering units). When using the dynamic minimum movement functionality (MOVRES > 0) then moves smaller than MOVRES are accumulated into MOVACC. When MOVACC > MOVRES a move will be implemented and MOVACC is reset to zero. This feature is useful for working with valves that require sufficient movement before the process is affected and for discrete variables such as fin fans.
This feature is reserved for internal Aspentech use only.

Applies to: MVs only (Independent Section)
Data Type: Float
Access: Write Only
Range: 0 to (No Maximum)
Default: 0 (Required Entry)
Keywords: LOCAL WRITE

Note: Controller moves of zero are allowed.
Related Topics: MOVRES

MOVRES

Manipulated variable dynamic minimum move resolution. This defines the smallest change (in engineering units) the controller is allowed to make in the manipulated variable setpoint in one cycle if the controller decides to move this variable. This feature is useful for working with valves that require sufficient movement before the process is affected and for discrete variables such as fin fans. Moves smaller than MOVRES are not implemented, but are accumulated in MOVACC instead. This feature is different than setting LPCRIT to 1 (minimum movement) which penalizes moving the manipulated variable in either direction when determining the steady state solution.
This feature is reserved for internal Aspentech use only.

Applies to: MVs only (Independent Section)
Data Type: Float
Access: Read Only
Range: 0 to (No Maximum)
Default: 0 (Required Entry)
Keywords: LOCAL READ CONSTANT
Note: Controller moves of zero are allowed.
Related Topics: MAXMOV, MOVACC, LPCRIT

MSGACT

Message action switch defines the destination and timing of the messages produced by the DMCplus message system:
0 No messages produced - message system disabled
1 Immediate - write the messages to the console
2 Log - send the messages to the standard logs
3 Both - immediate and log.

Applies to: Controller General variables (General Section)
Data Type: Integer
Access: Read Only
Range: 0 to 3
Default: 1
Keywords: (None) CONSTANT LOCAL READ

MSGFIL

File specification for the DMCplus message file containing the message definitions for the interface message system.

Applies to: Controller Configuration variables (Configure Section)

Data Type: String*132
Access: Read Only
Range: No Restrictions
Default: message.dat
Keywords: (None) CONSTANT

MTGDEP

Dependent variable tag names. The dependent variable model names (MDLDEP) are used only for messaging. They appear in messages that refer to a specific dependent variable. MTGDEP usually contains the actual tag names that are familiar to operations.
MTGDEP does not have to match the dependent variable model names (MDLDEP). By default, Build will set MTGDEP to MDLDEP.

Applies to: All CVs (Dependent Section)
Data Type: String*32
Access: Read Only
Range: No Restrictions
Default: (Required Entry)
Keywords: CONSTANT
Related Topics: MDLDEP, MTGIND

MTGIND

Independent variable tag names. The independent variable model names (MDLIND) are used only for messaging. They appear in messages thet refer to a specific independent variable. MTGIND usually contains the actual tag names that are familiar to operations.
MTGIND does not have to match the independent variable model names (MDLIND). By default, Build will set MTGIND to MDLIND.

Applies to: MVs and FFs (Independent Section)
Data Type: String*32
Access: Read Only
Range: No Restrictions
Default: (Required Entry)
Keywords: CONSTANT
Related Topics: MDLIND, MTGDEP

MVINSB

Character string indicating to which subcontroller this independent variable is assigned. This entry is only valid if the controller incorporates subcontrollers. Each independent variable can only be a member of one subcontroller.

Applies to: MVs only if Subcontrollers option enabled (Independent Section)

Data Type: String*16
Access: Read Only
Range: No Restrictions
Default: Build automatically sets this value based on your selections.
Keywords: CONSTANT
Related Topics: CVINSB

MVOSWC

Solution type for the manipulated variable (MV) optimization
0 LP - linear
1 QP - quadratic or least squares
The solution type determines how MV movement is minimized. If the solution type is LP, then the weighted sum of the absolute values of the MV movements is minimized. If the solution type is QP, then the weighted sum of the squared MV movement is minimized. The weighting is also squared in the QP case. In both cases, the weighting is the MV steady-state cost factor: CST. Only the movement of MVs with the appropriate economic criterion (LPCRIT) will be minimized.
Note that the MV movement and bias CV (rank 1000) constraint violations are minimized at the same time. Because of this, the value of MVOSWC must match the solution type (CVLPQL and CVLPQU) for any bias CVs.

Applies to: Controller General variables (General Section)
Data Type: Integer
Access: Read Only
Range: 0 to 1
Default: Build automatically sets this value based on your selections.
Keywords: LOCAL READ CONSTANT
Related Topics: CVRANKL, CVRANKU, CST, LPCRIT, CVLPQL, CVLPQU

MVTOL

Resolution in engineering units of a manipulated variable. It is suggested that this value be determined from the process control system documentation.
It might be acceptable to supply the value derived by dividing the range of the variable in engineering units by 2 raised to the power of the number of bits in the analog to digital converter of the process control system. MVTOL is used as a tolerance beyond the high and low MV limits (ULINDM and LLINDM). Suppose that the MV high limit is 5.00 and the controller has moved the setpoint (VINDSP) to that limit. If round-off occurs due to process control system numerical resolution and the value read back (VIND) is a slightly larger value than what was sent, say 5.01, this value will cause the controller to turn off that MV and treat it as a feedforward. To avoid this problem, MVTOL is added to the high limit so that the VIND value is compared to the sum of ULINDM and MVTOL. Even if VIND is read in as 5.01, the VINDSP that is calculated will not exceed 5.00 (ULINDM).
It can also be used in an input transform to avoid numerical conflicts in process values and limits.

Applies to: MVs only (Independent Section)

Data Type: Float
Access: Read Only
Range: Positive Floating-point values (including zero)
Default: 0
Keywords: (None) LOCAL CONSTANT READ
Related Topics: INTSUM

MXLPIT

Maximum primary LP iterations.

Applies to: Controller Configuration variables (Configure Section)
Data Type: Integer
Access: Read Only
Range: 0 to 100000
Default: 0
Keywords: (None) CONSTANT
Note: For AspenTech use only.

MXNIMB

Maximum number of ramp imbalance cycles allowed:
-1 Steady-state solver does not attempt to balance ramp
0 Steady-state solver must always balance ramp
>0 Steady-state solver permits ramp imbalance for MXNIMB cycles
MXNIMB specifies the maximum number of cycles for which dependent variable ramp imbalance in the steady-state solver will be permitted. For ramps where MXNIMB >= 0, the steady-state solver attempts to balance the ramp on every cycle.
After MXNIMB consecutive cycles where the steady-state solver cannot balance the ramp, the controller will turn OFF. For ramps where MXNIMB = -1, the steady-state solver does not attempt to balance the ramp.

Applies to: Ramp CVs only (Dependent Section)
Data Type: Integer
Access: Read Only
Range: -1 to (No Maximum)
Default: 0 (Required Entry)
Keywords: LOCAL CONSTANT READ

MXRFAC

Maximum secondary LP iterations.

Applies to: Controller Configuration variables (Configure Section)
Data Type: Integer
Access: Read Only

Range: 0 to 2000
Default: 0
Keywords: (None) CONSTANT
Note: For AspenTech use only.

MXUSPR

Maximum cycles for which the prediction for this dependent variable can be used for control. Once this limit is exceeded, the variable is set BAD. This entry is only required for variables with intermittent signals.

Applies to: Intermittent update CVs only (Dependent Section)
Data Type: Integer
Access: Read Only
Range: 0 to (No Maximum)
Default: 0 (Required Entry)
Keywords: LOCAL CONSTANT READ
Note: Only used for intermittent signals. Must not be present for continuous signals.
Related Topics: ISSIG, NEWPV

NEWPV

Dependent variable new value for a PV indicator:
0 Use model prediction in control calculations based on the last new PV value read.
1 Use current process control system value (DEP) in control calculations.
NEWPV should be set to 1 by some external mechanism when a discretely sampled variable, such as composition from a stream analyzer, has been updated since the last controller cycle. The controller resets NEWPV back to 0 after it receives a value of 1.
The controller validation suite sets DEP to BAD if more than MXUSPR cycles have elapsed since the last new process control system value was received.

Applies to: Intermittent update CVs only (Dependent Section)
Data Type: Integer
Access: Read/Write
Range: 0 to 1
Default: 0 (Required Entry)
Keywords: RDWRT LOCAL
Note: Only used for intermittent signals. Must not be present for continuous signals. Typically this value is computed in the process control system or in an input calculation.
Related Topics: ISSIG, MXUSPR

NEWPVA

Value for NEWPV used by the controller. Saved because the controller will overwrite NEWPV.

Applies to: All CVs (Dependent Section)

Data Type: Integer
Access: Write Only
Range: No Restrictions
Default: 0
Keywords: (None) LOCAL WRITE
Related Topics: NEWPV

NGDDEP

Minimum number of good dependent variables required for DMCplus control. Valid range:
1 <= NGDDEP <= IPNDEP
If an insufficient number of dependent variables are available, the controller will turn OFF (ONSTS = 0).

Applies to: Controller General variables (General Section)
Data Type: Integer
Access: Read Only
Range: 1 to (No Maximum)
Default: 1
Keywords: (None) LOCAL CONSTANT READ
Related Topics: CRIDEP, IPNDEP, MNGCVS, ONSTS, SUBCRT

NGDMAN

Minimum number of good manipulated variables required for DMCplus Control. Valid range:
1 <= NGDMAN <= IPMIND
If an insufficient number of manipulated variables are available, the controller will turn OFF (ONSTS = 0).

Applies to: Controller General variables (General Section)
Data Type: Integer
Access: Read Only
Range: 1 to (No Maximum)
Default: 1
Keywords: (None) LOCAL CONSTANT READ
Related Topics: CRIIND, IPMIND, MNGMVS, ONSTS, SUBCRT

NGDSUB

Minimum number of good subcontrollers required for DMCplus control. Valid range:
1 <= NGDSUB <= IPNSUB
If an insufficient number of subcontrollers are available, the controller will turn OFF (ONSTS = 0).

Applies to: Controller General variables (General Section)
Data Type: Integer
Access: Read Only
Range: 1 to (No Maximum)

Default: Build automatically sets this value based on your selections.
Keywords: LOCAL CONSTANT READ
Related Topics: IPNSUB, ONSTS, SUBCRT

NORMOV

Normalized moves in use indicator. Build will set NORMOV to 1 when IPSKIP > 0 and extended moves are used.

Applies to: Controller Configuration variables (Configure Section)
Data Type: Integer
Access: Read Only
Range: 0 to 1
Default: Build automatically sets this value based on your selections.
Keywords: CONSTANT
Related Topics: CMOV, XTDMOV, XTDREQ, IPSKIP

OMSGnnn

Optional Message Text Segment. The 3-digit suffix (nnn) demotes the text segment number. This entry is part of the optional message output facility of DMCplus. The number of these text segments is determined from the number of text segments per message (OMSGSG) and the number of message lines to be displayed (OMSGLN).
Total text segments = OMSGSG * OMSGLN
There is a maximum limit of 80 text segments currently supported by DMCplus.

Applies to: Controller General variables (General Section)
Data Type: Variable Length String
Access: Write Only
Range: No Restrictions
Default: (Required Entry)
Keywords: LASTW LOCAL
Related Topics: OMSGBY, OMSGLN, OMSGSG, SWHYOnnn, WHYOnnn

OMSGBY

This value is part of the optional message output facility. It specifies the number of characters in a single message text segment. Three variables are used in combination to determine the buffer size of the optional message output facility:
OMSGLN Number of messages you wish to show in the output area.
OMSGBY Number of characters (bytes) allowed in each text segment.
OMSGSG Number of text segments required to display a single message.
These three values determine how many tag names (or point names) are required to contain the optional message output area (on a DCS screen for example).

Applies to: Controller Configuration variables (Configure Section)
Data Type: Integer
Access: Read Only
Range: Positive Integer values (including zero)
Default: Build automatically sets this value based on your selections.
Keywords: CONSTANT
Related Topics: OMSGLN, OMSGSG, OMSGnnn, SWHYOnnn, WHYOnnn

OMSGLN

This value is part of the optional message output facility. It specifies the total number of messages you wish to display in the message buffer. See OMSGBY for more information.

Applies to: Controller Configuration variables (Configure Section)
Data Type: Integer
Access: Read Only
Range: Positive Integer values (including zero)
Default: Build automatically sets this value based on your selections.
Keywords: CONSTANT
Related Topics: OMSGBY, OMSGSG, OMSGnnn, SWHYOnnn, WHYOnnn

OMSGSG

This value is part of the optional message output facility. It specifies the number of text segments that must be used to display a single message in the message buffer. See OMSGBY for more information.

Applies to: Controller Configuration variables (Configure Section)
Data Type: Integer
Access: Read Only
Range: Positive Integer values (including zero)
Default: Build automatically sets this value based on your selections.
Keywords: CONSTANT
Related Topics: OMSGBY, OMSGLN, OMSGnnn, SWHYOnnn, WHYOnnn

ONREQ

DMCplus controller master on/off request switch:
0 (OFF) Controller OFF
1 (ON) Request controller to turn ON
ONREQ is the master ON/OFF request switch for implementing manipulated variable setpoints. The controller will not allow manipulated variable setpoints to be implemented if ONREQ is OFF. The controller will never set the ONREQ flag to ON, but in some circumstances may set it to OFF.
ONREQ works in conjunction with ONSTS (the ON/OFF request result indicator). When ONREQ is set to ON, the controller performs validation to see if conditions are favorable to come ON or not. If conditions are favorable, it sets ONSTS to 1 (ON) and normal control is established. If conditions are not favorable,

ONSTS will be set to 0 (OFF) until conditions change, however ONREQ will continue to stay in the ON position.
The only normal case where ONREQ will be set to OFF is upon an ONSTS transition from ON to OFF. This would occur when the controller has been ON and an critical error occurs causing it to shed.
If you always wish to turn ONREQ OFF if it cannot turn ON within one cycle, then simply use the same tag name in the process control system for both ONREQ and ONSTS. This way, if ONSTS does not change to ON after the first cycle that ONREQ is requested, the controller will set ONSTS (and subsequently ONREQ) to OFF immediately.
To prevent ONREQ from ever being changed to OFF (by the controller) simply use the READ keyword instead of the RDWRT keyword.

Applies to: Controller General variables (General Section)
Data Type: Integer
Access: Read/Write
Range: 0 to 1
Default: 0 (Required Entry)
Keywords: RDWRT LOCAL READ CONSTANT
Note: This switch replaces DMCON.
Related Topics: ONSTS, SONREQ, SWHYOFF, WHYOFF

ONSTS

Resulting state of DMCplus controller master ON/OFF request switch (ONREQ):
0 (OFF) Controller is OFF
1 (ON) Controller is ON
This indicator will be set to OFF until conditions are favorable for the DMCplus controller to be able to write manipulated variable setpoints. It is used indicate whether or not the master ON/OFF request (ONREQ) was completed successfully.
Consider the following scenario:
Operator sets ONREQ to ON. The DMCplus controller detects the ON request and tries to turn the controller ON. However, one of the critical manipulated variable's loop status is OFF. This means the controller cannot turn ON this cycle. So the controller sets ONSTS to OFF, leaving ONREQ in the ON position (unless both ONSTS and ONREQ share the same process control system tag name). The controller goes into its wait mode for the next cycle. Before the next cycle, the operator sets the offending MV's loop status to ON. The controller runs again (with ONREQ still in the ON position). The MV passes validation and the controller turns ON. New MV setpoints are implemented and ONSTS is set to ON. ONSTS and ONREQ will now both stay ON unless the operator turns ONREQ to OFF or a critical error occurs in the controller.

Applies to: Controller General variables (General Section)
Data Type: Integer
Access: Write Only
Range: 0 to 1
Default: 0
Keywords: (None) WRITE LOCAL
Related Topics: ONREQ, SONREQ, SWHYOFF, WHYOFF

PDEPC

Compressed dependent variable predictions. Each value in PDEPC is selected from PDEP to correspond to the equivalent move time in FMOV.

Applies to: All CVs if Output Future Moves and Predictions to Process Control System option enabled (Dependent Section)
Data Type: Float
Access: Write Only
Range: No Restrictions
Default: 0 (Required Entry)
Keywords: LOCAL WRITE
Note: PDEPC can be output to the process control system by checking the "Output future moves and predictions to PCS Tags" option (FPENB) in Build, where PCS stands for Process Control System.
Related Topics: FMOV, FMOVT, FPENB, PDEPT, PFMDEP

PDEPT

Time in minutes into the future of each of the dependent variable calculated predictions. These values are sent only on a DMCplus controller initialization. They are available for configuring in the Configure section of DMCplus Build.

Applies to: Controller Configuration variables (Configure Section)
Data Type: Float
Access: Write Only
Range: Positive Floating-point values (including zero)
Default: 0
Keywords: (None) INIT
Note: PDEPT can be output to the process control system by checking the "Output future moves and predictions to PCS Tags" option (FPENB) in Build, where PCS stands for Process Control System.
Related Topics: FMOVT, FPENB, PFMDEP

PFMDEP

Dependent variable predictions with future moves. As part of its calculations, the controller predicts the future trajectories of the dependent variables based on past changes in the independent variables. PFMDEP contains the controller's prediction of the future trajectories assuming the manipulated variable moves proposed in FMOV are implemented, but no future movement occurs in the feedforward variables. The predicted trajectories span one controller time horizon (IPXCTH) into the future. PFMDEP contains one future prediction for each equation in the control matrix.

Applies to: All CVs if Output Future Moves and Predictions to Process Control System

option enabled (Dependent Section)
Data Type: Float
Access: Write Only
Range: No Restrictions
Default: 0 (Required Entry)
Keywords: LOCAL WRITE
Note: PFMDEP can be output to the process control system by checking the "Output future moves and predictions to PCS Tags" option (FPENB) in Build, where PCS stands for Process Control System.
Related Topics: FMOV, FMOVT, FPENB, IPXCTH, PDEPC, PDEPT, PRDOUT

PRDIND

Prediction initialization indicator:
0 (NO) Prediction not initialized
1 (YES) Prediction initialized
Indicates that prediction initialization occurred during this cycle. Prediction initialization occurs when: (1) the controller program is started after a re-load, (2) prediction initialization is requested via PRDSWC, or (3) when too many cycles are missed (as determined by MAXMIS).

Applies to: Controller General variables (General Section)
Data Type: Integer
Access: Write Only
Range: 0 to 1
Default: 0 (Although not required, AspenTech recommends defining this entry)
Keywords: (None) WRITE LOCAL
Related Topics: MAXMIS, PRDSWC

PRDOUT

Diagnostic print file prediction option:
0 (NONE) No prediction
1 (FULL) Full prediction
2 (SHORT) Pre-determined prediction pattern
Dependent variable predictions (PDEP and PFMDEP) can be included in the diagnostic print file. PRDOUT controls how much prediction information is printed.
Based on PRDOUT, no prediction information, full prediction information, or a short pre-determined pattern of prediction information will be included.

Applies to: Controller General variables (General Section)
Data Type: Integer
Access: Read Only
Range: 0 to 2
Default: 2
Keywords: (None) LOCAL CONSTANT READ

Related Topics: PRTSWC

PRDSWC

Prediction initialization switch:
0 (NO) Do not initialize prediction
1 (YES) Initialize prediction
Controller actions are based on the prediction of dependent variable values (PDEP). The prediction initialization switch, PRDSWC, allows the user to initialize PDEP for all CVs without stopping the controller program. The predictions for an individual CV may be initialized using the CV's PREDINIT flag.
Initializing the prediction may be necessary if a major unmeasured disturbance occurs because it will not be reflected in PDEP. The controller clears PRDSWC after initializing PDEP.

Applies to: Controller General variables (General Section)
Data Type: Integer
Access: Read/Write
Range: 0 to 1
Default: 0 (Although not required, AspenTech recommends defining this entry)
Keywords: (None) LOCAL RDWRT
Related Topics: PRDIND, PREDINIT

PREDER

Dependent variable prediction error. This value is the difference between the predicted and the actual controlled variable values, calculated as "prediction - actual".
As part of the controller calculations, the controller adjusts the prediction of future dependent variable values, PDEP, for movement in the independent variables, and then corrects for model error -- the difference between the adjusted prediction and the actual dependent variable value.

Applies to: All CVs (Dependent Section)
Data Type: Float
Access: Write Only
Range: No Restrictions
Default: 0
Keywords: (None) WRITE LOCAL
Related Topics: ACPRER, AVPRER

PREDINIT

Dependent variable prediction initialization switch:
0 (NO) Do not initialize predictions
1 (YES) Initialize prediction and prediction error history
2 (HISTORY ONLY) Initialize the prediction error history only (do not initialize the prediction itself)
Controller actions are based on the prediction of dependent variable values (PDEP). The prediction

initialization switch, PREDINIT, allows the user to initialize PDEP for a single CV without stopping the controller program or affecting the other CV predictions. A value of 2 for this parameter will initialize the prediction error history. The prediction error history is used to calculate the bias when a moving horizon filter is in use (PRERTYPE = 2).
Initializing the prediction may be necessary if a major unmeasured disturbance occurs because it will not be reflected in PDEP. The controller clears PREDINIT after initializing PDEP.

Applies to: All CVs (Dependent Section)
Data Type: Integer
Access: Read/Write
Range: 0 to 2
Default: 0 (Required Entry)
Keywords: LOCAL RDWRT
Related Topics: PRDSWC, PRERTYPE, PRERHORIZ

PRERHORIZ

The prediction error filter time horizon is used by the moving average filter (PRERTYPE = 2). The horizon is in minutes and is used to specify the number of past prediction errors that will be averaged to determine the final bias applied to the predictions. An exponential filter will automatically be applied to the moving average filter. The user defined PRERTAU will be used. If it is not set then a value of one-tenth of PRERHORIZ will be used. PRERHORIZ must be greater than or equal to CTLINT/60 and less than or equal to SSMINS.

Applies to: All CVs (Dependent Section)
Data Type: Float
Access: Read Only
Range: No Restrictions
Default: 0 (Required Entry)
Keywords: LOCAL READ
Related Topics: PRERTYPE

PRERTAU

The prediction error filter time constant is used with an exponential prediction error filter (PRERTYPE = 1). The time constant is in minutes and is used to calculate the bias that is applied to the prediction array.
When using an exponential filter the prediction error, PREDER, is calculated as follows:
PREDER = (1-alpha)*(PDEP001 - DEP)
where
alpha = PRERTAU/(PRERTAU + CTLINT/60)

Applies to: All CVs (Dependent Section)
Data Type: Float
Access: Read Only
Range: 0 to (No Maximum)

Default: 0 (Required Entry)
Keywords: LOCAL READ
Related Topics: PRERTYPE

PRERTYPE

Dependent variable prediction error filtering type:
0 (DMC) Traditional DMC prediction error filtering
1 (FIRST ORDER) Apply first order filter to the prediction error
2 (MOVING AVG.) Apply moving average filter to the prediction error
Controller actions are based on the prediction of dependent variable values (PDEP). The prediction error filter type governs how the controller updates the prediction based on feedback received from the plant. DMC filtering takes the difference between the current measurement and the current prediction to calculates a bias that is applied to each element of the prediction array. The first order filter option allows a fraction of the bias to be applied to the prediction array. The fraction is calculated based on the value of the prediction error filter time constant PRERTAU. The moving average filter uses an average of past values of the bias to determine the final bias applied to the prediction array . The number of past values used is specified by the prediction error filter time horizon PRERHORIZ. In addition, an exponential filter will be applied to the error. If PRERTAU is set to zero then a value equal to one-tenth of the PRERHORIZ will be used.
The various filtering schemes are intended to improve controller performance by improving the quality of the predictions. First order filters can be used for noisy measurements or to dampen infrequent disturbances to a given CV. Cycles of known duration can be removed or dampened with a moving horizon filter with a horizon of the same duration. DMC filtering is appropriate when there is high confidence in the incoming measurement.

Applies to: All CVs (Dependent Section)
Data Type: Integer
Access: Read Only
Range: 0 to 2
Default: 0 (Required Entry)
Keywords: LOCAL READ
Related Topics: PRERTAU, PRERHORIZ

PRMODE

Establishes the sources of diagnostic print files:
1 (NORMAL) As seen by the controller (file name will be:
<controllername>_<date>_<time>.PRT)
2 (BUFFER) Contents of common buffer following output transforms (file name will be:
<controllername>_<date>_<time>.PRB)
3 (BOTH) Both the .PRT and .PRB files will be generated

Applies to: Controller General variables (General Section)
Data Type: Integer
Access: Read Only

Range: 1 to 3
Default: 1
Keywords: (None) LOCAL READ
Related Topics: PRDOUT, PRTSWC

PRTSWC

Diagnostic print file down counter. Number of cycles to generate a diagnostic print file. If PRTSWC is greater than zero, the controller will generate a diagnostic print file at the end of the cycle. The controller will decrement a positive PRTSWC on each cycle until it is zero.

Applies to: Controller General variables (General Section)
Data Type: Integer
Access: Read/Write
Range: 0 to (No Maximum)
Default: 0 (Although not required, AspenTech recommends defining this entry)
Keywords: (None) RDWRT LOCAL
Related Topics: PRDOUT, PRMODE

R4ZTOL

Real zero tolerance.

Applies to: Controller Configuration variables (Configure Section)
Data Type: Float
Access: Read Only
Range: 0.0 to 0.001
Default: 1.00E-06
Keywords: (None) CONSTANT
Note: For AspenTech use only.

RAMPRT

Dependent variable ramp rate. Fraction of the distance from the current value back toward the ramp setpoint (RAMPSP) to use as the current setpoint. Valid range:
0.0 <= RAMPRT <= 1.0
The ramp rate controls how "hard" the controller will attempt to push a ramp-type dependent variable to the ramp setpoint. Ramp rate is only valid for ramp dependent variables and is ignored for non-ramp dependent variables

Applies to: Ramp CVs only (Dependent Section)
Data Type: Float
Access: Read Only
Range: 0.0 to 1.0
Default: 0 (Required Entry)

Keywords: LOCAL READ CONSTANT
Related Topics: RAMPSP, RHORIZ, ROTFAC

RAMPSP

Dependent variable ramp setpoint. Target to which the controller will attempt to drive a ramp-type dependent variable. Valid range:
LDEPTG <= RAMPSP <= UDEPTG
If RAMPSP is outside the valid range, RAMPSP is set to the value of the violated limit.
This value will highlight in the Production Control Web interface if it is considered to be an active constraint. For more information see DEPACT.

Applies to: Ramp CVs only (Dependent Section)
Data Type: Float
Access: Read Only
Range: No Restrictions
Default: 0 (Required Entry)
Keywords: READ LOCAL
Related Topics: LDEPTG, RAMPRT, UDEPTG

RESMON

Resource usage monitoring switch:
0 (OFF - Default) No resource monitoring
1 (ON) Resource monitoring output will be performed
If set, resource usage statistics are written to the resource monitoring file (<controllername>.RMN) at the end of major program steps. Time-stamped resource monitoring data will be appended to the file each control cycle until RESMON is set to 0 by the user.
Recommended usage: Turn ON for a few control cycles, then turn it OFF.

Applies to: Controller General variables (General Section)
Data Type: Integer
Access: Read Only
Range: 0 to 1
Default: 0
Keywords: (None) CONSTANT LOCAL READ

RHORIZ

Dependent variable ramp horizon. Specified as a fraction of the time to steady state. RHORIZ is used to calculate upper and lower allowed imbalance limits. Valid range:
1/30 <= RHORIZ
The upper allowed imbalance limit is the slope of the line connecting the current value to the "upper safety zone" at the time specified by RHORIZ. The lower limit is calculated in a similar manner. The upper safety zone is hard coded as 10% of UDEPTG - LDEPTG.

If the calculated imbalance for a ramp dependent variable exceeds the imbalance limits on any cycle, the controller will turn OFF.
The ramp horizon is only valid for ramp dependent variables with a non-zero MXNIMB. It is ignored for non-ramp type dependent variables, or ramp variables with a zero MXNIMB.

Applies to: Ramp CVs only (Dependent Section)
Data Type: Float
Access: Read Only
Range: 0.0333 to (No Maximum)
Default: 0 (Required Entry)
Keywords: LOCAL READ CONSTANT
Related Topics: MXNIMB, RAMPRT, ROTFAC

ROTFAC

Dependent variable ramp rotation factor. Fraction of the model error that is attributed to the imbalance in the system. Normally between 0.1 and 0.4. Valid range:
0.0 <= ROTFAC <= 1.0
The controller corrects its dependent variable future predictions using the difference between the actual current value and the predicted value.
For ramp-type variables, the error can be corrected by either shifting the prediction curve or rotating it. ROTFAC specifies the fraction of the error which is corrected by rotation. ROTFAC is only valid for ramp dependent variables and is ignored for non-ramp dependent variables.

Applies to: Ramp CVs only (Dependent Section)
Data Type: Float
Access: Read Only
Range: 0.0 to 1.0
Default: 0 (Required Entry)
Keywords: LOCAL READ CONSTANT
Related Topics: MXNIMB, RAMPRT, RHORIZ

SBOMSG

This flag is part of the Optional Message Buffer (OMSG) facility. It is used to prevent blank messages from appearing in the message buffer. This flag only affects the Optional Message Buffer (if you have selected this option). It has no effect on the master DMCplus message historian that Manage and View use.
0 Send all messages to the buffer.
1 Send only non-blank messages to the buffer.

Applies to: Controller General variables (General Section)
Data Type: Integer
Access: Read Only
Range: 0 to 1
Default: 0

Keywords: (None) LOCAL READ
Related Topics: CLOMSG, OMSGLN, OMSGSG, OMSGnnn, SWHYOnnn, WHYOnnn

SCNAM

Subcontroller name. One for each subcontroller.

Applies to: Subcontroller General variables (Subcontrollers Section)
Data Type: String*16
Access: Read Only
Range: No Restrictions
Default: Build automatically sets this value based on your selections.
Keywords: CONSTANT

SHPDEP

Dependent variable LP shadow price. A non-zero value indicates this variable is an active constraint in the LP. The shadow price is the incremental improvement in the LP objective function that would be obtained by relaxing this limit.
Shadow prices are not calculated when external targets are used or if the QP is used to minimize MV movement (MVOSWC set to 1).

Applies to: All CVs (Dependent Section)
Data Type: Float
Access: Write Only
Range: No Restrictions
Default: 0
Keywords: (None) WRITE LOCAL
Related Topics: DEPACT, SHPMAN

SHPMAN

Manipulated variable LP shadow price. A non-zero value indicates this variable is an active constraint in the LP. The shadow price is the incremental improvement in the LP objective function that would be obtained by relaxing this limit.
Shadow prices are not calculated when external targets are used or if the QP is used to minimize MV movement (MVOSWC set to 1).

Applies to: MVs only (Independent Section)
Data Type: Float
Access: Write Only
Range: No Restrictions
Default: 0
Keywords: (None) WRITE LOCAL
Related Topics: MANACT, SHPDEP

SIMCVSTDDEV

This entry is only used by Simulate. A Gaussian distribution with a mean of zero and a standard deviation of SIMCVSTDDEV is added to the dependent variable DEP value.
For a Gaussian or Normal distribution, often referred to as "white noise," 68.26% of the values will fall within one standard deviation of the mean, 95.44% of the values will be within two standard deviations of the mean, and 99.74% of the values will be within three standard deviations of the mean.
In DMCplus Simulate, enable the Add Noise option from the Controller menu or Toolbar icon, to add the Gaussian noise calculation to the dependent variable DEP value.

Applies to: All CVs (Dependent Section)
Data Type: Float
Access: Read Only
Range: Positive Floating-point values (including zero)
Default: 0.0 (Required Entry)
Keywords: LOCAL

SIMSWC

Simulation file output switch:
0 (OFF - Default) No simulation file produced
1 (ON) Output one simulation file and reset SIMSWC to 0
If set, causes the controller to produce a simulation file (<controllername>_<date>_<time>.DBG).

Applies to: Controller General variables (General Section)
Data Type: Integer
Access: Read/Write
Range: 0 to 1
Default: 1
Keywords: (None) LOCAL RDWRT

SONREQ

ON/OFF switch for each subcontroller:
0 (OFF) Subcontroller is OFF
1 (ON) Subcontroller is ON
The master ON/OFF result indicator (ONSTS) is not affected by turning SONREQ to OFF unless the subcontroller is critical (SUBCRT=1).

Applies to: Subcontroller General variables (Subcontrollers Section)
Data Type: Integer
Access: Read/Write
Range: 0 to 1
Default: 0 (Required Entry)

Keywords: RDWRT LOCAL
Related Topics: ONREQ, ONSTS, SUBCRT

SRECLP

Engineering switch which can be used to enable or disable a controller's participation in a DMCplus Composite suite.

Applies to: Composite General variables (Composite Section)
Data Type: Integer
Access: Read Only
Range: 0 to 1
Default: 0 (Required Entry)
Keywords: LOCAL READ
Related Topics: CLPENB, CLPREQ

SREDEP

Engineering service indicator for a dependent variable:
0 (OFF) Out of service for DMCplus controller
1 (ON) In service for DMCplus controller
Switch permitting engineering or an input transform to remove a variable from the controller calculations. If SREDEP = 0 for a dependent variable, its DMCplus status will be set to ENG_OFF (DEPSTA = -2). SREDEP is independent of the process control system status indicator. A variable can be flagged as out of service in the DMCplus controller without affecting its status in the process control system.

Applies to: All CVs (Dependent Section)
Data Type: Integer
Access: Read Only
Range: 0 to 1
Default: 1
Keywords: (None) READ LOCAL CONSTANT
Note: This entry is analogous to SRVDEP, but should not be available to operations. It is particularly useful in allowing a transform to set a variable in and out of service.
Related Topics: DEPSTA, SREIND, SRVDEP

SREIND

Engineer service indicator for an independent variable:
0 (OFF) Out of service for DMCplus controller
1 (ON) In service for DMCplus controller
Switch permitting engineering or an input transform to remove a variable from the controller calculations. If SREIND = 0 for an independent variable, its DMCplus status will be set to ENG_OFF (INDSTA = -2). SREIND is independent of the process control system status indicator. A variable can be flagged as out of service in the DMCplus controller without affecting its status in the process control system.

Applies to: MVs and FFs (Independent Section)
Data Type: Integer
Access: Read Only
Range: 0 to 1
Default: 1
Keywords: (None) READ LOCAL CONSTANT
Note: This entry is analogous to SRVIND, but should not be available to operations. It is particularly useful in allowing a transform to set a variable in and out of service.
Related Topics: INDSTA, LOOPST, SREDEP, SRVIND

SRVDEP

Operator service indicator for a dependent variable:
0 (OFF) Out of service for DMCplus controller
1 (ON) In service for DMCplus controller
Switch permitting operations to remove a variable from the controller calculations. If SRVDEP = 0 for a dependent variable, its DMCplus status will be set to BAD (DEPSTA = -1). SRVDEP is independent of the process control system status indicator. A variable can be flagged as out of service in the DMCplus controller without affecting its status in the process control system.

Applies to: All CVs (Dependent Section)
Data Type: Integer
Access: Read Only
Range: 0 to 1
Default: 1 (Required Entry)
Keywords: READ LOCAL CONSTANT
Note: It is recommended that this variable be available to the operator to take variables out of service.
Related Topics: DEPSTA, SREDEP, SRVIND

SRVIND

Operations service indicator for an independent variable:
0 (OFF) Out of service for DMCplus controller
1 (ON) In service for DMCplus controller
2 (FFW) Used as a feedforward (Manipulated variables only)
Switch permitting operations to remove a variable from the controller calculations. If SRVIND = 0 for an independent variable, its DMCplus status will be set to BAD (INDSTA = -1). SRVIND is independent of the process control system status indicator. A variable can be flagged as out of service in the DMCplus controller without affecting its status in the process control system.

Applies to: MVs and FFs (Independent Section)
Data Type: Integer
Access: Read Only

Range: 0 to 2
Default: 1 (Required Entry)
Keywords: READ LOCAL CONSTANT
Note: It is recommended that this variable be available to the operator to take variables out of service.
Related Topics: INDSTA, LOOPST, SREIND, SRVDEP

SSDEP

Dependent variable steady-state target. The DMCplus control move calculation is constrained to drive the variable to this value. If the controller is ON and no disturbances occur, the dependent variable should be equal to SSDEP at the end of the controller time horizon (IPXCTH).
This value will highlight in the Production Control Web interface if it is considered to be an active constraint. For more information see DEPACT.

Applies to: All CVs (Dependent Section)
Data Type: Float
Access: Write Only
Range: No Restrictions
Default: 0 (Although not required, AspenTech recommends defining this entry)
Keywords: (None) WRITE LOCAL
Note: It is strongly recommended that SSDEP be displayed to operations.
Related Topics: IPXCTH, SSERR, SSMAN

SSDEPA

Dependent variable steady-state target calculated by the controller engine before anti-transformation.

Applies to: All CVs (Dependent Section)
Data Type: Float
Access: Write Only
Range: No Restrictions
Default: 0
Keywords: (None) LOCAL WRITE
Related Topics: SSDEP

SSERR

Dependent variable steady-state target error. Difference between the dependent variable steady-state target (SSDEP) and a violated dependent variable target (UDEPTG or LDEPTG).
SSERR will be 0.0 if the steady-state target is at or within the dependent variable targets. SSERR will be non-zero if the steady-state target is outside the controlled variable targets. In that case, the controller was unable to satisfy the control objectives with the current setpoint and move limits on the manipulated variables.

Applies to: All CVs (Dependent Section)
Data Type: Float
Access: Write Only
Range: No Restrictions
Default: 0
Keywords: (None) WRITE LOCAL
Related Topics: LDEPTG, SSDEP, UDEPTG

SSMAN

Manipulated variable steady-state target. The DMCplus control move calculation is constrained to drive the variable to this value at the end of the controller time horizon (IPXCTH).
This value will highlight in the Production Control Web interface if it is considered to be an active constraint. For more information see MANACT.

Applies to: MVs only (Independent Section)
Data Type: Float
Access: Write Only
Range: No Restrictions
Default: 0 (Required Entry)
Keywords: LOCAL WRITE
Note: It is strongly recommended that SSMAN be displayed to operations.
Related Topics: IPXCTH, SSDEP

SSMANA

Manipulated variable steady-state target calculated by the controller before anti-transformation.

Applies to: MVs and FFs (Independent Section)
Data Type: Float
Access: Write Only
Range: No Restrictions
Default: 0
Keywords: (None) LOCAL WRITE
Related Topics: SSMAN

SSMINS

The number of minutes to steady state for the current controller. DMCplus Build reads this value directly from the model file and stores the value for reference in the CCF.

Applies to: Controller Configuration variables (Configure Section)
Data Type: Float
Access: Write Only
Range: Positive Floating-point values (including zero)

Default: Build automatically sets this value based on your selections.
Keywords: CONSTANT INIT

SSRDEP

Steady-state ramp dependent variable imbalance target. This entry is the imbalance value which the DMCplus controller is expecting the ramp controlled variable to reach.

Applies to: Ramp CVs only (Dependent Section)
Data Type: Float
Access: Write Only
Range: No Restrictions
Default: 0
Keywords: (None) LOCAL WRITE
Related Topics: RAMPSP, SSDEP

SSSTEP

Manipulated variable maximum steady-state target move (step). The controller may not calculate a steadystate target that is more than SSSTEP away from the current setpoint value. Valid range:
0.0 < SSSTEP <= 10.0 * (IPXNCI / 30) * MAXMOV
This upper bound on SSSTEP ensures that the controller will be able to move the manipulated variable to the new steady-state target during the controller time horizon (IPXCTH).

Applies to: MVs only (Independent Section)
Data Type: Float
Access: Read Only
Range: 0 to (No Maximum)
Default: 1 (Required Entry)
Keywords: LOCAL READ CONSTANT
Note: If SSSTEP = 0 and the variable is critical (CRIIND = 1), then the controller will be turned off (ONSTS = 0).
Related Topics: IPXCTH, IPXNCI, MAXMOV

SUBCRT

Subcontroller critical indicator. Indicates that this subcontroller is:
0 (N) Not critical for DMCplus controller operation
1 (Y) Critical for DMCplus controller operation (and Composite if Composite option is used)
2 (C) Critical for Composite participation (but not for controller operation)
Only used if subcontrollers are enabled.

Applies to: Subcontroller General variables (Subcontrollers Section)

Data Type: Integer
Access: Read Only
Range: 0 to 1
Default: 1
Keywords: (None) LOCAL CONSTANT READ
Related Topics: CRIDEP, CRIIND, MNGCVS, MNGMVS, SONREQ

SUPMLT

Move suppression (SUPMOV) affects how aggressively the controller will move the manipulated variable to achieve control objectives.
A larger value means more suppression, i.e., less movement.
The move suppression multiplier (SUPMLT) primarily affects the MV move plan after the 5th move. From the 5th move to the final (8th to 14th) move in the plan, the move suppression is modified linearly over the remaining coefficients from the value of the move suppression to the value of the multiplied move suppression (SUPMOV * SUPMLT). Valid range:
1.0 <= SUPMLT
If the multiplier is greater than 2, the effect on the move plan is to cause the controller to make slightly more aggressive moves earlier in the move plan to reach the same steady-state target. The default value for SUPMLT is two.
If the multiplier is less than 2, the move suppression will decrease from move 5 to the final move (8 - 14) and the controller will be able to push more of the MVs activity to the end of the move plan.
Most of the effect of the multiplier will be felt above the 5th move.
The move suppression should be manipulated up or down to affect the move plan between the 1st and 5th moves, accounting for the effect of the move suppression multiplier on the moves later in the plan.

Applies to: MVs only (Independent Section)
Data Type: Float
Access: Read Only
Range: 1.0 to (No Maximum)
Default: 2
Keywords: (None) READ LOCAL CONSTANT
Note: SUPMLT is not evident in DMCplus Build. The user must add SUPMLT as a user-defined LOCAL or READ entry in the CCF for each MV where modification is required.
Related Topics: SUPMOV

SUPMOV

Manipulated variable move suppression factor. Valid range:
0.01 <= SUPMOV
Affects how aggressively the controller will move the manipulated variables to achieve control objectives. A larger value means more suppression, i.e., less movement.
The move suppression multiplier (SUPMLT) primarily affects the move plan after the fifth move. From the fifth move to the final (8th and 14th) move in the plan, the move suppression is modified linearly over the remaining coefficients from the value of the move suppression to the value of the multiplied move

suppression (SUPMOV * SUPMLT).

Applies to: MVs only (Independent Section)
Data Type: Float
Access: Read Only
Range: 0.01 to (No Maximum)
Default: 1 (Required Entry)
Keywords: LOCAL READ CONSTANT
Related Topics: MAXMOV, SUPMLT

SWHYOnnn

Optional Message Text Segment for subcontroller WHYOFF message. The 3 digit suffix (nnn) denotes the text segment number. This entry is part of the optional message output facility of DMCplus. The number of these text segments is determined from the number of text segments per message (OMSGSG).
Only a single WHYOFF message is stored in the SWHYOnnn text segments.

Applies to: Subcontroller General variables (Subcontrollers Section)
Data Type: Variable Length String
Access: Write Only
Range: No Restrictions
Default: (Required Entry)
Keywords: LASTW LOCAL
Related Topics: OMSGBY, OMSGLN, OMSGSG, OMSGnnn, WHYOnnn

SWHYOFF

Text string indicating why a subcontroller was turned off. Output on an ON to OFF transition of SONREQ and cleared on an OFF to ON transition of SONREQ. There is one whyoff message for each subcontroller. If the subcontroller is flagged as critical (SUBCRT = 1) and the subcontroller turns off, then the master ON/OFF status (ONSTS) for the entire DMCplus controller will be turned OFF also.

Applies to: Subcontroller General variables (Subcontrollers Section)
Data Type: String*80
Access: Write Only
Range: No Restrictions
Default: (Required Entry)
Keywords: WRITE LOCAL
Related Topics: ONREQ, ONSTS, SONREQ, SUBCRT, WHYOFF

THISTM

Character string representation of the time the controller last ran.

Applies to: Controller General variables (General Section)

Data Type: String*20
Access: Write Only
Range: No Restrictions
Default:
Keywords: (None) WRITE LOCAL
Related Topics: LSTDAY, LSTSEC, LSTTIM

TRANZL

Transition zone size for dependent variable equal concern error at the lower limit. The transition zone is the size, in engineering units, of the region in which the control calculation equal concern error increases from its middle value to its value at the limit.

Applies to: All CVs (Dependent Section)
Data Type: Float
Access: Read Only
Range: 0 to (No Maximum)
Default: 0 (Required Entry)
Keywords: LOCAL READ CONSTANT
Related Topics: ECECML, ECECMM, TRANZU

TRANZU

Transition zone size for dependent variable equal concern error at the upper limit. The transition zone is the size, in engineering units, of the region in which the control calculation equal concern error increases from its middle value to its value at the limit.

Applies to: All CVs (Dependent Section)
Data Type: Float
Access: Read Only
Range: 0 to (No Maximum)
Default: 0 (Required Entry)
Keywords: LOCAL READ CONSTANT
Related Topics: ECECML, ECECMM, ECECMU, TRANZL

TRKDEP

Dependent variable tracking indicator:
0 (NONE) No tracking
1 (LIMIT) Track violated limit
2 (BOTH) Track both limits (setpoint tracking)
Enables dependent variable tracking. Dependent variable tracking has two forms, one for target ranges and one for setpoints. Use setpoint tracking (TRKDEP = 2) if the operating target range limits (UDEPTG/LDEPTG) are pinched. The tracking option determines what the controller does if a dependent variable is outside its operating limits when the controller is turned from OFF to ON.

If tracking is disabled, the controller will attempt to drive the variable back into the target range. If tracking is enabled, the controller will reset the violated operating limit (or both limits). The operating limit(s) will be reset to the current dependent variable value, unless the current value is outside the engineering limits (UDPENG/LDPENG). In that case the operating limit(s) will be reset to the violated engineering limit. The reset operating limit(s) will only be written back to the process control system if the controller is ON this cycle and was OFF last cycle.
NOTE: Limit tracking only occurs when ONSTS changes from OFF to ON. Tracking does not occur when turning on a subcontroller (SONREQ).
For SmartStep Testers, tracking only affects the operator limits and not the testing limits in order to preserve the testing range. Therefore, turning a Tester ON with a test group in one of the TEST modes will not cause the associated CV testing limits to track (thus possibly placing the test group into REPOSITION mode).

Applies to: All CVs (Dependent Section)
Data Type: Integer
Access: Read Only
Range: 0 to 2
Default: 0
Keywords: (None) LOCAL READ CONSTANT
Related Topics: LDEPTG, LDPENG, LVLDEP, UDEPTG, UDPENG, UVLDEP

TRKMAN

Manipulated variable tracking indicator:
0 (NO) No tracking
1 (YES) Track violated limit
Enables manipulated variable tracking. The tracking option determines what the controller does if a manipulated variable is outside its operating limits (ULINDM/LLINDM) when the controller is turned from OFF to ON.
If tracking is disabled the controller will not pick up the manipulated variable for control, but will treat it as a feedforward variable (INDSTA = 1). If tracking is enabled the controller will reset the violated operating limit.
The operating limit will be reset to the current manipulated variable value, unless the current value is outside the engineering limits (UMVENG/LMVENG). In that case the operating limit will be reset to the violated engineering limit. The reset operating limit will only be written back to the process control system if the controller is ON this cycle and was OFF last cycle.
NOTE: Limit tracking only occurs when ONSTS changes from OFF to ON. Tracking does not occur when turning on a subcontroller (SONREQ).

Applies to: MVs only (Independent Section)
Data Type: Integer
Access: Read Only
Range: 0 to 1
Default: 0
Keywords: (None) LOCAL CONSTANT READ
Related Topics: INDSTA, LLINDM, LMVENG, LVLIND, ULINDM, UMVENG, UVLIND

TYPMOV

The typical move value is used in model plots to show relative magnitudes between the step responses for a given dependent variable. This parameter has no effect on the controller calculations.

Applies to: MVs and FFs (Independent Section)
Data Type: Float
Access: Read Only
Range: Positive Floating-point values (including zero)
Default: 1.0 (Required Entry)
Keywords: LOCAL READ CONSTANT

UBYTES

This value is used by Manage to allocate memory for User Defined entries contained in the CCF. It is recalculated by Build automatically whenever an Open, Check or Save operation is performed on a CCF.

Applies to: Controller Configuration variables (Configure Section)
Data Type: Integer
Access: Read Only
Range: No Restrictions
Default: Build automatically sets this value based on your selections.
Keywords: BUILD
Note: This value gets updated automatically and cannot be modified directly.

UDEPTG

Dependent variable upper operating target used in control calculations. Must be at or within the validity and engineering limits for the dependent variable and greater than or equal to the lower target (LDEPTG).
If dependent variable tracking is enabled (TRKDEP), the controller will adjust UDEPTG if it is less than the current dependent variable value when the controller is turned ON.
This value will highlight in the Production Control Web interface if it is considered to be an active constraint.
For more information see DEPACT.

Applies to: All CVs (Dependent Section)
Data Type: Float
Access: Read/Write
Range: No Restrictions
Default: 0 (Required Entry)
Keywords: RDWRT LOCAL READ
Related Topics: LDEPTG, LDPENG, LVLDEP, TRKDEP, UDPENG, UVLDEP

UDPENG

Dependent variable upper engineering limit. Must be at or within the validity limits for the dependent variable and greater than or equal to the lower engineering limit (LDPENG).
If dependent variable tracking is enabled (TRKDEP), UDPENG is the upper bound on the dependent variable targets (UDEPTG/LDEPTG) which can be written back to the process control system when the controller is turned ON. UDPENG should be set by engineering to define the maximum allowable upper target for the dependent variable.

Applies to: All CVs (Dependent Section)
Data Type: Float
Access: Read Only
Range: No Restrictions
Default: 0 (Required Entry)
Keywords: READ LOCAL CONSTANT
Related Topics: LDEPTG, LDPENG, LVLDEP, TRKDEP, UDEPTG, UVLDEP

ULINDM

Manipulated variable upper operating limit used in control calculations. Must be at or within the validity and engineering limits for the manipulated variable and greater than or equal to the lower limit (LLINDM).
If manipulated variable tracking is enabled (TRKMAN), the controller will adjust ULINDM if it is less than the current manipulated variable value when the controller is turned ON.
This value will highlight in the Production Control Web interface if it is considered to be an active constraint. For more information see MANACT.

Applies to: MVs only (Independent Section)
Data Type: Float
Access: Read/Write
Range: No Restrictions
Default: 0 (Required Entry)
Keywords: READ LOCAL RDWRT
Related Topics: LLINDM, LMVENG, LVLIND, TRKMAN, UMVENG, UVLIND

UMVCM

Scaling factor used for the dynamic control move calculations for each MV.

Applies to: MVs only (Independent Section)
Data Type: Float
Access: Write Only
Range: No Restrictions
Default: 0
Keywords: (None) LOCAL WRITE

UMVENG

Manipulated variable upper engineering limit. Must be at or within the validity limits for the manipulated variable and greater than or equal to the lower engineering limit (LMVENG).
If manipulated variable tracking is enabled (TRKMAN), UMVENG is the upper bound on the adjustment of the manipulated variable limits (ULINDM/LLINDM). UMVENG should be set by engineering to define the maximum allowable upper limit for the manipulated variable.

Applies to: MVs only (Independent Section)
Data Type: Float
Access: Read Only
Range: No Restrictions
Default: 1 (Required Entry)
Keywords: LOCAL READ CONSTANT
Related Topics: LLINDM, LMVENG, LVLIND, TRKMAN, ULINDM, UVLIND

UMVLP

Scaling factor used for the steady-state calculation.

Applies to: MVs only (Independent Section)
Data Type: Float
Access: Write Only
Range: No Restrictions
Default: 0
Keywords: (None) LOCAL WRITE

URDPTG

Ramp dependent variable upper imbalance target. For ramps with a programmed imbalance (MXNIMB = -1), URDPTG is the upper limit on the allowed ramp imbalance, based on the ramp horizon (RHORIZ), the current dependent variable targets (UDEPTG/LDEPTG), and the current value of the dependent variable.

Applies to: Ramp CVs only (Dependent Section)
Data Type: Float
Access: Write Only
Range: No Restrictions
Default: 0
Keywords: (None) LOCAL WRITE
Related Topics: LDEPTG, LRDPTG, MXNIMB, RHORIZ, UDEPTG

UVLDEP

Dependent variable upper validity limit. If a dependent variable current value, operating limit, or engineering limit is greater than UVLDEP, the controller will treat it as a bad value. UVLDEP should be set by engineering to define the acceptable range of values the dependent variable can assume.

Applies to: All CVs (Dependent Section)
Data Type: Float
Access: Read Only
Range: No Restrictions
Default: 0 (Required Entry)
Keywords: READ LOCAL CONSTANT
Related Topics: LDEPTG, LDPENG, LVLDEP, TRKDEP, UDEPTG, UDPENG

UVLIND

Independent variable upper validity limit. If an independent variable current value, manipulated variable operating limit, or manipulated variable engineering limit is greater than UVLIND, it will be treated as a bad value by the controller. UVLIND should be set by engineering to define the acceptable range of values the independent variable can assume.

Applies to: MVs and FFs (Independent Section)
Data Type: Float
Access: Read Only
Range: No Restrictions
Default: 0 (Required Entry)
Keywords: READ LOCAL CONSTANT
Related Topics: LLINDM, LMVENG, LVLIND, TRKMAN, ULINDM, UMVENG

VIND

Independent variable current process value. Prior to the controller engine calculations, VIND contains the current process control system value of either the manipulated or feedforward variable.

Applies to: MVs and FFs (Independent Section)
Data Type: Float
Access: Read Only
Range: No Restrictions
Default: 0 (Required Entry)
Keywords: READ LOCAL
Related Topics: DEP, VINDSP

VINDA

Independent variable current process value used in the internal calculations of the controller. This is the transformed value of VIND.

Applies to: MVs and FFs (Independent Section)
Data Type: Float
Access: Write Only
Range: No Restrictions

Default: 0
Keywords: (None) LOCAL WRITE
Related Topics: VIND

VINDSP

Manipulated variable setpoint value as computed by the controller. If ONSTS is ON, the controller writes valid manipulated variable setpoints at the end of each controller cycle.

Applies to: MVs only (Independent Section)
Data Type: Float
Access: Write Only
Range: No Restrictions
Default: 0 (Required Entry)
Keywords: PWRITE LOCAL
Related Topics: DEP, ONSTS, VIND

VLARGE

Math very large number.

Applies to: Controller Configuration variables (Configure Section)
Data Type: Float
Access: Read Only
Range: 1.0E3 to 1.0E12
Default: 1.00E+12
Keywords: (None) CONSTANT
Note: For AspenTech use only.

WFAILM

Connect put error recovery mode. Allows the response of the controller on a process control system (PCS) write failure to be configured:
0 EXIT - (Default) Kill controller process if a write failure occurs.
1 OFF2EX - Try to turn off controller, and if two consecutive write failures occur, then kill the controller process.
2 OFF - Try to turn off controller, and don't track consecutive write failures.
3 IGNORE - Don't kill or turn off controller (ignore write failures). This option is a valid choice only after verifying that the PCS point list is stable (no points being added/deleted) and the controller has been well exercised and proven. Additionally, the watchdog timer logic at the PCS level must be in place to fail the controller and shed regulatory loops to normal mode when the timer expires due to a communications link failure.
Some common conditions where put errors can happen are:
PCS controller MODE is changed from CASC to non-CASC. Which may prevent computer write operations.

The MV limits are changed between the read and write phase of the DMCplus controller cycle.
A point in the PCS is re-built, moved or deleted. In this case, put errors will occur because of an invalid point address.

Applies to: Controller Configuration variables (Configure Section)
Data Type: Integer
Access: Read Only
Range: 0 to 3
Default: 0
Keywords: (None) CONSTANT
Note: If it is necessary to change WFAILM, you must first stop the controller and unload the context (Save the context to the CCF, then Delete the controller). Then edit the CCF and re-load it. Editing the CCF and re-loading over an existing controller will not change the value of WFAILM.
Related Topics: LISTSZ

WHYOnnn

Optional Message Text Segment for the overall DMCplus controller WHYOFF message. The 3 digit suffix (nnn) denotes the text segment number. This entry is part of the optional message output facility of DMCplus. The number of these text segments is determined from the number of text segments per message (OMSGSG).
Only a single WHYOFF message is stored in the WHYOnnn text segments.

Applies to: Controller General variables (General Section)
Data Type: Variable Length String
Access: Write Only
Range: No Restrictions
Default: (Required Entry)
Keywords: LASTW LOCAL
Related Topics: OMSGBY, OMSGLN, OMSGSG, OMSGnnn, SWHYOnnn

WHYOFF

Message stating why the controller turned off. Output on an ON to OFF transition of ONSTS and cleared on an OFF to ON transition of ONSTS.

Applies to: Controller General variables (General Section)
Data Type: String*80
Access: Write Only
Range: No Restrictions
Default: (Although not required, AspenTech recommends defining this entry)
Keywords: (None) WRITE LOCAL
Related Topics: ONREQ, ONSTS, SONREQ, SWHYOFF

WT

Dependent variable dynamic weight used in the control calculation. There are actually six values associated with this entry:
(I,1) Steady-state lower weight (DEP < Low Limit)
(I,2) Steady-state upper weight (DEP > High Limit)
(I,3) Control calculation lower weight (DEP < Low Limit)
(I,4) Control calculation middle weight (Low Limit < DEP < High Limit)
(I,5) Control calculation upper weight (DEP >High Limit)
(I,6) Control calculation weight used for this cycle.
Used by the controller to determine the relative importance of the dependent variables. The weights are always the inverse of the equal concern errors. The dynamic weight actually used in the control calculation is stored in the sixth element of the WT array, which is the only one output for the WT entry. All six values appear in the diagnostic print file.

Applies to: All CVs (Dependent Section)
Data Type: Float
Access: Write Only
Range: No Restrictions
Default: 0
Keywords: (None) LOCAL WRITE
Related Topics: ECECML, ECECMM, ECECMU, ECELPL, ECELPU

WTLP

Steady-state consistency weight. Weighting factor for the dynamic matrix to ensure that the dynamic moves calculated by the controller will place the MVs at the desired steady-state values calculated by the LP.

Applies to: Controller Configuration variables (Configure Section)
Data Type: Float
Access: Read Only
Range: 10.0 to 1.0E5
Default: 5.00E+02
Keywords: (None) CONSTANT
Note: For AspenTech use only.

WTMODE

This entry sets the method by which the DMCplus controller expects to be scheduled:
1 INTERNAL - (Default) Internal scheduling. The controller process schedules itself.
2 EXTERNAL - External scheduling. The controller process waits until an external source signals it to run.

Applies to: Controller Configuration variables (Configure Section)

Data Type: Integer
Access: Read Only
Range: 1 to 2
Default: 1
Keywords: (None) CONSTANT
Related Topics: CTOFF

XFORM

See the Standard Transform documentation.

Applies to: MVs and FFs (Independent Section)
Data Type: Variable Length String
Access: Read Only
Range: No Restrictions
Default:
Keywords: (None) XFORM

XTDMOV

Informational flag stating whether extended moves will be used or not:
0 Extended moves will not be used.
1 Extended moves will be used.
Without extended moves, the controller uses 30 coefficients, 15 predictions and 8 moves. With extended moves, the controller has up to 120 coefficients, 21 predictions and 14 moves. Another move is added for every 15 controller coefficients above 30. The following table shows this relationship.
Coefs. -- Preds. -- Moves
30 -- 15 -- 8
45 -- 16 -- 9
60 -- 17 -- 10
75 -- 18 -- 11
90 -- 19 -- 12
105 -- 20 -- 13
120 -- 21 -- 14
Note: The controller is limited to 120 coefficients, but the model may have more. See IPSKIP.

Applies to: Controller Configuration variables (Configure Section)
Data Type: Integer
Access: Read Only
Range: 0 to 1
Default: Build automatically sets this value based on your selections.
Keywords: CONSTANT
Related Topics: IPNMOV, IPSKIP, NORMOV, XTDREQ

XTDREQ

Request stating that extended moves should be used if possible:

0 (Default) Do not use extended moves.

1 Use extended moves if possible.

Applies to: Controller Configuration variables (Configure Section)

Data Type: Integer

Access: Read Only

Range: 0 to 1

Default: Build automatically sets this value based on your selections.

Keywords: CONSTANT

Related Topics: NORMOV, XTDMOV