

**Programmable Logic  
Controller Gateway  
Parameter Reference  
Dictionary**

PL09-540



**Implementation  
PLC Gateway**

***Programmable Logic  
Controller Gateway  
Parameter Reference  
Dictionary***

**PL09-540  
Release 520  
7/96**

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## About This Publication

This is a reference publication for people who need information about the hiway, box/slot, and data point parameters of the Programmable Logic Controller Gateway (PLCG). This publication can be used by engineers, supervisors, and operators because the information it contains is useful during the configuration of the PLCG, and during the operation of the system.

This publication supports the **TotalPlant** Solution (TPS) System network Release 500 - 520. TPS is the evolution of TDC 3000<sup>X</sup>.

Change bars are used to indicate paragraphs, tables, or illustrations containing changes that have been made to this manual effective with Release 520. Pages revised only to correct minor typographical errors contain no change bars.



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## INTRODUCTION Section 1

### 1.1 GENERAL

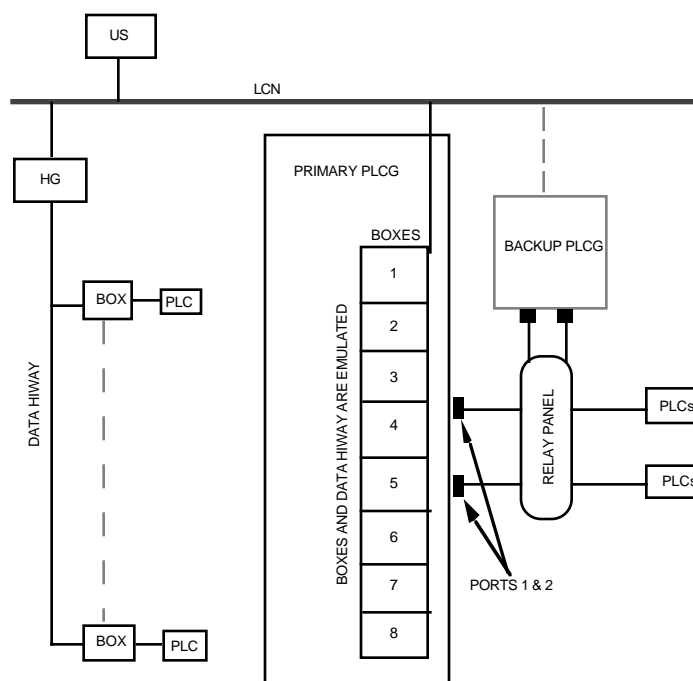
This publication provides reference information about Programmable Logic Controller Gateway (PLCG) parameters. It also provides listings of parameters that apply to the various PLCG data point types.

### 1.2 USE OF THIS PUBLICATION

Use this publication during configuration and during operation when detailed information about PLCG parameters is required.

For use in data point configuration, this publication provides definitions for each entry that can be made on the *PLCG Forms* in the *Implementation/PLCG* binder, and in the Parameter Entry Displays at the Universal Station.

Because the PLCG emulates a Hiway Gateway (HG) with a Data Hiway and up-to-eight extended Data Hiway Ports (DHPs), most parameters that apply to the HG/DHP also apply to the PLCG. The PLCG is directly connected to the LCN. Within the PLCG, up-to-eight DHPs are emulated. Directly attached to the PLCG are Programmable Logic Controllers (PLCs). For the purpose of this publication, the term “box” applies to the emulated DHP within the PLCG, the term “slot” applies to the point memory space in the PLCG, and the term “subslot” applies to the data points that are implemented in these slots.



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For use in process operation, this publication provides information about the parameters that appear for PLCG data points on the displays of Universal Stations that are running with the Operator personality.

### 1.3 NOTATION

Parameter names that are listed in this publication are the mnemonics that appear within parentheses next to the long names of the parameters on the configuration forms, and on the Universal Station displays. These parameter names consist of up to eight alphabetic or alphanumeric characters. The names are in boldface type with all capital letters such as **NAME**, **OUTSSLT**, etc. When parameter names appear within the definition of another parameter, the parameter names are underlined, such as LOADDEST, and INPTSSLT.

No algorithms are associated with the PLCG.

### 1.4 PARAMETER CONFIGURATION

Figure 1-1 shows the structure of the PLCG as it relates to the parameters in the reserved entities (whose names begin with “\$”) and an example data point:

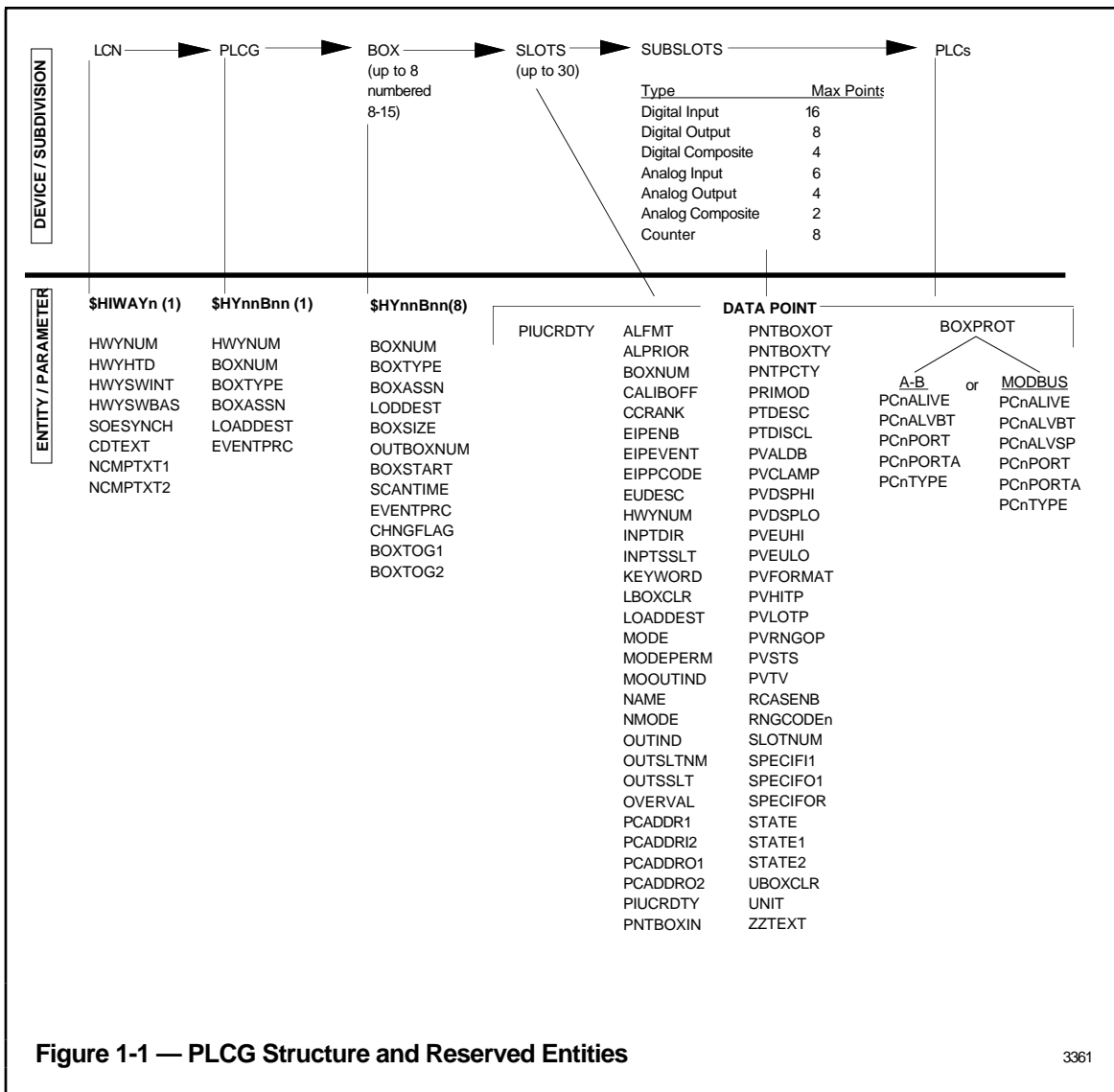


Figure 1-1 — PLCG Structure and Reserved Entities

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## 1.5 REFERENCES

<b>Title</b>	<b>Publication No.</b>	<b>Binder</b>
Engineer's Reference Manual	SW09-505	Implementation/Startup & Reconfiguration - 2
System Control Functions	SW09-501	Implementation/Startup & Reconfiguration - 2
Network Forms	SW88-505	Implementation/Configuration Forms
Network Data Entry	SW11-505	Implementation/Startup & Reconfiguration - 1
Programmable Logic Controller Gateway Control Functions	PL09-500	Implementation/PLC Gateway
Programmable Logic Controller Gateway Forms	PL88-500	Implementation/PLC Gateway
Programmable Logic Controller Gateway Planning, Installation, and Service	PL02-500	Implementation/PLC Gateway
Programmable Logic Controller Gateway Specification and Technical Data	PL03-500	System Summary - 2
Data Entity Builder Manual	SW11-511	Implementation/Engineering Operations - 1



## PARAMETER LISTS (PER DATA POINT TYPE) Section 2

### 2.1 GENERAL

This section contains listings of the configurable parameters that apply to all PLCG data point types. The parameters are listed in a tabular format in the order that they appear on the data point configuration forms and parameter entry displays. The data point types that are listed in Tables 2-1 through 2-7 are as follows:

Data Point Type	Table
Analog Composite	Table 2-1
Analog Input	Table 2-2
Analog Output	Table 2-3
Counter	Table 2-4
Digital Composite	Table 2-5
Digital Input	Table 2-6
Digital Output	Table 2-7

**Table 2-1 — Analog Composite Data Point Type**

PLCG Point Assignment Display	PLCG PV Configuration Display	PLCG Alarming Display	PLCG Operating Configuration Display	PLCG Mode Configuration Display
NAME UNIT PTDESC KEYWORD PRIMMODE HWYNUM PNTBOXTY BOXNUM OUTBOXNM PTDISCL SLOTNUM INPTSSLT OUTSLTNM OUTSSLT LOADDEST	EUDESC PVFORMAT PVEULO PVDSPLO PVEUHI PVDSPLHI OVERVAL PVRNGOP PVCLAMP CALIBOFF	\$AUXUNIT ALFMT PVLOTP PVHITP DEVLOTP DEVHITP CCRANK CCPRIPNT EIPPCODE EIPEVENT EIPENB CNFERRPR DEVHIPR DEVLOPR PVHIPR PVLOPR UNREASPR	OUTIND PVTV PNTPCTY PNTBOXIN PCADDR1 SPECIF1 SPECIF2 SPECIFO1 SPECIFO2 RNGCODE1 RNGCODE2 PNTBOXOT PCADDRO1 PCADDRO2	NMODE NMODATTR RCASENB MODEPERM MODE

Table 2-2 — Analog Input Data Point Type

PLCG Point Assignment Display	PLCG PV Configuration Display	PLCG Alarming Display	PLCG Operating Configuration Display
NAME UNIT PTDESC KEYWORD PRIMMOD HWYNUM PNTBOXTY BOXNUM PTDISCL SLOTNUM INPTSSLT LOADDEST	EUDESC PVFORMAT PVEULO PVDSPLO PVEUHI PVDSPHI OVERVAL PVRNGOP PVCLAMP CALIBOFF	\$AUXUNIT ALFMT PVLOTP PVALDB PVHITP DEVLOTP DEVHITP CCRANK CCPRIPNT EIPPCODE EIPEVENT EIPENB CNFERRPR DEVHIPR DEVLOPR PVHIPR PVLOPR UNREASPR	PVTV PNTBOXIN PNTPCTY PCADDR1 SPECIF1 SPECIF2 RNGCODE1 RNGCODE2

Table 2-3 — Analog Output Data Point Type

PLCG Point Assignment Display	PLCG Operating Configuration Display	PLCG Mode Configuration Display
NAME UNIT PTDESC KEYWORD PRIMMOD HWYNUM PNTBOXTY OUTBOXNM PTDISCL OUTSLTNM OUTTSSLT LOADDEST	OUTIND PNTBOXOT PNTPCTY PCADDRO1 PCADDRO2 SPECIFO1 SPECIFO2 RNGCODE1 RNGCODE2	NMODE NMODATTR RCASENB MODEPERM MODE

Table 2-4 — Counter Data Point Type

PLCG Point Assignment Display	PLCG Alarming Display	PLCG Operating Configuration Display
NAME UNIT PTDESC KEYWORD PRIMMOD HWYNUM PNTBOXOTY BOXNUM PTDISCL SLOTNUM INPTSSLT LOADDEST	\$AUXUNIT EIPPCODE EIPENB CNFERRPR COUNTRPR	EUDESC AVFORMAT AVCONV AV PRESET PNTBOXIN PNTPCTY PCADDR1 PCADDR2 SPECIF1 SPECIF2 SPECIFO1 SPECIFO2

Table 2-5 — Digital Composite Data Point Type

PLCG Point Assignment Display	PLCG Operating Configuration Display	PLCG Mode Configuration Display	PLCG Alarming Display
NAME UNIT PTDESC KEYWORD PRIMMOD HWYNUM PNTBOXTY BOXNUM OUTBOXNM PTDISCL LOADDEST SLOTNUM INPTSSLT NMBRINPT OUTSLTNM OUTSSLT NMBROUT	STATE2 STATE1 UBOXCLR LBOXCLR MOOUTIND OUTIND OVERVAL INPTDIR PNTPCTY PNTBOXIN PCADDR1 PCBIT1 SPECIF1 SPECIF2 PNTBOXOT PCADDRO1 PCADDRO2 PCBITO1 SPCIFIO1 SPECIFIO2	NMODE NMODATTR RCASENB MODEPERM MODE	\$AUXUNIT DIGALFMT CCRANK CCPRIPNT EIPPCODE EIPVENT EIPENB CNFERRPR OFFNRMPR CMDDISPR CHOFSTPR

Table 2-6 — Digital Input Data Point Type

PLCG Point Assignment Display	PLCG Alarming Display	PLCG Operating Configuration Display
NAME UNIT PTDESC KEYWORD PRIMMOD HWYNUM PNTBOXTY BOXNUM PTDISCL LOADDEST SLOTNUM INPTSSLT NMBRINPT	\$AUXUNIT DIGALFMT CCRANK CCPRIPNT EIPPCODE EIPEVENT EIPENB CHOFSTPR CNFERRPR OFFNRMPR	STATE2 STATE1 UBOXCLR LBOXCLR OVERVAL INPTDIR PNTBOXIN PNTPCTY PCADDR1 PCADDR2 PCBIT1 PCBIT2 SPECIF1 SPECIF2

Table 2-7 — Digital Output Data Point Type

PLCG Point Assignment Display	PLCG Operating Configuration Display	PLCG Mode Configuration Display
NAME UNIT PTDESC KEYWORD PRIMMOD HWYNUM PNTBOXTY OUTBOXNM PTDISCL LOADDEST OUTSLTNM OUTSSLT NMBROUT	STATE2 STATE1 UBOXCLR LBOXCLR MOOUTIND OUTIND PNTBOXOT PNTPCTY PCADDRO1 PCADDRO2 PCBITO1 PCBITO2 SPECIFO1 SPECIFO2	NMODE NMODATTR RCASENB MODEPERM MODE

**2.2**

**-\$-**

**\$AUXUNIT—Auxiliary Unit**

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

<b>Source:</b> System	<b>Default Value:</b> Null	<b>Access Lock:</b> Oper.
<b>Value Type:</b> Enum. of UNIT	<b>Value Range:</b> A-Z, 0-9 and Null (Any valid unit ID as configured in the NCF)	



**-A-****NOTE**

Because the PLCG emulates an HG with a data hiway and up to eight extended DHPs, most parameters that apply to the HG/DHP also apply to the PLCG. Within the PLCG parameter definitions, the terms “box”, “slot”, and “subslot” refer to logical instead of physical devices.

**ALFMT—Alarm Format (Analog Data Point)**

This parameter defines the type of alarming (PV, deviation, etc.) that is to be used for an analog data point. (Enter the alarm trip point values for the selected alarm format on the configuration form in the lines that follow the ALFMT line.)

<b>Source:</b>	User	<b>Default Value:</b>	Alfmt00	<b>Access Lock:</b>	Engr.
<b>Value Type:</b>	Enum. of ALFMT	<b>Value Range:</b>	Alfmt00 = PV alarming ( <u>PVLOTP</u> & <u>PVHITP</u> ) Alfmt01 = Deviation alarming ( <u>DEVLOTP</u> & <u>DEVHITP</u> )		

**ALPRIOR—Alarm Priority**

This parameter defines the priority of an alarm generated by a data point. The alarm priority determines how the alarm is handled by the system. ALPRIOR can only be updated from CL or from a schematic.

<b>Source:</b>	User	<b>Default Value:</b>	Low	<b>Access Lock:</b>	Engr.
<b>Value Type:</b>	Enum. of ALPRIOR				
<b>Value Range:</b>	Noaction =	Alarm is not reported to the system. Alarm is not annunciated.			
	Journal =	Alarm is historized but is not reported to the Universal Station. Alarm is not annunciated.			
	Low =	Alarm is historized and is reported to the Universal Station. Alarm is annunciated.			
	High =	Alarm is historized and is reported to the Universal Station. Alarm is annunciated.			
	Emergency =	This alarm has emergency (first) priority, and is historized and reported to USs (this value not allowed for counter points). The Alarm is annunciated. Each HG has a capacity of 50 emergency-priority points. Emergency-priority alarms are evaluated by the PLCG at one-half second intervals. Such alarms are reported before those for other points when the PLCG starts up or fails over to the secondary PLCG. This priority does not apply to counter points, to digital I/O composite points whose <u>DIGALFMT</u> parameter contains Cmddis, nor to digital points whose <u>PIUCRDOP</u> parameter contains Notifyst.			
	Printer =	Alarm is reported to the US RTJ. Alarm is not historized or annunciated, and does appear on Group and Detail displays.			
<b>NOTE</b>					
If PRINTER is chosen, the alarm is lost if the printer is not working.					
	Inlprint =	Alarm is historized and reported to the US RTJ. Alarm is not annunciated and does not appear on Group and Detail displays.			

**ASSOCDSP—Associated Display**

This parameter specifies a user-configured schematic associated with a point. The specified associated display can be called from a Point Detail display, from any summary display, or from the Group display when the point is selected.

<b>Source:</b>	User	<b>Default Value:</b>	Blank	<b>Access Lock:</b>	Engr.
<b>Value Type:</b>	String_8	<b>Value Range:</b>	N/A		

**AV—Accumulator Value (Counter Data Point)**

This parameter is the current accumulated value at the specified emulated DHP counter data point.

<b>Source:</b>	System	<b>Default Value:</b>	0.0	<b>Access Lock:</b>	Oper.
<b>Value Type:</b>	Real	<b>Value Range:</b>	0 to 65535* <u>AVCONV</u>		

**AVCONV—Scale Factor (Counter Data Point)**

This parameter defines the scale factor that determines the engineering units that represent one count of the counter point.

<b>Source:</b>	User	<b>Default Value:</b>	1.0	<b>Access Lock:</b>	Engr.
<b>Value Type:</b>	Real	<b>Value Range:</b>	0 to 1.0		

**AVFORMAT—Accumulator Decimal Point Position**

This parameter defines the position where the decimal point is to be displayed in the accumulated value (AV).

<b>Source:</b>	System	<b>Default Value:</b>	N/A	<b>Access Lock:</b>	Engr
<b>Value Type:</b>	Enum. of VALFORMAT	<b>Value Range:</b>	D0 = XXXXXXX. D1 = XXXXX.X D2 = XXXX.XX D3 = XXX.XXX D4 = XX.XXXX D5 = X.XXXXX		

**NOTE**

Counter data-points have formats of D0-D3.



## 2.3

**-B-****BOXASSN—Box Assignment**

For an HG, this parameter establishes the relationships between the HGs on the Data Hiway. For a PLCG, this parameter must have a value of ThisHG, which indicates that the PLCG is responsible for all the functions of the emulated DHPs.

<b>Source:</b>	User	<b>Default Value:</b>	ThisHG	<b>Access Lock:</b>	DEB
<b>Value Type:</b>	Enum. of BOXASSN	<b>Value Range:</b>	ThisHG =	<b>ThisHG is the only valid value for a PLCG.</b> For a PLCG, the box number (address) being configured belongs to this PLCG, not another PLCG on the same hiway. For a emulated DHP, the PLCG that is configured as ThisHG provides support for all of this emulated DHPs functions.	

**The following values are not valid for a PLCG:**

AddedHG = For an HG, the box number (address) being configured belongs to an added HG on the same LCN as ThisHG. The added HG is used to share the processing load of ThisHG. For a box, the HG that is configured as AddedHG provides support for this box.

RemoteHG = For an HG, the box number (address) being configured belongs to an HG on this hiway, but on another LCN. For a box, the HG that is configured as ThisHG provides limited support for this box. This box is fully supported by the HG that is configured as RemoteHG.

**BOXFSTAT—Box Functional State**

This parameter defines the functional state of a box. BOXFSTAT can be overridden by HWYCTLST (Hiway Control State).

<b>Source:</b>	System	<b>Default Value:</b>	N/A	<b>Access Lock:</b>	Supvr.
<b>Value Type:</b>	Enum. of BOXFSTAT	<b>Value Range:</b>	Read =	AM can read data from this box, but cannot write data to this box.	
			Full =	AM can read data from this box, and can write data to this box.	
			Basic =	AM can read data from this box, but cannot write data to this box.	
			Test =	Box is being tested.	

**BOXNUM—Box Number or Input Box Number**

The box number defines the location of the physical address of the DHP (in which this data point resides) on the emulated Data Hiway. For a PLCG, this parameter defines the address within the emulated DHP where the data point resides. The box numbers are initially established in parameter BOXNUM on the HG-Box Point Assignment Display. For an input data point or composite data point, the input box number defines the location of the input portion of the data point. Refer to the applicable data point configuration form for this information.

<b>Source:</b> User	<b>Default Value:</b> 00	<b>Access Lock:</b> DEB
<b>Value Type:</b> Integer	<b>Value Range:</b> 8-15	

**NOTE**

For a composite data point, the input box number and the output box number must be the same number.

**BOXPROT—Box Protocol (Box Data Point)**

This parameter defines the type of protocol (message format) that is to be used by the PLCs that are connected to this PLCG.

<b>Source:</b> User	<b>Default Value:</b> Allenbrd	<b>Access Lock:</b> DEB
<b>Value Type:</b> Enum. of BOXPROT	<b>Value Range:</b> Allenbrd = Allen-Bradley Modicon = Modicon Honywell = Honeywell/ISSC Notcfg = Protocol is not configured	

**NOTE**

If you use a PLC that is different than the ones listed above, ensure that the PLC's protocol is compatible with a supported protocol and select that protocol.

**BOXSIZE —Box Size (Box Data Point)**

This parameter defines the number of slots/PLCs in the emulated DHP. For a PLCG, you must choose Extended to configure all 30 slots.

<b>Source:</b> User	<b>Default Value:</b> Regular	<b>Access Lock:</b> DEB
<b>Value Type:</b> Enum of BOXSIZE	<b>Value Range:</b> Regular = <b>Not valid for PLCG.</b> Extended = The PLCG emulates an extended DHP having 30 slots (slots 1-15 and 17-31).	

**BOXSTAT — Box Status**

This parameter defines the status of the particular emulated DHP.

<b>Source:</b>	System	<b>Default Value:</b>	N/A	<b>Access Lock:</b>	Read-Only
<b>Value Type:</b>	Enum. of BOXSTAT	<b>Value Range:</b>	Uncertn =		Box status has not yet been determined by the hiway security tests during PLCG startup.
			Run =		Emulated DHP is OK and is in the processing state.
			Failcom =		Emulated DHP is not responding.
			Failhdw =		Hiway address error or continued failure to respond has been detected.
			Runprtfl =		A failure has been detected during normal operation; emulated DHP is still OK.
			Runsftfl =		A soft failure such as A/D drift has been detected during normal operation; emulated DHP is still OK.
			Idle =		Emulated DHP is in idle state.
			Idlesft =		A soft failure has been detected while the emulated DHP is in the idle state.
			Reset =		Emulated DHP is in reset state.
			Idleprt =		A partial failure has been detected while the emulated DHP is in the idle state.

**BOXSTART — Box Startup (Box Data Point)**

This parameter defines the state the emulated DHP is to enter when it is started up.

<b>Source:</b>	User	<b>Default Value:</b>	Cold	<b>Access Lock:</b>	DEB
<b>Value Type:</b>	Enum. of BOXSTART	<b>Value Range:</b>	Cold =		After startup, emulated DHP remains in a reset state.
			Hot =		<b>Not valid for PLCG.</b>

**BOXTYPE — Box Type (Box Data Point)**

This parameter defines the hiway box type. For a PLCG, always select DHP.

<b>Source:</b> User	<b>Default Value:</b> Notconfg	<b>Access Lock:</b> DEB
<b>Value Type:</b> Enum. of BOXTYPE	<b>Value Range:</b> Notconfg =	This entry is used to delete a hiway box type.
	Dhp =	Data Hiway Port/620 Hiway Interface Module. <b>This is the only valid value for the BOXTYPE parameter on a PLCG.</b>

**The following appear on the display, but are not valid for a PLCG:**

- Cb = Basic Controller
- Au = Analog Unit
- Hlpiu = High-Level Process Interface Unit
- Lepiu = Low-Energy Process Interface Unit
- Llpiu = Low-Level Process Interface Unit
- Cbrcd = Basic Controller Reserve Controller Director
- Ec = Extended Controller
- Ecrd = Extended Controller Reserve Controller Director
- Mc = Multifunction Controller
- Mcrd = Multifunction Controller Reserve Controller Director
- Opsta = Operator Station, Basic or Enhanced
- H4500 = Honeywell 4500 Computer
- HG = Hiway Gateway
- GPCI = General Purpose Computer Interface

**BOXVDB — Box Variable Alarm Deadband**

This parameter defines whether an LLPIU or DHP box will use the Variable Alarm Deadband option. Variable Alarm Deadband allows the setting of a variable deadband value in percent of engineering units for analog input points instead of using the default setting of 1% of engineering unit range.

The variable deadband value may be entered in the PVALDB parameter. This option requires special variable deadband firmware to be installed in the LLPIU (part#38120017) and/or DHP (part#38120019).

<b>Default Source:</b> User	<b>Value:</b> Off	<b>Access Lock:</b> Eng
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**Value Type:** Boolean

**Value Range:** Off = Variable alarm deadband processing is turned off. PVALDB will be initialized to 1% when special deadband firmware is present on a box load and BOXVDB is OFF.

On = Variable alarm deadband processing is turned on. Allows entry of variable deadband values in PVALDB. Must have BOXDVB set to ON before a box load if PVALDB values are NOT to be initialized. BOXSIZE is required to be EXTENDED and the special variable deadband firmware must be present before BOXVDB can be set ON.



## 2.4

**-C-****CALIBOFF — Calibration Offset**

This parameter allows the user to specify a positive or negative offset value (in engineering units) to adjust the value of the PV input received from the field, thereby eliminating minor variations that can exist between the same types of field devices.

<b>Source:</b>	User	<b>Default Value:</b>	0	<b>Access Lock:</b>	Supvr.
<b>Value Type:</b>	Real	<b>Value Range:</b>	-9999 to 9999		

**CCPRIPNT — Primary Point**

This parameter specifies the tag name of the primary data point in a contact-cutout chain that is to report the alarm condition to the system. An entry has to be made for this parameter when the selection for the CCPRIPNT parameter is Secondary. Refer to the definition of NAME (Tag Name) for the valid character set.

<b>Source:</b>	User	<b>Default Value:</b>	All Underscores	<b>Access Lock:</b>	DEB/Engr.
<b>Value Type:</b>	Entity ID	<b>Value Range:</b>	See <u>NAME</u>		

**NOTE**

To update the value in this parameter, CCRANK must contain Secondary and CCRANK of the point named by the CCPRIPNT value in this point must contain Primary.

When updating the default value, underscores cannot be reentered once it has been changed.

**CCRANK — Contact-Cutout Rank**

This parameter allows you to specify whether a data point is to be part of a contact-cutout chain, and its position in the chain (primary or secondary). The contact-cutout function allows multiple secondary data points to be assigned to a primary data point (specified by CCPRIPNT) so that if the primary data point goes into an alarm condition, any alarms at the secondary data points are ignored (cut out) by the system. This prevents multiple alarms from being generated because one data point goes into an alarm condition. The primary data point resides in the same PLCG as the secondary data points.

<b>Source:</b>	User	<b>Default Value:</b>	Neither	<b>Access Lock:</b>	DEB
<b>Value Type:</b>	Enum. of CCRANK	<b>Value Range:</b>	Neither =	This data point is not part of a contact-cutout chain.	
			Primary =	This data point is to report the alarm condition to the system.	
			Secondary =	This data point is to report the alarm condition to the primary data point specified by <u>CCPRIPNT</u> (Primary Point) that resides in the same PLCG as the primary data point. If Secondary is entered for this parameter during configuration, also make an entry in the <u>CCPRIPNT</u> line to identify the tag name of the primary point.	

**CDTEXT — Command Disagree Text (Data Hiway Data Point)**

This parameter defines a descriptor of up to 8 characters that will be displayed for an MC digital composite data point that has been configured for Cmmdis (Command Disagree alarming).

<b>Source:</b>	User	<b>Default Value:</b>	Cmd_Dis	<b>Access Lock:</b>	DEB
<b>Value Type:</b>	String	<b>Value Range:</b>	The permissible character set consists of 11 characters on the Engineer's Keyboard. Basically this set consists of Alphabetics A-Z, Numerics 0-9 and the following special characters: space ! % & ' ( ) * + - / : ; > < = ? _ , . \$		

**CHOFSTPR—Change of State Alarm Priority**

This parameter defines the priority of the Change of State alarm generated by a data point.

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

**Value**  
**Type:** Enum. of  
ALPRIOR

**Value**  
**Range:**                      NOACTION =                      Alarm is not reported to the system. Alarm is not  
annunciated.

JOURNAL =                      Alarm is historized but is not annunciated. Alarm  
indicator does appear on Group and Detail displays.

LOW =                      Alarm is historized, annunciated, and does  
appear on Group and Detail displays.

HIGH =                      Alarm is historized, annunciated, and does  
appear on Group and Detail displays.

EMERGENCY =                      This alarm has emergency (first) priority, and is  
historized and reported to USs (this value not allowed for counter points).  
The Alarm is annunciated. There is no restriction on capacity.

PRINTER =                      Alarm is reported to the US RTJ. Alarm is  
not historized or annunciated, and does appear on Group and  
Detail displays.

**NOTE**

If PRINTER is chosen, the alarm is lost if the printer is not working.

JNLPRINT =                      Alarm is historized and reported to the US RTJ.  
Alarm is not annunciated and does not appear on Group and Detail  
displays.

**CHPINHWY — Checkpoint Hiway Inhibit (Data Hiway Data Point)**

This parameter enables the engineer to specify whether checkpointing is allowed for emulated DHPs within the PLCG. CHPINHWY overrides CHPINOPR.

**Source:** User                      **Default**  
**Value:** Enable                      **Access**  
(supplied by DEB)                      **Lock:** Engr.

**Value**  
**Type:** Enum. of  
CHPINDAC                      **Value**  
**Range:**                      Enable =                      Checkpointing for the emulated DHP is  
allowed.

Inhibit =                      Checkpointing for the emulated DHP is not  
allowed.

**CHPINOPR — Checkpoint Inhibit (Operator Generated)**

This parameter allows the engineer to specify whether checkpointing is allowed for the emulated DHP.

<b>Source:</b> User	<b>Default Value:</b> Enable (supplied by DEB)	<b>Access Lock:</b> Engr.
<b>Value Type:</b> Enum. of CHPINDAC	<b>Value Range:</b> Enable = Checkpointing is allowed for the emulated DHP. Disable = Checkpointing is not allowed for the emulated DHP.	

**CMDDISPR — Command Disagree Alarm Priority**

This parameter defines the priority of a command disagree alarm generated by a data point.

<b>Default Source:</b> User	<b>Value:</b> Low	<b>Access Lock:</b> Engr.
<b>Value Type:</b> Enum. of ALPRIOR		
<b>Value Range:</b>	NOACTION = Alarm is not reported to the system. Alarm is not annunciated.  JOURNAL = Alarm is historized but is not annunciated. Alarm indicator does appear on Group and Detail displays.  LOW = Alarm is historized, annunciated, and does appear on Group and Detail displays.  HIGH = Alarm is historized, annunciated, and does appear on Group and Detail displays.  EMERGENCY = This alarm has emergency (first) priority, and is historized and reported to USs (this value not allowed for counter points). The Alarm is annunciated. There is no restriction on capacity.  PRINTER = Alarm is reported to the US RTJ. Alarm is not historized or annunciated, and does appear on Group and Detail displays.	

**NOTE**

If PRINTER is chosen, the alarm is lost if the printer is not working.

JNLPRINT = Alarm is historized and reported to the US RTJ. Alarm is not annunciated and does not appear on Group and Detail displays.

**CNFERRPR — Configuration Error Alarm Priority**

This parameter defines the priority of a configuration error alarm generated by a data point.

**Default****Source:** User**Value:** Low**Access****Lock:** Engr.**Value****Type:** Enum. of  
ALPRIOR**Value**

**Range:** NOACTION = Alarm is not reported to the system. Alarm is not  
annunciated.

JOURNAL = Alarm is historized but not annunciated. Alarm  
indicator does appear on Group and Detail displays.

LOW = Alarm is historized, annunciated, and does  
appear on Group and Detail displays.

HIGH = Alarm is historized, annunciated, and does  
appear on Group and Detail displays.

EMERGENCY = This alarm has emergency (first) priority, and is  
historized and reported to USs (this value not allowed for counter points).  
The Alarm is annunciated. There is no restriction on capacity.

PRINTER = Alarm is reported to the US RTJ. Alarm is  
not historized or annunciated, and does appear on Group and  
Detail displays.

**NOTE**

If PRINTER is chosen, the alarm is lost if the printer is  
not working.

JNLPRINT = Alarm is historized and reported to the US RTJ.  
Alarm is not annunciated and does not appear on Group and Detail  
displays.

**COUNTRPR — Counter Overflow Alarm Priority**

This parameter defines the priority of a counter overflow alarm generated by a data point.

<b>Source:</b>	User	<b>Default Value:</b>	Low	<b>Access Lock:</b>	Engr.
<b>Value Type:</b>	Enum. of ALPRIOR				
<b>Value Range:</b>	NOACTION =	Alarm is not reported to the system. Alarm is not annunciated.			
	JOURNAL =	Alarm is historized but is not annunciated. Alarm indicator does appear on Group and Detail displays.			
	LOW =	Alarm is historized, annunciated, and does appear on Group and Detail displays.			
	HIGH =	Alarm is historized, annunciated, and does appear on Group and Detail displays.			
	EMERGENCY =	This alarm has emergency (first) priority, and is historized and reported to USs (this value not allowed for counter points). The Alarm is annunciated. There is no restriction on capacity.			
	PRINTER =	Alarm is reported to the US RTJ. Alarm is not historized or annunciated, and does appear on Group and Detail displays.			

**NOTE**

If PRINTER is chosen, the alarm is lost if the printer is not working.

JNLPRINT =	Alarm is historized and reported to the US RTJ. Alarm is not annunciated and does not appear on Group and Detail displays.				
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**CPUFREE — Central Processing Units' Free Time (All Processor Status Data Points)**

This parameter defines the percentage of free CPU time averaged over a 10-second sample period. (Note: Although the calculation of this value takes into account different processor types, it does not distinguish between the various memory board types; therefore, the significance attached to the value should be indicative, rather than absolute.)

<b>Source:</b>	System	<b>Default Value:</b>	0.0	<b>Access Lock:</b>	Read-Only
<b>Value Type:</b>	Real	<b>Value Range:</b>	0.0 to 100.0		

2.5

**-D-**

**DEVHIPR—Deviation High High High Alarm Priority**  
**DEVLOPR—Deviation Low Alarm Priority**

These parameters define the priority of the deviation high and low alarms generated by a data point.

<b>Source:</b>	User	<b>Default Value:</b>	Low	<b>Access Lock:</b>	Engr.
<b>Value Type:</b>	Enum. of ALPRIOR				
<b>Value Range:</b>	NOACTION = Alarm is not reported to the system. Alarm is not annunciated.				
	JOURNAL = Alarm is historized but is not annunciated. Alarm indicator does appear on Group and Detail displays.				
	LOW = Alarm is historized, annunciated, and does appear on Group and Detail displays.				
	HIGH = Alarm is historized, annunciated, and does appear on Group and Detail displays.				
	EMERGNCY = This alarm has emergency (first) priority, and is historized and reported to USs (this value not allowed for counter points). The Alarm is annunciated. There is no restriction on capacity.				
	PRINTER = Alarm is reported to the US RTJ. Alarm is not historized or annunciated, and does appear on Group and Detail displays.				
<b>NOTE</b>					
	If PRINTER is chosen, the alarm is lost if the printer is not working.				
	JNLPRINT = Alarm is historized and reported to the US RTJ. Alarm is not annunciated and does not appear on Group and Detail displays.				

**DEVHITP — Deviation High Trip Point**  
**DEVLOTP — Deviation Low Trip Point**

These parameters define the high and low values (in percent) of the deviation that cause an alarm condition at a data point. These parameters may or may not have to be configured depending on the selection for the ALFMT parameter. DEVHITP and DEVLOTP are applicable to analog data points.

<b>Source:</b>	User	<b>Default Value:</b>	0.0%	<b>Access Lock:</b>	Supvr.
<b>Value Type:</b>	Real				
<b>Value Range:</b>	<u>DEVHITP</u> = 0% to 113.7 <u>DEVLOTP</u> = -113.7% to 0				

## DIGALFMT — Alarm Format (Digital Data Points )

This parameter defines the alarm condition that is to be detected at a digital-input data point or a digital-composite data point.

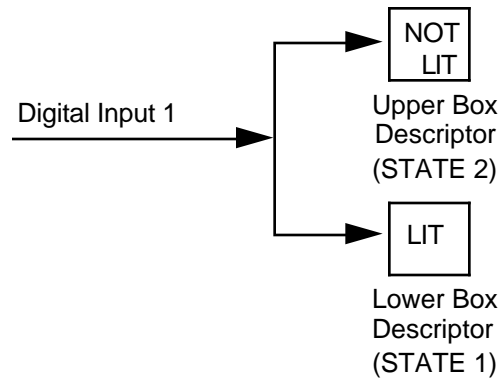
For additional information about digital states, state text parameters, and state descriptors, refer to 2.3.1 in *PLCG Control Functions* in the *Implementation/PLC Gateway* binder.

<b>Source:</b> User	<b>Default Value:</b> Chngofst	<b>Access Lock:</b> Engr.
<b>Value Type:</b> Enum. of DIGALFMT	<b>Value Range:</b> The following valid alarm formats are described using the upper and lower boxes that appear for a digital data point on the Group and Detail Displays. Refer to the configuration form to determine which alarm formats are applicable to the specific digital data point.	

FOR A SINGLE-INPUT DIGITAL DATA POINT:

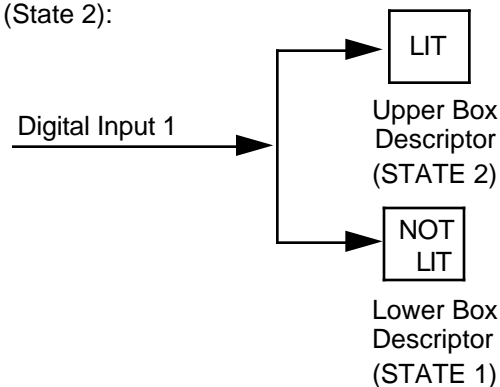
Valid alarm formats are State1, State2, Chngfst, and Cmmdis as follows:

State1 (State 1):



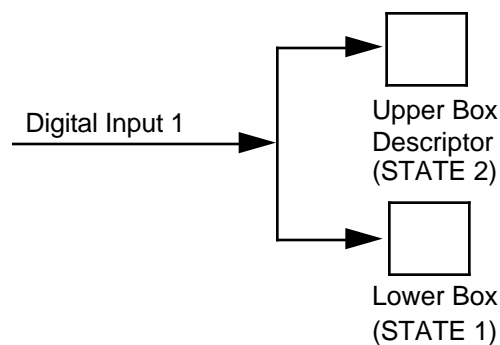
This data point is in an alarm condition when lower box lights because Input 1 contact is open (direct action) or because Input 1 contact is closed (reverse action).

State2 (State 2):



This data point is in an alarm condition when upper box lights because Input 1 contact is closed (direct action) or because Input 1 contact is open (reverse action).

Chngfst (Change of State):



This data point is in an alarm condition when the condition of either lighted box has changed because Input 1 contact has changed from closed to open or from open to closed. This alarm is annunciated to the operator and then is cleared after the alarm is acknowledged by the operator.

(Continued)

Cmmdis (Command Disagree):

### NOTES

1. This alarm format applies to only a DHPdigital-composite data point with a Latchout (Single or Dual Output) output option.
2. This alarm format applies to a DHPdigital data point that has an alarm priority (ALPRIOR) of Emergency.

This type of digital data point is in an alarm condition when the input from the field drives the upper and lower boxes to a condition where they do not agree with the "commanded" state. The "commanded" state is determined by the action of the



(Upper State Change) and



(Lower State Change) keys

of the Operator's Keyboard as shown below.

#### OUTPUT COMMAND



+

ENTER

#### "COMMANDED" STATE

LIT

Upper Box  
Descriptor  
(STATE 2)

After the feedback time (transient time) has expired, if the actual input state does not drive the upper and lower boxes to the condition as shown, this data point is in an alarm condition.

NOT  
LIT

Lower Box  
Descriptor  
(STATE 1)



+

ENTER

NOT  
LIT

Upper Box  
Descriptor  
(STATE 2)



After the feedback time (transient time) has expired, if the actual input state does not drive the upper and lower boxes to the condition as shown, this data point is in an alarm condition.

LIT

Lower Box  
Descriptor  
(STATE 1)

(Continued)

No alarm condition can occur during the configured feedback time (transient time) period after an output command is issued

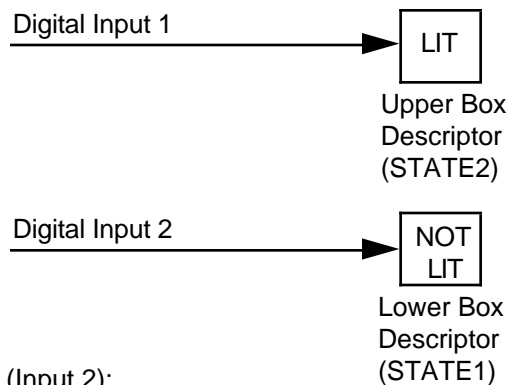
(by the  or  key and the **ENTER** key) to allow the affected device to respond.

An alarm condition can occur:

1. When a device does not correctly respond to an output command after the feedback time has expired.
2. Immediately upon a noncommanded change-of-state of the device (if the feedback time period has previously expired).

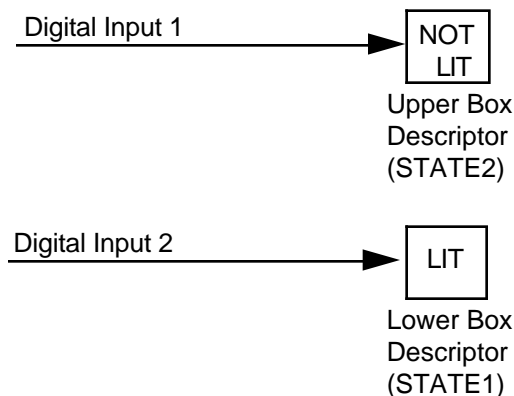
Valid alarm formats are Input1, Input2, Both, Chngofst, and Cmmdis as follows:

Input1 (Input 1):



This data point is in an alarm condition when upper box lights because Input 1 contact is closed (direct action) or because Input 1 contact is open (reverse action).

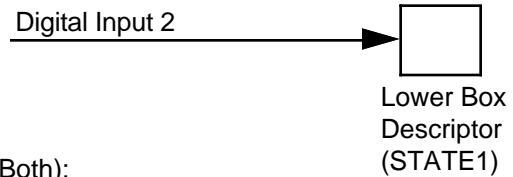
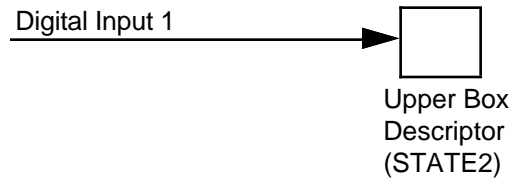
Input2 (Input 2):



This data point is in an alarm condition when lower box lights because Input 2 contact is closed (direct action) or because Input 2 contact is open (reverse action).

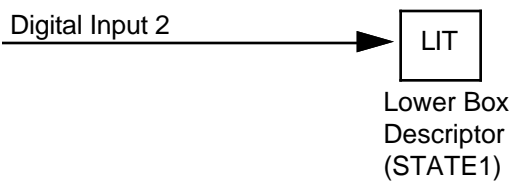
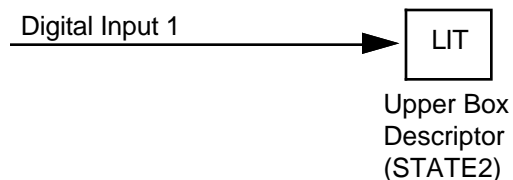
(Continued)

Either (Either):



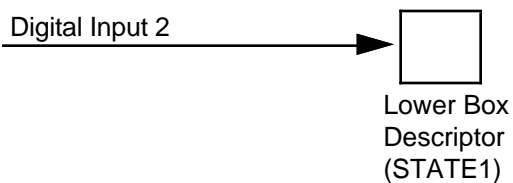
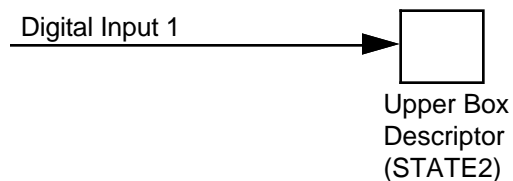
This data point is in an alarm condition when either the upper or lower box lights because the respective Input 1 or Input 2 contact is closed (direct action) or open (reverse action).

Both (Both):



This data point is in an alarm condition when both the upper and lower boxes are lighted because both Input 1 and Input 2 contacts are closed (direct action) or are open (reverse action).

Chngofst (Change of State):



This data point is in an alarm condition when the condition of either lighted box has changed because the Input 1 or Input 2 contact has changed from closed to open or from open to closed. This condition is annunciated to the operator and is acknowledged by the operator.

Cmmdis (Command Disagree):



#### NOTES

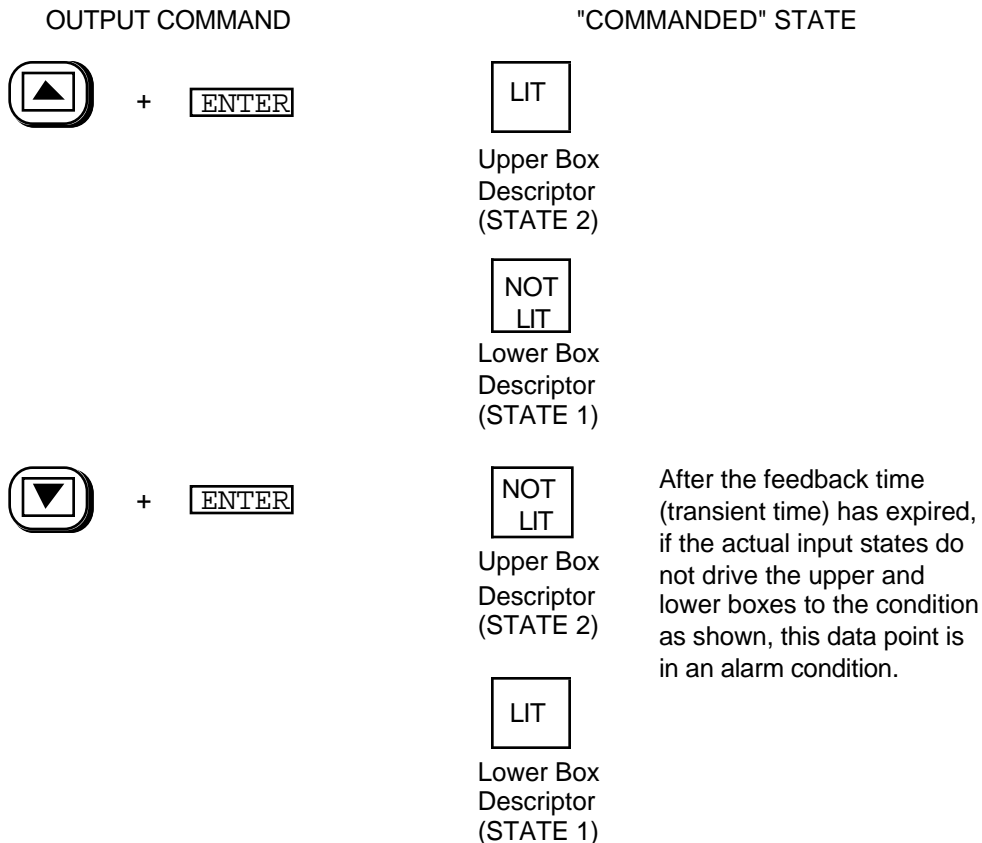
1. This alarm format applies to only DHP digital composite data points with a Latchout (Single or Dual Output) output options.

(Continued)




2. This alarm format is applicable for a DHP digital data point that has an alarm priority (ALPRIOR) of Emergency.

A Dual-Input digital data point is in an alarm condition when the inputs from the field drives the upper and lower boxes to a condition where they do not agree with the "commanded" state. The "commanded" state is determined by the action of the

 (Upper State Change) and  (Lower State Change) keys of the Operator's Keyboard as shown below.



No alarm condition can occur during the configured feedback time (transient time) period after an output command is issued

(by the  or  key and the  key) to allow the affected device to respond.

An alarm condition can occur:

1. When a device does not correctly respond to an output command after the feedback time has expired.
2. Immediately upon a noncommanded change-of-state of the device (if the feedback time period has previously expired).

**DIGTEXT — Digital State Text (Digital Data Points)**

This parameter is the current state of the data point. Refer to definitions of STATE1 and STATE2 parameters.

<b>Source:</b>	System	<b>Default Value:</b>	N/A	<b>Access Lock:</b>	Read-Only
<b>Value Type:</b>	String				

**DIGINTXT — Digital Input State Text (Digital Input and Composite Data Points)**

This parameter is the current state of the input at a digital data point. Refer to definitions of STATE1 and STATE2 parameters.

<b>Source:</b>	System	<b>Default Value:</b>	N/A	<b>Access Lock:</b>	Read-Only
<b>Value Type:</b>	String				

**DIGOUTXT — Digital Output State Text (Digital Output and Composite Data Points)**

This parameter is the current state of the output at a digital data point. Refer to definitions of STATE1 and STATE2 parameters.

<b>Source:</b>	System	<b>Default Value:</b>	N/A	<b>Access Lock:</b>	Read-Only
<b>Value Type:</b>	String				

## 2.6

**-E-****EIPENB—Enable Event Initiated Processing**

Defines whether event-initiated processing (EIP) is enabled or not (see 4.2 in *System Control Functions*).

<b>Source:</b> User	<b>Default Value:</b> Enable	<b>Access Lock:</b> Supvr.
<b>Value Type:</b> Enum. of ATTRIB	<b>Value Range:</b> Enable = EIP is enabled. Disable = EIP is disabled.	

**EIPEVENT—EIP Event Type**

Defines which types of events are reported to the target data point specified in EIPPCODE when event-initiated processing is enabled (see 4.2 in *System Control Functions*).

<b>Source:</b> User	<b>Default Value:</b> Any	<b>Access Lock:</b> Engr.
<b>Value Type:</b> Enum. of \$EIPST	<b>Value Range:</b> Any = Any alarm-state change and digital-PV state change is reported. Alarm = Any change from no alarm state to alarm state is reported. Return = Any change from alarm state to no alarm state is reported. High = Any change from no high alarm to high alarm is reported. High-R = Any change from high alarm to no high alarm is reported. Low = Any change from no low alarm to low alarm is reported. Low-R = Any change from low alarm to no low alarm is reported. Chgstate = Any change of a digital PV state is reported. State1 = Any digital PV state change to state 1 is reported. State2 = Any digital PV state change to state 2 is reported.	

**EIPPCODE — EIP Point ID**

This parameter defines the tag name of the data point in the Application Module or CG/CM that is to be notified when an event is detected by this PLCG point (see 4.2 in *System Control Functions*). Refer to the definition of NAME (Tag Name) for the valid character set.

<b>Source:</b>	User	<b>Default Value:</b>	All Underscores	<b>Access Lock:</b>	DEB
<b>Value Type:</b>	Entity ID	<b>Value Range:</b>	See <u>NAME</u>		

**EIPSTATE—EIP Status**

This parameter indicates whether notification of the last EIP event was received by the point named in EIPPCODE (see *Programmable Logic Controller Gateway Control Functions*).

<b>Source:</b>	System	<b>Default Value:</b>	Ok	<b>Access Lock:</b>	Read-Only
<b>Value Type:</b>	Enum. of \$EIPSTAT	<b>Value Range:</b>	Ok =	The last EIP event was received.	
			Error =	The last EIP event was not received.	

**EUDESC — E.U. Descriptor**

This parameter specifies the name of the engineering units (EU) that are displayed on the Group and Detail Displays for this data point as shown in Figure N-1 (see NAME). In the example shown in the figure, the engineering unit descriptor is LBS/SEC.

<b>Source:</b>	User	<b>Default Value:</b>	All Blanks	<b>Access Lock:</b>	DEB
<b>Value Type:</b>	String	<b>Value Range:</b>	The permissible character set consists of all characters on the Engineer's Keyboard. Basically this set consists of Alphabets A-Z, Numerics 0-9 and the following special characters: space ! % & ' ( ) * + - / : ; > < = ? , . \$		

**EVENTPRC — Event Processing (Box Data Points)**

This parameter defines whether process events (process alarms, process changes, and operator messages) that pertain to the emulated DHP are to be routed through the PLCG to the LCN.

<b>Source:</b> User	<b>Default Value:</b> Enable	<b>Access Lock:</b> Engr.
<b>Value Type:</b> Enum. of ENBLSTAT	<b>Value Range:</b> Disable = Enable =	Process events for the emulated DHP are not to be routed through the PLCG to the LCN. Process events for the emulated DHP are to be routed through the PLCG to the LCN.

**EVRATE— # of Detected Process Changes (PLCG Processor Status Data Points)**

This parameter defines the number of detected process changes during the last 15-second sample period.

<b>Source:</b> System	<b>Default Value:</b> 0.0	<b>Access Lock:</b> Read-Only
<b>Value Type:</b> Real	<b>Value Range:</b> $\geq 0.0$	



## 2.7

**-F-****FBTIME — Feedback Time (HLPIU and MC Digital Composite Data Points)**

This parameter defines the duration (in seconds) for which alarming is suppressed following an output command from a digital-composite data point that has been configured for command-disagree alarming.

<b>Source:</b> User	<b>Default Value:</b> 0	<b>Access Lock:</b> Supervisor
<b>Value Type:</b> Integer	<b>Value Range:</b> 0 to 1023	



2.8

**-H-**

**HIWAYWRD — Diagnostic Hiway Addressing**

This parameter is a diagnostic tool that allows the accessing of memory locations within an emulated DHP during testing.

<b>Source:</b>	System	<b>Default Value:</b>	N/A	<b>Access Lock:</b>	Read-Only
<b>Value Type:</b>	Integer				

**HWYACT — Active Hiway Indicator**

In the HG, this parameter indicates which emulated hiway (A or B) is presently being used for transmitting information. In the PLCG, the Data Hiway is emulated, and there are no physical cables. However, the cable indication remains on the display, and indicates cable A until the operator changes it, or until the system changes it during a software failure.

<b>Source:</b>	System	<b>Default Value:</b>	N/A	<b>Access Lock:</b>	Read-Only
<b>Value Type:</b>	Enum. of HWYACT	<b>Value Range:</b>	Nonact = Neither PLCG cable is active. Acta = PLCG cable A is active. Actb = PLCG cable B is active.		

**HWYASWST — Hiway Automatic Swap Option**

This parameter exists in the PLCG, but has no meaning, because the data hiway is emulated. In the HG, the parameter defines whether automatic switching of the hiway cables is to occur (only when the HG is designated as the HTD). If automatic switching is selected, it will occur at the time of day specified by the HWYSWBAS (Switch Base Time) parameter.

**HWYCTLST — Hiway Control State**

This parameter defines the functional state of a Data Hiway.

<b>Source:</b>	System	<b>Default Value:</b>	Basic (supplied by DEB)	<b>Access Lock:</b>	Supvr.
<b>Value Type:</b>	Enum. of BOXFSTAT	<b>Value Range:</b>	Read =	AM can read data from the boxes, but cannot write data into the boxes on this hiway.	
			Full =	AM can read data from and write data into the boxes on this hiway.	
			Basic =	AM can read data from the boxes, but cannot write data into the boxes on this hiway.	
			Test =	A box is being tested.	

**NOTES**

The Hiway Control State supersedes the Box Functional State. For example, if the HWYCTLST = BASIC and the BOXFSTAT = FULL then the BOXFSTAT = BASIC until the HWYCTLST = FULL.

If an AM is to write to an emulated DHP in an EPLCG, HWYCTLST and BOXFSTAT must be FULL.

**HWYDEVEN — Hiway Preferred Device Option**

This parameter exists in the PLCG, but has no meaning. In the HG, it indicates which devices are active preferred devices.

**HWYERR (N) — # of Errors for Box N at each Hiway (PLCG Processor Status Data Points)**

This parameter defines the number of errors for emulated DHP (box) on each PLCG during the last 15-second sample period.

<b>Source:</b> System	<b>Default Value:</b> 0.0	<b>Access Lock:</b> Read Only
<b>Value Type:</b> ARRAY [1..63] of REAL	<b>Value Range:</b> ≥ 0.0	

**HWYHSAST — Hiway Swap Algorithm State**

This parameter exists in the PLCG, but has no meaning. In the HG, it indicates the state of the hiway swap algorithm.

**HWYHTD — HTD Assignment (Box Data Point)**

This parameter specifies the device that performs the function of a Hiway Traffic Director (HTD).

<b>Source:</b> User	<b>Default Value:</b> Htd	<b>Access Lock:</b> DEB
<b>Value Range:</b> Enum. of HWYHTD	<b>Value Type:</b> ThisHG =	The PLCG assigned to this hiway acts as the HTD on this physical hiway. <b>This is the only valid value for a PLCG.</b>

**The following values are not valid for a PLCG:**

RemoteHG = The HG on another LCN acts as the HTD on this physical hiway.

AddedHG = The HG on this LCN, but assigned to a different hiway number acts as the HTD.

Htd = Physical HTD is in use.

**NOTE**

Because ThisHG is the only valid value for HWYHTD, ensure that you complete the entries for the HWYSWINT (Switch Interval) and HWYSWBAS (Switch Base Time) parameters on the Data Hiway Data Point Configuration Form.

**HWYNUM — Hiway Number**

The hiway number defines the hiway (process network) for the emulated Data Hiway. For the PLCG, this parameter assigns a logical hiway number to the PLCG that identifies this PLCG and its emulated Data Hiway.

<b>Source:</b> User	<b>Default Value:</b> 01	<b>Access Lock:</b> DEB
<b>Value Type:</b> Integer	<b>Value Range:</b> 01 to 20	

**HWYREDST — Hiway Redundancy State**

This parameter indicates which PLCG (NCF configured as primary or secondary) is active on a Data Hiway.

<b>Source:</b> System	<b>Default Value:</b> Primary	<b>Access Lock:</b> Read-Only
<b>Value Type:</b> Enum. of HWYREDST	<b>Value Range:</b>	
	Inactive =	PLCG redundancy state is presently inactive.
	Primary =	PLCG is the primary PLCG.
	Secndry =	PLCG is the redundant PLCG.

**HWYSTAT — Hiway Status**

This parameter indicates the current status of the emulated Data Hiway.

<b>Source:</b> System	<b>Default Value:</b> N/A	<b>Access Lock:</b> Read-Only
<b>Value Type:</b> Enum. of HWYSTAT	<b>Value Range:</b>	
	Uncertn =	A Hiway has not finished startup or there is no emulated DHP configured on the Hiway.
	Init =	Hiway is being initialized.
	Run =	Hiway is operating properly.
	Failed =	Hiway cannot communicate with any of the emulated DHPs.

**HWYSWBAS — Switch Base Time (PLCG Data Point)**

This parameter defines the time of day (in minutes) during which Hiway switching is to take place.

<b>Source:</b> User	<b>Default Value:</b> 0 (12:00 AM midnight)	<b>Access Lock:</b> DEB
<b>Value Type:</b> Integer	<b>Value Range:</b> 0 to 1440 minutes	
	Example: 1:30 AM would be entered as 90 Example: 3:00 PM would be entered as 900	

**NOTE**

Because HWYHTD=ThisHG must be specified for a PLCG, you must ensure that an entry is to be made for this parameter. We recommend that you enter the value of 0.

**HWYSWINT — Switch Interval (Min) (PLCG Data Point)**

This parameter defines the amount of time (in minutes) between automatic switching of the emulated primary and backup data hiways.

<b>Source:</b> User	<b>Default Value:</b> 1440 minutes	<b>Access Lock:</b> DEB
<b>Value Type:</b> Integer	<b>Value Range:</b> 0 to 1440 minutes (1440 is the number of minutes in one day).	

**NOTE**

Because HWYHTD=ThisHG must be specified for a PLCG, you must ensure that an entry is to be made for this parameter. We recommend that you enter the value of 1440.

**HWYSWST — Hiway Swap State**

This parameter exists in the PLCG, but has no meaning. In the HG, it indicates if the emulated hiway cables have yet to be swapped (based on the hiway swap algorithm).



## 2.9

**INPTCOND — Input Conditioning**

This parameter defines the type of input conditioning required for the PV input of analog data points.

<b>Source:</b>	User	<b>Default Value:</b>	Linear	<b>Access Lock:</b>	Engr.
<b>Value Type:</b>	Enum. of INPTCOND	<b>Value Range:</b>	Linear = Linear Conditioning		

**NOTE**

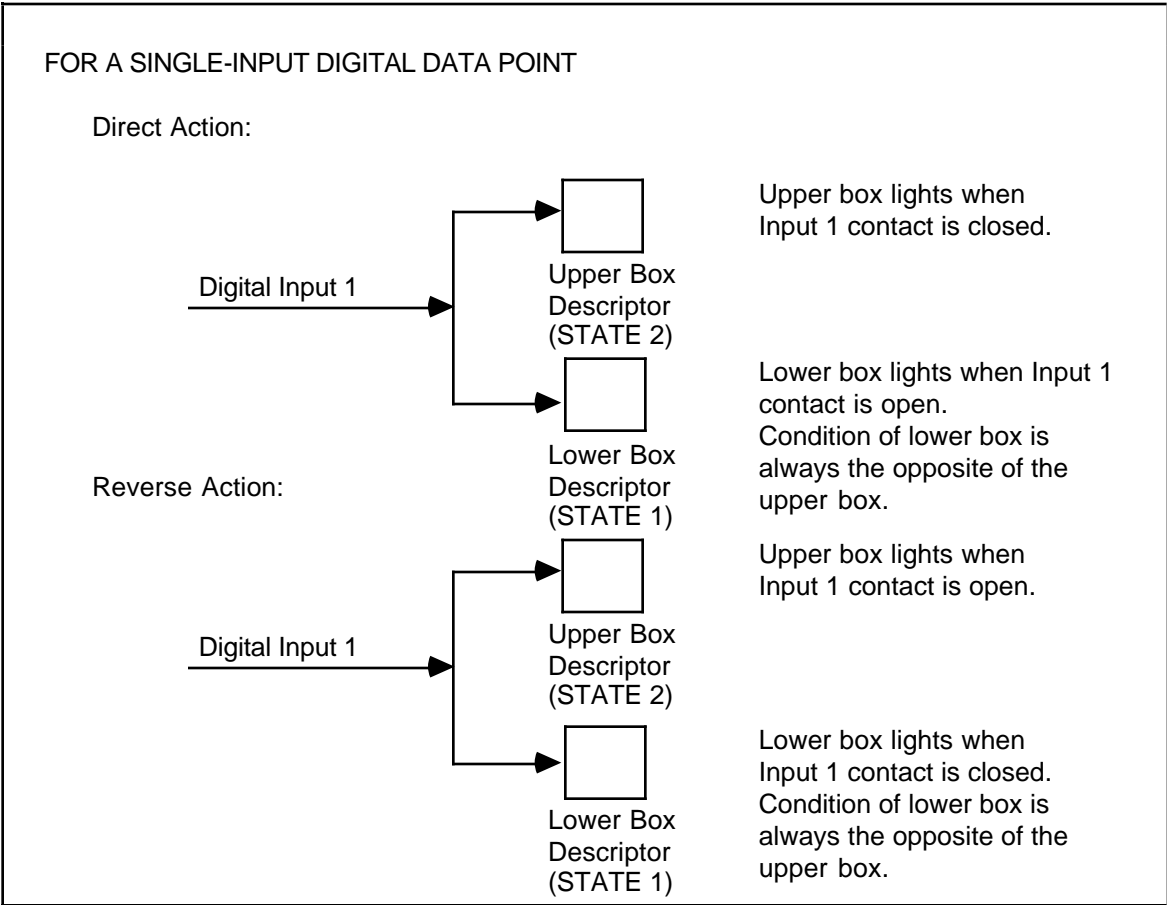
To update the value in this parameter, MODE must contain Man.

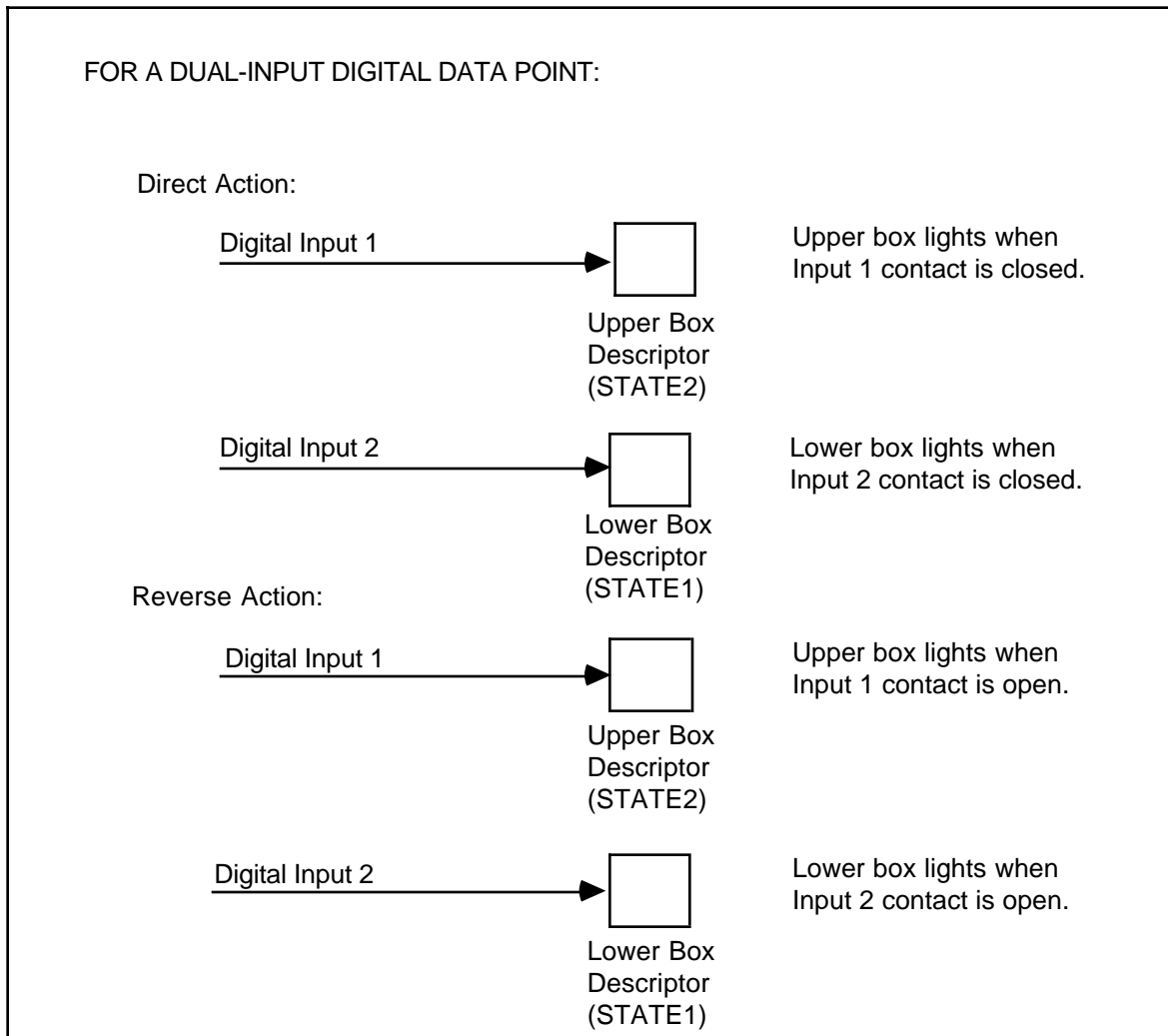
**INPTDIR — Input Direction**

This parameter defines the contact condition required to light the upper or lower box on a Group and Detail Display for a digital input data point or a digital composite data point.

**Source:** User                      **Default Value:** Direct                      **Access Lock:** DEB

**Value Type:** Enum. of POLARITY                      **Value Range:** Input direction can be Direct or Reverse as follows:





### INPTSSLT —Subslot Number or Input Subslot Number

This parameter specifies which of the inputs (subslots/data points) is to be used as the input to this analog, digital, or counter data point.

For a dual-input digital input or digital composite data point, this parameter defines the input (Input 1) that lights the upper box on the Group and Detail Displays. The subslot/data point number of the second input (Input 2), which lights the lower box on the displays, is automatically assigned by the system.

The number that is assigned by the system is the next consecutive number that follows the number entered for the INPTSSLT parameter. For example, if a 3 was entered for the INPTSSLT parameter, then the subslot/data point number that is automatically assigned by the system for the second input (Input 2) is 4.

The parameter that determines the number of inputs for a data point is NMBRINPT (Number of Inputs). If a 2 is entered for the NMBRINPT parameter (to specify that a digital data point has two inputs), the system automatically assigns the number of the second subslot/data point as described above.

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

**Value Type:** Integer              **Value Range:** The subplot/data point number ranges for the various data points are as follows:

PLCG Data Point Type	Subslot/Data Point Number Range
Analog Input	1-6
Analog Output	1-4
Analog Composite	1-6 (inputs); 1-4 (outputs)
Digital Input	1-16
Digital Output	1-8
Digital Composite	1-16 (singles inputs); 1-8 (single outputs); 1-15 (dual inputs); 1-7 (dual outputs)
Counter	1-8

**IOCBS — # of PLCG IOCBs (PLCG Processor Status Data Points)**

This parameter defines the number of PLCG I/O control blocks during the last 15-second sample period.

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

**Value Type:** Real                      **Value Range:** >= 0.0

## 2.10

**-K-****KEYWORD — Point Keyword**

A point keyword gives an eight character description of the particular data point. It appears on the Group and Detail Displays for the data point. For example, in Figure N-1 (see NAME) the keyword for the data point that describes the Deth Reflux Pump that is called REFLUX.

<b>Source:</b> User	<b>Default Value:</b> All Blanks	<b>Access Lock:</b> DEB
<b>Value Type:</b> String	<b>Value Range:</b> The point keyword can consist of up-to-eight characters, and the permissible character set is as follows:	
	Alphabets A through Z (upper case only); Numerics 0 through 9 (an all numeric keyword is not permissible); Underscore ( ) cannot be used as the first character or last character in a keyword, and consecutive underscores are not allowed.	



## 2.11

**LBOXCLR — Lower-Box Color**

This parameter defines the color of the lower (STATE 1) emulated DHP that is used to show the status of the input(s) of a digital-input data point or digital-composite data point.

<b>Source:</b>	User	<b>Default Value:</b>	Red	<b>Access Lock:</b>	DEB
<b>Value Type:</b>	Enum. of BOXCOLOR	<b>Value Range:</b>	Red Green White Black Cyan Yellow Blue Magenta		

**LOADDEST — Load Destination**

This parameter specifies whether data-point parameter values are loaded in this PLCG by the Data Entity Builder, or checkpoint data restored to this PLCG, is to reach the PLCG only, or both the PLCG and its emulated boxes. The Hg value is useful only for a true HG and has no meaning for the PLCG. For PLCG points, select the Hg\_Hiway value.

<b>Source:</b>	User	<b>Default Value:</b>	Hg	<b>Access Lock:</b>	DEB
<b>Value Type:</b>	Enum. of LOADDEST	<b>Value Range:</b>	Hg =  Hg_Hiway =	<b>This is not valid for a PLCG.</b>  Parameter values are loaded into both the PLCG and its emulated boxes. <b>For PLCGs, select this value.</b>	



## 2.12

**-M-****MODE — Operating Mode**

On a configuration form, this parameter does not contain any entries and serves only to remind the user that this data point is in the manual mode after the data point is loaded during configuration data entry.

During operation, this parameter represents the current operating mode of a data point.

<b>Source:</b>	User	<b>Default Value:</b>	Man	<b>Access Lock:</b>	Oper.
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**Value Type:** Enum.

**Value Range:** Man = Manual mode; an operator or a user-written program controls the output value, OP, of this point.

Auto = Automatic mode; does not apply to PLCG data points.

Cas = Cascade mode; continuous-control output connections in an LCN node or a user-written program controls the output value, OP, of this point.

RCASENB must contain On (true) to allow control of OP in Manual or Cascade Modes by continuous-control output connections or by user-written programs.

When an operator or discontinuous control program selects the cascade mode for a data point, the data point does not immediately go into the cascade mode. Instead, a cascade request (CASREQ) is generated. This condition is displayed at the Universal Station as "-C" to the right of the current operating mode, and it also indicates to the primary data point that it may take over control of the data point. Later, when the AM requests the cascade mode, the cascade request is removed and the data point goes into the remote cascade mode.

The cascade mode applies to analog output and analog composite data points, and digital output and digital composite data points.

**NOTES**

1. For analog or digital data points, the requested mode must be either Man or Cas.
2. Updates to the value in this parameter depend on mode attributes, control interlocks, and the normal mode and normal-mode attribute. Refer to 4.4.3 and 4.4.4 in *System Control Functions* in the *Implementation/Startup & Reconfiguration - 2* binder.
3. MODE is displayed in reverse video on the Detail Display when the value in NMODE differs from that in MODE (except when NMODE contains None).

**MODEAPPL — Array of Applicable Modes**

When retrieved, this parameter is a set of four Boolean values that correspond to the following four operating modes: MAN, AUTO, CAS, and BCAS. The values listed below (True and False) indicate which mode is currently allowed for the data point.

<b>Source:</b>	System	<b>Default Value:</b>	N/A	<b>Access Lock:</b>	Read-Only
<b>Value Type:</b>	Boolean Array	<b>Value Range:</b>	True = Mode is allowed. False = Mode is not allowed.		

**MODEPERM — Operator Mode Change (Operator Keylock-Access-Level Change Permission)**

This parameter defines whether the Operator Keylock-Access Level is allowed to change the control mode of the data point.

<b>Source:</b>	User	<b>Default Value:</b>	Permit	<b>Access Lock:</b>	Engr.
<b>Value Type:</b>	Enum. of MODEPERM	<b>Value Range:</b>	Permit = Nopermit =	Operator key level can change the control mode for this data point. Operator key level cannot change the control mode of this data point.	

**MOOUTIND — Momentary O/P (Output) Indication**



This parameter specifies whether the latched single or dual outputs from a digital output data point or a digital composite data point are to be momentary ("doorbell" action) or nonmomentary.

<b>Source:</b> User	<b>Default Value:</b> Nomoment	<b>Access Lock:</b> DEB
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**Value**

**Type:** Enum. of MOOUTIND

**Value Range:** Nomoment = Output from the data point is held in the commanded state (energized or de-energized) until another command is issued

by the  (Upper state change) or  (Lower state change) and the **ENTER** Keys.

Moment = Output from the data point is held in the commanded state

(energized or de-energized) until the  or  key is released. If Moment is entered, do not make any entry for the RCASENB parameter. Refer to the definition of the OUTIND (Output Indication) parameter for more information.

**NOTE**

If DIGALFMT=Cinddis, you must ensure that the MOOUTIND parameter contains Nomoment.



## 2.13

**-N-****NAME — Tag Name**

The Tag Name defines the name of the data point in the system. It is used to identify the data point in all displays, listings, messages, alarms, etc., throughout the system. For example, Figure N-1 shows the location of Tag Name FC100T1 on the Group and Detail Displays.

<b>Source:</b> User	<b>Default Value:</b> All Underscores	<b>Access Lock:</b> DEB
<b>Value Type:</b> Entity ID	<b>Value Range:</b> The Tag Name can consist of up to 16 characters, and the permissible character set is as follows:	
	Alphabets A through Z (upper case only).	
	Numerics 0 through 9 (an all numeric tag name is not permissible).	
	Underscore ( _ ) cannot be used as the first character or the last character in the tag name, and consecutive underscores are not allowed.	
	Embedded space characters are not allowed.	

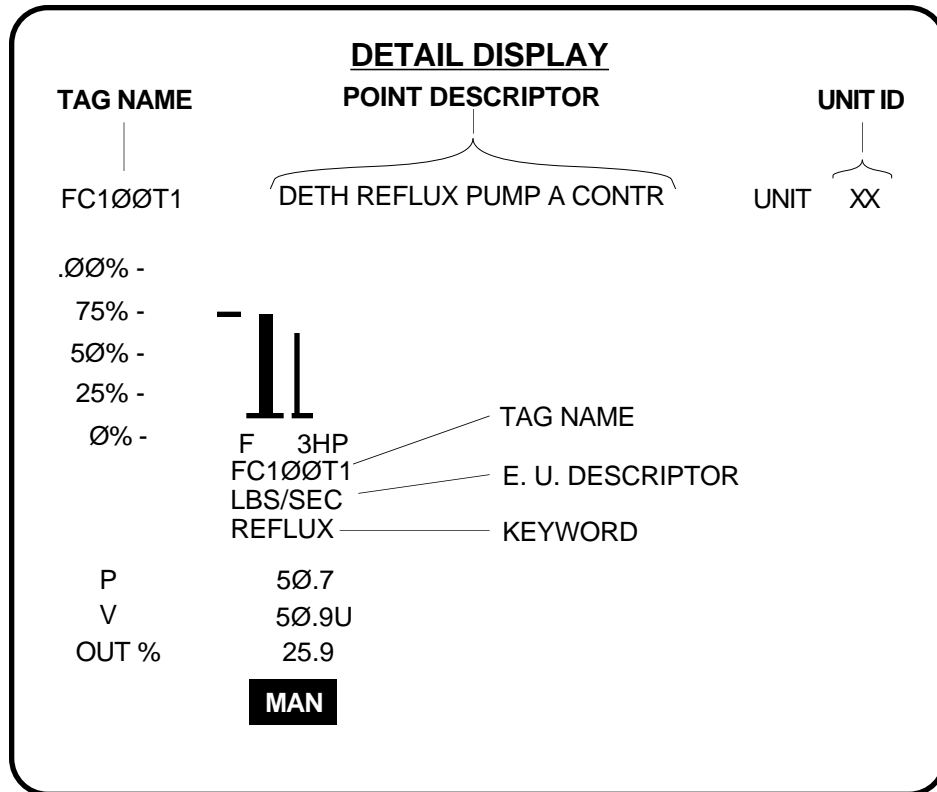
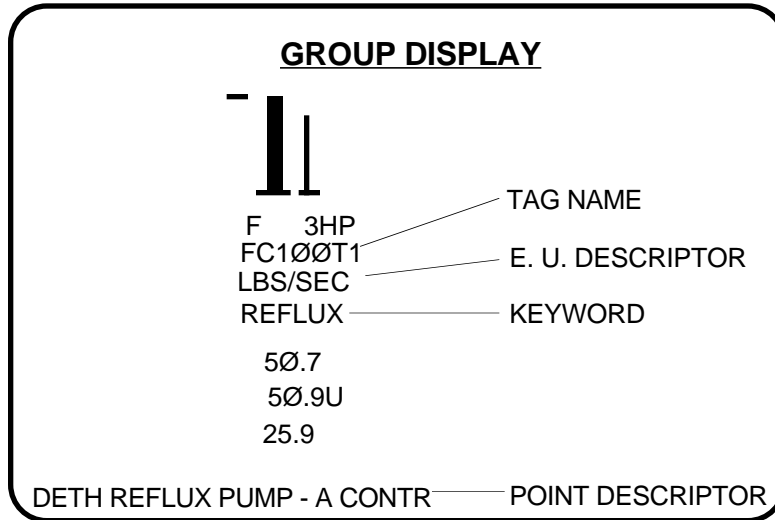


Figure N-1 — Location of Terms on Group and Detail Displays

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**NCMPTXT1 — Text 1 (Data Hiway Data Point)**

This parameter defines a descriptor of up to eight characters that is to be displayed when both inputs to a digital data point are noncomplementary (00 or 11), as defined by the ZZTEXT (Non-Comp State 00 Text) parameter. If Text1 is entered for ZZTEXT, this descriptor is displayed when both inputs are false (00). If Text2 is entered for ZZTEXT, this descriptor is displayed when both inputs are true (11).

<b>Source:</b> User	<b>Default Value:</b> Badpv	<b>Access Lock:</b> DEB
<b>Value Type:</b> String	<b>Value Range:</b> The permissible character set consists of all characters on the Engineer's Keyboard. Basically this set consists of Alphabetics A-Z, Numerics 0-9 and the following special characters: space ! " % & ' ( ) * + - / : ; > < = ? _ , . \$	

**NCMPTXT2 — Text 2 (Data Hiway Data Point)**

This parameter defines a descriptor of up to eight characters that is to be displayed when both inputs to a digital data point are noncomplementary (00 or 11) as defined by the ZZTEXT (Non-Comp State 00 Text) parameter. If Text1 is entered for ZZTEXT, this descriptor is displayed when both inputs are true (11). If Text2 is entered for ZZTEXT, this descriptor is displayed when both inputs are false (00).

<b>Source:</b> User	<b>Default Value:</b> Inbetwn	<b>Access Lock:</b> DEB
<b>Value Type:</b> String	<b>Value Range:</b> The permissible character set consists of all characters on the Engineer's Keyboard. Basically this set consists of Alphabetics A-Z, Numerics 0-9 and the following special characters: space ! " % & ' ( ) * + - / : ; > < = ? _ , . \$	

**NMBRINPT — Number of Inputs**

This parameter defines the number of inputs for a digital input or digital composite data point.

If a 2 is entered for this parameter (to specify that a digital data point has two inputs), the system automatically assigns the number of the second subslot/data point as described for the INPTSSLT (Input Subslot/data point) parameter.

<b>Source:</b> User	<b>Default Value:</b> 1	<b>Access Lock:</b> DEB
<b>Value Type:</b> Integer	<b>Value Range:</b> 1 = Digital data point has one input. 2 = Digital data point has two inputs.	

**NMBROUT — Number of Outputs**

This parameter defines the number of outputs for a digital output or digital composite data point.

If a 2 is entered for this parameter (to specify that a digital data point has two outputs), the system automatically assigns the number of the second subslot/data point as described for the OUTSSLT (Output Subslot/data point) parameter.

<b>Source:</b> User	<b>Default Value:</b> 1	<b>Access Lock:</b> DEB
<b>Value Type:</b> Integer	<b>Value Range:</b> 1 = Digital data point has one output. 2 = Digital data point has two outputs.	

**NMODATTR— Normal Mode Attribute**

This parameter defines the normal mode attribute. The normal mode attribute is the attribute that is copied into MODATTR when the NORM button is pressed at a Universal Station (also at that time, the content of NMODE is copied into MODE). This then becomes the mode attribute for this point. Refer to 4.4.4 in *System Control Functions in the Implementation/Startup & Reconfiguration - 2* binder.

<b>Source:</b> User	<b>Default Value:</b> None	<b>Access Lock:</b> Engr.
<b>Value Type:</b> Enum. of MODEATT	<b>Value Range:</b> Operator = Operator supplies the mode, setpoint, and output value. Program = Program supplies the mode, setpoint, and output value. None = The normal mode does not have an attribute.	

**NMODE — Normal Mode**

This parameter defines the normal mode. The normal mode is the mode that is copied into MODE when the NORM button is pressed at a Universal Station (also at that time, the content of NMODATTR is copied into MODATTR). This then becomes the mode for this point. Refer to 4.4.4 in *System Control Functions* in the *Implementation/Startup & Reconfiguration - 2* binder.

This parameter is applicable to analog and digital output data points, and analog and digital composite data points.

<b>Source:</b>	User	<b>Default Value:</b>	None	<b>Access Lock:</b>	Engr.
<b>Value Type:</b>	Enum. of MODE	<b>Value Range:</b>	None = Normal mode is not configured.		
			Man = Normal mode is manual.		
			Auto = Normal mode is automatic.		
			Cas = Normal mode is cascade.		

**NOTES**

1. MODE/MODATTR is displayed in reverse video when either conflicts with NMODE/NMODATTR, except if NMODE is None.
2. When NMODE = None is selected when the point is built, NMODATTR defaults to None. When an NMODE selection other than None is chosen, the possible values for NMODATTR are None, Operator, and Program.
3. The user can set NMODATTR to None and NMODE to something other than None. In this case, pressing the NORM key results in MODE being changed to the configured NMODE and MODATTR staying the same.



## 2.14

**OFFNRMPR—Off Normal Alarm Priority**

This parameter defines the priority of an off normal alarm generated by a data point.

<b>Source:</b> User	<b>Default Value:</b> Low	<b>Access Lock:</b> Engr.
<b>Value Type:</b> Enum. of ALPRIOR		
<b>Value Range:</b> NOACTION =	Alarm is not reported to the system. Alarm is not annunciated.	
JOURNAL =	Alarm is historized but is not annunciated. Alarm indicator does appear on Group and Detail displays.	
LOW =	Alarm is historized, annunciated, and does appear on Group and Detail displays.	
HIGH =	Alarm is historized, annunciated, and does appear on Group and Detail displays.	
EMERGENCY =	This alarm has emergency (first) priority, and is historized and reported to USs (this value not allowed for counter points). The Alarm is annunciated. There is no restriction on capacity.	
PRINTER =	Alarm is reported to the US RTJ. Alarm is not historized or annunciated, and does appear on Group and Detail displays.	

**NOTE**

If PRINTER is chosen, the alarm is lost if the printer is not working.

JNLPRINT =	Alarm is historized and reported to the US RTJ. Alarm is not annunciated and does not appear on Group and Detail displays.
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**OP — Output Value for Analog Data Points**

This parameter is the current output value (in percent) of the specified analog data point. Output value can also be supplied by the operator, by a **TotalPlant** Solution (TPS) System module, or by CL/MC (if it is an MC data point) depending on the mode of the data point.

<b>Source:</b> System or User	<b>Default Value:</b> 0.0	<b>Access Lock:</b> Oper.
<b>Value Type:</b> Real	<b>Value Range:</b> -6.86% to 106.9%	

**NOTE**

To update the value in this parameter, unless BOXSTAT contains Idle or Reset, MODE must contain Man. If a program or continuous control is to update the value in this parameter, HWYCTLST (for this hiway) and BOXFSTAT (for this box) must contain Full.

**OP**

## OP — Output Value for Digital Data Points

This parameter is the current output state of the specified digital output or digital composite data point. Output state can also be supplied by the operator, by a TPS module, or be CL/MC (if it is an MC data point) depending on the mode of the data point.

<b>Source:</b>	System or User	<b>Default Value:</b>	0	<b>Access Lock:</b>	Oper.
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<b>Value Type:</b>	Self-Defining Enum.	<b>Value Range:</b>	For a data point with a single output: 0 = Output is false. 1 = Output is true.
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For a data point with dual outputs:  
0 = Both outputs are false.  
1 = Output 1 is false, Output 2 is true.  
2 = Output 1 is true, Output 2 is false.  
3 = Both outputs are true.

### NOTE

To update the value in this parameter, unless BOXSTAT contains Idle or Reset, MODE must contain Man. If a program or continuous control is to update the value in this parameter, HWYCTLST (for this hiway) and BOXFSTAT (for this box) must contain Full.

**OPCRDOP — Output Card Option**

This parameter appears on the Detail Display for HG points to indicate whether the card installed in the process-connected box chassis has the output option required by the configured digital output point. For PLCG points, there is no physical output card in the emulated DHP; therefore, the value in OPCRDOP should always match the configured output option.

<b>Source:</b>	System	<b>Default Value:</b>	N/A	<b>Access Lock:</b>	Read-Only
<b>Value Type:</b>	Enum. of PIUCRDOP	<b>Value Range:</b>	None = Output slot option is not configured.		
			Pulseout = Pulsed output.		
			Latchout = Latchout = Latched Output.		

**OPCRDTY — Output Card Type**

This parameter appears on the Detail Display for HG points to indicate whether the card installed in the process-connected box chassis has the output card type required by the configured digital output point. For PLCG points, there is no physical output card in the emulated DHP; therefore, the value in OPCRDTY should always match the configured output type.

<b>Source:</b>	System	<b>Default Value:</b>	N/A	<b>Access Lock:</b>	Read-Only
<b>Value Type:</b>	Enum. of PIUCRDTY	<b>Value Range:</b>	None = This type does not have an output.		
			Analogot = Analog Output.		
			Digout = Digital Output.		

**OPHIFL — Output Hi Limit Exceeded Flag**  
**OPLOFL — Output LO Limit Exceeded Flag**

These parameters indicate whether the output value for the specified data point has reached or has exceeded the configured high or low output limit.

<b>Source:</b>	System	<b>Default Value:</b>	N/A	<b>Access Lock:</b>	Read-Only
<b>Value Type:</b>	Boolean	<b>Value Range:</b>	True = Configured limit has been reached or exceeded.		
			False = Configured limit has not been reached or exceeded.		

**OUTBOXNM — Output Box Number or Box Number**

This parameter defines the address of the emulated DHP in the PLCG. PLCG box numbers range from 08 to 15.

**NOTE**

For a composite data point, the input boxnumber and the output boxnumber must be the same number. The input and output portions of the data point must reside in the same emulated DHP.

**OUTIND — Output Indication (Analog Data Points)**

This parameter defines how the output of an analog data point is to be displayed at the Universal Station.

<b>Source:</b>	User	<b>Default Value:</b>	Direct	<b>Access Lock:</b>	Engr. for regulatory data points. DEB for analog data points.
<b>Value Type:</b>	Enum. of POLARITY	<b>Value Range:</b>	Direct =	A 0% output from this data point is displayed as 0.0 at the Universal Station. A 20 mA output is displayed as 100.0.	
			Reverse =	A 100% output from this data point is displayed as 0.0. A 0% output is displayed as 100.0.	

**OUTIND — Output Indication (Digital Output and Digital Composite Data Points)**



This parameter is used in conjunction with the PNTOPOP (Output Type) and MOOUTIND (Momentary Output Indication) parameters to specify the output action and the type of output that is to be provided by the single and dual outputs of a Digital Output Data Point or Digital Composite Data Point. The OUTIND parameter determines whether the output is direct or reverse acting, while the entries for the PNTOPOP and MOOUTIND parameters determine the type of output (latched or momentary) as shown in the following chart.


OUTPUT TYPE PARAMETER	ENTRY FOR PNTOPOP PARAMETER	ENTRY FOR MOOUTIND
Latched Momentary	Latchout Latchout	Nomoment Moment

<b>Source:</b>	User	<b>Default Value:</b>	Direct	<b>Access Lock:</b>	DEB
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**Value Type:** Enum. of POLARITY

**Value Range:** Refer to the following paragraphs that describe the possible entries (Direct, Reverse) for the output action and the output type.

Using the  (Upper-State Change),  (Lower-State Change),

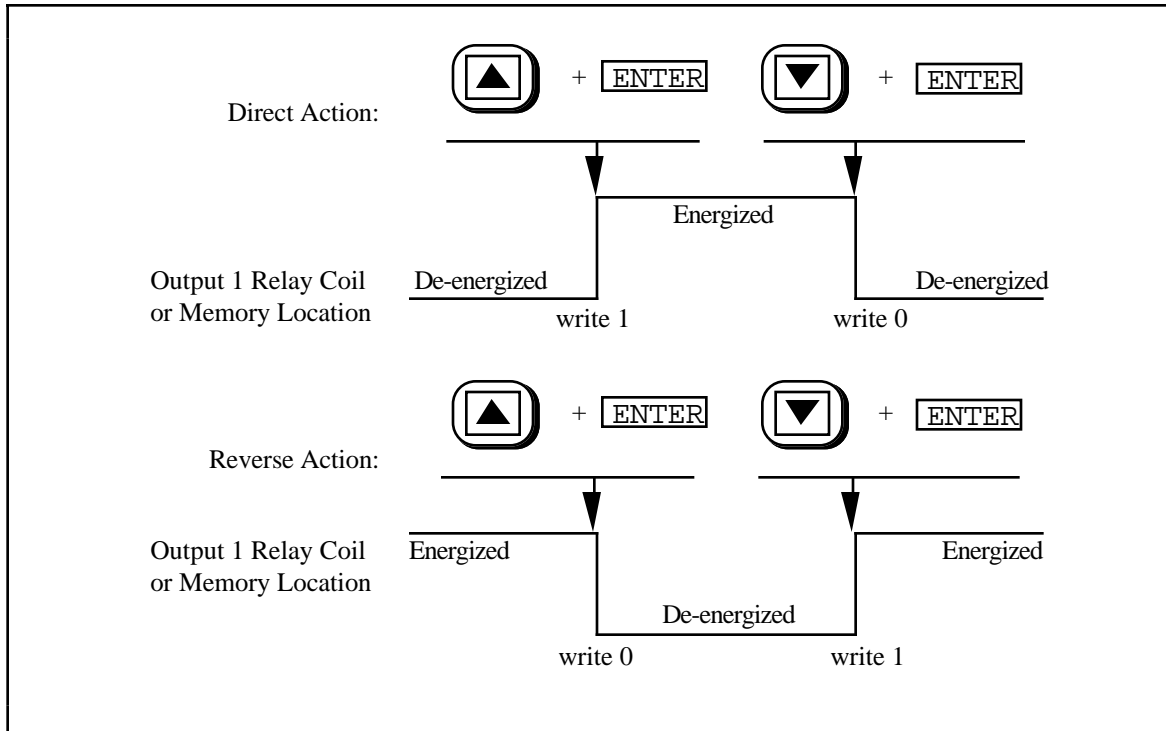
and  keys of the Operator's Keyboard, you can change the state of the Output Relay Coil from energized to de-energized.

The emulated DHP is a communications device that sends messages to the "configured coil" of its associated programmable logical controller to be used internally. Because the emulated DHP supports the interface to a wide variety of devices, you should read the documentation provided by the PLC manufacturer to determine how to implement the coils in the device.

During normal communications, when OUTIND=Direct is specified, the emulated DHP sends a logical 1 to the associated PLC when the Upper-State Change key is pressed. Conversely, when the Lower-State Change key is pressed the emulated DHP sends a logical 0 to the associated PLC.

When OUTIND=Reverse is specified, the emulated DHP de-energizes the configured coil of the associated PLC when the Upper-State Change key is pressed. When the Lower-State Change key is pressed, the emulated DHP energizes the configured coil of the associated PLC.

The following figure shows the differences between OUTIND=Direct and OUTIND=Reverse during normal operation.



**OUTSLTNM — Output Slot Number**

This parameter specifies the slot number where the output of this data point resides. For the emulated DHP, it specifies a software slot rather than a hardware slot.

<b>Source:</b> User	<b>Default Value:</b> 1	<b>Access Lock:</b> DEB
<b>Value Type:</b> Integer	<b>Value Range:</b> 1-15 and 17-31	

**OUTSSLT — Output Subslot/Data Point Number**

This parameter specifies which of the outputs (subslots/data points) is to be used as the output from this analog or digital data point.

For a dual output, digital output, or digital composite data point, this parameter defines the output (Output 1) that is controlled by the



(Upper State Change Key). The subslot/data point number of the second output

(Output 2), which is controlled by the



(Lower State Change Key), is

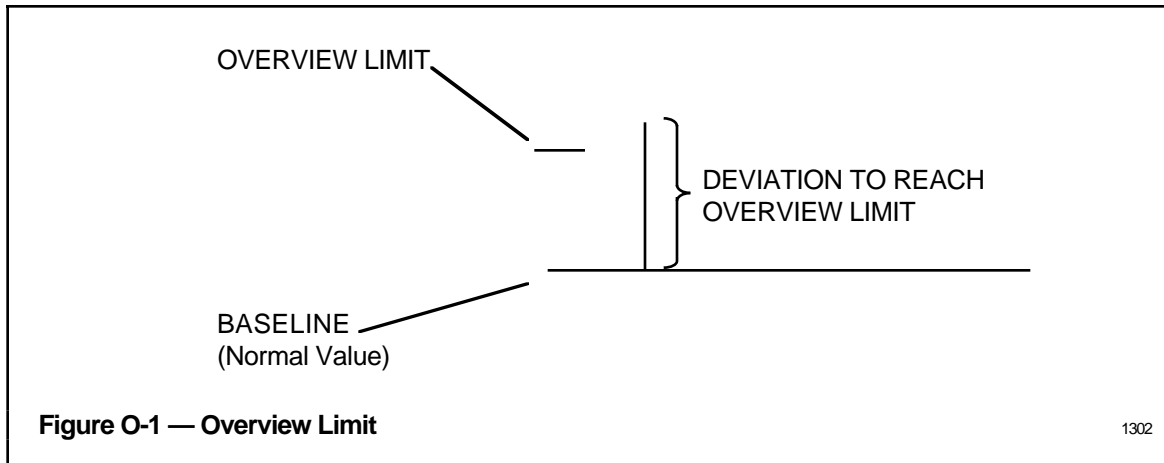
automatically assigned by the system. The number that is assigned by the system is the next consecutive number that follows the number entered for the OUTSSLT parameter. For example, if a 3 is entered for the OUTSSLT parameter, the subslot/data point number that is automatically assigned by the system for the second output (Output 2) is 4.

<b>Source:</b> User	<b>Default Value:</b> 1	<b>Access Lock:</b> DEB
<b>Value Type:</b> Integer	<b>Value Range:</b> 1, 2, 3, or 4 for analog points. 1, 2, 3, 4, 5, 6, 7, or 8 for digital points.	

**OVERVAL — Overview Value (Analog Input, Analog Composite, and Counter Points)**

This parameter defines the amount of deviation (in percent) that causes the PV to reach the overview limit on the Overview Display. As shown in Figure O-1, the baseline represents the normal operating value for this PV.

<b>Source:</b> User	<b>Default Value:</b> 0%	<b>Access Lock:</b> Engr.
<b>Value Type:</b> Integer	<b>Value Range:</b> 0% to 100%	



**OVERVAL — Overview Value (Digital Data Point only)**

This parameter defines whether an alarm condition for a digital input, digital composite, or is not to be shown on the Overview Display.

<b>Source:</b> User	<b>Default Value:</b> Off	<b>Access Lock:</b> Engr.
<b>Value Type:</b> Enum. of BOOLEAN	<b>Value Range:</b> Off = Alarm condition is not to be displayed. On = Alarm condition is to be displayed.	

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**-P-**

**PARSEC — # of Parameters Per Second (All Processor Status Data Points)**

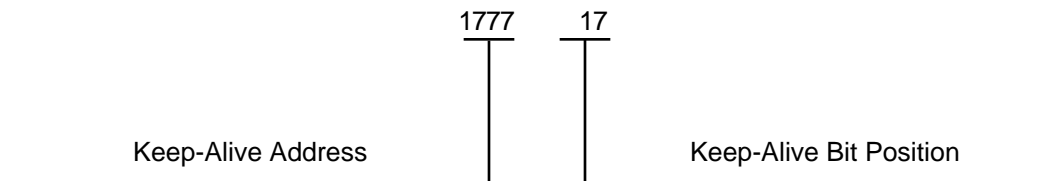
This parameter defines the number of parameters fetched from this node.

<b>Source:</b> System	<b>Default Value:</b> 0.0	<b>Access Lock:</b> Operator
<b>Value Type:</b> Real	<b>Value Range:</b> ≥ 0.0	

**PC1ALIVE-PC8ALIVE — Keep-Alive Address (Box Data Point)**

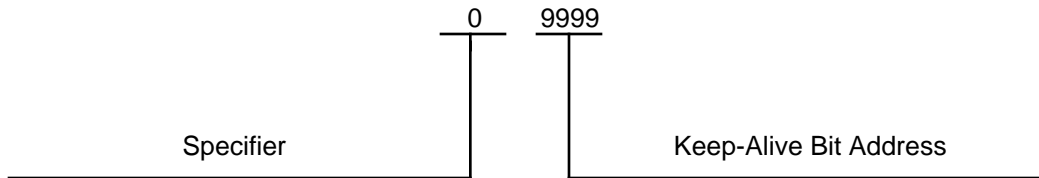
These parameters define the keep-alive addresses for the PLCs. The keep-alive address is the address within the PLC that may be periodically updated by the emulated DHP to inform the PLC that it is "alive." If the emulated DHP is not "alive," all output data points (if the PLC is configured appropriately) are switched to PLC ladder logic control, or other action may be taken.

For an Allen-Bradley PLC, this address is divided into two parts as follows (using address 177717 as an example):



The four most-significant digits are the keep-alive address (in octal form) and are to be entered for this parameter. The two-least significant digits are the keep-alive bit position (also in octal form) and are to be entered for the appropriate PC1ALVBT-PC8ALVBT parameter.

For Modicon or Honeywell PLCs, this address is divided into two parts as follows (using address 09999 as an example):



The most-significant digit is the specifier and is entered in the appropriate PC1ALVSP-PC8ALVSP parameter (the specifier bit is always 0 for the keep-alive address). The four least-significant digits are the keep-alive address (in decimal form) and are to be entered for this parameter.

<b>Source:</b> User	<b>Default Value:</b> 0	<b>Access Lock:</b> DEB
<b>Value Type:</b> Integer	<b>Value Range:</b> For Allen-Bradley: 0 to 1777 (Octal).* For Modicon or Honeywell: 0 to 9999 (Decimal).*	

\*0 is used to set the Keep-Alive function = notconfig

**PC1ALVSP-PC8ALVSP — Specifier (Box Data Point)**

This parameter defines the specifier code for the keep-alive address of a Modicon or Honeywell PLC. No entry is required for this parameter because the default value is zero, which is the required specifier code.

<b>Source:</b> User	<b>Default Value:</b> 0	<b>Access Lock:</b> DEB
<b>Value Type:</b> Integer		

**PC1ALVBT-PC8ALVBT — Keep-Alive Bit Position (Box Data Point)**

This parameter defines the keep-alive bit position for the keep-alive address of an Allen-Bradley PLC.

<b>Source:</b> User	<b>Default Value:</b> 0	<b>Access Lock:</b> DEB
<b>Value Type:</b> Integer	<b>Value Range:</b> 00 to 17 Octal	

**PC1PORT- PC8PORT — Port Number (Box Data Point)**

This parameter defines which of the two PLCG port numbers is assigned to this PLC. The PLCG has only two physical ports. Logical port numbers 3 and 4 represent physical ports 1 and 2, respectively.

<b>Source:</b> User	<b>Default Value:</b> 1	<b>Access Lock:</b> DEB
<b>Value Type:</b> Integer	<b>Value Range:</b> 1 or 2 - Modicon or Allen-Bradley Data Scan 3 or 4 - Allen-Bradley Report by Exception	

**PC1PORTA-PC8PORTA — Port Address (Box Data Point)**

This parameter defines the address of the PLC on the connected PLC network.

<b>Source:</b> User	<b>Default Value:</b> 0	<b>Access Lock:</b> DEB
<b>Value Type:</b> Integer	<b>Value Range:</b> 0 = Undefined. 1-376 octal - Allen-Bradley 1-247 decimal - Modicon or Honeywell	

**PC1TYPE-PC8TYPE — PC1-PC8 Model Type (Box Data Point)**

This parameter defines the model type of this PLC.

<b>Source:</b> User	<b>Default Value:</b> Notconfg	<b>Access Lock:</b> DEB
<b>Value Type:</b> Enum. of PCTYPE	<b>Value Range:</b> If Modicon has been entered for <u>BOXPROT</u> parameter:  Notconfg = Not configured M384 = Model Type 384 (or GE 6/60) M484 = Model Type 484 (or GE 6/600) M584 = Model Type 584 (or GE 6/600) Select M584 if a Modicon 884 or 984 is to be used.  If Allenbrd has been entered for <u>BOXPROT</u> :  Aplc = Model Type PLC -3 or -5 communicating values in binary.  Aplc2=PLC2 communication values in BCD Aplc215=PLC2/15 communication values in BCD Aplc220=PLC2/20 communication values in BCD Aplc230=PLC2/30 communication values in BCD AminPLC2=Min2 communication values in BCD  If Honeywell has been entered for <u>BOXPROT</u> : (continued)	

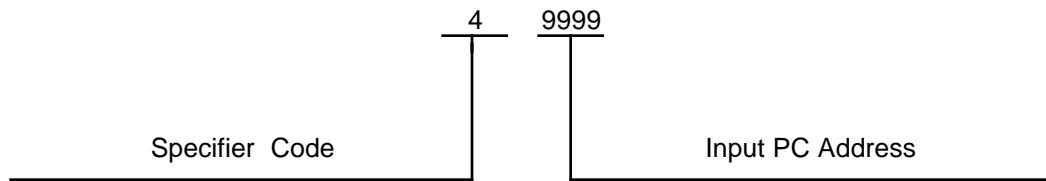
Notconfg = Not configured  
 Ipc620 = Emulated DHP supports all Honeywell PLC models. The model type does not have to be specified.

**PCADDR11 — Input PLC Address (Analog or Counter Data Point)**

For an analog input, analog composite, or counter data point, this parameter defines the register or word address in the PLC of the current input value for this data point.

<b>Source:</b> User	<b>Default Value:</b> 0	<b>Access Lock:</b> Engr.
<b>Value Type:</b> Integer	<b>Value Range:</b> If Allenbrd has been entered for the <u>PNTPCY</u> (PLC Type) parameter, input PLC Address has a range from 1 to 1777 (octal).	

If Modicon or Honeywell has been entered for the PNTPCY (PLC Type) parameter, input PLC address has a range of 1 to 9999 (decimal). The PCADDR11 parameter works with Specifier Code parameter SPECIFI1 to determine the address location in the PLC as follows:



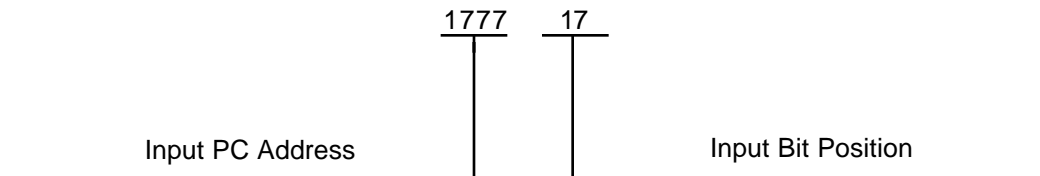
Specifier code is 3 or 4 as defined by SPECIFI1 parameter in a separate line on the configuration form.

For Modicon 384 and 484, input PLC address range is from 1 to 999 (decimal). For Modicon 584 and Honeywell IPC620, Input PLC address range is from 1 to 9999 (decimal). The selected address is entered for this parameter.

**PCADDR11 — Input 1 PLC Address (Digital Data Point)**  
**PCADDR12 — Input 2 PLC Address**

These parameters define the addresses in the PLC of the current states of input 1 and input 2 for a digital input or digital composite data point. For a digital data point with a single input or dual inputs, the PLC address of the first input (Input 1) is defined by the PCADDR11 (Input 1 PLC Address) parameter. For a digital data point with dual inputs, the PLC address of the second input (Input 2) is defined by the PCADDR12 (Input 2 PLC Address) parameter.

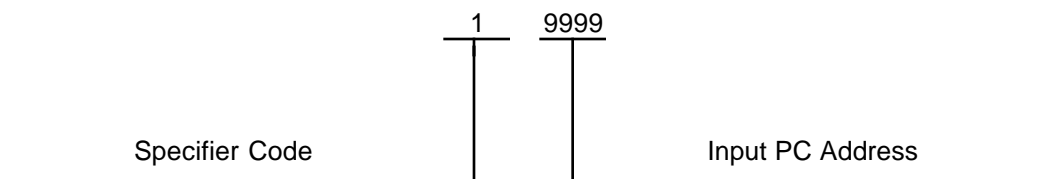
<b>Source:</b> User	<b>Default Value:</b> 0	<b>Access Lock:</b> Engr.
<b>Value Type:</b> Integer	<b>Value Range:</b> If Allenbrd has been entered for the <u>PNTPCY</u> (PLC Type) parameter, Input PLC Address has a range from 100 to 177717 (octal). This address is divided into two parts as follows (using address 177717 as an example):	



The four most-significant digits (1777) represent the portion of the Input PLC Address that is to be entered for the PCADDR11 or PCADDR12 parameter. Range is from 1 to 1777, octal.

The two least-significant digits (17) represent the portion of the Input PLC Address that is to be entered for the PCBIT11 (Input 1 Bit Position) or PCBIT12 (Input 2 Bit Position) parameter. This portion of the Input PLC Address is entered on another line of the configuration form. Range is from 00 to 17, octal.

If Modicon or Honeywell has been entered for the PNTPCY (PLC Type) parameter, output PLC address has a range of 1 to 9999 (decimal). The PCADDR11 parameter works with Specifier Code parameter SPECIF11 to determine the address location in the PLC as follows:



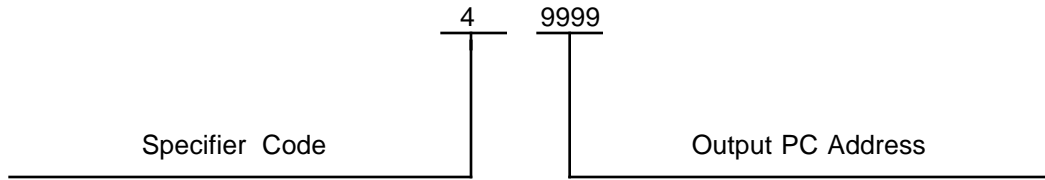
Specifier code is for digital inputs as defined by SPECIF11 parameter in a separate line on the configuration form. SPECIF12 works in conjunction with PCADDR12.

For Modicon 384 and 484, input PLC address range is from 1 to 999 (decimal). For Modicon 584 and Honeywell IPC620, Input PLC address range is from 1 to 9999 (decimal).

**PCADDRO1 — Output PLC Address (Analog Data Point)**

For an analog output or analog composite data point, this parameter defines the register or word address in the PLC of the current output value for this data point.

<b>Source:</b> User	<b>Default Value:</b> 0	<b>Access Lock:</b> Engr.
<b>Value Type:</b> Integer	<b>Value Range:</b> If Allenbrd has been entered for the <u>PNTPCY</u> (PLC Type) parameter, output PLC Address has a range from 1 to 1777 (octal).  If Modicon or Honeywell has been entered for the <u>PNTPCY</u> (PLC Type) parameter, output PLC address has a range of 1 to 9999 (decimal). The <u>PCADDRO1</u> parameter works with Specifier Code parameter <u>SPECIFO1</u> to determine the address location in the PLC as follows:	



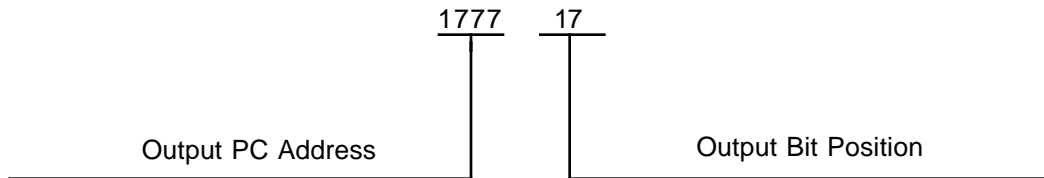
Specifier code is 4 for analog output PLC addresses as defined by SPECIFO1 parameter in a separate line on the Configuration Form.

For Modicon 384 and 484, output PLC address range is from 1 to 999 (decimal). For Modicon 584 and Honeywell IPC620, output PLC address range is from 1 to 9999 (decimal).

**PCADDRO1 — Output 1 PLC Address (Digital Data Point)**  
**PCADDRO2 — Output 2**

For a digital output or digital composite data point, this parameter defines the address in the PLC of the current state of Output 1. For a digital data point with dual outputs, the PLC address of Output 2 is defined by the PCADDRO2 (Output 2 PLC Address) parameter.

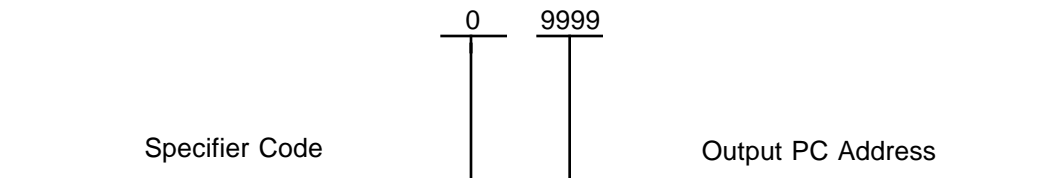
<b>Source:</b> User	<b>Default Value:</b> 0	<b>Access Lock:</b> Engr.
<b>Value Type:</b> Integer	<b>Value Range:</b> If Allenbrd has been entered for the <u>PNTPCY</u> (PLC Type) parameter, output PLC Address has a range from 1 to 1777 (octal).	



The four most-significant digits (1777) represent the portion of the Output PLC Address that is to be entered for the PCADDRO1 or PCADDRO2 parameter. Range is from 1 to 1777 (octal).

The two least-significant digits (17) represent the portion of the Output PLC Address that is to be entered for the PCBITO1 (Output 1 Bit Position) or PCBITO2 (Output 2 Bit Position) parameter. This portion of the Output PLC Address is entered on another line of the configuration form. Range is 00 to 17 (octal).

If Modicon or Honeywell has been entered for the PNTPCY (PLC Type) parameter, output PLC address has a range of 1 to 9999 (decimal). The PCADDRO1 parameter works with Specifier Code parameter SPECIFO1 to determine the address location in the PLC as follows:



Specifier code is 0 for digital output PLC addresses as defined by SPECIFO1 parameter in a separate line on the Configuration Form. SPECIFO2 is used with PCADDRO2.

For Modicon 384 and 484, output PLC address range is from 1 to 999 (decimal). For Modicon 584 and Honeywell IPC620, output PLC address range is from 1 to 9999 (decimal).

**PCBIT11 — Input 1 Bit Position (Digital Data Point)****PCBIT12 — Input 2 Bit Position**

These parameters define the two least-significant digits (in octal form) of the Input PC Address when Allenbrd (Allen-Bradley) has been entered for the PCNTPCTY (PC Type) parameter. PCBIT11 is used in conjunction with PCADDRI1 (Input 1 PC Address); PCBIT12 is used in conjunction with PCADDRI2 (Input 2 PC Address).

<b>Source:</b> User	<b>Default Value:</b> 00	<b>Access Lock:</b> Engr.
<b>Value Type:</b> Integer	<b>Value Range:</b> 00-17 (Octal)	

**PCBITO1 — Output 1 Bit Position (Digital Data Point)****PCBITO2 — Output 2 Bit Position**

These parameters define the two least-significant digits (in octal form) of the Output PC Address when Allenbrd (Allen-Bradley) has been entered for the PCNTPCTY (PC Type) parameter. PCBITO1 is used in conjunction with PCADDRO1 (Output 1 PC Address); PCBITO2 is used in conjunction with PCADDRO2 (Output 2 PC Address).

<b>Source:</b> User	<b>Default Value:</b> 00	<b>Access Lock:</b> Engr.
<b>Value Type:</b> Integer	<b>Value Range:</b> 00-17 (Octal)	

**PCCONFI1 — PLC Bad Configuration Status for Input 1****PCCONFI2 — PLC Bad Configuration Status for Input 2**

These parameters indicate whether the input or inputs to an emulated DHP data point have been configured properly. Parameter PCCONFI1 is applicable to all emulated DHP analog and digital data points; PCCONFI2 is applicable to only the second input of digital data points that have dual inputs. The values of PCCONFI1 and PCCONFI2 are set by the emulated DHP.

<b>Source:</b> System	<b>Default Value:</b> N/A	<b>Access Lock:</b> Read-Only
<b>Value Type:</b> Enum. of PCCONFIG	<b>Value Range:</b>	
	Notconfg =	This input has not been configured.
	Uncertn =	Configuration of this input has not been checked.
	Bad =	This input has been configured incorrectly.
	Ok =	This input has been configured correctly.

**PCCONFO1 — PLC Bad Configuration Status for Output 1**  
**PCCONFO2 — PLC Bad Configuration Status for Output 2**

These parameters indicate whether the output or outputs of an emulated DHP data point have been properly configured. Parameter PCCONFO1 is applicable to emulated DHP analog and digital data points; PCCONFO2 is applicable to only the second output of digital data points that have dual outputs.

<b>Source:</b>	System	<b>Default Value:</b>	N/A	<b>Access Lock:</b>	Read-Only
<b>Value Type:</b>	Enum. of PCCONFG	<b>Value Range:</b>	Notconfg =	This output has not been configured.	
			Uncertn =	Configuration of this output has not been checked.	
			Bad =	This output has been configured incorrectly.	
			Ok =	This output has been configured correctly.	

**PFPSHLDB — Hold Breath Count (All Processor Status Data Points)**

This parameter defines the "hold breath" count based on the Data Access timeout in accessing data, cumulative since node startup or reset action by engineer. (This is intended to be a measure of the number of failovers, particularly PLCG failovers.)

<b>Source:</b>	System	<b>Default Value:</b>	0.0	<b>Access Lock:</b>	Engineer
<b>Value Type:</b>	Real	<b>Value Range:</b>	≥0.0		

**PIUCRDTY — Slot Type (Box Data Points)**

In an HG with PIUs, this parameter defines the type of card in the particular slot. For the emulated DHP in the PLCG, it defines the type of slot rather than the card type because the slots are software rather than hardware.

<b>Source:</b> User	<b>Default Value:</b> None	<b>Access Lock:</b> DEB
<b>Value Type:</b> Enum. of PIUCRDTY	<b>Value Range:</b> None = This slot/PLC is not used. Digin = Digital Input Data Points. Digout = Digital Output Data Points. Analogin = Analog Input Data Points. Analogot = Analog Output Data Points. Counter = Counter Data Points.	

**NOTES**

1. Use the entries for slots 1-15 and 17-31 as the PLCG emulates extended DHPs. Slot 16 is reserved for configuration and box status; slot 32 is reserved for future use.
2. When re-entering box/slot (emulated DHP) configuration, if a type changes for a slot, all points must first be deleted from that slot before the PLCG allows the change.

**PNTBOXIN — PLC Box Index or PLC Box Index (Input)**

This parameter defines an index to a specific PLC that contains the input portion of an analog or digital input or composite data point, or a counter data point.

Use the default value 1.

<b>Source:</b> User	<b>Default Value:</b> 1	<b>Access Lock:</b> DEB
<b>Value Type:</b> Integer	<b>Value Range:</b> 1-8	

**NOTE**

These numbers correspond to the PC1-PC8 numbers that are used to define up to eight PLCs on the PLCG Data Point Configuration Form, PL88-433.

**PNTBOXOT — PLC Box Index or PLC Box Index (Output)**

This parameter defines the address of the PLC that contains the output portion of an analog or digital output or composite data point.

<b>Source:</b> User	<b>Default Value:</b> 1	<b>Access Lock:</b> DEB
<b>Value Type:</b> Integer	<b>Value Range:</b> 1-8	

**NOTE**

These numbers correspond to the PC1-PC8 numbers that are used to define up to eight PLCs on the *PLCG Data Point Configuration Form, PL88-433*.

**PNTBOXTY — Box Type**

This parameter defines the type of hiway box in which the data point specified by NAME (Tag Name) resides.

<b>Source:</b> User	<b>Default Value:</b> Undefined	<b>Access Lock:</b> DEB
<b>Value Type:</b> Enum. of BOXTYPE	<b>Value Range:</b> Dhp = Data Hiway Port. <b>This is the only valid PLCG value.</b>	

**The following are not valid values for the PLCG:**

- Cb = Basic Controller.
- Ec = Extended Controller.
- Hlpiu = High Level Process Interface Unit.
- Lepiu = Low Energy Process Interface Unit.
- Llpiu = Low Level Process Interface Unit.
- Mc = Multifunction Controller.

**PNTPCTY — PLC Type**

This parameter defines the manufacturer of the PLCs that are connected to this DHP.

<b>Source:</b> User	<b>Default Value:</b> Allenbrd	<b>Access Lock:</b> DEB
<b>Value Type:</b> Enum. of BOXPROT	<b>Value Range:</b> Allenbrd = Allen-Bradley. Modicon = Modicon (if other Modicon emulator PLCs are to be used, select Modicon as the entry for this parameter). Honywell = Honeywell.	

**PNTSTATE — Point State**

This parameter provides an indication of the current point state. For the most part, the point state is the same as the emulated DHP state.

<b>Source:</b> System	<b>Default Value:</b> N/A	<b>Access Lock:</b> Read-Only
<b>Value Type:</b> Enum. of PNTTYPE	<b>Value Range:</b> Uncertn = No emulated hiway security tests have been performed or hiway status is uncertain. Ok = Box data point is operating properly. Failed = Emulated DHP has failed. Reset = Emulated DHP is in reset state. Test = Emulated DHP is being tested.	

**PNTTYPE — Point Type**

This parameter defines the type of data point.

<b>Source:</b>	System	<b>Default Value:</b>	Null	<b>Access Lock:</b>	Read-Only
<b>Value Type:</b>	Enum. of PNTTYPE	<b>Value Range:</b>	Null = This is not a data point. Analogin = Analog Input Data Point. Analogout = Analog Output Data Point. Analogcom = Analog Composite Data Point. Digin = Digital Input Data Point. Digout = Digital Output Data Point. Digcom = Digital Composite Data Point. Counter = Counter Data Point.		

**NOTE**

The list above applies to PLCG data point types only. For a complete list of HG data points, see the parameter entry for PNTTYPE in the *HG Parameter Reference Dictionary*.

**POLLRES — # of Poll Responses (HG Processor Status Points)**

This parameter exists in the PLCG, but has no meaning. In the HG, it defines the number of hiway poll responses of DHI board data during the last 15-second sample period.

**POLLS — # of Hiway Polls (HG Processor Status Data Points)**

This parameter exists in the PLCG, but has no meaning. In the HG, it defines the number of hiway polls of DHI board data during the last 15-second sample period.

**PRESET — Preset Value (Counter Data Point)**

This parameter specifies the value at which a counter data point goes into an alarm condition (accumulated value exceeds the preset value). This parameter is a PLCG value only and cannot be written to a PLC counter parameter.

<b>Source:</b>	User	<b>Default Value:</b>	0	<b>Access Lock:</b>	Oper.
<b>Value Type:</b>	Real	<b>Value Range:</b>	For emulated DHP Counter Data Point: 0 to 65535*AVCONV  If the value entered exceeds the maximum value, the PLCG clamps it to the maximum value.		

**PRIMMOD — Primary Module Point ID**

The primary module point identifier is the Tag Name of a process module to which a data point can be assigned. Refer to the definition of NAME (Tag Name) for the valid character set.

**PTDESC — Point Descriptor**

The point descriptor is used to describe the data point, and it appears on the Group and Detail Displays for this data point. In the example shown in Figure N-1 (see NAME), the point descriptor is DETH REFLUX PUMP A CONTR. The point descriptor appears on the Group Display only when the data point is selected.

<b>Source:</b> User	<b>Default Value:</b> All Blanks	<b>Access Lock:</b> DEB
<b>Value Type:</b> String	<b>Value Range:</b> The point descriptor can consist of up to 24 characters, and the permissible character set consists of all characters on the Engineer's Keyboard. Basically this set consists of Alphabets A-Z, Numerics 0-9, space, and the following special characters: ! " % & ' ( ) * + - / : ; > < = ? _ , . \$	

**PTDISCL — Point Disclosure**

This parameter determines whether the Data Entity Builder's parameter entry display is to show the complete set of user-configurable parameters or a smaller set of the parameters, leaving the parameters not displayed at the default values.

<b>Source:</b> User	<b>Default Value:</b> Brief	<b>Access Lock:</b> DEB
<b>Value Type:</b> Enum. of PTDISCL	<b>Value Range:</b> Brief = The brief set of configurable parameters is displayed on the parameter entry display. If this entry is selected, default values are supplied by the DEB for parameters that do not appear on the parameter entry display.  Full = The full set of configurable parameters is displayed on the parameter entry display.	

**PTEXECST — Point Execution State**

This parameter indicates the execution state of the specified data point.

<b>Source:</b> System	<b>Default Value:</b> N/A	<b>Access Lock:</b> Read-Only
<b>Value Type:</b> Enum. of PTEXECST	<b>Value Range:</b> Notconfig = This is a transient state; configuration has not been completed for this data point.  Active = Data point is running.  Inactive = Data point is fully configured but is not running.	

**PTINAL — Point in Alarm**

This parameter indicates whether an alarm condition exists on this point.

<b>Source:</b> System	<b>Default Value:</b> Off	<b>Access Lock:</b> Read-Only
<b>Value Type:</b> Boolean	<b>Value Range:</b> Off = Point is not in alarm. On = Point is in alarm.	

**PTSESTBL — # of Established Process Points (All Processor Status Data Points)**

This parameter defines the number of process points currently established in this node.

<b>Source:</b> System	<b>Default Value:</b> 0	<b>Access Lock:</b> Read-Only
<b>Value Type:</b> Integer	<b>Value Range:</b> 0-32767	

**PV — Current State (PV) (Digital Data Points)**

This parameter provides the current state of the specified data point.

<b>Source:</b> System	<b>Default Value:</b> N/A	<b>Access Lock:</b> Supvr.
<b>Value Type:</b> Self-Defining Enum.	<b>Value Range:</b> For a single input digital data point: 0 = Input is true. 1 = Input is false.  For a dual input digital data point: 0 = Both inputs are false. 1 = Input 1 is false, Input 2 is true. 2 = Input 1 is true, Input 2 is false. 3 = Both inputs are true.	

**PV — Current Value of PV (Analog Data Points)**

This parameter provides the current value of the PV input (in engineering units) at the specified data point.

<b>Source:</b> System	<b>Default Value:</b> N/A	<b>Access Lock:</b> Supvr.
<b>Value Type:</b> Real	<b>Value Range:</b> -6.86% to 106.9% percent of scale in engineering units.	

**PVALDB — PV Alarm Deadband ( Analog Input Data Points)**

This parameter is not used in PLCG/EPLCG and should be ignored. PVALDB defines the alarm deadband for the PV high limit and PV low limit for analog input points for the HG.

**PVAUTO — PV Automatic**

This parameter is the current PV value (in engineering units) that is read from the emulated DHP. This parameter is used in conjunction with the PV parameter when the PVSOURCE is manual or substituted. For these values of PVSOURCE, the PV is read/stored to the PLCG database; it is not read from the process box. This allows you to see the manual/substituted PV value (PV) as well as the PV value from the process box (PVAUTO).

<b>Source:</b> System	<b>Default Value:</b> N/A	<b>Access Lock:</b> Read-Only
<b>Value Type:</b> Real	<b>Value Range:</b> -6.86% to 106.9% of scale in engineering units.	

**PVCLAMP — Clamp Value Option**

This parameter defines whether the PV value is clamped when it is outside the configured range established by PVEULO and PVEUHI. If the PV is clamped, it is clamped to the nearest end-point of the extended range as specified by the PV range-option parameter PVRNGOP. Refer to Tables P-1.

<b>Source:</b> User	<b>Default Value:</b> Noclamp	<b>Access Lock:</b> Engr.
<b>Value Type:</b> Enum. of PVCLAMP	<b>Value Range:</b> Noclamp = PV values outside the configured range are not clamped to the specified extended range. PV is displayed as "-----" (Not A Number).  Clmp = Configured range is clamped to the specified extended range and the clamped value is displayed for the PV.	

Table P-1 — Clamp Value Option for PLCGs and DHPs

PV RANGE OPTION SELECTED	CLAMP VALUE OPTION SELECTED	PV VALUE RECEIVED FROM HIWAY (%)	PV VALUE DISPLAYED (%)
None	Noclamp	PV < -6.9 -6.9 <= PV <= 106.9 PV > 106.9	"-----" PV Value "-----"
Fullrng	Noclamp	PV < -2.9 -2.9 <= PV <= 102.9 PV > 102.9	"-----" PV Value "-----"
Clmpzero	Noclamp	PV < -2.9 -2.9<= PV < 0 0 <= PV <= 102.9 PV > 102.9	"-----" 0.0 PV Value "-----"
None	Clamp	PV < -6.9 -6.9 <= PV <= 106.9 PV > 106.9	-6.9 PV Value 106.9
Fullrng	Clamp	PV < -2.9 -2.9 <= PV <= 102.9 PV > 102.9	-2.9 PV Value 102.9
Clmpzero	Clamp	PV < -2.9 -2.9<= PV < 0 0 <= PV <= 102.9 PV > 102.9	0.0 0.0 PV Value 102.9

**NOTE:** This table applies only when PVSOURCE = Auto.

**PVDSPHI — PV Display Range High**  
**PVDSPLO— PV Display Range Low**

These parameters are present only if the HG Display Range option has been purchased for the system. These parameters allow an engineer to specify for this point, a different display range (0% to 100%) for the PV value on Group and Detail displays than the PV range defined by PVEUHI and PVEULO. If the option is not present or if NaN is entered in these parameters, the display range is defined by PVEUHI and PVEULO.

<b>Source:</b> User	<b>Default Value:</b> NaN (- - -)	<b>Access Lock:</b> Engr.
<b>Value Type:</b> Real	<b>Value Range:</b> Within the range defined by <u>PVEULO</u> and <u>PVEUHI</u> , but not exactly equal to either value. See the description of these parameters for further details.	

**PVEUHI — PV Range High**  
**PVEULO — PV Range Low**

For analog inputs, RNGCODE1 defines the input values that correspond to the high and low engineering-units limits specified in PVEULO and PVEUHI, respectively. For analog outputs, RNGCODE2 defines the output values that correspond to the 0% to 100% output value range.

<b>Source:</b> User	<b>Default Value:</b> 100.0 for <u>PVEUHI</u> 0.0 for <u>PVEULO</u>	<b>Access Lock:</b> Engr.
<b>Value Type:</b> Real	<b>Value Range:</b> -9999 to 9999	

**NOTE**

The values for PVEUHI and PVEULO are stored both in the PLCG and in the emulated DHP. When a change in the PVEUHI or PVEULO value occurs, the values for the following parameters (also stored both in the PLCG and the emulated DHP) are updated in the PLCG: PVEUHI, PVEULO, and PVTEMP or PVFORMAT (depending on the value in PVCHAR—linear types use PVFORMAT and temperature type use PVTEMP).

These parameters represent the high and low ends of the EU range for the PV. The maximum, total range allowed is 10000.0 units. For example, if PVEULO contains -10000.0, PVEUHI can be no higher than 0.0 units. Similarly, if PVEULO contains 0.0, PVEUHI can be no higher than 10000.0 units.

Because PVEUHI represents the span of the PV range, a change to the value in PVEULO can affect the value in PVEUHI. For example, if PVEULO initially contains 0.0 and PVEUHI contains 1000.0, and then an engineer changes PVEULO to 100.0, PVEUHI is automatically adjusted to 1100.0, to retain the span of 1000.0 units. The span can be changed only by updating the value in PVEUHI.

**PVFORMAT — Decimal Format**  
**PVFORMAT — Decimal Format of X**

This parameter defines the position of the decimal point for values in analog data points.

<b>Source:</b>	User	<b>Default Value:</b>	D0	<b>Access Lock:</b>	Engr.
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<b>Value Type:</b>	Enum. of VALFORMAT	<b>Value Range:</b>	For all data points except numeric data points: D0 = <u>+XXXX</u> D1 = <u>+XXX.X</u> D2 = <u>+XX.XX</u> D3 = <u>+X.XXX</u>
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**NOTE**

To update the value in this parameter, MODE must contain Man.

The value for this parameter is stored both in the PLCG and the emulated DHP. When a change to this value occurs, the values in the following parameters are also updated: PVEUHI, PVEULO, and PVCHAR.

**PVHIPR — PV High Priority**  
**PVLOPR — PV Low Priority**

These parameters define high and low priority levels for PV alarms.

<b>Source:</b>	User	<b>Default Value:</b>	Low	<b>Access Lock:</b>	Engr.
<b>Value Type:</b>	Enum. of ALPRIOR				
<b>Value Range:</b>	NOACTION =	Alarm is not reported to the system. Alarm is not annunciated.			
	JOURNAL =	Alarm is historized but is not annunciated. Alarm indicator does appear on Group and Detail displays.			
	LOW =	Alarm is historized, annunciated, and does appear on Group and Detail displays.			
	HIGH =	Alarm is historized, annunciated, and does appear on Group and Detail displays.			
	EMERGENCY =	This alarm has emergency (first) priority, and is historized and reported to USs (this value not allowed for counter points). The Alarm is annunciated. There is no restriction on capacity.			
	PRINTER =	Alarm is reported to the US RTJ. Alarm is not historized or annunciated, and does appear on Group and Detail displays.			
<b>NOTE</b>					
If PRINTER is chosen, the alarm is lost if the printer is not working.					
	JNLPRINT =	Alarm is historized and reported to the US RTJ. Alarm is not annunciated and does not appear on Group and Detail displays.			

**PVHITP — PV High Trip Point**  
**PVLOTP — PV Low Trip Point**

These parameters define the high and low trip point values (in engineering units) of the PV that cause an alarm condition to be generated. (PVHITP and PVLOTP are applicable to analog data points.)

<b>Source:</b> User	<b>Default Value:</b> 0.0	<b>Access Lock:</b> Supvr.
<b>Value Type:</b> Real	<b>Value Range:</b> <u>PVHITP</u> = -6.9% to 106.9 % of full scale in engineering units.	<u>PVLOTP</u> = -6.9% to 106.9% of full scale in engineering units.

Engineering unit range is from -9999 to 9999. Full scale in engineering units is defined by values assigned to PVEULO and PVEUHI.

**NOTE**

PVLOTP cannot be set higher than PVHITP; otherwise, an unreasonable value alarm condition can exist.

**PVRNGOP — PV Range Option**

This parameter defines the range of the PV input for analog data points.

<b>Source:</b> User	<b>Default Value:</b> None	<b>Access Lock:</b> Engr.
<b>Value Type:</b> Enum. of PVRNGOP	<b>Value Range:</b> None = -6.9% to 106.9 % (no clamping). Fullrng = -2.9% to 102.9% (no clamping). Clmpzero = 0.0% to 102.9% (clamped at zero).	

**PVSOURCE — PV Source (Analog and Digital Data Points)**

This parameter indicates the source of the PV value and which access levels, if any, are permitted to change the PV value.

<b>Source:</b> User	<b>Default Value:</b> Auto	<b>Access Lock:</b> Supvr.
<b>Value Type:</b> Enum. of PVSOURCE	<b>Value Range:</b> Auto = Automatic; the PV value is obtained from the hiway box. Changes to the PV value are not allowed.	
	Man = Manual; operator, supervisor, or engineer access level can be used to change the PV.	
	Sub = Substituted; program and continuous control access levels in an LCN node can be used to change the PV value of this data point.	

**NOTE**

When this parameter contains Man or Sub, you can still see the value from the process in the PVAUTO parameter. When the value in PVSOURCE is changed from Man or Sub to Auto, the values in PVAUTO and in PV should be made the same, to avoid a "bump."

**PVSTS — PV Value Status**

This parameter provides the current status of the PV value for the specified data point.

<b>Source:</b> System	<b>Default Value:</b> N/A	<b>Access Lock:</b> Read-Only
<b>Value Type:</b> Enum. of PVVALST	<b>Value Range:</b> Normal = PV value is OK.	
	Uncertn = PV value is uncertain.	
	Bad = PV value is bad.	

**PVTV — Target**

This parameter defines the target (setpoint) value in engineering units for analog input data points and for the input portion of analog-composite data points.

<b>Source:</b> User	<b>Default Value:</b> 0.0	<b>Access Lock:</b> Oper.
<b>Value Type:</b> Real	<b>Value Range:</b> Target value can have a range from -6.9% to 106.9%. Value that is entered is defined by the configured range established by <u>PVEULO</u> and <u>PVEUHI</u> .	

**RCASENB — Remote Cascade Enable**

This parameter specifies whether a control output connection or a continuous control program in an LCN node can control the output of this PLCG point. If you need more information, see 4.4.4.3 in *System Control Functions*.

This parameter does not apply to a digital data point if Moment has been entered for the MOOUTIND (Momentary Output Indication) parameter.

<b>Source:</b> User	<b>Default Value:</b> Off	<b>Access Lock:</b> Engr.
<b>Value Type:</b> Boolean	<b>Value Range:</b> Off = An LCN device can control the OP value from this point. On = An LCN device cannot control the OP value from this point.	

**NOTE**

To update the value in this parameter, MODE must contain Man and CASREQ must contain Notreq.

**RNGCODE1 — PLC Range Code for Analog Inputs**  
**RNGCODE2 — PLC Range Code for Analog Outputs**

These parameters are used for analog input, analog output, and analog composite data points to specify the range that is to be used by the DHP when it converts PLC values to B12E format. RNGCODE1 is used for analog input data points, and for the input portion of analog composite data points; RNGCODE2 is used for analog output data points, and for the output portion of analog composite data points.

<b>Source:</b> User	<b>Default Value:</b> 0	<b>Access Lock:</b> DEB
<b>Value Type:</b> Integer	<b>Value Range:</b> 0 = 0-999 (Use for A-B PLC-2) 1 = 0-4095 (Use for Modicon and can be used for A-B PLC 3 -5); binary 2 = 0-9999 (Can be used for A-B); PLC 3,5 with BCD or binary values. 3-7 = Defaults to 0-9999	

For analog inputs, RNGCODE1 is used with PVEULO, PVEUHI to define the Engineering Unit (EU) range of RNGCODE1.

For analog outputs, RNGCODE2 defines 0-100% output (the only units of outputs on the LCN).

**RPARSEC — # of Read Parameter Requests (All Processor Status Data Points)**

This parameter defines the cumulative number of read parameter requests to any LCN node since node startup or last reset action by engineer. Indicate the number of parameter read requests from this node to any LCN node.

<b>Source:</b> System	<b>Default Value:</b> 0.0	<b>Access Lock:</b> Engr.
<b>Value Type:</b> Real	<b>Value Range:</b> $\geq 0.0$	

## 2.17

**-S-****SCANTIME — Scan Time (Sec) (Box Data Point)**

This parameter defines the scan time (in seconds) during which the emulated DHP updates all the PLC data points in the emulated DHP database. A scan time of 0 seconds is considered as being free-running, and is the only valid value for PLCGs (0 is forced).

<b>Source:</b>	User	<b>Default Value:</b>	0 seconds	<b>Access Lock:</b>	DEB
<b>Value Type:</b>	Integer	<b>Value Range:</b>	00 (free running)		

**SLOTNUM — Slot Number or Input Slot Number**

This parameter defines the slot number of the emulated slot where this particular data point resides in the emulated DHP. For analog input and digital input and composite data points, and counter data points, the slot number defines the slot where the input to the data point resides.

<b>Source:</b>	User	<b>Default Value:</b>	1	<b>Access Lock:</b>	DEB
<b>Value Type:</b>	Integer	<b>Value Range:</b>	The slot number ranges for the various data points are as follows:		
		<b>Data Point Type</b>	<b>Slot Number Range</b>		
		All	1-15, 17-31		

**SOESYNCH — SOE Synchronization (PLCG Data Point)**

Sequence-of-events reporting is not available in a PLCG, so the only valid value is Disable.

<b>Source:</b>	User	<b>Default Value:</b>	Disable	<b>Access Lock:</b>	DEB
<b>Value Type:</b>	Enum. of ENBLSTAT	<b>Value Range:</b>	Disable = <b>Select this value for PLCGs.</b>		
			Enable = <b>Not a valid value for PLCGs.</b>		

**SPARSEC — # of Store Parameters Requests (All Processor Status Data Points)**

This parameter defines the number of store parameters requests per second to any LCN node.

<b>Source:</b> System	<b>Default Value:</b> 0.0	<b>Access Lock:</b> Engr.
<b>Value Type:</b> Real	<b>Value Range:</b> ≥ 0.0	

**SPECIFI1 — Specifier Code or Input 1 Specifier Code**

Used only with Modicon or Modbus compatible PLCs, this parameter specifies whether the input PLC address is that of an analog input, digital input, or a counter. SPECIFI1 can be used as the specifier code for a digital data point with one input, or for the first input (Input 1) of a digital data point that has two inputs.

<b>Source:</b> User	<b>Default Value:</b> 0	<b>Access Lock:</b> Engr.
<b>Value Type:</b> Integer	<b>Value Range:</b> For Analog Input: 3 (Modicon input register) or 4 For Digital Input: 1 (one bit) or 4 (holding register with packed digitals) For Counter Input: 4	

**SPECIFO1 — Specifier Code or Output 1 Specifier Code**

Used only with Modicon or Modbus compatible PLCs, this parameter specifies whether the output PLC address is that of an analog composite, analog output, digital composite, or digital output data point. SPECIFO1 is also used as the specifier code for a digital data point with one output, or for the first output (Output 1) of a digital data point that has two outputs.

<b>Source:</b> User	<b>Default Value:</b> 0	<b>Access Lock:</b> Engr.
<b>Value Type:</b> Integer	<b>Value Range:</b> For Analog Data Point: 4 For Digital Data Point: 0	

**SPECIFI2 — Input 2 Specifier Code (Digital Data Point)**

This parameter specifies that the input PLC address is that of the second input (Input 2) of a digital data point that has two inputs.

<b>Source:</b> User	<b>Default Value:</b> 0	<b>Access Lock:</b> Engr.
<b>Value Type:</b> Integer	<b>Value Range:</b> 1 or 4	

**SPECIFO2 — Output 2 Specifier Code (Digital Data Point)**

Used only with Modicon or Modbus compatible PLCs, this parameter specifies that the output PLC address is that of the second output (Output 2) of a digital output or digital composite data point that has two outputs.

<b>Source:</b> User	<b>Default Value:</b> 0	<b>Access Lock:</b> Engr.
<b>Value Type:</b> Integer	<b>Value Range:</b> For Digital Data Point: 0	

**STATE1 — Lower Box Descriptor (Digital Data Points)****STATE2 — Upper Box Descriptor**

These descriptors can be up-to-eight characters long and appear below the upper and lower boxes on Group and Detail Displays as shown in the following:



(Upper Box)

Upper Box Descriptor  
(STATE2)

(Lower box)

Lower Box Descriptor  
(STATE1)

<b>Source:</b> User	<b>Value:</b> UPPER for upper box. LOWER for lower box.	<b>Lock:</b> DEB
---------------------	--	------------------

<b>Value Type:</b> String	<b>Value Range:</b> The permissible character set for the lower- and upper-box descriptors is as follows:
---------------------------	---

Alphabets A through Z (upper case only),  
Numerics 0 through 9,  
Underscore ( \_ )

The colors of the boxes are specified by the UBOXCLR (Upper-Box Color) and LBOXCLR (Lower-Box Color) parameters. These boxes light depending on whether the digital data point has one or two inputs, and the states of the inputs (contact open or contact closed). Refer to the definition of the INPTDIR (Input Direction) parameter.

**CAUTION**

In the **TotalPlant** Solution (TPS) System Enhanced Operator Station, STATE2 text descriptor is for the lower box while STATE1 text descriptor is for the upper box. Only the positions of the descriptors have changed; input action remains the same.



2.18

**-T-**

**TOGINTSL — Slot/PLC 1-n TOG Interval (Box Data Point)**

This parameter defines which time-out interval (BOXTOG1 (TOG Interval 1) or BOXTOG2 (TOG Interval 2)) parameter is to be used for the specified slot/PLC in this emulated DHP.

<b>Source:</b>	User	<b>Default Value:</b>	Interv1	<b>Access Lock:</b>	Engr.
<b>Value Type:</b>	Enum. of SLOTTOGS	<b>Value Range:</b>	Interv1 = Interv2 =	Time-out interval specified by <u>BOXTOG1</u> parameter is to be used for this slot/PLC. Time-out interval specified by <u>BOXTOG2</u> parameter is to be used for this slot/PLC.	



2.19

**-U-**

**UBOXCLR — Upper-Box Color**

This parameter defines the color of the upper (STATE2) box that is used to show the status of the input(s) at a digital input or digital composite data point.

<b>Source:</b>	User	<b>Default Value:</b>	Red	<b>Access Lock:</b>	DEB
<b>Value Type:</b>	Enum. of BOXCOLOR	<b>Value Range:</b>	Red Green White Black Cyan Yellow Blue Magenta		

**UNIT — Unit ID**

This parameter defines the unit to which this data point is assigned. The unit identifier appears on the Detail Display for this data point as shown in Figure N-1, and in other displays and listings throughout the system. In the example shown in Figure N-1, the unit identifier is XX. (The unit identifiers are originally defined during network configuration.)

<b>Source:</b>	User	<b>Default Value:</b>	All Blanks	<b>Access Lock:</b>	DEB
<b>Value Type:</b>	String	<b>Value Range:</b>	<p>The unit identifier can consist of one or two characters and the valid character set is as follows:</p> <p>Alphabets A through Z (upper-case only).                      Numerics 0 through 9 (an all numeric identifier is permissible).                      Underscores are not permitted.                      No leading blanks (spaces).                      A single character with a trailing space is not permitted.</p> <p>Restriction: After a unit identifier has been defined, it should be written exactly the same way each time when the same identifier is to be used. As an example, if the unit identifier was defined as 03, it should be written as 03 and not as 3 for each usage of this unit identifier.</p>		

A Real number is returned for this parameter by the Picture Editor and by CL. This number is equivalent to the ordinal number in the enumeration list of units.

**UNREASPR — Unreasonable Alarm Priority**

This parameter defines the priority of an unreasonable alarm generated by a data point.

<b>Source:</b>	User	<b>Default</b>	<b>Access</b>
<b>Value</b>		<b>Value:</b> Low	<b>Lock:</b> Engr.
<b>Type:</b>	Enum. of ALPRIOR		
<b>Value Range:</b>	NOACTION =	Alarm is not reported to the system. Alarm is not annunciated.	
	JOURNAL =	Alarm is historized but is not annunciated. Alarm indicator does appear on Group and Detail displays.	
	LOW =	Alarm is historized, annunciated, and does appear on Group and Detail displays.	
	HIGH =	Alarm is historized, annunciated, and does appear on Group and Detail displays.	
	EMERGNCY =	This alarm has emergency (first) priority, and is historized and reported to USs (this value not allowed for counter points). The Alarm is annunciated. There is no restriction on capacity.	
	PRINTER =	Alarm is reported to the US RTJ. Alarm is not historized or annunciated, and does appear on Group and Detail displays.	
		<b>NOTE</b>	
		If PRINTER is chosen, the alarm is lost if the printer is not working.	
	JNLPRINT =	Alarm is historized and reported to the US RTJ. Alarm is not annunciated and does not appear on Group and Detail displays.	

## 2.20

**-Z-****ZZTEXT — Non-Comp State 00 Text**

This parameter defines the descriptors that are displayed when both inputs to a digital data point are noncomplementary. Text1 and Text2 are used to reference the descriptors that are entered in parameters NCMPTXT1 and NCMPTXT2 on the PLCG Hiway Point Assignment display. This parameter is valid only for a digital data point that has two inputs.

<b>Source:</b>	User	<b>Default Value:</b>	Text1	<b>Access Lock:</b>	DEB
<b>Value Type:</b>	Enum. of ZZTEXT	<b>Value Range:</b>	Text1 = The Text1 descriptor is displayed when both inputs to this data point are false (00). The Text2 descriptor is displayed when both inputs to this data point are true (11).		
			Text2 = The Text2 descriptor is displayed when both inputs to this data point are false (00). The Text1 descriptor is displayed when both inputs to this data point are true (11).		

**NOTES**

1. When neither the upper box or the lower box is lit for this data point on a Universal Station display, then the Text1 or Text2 descriptor that has been selected for this parameter is displayed.
2. When both the upper and lower boxes are lit on the display, then the Text1 or Text2 descriptor that is not selected as ZZTEXT is displayed.



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