# Honeywell

Experion PKS

# Experion Legacy I/O Link Module Parameter Reference Dictionary

**Release 431**

# Honeywell

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# Contents

# 1  About This Document

This document describes the parameters of Legacy I/O Link Module (LIOM). The parameters can be accessed from the function block tables or from the alphabetical listing.

| Revision | Date | Description |
| --- | --- | --- |
| A | December 2013 | Initial release of the document. |

**Related topics**

"Intended Audience" on page 16
"Prerequisite Skills" on page 17
"References" on page 18
"Acronyms and Definitions" on page 19

## 1.1  Intended Audience

The intended audience for this guide includes:

- Operators
- Supervisors
- Engineers
- Managers

## 1.2  Prerequisite Skills

- Familiarity with Experion and Control Builder
- Familiarity with LCS621 serial I/Os system.

# 1.3  References

The following list identifies all documents that may be sources of reference for material discussed in this publication:

- Honeywell LCS621 IO Integration Guide
- LCS 620 User documentation
- LCS 621 IO User documentation

# 1.4  Acronyms and Definitions

| Acronym | Description |
|---|---|
| AEM | Absolute Encoder Module |
| ASD | Alarm Summary Display |
| BCD | Binary Coded Decimal |
| CDA | Control Data Access |
| CEE | Control Execution Environment |
| CEE | Control Execution Environment |
| CM | Control Module |
| CNI | ControlNet Network Interface |
| CPM | C200 Processor Module |
| CPU | Central Processing Unit |
| EDM | Enhanced Diagnostic Module |
| EDM | Enhanced Diagnostic Module |
| EE | Execution Environment |
| EEA | Execution Environment Assignment |
| EOS | End of Skip |
| EOS | End of Skip |
| EPKS | Experion Process Knowledge Solutions |
| ERDB | Engineering Repository Database |
| ESD | Electrostatic Discharge |
| FB | Function Block |
| FTEB | Fault Tolerant Ethernet Bridge |
| IOC | Input Output Channel |
| LIOM | Legacy Input Output Module |
| NSKD | Not Skip and De-energize |
| NSKR | Not Skip and Retain |
| NSKR | Not Skip and Retain |
| PLC | Programmable Logic Controller |
| PU | Processing Unit |
| RCP | Redundant Chassis Pair |
| RH | Relative Humidity |
| RIUP | Removal and Insertion Under Power |
| RM | Redundancy Module |
| RSSU | RAM Retention Startup |
| RTDM | Resistance Temperature Detector Module |
| SIOM | Serial Input Output Module |
| SLM | Serial Link Module |
| UAIM | Universal Analog Input Module |

# 2 Legacy Input/ Output Link Module Parameter Reference

**Related topics**

# 2.1 LIOM Function Blocks

**Related topics**

## 2.1.1 LIOM FB

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| "BLCKCOMMENT3" on page 47 | "INITVAL" on page 117 (AOC Only) | "PV" on page 190 |
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| "CHNLCOMSTAT" on page 63 | "PTRDIRCTN" on page 187 |
| "IOCNUMBER" on page 119 | "PUSHDATA[1..8]" on page 189 |
| "CHNLCOMSTAT" on page 63 | "RSTDTPTR" on page 239 |

## 2.3.10  ASCIIREADERROR

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| "CHNLCOMSTAT" on page 63 | "FBENABLE" on page 93 |
| "ERRORCODE[1..8]" on page 87 | "MODLATCH" on page 137 |

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| "CHNLCOMSTAT" on page 63 | "MSG[1..8]" on page 141 |
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| "FBENABLE" on page 93 | |

# 2.4 LIOM Component Function Blocks

**Related topics**

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## 2.4.1 Logical blocks (AND, LCS1SCOMPLEMENT, NOT, OR, XOR, LCSRS, LCSSR)

| Function Blocks<br><br>Parameters | AND | LCS1S COMPLEMENT | NOT | OR | XOR | LCSRS | LCSSR |
|---|---|---|---|---|---|---|---|
| "IN" on page 107 | NA | A | A | NA | NA | NA | NA |
| "IN[1..8]" on page 108 | A | NA | NA | A | A | NA | NA |
| "INPTINVSTS[1..8]" on page 117 | A | NA | NA | A | A | NA | NA |
| "ORDERINCM" on page 171 | A | A | A | A | A | A | A |
| "OUT" on page 171 | A | A | A | A | A | NA | NA |
| "Q" on page 215 | NA | NA | NA | NA | NA | A | A |
| "R" on page 216 | NA | NA | NA | NA | NA | A | A |
| "RETENTIVE" on page 234 | NA | NA | NA | NA | NA | A | A |
| "RETINDEX" on page 234 | NA | NA | NA | NA | NA | A | A |
| "S" on page 241 | NA | NA | NA | NA | NA | A | A |

A: Applicable

NA: Not Applicable

## 2.4.2 Utility Blocks (LCSFLAG, FLAGARRAY, LCSNUMERIC, NUMERICARRAY, LCSNUMERIC16)

| Function Blocks<br><br>Parameters | LCSFLAG | FLAGARRAY | LCSNUMERIC | NUMERICARRAY | LCSNUMERIC16 |
|---|---|---|---|---|---|
| "ACCLOCK" on page 40 | A | A | A | A | A |

| Function Blocks<br>Parameters | LCSFLAG | FLAGARRAY | LCSNUMERIC | NUMERICARRAY | LCSNUMERIC16 |
|---|---|---|---|---|---|
| "IN[1..8]" on page 108 | A | NA | NA | NA | NA |
| "EUDESC" on page 89 | A | NA | NA | NA | NA |
| "HIALM.PR" on page 101 | A | NA | NA | NA | NA |
| "HIALM.SV" on page 101 | A | NA | NA | NA | NA |
| "HIALM.TYPE" on page 102 | A | NA | NA | NA | NA |
| "INALM" on page 111 | A | NA | NA | NA | NA |
| "NAME" on page 143 | A | A | A | A | A |
| "NORMAL" on page 145 | A | NA | NA | NA | NA |
| "OFFNRMALM.FL" on page 162 | A | NA | NA | NA | NA |
| "OFFNRMALM.PR" on page 163 | A | NA | NA | NA | NA |
| "OFFNRMALM.SV" on page 163 | A | NA | NA | NA | NA |
| "ORDERINCM" on page 171 | A | A | A | A | A |
| "NFLAG" on page 144 | NA | A | NA | NA | NA |
| "NNUMERIC" on page 144 | NA | NA | NA | A | NA |
| "PV" on page 190 | A | NA | A | NA | A |
| "PVFL" on page 196 | A | NA | NA | NA | NA |
| "PV[1..200]" on page 192 | NA | NA | NA | A | NA |
| "PVFL[1..1000]" on page 197 | NA | A | NA | NA | NA |
| "PVFORMAT" on page 197 | NA | NA | A | A | NA |
| "PVHILM" on page 202 | NA | NA | A | NA | A |
| "PVLOLM" on page 208 | NA | NA | A | NA | A |
| "RETENTIVE" on page 234 | A | NA | A | NA | A |
| "RETINDEX" on page 234 | A | NA | A | NA | A |
| "STATE0" on page 257 | A | NA | NA | NA | NA |
| "STATE1" on page 257 | A | NA | NA | NA | NA |
| "STATETEXT[0..1]" on page 258 | A | NA | NA | NA | NA |

A: Applicable

NA: Not Applicable

## 2.4.3  Bitwise operation blocks (BITAND, BITOR, BITXOR, BITRD, BITWR)

| Function Blocks<br>Parameters | BITAND | BITOR | BITXOR | BITRD | BITWR |
|---|---|---|---|---|---|
| "IN" on page 107 | NA | NA | NA | A | A |
| "IN1[1..16]" on page 109 | A | A | A | NA | NA |
| "IN2[1..16]" on page 109 | A | A | A | NA | NA |

| Function Blocks<br>Parameters | BITAND | BITOR | BITXOR | BITRD | BITWR |
|---|---|---|---|---|---|
| "K" on page 123 | NA | NA | NA | A | A |
| "KSP" on page 123 | NA | NA | NA | NA | A |
| "OUT" on page 171 | NA | NA | NA | A | A |
| "OUT[1..16]" on page 172 | A | A | A | NA | NA |
| "PV" on page 190 | A | A | A | NA | NA |
| "ORDERINCM" on page 171 | A | A | A | A | A |

A: Applicable

NA: Not Applicable

## 2.4.4 Comparison blocks (EQ, GE, GT, LE, LT, NE)

| Function Blocks<br>Parameters | EQ | GE | GT | LE | LT | NE |
|---|---|---|---|---|---|---|
| "DEADBAND" on page 81 | NA | A | A | A | A | NA |
| "DEADBAND1" on page 81 | A | NA | NA | NA | NA | A |
| "DEADBAND2" on page 81 | A | NA | NA | NA | NA | A |
| "IN[1..2]" on page 108 | A | A | A | A | A | A |
| "INBADOPT" on page 112 | A | A | A | A | A | A |
| "NUMOFINPUTS" on page 155 | A | A | A | A | A | A |
| "ORDERINCM" on page 171 | A | A | A | A | A | A |
| "OUT" on page 171 | A | A | A | A | A | A |
| "TP" on page 264 | A | A | A | A | A | A |

A: Applicable

NA: Not Applicable

## 2.4.5 Analog blocks (ABS, ADD, SUB, MUL, DIV, SQRT)

| Function Blocks<br>Parameters | ABS | ADD | SUB | MUL | DIV | SQRT |
|---|---|---|---|---|---|---|
| "ORDERINCM" on page 171 | A | A | A | A | A | A |
| "P" on page 178 | A | NA | NA | NA | NA | A |
| "P[1..2]" on page 178 | NA | A | A | A | A | NA |
| "PV" on page 190 | A | A | A | A | A | A |
| "PVSTS" on page 211 | A | A | A | A | A | A |
| "PVSTSSRC" on page 213 | A | A | A | A | A | A |

A: Applicable

NA: Not Applicable

## 2.4.6  Delay/Trigger blocks (DELAY, LCSOFFDELAY, LCSONDELAY, FTRIG, RTRIG)

| Function Blocks<br>Parameters | DELAY | LCSOFFDELAY | LCSONDELAY | FTRIG | RTRIG |
|---|---|---|---|---|---|
| "DELAYTIME" on page 81 | NA | A | A | NA | NA |
| "IN" on page 107 | A | A | A | A | A |
| "ORDERINCM" on page 171 | A | A | A | A | A |
| "OUT" on page 171 | A | A | A | A | A |

A: Applicable

NA: Not Applicable

## 2.4.7  Timer/Counter blocks (LCSTIMER, LCSCOUNTER)

| Function Blocks<br>Parameters | LCSTIMER | LCSCOUNTER |
|---|---|---|
| "COMMAND" on page 71 | A | NA |
| "DNIN" on page 84 | NA | A |
| "K" on page 123 | NA | A |
| "ORDERINCM" on page 171 | A | A |
| "PV" on page 190 | A | A |
| "RESETFLLO" on page 231 | A | NA |
| "RESETLO" on page 232 | NA | A |
| "RESTARTFL" on page 232 | A | NA |
| "RETENTIVE" on page 234 | A | A |
| "RETINDEX" on page 234 | A | A |
| "RV" on page 240 | A | NA |
| "SO" on page 253 | A | A |
| "SP" on page 255 | A | A |
| "STARTFL" on page 255 | A | NA |
| "STATE" on page 256 | A | NA |
| "STOPFL" on page 260 | A | NA |
| "TIMEBASE" on page 263 | A | NA |
| "UPIN" on page 268 | NA | A |

A: Applicable

NA: Not Applicable

## 2.4.8  Auxiliary Blocks (AUXCALC)

| | | | |
|---|---|---|---|
| "C[1..8]" on page 52 | "EXECDESC[1..8]" on page 90 | "PV" on page 190 | "PVSTSFL.UNCER" on page 212 |
| "CONFIGCODE[1..8]" on page 72 | "EXECSTS[1..8]" on page 91 | "PVFORMAT" on page 197 | "PVSTSSRC" on page 213 |
| "CONFIGDESC[1..8]" on page 72 | "EXPR[1..8]" on page 92 | "PVSRC" on page 209 | "PVVALSTS" on page 214 |
| "CONFIGSTS[1..8]" on page 73 | "NAME" on page 143 | "PVSTS" on page 211 | "P1FILTTIME" on page 179 |
| "CSTS[1..8]" on page 79 | "NUMSRCCONN[1..8]" on page 159 | "PVSTSFL.BAD" on page 211 | "INITOPOPT" on page 115 |
| "DESC" on page 82 | "ORDERINCM" on page 171 | "PVSTSFL.MAN" on page 212 | |
| "EUDESC" on page 89 | "P[1..6]" on page 178 | "P1CLAMPOPT" on page 179 | |
| "EXECCODE[1..8]" on page 89 | "PSTS[1..6]" on page 188 | "PVSTSFL.NORM" on page 212 | |

## 2.4.9  Data acquisition block (DATAACQ)

| | | | | |
|---|---|---|---|---|
| "ALMDB" on page 40 | "P1" on page 178 | "PVHHALM.TM" on page 199 | "PVLOALM.TM" on page 207 | "ROCPOSALM.TP" on page 238 |
| "ALMDBU" on page 41 | "P1CLAMPOPT" on page 179 | "PVHIALM.TP" on page 202 | "PVLOALM.DB" on page 205 | |
| "ALMTM" on page 42 | "P1FILTINIT" on page 179 | "PVHIALM.DB" on page 200 | "PVHISIGCHG.CT" on page 202 | |
| "BADPVALM.FL" on page 45 | "P1FILTTIME" on page 179 | "PVHIALM.DBU" on page 200 | "PVLOSIGCHG.TP" on page 209 | |
| "BADPVALM.PR" on page 45 | "P1STS" on page 180 | "PVHIALM.FL" on page 201 | "PVP" on page 209 | |
| "BADPVALM.SV" on page 46 | "PV" on page 190 | "PVHIALM.PR" on page 201 | "PVSRC" on page 209 | |
| "DESC" on page 82 | "PVAUTO" on page 193 | "PVHIALM.SV" on page 201 | "PVSRCOPT" on page 210 | |
| "EUDESC" on page 89 | "PVAUTOSTS" on page 193 | "PVHISIGCHG.CT" on page 202 | "PVSTSSRC" on page 213 | |
| "HIALM.PR" on page 101 | "PVCHAR" on page 194 | "PVLOSIGCHG.TP" on page 209 | "PVSTS" on page 211 | |
| "HIALM.SV" on page 101 | "PVEUHI" on page 194 | "PVLLALM.DB" on page 203 | "PVSTSFL.BAD" on page 211 | |
| "HIALM.TYPE" on page 102 | "PVEULO" on page 194 | "PVLLALM.DBU" on page 203 | "PVSTSFL.MAN" on page 212 | |
| "INALM" on page 111 | "PVEXHIFL" on page 195 | "PVLLALM.FL" on page 204 | "PVSTSFL.NORM" on page 212 | |
| "INSBLOCK[1..10]" on page 118 | "PVEXHILM" on page 195 | "PVLLALM.PR" on page 204 | "PVSTSFL.UNCER" on page 212 | |

| | | | |
|---|---|---|---|
| "INSERTSTS" on page 118 | "PVEXLOFL" on page 195 | "PVLLALM.SV" on page 204 | "PVVALSTS" on page 214 | |
| "INSFAILFL" on page 118 | "PVEXLOLM" on page 195 | "PVLLALM.TM" on page 205 | "ROCNEGALM.FL" on page 235 | |
| "INSTYPE" on page 119 | "PVFORMAT" on page 197 | "PVLLALM.TP" on page 205 | "ROCNEGALM.PR" on page 236 | |
| "LASTGOODPV" on page 125 | "PVHHALM.DB" on page 197 | "PVLOALM.DB" on page 205 | "ROCNEGALM.SV" on page 236 | |
| "LOCUTOFF" on page 129 | "PVHHALM.DBU" on page 198 | "PVLOALM.DBU" on page 206 | "ROCNEGALM.TP" on page 236 | |
| "NAME" on page 143 | "PVHHALM.FL" on page 198 | "PVLOALM.FL" on page 206 | "ROCPOSALM.FL" on page 237 | |
| "NUMINSERT" on page 153 | "PVHHALM.PR" on page 198 | "PVLOALM.PR" on page 207 | "ROCPOSALM.PR" on page 237 | |
| "ORDERINCM" on page 171 | "PVHHALM.SV" on page 199 | "PVLOALM.SV" on page 207 | "ROCPOSALM.SV" on page 237 | |

## 2.4.10  Device Control block (DEVCTL)

| | | | |
|---|---|---|---|
| "BADPVALM.FL" on page 45 | "HIALM.TYPE" on page 102 | "NORMMODEATTR" on page 145 | "PV" on page 190 |
| "BADPVALM.PR" on page 45 | "HOLDOPT" on page 103 | "NULLPVFL" on page 145 | "PVAUTO" on page 193 |
| "BADPVALM.SV" on page 46 | "INALM" on page 111 | "NUMDINPUTS" on page 149 | "PVFL[0..2]" on page 196 |
| "BYPASS" on page 50 | "INBETFL" on page 112 | "NUMDOUTS" on page 149 | "PVSRCOPT" on page 210 |
| "BYPPERM" on page 50 | "INITCONNECTD [1..3]" on page 114 | "NUMSIOVRD" on page 158 | "PVSTS" on page 211 |
| "CLROPREQFL" on page 66 | "INITMAN" on page 115 | "NUMSTATES" on page 159 | "REDTAG" on page 231 |
| "CMDDISALM.FL" on page 66 | "INITOPOPT" on page 115 | "OFFNRMALM.FL" on page 162 | "RESTARTOPT" on page 233 |
| "CMDDISALM.PR" on page 67 | "INITOPAFTLD" on page 115 | "OFFNRMALM.PR" on page 163 | "SAFEOP" on page 241 |
| "CMDFALALM.SV" on page 69 | "INITREQ[0..2]" on page 116 | "OFFNRMALM.SV" on page 163 | "SEALOPT" on page 244 |
| "CMDDISALM.TM [0..2]" on page 68] | "LASTGOPREQ" on page 125 | "OI [0..2]" on page 164 | "SI" on page 248 |
| "CMDFALALM.FL" on page 68 | "LASTOPREQ" on page 126 | "OIALM.FL [0..2]" on page 164 | "SIALM.FL" on page 248 |
| "CMDFALALM.PR" on page 69 | "LASTOPTYPE" on page 127 | "OIALM.OPT [0..2]" on page 165 | "SIALM.OPT" on page 249 |
| "CMDFALALM.SV" on page 69 | "LASTREQFL" on page 127 | "OIALM.PR [0..2]" on page 165 | "SIALM.PR" on page 249 |
| "CMDFALALM.TM [0..2]" on page 70 | "LASTSTEP" on page 128 | "OIALM.SV [0..2]" on page 166 | "SIALM.SV" on page 250 |
| "DESC" on page 82 | "LOCALMAN" on page 129 | "OP" on page 166 | "STARTOPT" on page 256 |
| "DI[1..4]" on page 82 | "MAINTOPT" on page 131 | "OPCMD [0..2]" on page 168 | "STATETEXT [0..6]" on page 258 |

| | | | |
|---|---|---|---|
| "DIPVMAP[0..15]" on page 83 | "MAXTIME [0..2]" on page 132 | "OPDOMAP [0..3][1..3]" on page 168] | "STATETIME [0..2]" on page 258 |
| "DO[1..3]" on page 84 | "MAXTRANS [0..2]" on page 133] | "OPFINAL" on page 169 | "STOPOPT" on page 260 |
| "EUDESC" on page 89 | "MODE" on page 133 | "OPREQ" on page 169 | "UNCMDALM.FL" on page 266 |
| "GOP" on page 96 | "MODEATTR" on page 134 | "OPTYPE" on page 170 | "UNCMDALM.PR" on page 267 |
| "GOPFINAL" on page 97 | "MODEATTRFL.NORM" on page 134 | "ORDER" on page 170 | "UMCMDALM.SV" on page 266 |
| "GOPREQ" on page 97 | "MODEATTRFL.OPER" on page 135 | "ORDERINCM" on page 171 | |
| "GOPSCADA" on page 98 | "MODEATTRFL.PROG" on page 135 | "PI[0..2]" on page 184 | |
| "GPV" on page 98 | "MODETRACK" on page 136 | "PO[0..3]" on page 185 | |
| "GPVAUTO" on page 99 | "MOMSTATE" on page 138 | "POCONNECTED[1..3]" on page 186 | |
| "HIALM.SV" on page 101 | "NAME" on page 143 | "PULSEWIDTH[1..3]" on page 189 | |

## 2.4.11 LCSSEQUENCER

| | |
|---|---|
| "EXECSTSB" on page 91 | "ORDERINCM" on page 171 |
| "IN[1..128]" on page 108 | "OUTR" on page 174 |
| "K" on page 123 | "OUTI" on page 173 |
| "NIN" on page 144 | |

## 2.4.12 LCSSEL

| | |
|---|---|
| "G" on page 96 | "ORDERINCM" on page 171 |
| "IN[1..2]" on page 108 | "OUT" on page 171 |
| "INPTINVSTS[1..2]" on page 117 | |
| "NAME" on page 143 | |

## 2.4.13 LCSSELECT

| | |
|---|---|
| "EXECSTSB" on page 91 | |
| "IN[1..2]" on page 108 | "OUTR" on page 174 |
| "K" on page 123 | "OUTI" on page 173 |
| "ORDERINCM" on page 171 | |

## 2.4.14 LCSTYPECONVERT

| | |
|---|---|
| "BOOLVALUEOFF" on page 48 | "ORDERINCM" on page 171 |

| | |
|---|---|
| "BOOLVALUEON" on page 49 | "OUT.BOOLEAN" on page 172 |
| "ENUMBOOLMAP(0..63)" on page 87 | "OUT.FLOAT32" on page 172 |
| "EXECSTS" on page 90 | "OUT.FLOAT64" on page 173 |
| "IN.BOOLEAN" on page 109 | "OUT.INT8" on page 173 |
| "IN.ENUM" on page 109 | "OUT.INT16" on page 173 |
| "IN.FLOAT32" on page 109 | "OUT.INT32" on page 173 |
| "IN.FLOAT64" on page 110 | "OUT.SDENUM" on page 174 |
| "IN.INT8" on page 110 | OUT.INT16 |
| "IN.INT16" on page 110 | "SDENUMTEXT[0..63]" on page 244 |
| "IN.INT32" on page 110 | "THRESHOLD" on page 263 |
| "IN.SDENUM" on page 110 | "TRUNCATEOPT" on page 264 |
| "IN.UINT16" on page 111 | "OUT.UINT16" on page 175 |
| "IN.UINT32" on page 111 | |

## 2.4.15  PUSH

| | | |
|---|---|---|
| "BOOLVALUEOFF" on page 48 | "INPUTCHGDB" on page 117 | "STATETEXT[0..1]" on page 258 |
| "BOOLVALUEON" on page 49 | "ORDERINCM" on page 171 | "STOREENB" on page 260 |
| "ENUMBOOLMAP(0..63)" on page 87 | "OUT.BOOLEAN" on page 172 | "STORESTS" on page 261 |
| "EXECSTS" on page 90 | "OUT.FLOAT32" on page 172 | "STORONCHGENB" on page 261 |
| "IN.BOOLEAN" on page 109 | "OUT.FLOAT64" on page 173 | "THRESHOLD" on page 263 |
| "IN.ENUM" on page 109 | "OUT.INT8" on page 173 | "TRUNCATEOPT" on page 264 |
| "IN.FLOAT32" on page 109 | "OUT.INT16" on page 173 | |
| "IN.FLOAT64" on page 110 | "OUT.INT32" on page 173 | |
| "IN.INT8" on page 110 | "OUT.SDENUM" on page 174 | |
| "IN.INT16" on page 110 | "OUT.INT16" on page 173 | |
| "IN.INT32" on page 110 | "PVFL" on page 196 | |
| "IN.SDENUM" on page 110 | "SDENUMTEXT[0..63]" on page 244 | |
| "IN.UINT16" on page 111 | "STATE0" on page 257 | |
| "IN.UINT32" on page 111 | "STATE1" on page 257 | |

# 3 Alphabetical Listing of Parameters

**Related topics**

# 3.1 -A-

**Related topics**

## 3.1.1 ACCLOCK

This parameter specifies who can change the LCSFLAG function block's state (using PV and PVFL), and who can change the LCSNUMERIC function block's value (PV).

| Specific to Block(s) | LCSFLAG, LCSNUMERIC FLAGARRAY, NUMERICARRAY, LCSNUMERIC16 | Description | Access Lock |
|---|---|---|---|
| Data Type | Enumeration ACCLOCK | Range | Operator (0) Engineer (1) OtherFB (2) |
| Default | Operator (0) | Configuration Load | Yes |
| Access Lock | Engineer | Residence | EE |
| Related Parameters | LCSNUMERIC only: PV LCSFLAG only: PV, PVFL. FLAGARRAY only: PVFL[1..1000]. NUMERICARRAY only: PV[1..200] | Checkpoint | Yes (for OCD) |

## 3.1.2 ALMDB

This parameter indicates the overall deadband for all analog alarms. Individual alarm deadbands are not individually configurable. The configured ALMDB is loaded to the block, then the block copies the ALMDB value to all the xxALM.DB of all analog alarms on the block. ALMDBU and ALMTM are handled in the same way. Thus, all analog alarms get the same three values through a one-time configuration of the three values.

If desired, the individual alarm parameters (xxALM.DB, xxALM.DBU, and xxALM.TM) may be modified after the block is loaded. The block load sets all individual alarm parameters to the three configured values.

| Specific to Block(s) | DATAACQ | Description | Alarm Deadband |
|---|---|---|---|

| Data Type | 64-Bit Real Number | Range | N/A |
|---|---|---|---|
| Default | 0.00 | Configuration Load | Yes |
| Access Lock | Engineer | Residence | EE |
| Related Parameters | OPHIALM.DB, OPLOALM.DB, PVHHALM.DB, PVHIALM.DB, PVLLALM.DB, PVLOALM.DB | Checkpoint | Yes (for OCD). |

## 3.1.3  ALMDBU

This parameter indicates the overall deadband unit for all analog alarms. Individual alarm deadbands are not individually configurable. The configured ALMDBU is loaded to the block, then the block copies the ALMDBU value to all the xxALM.DBU of all analog alarms on the block. ALMDB and ALMTM are handled in the same way. Thus, all analog alarms get the same three values through a one-time configuration of the three values.

If desired, the individual alarm parameters (xxALM.DB, xxALM.DBU, and xxALM.TM) may be modified after the block is loaded. The block load sets all individual alarm parameters to the three configured values.

| Specific to Block(s) | DATAACQ | Description | Alarm Deadband Unit |
|---|---|---|---|
| Data Type | Enumeration ALMDBU | Range | Percent (0) Engineering Units (1) |
| Default | Percent (0) | Configuration Load | Yes |
| Access Lock | Application Developer | Residence | EE |
| Related Parameters | OPHIALM.DBU, OPLOALM.DBU, PVHHALM.DBU, PVHIALM.DBU, PVLLALM.DBU, PVLOALM.DBU | Checkpoint | Yes (for OCD). |

## 3.1.4  ALMENBSTATE

| Specific to Block(s) | IOM, EEFB | Description | Alarm Enable State - Defines the alarm reporting function that is to be used, when an alarm condition is detected by the function block, or by one of its components. |
|---|---|---|---|
| Data Type | Boolean | Range | TRUE FALSE |
| Default | TRUE | Configuration Load | Yes |
| Access Lock | Operator | Residence | EE |
| Related Parameters | INALM | Checkpoint | Yes (for OCD) |

**Remarks:** When On, ALMENBSTATE allows alarms detected by component blocks within the CM to propagate out of the EE to alarm displays and journals. When OFF, alarm reports do not propagate out of the EE, but alarm flags reflect current alarm state. When ALMENBSTATE changes from OFF to ON, all active alarms are regenerated.

## 3.1.5 ALMTM

This parameter indicates the filter time for all alarms. Individual alarm deadbands are not individually configurable. The configured ALMTM is loaded to the block, then the block copies the ALMTM value to all the xxALM.TM of all analog alarms on the block. ALMDB and ALMDBU are handled in the same way. Thus, all analog alarms get the same three values through a one-time configuration of the three values.

If desired, the individual alarm parameters (xxALM.DB, xxALM.DBU, and xxALM.TM) may be modified after the block is loaded. The block load sets all individual alarm parameters to the three configured values.

| Specific to Block(s) | DATAACQ | Description | Alarm filter time |
|---|---|---|---|
| Data Type | 32-Bit Unsigned Integer | Range | 0 to 60 |
| Default | 0 | Configuration Load | Yes |
| Access Lock | Engineer/Application Developer | Residence | EE |
| Related Parameters | CMDDISALM.TM[0..2], CMDFALALM.TM[0..2], OPHIALM.TM, OPLOALM.TM, PVHHALM.TM, PVHIALM.TM, PVLLALM.TM, PVLOALM.TM. | Checkpoint | Yes (for OCD). |

## 3.1.6 ATMPRESSURE[1..8]

| Specific to Block(s) | RTDM | Description | Atmospheric Pressure (mm) |
|---|---|---|---|
| Data Type | UNIT16 | Range | 590-762 |
| Default | 760 | Configuration Load | Yes |
| Access Lock | Engineer | Residence | EE |
| Related Parameters | | | |

## 3.1.7 AUTORUN

This parameter indicates whether the controller would be set to RUN state or IDLE state following retentive restore.

| Specific to Block(s) | LIOM FB | Description | Auto Run |
|---|---|---|---|
| Data Type | Boolean | Range | True/ False |
| Default | False | Configuration Load | Yes |
| Access Lock | Engineer | Residence | LIOM (Primary, in case of a redundant configuration) |

| Related Parameters | AUTOSAVE | | |
|---|---|---|---|

## 3.1.8 AUTOSAVE

This parameter indicates whether automatic save to flash operation is enabled. When enabled, the LIOM control strategies are saved to the flash memory every 4 hours.

| Specific to Block(s) | LIOM FB | Description | Auto Save |
|---|---|---|---|
| Data Type | Boolean | Range | True/ False |
| Default | False | Configuration Load | Yes |
| Access Lock | Engineer | Residence | LIOM (Primary, in case of a redundant configuration) |
| Related Parameters | AUTORUN | | |

## 3.1.9 AV

This parameter stores the accumulated value of the counter. The maximum value it can store is 65535.

| Specific to Block(s) | LCSPICHANNEL | Description | Accumulated Value |
|---|---|---|---|
| Data Type | UINT16 | Range | 0-65535 |
| Default | 0 | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | | | |

This parameter displays the accumulated value of the counter.

| Specific to Block(s) | LCSPQICHANNEL | Description | Accumulated Value |
|---|---|---|---|
| Data Type | Unsigned Integer - 32 bits | Range | 0-4294967295 |
| Default | 0 | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | | | |

## 3.1.10 AV[1..4]

This parameter stores the accumulated value of the counter for Pulse Input IO Module. The maximum value it can store is 65535.

| Specific to Block(s) | Pulse Input Module | Description | Accumulated Value |
|---|---|---|---|
| Data Type | UINT16 | Range | 0-65535 |
| Default | 0 | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | | | |

## 3.1.11 AVVAL[1..3]

This parameter displays the accumulated value of the counter.

| Specific to Block(s) | Pulse Quadrature Input Module | Description | Accumulated Value |
|---|---|---|---|
| Data Type | Unsigned Integer - 32 bits | Range | 0-4294967295 |
| Default | 0 | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | | | |

# 3.2 -B-

## 3.2.1 BADPV

| Specific to Block(s) | DIC | Description | Indicates the Digital Input process variable (PV) status. |
|---|---|---|---|
| Data Type | Boolean | Range | Off (0) On (1) |
| Default | Off (0) | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | | | |

**Remarks:** If this parameter is ON, the value is BAD.

## 3.2.2 BADPVALM.FL

| Specific to Block(s) | DATAACQ, DEVCTL | Description | Bad Control Alarm Flag |
|---|---|---|---|
| Data Type | Boolean | Range | Off (0) On (1) |
| Default | Off (0) | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | BADCTLFL BADCTLALM.PR BADCTLALM.SV | Checkpoint | Yes (for OCD). |

## 3.2.3 BADPVALM.PR

| Specific to Block(s) | DATAACQ, DEVCTL | Description | Bad Control Alarm Priority - Defines the priority of a Bad Control alarm. |
|---|---|---|---|
| Data Type | Enumeration ALPRIOR | Range | None (0) Journal (1) Low (2) High (3) Urgent (4) |
| Default | Low (2) | Configuration Load | Yes |
| Access Lock | Engineer | Residence | EE |
| Related Parameters | BADCTLFL BADCTLALM.FL BADCTLALM.SV | Checkpoint | Yes (for OCD). |

## 3.2.4  BADPVALM.SV

| Specific to Block(s) | DATAACQ, DEVCTL | Description | Bad Control Alarm Severity |
|---|---|---|---|
| Data Type | 16-Bit Integer | Range | 0 to 15 |
| Default | 0 | Configuration Load | Yes |
| Access Lock | Engineer | Residence | EE |
| Related Parameters | BADCTLFL BADCTLALM.FL BADCTLALM.PR | Checkpoint | Yes (for OCD). |

## 3.2.5  BASEPERIOD

| Specific to Block(s) | EE | Description | Base Period for the EE function block in milliseconds (ms). |
|---|---|---|---|
| Data Type | Integer | Range | 5 ms (0) 25ms (1) 50ms(2) |
| Default | 50 ms (2) | Configuration Load | Yes |
| Access Lock | Application Developer | Residence | EE |
| Related Parameters | | | |

**Remarks:** The 50 ms base period (or 50 ms EE) supports block execution periods from 50 ms to 2000 ms.

LIOM EE supports only 50ms base period.

## 3.2.6  BITRES

| Specific to Block(s) | AEM | Description | Bit Resolution | | |
|---|---|---|---|---|---|
| Data Type | Enumeration | Range | 8 | 10 | 12 |
| | | | 9 | 11 | |
| Default | 8 | Configuration Load | Yes | | |
| Access Lock | Application Developer | Residence | EE | | |
| Related Parameters | | | | | |

## 3.2.7  BLCKCOMMENT1

| Specific to Block(s) | All Blocks | Description | Block Comment 1 - Lets you enter pertinent comment to be associated with this block. |
|---|---|---|---|
| Data Type | STRING | Range | Length: 40 characters |
| Default | Null | Configuration Load | Yes |
| Access Lock | Application Developer | Residence | SR |
| Related Parameters | | | |

**Remarks**: Must have template license for identification tab to apply.

## 3.2.8  BLCKCOMMENT2

| Specific to Block(s) | All Blocks | Description | Block Comment 2 - Lets you enter pertinent comment to be associated with this block. |
|---|---|---|---|
| **Data Type** | STRING | **Range** | Length: 40 characters |
| **Default** | Null | **Configuration Load** | Yes |
| **Access Lock** | Application Developer | **Residence** | SR |
| **Related Parameters** | | | |

**Remarks**: Must have template license for identification tab to apply.

## 3.2.9  BLCKCOMMENT3

| Specific to Block(s) | All Blocks | Description | Block Comment 3 - Lets you enter pertinent comment to be associated with this block. |
|---|---|---|---|
| **Data Type** | STRING | **Range** | Length: 40 characters |
| **Default** | Null | **Configuration Load** | Yes |
| **Access Lock** | Application Developer | **Residence** | SR |
| **Related Parameters** | | | |

**Remarks**: Must have template license for identification tab to apply.

## 3.2.10  BLCKCOMMENT4

| Specific to Block(s) | All Blocks | Description | Block Comment 3 - Lets you enter pertinent comment to be associated with this block. |
|---|---|---|---|
| **Data Type** | STRING | **Range** | Length: 40 characters |
| **Default** | Null | **Configuration Load** | Yes |
| **Access Lock** | Application Developer | **Residence** | SR |
| **Related Parameters** | | | |

**Remarks**: Must have template license for identification tab to apply.

## 3.2.11  BLKTYPCOUNT

| Specific to Block(s) | EE | Description | Block Type Count - The number of instances currently loaded to the controller. |
|---|---|---|---|
| **Data Type** | 16-Bit Integer | **Range** | 0 to 4, 258,848 (instances) |
| **Default** | 0 | **Configuration Load** | No |
| **Access Lock** | View Only | **Residence** | EE |

| Related Parameters | | | |
|---|---|---|---|

## 3.2.12  BLKTYPDESC

| Specific to Block(s) | EE | Description | Block Type Description - The description string used for the block type name. |
|---|---|---|---|
| Data Type | String (one dimensional array) | Range | 0 to 400 (maximum string size is 32 characters) |
| Default | None | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | | | |

## 3.2.13  BLKTYPLIB

| Specific to Block(s) | EE | Description | Block Type Library - The name of the Control Component Library containing the block type. |
|---|---|---|---|
| Data Type | String (one dimensional array) | Range | 0 to 400 (maximum string size is 20 characters) |
| Default | None | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | | | |

## 3.2.14  BLKTYPSIZE

| Specific to Block(s) | EE | Description | Block Type Size - The size of the block type footprint in bytes. |
|---|---|---|---|
| Data Type | 32-Bit Integer | Range | 0 to 4,258,848 |
| Default | 0 | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | | | |

**Remarks**: This value does **not** include the memory required for the block specific configuration and run-time data.

## 3.2.15  BOOLVALUEOFF

This parameter is applicable for conversion between Boolean and Enumeration values. The output Enumeration value is whatever the BOOLVALUEOFF is set to.

| Specific to Block(s) | LCSTYPECONVERT, PUSH | Description | Used for converting Boolean values to Enumeration |
|---|---|---|---|
| Data Type | Enumeration TCGENERICENUM | Range | Enum0 to Enum63 |

| Default | Enum0 | Configuration Load | Yes |
|---|---|---|---|
| Access Lock | Engineer | Residence | EE |
| Related Parameters | BOOLVALUEON | Checkpoint | Yes (for OCD) |

## 3.2.16  BOOLVALUEON

This is applicable for conversion between Boolean and Enumeration values. The output Enumeration value is whatever the BOOLVALUEON is set to.

| Specific to Block(s) | LCSTYPECONVERT, PUSH | Description | Used for converting Boolean values to Enumeration |
|---|---|---|---|
| Data Type | Enumeration TCGENERICENUM | Range | Enum0 to Enum63 |
| Default | Enum1 | Configuration Load | Yes |
| Access Lock | Engineer | Residence | EE |
| Related Parameters | BOOLVALUEOFF | Checkpoint | Yes (for OCD) |

## 3.2.17  BURNOUTINTRVL

This parameter determines the burnout interval in seconds for the thermocouple input.

| Specific to Block(s) | UAIM | Description | Burnout Interval |
|---|---|---|---|
| Data Type | Enum UAIM_BURNOUTINTRVL TYPE | Range | 5 Sec Continuous |
| Default | 5 Sec | Configuration Load | Yes |
| Access Lock | Engineer | Residence | EE |
| Related Parameters | | | |

**Remarks**: A thermocouple input includes two dissimilar metals joined at one end. When this junction no longer exists due to wear and tear, a burnout occurs. The BURNOUTINTRVL determines how often the UAIM tests for a burnout at an input. On burnout, the UAIM sets the output count to zero scale or full scale depending on the FAILSAFE configuration.

## 3.2.18  BURNOUTSEL[1..16]

This parameter indicates if the burnout testing is enabled for the thermocouple input. This parameter is applicable only when you select the signal range as 'Direct', and Characterization as 'Thermocouple'. When characterization is selected as 'Thermocouple,' then signal range can be selected as 'Direct.'

| Specific to Block(s) | UAIM | Description | Burnout Select |
|---|---|---|---|
| Data Type | Enum UAIM_BURNOUTSELTYPE | Range | OFF ON NA |
| Default | NA | Configuration Load | Yes |
| Access Lock | Engineer | Residence | EE |
| Related Parameters | BURNOUTINTRVL | | |

**Remarks**: If this parameter is set to ON, the UAIM tests for a burnout depending on the BURNOUTINTRVL configuration. The UAIM can detect a burnout on the first execution following failure. It detects burnout for a loop resistance for a minimum of 1K and a maximum of 4K.

Note that the UAIM can detect each direct thermocouple input for burnout. However, it cannot detect temperature transmitter burnout.

## 3.2.19 BYPASS

| | | | |
|---|---|---|---|
| **Specific to Block(s)** | DEVCTL | **Description** | Permissive and Interlock Bypass |
| **Data Type** | Boolean | **Range** | Off (0) On (1) |
| **Default** | Off (0) | **Configuration Load** | Yes |
| **Access Lock** | Operator | **Residence** | EE |
| **Related Parameters** | BYPPERM NUMDOUTS OI [0..2] OP PI[0..2] | **Checkpoint** | Yes (for OCD). |

**Remarks**: This parameter can be changed only where BYPPERM = ON. When this parameter is set to ON, Override and Permissive Interlocks are bypassed. Default to OFF when BYPPERM is set to OFF.

Illegal if NUMDOUTS = 0.

## 3.2.20 BYPCNFGLOAD

When the IOM is loaded from the Control Builder, the configuration is not loaded with the UAIM/RTDM if the parameter check box is selected. This feature enables the user to configure the IOM without affecting the field configuration. Subsequently, the user can read the configuration.

| | | | |
|---|---|---|---|
| **Specific to Block(s)** | UAIM, RTDM | **Description** | Bypass configuration load. |
| **Data Type** | Boolean | **Range** | TRUE FALSE |
| **Default** | FALSE | **Configuration Load** | Yes |
| **Access Lock** | Engineer | **Residence** | EE |
| **Related Parameters** | | | |

## 3.2.21 BYPPERM

| | | | |
|---|---|---|---|
| **Specific to Block(s)** | DEVCTL | **Description** | Override and Permissive Bypass Permit |
| **Data Type** | Boolean | **Range** | Off (0) On (1) |
| **Default** | Off (0) | **Configuration Load** | Yes |

| Access Lock | Engineer | Residence | EE |
|---|---|---|---|
| **Related Parameters** | BYPASS | **Checkpoint** | Yes (for OCD). |
| | NUMDOUTS | | |
| | OI[0..2] | | |
| | PI[0..2] | | |

**Remarks**: When ON, this parameter allows BYPASS to be set to bypass the Permissive and Override Interlocks - OI[0..2] and PI[0..2].

Illegal if NUMDOUTS = 0.

## 3.3 -C-

### 3.3.1 C[1..8]

This parameter results up to eight calculator expressions.

| Specific to Block(s) | AUXCALC | Description | Calculator |
|---|---|---|---|
| Data Type | 64-Bit Real Number | Range | N/A |
| Default | NaN | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | CSTS[1..8] | Checkpoint | Yes (for OCD). |

### 3.3.2 CARDFAULT

This parameter indicates the Card Fault detail settings done by Dipswitches on the SIOM. Based on this switch setting, the SIOM detects and communicates a Card Fault to the LIOM.

| Specific to Block(s) | SLINK FB | Description | Card Fault |
|---|---|---|---|
| Data Type | ENUM SLINK_CARDFAULT | Range | Recognize Ignore |
| Default | N/A | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | | | |

| Specific to Block(s) | AEM | Description | |
|---|---|---|---|
| Data Type | Boolean | Range | Off On |
| Default | Off | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | | | |

### 3.3.3 CBLDISCONNERR

This parameter indicates that the cable is no longer connected. This bit is latched and will remain ON until the channel Reset control output is pulsed or the power to the module is cycled. If a channel is disabled by the DIP switch, this bit is turned OFF.

| Specific to Block(s) | LCSPQICHANNEL | Description | CABLE DISCONNECT ERROR |
|---|---|---|---|
| Data Type | Boolean | Range | True/ False |
| Default | False | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | | | |

### 3.3.4  CBLDISCONNERR [1..3]

This status parameter indicates that the cable is no longer connected. This bit is latched and will remain ON until the channel Reset control output is pulsed or the power to the module is cycled. If a channel is disabled by the DIP switch, this bit is turned OFF.

| Specific to Block(s) | Pulse Quadrature Input Module | Description | Cable Disconnect Error |
|---|---|---|---|
| Data Type | Boolean | Range | True/ False |
| Default | False | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | | | |

### 3.3.5  CDIPAVGSPSCONN [1..RDISPCONNMAX]

| Specific to Block(s) | EE | Description | Average Display Parameters Per Second - Indicates the average number of peer parameters/sec processed by the Execution Environment. |
|---|---|---|---|
| Data Type | Float64 | Range | >= 0.0 |
| Default | 0 | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | | | |

### 3.3.6  CDISPAVGPPS

| Specific to Block(s) | EE, LIOM | Description | Control Execution Environment Display Average Parameters Per Seconds - The average number of display peer parameters per second processed by the execution environment. |
|---|---|---|---|
| Data Type | Float64 | Range | Greater than or equal to 0 |
| Default | 0 | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | | | |

### 3.3.7  CDISPAVGPPSCONN [1..RDISPCONNMAX]

| Specific to Block(s) | EE | Description | Average Display Parameters Per Second - Indicates the average number of peer parameters/ sec processed by the Execution Environment. |
|---|---|---|---|

| Data Type | Float64 | Range | >= 0.0 |
|---|---|---|---|
| Default | 0 | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | | | |

### 3.3.8  CDISPMAXPPS

| Specific to Block(s) | EE, LIOM | Description | Control Execution Environment Maximum Display Parameters Per Seconds - The maximum number of display peer parameters per second processed by the execution environment. |
|---|---|---|---|
| Data Type | Float64 | Range | Greater than or equal to 0 |
| Default | 0 | Configuration Load | No |
| Access Lock | View Only | Residence | EE, LIOM |
| Related Parameters | | | |

### 3.3.9  CDISPMAXPPSCONN [1..RDISPCONNMAX]

| Specific to Block(s) | EE | Description | Maximum Display Parameters Per Second - Indicates the maximum number of peer parameters /sec processed by the Execution Environment. |
|---|---|---|---|
| Data Type | Float64 | Range | >= 0.0 |
| Default | 0 | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | | | |

### 3.3.10  CDISPMAXSPSCONN [1..RDISPCONNMAX]

| Specific to Block(s) | EE | Description | Maximum Display Acyclic Stores Per Second - Indicates the maximum number of display acyclic stores/sec processed by the Execution Environment. |
|---|---|---|---|
| Data Type | Float64 | Range | >= 0.0 |
| Default | 0 | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | | | |

## 3.3.11  CEECOMMAND

| Specific to Block(s) | EE, LIOM | Description | Control Execution Environment (EE) Command - Stores to this parameter toggle CEESTATE parameter between IDLE and RUN states. |
|---|---|---|---|
| Data Type | Enumeration CEECOMMAND | Range | Idle (0) RUN (1) None (2) |
| Default | None (2) | Configuration Load | No |
| Access Lock | Supervisor or Engineer - When an IDLE command is stored to CEECOMMAND and the EE is in the RUN state. Supervisor, Engineer or Operator - When a CEECOMMAND of RUN is stored and the EE is in IDLE state. | Residence | EE |
| Related Parameters | CEESTATE | | |

**Remarks**: Both COLDSTART and WARMSTART bring the EE to **RUN** state.

## 3.3.12  CEESTATE

| Specific to Block(s) | EE, LIOM | Description | Control Execution Environment State - Indicates the current state of EE. |
|---|---|---|---|
| Data Type | Enumeration CEESTATE | Range | Idle(0) Run(1) Failed(2) NotLoaded(3) |
| Default | Idle(0) | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | CEECOMMAND EXECSTATE PCMSTATE | | |

**Remarks**: Although this parameter is most logically associated with the EE function block, it is exposed as a parameter on LIOM as well. Note that CEESTATE can be changed only by writing to the CEECOMMAND parameter.

When CEESTATE is RUN, all active blocks within the EE execute. When CEESTATE is IDLE, only CPM FB, EE FB and IOM FBs execute. EE FB issues a change of state notification whenever CEESTATE is changed. CEESTATE holds the value NOTLOADED until the first load of the EE FB. If CEESTATE is RUN before a

power down and RAM state is preserved by battery until the next power up, then CEESTATE is changed to IDLE as part of database retention startup.

### 3.3.13 CHANNEL.BURNOUTNOTAPPLICABLE

This indicates that the Burnout detection is not applicable for that channel.

| Specific to Block(s) | UAIM | Description | Burnout not applicable |
|---|---|---|---|
| Data Type | BOOLEAN | Range | TRUE<br>FALSE |
| Default | FALSE | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | | | |

### 3.3.14 CHANNEL.CALIBRATIONERROR

| Specific to Block(s) | UAIM,<br>RTDM | Description | Calibration error |
|---|---|---|---|
| Data Type | BOOLEAN | Range | TRUE - Calibration Error<br>FALSE - No calibration |
| Default | FALSE | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | | | |

### 3.3.15 CHANNEL.CALIBRATIONMODE

| Specific to Block(s) | UAIM,<br>RTDM | Description | Calibration mode |
|---|---|---|---|
| Data Type | BOOLEAN | Range | TRUE - Calibrate mode ON<br>FALSE - Calibrate mode OFF |
| Default | FALSE | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | | | |

### 3.3.16 CHANNEL.CALIBRATIONCOMMANDINPROGRESS

| Specific to Block(s) | UAIM,<br>RTDM | Description | Calibration command in progress |
|---|---|---|---|
| Data Type | BOOLEAN | Range | TRUE - Command in progress<br>FALSE - No command |
| Default | FALSE | Configuration Load | No |
| Access Lock | View Only | Residence | EE |

| Related Parameters | | | |
|---|---|---|---|

## 3.3.17  CHANNEL.CALIBRATIONINPROGRESS[1..8]

| Specific to Block(s) | RTDM | Description | Calibration in progress |
|---|---|---|---|
| Data Type | BOOLEAN | Range | TRUE - Calibration in progress<br><br>FALSE - No calibration in progress |
| Default | FALSE | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | | | |

## 3.3.18  CHANNEL.CONFIGURATIONERROR

| Specific to Block(s) | UAIM,<br><br>RTDM | Description | Configuration error |
|---|---|---|---|
| Data Type | BOOLEAN | Range | TRUE - Channel configuration error<br><br>FALSE - No configuration error |
| Default | FALSE | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | | | |

## 3.3.19  CHANNEL.CONFIGURATIONINPROGRESS

| Specific to Block(s) | RTDM | Description | Configuration in progress |
|---|---|---|---|
| Data Type | BOOLEAN | Range | TRUE - Channel configuration in progress<br><br>FALSE - None |
| Default | FALSE | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | | | |

## 3.3.20  CHANNEL.CONVERSIONRATEOVERLOAD

| Specific to Block(s) | UAIM,<br><br>RDTM | Description | Conversion rate overload |
|---|---|---|---|
| Data Type | BOOLEAN | Range | TRUE - Overload<br><br>FALSE - No overload |
| Default | FALSE | Configuration Load | No |
| Access Lock | View Only | Residence | EE |

| Related Parameters | | | |
|---|---|---|---|

## 3.3.21 CHANNEL.FAILURERESPONSE

| Specific to Block(s) | RTDM | Description | Failure response |
|---|---|---|---|
| Data Type | BOOLEAN | Range | TRUE<br>FALSE |
| Default | FALSE | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | | | |

## 3.3.22 CHANNEL.HARDWAREFAILURE

| Specific to Block(s) | UAIM | Description | Hardware failure |
|---|---|---|---|
| Data Type | BOOLEAN | Range | TRUE<br>FALSE |
| Default | FALSE | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | | | |

## 3.3.23 CHANNEL.HONEYWELLINTERNAL

| Specific to Block(s) | UAIM | Description | Honeywell Internal |
|---|---|---|---|
| Data Type | BOOLEAN | Range | TRUE<br>FALSE |
| Default | FALSE | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | | | |

## 3.3.24 CHANNEL.ILLEGALFREQORRESOLUTION

| Specific to Block(s) | UAIM,<br>RTDM | Description | Illegal frequency or resolution |
|---|---|---|---|
| Data Type | BOOLEAN | Range | TRUE<br>FALSE |
| Default | FALSE | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | | | |

## 3.3.25  CHANNEL.INPUTOVERLOADORUNDERLOADDED

| | | | |
|---|---|---|---|
| **Specific to Block(s)** | RTDM | **Description** | Input overload or underloaded |
| **Data Type** | BOOLEAN | **Range** | TRUE<br>FALSE |
| **Default** | FALSE | **Configuration Load** | No |
| **Access Lock** | View Only | **Residence** | EE |
| **Related Parameters** | | | |

## 3.3.26  CHANNEL.INTERNALINPUTFAILURE

| | | | |
|---|---|---|---|
| **Specific to Block(s)** | UAIM,<br>RTDM | **Description** | Internal input failure |
| **Data Type** | BOOLEAN | **Range** | TRUE<br>FALSE |
| **Default** | FALSE | **Configuration Load** | No |
| **Access Lock** | View Only | **Residence** | EE |
| **Related Parameters** | | | |

## 3.3.27  CHANNEL.MEMORYFAILURE

| | | | |
|---|---|---|---|
| **Specific to Block(s)** | RTDM | **Description** | Failure of memory |
| **Data Type** | BOOLEAN | **Range** | TRUE<br>FALSE |
| **Default** | FALSE | **Configuration Load** | No |
| **Access Lock** | View Only | **Residence** | EE |
| **Related Parameters** | | | |

## 3.3.28  CHANNELMODE[1..8]

| | | | |
|---|---|---|---|
| **Specific to Block(s)** | RTDM | **Description** | Channel Mode |
| **Data Type** | String | **Range** | DRY BULB<br>WET BULB |
| **Default** | DRY BULB (For Odd channels)<br>WET BULB (For Even channels) | **Configuration Load** | Yes |
| **Access Lock** | View Only | **Residence** | SR |
| **Related Parameters** | | | |

This is applicable when the RHENABLE is made ON for one of the Channels.

## 3.3.29  CHANNEL.POWERSUPPLYOUTOFTOLLERANCE

| Specific to Block(s) | UAIM | Description | Power supply out of tolerance. |
|---|---|---|---|
| Data Type | BOOLEAN | Range | TRUE<br>FALSE |
| Default | FALSE | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | | | |

## 3.3.30  CHANNEL.PWBTEMPERATUREAST0TO70DEGC

| Specific to Block(s) | UAIM | Description | PWB temperature past 0-70 Deg C |
|---|---|---|---|
| Data Type | BOOLEAN | Range | TRUE<br>FALSE |
| Default | FALSE | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | | | |

## 3.3.31  CHANNEL.RTDFAILURERESPONSEDETECTED

| Specific to Block(s) | RTDM | Description | RTD failure response detected |
|---|---|---|---|
| Data Type | BOOLEAN | Range | TRUE<br>FALSE |
| Default | FALSE | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | | | |

## 3.3.32  CHANNEL.RTDINPUTOPEN

| Specific to Block(s) | RTDM | Description | RTD Input open |
|---|---|---|---|
| Data Type | BOOLEAN | Range | TRUE<br>FALSE |
| Default | FALSE | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | | | |

### 3.3.33 CHANNEL.SCANTURNEDOFF

| Specific to Block(s) | UAIM, RTDM | Description | Scan turned off |
|---|---|---|---|
| Data Type | BOOLEAN | Range | TRUE FALSE |
| Default | FALSE | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | | | |

### 3.3.34 CHANNEL.SIGNALOVERORUNDERRANGE

| Specific to Block(s) | UAIM | Description | Signal over or under range |
|---|---|---|---|
| Data Type | BOOLEAN | Range | TRUE FALSE |
| Default | FALSE | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | | | |

### 3.3.35 CHANNEL.THERMOCOUPLEBURNEDOUT

| Specific to Block(s) | UAIM | Description | Thermocouple burned out |
|---|---|---|---|
| Data Type | BOOLEAN | Range | TRUE FALSE |
| Default | FALSE | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | | | |

### 3.3.36 CHANNEL.VOLTAGEERROR

| Specific to Block(s) | RTDM | Description | Voltage error |
|---|---|---|---|
| Data Type | BOOLEAN | Range | TRUE FALSE |
| Default | FALSE | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | | | |

### 3.3.37 CHANNEL.WATCHDOGTIMERRESTART

| Specific to Block(s) | UAIM, RTDM | Description | Restarts watchdog timer |
|---|---|---|---|

| Data Type | BOOLEAN | Range | TRUE |
| --- | --- | --- | --- |
| | | | FALSE |
| Default | FALSE | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | | | |

## 3.3.38 CHANSTATUS[1..8]

This parameter is used to view last read status of each slot.

| Specific to Block(s) | RTDM | Description | Last Read Status |
| --- | --- | --- | --- |
| Data Type | ENUM RTDM_CHANSTATUS | Range | No Error |
| | | | Error Bit(s) Set |
| Default | No Error | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | | | |

## 3.3.39 CHANSTATUS[1..16]

This parameter is used to view the last read status for each slot.

| Specific to Block(s) | UAIM | Description | Last Read Status |
| --- | --- | --- | --- |
| Data Type | ENUM UAIM_CHANSTATUS | Range | No Error |
| | | | Error Bit(s) Set |
| Default | No Error | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | | | |

## 3.3.40 CHARACTERIZATION[1..16]

This parameter is used for selecting the Characterization type for each slot.

| Specific to Block(s) | UAIM | Description | Characterization |
| --- | --- | --- | --- |
| Data Type | Enum UAIM_CHARACTERIZATIONTYPE | Range | See Range list |
| Default | Linear | Configuration Load | Yes |
| Access Lock | Engineer | Residence | EE |
| Related Parameters | | | |

**Remarks**: UAIM uses characterization algorithms to determine degrees Celsius or degree Fahrenheit for pyrometer and thermocouple inputs. Based on the result of the algorithm, the UAIM determines the output in counts, which would then be used by the processor to control the process.

**Range**:

• Linear
• Square Root

- Thermocouple B
- Thermocouple J
- Thermocouple K
- Thermocouple Ni -NiMoly
- Thermocouple R
- Thermocouple S
- Thermocouple T
- Thermocouple W5-W26
- Thermocouple E
- Thermocouple N
- Honeywell Pyrometer
- Marathon O2
- Corning O2
- AACC O2
- B Coleman O2
- Furnace Control O2
- Furnace Control Dew Point
- Marathon C
- Corning C
- AACC C
- B Coleman C
- Furnace Control C

## 3.3.41 CHNLCOMFAIL

Displays the failure status of the communication between the channel and the ASCII Control Module. By default, the value of this parameter is OFF. If the communication fails, the value of this parameter changes to ON.

| Specific to Block(s) | ASCIIREADCLOCK, ASCIISETDTPTR, ASCIIPULL, ASCIIPUSH, ASCIIREADERROR ASCIITMSG | Description | Channel Communication failure. |
|---|---|---|---|
| Data Type | Boolean | Range | ON/ OFF |
| Default | OFF | Configuration Load | No |
| Access Lock | View Only | Residence | LIOM |
| Related Parameters | | | |

## 3.3.42 CHNLCOMSTAT

This parameter displays the communication status of the channel. Some examples of the Channel Communication Status are: Channel Idle, Module Not Ready, Request State Waiting and Bad, Function Call.

| Specific to Block(s) | ASCIIREADCLOCK, ASCIISETDTPTR, ASCIIPULL, ASCIIPUSH, ASCIIReadError ASCIITMSG | Description | Channel Communication Status |
|---|---|---|---|
| Data Type | Enumeration | Range | None ChannelIdle, ModuleNotReady, Requested, Waiting, ResponseArrived, TimedOut, Succeeded , BadIOMConnection, BadFnCall, BadSignatureId, Initializing |
| Default | Channel Idle | Configuration Load | No |
| Access Lock | View Only | Residence | LIOM |
| Related Parameters | | | |

### 3.3.43 CHNLINSERVICE

This parameter displays the channel that is servicing a communication request at a specific point of time. If the module is not servicing any request, then the value of this parameter is zero (default value.)

| Specific to Block(s) | ASCIIREADCLOCK, ASCIISETDTPTR, ASCIIPULL, ASCIIPUSH, ASCIIReadError ASCIITMSG | Description | Channel In Service |
|---|---|---|---|
| Data Type | UINT8 | Range | **1-128** |
| Default | 0 | Configuration Load | No |
| Access Lock | View Only | Residence | LIOM |
| Related Parameters | | | |

### 3.3.44 CHNL1615BIND

This parameter indicates that Channel 16 is configured for a Carbon probe, and hence you need a thermocouple or pyrometer input in channel 15 for percentage carbon, percentage oxygen or dewpoint calculation. Both inputs are used together for this calculation.

| Specific to Block(s) | UAIM | Description | Join 15-16 |
|---|---|---|---|
| Data Type | Boolean | Range | True |
| | | | False |
| Default | False | Configuration Load | Yes |
| Access Lock | View Only | Residence | EE |
| Related Parameters | | | |

## 3.3.45 CLRFREEZEOPT

This parameter is used to show Clear/Freeze Option configured for the selected SIOM Using the Dipswitch. When Clear is selected and the communication from LIOM to SIOM ceases or the EE is in IDLE state, the SIOM clears all outputs. If Freeze is selected, and the communication with LIOM ceases or EE is IDLE, the SIOM holds the last output value.

| Specific to Block(s) | SLINK | Description | Clear/Freeze Option |
|---|---|---|---|
| Data Type | ENUM SLINK_CLRFREEZE | Range | Clear |
| | | | Freeze |
| Default | Clear | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | | | |

## 3.3.46 CLRMSGRETRY

This parameter is a command used to clear the number of message retries. When issued, the command resets the number of message retries to zero.

| Specific to Block(s) | SLINK | Description | Clear Number of Retries |
|---|---|---|---|
| Data Type | Boolean | Range | False |
| | | | True |
| Default | False | Configuration Load | No |
| Access Lock | Operator | Residence | EE |
| Related Parameters | | | |

## 3.3.47 CLROVRUNDRFL

When this parameter is set to ON, the counter's overflow or underflow status is cleared. This output should also be pulsed so that the Overflow and Underflow status bits can be re-enabled to allow for multiple overflows or underflows.

| Specific to Block(s) | LCSPQICHANNEL | Description | Clear Overflow/ Underflow |
|---|---|---|---|
| Data Type | Boolean | Range | True/ False |
| Default | False | Configuration Load | Yes |
| Access Lock | Engineer | Residence | EE |
| Related Parameters | | | |

### 3.3.48 CLROPREQFL

| | | | |
|---|---|---|---|
| **Specific to Block(s)** | DEVCTL | **Description** | Clear Requested Output Value (OPREQ) Flag |
| **Data Type** | Boolean | **Range** | Off (0)<br>On (1) |
| **Default** | Off (0) | **Configuration Load** | No |
| **Access Lock** | Other Function Block | **Residence** | EE |
| **Related Parameters** | GOPREQ<br>OPREQ<br>OPTYPE | **Checkpoint** | Yes (for OCD). |

### 3.3.49 CLRRETDATA

This command is used for clearing retentive memory.

| | | | |
|---|---|---|---|
| **Specific to Block(s)** | LIOM | **Description** | Clear Retentive Data |
| **Data Type** | BOOLEAN | **Range** | TRUE<br>FALSE |
| **Default** | FALSE | **Configuration Load** | No |
| **Access Lock** | Engineer, Manager | **Residence** | EE |
| **Related Parameters** | | | |

**❗ Attention**
- It is recommended to use this command immediately after a power-cycle or after upgrading LIOM firmware.
- It is recommended that this command be executed when EE is in **IDLE** state and all IOMs are inactivated.

### 3.3.50 CMDDISALM.FL

| | | | |
|---|---|---|---|
| **Specific to Block(s)** | DEVCTL | **Description** | Command Disagree Alarm Flag |
| **Data Type** | Boolean | **Range** | Off (0)<br>On (1) |
| **Default** | Off (0) | **Configuration Load** | No |
| **Access Lock** | View Only | **Residence** | EE |

| Related Parameters | CMDDISALM.PR | Checkpoint | Yes (for OCD). |
|---|---|---|---|
| | CMDDISALM.SV | | |
| | CMDDISALM.TM [0..2] | | |
| | GOP | | |
| | GPV | | |
| | HIALM | | |
| | NUMDINPUTS | | |
| | NUMDOUTS | | |
| | OP | | |
| | OPFINAL | | |
| | PV | | |

**Remarks**: Illegal if NUMDINPTS = 0 or NUMDOUTS = 0.

Illegal if all CMDDISALM.TM[0..2] = 0.

## 3.3.51  CMDDISALM.PR

| Specific to Block(s) | DEVCTL | Description | Command Disagree Alarm Priority |
|---|---|---|---|
| Data Type | Enumeration ALPRIOR | Range | None (0) |
| | | | Journal (1) |
| | | | Low (2) |
| | | | High (3) |
| | | | Urgent (4) |
| Default | Low (2) | Configuration Load | Yes |
| Access Lock | Engineer | Residence | EE |
| Related Parameters | CMDDISALM.FL | Checkpoint | Yes (for OCD). |
| | CMDDISALM.SV | | |
| | CMDDISALM.TM [0..2] | | |
| | NUMDINPUTS | | |
| | NUMDOUTS | | |

**Remarks:** Illegal if NUMDINPTS = 0 or NUMDOUTS = 0.

Illegal if CMDDISALM.TM[0..2]= 0.

## 3.3.52  CMDDISALM.SV

| Specific to Block(s) | DEVCTL | Description | Command Disagree Alarm Severity |
|---|---|---|---|
| Data Type | 16-Bit Integer | Range | 0 to 255 |
| Default | 0 | Configuration Load | Yes |
| Access Lock | Engineer | Residence | EE |

| Related Parameters | CMDDISALM.FL | Checkpoint | Yes (for OCD) |
| --- | --- | --- | --- |
| | CMDDISALM.PR | | |
| | CMDDISALM.TM [0..2] | | |
| | NUMDINPTS | | |
| | NUMDOUTS | | |

**Remarks:** Illegal if NUMDINPTS = 0 or NUMDOUTS = 0.

Illegal if all CMDDISALM.TM[0..2] = 0.

## 3.3.53  CMDDISALM.TM [0..2]

| Specific to Block(s) | DEVCTL | Description | Command Disagree Feedback Times - The wait time for each state before Command Disagree Alarm becomes active. |
| --- | --- | --- | --- |
| Data Type | 32-Bit Integer | Range | 0 to 1000 seconds |
| Default | 0 seconds | Configuration Load | Yes |
| Access Lock | Engineer | Residence | EE |
| Related Parameters | CMDDISALM.FL | Checkpoint | Yes (for OCD). |
| | CMDDISALM.PR | | |
| | CMDDISALM.SV | | |
| | NUMDINPUTS | | |
| | NUMDOUTS | | |
| | NUMSTATES | | |

**Remarks:** Function block must be INACTIVE to change to or from 0.

Illegal if NUMDINPTS = 0 or NUMDOUTS = 0.

CMDDISALM.TM[2] is illegal if NUMSTATES = 2.

## 3.3.54  CMDFALALM.FL

| Specific to Block(s) | DEVCTL | Description | Command Fail Alarm Flag |
| --- | --- | --- | --- |
| Data Type | Boolean | Range | Off (0) |
| | | | On (1) |
| Default | Off (0) | Configuration Load | No |
| Access Lock | View Only | Residence | EE |

| Related Parameters | CMDFALALM.PR | Checkpoint | Yes (for OCD). |
|---|---|---|---|
| | CMDFALALM.SV | | |
| | CMDFALALM.TM [0..2] | | |
| | GOP | | |
| | GPV | | |
| | HIALM | | |
| | NUMDINPUTS | | |
| | NUMDOUTS | | |
| | OP | | |
| | OPFINAL | | |
| | PV | | |

**Remarks:** Illegal if NUMDINPTS = 0 or NUMDOUTS = 0.

Illegal if all CMDFALALM.TM[0..2] = 0.

## 3.3.55  CMDFALALM.PR

| Specific to Block(s) | DEVCTL | Description | Command Fail Alarm Priority |
|---|---|---|---|
| Data Type | Enumeration ALPRIOR | Range | None (0) |
| | | | Journal (1) |
| | | | Low (2) |
| | | | High (3) |
| | | | Urgent (4) |
| Default | Low (2) | Configuration Load | Yes |
| Access Lock | Engineer | Residence | EE |
| Related Parameters | CMDFALALM.FL | Checkpoint | Yes (for OCD). |
| | CMDFALALM.SV | | |
| | CMDFALALM.TM [0..2] | | |
| | NUMDINPTS | | |
| | NUMDOUTS | | |

**Remarks:** Illegal if NUMDINPTS = 0 or NUMDOUTS = 0.

Illegal if all CMDFALALM.TM[0..2] = 0.

## 3.3.56  CMDFALALM.SV

| Specific to Block(s) | DEVCTL | Description | Command Fail Alarm Severity |
|---|---|---|---|
| Data Type | 16-Bit Integer | Range | 0 to 255 |
| Default | 0 | Configuration Load | Yes |
| Access Lock | Engineer | Residence | EE |

| Related Parameters | CMDFALALM.FL | Checkpoint | Yes (for OCD). |
|---|---|---|---|
| | CMDFALALM.PR | | |
| | CMDFALALM.TM [0..2] | | |
| | NUMDINPTS | | |
| | NUMDOUTS | | |

**Remarks:** NOR Illegal if NUMDINPTS = 0 or NUMDOUTS = 0.

Illegal if all CMDFALALM.TM[0..2] = 0.

## 3.3.57 CMDFALALM.TM [0..2]

| Specific to Block(s) | DEVCTL | Description | Command Fail Alarm Time-outs - The wait time for each state before Command Fail Alarm becomes active. |
|---|---|---|---|
| Data Type | 32-Bit Integer | Range | 0 to 1000 seconds |
| Default | 0 seconds | Configuration Load | Yes |
| Access Lock | Engineer | Residence | EE |
| Related Parameters | CMDDISALM.TM [0..2] | | |
| | CMDFALALM.FL | | |
| | CMDFALALM.PR | | |
| | CMDFALALM.SV | | |
| | NUMDINPUTS | | |
| | NUMDOUTS | | |
| | NUMSTATES | | |

**Remarks:** Function block must be INACTIVE to change to or from 0.

Must be less than respective CMDDISALM.TM[0..2].

Illegal if NUMDINPTS = 0 or NUMDOUTS = 0.

CMDFALALM.TM[2] is illegal if NUMSTATES =2

## 3.3.58 CNISLOTNUM

| Specific to Block(s) | LIOM | Description | Supervisory CNI Slot Number |
|---|---|---|---|
| Data Type | 16-Bit Integer | Range | 1-16 |
| Default | 0 | Configuration Load | Yes |
| Access Lock | Engineer | Residence | EE |
| Related Parameters | | | |

## 3.3.59 CNTDIR

This parameter indicates counter direction -- whether the counter is increasing or decreasing. When the bit is ON, the 16-bit counter is decrementing. When the bit is OFF, the counter is incrementing. If a channel is disabled by the DIP SWITCH, then this bit will be OFF.

| Specific to Block(s) | LCSPQICHANNEL | Description | Count Direction |
|---|---|---|---|
| Data Type | Boolean | Range | True/ False |
| Default | False | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | | | |

## 3.3.60  CNTDIR[1..3]

This parameter indicates whether the counter is incrementing or decrementing. When ON, the bit counter is decrementing. When OFF, the counter is incrementing. If a channel is disabled by the DIP SWITCH, then this parameter's value is set to OFF.

| Specific to Block(s) | Pulse Quadrature Input Module | Description | Count Direction |
|---|---|---|---|
| Data Type | Boolean | Range | True/ False |
| Default | False | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | | | |

## 3.3.61  CNTRLBIT[0..7]

There are eight Control Bit addresses that control the twelve Control Bit functions. Control Bit functions define the capabilities of the Data Table pointer, perform handshake operations, operate as flags for messages and errors and set some ASCII Control Module/ PC Communications Functions. The eight Control Bit addresses are divided into PUSH and PULL functions (Control Bits D0 and D1 select the function.)

| Specific to Block(s) | ASCII Control Module IOM | Description | ASCII Control Bits |
|---|---|---|---|
| Data Type | Boolean | Range | ON / OFF |
| Default | OFF | Configuration Load | No |
| Access Lock | Program | Residence | LIOM |
| Related Parameters | | Checkpoint | No. |

## 3.3.62  COMMAND

| Specific to Block(s) | LCSTIMER | Description | Timer Command - Used by the operator to control the operation of the Timer Function block. |
|---|---|---|---|
| Data Type | Enumeration TIMERCOMMAND | Range | None (0) Reset (1) Stop (2) Restart (3) Start (4) |
| Default | None (0) | Configuration Load | No |
| Access Lock | Operator | Residence | EE |

| Related Parameters | RESETFLLO | | |
|---|---|---|---|
| | STARTFL | | |
| | STATE | | |
| | STOPFL | | |

**Remarks**: Start: Timer is started; PV starts incrementing.

Stop: Timer is stopped; PV freezes.

Reset: Timer is reset; PV is set to 0, and RV is set to SP.

Restart: Timer continues from the point it last stopped.

## 3.3.63 CONFIGCODE[1..8]

| Specific to Block(s) | AUXCALC | Description | Configuration Code |
|---|---|---|---|
| **Data Type** | Enumeration AUXCALCCONFIGCODE | **Range** | Refer Range list |
| **Default** | None (0) | **Configuration Load** | No |
| **Access Lock** | Engineer/Application Developer | **Residence** | EE |
| **Related Parameters** | | **Checkpoint** | Yes (for OCD). |

**Range:**

| | | | |
|---|---|---|---|
| None (0) | SyntaxError (16) | IntegerExp (32) | ExtUse48 (48) |
| Ok (1) | ExprTooCmplx (17) | DoubleExp (33) | ExtUse49 (49) |
| UnknownError (2) | NotEPcodeMe (18) | MissedImpl (34) | ExtUse50 (50) |
| ImplicitConv (3) | NotEDataStak (19) | UnicodeConv (35) | UnSupConTyp (51) |
| LossOfPrecsn (4) | UnsuppFeatur (20) | ConstExprRem (36) | UnExpClsParn (52) |
| UnexpctEnd (5) | ExprTooLong (21) | DuplExprRem (37) | CantAssRVal (53) |
| UnexpctComm (6) | DivideByZero (22) | ExtUse38 (38) | UnExpArrOpen (54) |
| ColonWoQMar (7) | UnknownToken (23) | ExtUse39 (39) | ArrClsExpect (55) |
| FctNotMltArg (8) | UnexpTokenO (24) | ExtUse40 (40) | ArrOpnExpect (56) |
| ClosParenExp (9) | UnknownFunc (25) | ExtUse41 (41) | ArrIndxError (57) |
| OperandExp (10) | UnexpOCExpr2 (26) | ExtUse42 (42) | StringExpect (58) |
| MissingArg (11) | UnexpOCExpr3 (27) | ExtUse43 (43) | InvalidRefer (59) |
| OperatorExp (12) | ZeroArgument (28) | ExtUse44 (44) | TooManyConn (60) |
| ColonExp (13) | UnexpToken (29) | ExtUse45 (45) | CantConvInpt (61) |
| TypeMismatch (14) | InvalResult (30) | ExtUse46 (46) | |
| TypeNotSupp (15) | InvalTokenTb (31) | ExtUse47 (47) | |

## 3.3.64 CONFIGDESC[1..8]

| Specific to Block(s) | AUXCALC | Description | Configuration Descriptor |
|---|---|---|---|
| **Data Type** | String | **Range** | Maximum of 39 characters. |
| **Default** | None | **Configuration Load** | No |

| Access Lock | View Only | Residence | EE |
|---|---|---|---|
| Related Parameters | | Checkpoint | Yes (for OCD) |

## 3.3.65 CONFIGSTS[1..8]

| Specific to Block(s) | AUXCALC | Description | Configuration Status |
|---|---|---|---|
| Data Type | Enumeration AUXCALCCONFIGSTS, CSCOCONFIG | Range | Ok (0) Information (1) Warning (2) SevereWarning (3) Fail (4) Error (5) SevereError (6) |
| Default | Ok (0) | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | | Checkpoint | Yes (for OCD) |

## 3.3.66 CONFIGURATIONSTATUS

| Specific to Block(s) | UAIM | Description | Configuration Status |
|---|---|---|---|
| Data Type | Enum UAIM_CONFIGSTAUTS | Range | Refer range list. |
| Default | ' ' (Blank) | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | | | |

**Range:**

| ' '(Blank) | InvalidOrNoResponseForChannel_3 | InvalidOrNoResponseForChannel_11 |
|---|---|---|
| Success | InvalidOrNoResponseForChannel_4 | InvalidOrNoResponseForChannel_12 |
| InProgress | InvalidOrNoResponseForChannel_5 | InvalidOrNoResponseForChannel_13 |
| Aborted | InvalidOrNoResponseForChannel_6 | InvalidOrNoResponseForChannel_14 |
| NoResponseForPageChangeCommand | InvalidOrNoResponseForChannel_7 | InvalidOrNoResponseForChannel_15 |
| NoResponseForModuleParamCommand | InvalidOrNoResponseForChannel_8 | InvalidOrNoResponseForChannel_16 |
| InvalidOrNoResponseForChannel_1 | InvalidOrNoResponseForChannel_9 | BypassedOrNotAttempted |
| InvalidOrNoResponseForChannel_2 | InvalidOrNoResponseForChannel_10 | |

## 3.3.67 CONFIGURATIONTIME

The parameter indicates the time at which the last configuration was performed.

| Specific to Block(s) | UAIM, RTDM | Description | Configuration Time |
|---|---|---|---|
| Data Type | Time | Range | |
| Default | 0 | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | | | |

## 3.3.68  COUNTHI[1..8]

| Specific to Block(s) | RTDM | Description | Count High |
|---|---|---|---|
| Data Type | UINT 16 | Range | Varies based on output resolution |
| Default | 32767 | Configuration Load | Yes |
| Access Lock | Engineer | Residence | EE |
| Related Parameters | OUTPUTRESOLN COUNTLO[1..8] | | |

## 3.3.69  COUNTLO[1..8]

| Specific to Block(s) | RTDM | Description | Count Low |
|---|---|---|---|
| Data Type | UINT16 | Range | Varies based on output resolution |
| Default | 0 | Configuration Load | Yes |
| Access Lock | Engineer | Residence | EE |
| Related Parameters | OUTPUTRESOLN COUNTHI[1..8] | | |

## 3.3.70  COUNTRAW

| Specific to Block(s) | AIC, RTDM, UAIM | Description | Provides the raw count supplied by the IOMs. |
|---|---|---|---|
| Data Type | UINT16 | Range | Depends on the IOM's ADC bit resolution. |
| | | | If… / Then… |
| | | | 12-bit / 0-4095 |
| | | | 13-bit / 0-8191 |
| | | | 14-bit / 0-16383 |
| | | | 15-bit / 0-32767 |
| Default | 0 | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | | | |

**Remarks**: Though Isolated Analog Input Module's output resolution is 12-bit, if configured, it can make use of the 13$^{th}$ bit for diagnostic purpose. The 13$^{th}$ bit weightage is included in the CountRaw.

## 3.3.71  CPEERAVGPPS

| Specific to Block(s) | EE, LIOM | Description | Control Execution Environment Peer Average Parameters Per Second - The average number of peer parameters per second processed by the execution environment, including both cyclic and acyclic requests. |
|---|---|---|---|
| Data Type | Float64 | Range | >=0 |
| Default | 0 | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | | | |

## 3.3.72  CPEERAVGPPSCONN [1..RPEERCONNMAX]

| Specific to Block(s) | EE | Description | Average Peer Acyclic Stores Per Second - Indicates the average number of peer acyclic stores/sec processed by the Execution Environment. |
|---|---|---|---|
| Data Type | Float64 | Range | >= 0.0 |
| Default | 0 | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | | | |

## 3.3.73  CPEERAVGSPSCONN [1..RPEERCONNMAX]

| Specific to Block(s) | EE | Description | Average Peer Acyclic Stores Per Second - Indicates the average number of peer acyclic stores/sec processed by the Execution Environment. |
|---|---|---|---|
| Data Type | Float64 | Range | >= 0.0 |
| Default | 0 | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | | | |

## 3.3.74  CPEERMAXPPS

| Specific to Block(s) | EE, LIOM | Description | Control Execution Environment Peer Maximum Parameters Per Second - The maximum number of peer parameters per second processed by the execution environment, including both cyclic and acyclic requests. |
|---|---|---|---|
| Data Type | Float64 | Range | Greater than or equal to 0 |

| Default | 0 | Configuration Load | No |
|---|---|---|---|
| Access Lock | View Only | Residence | EE, LIOM |
| Related Parameters | | | |

## 3.3.75  CPEERMAXPPSCONN [1..RPEERCONNMAX]

| Specific to Block(s) | EE | Description | Maximum Peer Parameters Per Second - Indicates the maximum number of peer parameters/sec processed by the Execution Environment. This includes both cyclic and acyclic requests. |
|---|---|---|---|
| Data Type | Float64 | Range | >= 0.0 |
| Default | 0 | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | | | |

## 3.3.76  CPEERMAXSPSCONN [1..RPEERCONNMAX]

| Specific to Block(s) | EE | Description | Maximum Peer Acyclic Stores Per Second - Indicates the maximum number of peer acyclic stores per second processed by the Execution Environment. |
|---|---|---|---|
| Data Type | Float64 | Range | >= 0.0 |
| Default | 0 | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | | | |

## 3.3.77  CPPERIOD

In a redundant configuration, this parameter indicates the period for data synchronization. The default value is 50msec. Honeywell recommends to set this parameter at 100msec.

| Specific to Block(s) | LIOM | Description | Clean Point Period |
|---|---|---|---|
| Data Type | ENUM | Range | 50mS(0), 100mS(1), 200mS(2) |
| Default | 50mS | Configuration Load | No |
| Access Lock | AppDevOnly | Residence | CEE |
| Related Parameters | | | |

For additional information on CPPERIOD, refer to the Control Functions Theory section in the *Honeywell LCS 621 IO Integration Guide*.

## 3.3.78  CPUCYCLEAVG [0..39]

| Specific to Block(s) | EE | Description | Average percentage of Central Processing Unit (CPU) Processing Power Used Per Cycle. |
|---|---|---|---|
| Data Type | 64-Bit Real Number | Range | Greater-than, or equal-to zero |
| Default | N/A | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | CPUCYCLEMAX STATSRESET | | |

**Remarks**: Each element gives a rolling average of the CPU used by each execution cycle. Units are a percentage of the 50 ms cycle. Index corresponds to the cycle number. Averaging can be restarted by storing to the STATSRESET parameter. Characteristic time constant of the average is 1 minute. Wait 2-3 minutes to be sure averaging has fully settled.

## 3.3.79  CPUCYCLEMAX [0..39]

| Specific to Block(s) | EE | Description | Historical Maximum of Central Processor Unit (CPU) Processing Power Used Per Cycle. |
|---|---|---|---|
| Data Type | 64-Bit Real Number | Range | Greater-than or equal-to zero. |
| Default | 0 | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | CPUCYCLEAVG STATSRESET | | |

**Remarks**: Each element gives the historical maximum of the CPU used by each execution cycle. Units are percent of 50 ms cycle. Index corresponds to the cycle number. Historical maximum can be reset to current instantaneous value by storing to the STATSRESET parameter.

## 3.3.80  CPUFREEAVG

| Specific to Block(s) | EEFB | Description | Average free Central Processing Unit (CPU) Processing Power in the CPM |
|---|---|---|---|
| Data Type | 64-Bit Real Number | Range | 0.0 to 100.0 |
| Default | 0 | Configuration Load | No |
| Access Lock | View Only | Residence | EE or FTEB |
| Related Parameters | CPUFREEMIN STATSRESET | | |

**Remarks**: Gives rolling average of free CPU not currently used for processing by the CPM. Units are percent. Averaging can be restarted by storing to the STATSRESET parameter. Characteristic time constant of the average is 1 minute. Wait 2-3 minutes to be sure averaging has fully settled.

### 3.3.81 CPUFREEMIN

| Specific to Block(s) | LIOM | Description | Historical Minimum of Free CPU Processing Power in the CPM. |
|---|---|---|---|
| Data Type | 64-Bit Real Number | Range | 0 to 100.0 |
| Default | N/A | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | CPUCYCLEMAX CPUFREEAVG STATSRESET | | |

**Remarks**: Gives the historic minimum of the unused CPU available to LIOM. Units are percent. Historical minimum can be reset to current instantaneous value by storing to the STATSRESET parameter.

### 3.3.82 CRCYCLEOVRN [0..40]

| Specific to Block(s) | EE | Description | Current Hour Cycle Overruns. |
|---|---|---|---|
| Data Type | 16-Bit Real Number | Range | 0 to 32767 |
| Default | 0 | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | LSCYCLEOVRN | | |

**Remarks**: Each element gives a count of cycle overruns that have occurred during the current hour. Elements 0..39 give the count for the corresponding cycle. Element 40 gives the total count over all cycles. All elements are reset to 0 once an hour. Reset time is not synchronized with wall clock time.

### 3.3.83 CRNTDTPTR

The Data Table Pointer marks a position in the Data Table, from which a data transfer occurs. It can access consecutive Data Table locations, within the ASCII Control Module's memory by incrementing or decrementing one address at a time, each with a PUSH or PULL. It is necessary to set the Data Table pointer only when the data tables must be accessed within the table must be accessed beyond the increment/decrement range of the pointer. The current location of the data table pointer can be monitored using the CRNTDTPTR parameter.

| Specific to Block(s) | ASCIIREADCLOCK | Description | Current location of Data Table Pointer |
|---|---|---|---|
| Data Type | Unsigned Integer - 16 bits. | Range | 0 - 999 |
| Default | 0 | Configuration Load | No |
| Access Lock | View Only | Residence | LIOM |
| Related Parameters | POINTERLOC | | |

## 3.3.84  CSTS[1..8]

| Specific to Block(s) | AUXCALC | Description | Expression Statuses |
|---|---|---|---|
| Data Type | Enumeration PVSTS | Range | Bad (0) |
| | | | Uncertn (1) |
| | | | Normal (2) |
| | | | Manual (3) |
| Default | Bad (0) | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | | Checkpoint | Yes (for OCD) |

## 3.3.85  CTRLCONFIRM

This parameter lets you select whether or not the electronic signature function is to be turned ON or OFF for this object.

| Specific to Block(s) | Most function blocks | Description | Control Confirmation |
|---|---|---|---|
| Data Type | Boolean | Range | Off(0) |
| | | | On(1) |
| Default | Off(0) | Configuration Load | Yes |
| Access Lock | Application Developer | Residence | SR |
| Related Parameters | | | |

**Remarks:** An electronic signature license is needed to edit this parameter.

# 3.4  -D-

**Related topics**

## 3.4.1  DAY

Realtime clock data can be pulled using the ASCIIREADCLOCK function block. The DAY parameter fetches the value of the Day from the clock time.

| Specific to Block(s) | ASCIIREADCLOCK | Description | Fetches the value of the date (Example: Jan-27) from the ASCII Control Module's real-time flow data. |
|---|---|---|---|
| **Data Type** | Unsigned Integer -16 bit | **Range** | 0-65535 |
| **Default** | 0 | **Configuration Load** | No |
| **Access Lock** | View Only | **Residence** | LIOM |
| **Related Parameters** | | **Checkpoint** | Yes (for OCD). |

Realtime clock data can be pushed to the ASCII Control Module using the ASCIISETDTPTR function block. The DAY parameter sets the value of the Day to the clock time.

| Specific to Block(s) | ASCIISetDTPTR | Description | Sets the value of the date (Example: Jan-27) to the ASCII Control Module real-time flow data. |
|---|---|---|---|
| **Data Type** | Unsigned Integer -16 bit | **Range** | 1-31 |
| **Default** | 1 | **Configuration Load** | Yes |
| **Access Lock** | Program | **Residence** | CEE |
| **Related Parameters** | | **Checkpoint** | Yes (for OCD). |

## 3.4.2  DEADBAND

| Specific to Block(s) | GE, GT, LE, LT | Description | Deadband Value-Defines the value of the deadband for Comparison Functions. |
|---|---|---|---|
| Data Type | 64-Bit Real | Range | Greater-than or equal to 0. |
| Default | 0.005 | Configuration Load | Yes |
| Access Lock | Engineer | Residence | EE |
| Related Parameters | | Checkpoint | Yes (for OCD) for GT, LT, GE, LE |

## 3.4.3  DEADBAND1

| Specific to Block(s) | EQ, NE | Description | Deadband Value #1 - Defines the value of the (inner) deadband. |
|---|---|---|---|
| Data Type | 64-Bit Real | Range | Greater-than or equal-to 0. Less-than or equal-to DEADBAND |
| Default | 0.005 | Configuration Load | Yes |
| Access Lock | Engineer | Residence | EE |
| Related Parameters | | Checkpoint | Yes (for OCD) |

## 3.4.4  DEADBAND2

| Specific to Block(s) | EQ, NE | Description | Deadband Value #2 - Defines the value of the (outer) deadband. |
|---|---|---|---|
| Data Type | 64-Bit Real | Range | Greater-than or equal-to DEADBAND1 |
| Default | 0.01 | Configuration Load | Yes |
| Access Lock | Engineer | Residence | EE |
| Related Parameters | | Checkpoint | Yes (for OCD) |

## 3.4.5  DELAYTIME

| Specific to Block(s) | LCSOFFDELAY, LCSONDELAY | Description | Delay in seconds |
|---|---|---|---|
| Data Type | UINT 16 | Range | 0- 65535 seconds |
| Default | 2 seconds | Configuration Load | Yes |
| Access Lock | Engineer | Residence | EE |
| Related Parameters | | Checkpoint | Yes (for OCD) |

## 3.4.6  DESC

| Specific to Block(s) | Applies to all blocks with alarming capability. | Description | Block Descriptor - Used to specify the descriptive text for the function block. Appears on both detail and group displays. |
|---|---|---|---|
| Data Type | String | Range | Length: 24 characters<br><br>23 characters for DEVCTL. |
| Default | Null string | Configuration Load | Yes |
| Access Lock | Application Developer | Residence | SR |
| Related Parameters | EUDESC<br><br>KEYWORD | Checkpoint | Yes (for OCD) |

**Remarks**: This is a configurable parameter, which may be set by the user before loading the block to the controller.

## 3.4.7  DI[1..4]

| Specific to Block(s) | DEVCTL | Description | Digital Input Value |
|---|---|---|---|
| Data Type | Boolean | Range | Off (0)<br>On (1) |
| Default | Off (0) | Configuration Load | No |
| Access Lock | View only | Residence | EE |
| Related Parameters | DIPVMAP[0..15],<br><br>GPVAUTO,<br><br>NUMDINPTS,<br><br>NUMSTATES,<br><br>PVAUTO. | Checkpoint | Yes (for OCD). |

**Remarks:** The number of elements allowed is restricted by the value of NUMDINPTS. For example, if NUMDINPTS = 2, then only DIPVMAP[0..3] are legal.

## 3.4.8  DIPVMAP

| Specific to Block(s) | DEVCTL | Description | Actual State Definitions. |
|---|---|---|---|
| Data Type | String | Range | Bad (0)<br>InBet (1)<br>State0 (4)<br>State1 (5)<br>State2 (6) |
| Default | Bad (0) | Configuration Load | Yes |
| Access Lock | Engineer | Residence | EE |

| Related Parameters | DI [1..4] | | |
|---|---|---|---|
| | GPVAUTO | | |
| | NUMDINPTS | | |
| | NUMSTATES | | |
| | PVAUTO | | |

**Remarks:** The number of elements allowed is restricted by the value of NUMDINPTS. For example, if NUMDINPTS = 2, then only DIPVMAP[0..3] are legal.

No member of DIPVMAP may be assigned State2, if NUMSTATES = 2.

## 3.4.9  DIPVMAP[0..15]

| Specific to Block(s) | DEVCTL | Description | Actual State Definitions |
|---|---|---|---|
| Data Type | String | Range | Bad (0) |
| | | | InBet (1) |
| | | | State0 (4) |
| | | | State1 (5) |
| | | | State2 (6) |
| Default | Bad (0) | Configuration Load | Yes |
| Access Lock | Engineer | Residence | EE |
| Related Parameters | DI[1..4], | | |
| | GPVAUTO, | | |
| | NUMDINPTS,. | | |
| | NUMSTATES, | | |
| | PVAUTO | | |

**Remarks**: The number of elements allowed is restricted by the value of NUMDINPTS. For example, if NUMDINPTS = 2, then only DIPVMAP[0..3] are legal.

No member of DIPVMAP may be assigned State2, if NUMSTATES = 2.

## 3.4.10  DIRROT

| Specific to Block(s) | LCSCOUNTER | Description | Count Down Input |
|---|---|---|---|
| Data Type | BOOLEAN | Range | Off, On |
| Default | Off | Configuration Load | No |
| Access Lock | Engineer | Residence | EE |
| Related Parameters | RESETFLLO | | |

## 3.4.11  DISBLCONTR

This parameter is used to stop the counting of pulse input accumulated by the counter. When the output is OFF, the counting continues. When it is energized, the counting is disabled.

| Specific to Block(s) | LCSPICHANNEL | Description | Disable Counter |
|---|---|---|---|

| Data Type | Boolean | Range | ON/ OFF |
|---|---|---|---|
| Default | OFF | Configuration Load | Yes |
| Access Lock | Engineer | Residence | LIOM |
| Related Parameters | | | |

## 3.4.12 DNIN

| Specific to Block(s) | AEM LCSCOUNTER | Description | Indicates the direction of rotation. |
|---|---|---|---|
| Data Type | Enumeration | Range | Increasing, Decreasing |
| Default | Increasing | Configuration Load | No |
| Access Lock | View Only | Residence | |
| Related Parameters | | Checkpoint | Yes (for OCD). |

**Remarks**: When this input transitions from OFF to ON, the counter begins to count downwards if the RESET pin is high.

## 3.4.13 DO[1..3]

| Specific to Block(s) | DEVCTL | Description | Digital Output Values |
|---|---|---|---|
| Data Type | Boolean | Range | Off (0) On (1) |
| Default | Off (0) | Configuration Load | No |
| Access Lock | View only | Residence | EE |
| Related Parameters | GOPFINAL, NUMDOUTS, OPDOMAP[0..3][1..3], OPFINAL. | Checkpoint | Yes (for OCD). |

**Remarks**: This parameter is valid only if NUMDOUTS allows the respective output. DO[i] and PO[i] cannot be connected simultaneously.

## 3.4.14 DOTYPE

| Specific to Block(s) | DOC | Description | Digital Output (DO) Type. Determines the type of digital output point. |
|---|---|---|---|
| Data Type | Enum | Range | |
| Default | SO | Configuration Load | Yes |
| Access Lock | Application Developer | Residence | |
| Related Parameters | | | |

## 3.4.15  DRIVERNAME

This parameter is used for selecting the supervisory network driver name (ControlNet or Ethernet).

| Specific to Block(s) | LIOM | Description | Network Driver Name |
|---|---|---|---|
| Data Type | String | Range | Length: 255 characters |
| Default | Null String | Configuration Load | No |
| Access Lock | Engineer | Residence | SR |
| Related Parameters | NETWORKTYPE | | |

# 3.5 -E-

**Related topics**

## 3.5.1 EMISSIVITY[1..16]

| Specific to Block(s) | UAIM | Description | Emissivity |
|---|---|---|---|
| **Data Type** | Real | **Range** | 0-100 |
| **Default** | 1.0 | **Configuration Load** | Yes |
| **Access Lock** | Engineer | **Residence** | EE |
| **Related Parameters** | | | |

**Remarks**: Emissivity is the relative power of a surface to emit heat by radiation. When a channel is configured for a pyrometer input, you must enter the emissivity factor of that surface in a scale of 1 to 100.

## 3.5.2 ENBLSETTIME

This parameter enables the user to set the time when the parameter is set to ON.

| Specific to Block(s) | ASCIISETDTPTR | Description | Enable Set Time. |
|---|---|---|---|
| **Data Type** | Boolean | **Range** | Off (0) On (1) |
| **Default** | Off (0) | **Configuration Load** | Yes |
| **Access Lock** | Engineer | **Residence** | CEE |
| **Related Parameters** | | | |

## 3.5.3 ENCODERVALUE

| Specific to Block(s) | AEM | Description | Indicates the shaft position in terms of counts. |
|---|---|---|---|

| Data Type | UINT16 | Range | 0-65535 |
|---|---|---|---|
| Default | 0 | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | | | |

## 3.5.4 ENUMBOOLMAP(0..63)

| Specific to Block(s) | LCSTYPECONVERT, PUSH | Description | An array used when converting Enumerations to Boolean values. |
|---|---|---|---|
| Data Type | Boolean | Range | Off (0) On (1) |
| Default | Off (0) | Configuration Load | Yes |
| Access Lock | Engineer | Residence | EE |
| Related Parameters | | Checkpoint | Yes (for OCD) |

**Remarks**: This is applicable for conversion between Enumerations and Boolean values. The output Boolean value corresponds to the ENUMBOOLMAP value that is set to.

## 3.5.5 ERRORCODE[1..8]

This parameter from the ASCIIREADERROR block is used to read error codes transferred from the ASCII Control Module to the controller. Some examples of error codes are: No ACK Received on Transmit, Incorrect Echo Received on Transmit, Transmit End of Message Doesn't Exist. The ASCII Control Module saves the first eight errors. If more than eight errors have occurred since the last time this function was invoked, only the first eight errors are saved in the error buffer.

| Specific to Block(s) | ASCIIREADERROR | Description | Displays the ASCII Control Module errors. |
|---|---|---|---|

| **Data Type** | Enumeration | **Range** | NOERROR |
|---|---|---|---|
| | | | NOACKRCVONXMIT |
| | | | NAKRCVONXMIT |
| | | | INCRTECHORCV |
| | | | XMITMSGNOTEXIST |
| | | | XMITSRT |
| | | | MSGNOTEXIST |
| | | | XMITENDMSGNOTEXIST |
| | | | ACKMSGNOTEXIST |
| | | | NOTACKMSGNOTEXIST |
| | | | XMITMSGNOBFROVRFLOW |
| | | | TIMEOUTERROR |
| | | | RCVSTRTMSGINCORRECT |
| | | | RCVENDMSGINCORRECT |
| | | | RCVFMTNOTEXIST |
| | | | RCVSTRTMSGNOTEXIST |
| | | | RCVENDMSGNOTEXIST |
| | | | RCVCHKSUMWRONG |
| | | | BATVOLTAGELOW |
| | | | DCDHIGH |
| | | | MODNOTINRUNMODE |
| | | | STACKSPACEOVERRUN |
| | | | PORTPRMCKSMERR |
| | | | XMITPRMCHKSMERROR |
| | | | RCVPRMCHKSMERR |
| | | | MSGMEMCHKSMERR |
| | | | DUPMSGNOFOUND |
| | | | MSGMEMFULL |
| | | | WRONGTAPETYPE |
| | | | PARITYERROR |
| | | | FRAMINGERROR |
| | | | PORTOVRRUNERROR |
| | | | PORTBFROVRFLOWERR |
| | | | ILLEGALPORTNUM |
| **Default** | NOERROR | **Configuration Load** | No |
| **Access Lock** | View Only | **Residence** | LIOM |
| **Related Parameters** | ERRORCOUNT | | |
| | FBENABLE | | |
| | CHNLCOMSTAT | | |
| | ModLatch | | |
| | CHNLCOMFAIL | | |

## 3.5.6 ERRORCOUNT

This parameter counts the numbers of errors in communication between the channel and the ASCII Control Module when the ASCIIREADERROR function block is used. It can store a maximum of 8 errors.

| Specific to Block(s) | ASCIIREADERROR | Description | Counts the number of errors. |
|---|---|---|---|
| Data Type | Unsigned Integer \ 16 bits | Range | 0-8 |
| Default | 0 | Configuration Load | No |
| Access Lock | View Only | Residence | LIOM |
| Related Parameters | ERRORCOUNT FBENABLE CHANNELCOMSTAT MODLATCH CHANNELCOMFAIL ERRORCODE[1..8] | | |

## 3.5.7 EUDESC

| Specific to Block(s) | All Function Blocks except I/O channels | Description | Block Engineering Units Descriptor - Used to describe an important aspect of the block, for example, Engineering Units. |
|---|---|---|---|
| Data Type | String | Range | Length: 15 characters |
| Default | Null String | Configuration Load | Yes |
| Access Lock | Application Developer | Residence | SR |
| Related Parameters | DESC KEYWORD | Checkpoint | Yes (for OCD) \for AUXCALC, DEVCTL |

## 3.5.8 EXECCODE[1..8]

| Specific to Block(s) | AUXCALC | Description | Execution Code |
|---|---|---|---|
| Data Type | Enumeration AUXCALCEXECCODE | Range | None (0) ConfigError (1) ExprEvalFail (2) StoreFailed (3) CommError (4) StoreWarning (5) InternalErr (6) CtrlReqErr (7) DataTypeErr (8) StorePending (9) |
| Default | None (0) | Configuration Load | No |

| Access Lock | View Only | Residence | EE |
|---|---|---|---|
| Related Parameters | EXECDESC[1..8], EXECSTS[1..8]. | Checkpoint | Yes (for OCD) |

## 3.5.9 EXECDESC[1..8]

| Specific to Block(s) | AUXCALC | Description | Execution Code Descriptor |
|---|---|---|---|
| Data Type | String | Range | Maximum of 39 characters |
| Default | None | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | EXECCODE[1..8], EXECSTS[1..8]. | Checkpoint | Yes (for OCD) |

## 3.5.10 EXECSTATE

| Specific to Block(s) | LIOM IOM | Description | Execution state of the block and its components. |
|---|---|---|---|
| Data Type | Enumeration of EXECSTATE | Range | Inactive (0) Active (1) |
| Default | Inactive (0) | Configuration Load | No |
| Access Lock | Supervisor | Residence | EE |
| Related Parameters | CEESTATE | | |

**Remarks**: For CMs: When EXECSTATE is ACTIVE and the CEESTATE is RUN, it indicates that the block and its component blocks are executing.

For IOMs: When EXECSTATE is ACTIVE, the IOM executes regardless of CEESTATE.

For both CMs and IOMs: Block reload is only allowed when the block is NOT executing.

Note that EXECSTATE is always initialized to INACTIVE after load, reload or snapshot restore, regardless of its previous state.

## 3.5.11 EXECSTS

This parameter provides the overall operation status of the LCSTYPECONVERT function block.

| Specific to Block(s) | LCSTYPECONVERT | Description | Execution Status |
|---|---|---|---|
| Data Type | Enumeration TCEXECSTS | Range | Ok (0) ClampWarning (1) BadInput (2) InBlkMissing(3) |
| Default | Ok (0) | Configuration Load | No |
| Access Lock | View only | Residence | EE |
| Related Parameters | | | |

**Remarks**: When EXECSTS is not OK, it means that either:

- The input could not be fetched,
- The connection to the input is lost,
- It is bad data, or
- The input is clamped during type conversion.

| Specific to Block(s) | PUSH | Description | Execution Status \ Provides the overall operation status of the PUSH function block. |
|---|---|---|---|
| Data Type | Enumeration | Range | OK(0) CLAMPWARING(1) BADINPUT(2) INBLKMISSING(3) |
| Default | OK(0) | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | | | |

## 3.5.12 EXECSTS[1..8]

| Specific to Block(s) | AUXCALC | Description | Execution Status |
|---|---|---|---|
| Data Type | Enumeration AUXCALCEXECSTS | Range | Ok (0) Bypass (1) Info (2) Warning (3) Fail (4) Error (5) |
| Default | Ok (0) | Configuration Load | No |
| Access Lock | View only | Residence | EE |
| Related Parameters | | Checkpoint | Yes (for OCD) |

## 3.5.13 EXECSTSB

This parameter is set to ON if the execution is successful. The value of this parameter is used for fault handling.

| Specific to Block(s) | LCSSEQUENCER, LCSSELECT | Description | Execution Status |
|---|---|---|---|
| Data Type | BOOLEAN | Range | Off On |
| Default | Off | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | | | |

## 3.5.14 EXPR[1..8]

Calculator expressions \ Each expression may contain a user-specified logical, arithmetic, or conditional expression of up to eighty characters.

| Specific to Block(s) | AUXCALC | Description | Calculator Expressions |
|---|---|---|---|
| Data Type | String | Range | Length: up to 255 characters. (This will be unlimited in a future release.) |
| Default | Null string | Configuration Load | Yes |
| Access Lock | Engineer | Residence | EE |
| Related Parameters | | Checkpoint | Yes (for OCD) |

# 3.6 -F-

**Related topics**

## 3.6.1 FAILSAFE[1..16]

This parameter is used for selecting the Fail Safe value for each slot.

| Specific to Block(s) | UAIM | Description | Fail Safe |
|---|---|---|---|
| Data Type | Enum UAIM_FAILSAFETYPE | Range | 0 Max Counts |
| Default | Max Counts | Configuration Load | Yes |
| Access Lock | Engineer | Residence | EE |
| Related Parameters | | | |

**Remarks**: The failsafe output activates when an input failure such as thermocouple burnout or input overload occurs. The UAIM then sends the output count to zero scale or full scale depending on the FAILSAFE configuration.

## 3.6.2 FAILSAFE[1..8]

This parameter is used for selecting the Fail Safe value for each slot.

| Specific to Block(s) | RTDM | Description | Fail Safe |
|---|---|---|---|
| Data Type | Enum RTDM_FAILSAFETYPE | Range | Min counts Max Counts |
| Default | Max Counts | Configuration Load | Yes |
| Access Lock | Engineer | Residence | EE |
| Related Parameters | | | |

## 3.6.3 FBENABLE

This parameter enables the function blocks to initiate a communication sequence with the IO module, when it is set to ON. By default it is OFF.

| Specific to Block(s) | ASCIIREADCLOCK, ASCIISETDTPTR, ASCIIPull, ASCIIPush ASCIIReadError, ASCIITMSG | Description | Enables the function block |
|---|---|---|---|
| Data Type | Boolean | Range | ON/ OFF |
| Default | OFF | Configuration Load | Yes |
| Access Lock | Engineer | Residence | CEE |
| Related Parameters | | Checkpoint | No |

## 3.6.4 FETCHMODE

| Specific to Block(s) | All IO Channels, | Description | Fetch Mode - When this mode is set, the IO Channel works without the IOM function block. |
|---|---|---|---|
| Data Type | Integer | Range | N/A |
| Default | Off (0) | Configuration Load | No |
| Access Lock | Engineer | Residence | EE |
| Related Parameters | | | |

**Remarks**: Direct Get, Direct Store

## 3.6.5 FLASHHEALTH

This parameter indicates the health of Flash. The default value is kFlashFail. The other values are kFlashOk, kNotInSync and kFlashSaving.

| Specific to Block(s) | LIOM FB | Description | Flash Health |
|---|---|---|---|
| Data Type | Enumeration | Range | FAIL OK NOT IN SYNC SAVING |
| Default | FAIL | Configuration Load | No |
| Access Lock | Read Only | Residence | LIOM (Primary, in case of a redundant configuration) |
| Related Parameters | | | |

## 3.6.6 FORCEENABLE

The FORCEENABLE parameter when set to ON, forces the value entered in FORCEVALUE to/from the DO/DI channels. The already existing values are overwritten.

| Specific to Block(s) | LCSDICHANNEL, LCSDOCHANNEL | Description | |
|---|---|---|---|

| Data Type | Boolean | Range | ON/ OFF |
|---|---|---|---|
| Default | OFF | Configuration Load | Yes |
| Access Lock | Engineer | Residence | CEE |
| Related Parameters | | Checkpoint | No |

## 3.6.7  FORCEVALUE

This parameter works in conjunction with FORCEENABLE. When the FORCEENABLE parameter is set to ON, the value entered in FORCEVALUE is forced to/from the DO/DI channels.

| Specific to Block(s) | LCSDICHANNEL, LCSDOCHANNEL | Description | |
|---|---|---|---|
| Data Type | Boolean | Range | ON/ OFF |
| Default | OFF | Configuration Load | Yes |
| Access Lock | Engineer | Residence | CEE |
| Related Parameters | | Checkpoint | No |

## 3.6.8  FREQUENCY

This parameter indicates the frequency of the power line.

| Specific to Block(s) | UAIM, RTDM | Description | Frequency 60/50Hz |
|---|---|---|---|
| Data Type | Enum UAIM_FREQU6050TYPE | Range | 60 50 |
| Default | 60 | Configuration Load | Yes |
| Access Lock | Application Developer | Residence | EE |
| Related Parameters | | | |

# 3.7  G

| Specific to Block(s) | LCSSEL | Description | G selector input value |
|---|---|---|---|
| Data Type | Boolean | Range | Off(0), On(1) |
| Default | Off(0) | Configuration Load | Yes |
| Access Lock | Engineer | Residence | CEE |
| Related Parameters | | | |

## 3.7.1  G

| Specific to Block(s) | LCSSEL | Description | G selector input value |
|---|---|---|---|
| Data Type | Boolean | Range | Off(0), On(1) |
| Default | Off(0) | Configuration Load | Yes |
| Access Lock | Engineer | Residence | CEE |
| Related Parameters | | | |

## 3.7.2  GOP

| Specific to Block(s) | DEVCTL | Description | Generic Output (OP) |
|---|---|---|---|
| Data Type | Enumeration GENSTATE | Range | Refer Range list |
| Default | S0 (4) | Configuration Load | No |
| Access Lock | Other Function Block | Residence | EE |
| Related Parameters | GOPFINAL<br>GOPREQ<br>MODEATTR<br>NUMDOUTS<br>NUMSTATES<br>OP<br>OPFINAL<br>OPREQ<br>SAFEOP<br>SAFEREDTAG | Checkpoint | Yes (for OCD). |

**Range**:

| Active (2): | Not configured SafeOP for two state device (i.e., if SafeOp = State 0, ACTIVE sets OP to state 1). |
|---|---|
| Safe (3): | The state nominated as the SafeOP state on the State Assignment form. |
| S0 (4): | State zero as defined on the State Assignment form. |
| S1 (5): | State one as defined on the State Assignment form. |
| S2 (6): | State two as defined on the State Assignment form. |

**Remarks:** Access is illegal if NUMDOUTS = 0.

S2 is illegal if NUMSTATES = 2.

Once SAFEOP is configured, GOP always defaults to SAFEOP.

Active is illegal if NUMSTATES = 3.

## 3.7.3 GOPFINAL

| Specific to Block(s) | DEVCTL | Description | Generic Field Output State (OPFINAL) |
|---|---|---|---|
| Data Type | Enumeration GENSTATE | Range | S0 (4) S1 (5) S2 (6) |
| Default | S0 (4) | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | GOP MODEATTR NUMDOUTS NUMSTATES OP OPDOMAP [0..3] [1..3] OPFINAL | Checkpoint | Yes (for OCD). |

**Remarks**: Access is illegal if NUMDOUTS = 0.

## 3.7.4 GOPREQ

| Specific to Block(s) | DEVCTL | Description | Generic Requested Output Value (OPREQ) |
|---|---|---|---|
| Data Type | Enumeration GENSTATE | Range | Null (0) Active (2) Safe (3) S0 (4) S1 (5) S2 (6) |
| Default | Null (0) | Configuration Load | No |
| Access Lock | Other Function Block | Residence | EE |
| Related Parameters | CONTROLREQ GOP NUMSTATES OP OPREQ OPTYPE SCMOPT | Checkpoint | Yes (for OCD). |

**Remarks:** S2 is illegal if NUMSTATES = 2.

GOPREQ is illegal if CONTROLOPT = None.

## 3.7.5 GOPSCADA

| Specific to Block(s) | DEVCTL | Description | Generic Output for Experion PKS Server detail displays - This parameter represents the three user-defined states so that they may be represented clearly in the detail displays. |
|---|---|---|---|
| Data Type | Enumeration GENSTATESC | Range | State_0 (0) State_1 (1) State_2 (2) |
| Default | State_0 (0) | Configuration Load | No |
| Access Lock | Operator | Residence | EE |
| Related Parameters | GOP OP | Checkpoint | Yes (for OCD). |

## 3.7.6 GPV

| Specific to Block(s) | DEVCTL | Description | Generic Process Variable (PV) |
|---|---|---|---|
| Data Type | Enumeration GENSTATE | Range | Null (0) Inbet (1) S0 (4) S1 (5) S2 (6) |
| Default | Null (0) | Configuration Load | No |
| Access Lock | View Only, Other Function Block (see Remarks) | Residence | EE |
| Related Parameters | DIPVMAP [0..15] GPVAUTO NUMDINPTS NUMSTATES PV PVAUTO PVSOURCE PVSRCOPT | Checkpoint | Yes (for OCD). |

**Remarks:** Access is illegal if NUMDINPTS = 0.

S2 is illegal if NUMSTATES = 2.

InBet is illegal if DIPVMAP is not assigned to InBet.

Access Lock is View-Only if PVSOURCE = AUTO, MAN or TRACK; or if

PVSRCOPT is ONLYAUTO.

Access Lock is Other Function Block if PVSOURCE = SUB.

## 3.7.7  GPVAUTO

| Specific to Block(s) | DEVCTL | Description | Generic PVAUTO |
|---|---|---|---|
| Data Type | Enumeration GENSTATE | Range | Null (0) |
| | | | Inbet (1) |
| | | | S0 (4) |
| | | | S1 (5) |
| | | | S2 (6) |
| Default | Null (0) | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | DIPVMAP [0...15] | Checkpoint | Yes (for OCD). |
| | GPV | | |
| | NUMDINPTS | | |
| | NUMSTATES | | |
| | PV | | |
| | PVAUTO | | |
| | PVSOURCE | | |

**Remarks:** Access is illegal if NUMDINPTS = 0.

S2 is illegal if NUMSTATES = 2.

InBet is illegal if DIPVMAP is not assigned to InBet.

# 3.8  -H-

**Related topics**

## 3.8.1  HIALM

This variable is used by the system to ensure that when alarm conditions exist for a function block at the same time, the most important or highest-level alarm condition appears on both detail and group displays.

The value of FBHIALM first takes into account the configured Priorities (xxxxALM.PR) for the function block alarms. When the function block has multiple alarms, and the priorities are equal, the following default priority order is used (highest-to-lowest):

- 3 - BadCtl
- 4 - SafetyILock
- 5 - DevHi or DevLo: (DevHi and DevLo alarms cannot exist concurrently.)
- 6 - AdvDev
- 7 - OpHi or OpLo: (OpHi and OpLo alarms cannot exist concurrently.)
- 8 - Config

| Specific to Block(s) | DATAACQ | Description | Highest Alarm Detected |
|---|---|---|---|
| **Data Type** | Enumeration REGALMTYPE | **Range** | Refer Range list |
| **Default** | NoAlarm (0) | **Configuration Load** | No |
| **Access Lock** | View only | **Residence** | EE |
| **Related Parameters** | ADVDEVALM.FL, BADCTLFL, CMDDISALM.FL, CMDFALALM.FL, DEVHIALM.FL, DEVLOALM.FL, HIALM.PR, HIALM.SV, OFFNRMALM.FL, OPHIALM.FL, OPLOALM.FL, SIALM.FL, UNCMDALM.FL. | | |

**Range:**

| NoAlarm (0) | No alarm exists; this is the lowest-level alarm condition. |
|---|---|
| Config (1) | Configuration alarm |
| OPHi (2) | OP High alarm |
| OPLo (3) | OP Low alarm |
| AdvDev (4) | Advisory Deviation alarm |
| DevHi (5) | Deviation High alarm |
| DevLo (6) | Deviation Low alarm |
| SafetyIlock (7) | Safety Interlock alarm |
| BadCtl (8) | Bad Control alarm |

## 3.8.2  HIALM.PR

| Specific to Block(s) | DATAACQ, LCSFLAG | Description | Highest Alarm Priority - Indicates the priority of the highest-level alarm that currently exists for the function block. |
|---|---|---|---|
| Data Type | Enumeration ALPRIOR | Range | None (0) Journal (1) Low (2) High (3) Urgent (4) |
| Default | None (0) | Configuration Load | Yes |
| Access Lock | View Only | Residence | EE |
| Related Parameters | HIALM.SV HIALM.TYPE | Checkpoint | Yes (for OCD) - for DATAACQ only. |

## 3.8.3  HIALM.SV

| Specific to Block(s) | DEVCTL, DATAACQ, LCSFLAG | Description | Highest Alarm Severity - Indicates the severity of the highest-level alarm that currently exists for the function block. |
|---|---|---|---|
| Data Type | Integer | Range | 0 to 15 |
| Default | 0 | Configuration Load | Yes |
| Access Lock | View Only For LCSFLAG Only: Engineer | Residence | EE |
| Related Parameters | HIALM.PR HIALM.TYPE | Checkpoint | Yes (for OCD) - for DEVCTL, DATAACQ |

## 3.8.4  HIALM.TYPE

| Specific to Block(s) | DATAACQ DEVCTL LCSFLAG | Description | Highest Alarm Detected - This variable is used by the system to ensure that, when alarm conditions exist for a function block at the same time, the most important or highest-level alarm condition appears on both detail and group displays. |
|---|---|---|---|
| Data Type | Enumeration DACALMTYPE | Range | Refer Range list |
| Default | None (0) | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | HIALM.PR HIALM.SV | Checkpoint | Yes (for OCD) - for DEVCTL |

**Range:**

| None (0): | No alarm exists (Lowest-level alarm condition) |
|---|---|
| NegROC (1): | Negative Rate-of-Change alarm |
| PosROC (2): | Positive Rate-of-Change alarm |
| PvLo (3): | PV Low alarm |
| PvHi (4): | PV High alarm |
| PvLoLo (5): | PV Low Low alarm |
| PvHiHi (6): | PV High High alarm |
| BadPV (7): | Bad PV alarm |

| Specific to Block(s) | DEVCTL | Description | Highest Alarm Detected - This variable is used by the system to ensure that, when alarm conditions exist for a function block at the same time, the most important or highest-level alarm condition appears on both detail and group displays. |
|---|---|---|---|
| Data Type | Enumeration DAVHIALM | Range | Refer Range list |
| Default | None (0) | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | HIALM.PR HIALM.SV | | |

**Range:**

| None (0) | No alarm |
|---|---|
| BadPv (1) | Bad PV alarm |

| OffNormal (2) | Off Normal alarm |
|---|---|
| CmdDisagree (3) | Command Disagree alarm |
| CommandFail (4) | Command Fail alarm |
| UnCommanded (5) | Uncommanded alarm |
| SafetyIlock (6) | Safety Interlock alarm |
| Oride0Ilock (7) | State0 Override Interlock alarm |
| Oride1Ilock (8) | State1 Override Interlock alarm |
| Oride2Ilock (9) | State2 Override Interlock alarm |

| Specific to Block(s) | LCSFLAG | Description | Highest Alarm Detected - This variable is used by the system to ensure that, when alarm conditions exist for a function block at the same time, the most important or highest-level alarm condition appears on both detail and group displays. |
|---|---|---|---|
| Data Type | Enumeration HIALMFLAG | Range | None (0) OffNormal (1) |
| Default | None (0) | Configuration Load | No |
| Access Lock | Engineer | Residence | No |
| Related Parameters | INALM OFFNRMALM.FL OFFNRMALM.PR OFFNRMALM.SV | | |

## 3.8.5 HOLDOPT

| Specific to Block(s) | DEVCTL | Description | The Hold State Option is a configurable parameter that specifies the action the control device takes, when SCMSTATE is Holding or Held. This option should be disabled, when sequencing actions are required as part of the SCM. In this case, the SCM should execute its HOLD Handler. The SCM can also disable this option. |
|---|---|---|---|
| Data Type | Enumeration REGEXOPT | Range | Refer Range list |
| Default | None (0) | Configuration Load | Yes |
| Access Lock | Engineer | Residence | EE |

| Related Parameters | DEVCTL only: | Checkpoint | Yes (for OCD). |
|---|---|---|---|
| | OPREQ | | |
| | OPTYPE | | |
| | RESTARTOPT | | |
| | SAFEOP | | |
| | SCMOPT | | |
| | STARTOPT | | |
| | STOPOPT | | |

**Range**:

| None (0): | no changes |
|---|---|
| Man (1): | set MODEREQ = Manual |
| Auto (2): | set MODEREQ = Auto |
| Cas (3): | set MODEREQ = Cas |
| FixedOP (4): | set OPREQ = HOLDVAL |
| HoldPv (5): | se PV |
| FixedSP (6): | set SPTVREQ = HOLDVAL, and SPRATEREQ = NaN |
| RampedSP (7): | set SPTVREQ = HOLDVAL, and SPRATEREQ = HOLDRATE |

**Remarks:** Defines values for SPREQ, SPTVREQ, SPRATEREQ, OPREQ, and MODREQ, when the Control Module.SCMSTATE transitions to Held or Holding. DEVCTL only: Illegal if ControlModule.SCMOPT = None.

## 3.8.6  HOUR

Realtime clock data can be pulled using the ASCIIREADCLOCK function block. The HOUR parameter fetches the value of the Hour from the clock time.

| Specific to Block(s) | ASCIIREADCLOCK | Description | Fetches the value of the hour (**HH**:MM:SS) of the ASCII real-time flow |
|---|---|---|---|
| Data Type | Unsigned Integer - 16 bits | Range | 0-65535 |
| Default | 0 | Configuration Load | No |
| Access Lock | View Only | Residence | LIOM |
| Related Parameters | | Checkpoint | Yes (for OCD). |

Realtime clock data can be pushed to the ASCII Control Module using the ASCIISETDTPTR function block. The HOUR parameter sets the value of the Hour to the clock time.

| Specific to Block(s) | ASCIISETDTPTR | Description | Sets the value of the hour (**HH**:MM:SS) of the ASCII real-time flow |
|---|---|---|---|
| Data Type | Unsigned Integer - 16 bits | Range | 0-23 |
| Default | 0 | Configuration Load | Yes |
| Access Lock | Engineer | Residence | CEE |

| Related Parameters | | Checkpoint | Yes (for OCD). |
|---|---|---|---|

# 3.9  -I-

**Related topics**

## 3.9.1  IMAGEVER

| Specific to Block(s) | LIOM | Description | Image Version - Identifies current personality image version loaded in the module |
|---|---|---|---|
| **Data Type** | String | **Range** | 32 Characters Maximum |
| **Default** | Null | **Configuration Load** | No |
| **Access Lock** | View Only | **Residence** | LIOM |
| **Related Parameters** | | | |

## 3.9.2  IN

| Specific to Block(s) | NOT, DELAY, LCSOFFDELAY, LCSONDELAY, FTRIG, RTRIG | Description | Input value for the IN connection |
|---|---|---|---|
| **Data Type** | Boolean | **Range** | Off (0) <br> On (1) |
| **Default** | Off (0) | **Configuration Load** | Yes |
| **Access Lock** | Engineer | **Residence** | EE |
| **Related Parameters** | | **Checkpoint** | Yes (for OCD) for DELAY, FTRIG. |

| Specific to Block(s) | BITRD, BITWR | Description | Input value for the IN connection |
|---|---|---|---|
| **Data Type** | Integer | **Range** | -32768 to 32767 |
| **Default** | 0 | **Configuration Load** | Yes |
| **Access Lock** | Engineer | **Residence** | EE |
| **Related Parameters** | | | |

| Specific to Block(s) | LCS1SCOMPLEMENT | Description | Input value for the IN connection |
|---|---|---|---|
| **Data Type** | 16-Bit Signal Integer | **Range** | -32768 to 32767 |
| **Default** | 0 | **Configuration Load** | Yes |
| **Access Lock** | Engineer | **Residence** | EE |
| **Related Parameters** | | | |

### 3.9.3  IN[1..2]

| Specific to Block(s) | LCSSELECT | Description | Input value for the IN connection |
|---|---|---|---|
| Data Type | Real | Range | N/A |
| Default | NaN | Configuration Load | Yes |
| Access Lock | Engineer | Residence | EE |
| Related Parameters | | | |

| Specific to Block(s) | LCSSEL | Description | Input value for the IN connection |
|---|---|---|---|
| Data Type | Boolean | Range | Off(0) On(1) |
| Default | Off(0) | Configuration Load | No |
| Access Lock | Engineer | Residence | CEE |
| Related Parameters | | | |

| Specific to Block(s) | EQ, GE, GT, LE, LT, NE | Description | Input value for the IN connection |
|---|---|---|---|
| Data Type | Real | Range | N/A |
| Default | NaN | Configuration Load | No |
| Access Lock | Engineer | Residence | EE |
| Related Parameters | | | |

### 3.9.4  IN[1..8]

| Specific to Block(s) | AND, OR, XOR | Description | Input value for the IN connection |
|---|---|---|---|
| Data Type | Boolean | Range | Off (0) On (1) |
| Default | Off (0) For AND only: ON (1) | Configuration Load | Yes |
| Access Lock | Engineer | Residence | EE |
| Related Parameters | | Checkpoint | Yes (for OCD) |

### 3.9.5  IN[1..128]

| Specific to Block(s) | LCSSEQUENCER | Description | Input value |
|---|---|---|---|
| Data Type | FLOAT64 | Range | N/A |
| Default | NaN | Configuration Load | Yes |
| Access Lock | Engineer | Residence | EE |

| Related Parameters | | | |
|---|---|---|---|

## 3.9.6  IN1[1..16]

| Specific to Block(s) | LIOM - BITAND, BITOR, BITXOR | Description | Input1 |
|---|---|---|---|
| Data Type | BOOLEAN | Range | Off<br>On |
| Default | Off | Configuration Load | Yes |
| Access Lock | Engineer | Residence | EE |
| Related Parameters | | | |

## 3.9.7  IN2[1..16]

| Specific to Block(s) | LIOM - BITAND, BITOR, BITXOR | Description | Input2 |
|---|---|---|---|
| Data Type | BOOLEAN | Range | Off<br>On |
| Default | Off | Configuration Load | Yes |
| Access Lock | Engineer | Residence | EE |
| Related Parameters | | | |

## 3.9.8  IN.BOOLEAN

| Specific to Block(s) | LCSTYPECONVERT, PUSH | Description | Boolean Input Value |
|---|---|---|---|
| Data Type | Boolean | Range | Off (0)<br>On (1) |
| Default | Off (0) | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | | | |

## 3.9.9  IN.ENUM

| Specific to Block(s) | LCSTYPECONVERT, PUSH | Description | Enumerated Input Value |
|---|---|---|---|
| Data Type | Enumeration | Range | N/A |
| Default | 0 | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | | | |

## 3.9.10  IN.FLOAT32

| Specific to Block(s) | LCSTYPECONVERT, PUSH | Description | 32-Bit Floating Point Input Value |
|---|---|---|---|

| Data Type | Real | Range | N/A |
|---|---|---|---|
| Default | NaN | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | | | |

## 3.9.11  IN.FLOAT64

| Specific to Block(s) | LCSTYPECONVERT, PUSH | Description | 64-Bit Floating Point Input Value |
|---|---|---|---|
| Data Type | Real | Range | N/A |
| Default | NaN | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | | | |

## 3.9.12  IN.INT8

| Specific to Block(s) | LCSTYPECONVERT, PUSH | Description | Signed 8-Bit Input Value |
|---|---|---|---|
| Data Type | 8-Bit Integer | Range | -32768 to 32767 |
| Default | 0 | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | | | |

## 3.9.13  IN.INT16

| Specific to Block(s) | LCSTYPECONVERT, PUSH | Description | Signed 16-Bit Input Value |
|---|---|---|---|
| Data Type | 16-Bit Integer | Range | -32768 to 32767 |
| Default | 0 | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | | | |

## 3.9.14  IN.INT32

| Specific to Block(s) | LCSTYPECONVERT, PUSH | Description | Signed 32-Bit Input Value |
|---|---|---|---|
| Data Type | 32-Bit Integer | Range | -2147483648 to 2147483647 |
| Default | 0 | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | | | |

## 3.9.15  IN.SDENUM

| Specific to Block(s) | LCSTYPECONVERT, PUSH | Description | Self-Defining Enumeration Input. |
|---|---|---|---|

| Data Type | Integer | Range | Positive Integers |
|---|---|---|---|
| Default | 0 | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | | | |

## 3.9.16  IN.UINT16

| Specific to Block(s) | LCSTYPECONVERT, PUSH | Description | Unsigned 16-Bit Input Value |
|---|---|---|---|
| Data Type | Unsigned 16-Bit Integer | Range | 0 to 65535 |
| Default | 0 | Configuration Load | No |
| Access Lock | Other Function Block | Residence | EE |
| Related Parameters | | | |

## 3.9.17  IN.UINT32

| Specific to Block(s) | LCSTYPECONVERT, PUSH | Description | Unsigned 32-Bit Input Value |
|---|---|---|---|
| Data Type | Unsigned 32-Bit Integer | Range | 0 to 4294967295 |
| Default | 0 | Configuration Load | No |
| Access Lock | Other function block | Residence | EE |
| Related Parameters | | | |

## 3.9.18  INALM

| Specific to Block(s) | All alarming basic blocks and all independent blocks (EE, CM, LIOM, DATAACQ, DEVCTL, IOM, LCSFLAG) | Description | Function Block In Alarm Flag - Indicates if an alarm condition has been detected within this function block. |
|---|---|---|---|
| Data Type | Boolean | Range | Off (0): Function block is not in alarm<br><br>On (1): Function block is in alarm |
| Default | Off (0) | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | DEVCTL only:<br><br>CMDDISALM.FL<br><br>CMDFALALM.FL<br><br>SIALM.FL<br><br>UNCMDALM.FL | Checkpoint | Yes (for OCD) - for DATAACQ, DEVCTL |

## 3.9.19  INBADOPT

| Specific to Block(s) | EQ, GE, GT, LE, LT, NE | Description | Input Bad Option - Configurable value that defines the output fail-safe value when any input is Not a Number (NaN). This is required since it is not specified whether the comparison is ordered or unordered. |
|---|---|---|---|
| Data Type | Boolean | Range | Off<br>On |
| Default | Off | Configuration Load | Yes |
| Access Lock | Engineer | Residence | EE |
| Related Parameters | | Checkpoint | Yes (for OCD) for EQ, GT, LT, NE, GE, LE |

**Remarks**: If IN[1] and/or IN[2] are NaN, OUT is set to INBADOPT

## 3.9.20  INBETFL

| Specific to Block(s) | DEVCTL | Description | Process Variable (PV) In Between State Flag |
|---|---|---|---|
| Data Type | Boolean | Range | Off (0)<br>On (1) |
| Default | Off (0) | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | DIPVMAP [0..15]<br>GPV<br>PV<br>NUMDINPTS | Checkpoint | Yes (for OCD). |

**Remarks:** Illegal if DIPVMAP is not selected for InBet.

Illegal if NUMDINPTS = 0.

## 3.9.21  INDRCTSYNC

| Specific to Block(s) | Primary/Secondary LIOM | Description | Indirect Synchronization State - Indirect synchronization is a multistage process, which requires several steps of interaction with the On-Process Migration (OPM) User Interface (UI). |
|---|---|---|---|

3 ALPHABETICAL LISTING OF PARAMETERS

| Data Type | Enumeration | Range | DISABLED (0) - Indicates that On-Process Migration session is not in progress. |
|---|---|---|---|
| | | | WAITSYNC1 (1) - LIOM is waiting for snapshot restore to secondary LIOM to complete. |
| | | | WAITSYNC2 (2) - LIOM is waiting for the command to synchronize and switchover. |
| | | | WAITSYNC3 (3) - LIOM is waiting for the RM to commence initial synchronization. |
| | | | WAITSYNC4 (4) - LIOM is waiting for formation of secondary I/O connections to complete. |
| | | | TRANSFERDSD (5) - Control processing in the primary LIOM is frozen and Dynamic State Data (DSD) is being transferred from primary to secondary. |
| | | | SWITCHOVER (6) - LIOM has requested the RM to initiate C200 switchover. |
| **Default** | DISABLED (0) | **Configuration Load** | No |
| **Access Lock** | View Only | **Residence** | LIOM |
| **Related Parameters** | INDSYNCCMD | **Checkpoint** | No |

**Remarks:** Indirect synchronization is a multi-stage process, which requires several steps of interaction with the Controller Migration Wizard. A transition in INDRCTSYNC results in the generation of a system event notification.

## 3.9.22  INDSYNCCMD

| **Specific to Block(s)** | LIOM | **Description** | Indirect Synchronization Command - Command is written by the On-Process Migration (OPM) User Interface (UI) to control specific phases of the indirect synchronization process. |
|---|---|---|---|

| Data Type | Enumeration | Range | NONE (0) |
|---|---|---|---|
| | | | ENABLE (1) - Begin a new On Process Migration session. Results in the transition of INDRCTSYNC out of the initial state of DISABLED, and causes the primary LIOM to disable configuration and snapshot restore but to keep processing control. |
| | | | SYNCSWITCH (2) - Following restore of snapshot to the secondary LIOM, this starts the final sequencing of indirect synchronization and leads to redundant controller switchover. |
| | | | ABORT (3) - Terminate current On Process Migration session. The stages of indirect synchronization are covered by time-out monitoring so that if the UI application dies or if communication is interrupted, LIOM can terminate activity on its own and revert to a safe quiescent state. ABORT is provided so that a UI application can terminate indirect synchronization without waiting for timeout. |
| Default | None (0) | Configuration Load | No |
| Access Lock | Intimate User | Residence | LIOM |
| Related Parameters | INDRCTSYNC | Checkpoint | No |

**Remarks:** INDSYNCMD is written by the Controller Migration Wizard to control specific phases of the indirect synchronization process. Note that INDSYNCCMD has edge trigger semantics and always returns NONE when read

## 3.9.23  INITCONNECTD [1..3]

| Specific to Block(s) | DEVCTL | Description | Initialization Connection Flag |
|---|---|---|---|
| Data Type | Boolean | Range | Off (0) |
| | | | On (1) |
| Default | Off (0) | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | BACKCALCIN [1..3] | Checkpoint | Yes (for OCD). |

**Remarks:** INITCONNECTD[i] is automatically set to ON (1) by the function block (on the Control Module's EXECSTATE transition to ACTIVE) if the BACKCALCIN[i] is connected to a BACKCALCOUT structure.

## 3.9.24  INITMAN

| Specific to Block(s) | DEVCTL | Description | Initialization Manual Flag |
|---|---|---|---|
| Data Type | Boolean | Range | Off (0) On (1) |
| Default | Off (0) | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | GOP, GPV, INITOPAFTLD INITOPOPT NUMDOUTS, OP, PV, SI | Checkpoint | Yes (for OCD). |

**Remarks:** This parameter is illegal if NUMDOUTS = 0.

## 3.9.25  INITOPAFTLD

| Specific to Block(s) | DEVCTL | Description | OP and DO Initialization after Load |
|---|---|---|---|
| Data Type | Enumeration INITSTATE | Range | DEFAULT, STATE2 |
| Default | DEFAULT | Configuration Load | Yes |
| Access Lock | Application Developer | Residence | EE |
| Related Parameters | DO GOP OP OPDOMAP NUMDOUTS | | |

**Remarks**: This parameter is illegal if NUMDOUTS = 0.

## 3.9.26  INITOPOPT

| Specific to Block(s) | DEVCTL | Description | Output (OP) Initialization Option |
|---|---|---|---|
| Data Type | Enumeration INITOPOPT | Range | NORMALOPOPT, HOLDOPOPT, SAFEOPT |
| Default | NORMALOPOPT | Configuration Load | Yes |
| Access Lock | Engineer | Residence | EE |

| Related Parameters | OP | Checkpoint | Yes (for OCD). |
|---|---|---|---|
| | GOP | | |
| | INITMAN | | |
| | NUMDOUTS | | |

**Remarks**: This parameter is illegal if NUMDOUTS = 0.

## 3.9.27  INITREQ

| Specific to Block(s) | AOC, DOC | Description | Initialization Request Flags - Used by a function block; it requests a Primary to initialize. There is one flag for each Primary. |
|---|---|---|---|
| Data Type | Boolean | Range | Off (0): | Full output path is normal. |
| | | | On (1): | Output path has been broken and needs to be back initialized. |
| Default | Off (0) | Configuration Load | No | |
| Access Lock | View Only | Residence | EE | |
| Related Parameters | INITVAL (AOC Only) | | | |

## 3.9.28  INITREQ[0..2]

| Specific to Block(s) | DEVCTL | Description | Initialization Request Flag |
|---|---|---|---|
| Data Type | Boolean | Range | Off (0) |
| | | | On (1) |
| Default | Off (0) | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | GOP, | Checkpoint | Yes (for OCD). |
| | OP. | | |

**Remarks**: OFF indicates that the block can act on a command to that state (index 0 corresponds to state 0, index 1 to state 1, and index 2 to state 2).

## 3.9.29  INITREQLATCH

| Specific to Block(s) | AOC, DOC | Description | Initialization Request Latch |
|---|---|---|---|
| Data Type | Boolean | Range | Off (0) |
| | | | On (1) |
| Default | Off (0) | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | | | |

### 3.9.30  INITVAL

| | | | |
|---|---|---|---|
| **Specific to Block(s)** | AOC | **Description** | Initialization Request Value |
| **Data Type** | 64-bit real value | **Range** | 0-100% |
| **Default** | 0.0% | **Configuration Load** | No |
| **Access Lock** | View Only | **Residence** | EE |
| **Related Parameters** | | | |

### 3.9.31  INPTINVSTS[1..2]

| | | | |
|---|---|---|---|
| **Specific to Block(s)** | LCSSEL | **Description** | Input Inversion Status |
| **Data Type** | Boolean | **Range** | Off (0) On (1) |
| **Default** | Off (0) | **Configuration Load** | Yes |
| **Access Lock** | Engineer | **Residence** | EE |
| **Related Parameters** | | | |

### 3.9.32  INPTINVSTS[1..8]

| | | | |
|---|---|---|---|
| **Specific to Block(s)** | AND, OR, XOR | **Description** | Input Inversion Status |
| **Data Type** | Boolean | **Range** | Off (0) On (1) |
| **Default** | Off (0) | **Configuration Load** | Yes |
| **Access Lock** | Engineer | **Residence** | EE |
| **Related Parameters** | NUMOFINPUTS | **Checkpoint** | Yes (for OCD). |

**Remarks**: When the check box is ticked the input is inverted before processing.

### 3.9.33  INPUTCHGDB

| | | | |
|---|---|---|---|
| **Specific to Block(s)** | PUSH | **Description** | Input change deadband |
| **Data Type** | Real | **Range** | Non-zero positive number |
| **Default** | 0.001 | **Configuration Load** | Yes |
| **Access Lock** | Engineer | **Residence** | EE |
| **Related Parameters** | | **Checkpoint** | Yes (for OCD) |

**Remarks**: Change in the input value has to be more than the INPUTCHGDB for that value to be stored to destination.

## 3.9.34 INPUTFMT

| Specific to Block(s) | AEM | Description | Indicates the input bit format set for the module. |
|---|---|---|---|
| Data Type | Enumeration | Range | Natural Binary, Grey Code, BCD |
| Default | Natural Binary | Configuration Load | Yes |
| Access Lock | Application Developer | Residence | EE |
| Related Parameters | | | |

## 3.9.35 INSBLOCK[1..10]

| Specific to Block(s) | DATAACQ | Description | Insert Block - Identifies name of CAB instance associated with insertion type. |
|---|---|---|---|
| Data Type | Blockid | Range | |
| Default | Null | Configuration Load | Yes |
| Access Lock | Application Developer | Residence | CEE |

## 3.9.36 INSERTSTS

| Specific to Block(s) | DATAACQ | Description | Insertion Status |
|---|---|---|---|
| Data Type | ENUM | Range | Unloaded(0) Normal(1) Exception(2) Termination(3) Dormant(4) Notsupported(5) |
| Default | Normal | Configuration Load | No |
| Access Lock | View only | Residence | CEE |
| Checkpoint | Yes (for OCD) | | |

## 3.9.37 INSFAILFL

| Specific to Block(s) | DATAACQ | Description | Insertion Fail Flag - Shows status of insertion failure. |
|---|---|---|---|
| Data Type | Boolean | Range | Off, On |
| Default | Off | Configuration Load | No |
| Access Lock | View only | Residence | CEE |
| Checkpoint | Yes (for OCD) | | |

**Remarks**: Insertion fail alarm is generated by the calling block.

## 3.9.38 INSTYPE

| Specific to Block(s) | DATAACQ | Description | Insertion Type |
|---|---|---|---|
| Data Type | ENUM | Range | PV_Alg(0) |
| | | | Post_Pvchar(1) |
| | | | Post_Clampfilt(2) |
| | | | Post_PVsrc(3) |
| | | | Post_Alarmproc(4) |
| Default | PV_Alg | Configuration Load | Yes |
| Access Lock | Application Developer | Residence | CEE |

## 3.9.39 IOCNUMBER

| Specific to Block(s) | All IO Channels | Description | This indicates the channel number |
|---|---|---|---|
| Data Type | 32-Bit Integer | Range | -2147483648 to 2147483647 |
| Default | -1 | Configuration Load | Yes |
| Access Lock | Application Developer | Residence | EE |
| Related Parameters | | Checkpoint | Yes (for OCD) |

## 3.9.40 IOCONNSTATUS

This parameter is used to show the IO Connection Status.

| Specific to Block(s) | LIOM IOM | Description | I/O Connection Status - Displays the status of the connection between the Controller and the I/O Module. If the connection is not established, the reason for the connection failure is displayed. |
|---|---|---|---|
| Data Type | Enum IOCONNSTATUS | Range | (0) Bad Schedule |
| | | | (1) Communications Error |
| | | | (2) Configuration Error |
| | | | (3) Connected |
| | | | (4) Connection in Use |
| | | | (5) I/O Module Not Found |
| | | | (6) No Configuration |
| | | | (7) No Keeper |
| | | | (8) No Schedule |
| | | | (9) Not Connected |
| | | | (10) Wrong Module |
| Default | (9) Not Connected | Configuration Load | No Load |

| Access Lock | View Only | Residence | EE |
|---|---|---|---|
| Related Parameters | | Configured on DeviceNet | No |

## 3.9.41  IOMTYPE

| Specific to Block(s) | All IOM function blocks | Description | This non-configurable parameter is a description of the respective IO module type. |
|---|---|---|---|
| Data Type | String | Range | Length: 64 characters |
| Default | Defined appropriately on each I/O module type. See Note below. | Configuration Load | Not configurable, but loaded to SR |
| Access Lock | View Only | Residence | SR |
| Related Parameters | | | |

**Remarks**: Note that there is a standard format for IOMTYPE descriptor strings:

Module type, number of channels, electrical characteristics, and auxiliary descriptor.

For example: Analog Output, 6 ch, 4-20 mA, Isolated

## 3.9.42  IPDRFLAG

This parameter indicates if the IPDR has been received for that link. If IPDR has been received, then the parameter is set to ON, else it is set to OFF.

| Specific to Block(s) | SLINK FB | Description | IPDR Bit |
|---|---|---|---|
| Data Type | Boolean | Range | Off<br>On |
| Default | Off | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | | | |

For additional information on IPDR, please refer *Honeywell LCS621 IO Integration Guide*.

## 3.9.43  IPEERCONNERRCODE[1…N]

| Specific to Block(s) | EE, LIOM | Description | Peer Initiator Connection Error Code - Indicates the ICP/ASA error returned on an open connection attempt. |
|---|---|---|---|
| Data Type | 32-Bit Integer | Range | |
| Access Lock | View Only | Residence | EE |
| Related Parameters | | | |

## 3.9.44 IPEERCONNERRINFO[1…N]

| Specific to Block(s) | EE | Description | Peer Initiator Connection Extended Error Information - Indicates the ICP/ASA extended error information returned on an open connection attempt. |
|---|---|---|---|
| Data Type | 32-Bit Integer | **Range** | |
| Default | 0 | **Configuration Load** | No |
| Access Lock | View Only | **Residence** | EE |
| Related Parameters | | | |

## 3.9.45 IPEERCONNSTS[1…N]

| Specific to Block(s) | EE | Description | Peer Initiator Connection Status - Indicates the current ICOA connection status. |
|---|---|---|---|
| Type | Enumeration | **Range** | Open |
| | | | No State |
| Default | No State | **Configuration Load** | No |
| Access Lock | View Only | **Residence** | EE |
| Related Parameters | | | |

## 3.9.46 IPEERNAME[1..IPEERCONNMAX]

| Specific to Block(s) | EE | Description | Initiator Peer Name - The name of the target CPM, ACE, block. |
|---|---|---|---|
| Data Type | EntityID | **Range** | |
| Default | Null | **Configuration Load** | No |
| Access Lock | View Only | **Residence** | EE |
| Related Parameters | | | |

## 3.9.47 IPEERPATH[1..IPEERCONNMAX]

| Specific to Block(s) | EE | Description | Initiator Peer Path - The peer initiator's Automation System Architecture (ASA) path. |
|---|---|---|---|
| Data Type | String | **Range** | 32 characters for LIOM or CPM.<br>512 characters for ACE. |
| Default | Null | **Configuration Load** | No |
| Access Lock | View Only | **Residence** | EE |
| Related Parameters | | | |

## 3.9.48  ISSELECTED[1..16]

| Specific to Block(s) | UAIM | Description | Select |
|---|---|---|---|
| Data Type | BOOLEAN | Range | TRUE<br>FALSE |
| Default | FALSE | Configuration Load | Yes |
| Access Lock | Engineer | Residence | EE |
| Related Parameters | | | |

**Remarks**: If a channel is selected, the UAIM scans the input based on the scan time configured for the channel.

## 3.9.49  ISSELECTED[1..8]

This parameter specifies the selected channel for a read operation or configuration.

| Specific to Block(s) | RTDM | Description | Select |
|---|---|---|---|
| Data Type | BOOLEAN | Range | TRUE<br>FALSE |
| Default | FALSE | Configuration Load | Yes |
| Access Lock | Engineer | Residence | EE |
| Related Parameters | | | |

# 3.10 K

This parameter indicates the position of the bit into which the value has to be written.

| Specific to Block(s) | BITRD, BITWR | Description | Bit position |
|---|---|---|---|
| Data Type | 16-Bit Unsigned Integer | Range | 0 - 15 |
| Default | 0 | Configuration Load | Yes |
| Access Lock | Engineer | Residence | EE |
| Related Parameters | KSP (BITWR Only) | | |

| Specific to Block(s) | LCSSEQUENCER | Description | |
|---|---|---|---|
| Data Type | 32-Bit Signed Integer | Range | 0 - 127 |
| Default | 0 | Configuration Load | Yes |
| Access Lock | Engineer | Residence | EE |
| Related Parameters | | | |

**Remarks**:

| If... | Then... |
|---|---|
| K = 0 | OUT = IN[1] |
| K = 1 | OUT = IN[2] |
| K = n | OUT = IN[n+1] |

| Specific to Block(s) | LCSCOUNTER | Description | Preload value |
|---|---|---|---|
| Data Type | 32-Bit Integer | Range | -2147483648 to 2147483648 |
| Default | 0 | Configuration Load | Yes |
| Access Lock | Engineer | Residence | EE |
| Related Parameters | RESETLO | Checkpoint | Yes (for OCD). |

**Remarks**: When the RESETLO is false, the counter is reset to the value connected to the parameter (PV = K).

| Specific to Block(s) | LCSSELECT, LCSSEL | Description | K selector |
|---|---|---|---|
| Data Type | Boolean | Range | ON OFF |
| Default | OFF | Configuration Load | Yes |
| Access Lock | Engineer | Residence | EE |
| Related Parameters | | | |

**Remarks:** When this input is ON then IN[2] is passed on to the output, otherwise IN[1] is passed on to the output.

## 3.10.1 KSP

This parameter indicates the Boolean value to be written into the bit based on the value of K.

| Specific to Block(s) | BITWR | Description | Input value |
|---|---|---|---|
| Data Type | Boolean | Range | TRUE |
| | | | FALSE |
| Default | FALSE | Configuration Load | Yes |
| Access Lock | Engineer | Residence | EE |
| Related Parameters | K | | |

# 3.11 -L-

**Related topics**

## 3.11.1 LASTGOODPV

| **Specific to Block(s)** | DATAACQ | **Description** | Last good Process Variable (PV) value |
|---|---|---|---|
| **Data Type** | 64-Bit Real Number | **Range** | N/A |
| **Default** | NaN | **Configuration Load** | No |
| **Access Lock** | View Only | **Residence** | EE |
| **Related Parameters** | PV, PVSTS | **Checkpoint** | Yes (for OCD) |

## 3.11.2 LASTGOPREQ

| **Specific to Block(s)** | DEVCTL | **Description** | Last Generic Requested Output Value (GOPREQ) while ControlModule.SMCSTATE is Running |
|---|---|---|---|
| **Data Type** | Enumeration GENSTATE | **Range** | Null (0) S0 (1) S1 (2) S2 (3) |
| **Default** | Null (0) | **Configuration Load** | No |
| **Access Lock** | Other Function Block | **Residence** | EE |

| Related Parameters | GOPREQ | Checkpoint | Yes (for OCD). |
|---|---|---|---|
| | LASTOPMNAME | | |
| | LASTOPREQ | | |
| | LASTREQFL | | |
| | NUMSTATES | | |
| | OPREQ | | |
| | RESTARTOPT | | |
| | SCMOPT | | |
| | SCMSTATE | | |
| | STATETEXT [0..6] | | |

**Remarks:**S2 is illegal if NUMSTATES = 2. Illegal if ControlModule.SCMOPT = None.

## 3.11.3  LASTOPMNAME

| Specific to Block(s) | LIOM (Secondary) | Description | Last OPM Name - Name of last block to be on-process migrated. |
|---|---|---|---|
| Data Type | BLOCKID | Range | N/A |
| Default | N/A | Configuration Load | No |
| Access Lock | View Only | Residence | LIOM |
| Related Parameters | LIOM | Checkpoint | No |

**Remarks:**Used to isolate the name of the first block encountered that has detected a controller On-Process Migration error. Parameter only appears on configuration form for secondary LIOM.

## 3.11.4  LASTOPREQ

| Specific to Block(s) | DEVCTL | Description | Last OPREQ (Output Request) while SCM was running. |
|---|---|---|---|
| Data Type | String | Range | Length: 12 characters |
| Default | STATETEXT[0] | Configuration Load | No |
| Access Lock | View only | Residence | EE |
| Related Parameters | GOPREQ, | Checkpoint | Yes (for OCD). |
| | LASTGOPREQ, | | |
| | LASTREQFL, | | |
| | NUMSTATES, | | |
| | OPREQ, | | |
| | RESTARTOPT, | | |
| | SCMOPT, | | |
| | SCMSTATE, | | |
| | STATETEXT[0..6] | | |

**Remarks**:

- LASTOPREQ is a String set equal to STATETEXT (GOPREQ value while Running).
- STATETEXT[6] ['State2'] is illegal if NUMSTATES = 2.
- Illegal if ControlModule.SCMOPT = None.

## 3.11.5  LASTOPTYPE

| Specific to Block(s) | DEVCTL | Description | Last OPTYPE (Output Type) stored when SCM was Running. |
|---|---|---|---|
| Data Type | Enumeration OPTYPE | Range | Null (0)<br><br>Set (1)<br><br>NotStored (2)<br><br>Default (3) |
| Default | Null (0) | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | LASTGOPREQ<br>LASTOPMNAME<br>LASTOPREQ<br>LASTREQFL<br>OPTYPE<br>RESTARTOPT<br>SCMOPT<br>SCMSTATE | Checkpoint | Yes (for OCD). |

**Remarks**: Illegal if ControlModule.SCMOPT = None.

## 3.11.6  LASTREQFL

| Specific to Block(s) | DEVCTL | Description | Last Requested Parameters Flag |
|---|---|---|---|
| Data Type | Boolean | Range | Off (0): Don't show Last Requested Variables.<br><br>On (1): Display Last Requested Variables. |
| Default | Off (0) | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | LASTOPMNAME<br>LASTOPREQ<br>RESTARTOPT<br>SCMASTEP [1..10]<br>SCMMODE<br>SCMOPT<br>SCMSTATE | Checkpoint | Yes (for OCD). |

**Remarks**: Illegal if ControlModule.SCMOPT = None.

## 3.11.7  LASTSTEP

| Specific to Block(s) | DEVCTL | Description | Last ASTEPID while SCM was Running the Last Active Step when the monitored SCM was in Running State. |
|---|---|---|---|
| **Data Type** | Integer | **Range** | N/A |
| **Default** | 0 | **Configuration Load** | No |
| **Access Lock** | View Only | **Residence** | EE |
| **Related Parameters** | LASTOPMNAME, LASTOPREQ, LASTOPTYPE, NUM, RESTARTOPT, SCMASTEP[1..10], SCMMODE, SCMOPT, SCMSTATE | **Checkpoint** | Yes (for OCD). |

**Remarks**: The value of this parameter is illegal if ControlModule.SCMOPT = None.

## 3.11.8  LASTTIMESAVED

This displays the date and time when the last Save to Flash operation was performed.

| Specific to Block(s) | LIOM FB | Description | Last Time Saved |
|---|---|---|---|
| **Data Type** | UINT64 | **Range** | NA |
| **Default** | 1/1/1972 12:00:00 AM | **Configuration Load** | No |
| **Access Lock** | View Only | **Residence** | LIOM (Primary, in case of a redundant configuration). |
| **Related Parameters** | | | |

## 3.11.9  LNKSHUTDWNCAUSE

| Specific to Block(s) | SLINK FB | Description | Cause for Link Shutdown |
|---|---|---|---|
| **Data Type** | Enum | **Range** | Not Applicable (0) SIOM Offline (1) Other link ceased (2) Message retries exceeded (3) |
| **Default** | Not Applicable | **Configuration Load** | No |
| **Access Lock** | View Only | **Residence** | EE |
| **Related Parameters** | | | |

## 3.11.10 LOADOFFSETFL

When this parameter is set to ON, the offset value can be loaded to the respective accumulators.

Note: Pulse this output on, then off, to prevent reloading the offset values inadvertently. To do so, control the Load Offset output with transitional contacts.

The Load Offset output must follow the preset value PUSHed to the 621-0019R (Pulse Quadrature Input Module, 3 pt) . If a channel's Load Offset output is left on, any new offset value PUSHed to the channel will be loaded as the new accumulator value. Counting is inhibited when this output is on because the accumulator is overwritten by the offset value.

| Specific to Block(s) | LCSPQICHANNEL | Description | Load Offset Flag |
|---|---|---|---|
| Data Type | Boolean | Range | Off (0) On (1) |
| Default | Off (0) | Configuration Load | Yes |
| Access Lock | Engineer | Residence | EE |
| Related Parameters | | | |

## 3.11.11 LOCALMAN

| Specific to Block(s) | DEVCTL | Description | Local Manual Input. |
|---|---|---|---|
| Data Type | Boolean | Range | Off (0) On (1) |
| Default | Off (0) | Configuration Load | No |
| Access Lock | DEVCTL: Other Function Block Pulse Count, Pulse Length: Program | Residence | EE |
| Related Parameters | GOP GPV NUMDINPTS NUMDOUTS OP PV | Checkpoint | Yes (for OCD). |

**Remarks**: Illegal if NUMDOUTS = 0 or NUMDINPTS = 0.

## 3.11.12 LOCUTOFF

| Specific to Block(s) | DATAACQ | Description | Low Signal Cutoff - Evaluates PVAUTO. |
|---|---|---|---|
| Data Type | 64-Bit Real Number | Range | PVEULO to PVEUHI, NaN, Greater-than or equal-to 0. |
| Default | NaN | Configuration Load | Yes |
| Access Lock | Engineer/Application developer | Residence | EE |

| Related Parameters | PVEUHI, PVEULO, PVCHAR | Checkpoint | Yes (for OCD) |
|---|---|---|---|

**Remarks**: When LOCUTOFF is:

- NaN: no action
- Non-Nan: when PVAUTO < LOCUTOFF, PVAUTO is set to PVEULO.

Store to this parameter requires CM to be inactive or CEE in IDLE. LOCUTOFF is not applicable if PVCHAR is None.

## 3.11.13  LSCYCLEOVRN [0..40]

| Specific to Block(s) | EE | Description | Count of Cycle Overruns in Last Hour |
|---|---|---|---|
| Data Type | 16-Bit Integer | Range | 0 to 32,767 |
| Default | 0 | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | CRCYCLEOVRN | | |

**Remarks**: Each element gives a count of cycle overruns that have occurred during the previous hour. Elements 0..39 give the count for the corresponding cycle. Element 40 gives the total count over all cycles. Associated elements are copied from CRCYCLEOVRN[0..40] once an hour. Copy occurs at the same time that CRCYCLEOVRN[0..40] is reset. It is not synchronized with wall clock time.

# 3.12  -M-

**Related topics**

## 3.12.1  MAINTOPT

| Specific to Block(s) | DEVCTL | Description | Maintenance Statistics Option |
|---|---|---|---|
| Data Type | Boolean | Range | Off (0): Maintenance Statistics not enabled. On (1): Maintenance Statistics enabled. |
| Default | Off (0) | Configuration Load | Yes |
| Access Lock | Application Developer | Residence | EE |
| Related Parameters | MAXTIME [0..2] MAXTRANS [0..2] NUMSIOVRD RESETFLLO STATETIME [0..2] | Checkpoint | Yes (for OCD). |

## 3.12.2 MANUALBIAS[1..8]

| Specific to Block(s) | RTDM | Description | Manual Bias |
|---|---|---|---|
| Data Type | REAL | Range | Varies based on RTD Alpha and Type |
| Default | 0 | Configuration Load | Yes |
| Access Lock | Engineer | Residence | EE |
| Related Parameters | | | |

**Remarks**: A shift in the value provided by RTD can be corrected using MANUALBIAS. For more details, refer Temperature Detector Module User Manual.

## 3.12.3 MANUALBIAS[1..16]

This parameter is used to enter the Manual Bias value.

| Specific to Block(s) | UAIM | Description | Manual Bias |
|---|---|---|---|
| Data Type | Real | Range | Based on other selections like characterization, signal range etc |
| Default | 0 | Configuration Load | Yes |
| Access Lock | Engineer | Residence | EE |
| Related Parameters | | | |

**Remarks**: When a field device is not calibrated for zero, you can use manual bias to compensate for the incorrect input. Manual bias shifts the entire input range, but it responds differently to each input type. For more details, refer UAIM User Guide.

## 3.12.4 MAXBLKTYPES

| Specific to Block(s) | EE | Description | Maximum number of block types that can be supported in the Execution Environment, including those that are part of Control Component Libraries. |
|---|---|---|---|
| Data Type | 32-Bit Integer | Range | 0 to 4,258,848 (block types) |
| Default | 0 | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | | | |

## 3.12.5 MAXTIME [0..2]

| Specific to Block(s) | DEVCTL | Description | Maximum Duration per State |
|---|---|---|---|
| Data Type | 64-Bit Real Number | Range | 0.0 to 96000.0 hours (4000.0 days) |

| Default | 0.0 | Configuration Load | Yes |
|---|---|---|---|
| Access Lock | Engineer | Residence | EE |
| Related Parameters | MAINTIME<br>NUMSTATES | | |

**Remarks**: MAXTIME[2] is illegal if NUMSTATES = 2.

## 3.12.6  MAXTRANS [0..2]

| Specific to Block(s) | DEVCTL | Description | Maximum Transitions per State. |
|---|---|---|---|
| Data Type | 64-Bit Real Number | Range | 0.0 to Maximum Real Number |
| Default | 0.0 | Configuration Load | Yes |
| Access Lock | Engineer | Residence | EE |
| Related Parameters | MAINTOPT<br>NUMSTATES | Checkpoint | Yes (for OCD). |

**Remarks**: MAXTRANS[2] is illegal if NUMSTATES = 2.

## 3.12.7  MINUTE

Realtime clock data can be pulled from the module by using the ASCIIREADCLOCK function block. The MINUTE parameter fetches the value of the Minute from the clock time.

| Specific to Block(s) | ASCIIREADCLOCK | Description | Fetches the value of the minute (HH:**MM**:SS) of the ASCII real-time flow |
|---|---|---|---|
| Data Type | Unsigned Integer - 16 bits | Range | 0-65535 |
| Default | 0 | Configuration Load | No |
| Access Lock | View Only | Residence | LIOM |
| Related Parameters | | Checkpoint | Yes (for OCD). |

Realtime clock data can be pushed to the ASCII Control Module using the ASCIISETDTPTR function block. The MINUTE parameter sets the value of the Minute to the clock time.

| Specific to Block(s) | ASCIISETDTPTR | Description | Sets the value of the minute (HH:**MM**:SS) of the ASCII real-time flow. |
|---|---|---|---|
| Data Type | Unsigned Integer - 16 bits | Range | 0-59 |
| Default | 0 | Configuration Load | Yes |
| Access Lock | Engineer | Residence | CEE |
| Related Parameters | | Checkpoint | Yes (for OCD). |

## 3.12.8  MODE

| Specific to Block(s) | DEVCTL | Description | Mode |
|---|---|---|---|

| Data Type | Enumeration MODE | Range | Manual |
|---|---|---|---|
| Default | Manual | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | | Checkpoint | Yes (for OCD). |

**Remarks**: Access is illegal if NUMDOUTS = 0. The value of this parameter is fixed Manual to be compatible with other function blocks.

## 3.12.9 MODEATTR

Mode Attribute determines where state commands to the Device Control Function Blocks may originate, that is, who may set OP.

| Specific to Block(s) | DEVCTL | Description | Mode Attribute |
|---|---|---|---|
| Data Type | Enumeration MODEATTR | Range | Refer Range list |
| Default | Operator(0) | Configuration Load | Yes |
| Access Lock | Operator | Residence | EE |
| Related Parameters | CONTROLREQ, GOP, OPREQ, MODETRACK, NUMDOUTS, OP, OPREQ, REDDATAA, REDDATAB, REDTAG | Checkpoint | Yes (for OCD). |

**Range**:

- None (0)
- Operator (1): Only the operator may command the output state.
- Program (2): Only other Function Blocks (e.g. Logic FBs, SCM programs) may command the output state by setting OP or OPCMD[i].
- Normal (3): When Normal is stored to MODEATTR, the parameter is set to the present value of NORMMODEATTR

**Remarks**: Access is illegal, if NUMDOUTS = 0. MODEATTR may not be changed if REDTAG is ON.

## 3.12.10 MODEATTRFL.NORM

| Specific to Block(s) | DEVCTL | Description | Normal Mode Attribute Indicator Flag |
|---|---|---|---|
| Data Type | Boolean | Range | Off (0): Mode attribute is not normal<br><br>On (1): Mode attribute is normal |
| Default | Off(0) | Configuration Load | No |

| Access Lock | View only | Residence | EE |
|---|---|---|---|
| Related Parameters | MODEATTR, MODEATTRFL.OPER, MODEATTRFL.PROG | Checkpoint | Yes (for OCD). |

**Remarks**: Value is ON if MODEATTR = NORMMODEATTR

## 3.12.11 MODEATTRFL.OPER

| Specific to Block(s) | DEVCTL | Description | Operator Mode Attribute Indicator Flag |
|---|---|---|---|
| Data Type | Boolean | Range | Off (0): Mode attribute is not operator<br><br>On (1): Mode attribute is operator |
| Default | Off (0) | Configuration Load | No |
| Access Lock | View only | Residence | EE |
| Related Parameters | MODEATTR, MODEATTRFL.NORM, MODEATTRFL.PROG | Checkpoint | Yes (for OCD). |

**Remarks**: Value is ON if MODEATTR = Operator.

## 3.12.12 MODEATTRFL.PROG

| Specific to Block(s) | DEVCTL | Description | Program Mode Attribute Indicator Flag |
|---|---|---|---|
| Data Type | Boolean | Range | Off (0): Mode attribute is not program<br><br>On (1): Mode attribute is program |
| Default | Off(0) | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | MODEATTR, MODEATTRFL.OPER, MODEATTRFL.NORM | Checkpoint | Yes (for OCD). |

**Remarks:** Value is ON if MODEATTR = Program.

## 3.12.13  MODETRACK

| Specific to Block(s) | DEVCTL | Description | Sequential Control Module (SCM) Mode Tracking Option - A configurable parameter that defines how the regulatory control or device control FB sets the state of the MODEATTR based upon the MODE of the SCM. |
|---|---|---|---|
| Data Type | Enumeration MODETRACK | Range | None (0)<br><br>OneShot (1)<br><br>SemiCont (2)<br><br>ContRtn (3)<br><br>Cont (4) |
| Default | OneShot (1) | Configuration Load | Yes |
| Access Lock | Engineer | Residence | EE |
| Related Parameters | MODEATTR<br><br>SCMMODE<br><br>SCMOPT<br><br>SCMSTATE | Checkpoint | Yes (for OCD). |

**Remarks**: It is invalid if ControlModule.SCMOPT = None.

## 3.12.14  MODISREDUN

| Specific to Block(s) | LIOM | Description | Module is redundant - Defines whether the module is redundant or not. |
|---|---|---|---|
| Data Type | Boolean | Range | Off (0)<br><br>On (1) |
| Default | Off (0) | Configuration Load | Yes |
| Access Lock | Application Developer | Residence | SR |
| Related Parameters | | | |

**Remark:** A selected check box indicates that the module is redundant.

## 3.12.15  MODULETYPE

This parameter is used to show the Module Type configured for respective slots in the SIOM by the DIP sub-tab setting.

| Specific to Block(s) | LIOM, SLINK | Description | Module Type |
|---|---|---|---|

| Data Type | ENUM SLINK_MODTYPE | Range | Analog |
|---|---|---|---|
| | | | Digital |
| | | | Not Present |
| Default | N/A | Configuration Load | No Load |
| Access Lock | View Only | Residence | EE |
| Related Parameters | | | |

## 3.12.16 MODCOMSTATE

This displays the status of the module during communication. Some examples of the values of this parameter are: None, Timed Out, Waiting, etc.

| Specific to Block(s) | ASCII Control Module | Description | Module Communication Status |
|---|---|---|---|
| Data Type | Enumeration | Range | None, |
| | | | ModuleNotReady, |
| | | | Requested, |
| | | | Waiting, |
| | | | ResponseArrived, |
| | | | TimedOut, |
| | | | Succeeded , |
| | | | BadIOMConnection* |
| | | | * This is channel specific. |
| | | | BadFnCall |
| | | | BadSignatureId, |
| | | | CustomProgram, |
| | | | Initializing |
| Default | None | Configuration Load | No |
| Access Lock | View Only | Residence | LIOM |
| Related Parameters | | Checkpoint | Yes (For OCD) |

## 3.12.17 MODLATCH

This parameter stores the module status during communication between the channel and the module. If the communication is in process, the value of this parameter will be ON. If not, the value will be OFF. The default value for this parameter is OFF.

| Specific to Block(s) | ASCII Control Module | Description | ASCII Module Latch |
|---|---|---|---|
| | ASCIIREADCLOCK, | | |
| | ASCIISETDTPTR, | | |
| | ASCIIPULL, | | |
| | ASCIIPUSH, | | |
| | ASCIIREADERROR | | |
| | ASCIITMSG | | |

| Data Type | Boolean | Range | Off (0) On (1) |
|---|---|---|---|
| Default | Off (0) | Configuration Load | No |
| Access Lock | View Only | Residence | LIOM |
| Related Parameters | | Checkpoint | No. |

## 3.12.18  MODULEFAULTSTAT

This parameter indicates a module failure. A module fault can be a runtime error or failure to pass the self-diagnostic test. Module Fault does not indicate a cable disconnect error.

| Specific to Block(s) | Pulse Quadrature Input Module | Description | Module Fault Status |
|---|---|---|---|
| Data Type | Boolean | Range | Off (0) On (1) |
| Default | Off (0) | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | | | |

## 3.12.19  MOMSTATE

| Specific to Block(s) | DEVCTL | Description | Momentary Output States |
|---|---|---|---|
| Data Type | Enumeration MOMSTATE | Range | None (0) Mom_1 (1) Mom_0 (2) Mom_2 (3) Mom_1_2 (4) Mom_0_2 (5) Mom_0_1 (6) |
| Default | None (0) | Configuration Load | Yes |
| Access Lock | Engineer | Residence | EE |
| Related Parameters | GOP NUMSTATES OP OPDOMAP [0..3][1..3] SAFEOP | Checkpoint | Yes (for OCD). |

**Remarks:**

- Access is illegal, if NUMDOUTS = 0.
- The function block must be INACTIVE to change MOMSTATE.
- MOMSTATE is inaccessible if REDDATAA, REDDATAB, REDTAG is set.
- MOMSTATE may not be set if SEALOPT is Enabled.
- Mom_1: State1 is momentary; it can only be selected if SAFEOP does not = State1.

- Mom_0: State0 is momentary; it can only be selected if SAFEOP does not = State0.
- Mom_2: State2 is momentary; it can only be selected if NUMSTATES = 3 and SAFEOP does not = State2.
- Mom_1_2: Both State1 and State2 are momentary; they can only be selected if NUMSTATES = 3, and SAFEOP = State0.
- Mom_0_2: Both State0 and State2 are momentary; they can only be selected if NUMSTATES = 3, and SAFEOP = State1.
- Mom_0_1: Both State0 and State1 are momentary; they can only be selected if NUMSTATES = 3, and SAFEOP = State2.

## 3.12.20  MONTH

Realtime clock data can be pulled using the ASCIIREADCLOCK function block. The MONTH parameter fetches the value of the Month from the clock time.

| Specific to Block(s) | ASCIIREADCLOCK | Description | Fetches the value of the month (Example: January) from the ASCII Control Module's real-time flow data. |
|---|---|---|---|
| Data Type | Unsigned Integer - 16 bits. | Range | 0-65535 |
| Default | 0 | Configuration Load | No |
| Access Lock | View Only | Residence | LIOM |
| Related Parameters | | Checkpoint | Yes (for OCD). |

Realtime clock data can be pushed to the ASCII Control Module using the ASCIISETDTPTR function block. The MONTH parameter sets the value of the Month to the clock time.

| Specific to Block(s) | ASCIIsetDTPTR | Description | Sets the value of the month (Example: January) to the ASCII Control Module's real-time flow data. |
|---|---|---|---|
| Data Type | Unsigned Integer - 16 bits. | Range | 1 to 12 |
| Default | 1 | Configuration Load | Yes |
| Access Lock | Engineer | Residence | CEE |
| Related Parameters | | Checkpoint | Yes (for OCD). |

## 3.12.21  MRKRENBLOADOFFSETFL

This parameter is similar to the LOADOFFSETFL. When MRKRENBLOADOFFSETFL is set to ON, the marker signal detector for the respective counter is enabled.

This parameter while ON, enables the MRKRPURSEDET parameter. When this is turned OFF, the MRKRPULSEDET parameter is also set to on.

| Specific to Block(s) | LCSPQICHANNEL | Description | Marker Enable Load Offset |
|---|---|---|---|
| Data Type | Boolean | Range | Off (0) On (1) |
| Default | Off (0) | Configuration Load | Yes |
| Access Lock | Engineer | Residence | |
| Related Parameters | | | |

## 3.12.22  MRKRENBRESETFL

When this flag is set to ON, the marker signal detector (M) for the counter is enabled. Then, on the rising edge of the next marker pulse, the counter is reset to zero and the Overflow and Underflow status bids are turned off. The counter is immediately able to resume counting after it has been reset. This output must be turned off, then on to reset the counter on the marker pulse a second time.

When MRKRENBRESETFL is set to ON, it enables the Marker Pulse Detected also to ON. When MRKRENBRESETFL is set to OFF, the Marker Pulse Detected is also turned OFF.

| Specific to Block(s) | LCSPQICHANNEL | Description | Marker Enable Reset |
|---|---|---|---|
| Data Type | Boolean | Range | Off (0) On (1) |
| Default | Off (0) | Configuration Load | Yes |
| Access Lock | Engineer | Residence | EE |
| Related Parameters | | | |

## 3.12.23  MRKRPULSEDET

This status bit is enabled when the marker pulse is detected and either the MRKRENBRESETFL or the MRKRENBLOADOFFSETFL output is ON. When a channel is disabled by the DIP Switch or either of the two outputs is turned OFF, the status bit is also turned OFF.

| Specific to Block(s) | Pulse Quadrature Input Module | Description | Market Pulse Detected. |
|---|---|---|---|
| Data Type | Boolean | Range | Off (0) On (1) |
| Default | Off (0) | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | | | |

## 3.12.24  MRKRPULSEDET [1..3]

This status parameter is enabled when the marker pulse is detected and either the MRKRENBRESETFL or the MRKRENBLLOADOFFSETFL is ON. When a channel is disabled by the DIP Switch or either of the two outputs is turned OFF, this parameter is also set to OFF. The control program uses this parameter to indicate that the marker pulse has been detected.

| Specific to Block(s) | Pulse Quadrature Module | Description | Marker Pulse Detected |
|---|---|---|---|
| Data Type | Boolean | Range | Off (0) On (1) |
| Default | Off (0) | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | | | |

## 3.12.25  MSG[1..8]

The ASCIITMSG parameter causes the ASCII Control Module to interpret all data pushed to the module as numbers to be transmitted. By giving specific values to this parameter, it is possible to change the data receive and transmit formats, reset the ASCII Control Module, set the ASCII Control Module in the CONFIG mode, put the ASCII Control Module in the RUN mode and transfer the CONFIG status to the data table.

| Specific to Block(s) | ASCIITMSG | Description | Takes the value of the message number to be transmitted as input |
|---|---|---|---|
| Data Type | Unsigned Integer - 16 bits. | Range | 0-63000 |
| Default | 0 | Configuration Load | Yes |
| Access Lock | Program | Residence | CEE |
| Related Parameters | FBEnable CHNLCOMSTAT MODLATCH CHNLCOMFAIL | Checkpoint | Yes (for OCD). |

# 3.13  -N-

**Related topics**

## 3.13.1  NAME

This parameter indicates a unique name that identifies the block in the system. The module name should reflect the type of module being used and its location. This makes tracking easier subsequently when more modules are added to the system. For example, the module name PI_IOM_01 might stand for Pulse Input - Input Output Module - Primary chassis. This name appears on all related system displays and any generated reports.

The following restrictions apply:

*   The following characters are restricted and should not be used:
    *   `` ` ~ ! @ # $ % ^ & * + - = ( ) { } [ ] | \ \ : ; ' < > , . ? / \ " ``
    *   Dots are allowed in parameter naming only.
*   An embedded space or leading space is not allowed.

    *   Spaces are allowed in area naming only.
*   Tabs should not be used.
*   The name should not be null (no characters).
*   One of these characters must be present in a valid name:

    *   ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz
*   The name must be less than the maximum size allowed for a tag name:

    *   16 for composites.
    *   15 for basic blocks.
    *   100 for parameter names.
*   The name must be unique.

| Specific to Block(s) | All function blocks | Description | Module name |
|---|---|---|---|
| Data Type | String | Range | Length: 16 characters |
| Default | N/A | Configuration Load | Yes |
| Access Lock | Application Developer | Residence | SR |
| Related Parameters | | Checkpoint | Yes (for OCD) - for AUXCALC, DEVCTL, DATAACQ, |

## 3.13.2  NETWORKTYPE

| Specific to Block(s) | LIOM | Description | Network Type |
|---|---|---|---|
| Data Type | Enumeration | Range | ControlNet (0) Ethernet (1) |
| Default | ControlNet | Configuration Load | Yes |
| Access Lock | Application Developer | Residence | SR |
| Related Parameters | | | |

### 3.13.3 NFLAG

| Specific to Block(s) | LCSFLAGARRAY | Description | Number of Flag Values - Specifies the number of Boolean values in the array of data from the serial device. |
|---|---|---|---|
| Data Type | 32-Bit Integer | Range | FLAGARRAY: 0 to 64 |
| Default | 1 | Configuration Load | Yes |
| Access Lock | Application Developer | Residence | EE |
| Related Parameters | | | |

### 3.13.4 NIN

| Specific to Block(s) | LCSSEQUENCER | Description | Number of input values |
|---|---|---|---|
| Data Type | 32-Bit Integer | Range | 8-128 |
| Default | 8 | Configuration Load | Yes |
| Access Lock | Application Developer | Residence | EE |
| Related Parameters | OUTPUT | | |

### 3.13.5 NNUMERIC

| Specific to Block(s) | NUMERICARRAY | Description | Number of Numeric Values - Specifies the number of numeric values in the array of data from the serial device. |
|---|---|---|---|
| Data Type | Float64 | Range | 1 to 200 |
| Default | 1 | Configuration Load | Yes |
| Access Lock | Application Developer | Residence | EE |
| Related Parameters | | | |

### 3.13.6 NOOFWIRES[1..8]

| Specific to Block(s) | RTDM | Description | Number of wires |
|---|---|---|---|
| Data Type | ENUM | Range | 2<br>3<br>4 |
| Default | 3 | Configuration Load | Yes |
| Access Lock | Engineer | Residence | EE |
| Related Parameters | | | |

### 3.13.7  NORMAL

Setting NORMAL to None disables the Off-Normal alarm.

| Specific to Block(s) | LCSFLAG | Description | Normal State - Defines the normal state of the LCSFLAG function block. |
|---|---|---|---|
| Data Type | Enumeration STATETEXT, None | Range | StateText (0) StateText (1) None |
| Default | None | Configuration Load | Yes |
| Access Lock | Supervisor Engineer is limited to change to/from None. | Residence | EE |
| Related Parameters | OFFNRMALM.FL PV STATETEXT [0..1] | Checkpoint | Yes (for OCD) |

### 3.13.8  NORMMODE

| Specific to Block(s) | DEVCTL | Description | Normal Mode |
|---|---|---|---|
| Data Type | Enumeration MODE | Range | Manual |
| Default | Manual | Configuration Load | Yes |
| Access Lock | Engineer | Residence | EE |
| Related Parameters | MODE | | |

### 3.13.9  NORMMODEATTR

| Specific to Block(s) | DEVCTL | Description | Normal Mode Attribute |
|---|---|---|---|
| Data Type | Enumeration MODEATTR | Range | None (0) Oper (1) Program (2) |
| Default | None(0) | Configuration Load | Yes |
| Access Lock | Engineer | Residence | CEE |
| Related Parameters | MODEATTR, MODETRACK, NUMDOUTS | Checkpoint | Yes (for OCD). |

**Remarks**: Access illegal if NUMDOUTS=0.

### 3.13.10  NULLPVFL

| Specific to Block(s) | DEVCTL | Description | PV Bad Value Flag |
|---|---|---|---|

| Data Type | Boolean | Range | Off (0) On (1) |
|---|---|---|---|
| Default | Off (0) | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | DIPVMAP [0..15] GPV NUMDINPTS PV | Checkpoint | Yes (for OCD). |

**Remarks**: This is not necessarily the same as the BADPVALM.FL alarm flag.

Access is illegal, if NUMDINPTS = 0.

## 3.13.11 NUMACCRQUAVG

| Specific to Block(s) | EE | Description | Average number of Acyclic peer communication parameter requests per second |
|---|---|---|---|
| Data Type | 64-Bit Real Number | Range | >=0.0 |
| Default | 0 | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | NUMACCRQUMAX STATSRESET | | |

**Remarks:** Rolling average of acyclic parameter request throughput. SCM step outputs are the only block mechanisms to cause acyclic peer-to-peer communication traffic.

## 3.13.12 NUMACCRQUMAX

| Specific to Block(s) | EE | Description | Number of Acyclic parameter Requests per second Maximum. |
|---|---|---|---|
| Data Type | 64-Bit Real Number | Range | >=0.0 |
| Default | N/A | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | NUMACCRQUAVG STATSRESET | | |

**Remarks**: Historical maximum of acyclic parameter requests throughput since last store to STATSRESET. SCM step outputs are the only block mechanisms to cause acyclic peer-to-peer communication traffic.

## 3.13.13 NUMACEINCON

| Specific to Block(s) | EE | Description | Number of ACE Input Connections - Defines number of Application Control Environments (ACEs) for peer targets. |
|---|---|---|---|
| Data Type | 32-Bit Integer | Range | 0 and larger |
| Default | 0 | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | | | |

## 3.13.14 NUMACEOUTCON

| Specific to Block(s) | EE | Description | Number of ACE Output Connections - Defines number of originator Application Control Environments. |
|---|---|---|---|
| Data Type | 32-Bit Integer | Range | 0 and larger |
| Default | 0 | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | | | |

## 3.13.15 NUMBLKTYPES

| Specific to Block(s) | EE | Description | Number of block types defined in the Control Execution Environment. |
|---|---|---|---|
| Data Type | 32-Bit Integer | Range | 0 to 4,258,848 (block types) |
| Default | 0 | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | | | |

**Remarks**: It includes the block types for all the loaded Control Component Libraries (CCLs).

## 3.13.16 NUMCCLRQU

| Specific to Block(s) | EE | Description | Number of Cyclic parameter requests for peer data per second. |
|---|---|---|---|
| Data Type | 64-Bit Real Number | Range | Greater-than or equal-to 0.0 |
| Default | N/A | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | SUBSCPERIOD | | |

**Remarks:** Value of NUMCCLRQU is associated with the currently loaded block configuration and SUBSCPERIOD.

Note that this statistical parameter is not affected by STATSRESET

## 3.13.17  NUMCHAN

This parameter is used to show the Number of Channels configured for respective slot in SIOM using the DIPswitch setting.

| Specific to Block(s) | SLINK | Description | Number of Channels |
|---|---|---|---|
| Data Type | ENUM SLINK_NUMCHAN | Range | 0 |
| | | | 8 |
| | | | 16 |
| | | | 32 |
| Default | N/A | Configuration Load | No Load |
| Access Lock | View Only | Residence | EE |
| Related Parameters | | | |

## 3.13.18  NUMCPMINCON

| Specific to Block(s) | EE | Description | Number of CPM Input Connections - Defines the number of Control Processor Modules (CPMs) for peer targets. |
|---|---|---|---|
| Data Type | 32-Bit Integer | Range | 0 and larger |
| Default | 0 | Configuration Load | No |
| Access Lock | View Only | Residence | |
| Related Parameters | | | |

**Remarks**: For SCE, this parameter defines number of Simulation Control Environments (SCEs) for peer targets.

## 3.13.19  NUMCPMOUTCON

| Specific to Block(s) | EE | Description | Number of CPM Output Connections - Defines number of peer originator Control Processor Modules (CPMs). |
|---|---|---|---|
| Data Type | 32-Bit Integer | Range | 0 and larger |
| Default | 0 | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | | | |

## 3.13.20  NUMDINPUTS

| Specific to Block(s) | DEVCTL | Description | Number of Digital Inputs |
|---|---|---|---|
| Data Type | Integer | Range | 0 to 4 |
| Default | 0 | Configuration Load | No |
| Access Lock | Engineer | Residence | EE |
| Related Parameters | BADPVALM.FL | Checkpoint | Yes (for OCD). |
| | BADPVALM.PR | | |
| | BADPVALM.SV | | |
| | CMDDISALM.FL | | |
| | CMDDISALM.PR | | |
| | CMDDISALM.SV | | |
| | CMDDISALM.TM | | |
| | CMDFALALM.FL | | |
| | CMDFALALM.PR | | |
| | CMDFALALM.SV | | |
| | CMDFALALM.TM | | |
| | DI | | |
| | GPV | | |
| | GPVAUTO | | |
| | INBETFL | | |
| | LOCALMAN | | |
| | NTOTMEMDESC | | |
| | NULLPVFL | | |
| | PV | | |
| | PVAUTO | | |
| | PVFL | | |
| | PVSOURCE | | |
| | PVSRCOPT | | |
| | SEALOPT | | |
| | STATETEXT | | |
| | UNCMDALM.FL | | |
| | UNCMDALM.PR | | |
| | UNCMDALM.SV | | |

**Remarks**: To change the value of this parameter, the function block must be in INACTIVE state.

## 3.13.21  NUMDOUTS

| Specific to Block(s) | DEVCTL | Description | Number of Digital Outputs |
|---|---|---|---|
| Data Type | Integer | Range | 0 to 3 |

| Default | 0 | Configuration Load | No |
|---|---|---|---|
| **Access Lock** | Engineer | **Residence** | EE |

| Related Parameters | BYPASS | Checkpoint | Yes (for OCD). |
|---|---|---|---|
| | CMDDISALM.FL | | |
| | CMDDISALM.PR | | |
| | CMDDISALM.SV | | |
| | CMDDISALM.TM | | |
| | CMDFALALM.FL | | |
| | CMDFALALM.PR | | |
| | CMDFALALM.TM | | |
| | DO | | |
| | GOP | | |
| | GOPFINAL | | |
| | INITMAN | | |
| | INITOPAFTLD | | |
| | INITOPOPT | | |
| | LOCALMAN | | |
| | MODEATTR | | |
| | OI | | |
| | OIALM.FL | | |
| | OIALM.OP | | |
| | OIALM.PR | | |
| | OIALM.SV | | |
| | OP | | |
| | OPDOMAP | | |
| | OPFINAL | | |
| | OROPT | | |
| | PI | | |
| | PO | | |
| | PULSEWIDTH | | |
| | PVSOURCE | | |
| | REDTAG | | |
| | SAFEOP | | |
| | SEALOPT | | |
| | SI | | |
| | SIALM.FL | | |
| | SIALM.OPT | | |
| | SIALM.PR | | |
| | SIALM.SV | | |
| | STATETEXT | | |
| | UNCMDALM.FL | | |
| | UNCMDALM.PR | | |
| | UNCMDALM.SV | | |

**Remarks**: To change the value of this parameter, the function block must be in INACTIVE state.

## 3.13.22 NUMEXCRQUAVG

| Specific to Block(s) | EE | Description | Number of Exchange Request Average - Defines the average exchange request throughput. |
|---|---|---|---|
| Data Type | FLOAT64 | Range | N/A |
| Default | N/A | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | | | |

## 3.13.23 NUMEXCRQUMAX

| Specific to Block(s) | EE | Description | Number of Exchange Requests Maximum - Defines the maximum exchange request throughput. |
|---|---|---|---|
| Data Type | FLOAT64 | Range | N/A |
| Default | N/A | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | | | |

## 3.13.24 NUMEXCRSPAVG

| Specific to Block(s) | EE | Description | Number of Exchange Response Average - Defines the average exchange response throughput. |
|---|---|---|---|
| Data Type | FLOAT64 | Range | N/A |
| Default | N/A | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | | | |

## 3.13.25 NUMEXCRSPMAX

| Specific to Block(s) | EE | Description | Number of Exchange Response Average - Defines the average exchange response throughput. |
|---|---|---|---|
| Data Type | FLOAT64 | Range | N/A |
| Default | N/A | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | | | |

## 3.13.26 NUMFIMINCON

| Specific to Block(s) | EE | Description | Number of FIM Input Connections - Defines number of Fieldbus Interface Modules (FIMs) for peer targets. |
|---|---|---|---|
| Data Type | 32-Bit Integer | Range | 0 and larger |
| Default | 0 | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | | | |

## 3.13.27 NUMFIMOUTCON

| Specific to Block(s) | EE | Description | Number of FIM Output Connections. |
|---|---|---|---|
| Data Type | 32-Bit Integer | Range | 0 and larger |
| Default | 0 | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | | | |

## 3.13.28 NUMFIMOUTCON

| Specific to Block(s) | EE | Description | Number of FIM Output Connections. |
|---|---|---|---|
| Data Type | 32-Bit Integer | Range | 0 and larger |
| Default | 0 | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | | | |

## 3.13.29 NUMINSERT

| Specific to Block(s) | DATAACQ | Description | Number of insertion points |
|---|---|---|---|
| Data Type | 16-Bit Integer | Range | 0 to 10 |
| Default | 0 | Configuration Load | Yes |
| Access Lock | Application Developer | Residence | CEE |
| Related Parameters | INSBLOCK | Checkpoint | Yes (for OCD) |

## 3.13.30 NUMIOLMINCON

| Specific to Block(s) | EE | Description | Number of IOLIM Input Connections - Defines number of I/O Link Interface Modules (IOLIMs) for peer targets. |
|---|---|---|---|
| Data Type | 32-Bit Integer | Range | 0 and larger |
| Default | 0 | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | | | |

## 3.13.31 NUMIOLMOUTCN

| Specific to Block(s) | EE | Description | Number of IOLIM Output Connections - Defines the number of originator I/O Link Interface Modules (IOLIMs). |
|---|---|---|---|
| Data Type | 32-Bit Integer | Range | 0 and larger |
| Default | 0 | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | | | |

## 3.13.32 NUMMSGRETRY

This parameter indicates the number of message retries on the link.

| Specific to Block(s) | SLINK | Description | Number of Message Retries |
|---|---|---|---|
| Data Type | UINT16 | Range | 0-65535 |
| Default | 0 | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | | | |

## 3.13.33 NUMNTFRQUAVG

| Specific to Block(s) | EE | Description | Number of Notification Requests per second Average. |
|---|---|---|---|
| Data Type | 64-Bit Real Number | Range | Greater-than or equal-to 0.0 |
| Default | 0 | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | NUMNTFRQMAX STATSRESET | | |

**Remarks**: Rolling average of notification request throughput.

## 3.13.34  NUMNTFRQUMAX

| Specific to Block(s) | EE | Description | Number of Notification Requests per second-Maximum. |
|---|---|---|---|
| Data Type | 64-Bit Real Number | Range | Greater-than or equal-to 0.0 |
| Default | N/A | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | NUMNTFRQUAVG STATSRESET | | |

**Remarks:** Historical maximum of notification request throughput since last store of STATSRESET.

## 3.13.35  NUMLIOMINCONN

| Specific to Block(s) | EE | Description | Number of ACE Input Connections - Defines number of Application Control Environments (ACEs) for peer targets. |
|---|---|---|---|
| Data Type | 32-Bit Integer | Range | 0 and larger |
| Default | 0 | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | | | |

## 3.13.36  NUMLIOMOUTCONN

| Specific to Block(s) | EE | Description | Number of ACE Output Connections - Defines number of originator Application Control Environments. |
|---|---|---|---|
| Data Type | 32-Bit Integer | Range | 0 and larger |
| Default | 0 | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | | | |

## 3.13.37  NUMOFINPUTS

| Specific to Block(s) | EQ, GE, GT, LE, LT, NE | Description | Number of configured inputs |
|---|---|---|---|
| Data Type | Integer | Range | 1 to 2 |
| Default | 2 | Configuration Load | Yes |
| Access Lock | Engineer | Residence | EE |

| Related Parameters | | Checkpoint | (For OCM) - for EQ, GT, LT, NE, GE, LE |
|---|---|---|---|

**Remarks**: If the number of inputs is selected as 1, the first input accepts inputs and the IN[2] is taken as TP.

## 3.13.38 NUMPARRSPAVG

| Specific to Block(s) | EE | Description | Average Number of Parameter Get / Store Responses per Second. |
|---|---|---|---|
| Data Type | 64-Bit Real Number | Range | >= 0.0 |
| Default | N/A | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | NUMPARRSPMAX STATSRESET | | |

**Remarks**: Gives a running time average of parameter response throughput being serviced by the EE. Units are parameter responses per second. Averaging restarts from the current moment when parameter STATSRESET is stored. Characteristic time constant of the average is 1 minute. Wait 2 - 3 minutes to be sure averaging has fully settled.

## 3.13.39 NUMPARRSPMAX

| Specific to Block(s) | EE | Description | Maximum Number of Parameter Get / Store Responses per Second. |
|---|---|---|---|
| Data Type | 64-Bit Real Number | Range | >= 0.0 |
| Default | N/A | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | NUMPARRSPAVG STATSRESET | | |

**Remarks**: Gives a historical maximum of parameter response throughput being serviced by the EE. Units are parameter responses per second. Search for maximum parameter response restarts from the current moment when parameter STATSRESET is stored.

## 3.13.40 NUMPEERENV

| Specific to Block(s) | EE | Description | Number of Peer Environments - Specifies the number of peer environments that are to have specific subscription periods and store expiration times configured for them. |
|---|---|---|---|
| Data Type | 32-Bit Integer | Range | >= 0.0 |
| Default | 0 | Configuration Load | Yes |
| Access Lock | Engineer | Residence | EE |

| Related Parameters | PEERENV[] | Checkpoint | Yes (for OCD) |
|---|---|---|---|
| | PEERSUBSCPER[] PEERSTRRESP[] | | |
| | STRRESP[] | | |
| | SUBSCPERIOD | | |

**Remarks**: The maximum number of active peer environment for LIOM is five.

## 3.13.41 NUMSCEINCON

| Specific to Block(s) | EE | Description | Number of SCE Input Connections - Defines number of Simulation Control Environments (SCEs) for peer targets. |
|---|---|---|---|
| Data Type | 32-Bit Integer | Range | 0 and larger |
| Default | 0 | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | | | |

## 3.13.42 NUMSCEOUTCON

| Specific to Block(s) | EE | Description | Number of SCE Output Connections - Defines number of originator Simulation Control Environments. |
|---|---|---|---|
| Data Type | 32-Bit Integer | Range | 0 and larger |
| Default | 0 | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | | | |

## 3.13.43 NUMSIGS

| Specific to Block(s) | Most function blocks | Description | Number of Signatures - Lets you select number of electronic signatures to be used. |
|---|---|---|---|
| Data Type | Enumeration | Range | None (0) Single (1) Double 2) |
| Default | None(0) | Configuration Load | Yes |
| Access Lock | Engineer/Application Developer | Residence | SR |
| Related Parameters | CTRLCONFIRM | | |

## 3.13.44 NUMSIOLMINCN

| Specific to Block(s) | EE | Description | Number of SIMIOLIM Input Connections - Defines number of Simulation I/O Link Interface Modules (IOLIMs) for peer targets. |
|---|---|---|---|
| Data Type | 32-Bit Integer | Range | 0 and larger |
| Default | 0 | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | | | |

## 3.13.45 NUMSIOLMOUCN

| Specific to Block(s) | EE | Description | Number of SIMIOLIM Output Connections - Defines the number of originator I/O Link Interface Modules (IOLIMs). |
|---|---|---|---|
| Data Type | 32-Bit Integer | Range | 0 and larger |
| Default | 0 | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | | | |

## 3.13.46 NUMSIOM

This parameter is used to show the number of SIOMs online.

| Specific to Block(s) | SLINK | Description | Number of SIOMs online |
|---|---|---|---|
| Data Type | 16-Bit Integer | Range | 0 to 16 |
| Default | 0 | Configuration Load | No Load |
| Access Lock | View Only | Residence | EE |
| Related Parameters | | | |

## 3.13.47 NUMSIOVRD

| Specific to Block(s) | DEVCTL | Description | Number of Safety Interlock Trips - The accumulated number of Safety Override Interlocks since the last reset of maintenance Statistics. |
|---|---|---|---|
| Data Type | 64-Bit Real Number | Range | 0.0 to Maximum Real Number |
| Default | 0.0 | Configuration Load | No |
| Access Lock | View Only | Residence | EE |

| **Related Parameters** | MAINTOPT | **Checkpoint** | Yes (for OCD). |
|---|---|---|---|
| | RESETFLLO | | |
| | SI | | |

**Remarks:**Default to 0.0 if MAINTOPT is set to OFF.

Reset to 0.0 whenever RESETFLLO is changed from OFF to ON.

## 3.13.48 NUMSRCCONN[1..8]

This parameter indicates the number of source connections \ define the number of references present in each expression.

| **Specific to Block(s)** | AUXCALC | **Description** | Number of Source Connections. |
|---|---|---|---|
| **Data Type** | 32-Bit Integer | **Range** | 0 to 6 |
| **Default** | 0 | **Configuration Load** | Yes |
| **Access Lock** | Application Developer Only | **Residence** | CEE |
| **Related Parameters** | | **Checkpoint** | No |

## 3.13.49 NUMSTATES

| **Specific to Block(s)** | DEVCTL | **Description** | Number of configurable states |
|---|---|---|---|
| **Data Type** | Integer | **Range** | 2 to 3 |
| **Default** | 2 | **Configuration Load** | Yes |
| **Access Lock** | Engineer | **Residence** | EE |

| Related Parameters | CMDDISALM.FL | Checkpoint | Yes (for OCD). |
|---|---|---|---|
| | CMDDISALM.PR | | |
| | CMDDISALM.SV | | |
| | CMDDISALM.TM | | |
| | CMDFALALM.FL | | |
| | CMDFALALM.PR | | |
| | CMDFALALM.TM | | |
| | CMDFALALM.SV | | |
| | DIPMAP | | |
| | GOP | | |
| | GOPFINAL | | |
| | GPV | | |
| | GPVAUTO | | |
| | LASTOPMNAME | | |
| | LASTOPREQ | | |
| | MAXTIME | | |
| | MAXTRANS | | |
| | MOMSTATE | | |
| | OP | | |
| | OPDOMAP | | |
| | OPFINAL | | |
| | OPREQ | | |
| | PI | | |
| | PV | | |
| | PVAUTO | | |
| | PVFL | | |
| | SAFEOP | | |
| | STATETIME | | |

**Remarks**: The function block must be INACTIVE to change this parameter. Any member of DIPVMAP that may have been assigned to state S2 changes to NULL, upon NUMSTATES being set to = 2.

# 3.14  -O-

**Related topics**

## 3.14.1 OFFLINEFLAG

This parameter indicates whether a SIOM is offline or online on that link. If a SIOM is offline, then the parameter is set to ON, else it is set to OFF.

| Specific to Block(s) | SLINK | Description | SIOM Offline Bit |
|---|---|---|---|
| Data Type | BOOLEAN | Range | Off<br>On |
| Default | Off | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | | | |

## 3.14.2 OFFNRMALM.FL

| Specific to Block(s) | DEVCTL<br>LCSFLAG | Description | Off Normal Alarm Priority |
|---|---|---|---|
| Data Type | Boolean | Range | Off(0)<br>On(1) |
| Default | Off(0) | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | BYPASS,<br>CMDDISALM.FL,<br>CMDDISALM.PR,<br>CMDDISALM.SV,<br>CMDDISALM.TM[0..2],<br>GOPREQ,<br>GPV,<br>HIALM,<br>OPREQ,<br>PV | Checkpoint | Yes (for OCD). |

This parameter indicates the 'OFF-Normal' condition. The Device is 'OFF-Normal' wherever the Process Variable (PV) does not equal OPREQ.

**Remarks**: This parameter is inactive when GOPREQ is Null.

| Specific to Block(s) | LCSFLAG | Description | Off Normal Alarm Flag |
|---|---|---|---|
| Data Type | Boolean | Range | Off(0)<br>On(1) |
| Default | Off(0) | Configuration Load | No |
| Access Lock | View Only | Residence | EE |

| Related Parameters | NORMAL, OFFNRMALM.PR, OFFNRMALM.SV, PV. | | |
|---|---|---|---|

**Remarks**: When set to ON, it indicates that the LCSFLAG function block is not currently in the normal state.

## 3.14.3  OFFNRMALM.PR

| Specific to Block(s) | DEVCTL LCSFLAG | Description | Off Normal Alarm Priority |
|---|---|---|---|
| Data Type | Enumeration ALPRIOR | Range | None (0) Journal (1) Low (2) High (3) Urgent (4) |
| Default | Low (2) | Configuration Load | Yes |
| Access Lock | Engineer | Residence | EE |
| Related Parameters | GOPREQ OPREQ. | Checkpoint | Yes (for OCD). |

| Specific to Block(s) | LCSFLAG | Description | Off Normal Alarm Priority |
|---|---|---|---|
| Data Type | Enumeration ALMPR | Range | None (0) Journal (1) Low (2) High (3) Urgent (4) |
| Default | Low (2) | Configuration Load | Yes |
| Access Lock | Engineer | Residence | EE |
| Related Parameters | OFFNRMALM.FL, OFFNRMALM.SV | | |

## 3.14.4  OFFNRMALM.SV

| Specific to Block(s) | DEVCTL, LCSFLAG. | Description | Off Normal Alarm Severity |
|---|---|---|---|
| Data Type | Integer | Range | 0 to 15 |
| Default | 0 | Configuration Load | Yes |
| Access Lock | Engineer | Residence | EE |
| Related Parameters | OFFNRMALM.FL OFFNRMALM.PR DEVCTL Only: GOPREQ OPREQ | Checkpoint | Yes (for OCD). |

**Remarks**: DEVCTL only: It is INACTIVE when GOPREQ is Null.

## 3.14.5 OFFSETVAL

Offset value is used to load each counter accumulator with a preset starting value. When using a serial I/O and loading a channel offset, send the offset value to the module, then turn on the Load Offset control output. This output should remain on until a PULL verifies that the channel accumulated value has received the offset value. Once the offset value has been verified, turn off the Load Offset output.

| **Specific to Block(s)** | LCSPQICHANNEL | **Description** | Offset Value |
|---|---|---|---|
| **Data Type** | UINT32 | **Range** | 0-4294967295 |
| **Default** | 0 | **Configuration Load** | Yes |
| **Access Lock** | Engineer | **Residence** | EE |
| **Related Parameters** | | | |

## 3.14.6 OI [0..2]

| **Specific to Block(s)** | DEVCTL | **Description** | Override Interlock |
|---|---|---|---|
| **Data Type** | Boolean | **Range** | Off (0) |
| | | | On (1) |
| **Default** | Off (0) | **Configuration Load** | No |
| **Access Lock** | Engineer/ Other Function Block (see Remarks) | **Residence** | EE |
| **Related Parameters** | BYPASS<br>BYPPERM<br>GOP<br>NUMDOUTS<br>OIALM.FL<br>OIALM.OPT<br>OIALM.PR<br>OIALM.SV<br>OP<br>SAFEOP<br>SI<br>SIALM.FL<br>SIALM.OPT<br>SIALM.PR<br>SIALM.SV | **Checkpoint** | Yes (for OCD). |

## 3.14.7 OIALM.FL [0..2]

| **Specific to Block(s)** | DEVCTL | **Description** | Override Interlock Alarm Flag |
|---|---|---|---|

| Data Type | Boolean | Range | Off (0) |
| --- | --- | --- | --- |
| | | | On (1) |
| Default | Off (0) | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | BYPASS | Checkpoint | Yes (for OCD). |
| | BYPPERM | | |
| | HIALM | | |
| | INALM | | |
| | NUMDOUTS | | |
| | OIALM.FL | | |
| | OIALM.PR | | |
| | OIALM.SV | | |

**Remarks**: Always OFF, if BYPASS is set ON.

## 3.14.8  OIALM.OPT [0..2]

| Specific to Block(s) | DEVCTL | Description | Override Interlock Alarm Option. |
| --- | --- | --- | --- |
| Data Type | Enumeration OVRDALOP | Range | No (0) |
| | | | Yes (1) |
| Default | N/A | Configuration Load | Yes |
| Access Lock | Engineer | Residence | EE |
| Related Parameters | NUMDOUTS | | |

**Remarks:** The value of this parameter is Illegal if NUMDOUTS = 0.

## 3.14.9  OIALM.PR [0..2]

| Specific to Block(s) | DEVCTL | Description | Override Interlock Alarm Priority |
| --- | --- | --- | --- |
| Data Type | Enumeration ALPRIOR | Range | None (0) |
| | | | Journal (1) |
| | | | Low (2) |
| | | | High (3) |
| | | | Urgent (4) |
| Default | Low (2) | Configuration Load | Yes |
| Access Lock | Engineer | Residence | EE |
| Related Parameters | NUMDOUTS | Checkpoint | Yes (for OCD). |
| | OI | | |
| | OIALM.FL | | |
| | OIALM.OPT | | |
| | OIALM.SV | | |

**Remarks**: Illegal if NUMDOUTS = 0.

## 3.14.10  OIALM.SV [0..2]

| Specific to Block(s) | DEVCTL | Description | Override Interlock Alarm Severity |
|---|---|---|---|
| Data Type | 16-Bit Integer | Range | 0 to 255 |
| Default | 0 | Configuration Load | Yes |
| Access Lock | Engineer | Residence | EE |
| Related Parameters | NUMDOUTS OI OIALM.FL OIALM.OPT OIALM.PR | Checkpoint | Yes (for OCD). |

**Remarks**: Illegal if NUMDOUTS = 0.

## 3.14.11  OFFPULSE

When the OFFPULSE is set to ON, the final output of the LCSDOCHANNEL is set to OFF for a specified interval.

| Specific to Block(s) | LCSDOCHANNEL | Description | |
|---|---|---|---|
| Data Type | Boolean | Range | OFF, ON |
| Default | OFF | Configuration Load | Yes |
| Access Lock | Engineer | Residence | EE |
| Related Parameters | ONPULSE | Checkpoint | No |

## 3.14.12  ONPULSE

When the ONPULSE is set to ON, the final output of the LCSDOCHANNEL is set to ON for a specified interval.

| Specific to Block(s) | LCSDOCHANNEL | Description | |
|---|---|---|---|
| Data Type | Boolean | Range | OFF, ON |
| Default | OFF | Configuration Load | Yes |
| Access Lock | Engineer | Residence | EE |
| Related Parameters | OFFPULSE | Checkpoint | No |

## 3.14.13  OP

| Specific to Block(s) | DEVCTL | Description | Commanded Output State |
|---|---|---|---|
| Data Type | String | Range | Length: 12 characters |
| Default | STATETEXT[4] | Configuration Load | No |
| Access Lock | Operator | Residence | EE |

| Related Parameters | BYPASS, | Checkpoint | No (for OCD) |
|---|---|---|---|
| | CMDDISALM.FL, | | |
| | CMDDISALM.PR, | | |
| | CMDDISALM.SV, | | |
| | CMDDISALM.TM[0..2], | | |
| | CMDFALALM.FL, | | |
| | CMDFALALM.PR, | | |
| | CMDFALALM.SV, | | |
| | CMDFALALM.TM[0..2], | | |
| | GOP, | | |
| | GOPFINAL, | | |
| | GOPREQ, | | |
| | MOMSTATE, | | |
| | NUMDOUTS, | | |
| | NUMSTATES, | | |
| | OI[0..2]. | | |
| | OPDOMAP[0..3][1..3], | | |
| | OPFINAL, | | |
| | OPREQ, | | |
| | SAFEOP, | | |
| | SAFEREDTAG, | | |
| | SI, | | |
| | STATETEXT[0..6], | | |
| | UNCMDALM.FL, | | |
| | UNCMDALM.PR, | | |
| | UNCMDALM.SV. | | |

**Remarks**:

- OP is a String set equal to STATETEXT[GOP].
- Access is illegal, if NUMDOUTS = 0.
- STATETEXT[6] ['State2'] is illegal if NUMSTATES = 2.
- STATETEXT[2] ['ACTIVE'] is illegal if SAFEOP = S2.

| Specific to Block(s) | AO CHANNEL | Description | Output Value |
|---|---|---|---|
| Data Type | 64-Bit Real | Range | 0-100% |
| Default | 0 | Configuration Load | No |
| Access Lock | Operator | Residence | EE |
| Related Parameters | | | |

| Specific to Block(s) | AEM | Description | |
|---|---|---|---|
| Data Type | Boolean | Range | Off, |
| | | | On |
| Default | Off | Configuration Load | No |

| Access Lock | View Only | Residence | EE |
|---|---|---|---|
| Related Parameters | | | |

## 3.14.14  OPCMD [0..2]

| Specific to Block(s) | DEVCTL | Description | Output Command |
|---|---|---|---|
| Data Type | Boolean | Range | Off (0) <br> On (1) |
| Default | Off (0) | Configuration Load | No |
| Access Lock | Program | Residence | EE |
| Related Parameters | GOPREQ <br> OPREQ <br> OPTYPE | Checkpoint | Yes (for OCD). |

**Remarks:** If all the elements of OPCMD are OFF, the OPREQ is set to SAFEOP. The priority of the OPCMD is determined by SAFEOP.

If SAFEOP = S0, then priority is 0, 1, 2.

If SAFEOP = S1, then priority is 1, 0, 2.

If SAFEOP = S2, then priority is 2, 0, 1.

## 3.14.15  OPDOMAP [0..3][1..3]

| Specific to Block(s) | DEVCTL | Description | Output (OP) to Digital Output Values (DO) Map of Settable State Assignments. |
|---|---|---|---|
| Data Type | Boolean | Range | Off (0) <br> On (1) |
| Default | Off (0) | Configuration Load | Yes |
| Access Lock | Engineer | Residence | EE |
| Related Parameters | DO <br> GOP <br> GOPFINAL <br> NUMDOUTS <br> NUMSTATES <br> OP <br> OPFINAL <br> PO | | |

**Remarks:**

Illegal if NUMDOUTS = 0.

OPDOMAP[2, x] is illegal, if NUMSTATES = 2.

## 3.14.16 OPECHO[1..4]

| Specific to Block(s) | AOM | Description | |
|---|---|---|---|
| Data Type | FLOAT64 | Range | 0-100% |
| Default | 0 | Configuration Load | No |
| Access Lock | View Only | Residence | |
| Related Parameters | | | |

## 3.14.17 OPFINAL

| Specific to Block(s) | DEVCTL | Description | Field Output State |
|---|---|---|---|
| Data Type | String | Range | Length: 12 characters |
| Default | STATETEXT[4] | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | DO<br>GOPFINAL<br>NUMDOUTS<br>NUMSTATES<br>OPDOMAP<br>SEALOPT<br>STATETEXT<br>STATETIME | Checkpoint | Yes (for OCD). |

**Remarks:** OPFINAL is a String set equal to STATETEXT (GOPFINAL).

Access is illegal if NUMDOUTS = 0.

STATETEXT[6] [`State2'] is illegal if NUMSTATES = 2.

## 3.14.18 OPFINAL[1..4]

| Specific to Block(s) | AOM, AOC | Description | Output Final. Shows the final output value sent to the control element. |
|---|---|---|---|
| Data Type | 64-Bit Real Number | Range | 0-100% |
| Default | 0 | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | | | |

## 3.14.19 OPREQ

| Specific to Block(s) | DEVCTL | Description | The Output State Requested |
|---|---|---|---|
| Data Type | String | Range | Length: 12 characters |
| Default | STATETEXT[0] | Configuration Load | No |

| Access Lock | Other function block | Residence | EE |
|---|---|---|---|
| Related Parameters | GOP, GOPREQ, HOLDOPT, LASTOPMNAME, LASTOPREQ, MODEATTR, NUMSTATES, OP, OPTYPE, RESTARTOPT, SAFEOP, STARTOPT, STATETEXT[0..6], STOPOPT | Checkpoint | Yes (for OCD). |

## 3.14.20  OPTYPE

| Specific to Block(s) | DEVCTL | Description | Sequential Control Module (SCM) Control Output Request Type Option |
|---|---|---|---|
| Data Type | Enumeration OPTYPE | Range | Null (0) Set (1) NotStored (2) Default (3) |
| Default | Null (0) | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | HOLDOPT LASTOPTYPE OPREQ RESTARTOPT STARTOPT STOPOPT | Checkpoint | Yes (for OCD). |

## 3.14.21  ORDER

| Specific to Block(s) | DEVCTL | Description | Execution Order within containing Control Module |
|---|---|---|---|
| Data Type | Integer | Range | 0 to 65535 |
| Default | A multiple of 10, established by Control Builder when the block is created. | Configuration Load | Yes |
| Access Lock | Point build | Residence | EE |

| Related Parameters | | Checkpoint | Yes (for OCD). |
|---|---|---|---|

## 3.14.22 ORDERINCM

| Specific to Block(s) | All basic function blocks | Description | Execution order in CM. |
|---|---|---|---|
| Data Type | 32-Bit Integer | Range | -2147483648 to 2147483647 |
| Default | Variable | Configuration Load | Yes |
| Access Lock | Application Developer | Residence | SR |
| Related Parameters | | Checkpoint | Yes (for OCD) - for AUXCAL, DATAACQ, DELAY, DEVCTL, FTRIG |

**Remarks**: This parameter is set for the proper sequencing of logic blocks.

## 3.14.23 OUT

| Specific to Block(s) | AND, OR, NOT, BITRD, XOR, DELAY, GE, LE, NE, GT, LT, LCSSEL, EQ, LCSONDELAY, LCSOFFDELAY, FTRIG, RTRIG | Description | Current output value |
|---|---|---|---|
| Data Type | BOOLEAN | Range | Off(0) On(1) |
| Default | Off(0) | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | | Checkpoint | Yes (for OCD) for DELAY, FTRIG. |

| Specific to Block(s) | LCS1SCOMPLEMENT, BITWR | Description | Current output value |
|---|---|---|---|
| Data Type | 16-Bit signed integer | Range | -32768 to 32767 |
| Default | 0 | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | | | |

**Remarks**: This output is a 1's complement of the 16-bit input value for LCS1SCOMPLEMENT block.

For LCSSELECT MSB of OUTI is mapped to OUT [1] of OUT[1]

| Specific to Block(s) | Pulse Quadrature Input Module | Description | Accumulated Value in Float |
|---|---|---|---|
| Data Type | Float64 | Range | |
| Default | 0 | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | | | |

Remarks: This parameter reflects the same value as in the parameter AV.

## 3.14.24  OUT[1..16]

| Specific to Block(s) | BITAND, BITOR, BITXOR, LCSSEQUENCER LCSSELECT, LCSSEL | Description | Output |
|---|---|---|---|
| Data Type | BOOLEAN | Range | Off On |
| Default | Off | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | OUTI (LCSSEQUENCER, LCSSELECT Only) | | |

**Remarks**: For LCSSELECT, MSB of OUTI is mapped to OUT[1] — Binary equivalent of OUTI.

## 3.14.25  OUT.BOOLEAN

| Specific to Block(s) | LCSTYPECONVERT, PUSH | Description | Boolean output value |
|---|---|---|---|
| Data Type | Boolean | Range | Off(0) On(1) |
| Default | Off(0) | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | | | |

## 3.14.26  OUT.ENUM

| Specific to Block(s) | LCSTYPECONVERT, PUSH | Description | Enumerated Output Value |
|---|---|---|---|
| Data Type | Enumeration | Range | N/A |
| Default | ENUM0 | Configuration Load | No |
| Access Lock | View Only | Residence | CEE |
| Related Parameters | | | |

## 3.14.27  OUT.FLOAT32

| Specific to Block(s) | LCSTYPECONVERT, PUSH | Description | 32-Bit Floating Point Output Value |
|---|---|---|---|
| Data Type | Real | Range | N/A |
| Default | NaN | Configuration Load | No |
| Access Lock | View only | Residence | EE |
| Related Parameters | | | |

## 3.14.28  OUT.FLOAT64

| Specific to Block(s) | LCSTYPECONVERT, PUSH | Description | 64-Bit Floating Point Output Value |
|---|---|---|---|
| Data Type | Real | Range | N/A |
| Default | NaN | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | | | |

## 3.14.29  OUT.INT8

| Specific to Block(s) | LCSTYPECONVERT, PUSH | Description | 8-Bit Integer Output Value |
|---|---|---|---|
| Data Type | 8-Bit Integer | Range | -128 to 127 |
| Default | 0 | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | | | |

## 3.14.30  OUT.INT16

| Specific to Block(s) | LCSTYPECONVERT, PUSH | Description | 16-Bit Integer Output Value |
|---|---|---|---|
| Data Type | 16-Bit Integer | Range | -32768 to 32767 |
| Default | 0 | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | | | |

## 3.14.31  OUT.INT32

| Specific to Block(s) | LCSTYPECONVERT, PUSH | Description | 32-Bit Integer Output Value |
|---|---|---|---|
| Data Type | 32-Bit Integer | Range | -2147483648 to 2147483647 |
| Default | 0 | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | | | |

## 3.14.32  OUTI

| Specific to Block(s) | LCSSEQUENCER LCSSELECT | Description | |
|---|---|---|---|
| Data Type | 32-bit Integer | Range | -2147483648 TO 2147483647 |
| Default | 0 | Configuration Load | No |

| Access Lock | View Only | Residence | EE |
|---|---|---|---|
| Related Parameters | | | |

Remarks: The selected input is given out as an integer.

| Specific to Block(s) | LCSSEL | Description | |
|---|---|---|---|
| Data Type | Boolean | Range | Off(0) On(1) |
| Default | Off(1) | Configuration Load | No |
| Access Lock | View Only | Residence | |
| Related Parameters | | | |

## 3.14.33  OUTR

| Specific to Block(s) | LCSSEQUENCER, LCSSELECT | Description | Real Output |
|---|---|---|---|
| Data Type | REAL | Range | NA |
| Default | NaN | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | | | |

| Specific to Block(s) | LCSSEL | Description | |
|---|---|---|---|
| Data Type | Boolean | Range | Off(0) On(1) |
| Default | Off(1) | Configuration Load | No |
| Access Lock | View Only | Residence | |
| Related Parameters | | | |

## 3.14.34  OUT.SDENUM

| Specific to Block(s) | PUSH | Description | Self-Defining Enumeration Output. |
|---|---|---|---|
| Data Type | SDENUM | Range | 12-character string corresponding to ordinal value. |
| Default | SDENUM0 | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | | | |

## 3.14.35  OUT.SDENUM[1..4]

| Specific to Block(s) | LCSTYPECONVERT | Description | Self-Defining Enumeration Output. |
|---|---|---|---|
| Data Type | Enumeration | Range | Positive Integers |
| Default | 0 | Configuration Load | No |
| Access Lock | View Only | Residence | EE |

| Related Parameters | | | |
|---|---|---|---|

## 3.14.36 OUT.UINT16

| Specific to Block(s) | PUSH LCSTYPECONVERT | Description | Unsigned 16-Bit Integer Output Value |
|---|---|---|---|
| Data Type | Unsigned 16-Bit Integer | Range | 0 to 65535 |
| Default | 0 | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | | | |

## 3.14.37 OUT.UINT16[1..4]

| Specific to Block(s) | LCSTYPECONVERT | Description | Unsigned 16-Bit Output Value |
|---|---|---|---|
| Data Type | Unsigned 16-Bit Integer | Range | 0 to 65535 |
| Default | 0 | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | | | |

## 3.14.38 OUT.UINT32

| Specific to Block(s) | PUSH | Description | Unsigned 32-Bit Output Value |
|---|---|---|---|
| Data Type | Integer | Range | 0 to 4294967295 |
| Default | 0 | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | | | |

## 3.14.39 OUT.UINT32[1..4]

| Specific to Block(s) | LCSTYPECONVERT | Description | Unsigned 32-Bit Output Value |
|---|---|---|---|
| Data Type | Unsigned 32-Bit Integer | Range | 0 to 4294967295 |
| Default | 0 | Configuration Load | No |
| Access Lock | Other function block | Residence | EE |
| Related Parameters | | | |

## 3.14.40 OUTPUTRESOLN

This parameter is used to enter the Output Resolution bits.

| Specific to Block(s) | UAIM, RTDM | Description | Output Resolution bits | |
|---|---|---|---|---|
| Data Type | Enum UAIM_OUTPUTRESOLTYPE | Range | 12 | 14 |
| | | | 13 | 15 |
| Default | 15 | Configuration Load | Yes | |
| Access Lock | Application Developer | Residence | EE | |
| Related Parameters | | | | |

## 3.14.41 OVERFLOW

When this status bit is set to ON, it indicates that the value in the counter has incremented through 32 bits for a 32-bit operation or though 16 bits for a 16-bit operation. This bit is latched and must be cleared by the CLROVRUNDRFL parameter. The Overflow bit is automatically turned off by the Reset control output, when the marker pulse resets the counter or when a channel is disabled by the DIP switch.

| Specific to Block(s) | LCSPQICHANNEL | Description | Overflow |
|---|---|---|---|
| Data Type | Boolean | Range | Off (0) On (1) |
| Default | Off (0) | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | | | |

## 3.14.42 OVERFLOW[1..3]

When this parameter's value is ON, it indicates that the value in the counter has incremented through 32 bits for a 32-bit operation or through 16 bits for a 16-bit operation. This bit is latched and must be cleared by setting the CLROVRUNDRFL parameter. The Overflow bit is automatically set to OFF by setting the Reset control output, when the marker pulse resets the counter or when a channel is disabled by the DIP switch.

| Specific to Block(s) | Pulse Quadrature Input Module | Description | Overflow Flag |
|---|---|---|---|
| Data Type | Boolean | Range | Off (0) On (1) |
| Default | Off (0) | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | | | |

## 3.14.43 OVRFLSTS

Overflow Status parameter stores the overflow information of the Accumulated Value of the counter. The Overflow bit is set to high (1) whenever the AV crosses the maximum value - 65535.

| Specific to Block(s) | LCSPICHANNEL | Description | Overflow Status |
|---|---|---|---|
| Data Type | UINT16 | Range | Off (0) On (1) |
| Default | 0 | Configuration Load | No |

| Access Lock | View Only | Residence | EE |
|---|---|---|---|
| Related Parameters | | | |

## 3.14.44 OVRFLSTS[1..4]

The Overflow Status parameter stores the overflow information of the Accumulated Value of the counter. The Overflow bit is set to high (1) whenever the AV crosses the maximum value - 65535.

| Specific to Block(s) | Pulse Input Module | Description | Overflow Status |
|---|---|---|---|
| Data Type | UINT16 | Range | Off (0) On (1) |
| Default | 0 | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | | | |

| Specific to Block(s) | LCSPICHANNEL | Description | Overflow Status |
|---|---|---|---|
| Data Type | UINT16 | Range | Off (0) On (1) |
| Default | 0 | Configuration Load | Yes |
| Access Lock | Engineer | Residence | EE |
| Related Parameters | | | |

## 3.14.45 OVRFLSTSCLR

This bit clears the overflow status of the corresponding channel. When the overflow status clear bit is set to high, the accumulator value is cleared when it touches 65535 and counting restarts from 0.

| Specific to Block(s) | LCSPICHANNEL | Description | Clear Overflow Status |
|---|---|---|---|
| Data Type | Boolean | Range | Off (0) On (1) |
| Default | Off (0) | Configuration Load | Yes |
| Access Lock | Engineer | Residence | LIOM |
| Related Parameters | | | |

# 3.15  P

| Specific to Block(s) | AUXCALC | Description | Process Input Values 1 through 6. |
|---|---|---|---|
| Data Type | 64-Bit Real Number | Range | N/A |
| Default | NaN | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | P1STS | | |

| Specific to Block(s) | ABS SQRT | Description | Input value |
|---|---|---|---|
| Data Type | 64-Bit Real Number | Range | N/A |
| Default | NaN | Configuration Load | No |
| Access Lock | Engineer | Residence | EE |
| Related Parameters | | Checkpoint | Yes (for OCD) |

## 3.15.1  P[1..2]

This is used to enter the input values.

| Specific to Block(s) | ADD, SUB, MUL, DIV | Description | Input value |
|---|---|---|---|
| Data Type | 64-Bit Real Number | Range | N/A |
| Default | NaN | Configuration Load | No |
| Access Lock | Engineer | Residence | EE |
| Related Parameters | | | |

## 3.15.2  P[1..6]

| Specific to Block(s) | AUXCALC | Description | Process Input Values 1 through 6. |
|---|---|---|---|
| Data Type | 64-Bit Real Number | Range | N/A |
| Default | NaN | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | P1STS | Checkpoint | Yes (for OCD) |

## 3.15.3  P1

This parameter indicates the current value of the process input to a Data Acquisition function block.

| Specific to Block(s) | DATAACQ | Description | Process Input Value #1 - The current value of the process input to a Data Acquisition function block. |
|---|---|---|---|
| Data Type | 64-Bit Real Number | Range | N/A |

| Default | NaN | Configuration Load | No |
|---|---|---|---|
| Access Lock | View Only | Residence | EE |
| Related Parameters | | Checkpoint | Yes (for OCD) |

## 3.15.4  P1CLAMPOPT

This parameter defines whether P1 clamping is used for this function block. If P1CLAMPOPT = Clamp, and the Process Variable (PV) is beyond its limits (PVEXLOLM or PVEXHILM), then PV is set equal to the limit that was violated; PVSTS is set to Uncertain.

| Specific to Block(s) | DATACQ | Description | Process Input Value #1 (P1) Clamping Option |
|---|---|---|---|
| Data Type | Enumeration ENABLE | Range | Refer Range list |
| Default | Disable (0) | Configuration Load | Yes |
| Access Lock | Engineer | Residence | EE |
| Related Parameters | | Checkpoint | Yes (for OCD) |

**Range:**

| Disable (0): | Do not clamp the Process Variable (PV) value. |
|---|---|
| Enable (1): | Clamp the Process Variable (PV) to its high or low limit. |

## 3.15.5  P1FILTINIT

This parameter is used for resetting the filtered P1 value. If the flag is set, the function block sets the filtered P1 value to the current P1 value.

| Specific to Block(s) | DATACQ | Description | Process Input Value #1 (P1) Filter Initialization Request Flag |
|---|---|---|---|
| Data Type | Boolean | Range | Off (0): Initialization is not requested. On (1): Initialization is requested. |
| Default | Off (0) | Configuration Load | No |
| Access Lock | Other function block | Residence | EE |
| Related Parameters | | Checkpoint | Yes (for OCD) |

## 3.15.6  P1FILTTIME

| Specific to Block(s) | DATACQ | Description | Process Input Value #1 (P1) Filter Time (in minutes) |
|---|---|---|---|
| Data Type | 64-Bit Real Number | Range | 0.0 to 60.0 minutes |
| Default | 0.0 | Configuration Load | Yes |
| Access Lock | Engineer | Residence | EE |
| Related Parameters | | Checkpoint | Yes (for OCD) |

**Remarks**: The default reading of 0.0 indicates that filtering will not be done.

## 3.15.7  P1STS

This parameter is used for resetting the filtered P1 value. If the flag is set, the function block sets the filtered P1 value to the current P1 value.

| Specific to Block(s) | DATAACQ | Description | Status of the Process Input #1 |
|---|---|---|---|
| Data Type | Enumeration PVVALSTS | Range | Refer Range list |
| Default | Bad (0) | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | P1 | Checkpoint | Yes (for OCD) |

**Range:**

| Bad (0): | The P1 value is bad (i.e., NaN). |
|---|---|
| Uncertn (1): | The status of the value is uncertain. |
| Normal (2): | The P1 value is good. |
| Manual (3): | The P1 value was manually stored. |

## 3.15.8  PCMSTATE

| Specific to Block(s) | LIOM | Description | Indicates current state of LIOM block |
|---|---|---|---|
| Data Type | Enumeration of PCMSTATE | Range | OFFNET (0) |
| | | | TESTING (1) |
| | | | BOOTING (2) |
| | | | ALIVE (3) |
| | | | LOADING (4) |
| | | | OK (5) |
| | | | FAILED (6) |
| | | | PIREADY (7) |
| | | | BACKUP (8) |
| | | | NOTLOADED (9) |
| | | | NOCEE (10) |
| | | | CEEIDLE (11) |
| | | | CEERUN (12) |
| | | | CEEMIX (13) |
| Default | OK (5) | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | | | |

## 3.15.9  PEERENV[1..NUMPEERENV]

| Specific to Block(s) | EE | Description | Peer Environment - Specifies the peer environment that has specific peer subscription period (PEERSUBSCPER[ ]) and peer store response time (PEERSTRRESP[ ]) values configured for it. |
|---|---|---|---|
| Data Type | BLOCKID | Range | N/A |
| Default | N/A | Configuration Load | Yes |
| Access Lock | Engineer | Residence | EE |
| Related Parameters | NUMPEEREVN PEERSTRRESP STRRESP SUBSCPERIOD | Checkpoint | Yes (for OCD) |

## 3.15.10  PEERGETAVG

| Specific to Block(s) | EE | Description | Average Peer Get Requests - Provides the running average of Get responses per second to this EE received from the peer environment, identified by corresponding PEERENV[index]. If there is no connection between the two peer environments, 0 is returned. |
|---|---|---|---|
| Data Type | Float64 | Range | N/A |
| Default | 0.0 | Configuration Load | No |
| Access Lock | View Only | Residence | NUMPEEREVN PEEREVN STATSRESET |
| Related Parameters | | | |

**Remarks**: The characteristic time constant of the average is 1 minute. Wait 2-3 minutes to be sure averaging has fully settled. Averaging can be restarted by triggering the STATSRESET parameter.

## 3.15.11 PEERSTRAVG[1..NUMPEERENV]

| Specific to Block(s) | EE | Description | Average Peer Store Requests - Provides the running average of acyclic stores added per second from this EE sent to the peer environment, identified by corresponding PEERENV[index]. If there is no connection between the two peer environments, 0 is returned. |
|---|---|---|---|
| Data Type | Float64 | Range | N/A |
| Default | 0.0 | Configuration Load | No |
| Access Lock | View Only | Residence | ACE, CPM, SCE |
| Related Parameters | NUMPEERENV PEERENV STATSRESET | | |

**Remarks**: The characteristic time constant of the average is 1 minute. Wait 2-3 minutes to be sure averaging has fully settled. Averaging can be restarted by triggering the STATSRESET parameter.

## 3.15.12 PEERSTRRESP[1..NUMPEERENV]

| Specific to Block(s) | EE | Description | Peer Store Response Time - Specifies the specific store response expiration time to be used for the corresponding peer environment number (PEERENV[ ]) in seconds. |
|---|---|---|---|
| Data Type | FLOAT64 | Range | Greater than 0 |
| Default | 15.0 | Configuration Load | Yes |
| Access Lock | Engineer | Residence | EE |
| Related Parameters | NUMPEERENV PEERENV STRRESP | Checkpoint | Yes (for OCD) |

**Remarks:** If a store response is not received within the configured expiration time, the store is marked failed.

## 3.15.13 PEERSUBSCPER[1..NUMPEERENV]

| Specific to Block(s) | EE | Description | Peer Subscription Period - Specifies the specific update period to be used for the corresponding peer environment number (PEERENV[ ]) in seconds. |
|---|---|---|---|

| Data Type | ENUMERATION | Range | Varies for given EE |
|---|---|---|---|
| Default | Varies for given EE | Configuration Load | Yes |
| Access Lock | Engineer | Residence | EE |
| Related Parameters | NUMPEEREVN PEEREVN SUBSCPERIOD | Checkpoint | Yes (for OCD) |

## 3.15.14 PERIOD

| Specific to Block(s) | IOM | Description | Execution period |
|---|---|---|---|
| Data Type | Enumeration of PERIOD | Range | Refer Range list |
| Default | DEFAULT | Configuration Load | Yes |
| Access Lock | Engineer | Residence | EE |
| Related Parameters | ORDERINCEE, ORDERINCM, PHASE | Checkpoint | No (for OCD) |

**Remarks**: This parameter determines execution period for a container block and its component blocks. Units are in milliseconds. It can be changed while the container block is INACTIVE without requiring reload.

**Range**:

IOM only:

- 5 to 2000 ms

| DEFAULT(0) | 100ms(5) |
|---|---|
| 5ms(1), | 200ms(6) |
| 10ms(2) | 500ms(7) |
| 20ms(3) | 1000ms(8) |
| 50ms(4) | 2000ms(9) |

- CEE configurable range:
  - 5 to 2000 ms

| DEFAULT(0) | 100ms(5) |
|---|---|
| 5ms(1), | 200ms(6) |
| 10ms(2) | 500ms(7) |
| 20ms(3) | 1000ms(8) |
| 50ms(4) | 2000ms(9) |

- Valid Range, 50 ms CEE
  - 50 to 2000 ms

| DEFAULT(0)* | 500ms(7) |
|---|---|
| 50ms(4) | 1000ms(8) |
| 100ms(5) | 2000ms(9) |

| | |
|---|---|
| 200ms(6) | |

- Valid Range, 5 ms CEE

  – 5 to 200 ms:

| | |
|---|---|
| DEFAULT(0)* | 50ms(4) |
| 5ms(1) | 100ms(5) |
| 10ms(2) | 200ms(6) |
| 20ms(3) | |

* DEFAULT(0) is converted to an actual value upon load:

Converted to 1000 ms for the 50 ms CEE

Converted to 200 ms for the 5 ms CEE

## 3.15.15  PHASE

| Specific to Block(s) | IOM | Description | Determines the set of cycles in which a container block executes. |
|---|---|---|---|
| Data Type | 16-bit Integer | Range | 0 to (PERIOD ms / 50 ms) - 1 |
| Default | 0 | Configuration Load | Yes |
| Access Lock | Engineer | Residence | EE |
| Related Parameters | CPUCYCLEAVG[0..39], ORDERINCEE, ORDERINCM, PERIOD | Checkpoint | No (for OCD) |

**Remarks**: The combination of PHASE and PERIOD uniquely determine the set of cycles in which a container block executes.

## 3.15.16  PI[0..2]

| Specific to Block(s) | DEVCTL | Description | Permissive Interlocks |
|---|---|---|---|
| Data Type | Boolean | Range | Off (0) On (1) |
| Default | On (1) | Configuration Load | No |
| Access Lock | Other Function Block | Residence | EE |
| Related Parameters | BYPASS, GOP, NUMDOUTS, NUMSTATES, OP. | Checkpoint | Yes (for OCD). |

**Remarks**:

Engineer can change only when the function block is INACTIVE or Box is IDLE.

- Illegal if NUMDOUTS = 0.
- PI[2] is illegal if NUMSTATES = 2.
- Permissives are ignored if BYPASS is set.

## 3.15.17  PO

This is an output parameter, which produces pulses on either a +PULSETIME or -PULSETIME value.

| Specific to Block(s) | Pulse Length Control, Pulse Count Control | Description | Pulse Output for both Raise and Lower pulses. |
|---|---|---|---|
| Data Type | Boolean | Range | Off (0) On (1) |
| Default | Off (0) | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | PODIR POLOWER PORAISE | | |

## 3.15.18  PO[0..3]

| Specific to Block(s) | DEVCTL | Description | Pulsed output values |
|---|---|---|---|
| Data Type | Structure | Range | N/A |
| Default | N/A | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | DO[1..3], GOPFINAL, NUMDOUTS, OPDOMAP[0..3][1..3], OPFINAL, PULSEWIDTH. | Checkpoint | Yes (for OCD). |

**Remarks**: This parameter is valid only if NUMDOUTS allows the respective output.

## 3.15.19  POCONNECTED

| Specific to Block(s) | DEVCTL | Description | Pulse Connection Flag - Whenever the respective PO(1..3) is connected to a DOC. ONPULSE or DOC. OFFPULSE, the parameter POCONNECTED(1..3) must be set to 'On.' This allows the Device Control function block to know which outputs are configured for pulsing. POCONNECTED[ ] may not be configured on the form until at least one PO[ ] parameter is exposed on the block. |
|---|---|---|---|
| Data Type | Boolean | Range | Off (0) On (1) |
| Default | Off (0) | Configuration Load | Yes |
| Access Lock | Operator | Residence | EE |
| Related Parameters | PO PULSEWIDTH | | |

## 3.15.20  POCONNECTED[1..3]

Whenever the respective PO(1..3) is connected to a DOC.ONPULSE or DOC.OFFPULSE, the parameter POCONNECTED(1..3) must be set to ON. This allows the Device Control function block to know which outputs are configured for pulsing. POCONNECTED[ ] may not be configured on the form until at least one PO[ ] parameter is exposed on the block.

| Specific to Block(s) | DEVCTL | Description | Pulse Connection Flag |
|---|---|---|---|
| Data Type | Boolean | Range | Off (0) On (1) |
| Default | Off (0) | Configuration Load | Yes |
| Access Lock | Operator | Residence | EE |
| Related Parameters | PO[1..3], PULSEWIDTH. | Checkpoint | Yes (for OCD). |

## 3.15.21  POINTERLOC

This parameter is used to set the location of the Data Table pointer.

| Specific to Block(s) | ASCIISETDTPTR | Description | Sets the data table pointer location. |
|---|---|---|---|
| Data Type | Unsigned Integer 16 | Range | 0-999 |
| Default | 0 | Configuration Load | Yes |

| Access Lock | Program | Residence | CEE |
|---|---|---|---|
| Related Parameters | CRNTDTPTR | Checkpoint | Yes (for OCD) |

## 3.15.22 PRIMARYSIG

| Specific to Block(s) | Most function blocks | Description | Primary Signature - Lets you specify the meaning associated with entering the primary signature. |
|---|---|---|---|
| Data Type | String | Range | 24 characters maximum |
| Default | None | Configuration Load | Yes |
| Access Lock | Engineer | Residence | SR |
| Related Parameters | | | |

## 3.15.23 PTRDIRCTN

This parameter indicates the direction of the data table pointer (backward/ forward).

| Specific to Block(s) | ASCIIPULL/ ASCIIPUSH | Description | Pointer Direction |
|---|---|---|---|
| Data Type | Boolean | Range | Off (0) On (1) |
| Default | Off (0) | Configuration Load | Yes |
| Access Lock | Program | Residence | CEE |
| Related Parameters | | Checkpoint | Yes (for OCD) |

## 3.15.24 PROGMODE

This parameter is ON when the AEM is being programmed for a given configuration.

| Specific to Block(s) | AEM | Description | |
|---|---|---|---|
| Data Type | Boolean | Range | Off, On |
| Default | Off | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | | | |

## 3.15.25 PVRAW[1..8]

| Specific to Block(s) | Isolated AIM, AIC RTDM | Description | Raw Process Variable |
|---|---|---|---|
| Data Type | 32-Bit Real Number | Range | 0-100 |

| Default | 0.0 | Configuration Load | No |
|---|---|---|---|
| Access Lock | View Only | Residence | EE |
| Related Parameters | | | |

In LCS analog modules, PVRAW is computed in percentage based on the counts read (COUNTRAW). The RTDM uses additional parameters to calculate the PVRAW.

For RTDM, PVRAW is computed in percentage using the following formula:

$$(COUNTRAW - COUNTLO)*100/(COUNTHI - COUNTLO)$$

**Attention**

The parameters OUTPUTRESOLN, COUNTLO, and COUNTHI parameters reside in both LIOM memory and the IOM memory. Hence, ensure to perform a Send/Read configuration before using PVRAW in control strategies.

## 3.15.26  PVRAW[1..16]

| Specific to Block(s) | UAIM | Description | Raw Process Variable |
|---|---|---|---|
| Data Type | 32-Bit Real Number | Range | 0-100 |
| Default | 0.0 | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | | | |

**Remarks:** In LCS analog modules, PVRAW is computed in percentage based on the counts read (COUNTRAW). The UAIM uses additional parameters to calculate the PVRAW. For UAIM, PVRAW is computed in percentage using the following formula:

$$PVRAW = COUNTRAW*100/(2^{OUTPUTRESOLN} - 1)$$

**Attention**

The parameters OUTPUTRESOLN, COUNTLO, and COUNTHI parameters reside in both LIOM memory and the IOM memory. Hence, ensure to perform a Send/Read configuration before using PVRAW in control strategies.

## 3.15.27  PSTS[1..6]

This parameter indicates the status of PV Input Values 1 through 6 - The current value status of up to six PV inputs to an Auxiliary function block.

| Specific to Block(s) | AUXCALC | Description | PV Status |
|---|---|---|---|
| Data Type | Enumeration PVVALSTS | Range | Refer Range list |
| Default | Bad (0) | Configuration Load | No |
| Access Lock | View Only | Residence | CEE |
| Related Parameters | P[1..6] | Checkpoint | Yes (for OCD) |

**Range:**

| Bad (0): | The value is bad and has been replaced with NaN. |
|---|---|

| Uncertn (1): | The status of the value is uncertain. |
|---|---|
| Normal (2): | The value is good. |
| Manual (3): | The value was manually stored. |

## 3.15.28  PULLDATA[1..8]

This parameter, in the ASCIIPULL function block, is used to fetch data from the ASCII Control Module's data table. The ASCIIPULL function block can only transfer the maximum number of values specified by the QNTY parameter of the ASCIISETDTPTR function block.

| Specific to Block(s) | ASCIIPULL | Description | Pull Data |
|---|---|---|---|
| Data Type | Unsigned Integer 16 - bits | Range | 0-65535 |
| Default | 0 | Configuration Load | No |
| Access Lock | View Only | Residence | LIOM |
| Related Parameters | POINTERLOC<br><br>QNTY | | |

## 3.15.29  PULSEWIDTH[1..3]

| Specific to Block(s) | DEVCTL | Description | Output Pulsewidth |
|---|---|---|---|
| Data Type | 64-Bit Real Number | Range | 0.000 to 60.000 seconds |
| Default | 1.0 | Configuration Load | Yes |
| Access Lock | Engineer | Residence | EE |
| Related Parameters | DO[1..3]<br><br>NUMDOUTS. | | |

**Remarks**: Access is illegal if the index is greater-than NUMDOUTS. Resolution may be entered in .001 seconds (1msec), but is dependent on the connected DO function block execution rate.

## 3.15.30  PUSHDATA[1..8]

This parameter, in the ASCIIPUSH function block, is used to push data to the ASCII Control Module's data table. The maximum number of data values that can be transferred by a single PUSH operation is determined by the value set for the QNTY parameter.

| Specific to Block(s) | ASCIIPUSH | Description | Push Data |
|---|---|---|---|
| Data Type | Unsigned Integer - 16 bits | Range | 0-65535. |
| Default | 0 | Configuration Load | Yes |
| Access Lock | Program | Residence | CEE |

| Related Parameters | RSTDTPTR | Checkpoint | Yes (for OCD). |
|---|---|---|---|
| | PTRDIRCTN | | |
| | FBENABLE | | |
| | CHNLCOMSTAT | | |
| | MODLATCH | | |
| | CHNLCOMFAIL | | |

## 3.15.31 PV

| Specific to Block(s) | ADD, SUB, MUL, DIV, ABS, SQRT, AIC | Description | Output |
|---|---|---|---|
| Data Type | 64-Bit Real Number | Range | N/A |
| Default | NaN | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | PVSOURCE<br>PVSRCOPT | Checkpoint | Yes (for OCD) - (applicable for MUL, DATAACQ), NUMERICARRAY<br><br>LCSNUMERIC16 |

| Specific to Block(s) | BITAND, BITOR, BITXOR | Description | |
|---|---|---|---|
| Data Type | UINT16 | Range | Default range for unsigned 16-bit integer |
| Default | 0 | Configuration Load | No |
| Access Lock | View Only | Residence | Execution Environment |
| Related Parameters | | Remarks | |

| Specific to Block(s) | LCSTIMER<br>LCSCOUNTER | Description | Time/Count value. This pin gives the output of combined values of all the 16 inputs as an unsigned integer. |
|---|---|---|---|
| Data Type | 32-Bit Signed Integer | Range | Default range for LCSTIMER: Signed 32-Bit Integer (only +ve)<br><br>Default range for LCSCOUNTER: Signed 32-Bit Integer (both -ve and +ve) |
| Default | N/A | Configuration Load | No |
| Access Lock | View Only | Residence | Execution Environment |
| Related Parameters | | Checkpoint | Yes (for OCD). |

| Specific to Block(s) | LCSFLAG | Description | Actual State - Indicates the current state of the function block. |
|---|---|---|---|
| Data Type | String | Range | STATETEXT[0]: PVFL = OFF<br><br>STATETEXT[1]: PVFL = ON |

| Default | STATETEXT[0] | Configuration Load | No |
|---|---|---|---|
| Access Lock | Defined by ACCLOCK | Residence | EE |
| Related Parameters | PVFL<br><br>STATETEXT[0..1] | Checkpoint | Yes. |

| Specific to Block(s) | LCSNUMERIC | Description | Actual State - Indicates the current state of the Numeric function block. |
|---|---|---|---|
| Data Type | Real Number | Range | PVLOLM to PVHILM |
| Default | NaN | Configuration Load | No |
| Access Lock | Defined by ACCLOCK | Residence | EE |
| Related Parameters | PVLOLM<br><br>PVHILM | | |

**Remarks:** For the out of range values stored by users (Operator, Engineer, etc.) an error is returned. For out of range values stored by other function blocks or programs, the value is clamped to the limit that is exceeded and then stored to PV.

| Specific to Block(s) | LCSNUMERIC16 | Description | Actual State - Indicates the current state of the function block. |
|---|---|---|---|
| Data Type | 16-Bit Integer | Range | PVLOLM to PVHILM |
| Default | 0 | Configuration Load | Yes |
| Access Lock | Operator | Residence | EE |
| Related Parameters | | | |

| Specific to Block(s) | DEVCTL | Description | Current active state |
|---|---|---|---|
| Data Type | String | Range | 12 characters |
| Default | STATETEXT[0] | Configuration Load | No |
| Access Lock | View Only, Operator, Other Function Block (see Remarks) | Residence | CEE |

| Related Parameters | BADPVALM.FL | | |
|---|---|---|---|
| | BADPVALM.PR | | |
| | BADPVALM.SV | | |
| | CMDDISALM.FL | | |
| | CMDDISALM.PR | | |
| | CMDDISALM.SV | | |
| | CMDDISALM.TM[0..2] | | |
| | CMDFALALM.FL | | |
| | CMDFALALM.PR | | |
| | CMDFALALM.SV | | |
| | CMDFALALM.TM[0..2] | | |
| | DIPVMAP[0..15] | | |
| | GPV | | |
| | GPVAUTO | | |
| | NUMDINPTS | | |
| | NUMSTATES | | |
| | PVAUTO | | |
| | PVSOURCE | | |
| | PVSRCOPT | | |
| | STATETEXT[0..6] | | |
| | UNCMDALM.FL | | |
| | UNCMDALM.PR | | |
| | UNCMDALM.SV. | | |

**Remarks**:

- Access is illegal if NUMDINPTS = 0.
- PV is a String set equal to STATETEXT(GPV).
- Access lock is View Only if PVSOURCE = AUTO or TRACK or PVSRCOPT is ONLYAUTO.
- Access lock is Operator if PVSOURCE = MAN.
- Access lock is Other Function Block if PVSOURCE = SUB.
- STATETEXT[6] [State2] is illegal if NUMSTATES = 2.

## 3.15.32  PV[1..200]

This parameter provides access to the Numeric values, one element at a time for all other function blocks of the EE. Initial values can be configured.

| Specific to Block(s) | NUMERICARRAY | Description | Numeric Data |
|---|---|---|---|
| **Data Type** | 64-Bit Real Number | **Range** | N/A |
| **Default** | NaN | **Configuration Load** | Yes |
| **Access Lock** | Determined by ACCLOCK | **Residence** | EE |
| **Related Parameters** | NNUMERIC | | |

## 3.15.33 PVAUTO

| Specific to Block(s) | DATAACQ | Description | Filtered and clamped value of the Process Input 1 (P1) |
|---|---|---|---|
| Data Type | 64-Bit Real Number | Range | N/A |
| Default | NaN | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | | Checkpoint | Yes (for OCD). |

| Specific to Block(s) | DEVCTL | Description | State of Actual Inputs |
|---|---|---|---|
| Data Type | String | Range | Length: 12 characters |
| Default | STATETEXT[0] | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | PVAUTO, GPV, GPVAUTO, NUMDINPTS, NUMSTATES, PV, PVSOURCE, STATETEXT[0..6] | Checkpoint | Yes (for OCD) |

**Remarks**:

- Access is illegal if NUMDINPTS = 0.
- PVAUTO is a String set equal to STATETEXT(GPVAUTO).
- STATETEXT[6] ['State2'] is illegal if NUMSTATES = 2.

## 3.15.34 PVAUTOSTS

| Specific to Block(s) | DATAACQ | Description | Status of the filtered and clamped value of the Process Input 1 (PVAUTO) |
|---|---|---|---|
| Data Type | Enumeration PVVALSTS | Range | Refer Range list |
| Default | Bad (0) | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | | Checkpoint | Yes (for OCD) |

**Range:**

Bad (0): The PVAUTO value was bad. It was replaced with NaN.

Uncertn (1): The status of the PVAUTO value is uncertain.

Normal (2): The value is good.

Manual (3): The value was manually stored.

## 3.15.35 PVCHAR

| Specific to Block(s) | DATAACQ | Description | PV Characterization Option: Defines the characterization to be used for characterizing the P1 value. |
|---|---|---|---|
| Data Type | Enumeration PVCHAR | Range | Refer Range list |
| Default | None (0) | Configuration Load | Yes |
| Access Lock | Application Developer | Residence | EE |
| Related Parameters | | Checkpoint | Yes (for OCD) |

**Remarks**: A floating point parameter P1EU is used to represent the converted EU value of P1.

**Range:**

| None (0): | Do nothing (typically used for RTD and thermocouple inputs). |
|---|---|
| Linear (1): | 0 to 100 inputs to P1 are converted to EUs using configured PVEULO and PVEUHI. |
| SquareRoot (2): | Square root of 0 to 100 inputs to P1 is taken, then this value is EUs using configured PVEULO and PVEUHI. |

## 3.15.36 PVEUHI

| Specific to Block(s) | DATAACQ | Description | Process Variable (PV) High Range (in Engineering Units) - This value corresponds to 100% of full scale. |
|---|---|---|---|
| Data Type | Real | Range | Greater-than PVEULO and less-than or equal to PVEXHILM. |
| Default | 100.0 | Configuration Load | Yes |
| Access Lock | Engineer | Residence | EE |
| Related Parameters | | Checkpoint | Yes (for OCD) |

## 3.15.37 PVEULO

| Specific to Block(s) | DATAACQ | Description | Process Variable (PV) Low Range (in Engineering Units) - This value corresponds to 100% of full scale. |
|---|---|---|---|
| Data Type | Real | Range | Less-than PVEUHI and Greater-than or equal to PVEXLOLM. |
| Default | 0.0 | Configuration Load | Yes |
| Access Lock | Engineer | Residence | EE |
| Related Parameters | | Checkpoint | Yes (for OCD) |

## 3.15.38  PVEXHIFL

| | | | |
|---|---|---|---|
| **Specific to Block(s)** | DATAACQ | **Description** | Process Variable (PV) High Limit Flag - Indicates if PV has exceeded its high limit. |
| **Data Type** | Boolean | **Range** | Off (0): PVs high limit is not exceeded. On (1): PVs high limit is exceeded. |
| **Default** | Off(0) | **Configuration Load** | No |
| **Access Lock** | View Only | **Residence** | EE |
| **Related Parameters** | | **Checkpoint** | Yes (for OCD) |

## 3.15.39  PVEXHILM

| | | | |
|---|---|---|---|
| **Specific to Block(s)** | DATAACQ | **Description** | Process Variable (PV) High Limit (in Engineering Units) - Used to detect and clamp a bad Process Variable (PV) value. |
| **Data Type** | 64-Bit Real Number | **Range** | Greater-than or equal to PVEUHI |
| **Default** | 102.9 | **Configuration Load** | Yes |
| **Access Lock** | Engineer | **Residence** | EE |
| **Related Parameters** | | **Checkpoint** | Yes (for OCD) |

## 3.15.40  PVEXLOFL

| | | | |
|---|---|---|---|
| **Specific to Block(s)** | DATAACQ | **Description** | Process Variable (PV) Low Limit Flag - Indicates if PV has exceeded its low limit. |
| **Data Type** | Boolean | **Range** | Off (0): PV low limit not exceeded. On (1): PV low limit exceeded. |
| **Default** | Off(0) | **Configuration Load** | No |
| **Access Lock** | View Only | **Residence** | EE |
| **Related Parameters** | | **Checkpoint** | Yes (for OCD) |

## 3.15.41  PVEXLOLM

| | | | |
|---|---|---|---|
| **Specific to Block(s)** | DATAACQ | **Description** | Process Variable (PV) Low Limit (in Engineering Units) - Used to detect and clamp a bad Process Variable (PV) value. |

| Data Type | 64-Bit Real Number | Range | Less than or equal to PVEULO |
|---|---|---|---|
| Default | -2.9 | Configuration Load | Yes |
| Access Lock | Engineer | Residence | EE |
| Related Parameters | | Checkpoint | Yes (for OCD) |

## 3.15.42 PVFL

| Specific to Block(s) | LCSFLAG, | Description | Actual State Flag |
|---|---|---|---|
| Data Type | Boolean | Range | Off (0) On (1) |
| Default | Off(0) | Configuration Load | No |
| Access Lock | Defined by ACCLOCK | Residence | EE |
| Related Parameters | PV, STATE0, STATE1, STATETEXT[0..1] | Checkpoint | Yes (for OCD) - for LCSFLAG. |

**Remarks:** This parameter indicates the current state of the LCSFLAG function block as a Boolean. If the checkbox is selected, then the initial value of the flag can be set to 1.

| Specific to Block(s) | DIC | Description | Process Value Flag |
|---|---|---|---|
| Data Type | Boolean | Range | Off (0) On (1) |
| Default | Off(0) | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | | | |

## 3.15.43 PVFL[0..2]

| Specific to Block(s) | DEVCTL | Description | Process Variable (PV) State Flags - PVFL(x) is On when OP = StateX. |
|---|---|---|---|
| Data Type | Boolean | Range | Off (0) On (1) |
| Default | Off(0) | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | GPV, DIPVMAP[0..15], NUMDINPTS, NUMSTATES, PV | Checkpoint | Yes (for OCD). |

**Remarks**:

- Access is illegal if NUMDINPTS = 0.
- PVFL[2] is illegal if NUMSTATES =2.

## 3.15.44  PVFL[1..1000]

This parameter provides access to the Boolean values, one element at a time for all other function blocks of the EE. Initial values can be configured.

| Specific to Block(s) | FLAGARRAY | Description | Flag Data |
|---|---|---|---|
| Data Type | Boolean | Range | Off (0) On (1) |
| Default | Off(0) | Configuration Load | No |
| Access Lock | Determined by ACCLOCK | Residence | EE |
| Related Parameters | NFLAG | Checkpoint | Yes (for OCD) |

## 3.15.45  PVFORMAT

This parameter defines the decimal format to be used to display the PV value. It contains up to eight characters, including the minus sign and decimal point.

| Specific to Block(s) | AUXCALC, DATAACQ, LCSNUMERIC, NUMERICARRAY | Description | Process Variable (PV) Display Format |
|---|---|---|---|
| Data Type | Enumeration PVFORMAT | Range | D0 (-XXXXXX.) D1 (-XXXXX.X) D2 (-XXXX.XX) D3 (XXX.XXX) |
| Default | D1 (-XXXXX.X) | Configuration Load | Yes |
| Access Lock | Engineer | Residence | EE |
| Related Parameters | PV | Checkpoint | Yes (for OCD) - for DATAACQ, AUXCALC, LCSNUMERIC, NUMERICARRAY |

## 3.15.46  PVHHALM.DB

| Specific to Block(s) | DATAACQ | Description | Process Variable (PV) High High Alarm Deadband |
|---|---|---|---|
| Data Type | 64-Bit Real Number | Range | 0.0 to 100.0 if alarm deadband units (PVHHALM.DBU) are Percent. PVEULO to PVEUHI if alarm deadband units (PVHHALM.DBU) are Engineering Units. |
| Default | 0.0 | Configuration Load | No |

| Access Lock | Operator | Residence | EE |
|---|---|---|---|
| **Related Parameters** | PV, PVHHALM.DBU, PVHHALM.FL, PVHHALM.PR, PVHHALM.SV, PVHHALM.TM, PVHHALM.TP. | **Checkpoint** | Yes (for OCD) |

## 3.15.47  PVHHALM.DBU

| **Specific to Block(s)** | DATAACQ | **Description** | PV High High Alarm Deadband Units - Indicates if PVHIALM.DB is in Percent or Engineering Units. |
|---|---|---|---|
| **Data Type** | Enumeration ALMDBU | **Range** | Percent (0) EU (1) |
| **Default** | Percent(0) | **Configuration Load** | No |
| **Access Lock** | Engineer | **Residence** | EE |
| **Related Parameters** | PV, PVHHALM.DB, PVHHALM.FL, PVHHALM.PR, PVHHALM.SV, PVHHALM.TM, PVHHALM.TP | **Checkpoint** | Yes (for OCD) |

## 3.15.48  PVHHALM.FL

| **Specific to Block(s)** | DATAACQ | **Description** | Process Variable (PV) High High Alarm Flag |
|---|---|---|---|
| **Data Type** | Boolean | **Range** | Off (0): PV High High alarm is not active; PV is less than PVHHALM.TP On (1): PV High High alarm is active; PV is greater than or equal to PVHHALM.TP |
| **Default** | Off (0) | **Configuration Load** | No |
| **Access Lock** | View Only | **Residence** | EE |
| **Related Parameters** | | **Checkpoint** | Yes (for OCD) |

## 3.15.49  PVHHALM.PR

| **Specific to Block(s)** | DATAACQ | **Description** | Process Variable (PV) High High Alarm Priority |
|---|---|---|---|

| Data Type | Enumeration ALPRIOR | Range | None (0) |
| --- | --- | --- | --- |
| | | | Journal (1) |
| | | | Low (2) |
| | | | High (3) |
| | | | Urgent (4) |
| Default | Low (2) | Configuration Load | Yes |
| Access Lock | Engineer | Residence | EE |
| Related Parameters | | Checkpoint | Yes (for OCD) |

## 3.15.50  PVHHALM.SV

| Specific to Block(s) | DATAACQ | Description | Process Variable (PV) High High Alarm Severity |
| --- | --- | --- | --- |
| Data Type | 16-Bit Integer | Range | 0 to 15 |
| Default | 0 | Configuration Load | Yes |
| Access Lock | Engineer | Residence | EE |
| Related Parameters | | Checkpoint | Yes (for OCD) |

## 3.15.51  PVHHALM.TM

This parameter prevents input spikes from causing PV High High alarms. An alarm is generated only if PV consistently exceeds the High High alarm trip point for more than the configured alarm filter time.

| Specific to Block(s) | DATAACQ | Description | Process Variable (PV) High High Alarm Filter Time (Seconds) |
| --- | --- | --- | --- |
| Data Type | 32-Bit Unsigned Integer | Range | 0 to 60 |
| Default | 0 | Configuration Load | No |
| Access Lock | Engineer | Residence | EE |
| Related Parameters | PV, PVHHALM.DB, PVHHALM.DBU, PVHHALM.FL, PVHHALM.PR, PVHHALM.SV, PVHHALM.TP | Checkpoint | Yes (for OCD) |

## 3.15.52  PVHHALM.TP

This parameter defines the trip point for a PV High High alarm.

| Specific to Block(s) | DATAACQ | Description | Process Variable (PV) High High Alarm Trip Point. |
| --- | --- | --- | --- |
| Data Type | 64-Bit Real Number | Range | NaN or PVHIALM.TP to PVEUHI. |

| Default | NaN | Configuration Load | Yes |
|---|---|---|---|
| Access Lock | Engineer | Residence | EE |
| Related Parameters | | Checkpoint | Yes (for OCD) |

## 3.15.53  PVHIALM.DB

| Specific to Block(s) | DATAACQ | Description | Process Variable (PV) High Alarm Deadband |
|---|---|---|---|
| Data Type | 64-Bit Real Number | Range | 0.0 to 100.0: If alarm deadband units (PVHIALM.DBU) are Percent.<br><br>PVEULO to PVEUHI, If alarm deadband units (PVHIALM.DBU) are Engineering Units. |
| Default | 0.0 | Configuration Load | No |
| Access Lock | Operator | Residence | EE |
| Related Parameters | PV,<br><br>PVHIALM.DBU,<br><br>PVHIALM.FL,<br><br>PVHIALM.PR,<br><br>PVHIALM.SV,<br><br>PVHIALM.TM,<br><br>PVHIALM.TP. | Checkpoint | Yes (for OCD) |

## 3.15.54  PVHIALM.DBU

| Specific to Block(s) | DATAACQ | Description | Process Variable (PV) High Alarm Deadband Units - Indicates if PVHIALM.DB is in Percent or Engineering Units. |
|---|---|---|---|
| Data Type | Enumeration ALMDBU | Range | Percent (0)<br>EU (1) |
| Default | Percent (0) | Configuration Load | No |
| Access Lock | Engineer | Residence | EE |
| Related Parameters | PV,<br><br>PVHIALM.DB,<br><br>PVHIALM.FL,<br><br>PVHIALM.PR,<br><br>PVHIALM.SV,<br><br>PVHIALM.TM,<br><br>PVHIALM.TP. | Checkpoint | Yes (for OCD) |

## 3.15.55  PVHIALM.FL

| Specific to Block(s) | DATAACQ | Description | Process Variable (PV) High Alarm Flag - Indicates if a PV High alarm has been issued. |
|---|---|---|---|
| Data Type | Boolean | Range | Off (0): PV High alarm is not active; PV is less than PVHIALM.TP.<br><br>On (1): PV High alarm present; PV is greater than or equal to PVHIALM.TP for the configured alarm time. |
| Default | Off (0) | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | | Checkpoint | Yes (for OCD) |

## 3.15.56  PVHIALM.PR

| Specific to Block(s) | DATAACQ | Description | Process Variable (PV) High Alarm Priority - Priority of a PV High alarm |
|---|---|---|---|
| Data Type | Enumeration ALPRIOR | Range | None (0)<br>Journal (1)<br>Low (2)<br>High (3)<br>Urgent (4) |
| Default | Low (2) | Configuration Load | Yes |
| Access Lock | Engineer | Residence | EE |
| Related Parameters | | Checkpoint | Yes (for OCD) |

## 3.15.57  PVHIALM.SV

| Specific to Block(s) | DATAACQ | Description | Process Variable (PV) High Alarm Severity - Severity of a PV High alarm |
|---|---|---|---|
| Data Type | 16-Bit Integer | Range | 0 to 15 |
| Default | 0 | Configuration Load | Yes |
| Access Lock | Engineer | Residence | EE |
| Related Parameters | | Checkpoint | Yes (for OCD) |

## 3.15.58  PVHIALM.TM

| Specific to Block(s) | DATAACQ | Description | Process Variable (PV) High Alarm Filter Time (Seconds) |
|---|---|---|---|

| Data Type | 32-Bit Unsigned Integer | Range | 0 to 60 |
|---|---|---|---|
| Default | 0 | Configuration Load | No |
| Access Lock | Engineer | Residence | EE |
| Related Parameters | PV,<br><br>PVHIALM.DB,<br><br>PVHIALM.DBU,<br><br>PVHIALM.FL,<br><br>PVHIALM.PR,<br><br>PVHIALM.SV,<br><br>PVHIALM.TP | Checkpoint | Yes (for OCD) |

## 3.15.59  PVHIALM.TP

| Specific to Block(s) | DATAACQ | Description | Process Variable (PV) High Alarm Trip Point - Defines the trip point for a PV High alarm. |
|---|---|---|---|
| Data Type | 64-Bit Real Number | Range | NaN or<br><br>PVLOALM.TP to PVHHALM.TP |
| Default | NaN | Configuration Load | Yes |
| Access Lock | Engineer | Residence | EE |
| Related Parameters | | Checkpoint | Yes (for OCD) |

## 3.15.60  PVHILM

| Specific to Block(s) | LCSNUMERIC,<br>LCSNUMERIC16 | Description | Process Variable (PV) High Limit |
|---|---|---|---|
| Data Type | 64-Bit Real Number | Range | Greater than PVLOLM |
| Default | For LCSNUMERIC only: NaN<br><br>For LCSNUMERIC16 only: 32767 | Configuration Load | Yes |
| Access Lock | Engineer | Residence | EE |
| Related Parameters | PVLOLM, PV | Checkpoint | Yes (for OCD) |

**Remarks**:

• When the value is NaN, the limit is not checked on stores to PV.

• When there is some value, stores to PV must be less than PVHILM.

## 3.15.61  PVHISIGCHG.CT

This parameter indicates the number of times the PV low alarm has been re-annunciated (because PVHIALM.TP has been exceeded).

| Specific to Block(s) | DATAACQ | Description | Process Variable (PV) High Significant-Change Count |
|---|---|---|---|

| Data Type | 32-Bit Integer | Range | Greater-than or equal-to 0. |
|---|---|---|---|
| Default | 0 | Configuration Load | No |
| Access Lock | View only | Residence | EE |
| Related Parameters | PVHISIGCHG.TP | Checkpoint | Yes (for OCD) |

## 3.15.62 PVHISIGCHG.TP

This parameter indicates if PV is between the High and High-High alarm limits, the High alarm is re-annunciated (if PV increases by this amount).

| Specific to Block(s) | DATAACQ | Description | Process Variable (PV) High Significant-Change Trip Point |
|---|---|---|---|
| Data Type | 64-Bit Real Number | Range | NaN, or greater-than 0.0. |
| Default | NaN | Configuration Load | Yes |
| Access Lock | Engineer | Residence | EE |
| Related Parameters | PVHISIGCHG.CT | Checkpoint | Yes (for OCD) |

## 3.15.63 PVLLALM.DB

| Specific to Block(s) | DATAACQ | Description | Process Variable (PV) Low Low Alarm Deadband |
|---|---|---|---|
| Data Type | 64-Bit Real Number | Range | 0.0 to 100.0: If alarm deadband units (PVLLALM.DBU) are Percent<br><br>PVEULO to PVEUHI If alarm deadband units (PVLLALM.DBU) are Engineering Units. |
| Default | 0.0 | Configuration Load | Yes |
| Access Lock | Operator | Residence | EE |
| Related Parameters | PV,<br><br>PVLLALM.DBU,<br><br>PVLLALM.FL,<br><br>PVLLALM.PR,<br><br>PVLLALM.SV,<br><br>PVLLALM.TM,<br><br>PVLLALM.TP | Checkpoint | Yes (for OCD) |

## 3.15.64 PVLLALM.DBU

This parameter indicates if PVLLALM.DB is in Percent or Engineering Units.

| Specific to Block(s) | DATAACQ | Description | Process Variable (PV) Low Low Alarm Deadband Unit |
|---|---|---|---|

| Data Type | Enumeration ALMDBU | Range | Percent (0) |
| --- | --- | --- | --- |
| | | | EU (1) |
| Default | Percent (0) | Configuration Load | Yes |
| Access Lock | Engineer | Residence | EE |
| Related Parameters | PV, | Checkpoint | Yes (for OCD) |
| | PVLLALM.DB, | | |
| | PVLLALM.FL, | | |
| | PVLLALM.PR, | | |
| | PVLLALM.SV, | | |
| | PVLLALM.TM, | | |
| | PVLLALM.TP | | |

## 3.15.65  PVLLALM.FL

This parameter indicates if a PV Low Low alarm has been issued.

| Specific to Block(s) | DATAACQ | Description | Process Variable (PV) Low Low Alarm Flag |
| --- | --- | --- | --- |
| Data Type | Boolean | Range | Off (0): PV Low Low Alarm is not active; PV is less than PVLLALM.TP. |
| | | | On (1): PV Low Low Alarm present; PV is greater than or equal to PVLLALM.TP. |
| Default | Off (0) | Configuration Load | No |
| Access Lock | View only | Residence | EE |
| Related Parameters | | Checkpoint | Yes (for OCD) |

## 3.15.66  PVLLALM.PR

| Specific to Block(s) | DATAACQ | Description | Process Variable (PV) Low Low Alarm Priority |
| --- | --- | --- | --- |
| Data Type | Enumeration ALPRIOR | Range | None (0) |
| | | | Journal (1) |
| | | | Low (2) |
| | | | High (3) |
| | | | Urgent (4) |
| Default | Low (2) | Configuration Load | Yes |
| Access Lock | Engineer | Residence | EE |
| Related Parameters | | Checkpoint | Yes (for OCD) |

## 3.15.67  PVLLALM.SV

| Specific to Block(s) | DATAACQ | Description | Process Variable (PV) Low Low Alarm Severity |
| --- | --- | --- | --- |

| Data Type | 16-Bit Integer | Range | 0 to 15 |
|---|---|---|---|
| Default | 0 | Configuration Load | Yes |
| Access Lock | Engineer | Residence | EE |
| Related Parameters | | Checkpoint | Yes (for OCD) |

## 3.15.68  PVLLALM.TM

This parameter prevents input spikes from causing PV Low Low alarms. An alarm is generated if PV is consistently below the Low Low alarm trip point for more than the configured alarm filter time.

If PVLLALM.TM = 0, an alarm is generated as soon as PV exceeds the trip point.

| Specific to Block(s) | DATAACQ | Description | Process Variable (PV) Low Low Alarm Filter Time (Seconds) |
|---|---|---|---|
| Data Type | 32-bit unsigned integer | Range | 0 to 60 |
| Default | 0 | Configuration Load | Yes |
| Access Lock | Engineer | Residence | EE |
| Related Parameters | PV, PVLLALM.DB, PVLLALM.DBU, PVLLALM.FL, PVLLALM.PR, PVLLALM.SV, PVLLALM.TP. | Checkpoint | Yes (for OCD) |

## 3.15.69  PVLLALM.TP

| Specific to Block(s) | DATAACQ | Description | Process Variable (PV) Low Low Alarm Trip Point - Defines the trip point for a PV Low Low alarm. |
|---|---|---|---|
| Data Type | 64-Bit Real Number | Range | NaN, PVEULO to PVLOALM.TP |
| Default | NaN | Configuration Load | Yes |
| Access Lock | Engineer | Residence | EE |
| Related Parameters | | Checkpoint | Yes (for OCD) |

## 3.15.70  PVLOALM.DB

| Specific to Block(s) | DATAACQ | Description | Process Variable (PV) Low Alarm Deadband |
|---|---|---|---|

| Data Type | 64-Bit Real Number | Range | 0.0 to 100.0: If alarm deadband units (PVLOALM.DBU) are Percent. PVEULO to PVEUHI, If alarm deadband units (PVLOALM.DBU) are Engineering Units. |
|---|---|---|---|
| Default | 0.0 | Configuration Load | No |
| Access Lock | Operator | Residence | EE |
| Related Parameters | PV, PVLOALM.DBU, PVLOALM.FL, PVLOALM.PR, PVLOALM.SV, PVLOALM.TM, PVLOALM.TP. | Checkpoint | Yes (for OCD) |

## 3.15.71 PVLOALM.DBU

| Specific to Block(s) | DATAACQ | Description | Process Variable (PV) Low Alarm Deadband Units - Indicates if PVLOALM.DB is in Percent or Engineering Units. |
|---|---|---|---|
| Data Type | Enumeration ALMDBU | Range | Percent (0) EU (1) |
| Default | Percent (0) | Configuration Load | No |
| Access Lock | Engineer | Residence | EE |
| Related Parameters | PV, PVLOALM.DB, PVLOALM.FL, PVLOALM.PR, PVLOALM.SV, PVLOALM.TM, PVLOALM.TP. | Checkpoint | Yes (for OCD) |

## 3.15.72 PVLOALM.FL

| Specific to Block(s) | DATAACQ | Description | Process Variable (PV) Low Alarm Flag - Indicates if a PV Low alarm has been issued. |
|---|---|---|---|

| Data Type | Boolean | Range | Off (0): PV Low alarm is not active; PV is greater than PVLOALM.TP.<br><br>On (1): PV Low alarm present; PV is lesser than or equal to PVLOALM.TP for the configured alarm time. |
|---|---|---|---|
| Default | Off (0) | Configuration Load | No |
| Access Lock | View only | Residence | EE |
| Related Parameters | | Checkpoint | Yes (for OCD) |

**Remarks**: The flag is set only when PV is below the trip point for the configured alarm time.

## 3.15.73  PVLOALM.PR

| Specific to Block(s) | DATAACQ | Description | Process Variable (PV) Low Alarm Priority - Priority of a PV Low alarm |
|---|---|---|---|
| Data Type | Enumeration ALPRIOR | Range | None (0)<br><br>Journal (1)<br><br>Low (2)<br><br>High (3)<br><br>Urgent (4) |
| Default | Low (2) | Configuration Load | Yes |
| Access Lock | Engineer | Residence | EE |
| Related Parameters | | Checkpoint | Yes (for OCD) |

## 3.15.74  PVLOALM.SV

| Specific to Block(s) | DATAACQ | Description | Process Variable (PV) Low Alarm Severity - Severity of a PV Low alarm |
|---|---|---|---|
| Data Type | 16-Bit Integer | Range | 0 to 15 |
| Default | 0 | Configuration Load | Yes |
| Access Lock | Engineer | Residence | EE |
| Related Parameters | | Checkpoint | Yes (for OCD) |

## 3.15.75  PVLOALM.TM

This parameter prevents input spikes from causing PV Low alarms. An alarm is generated if PV consistently exceeds the Low alarm trip point for more than the configured alarm filter time.

If PVLOALM.TM = 0, an alarm is generated as soon as PV falls below the trip point.

| Specific to Block(s) | DATAACQ | Description | Process Variable (PV) Low Alarm Filter Time (Seconds) |
|---|---|---|---|
| Data Type | 32-Bit Unsigned Integer | Range | 0 to 60 |
| Default | 0 | Configuration Load | No |

| Access Lock | Engineer | **Residence** | EE |
|---|---|---|---|
| **Related Parameters** | PV,<br><br>PVLOALM.DB,<br><br>PVLOALM.DBU,<br><br>PVLOALM.FL,<br><br>PVLOALM.PR,<br><br>PVLOALM.SV,<br><br>PVLOALM.TP | **Checkpoint** | Yes (for OCD) |

## 3.15.76  PVLOALM.TP

| **Specific to Block(s)** | DATAACQ | **Description** | Process Variable (PV) Low Alarm Trip Point - Defines the trip point for a PV High alarm. |
|---|---|---|---|
| **Data Type** | 64-Bit Real Number | **Range** | NaN, or<br><br>PVLLALM.TP to PVHIALM.TP |
| **Default** | NaN | **Configuration Load** | Yes |
| **Access Lock** | Engineer | **Residence** | EE |
| **Related Parameters** | | **Checkpoint** | Yes (for OCD) |

## 3.15.77  PVLOLM

| **Specific to Block(s)** | LCSNUMERIC, LCSNUMERIC16 | **Description** | Process Variable (PV) Low Limit |
|---|---|---|---|
| **Data Type** | 64-Bit Real Number | **Range** | Lesser than PVHILM |
| **Default** | For LCSNUMERIC only: NaN<br>For LCSNUMERIC16 only: -32768 | **Configuration Load** | Yes |
| **Access Lock** | Engineer | **Residence** | EE |
| **Related Parameters** | PV, PVHIALM, PVLOALM.TP | **Checkpoint** | Yes (for OCD) |

**Remarks**:

- When the value is NaN, the limit is not checked on stores to PV.
- When there is some value, stores to PV must be greater than PVLOLM.

## 3.15.78  PVLOSIGCHG.CT

The number of times the PV high alarm has been re-annunciated (because

PVLOALM.TP has been exceeded).

| **Specific to Block(s)** | DATAACQ | **Description** | Process Variable (PV) Low Significant-Change Count |
|---|---|---|---|
| **Data Type** | 32-Bit Integer | **Range** | Greater-than or equal-to 0. |
| **Default** | 0 | **Configuration Load** | No |

| Access Lock | View Only | Residence | EE |
|---|---|---|---|
| Related Parameters | PVLOSIGCHG.TP | | |

## 3.15.79  PVLOSIGCHG.TP

This parameter indicates if PV is between the Low and Low-Low alarm limits, the Low alarm is re-annunciated (if PV decreases by this amount).

| Specific to Block(s) | DATAACQ | Description | Process Variable (PV) Low Significant-Change Trip Point |
|---|---|---|---|
| Data Type | 64-Bit Real Number | Range | NaN, or greater-than 0.0. |
| Default | NaN | Configuration Load | Yes |
| Access Lock | Engineer | Residence | EE |
| Related Parameters | PVLOSIGCHG.CT | Checkpoint | Yes (for OCD) |

**Remarks**: Re-alarming is disabled if PVLOSIGCHG.TP = NaN.

## 3.15.80  PVP

| Specific to Block(s) | DATAACQ | Description | Process Variable (PV) Value (in Percent) |
|---|---|---|---|
| Data Type | 64-Bit Real Number | Range | N/A |
| Default | NaN | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | PV, PVEUHI, PVEULO | Checkpoint | Yes (for OCD) |

## 3.15.81  PVSRC

| Specific to Block(s) | AUXCALC DATAACQ | Description | Process Variable (PV) source: Any of P[1..6], PVSTS, C[1..8] or CSTS[1..8] |
|---|---|---|---|
| Data Type | Enumeration CALCOUTSELECTOR | Range | Refer Range list |
| Default | P1(0) | Configuration Load | Yes |
| Access Lock | Engineer | Residence | EE |
| Related Parameters | PVSTSSRC | Checkpoint | Yes (for OCD) |

**Range:**

| P1 (0) | C2 (7) | P1STS (14) | C2STS (21) |
|---|---|---|---|
| P2 (1) | C3 (8) | P2STS (15) | C3STS (22) |
| P3 (2) | C4 (9) | P3STS (16) | C4STS (23) |

| P4 (3) | C5 (10) | P4STS (17) | C5STS (24) |
|--------|---------|------------|------------|
| P5 (4) | C6 (11) | P5STS (18) | C6STS (25) |
| P6 (5) | C7 (12) | P6STS (19) | C7STS (26) |
| C1 (6) | C8 (13) | C1STS (20) | C8STS (27) |

| Specific to Block(s) | DATAACQ, DEVCTL | Description | Process Variable (PV) Source - Identifies the source of the PV input. |
|---|---|---|---|
| Data Type | Enumeration PVSOURCE | Range | Refer Range list |
| Default | Auto (2) | Configuration Load | Yes |
| Access Lock | DATAACQ: Operator DEVCTL: View Only, Operator | Residence | EE |
| Related Parameters | DEVCTL only: GPV, GPVAUTO, NUMDINPTS, NUMDOUTS, PV, PVAUTO, PVSRCOPT. | | |

**Range:**

| Sub (0): | PV value is provided by a user program. |
|---|---|
| Man (1): | PV value is provided by the operator |
| Auto (2): | PV value is fetched from another function block. |

**Remarks**:

- Access illegal if NUMDINPTS = 0
- PVSOURCE may not be set = Track if NUMDOUTS = 0
- View Only and defaulted to Auto if PVSRCOPT = OnlyAuto
- If PVSOURCE is not Man and the function block is INACTIVE, PV is defaulted to Null.

## 3.15.82 PVSRCOPT

| Specific to Block(s) | DEVCTL, DATAACQ | Description | Process Variable (PV) Source Option - Identifies the PV source selection options available to this function block. |
|---|---|---|---|
| Data Type | Enumeration PVSRCOPT | Range | Refer Range list |
| Default | OnlyAuto (0) | Configuration Load | Yes |
| Access Lock | Engineer | Residence | CEE |
| Related Parameters | DEVCTL only: GPV, NUMDINPTS, PV, PVSOURCE | Checkpoint | Yes (for OCD) |

**Range**:

| OnlyAuto (0): | PV may only be fetched from another function block, via an active input connection; PV source selection is not available. |
|---|---|
| All (1): | PV may be fetched from another function block, or provided by an operator or a user program, it depends on the PVSOURCE. |

**Remarks**:

DEVCTL only: Access is illegal if NUMDINPUTS = 0. If set to OnlyAuto, and the function block is Inactive, PV is set to Null.

## 3.15.83  PVSTS

This is used to show the PV status.

| Specific to Block(s) | ADD, SUB, MUL, DIV, ABS, SQRT, AIC, DATAACQ, AUXCALC | Description | PV Status |
|---|---|---|---|
| Data Type | ENUM PVSTS | Range | BAD<br>UNCERTN<br>NORMAL<br>MANUAL |
| Default | BAD | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | | Checkpoint | Yes (for OCD) - applicable for MUL, DATAACQ. |

## 3.15.84  PVSTSFL.BAD

| Specific to Block(s) | DATAACQ, AUXCALC | Description | Bad Process Variable (PV) Status Flag - Indicates if the PV status is Bad. |
|---|---|---|---|
| Data Type | Boolean | Range | Off (0): PVSTS is not Bad.<br>On (1): PVSTS is Bad. |
| Default | Off (0) | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | PV<br>PVSTS<br>PVSTSFL.MAN<br>PVSTSFL.NORM<br>PVSTSFL.UNCER<br>PVVALSTS | Checkpoint | Yes (for OCD) |

## 3.15.85 PVSTSFL.MAN

| Specific to Block(s) | DATAACQ, AUXCALC | Description | Manual Process Variable (PV) Status Flag - Indicates that the PVSTS is Manual. |
|---|---|---|---|
| Data Type | Boolean | Range | Off (0): PVSTS is not Manual. On (1): PVSTS is Manual. |
| Default | Off (0) | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | PV PVSTS PVSTSFL.BAD PVSTSFL.NORM PVSTSFL.UNCER PVVALSTS | Checkpoint | Yes (for OCD) |

## 3.15.86 PVSTSFL.NORM

| Specific to Block(s) | DATAACQ, AUXCALC | Description | Normal Process Variable (PV) Status Flag - Indicates that the PVSTS is Normal. |
|---|---|---|---|
| Data Type | Boolean | Range | Off (0): PVSTS is not Normal. On (1): PVSTS is Normal. |
| Default | Off (0) | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | PV PVSTS PVSTSFL.MAN PVSTSFL.UNCER PVVALSTS | Checkpoint | Yes (for OCD) |

## 3.15.87 PVSTSFL.UNCER

| Specific to Block(s) | DATAACQ, AUXCALC | Description | Uncertain Process Variable (PV) Status Flag - Indicates whether the Process Variable (PV) status is Uncertain. |
|---|---|---|---|
| Data Type | Boolean | Range | Off (0): PVSTS is not Uncertain. On (1): PVSTS is Uncertain. |
| Default | Off (0) | Configuration Load | No |
| Access Lock | View Only | Residence | EE |

| Related Parameters | PV | Checkpoint | Yes (for OCD) |
|---|---|---|---|
| | PVSTS | | |
| | PVSTSFL.BAD | | |
| | PVSTSFL.MAN | | |
| | PVSTSFL.NORM | | |
| | PVVALSTS | | |

## 3.15.88  PVSTSSRC

| Specific to Block(s) | AUXCALC | Description | PVSTS source: Any of C [1..8], CSTS [1..80], P [1..6] or PVSTS |
|---|---|---|---|
| | DATAACQ | | |
| | ADD | | |
| | ABS | | |
| | SUB | | |
| | MUL | | |
| | DIV | | |
| | SQRT | | |
| Data Type | Enumeration CALCOUTSELECTOR | Range | Refer Range list |
| Default | P1STS (14) | Configuration Load | Yes |
| Access Lock | Engineer | Residence | EE |
| Related Parameters | PVSRC | Checkpoint | Yes (for OCD) |

**Range:**

| P1 (0) | C4 (9) | P6STS (19) |
|---|---|---|
| P2 (1) | C5 (10) | C1STS (20) |
| P3 (2) | C6 (11) | C2STS (21) |
| P4 (3) | C7 (12) | C3STS (22) |
| P5 (4) | P1STS (14) | C4STS (23) |
| P6 (5) | P2STS (15) | C5STS (24) |
| C1 (6) | P3STS (16) | C6STS (25) |
| C2 (7) | P4STS (17) | C7STS (26) |
| C3 (8) | P5STS (18) | C8STS (27) |

| Specific to Block(s) | DATAACQ, DEVCTL | Description | Process Variable (PV) Source Option - Identifies the PV source selection options available for this function block. |
|---|---|---|---|
| Data Type | Enumeration PVSTSSRC | Range | Refer Range list |
| Default | OnlyAuto (0) | Configuration Load | Yes |
| Access Lock | Engineer | Residence | EE |

| Related Parameters | DEVCTL Only: |  |  |
|---|---|---|---|
|  | GPV, |  |  |
|  | NUMDINPTS, |  |  |
|  | PV, |  |  |
|  | PVSRC |  |  |

**Range:**

| OnlyAuto (0): | PV may only be fetched from another function block, via an active input connection; PV source selection is not available. |
|---|---|
| All (1): | PV may be fetched from another function block, or provided by an operator or a user program, it depends on the PVSRC. |

**Remarks**: DEVCTL only:

- Access is illegal if NUMDINPUTS = 0.
- If set to OnlyAuto, and the function block is INACTIVE, PV is set to Null.

This parameter is used to select parameter for which PV status is required.

| Specific to Block(s) | ADD, SUB, MUL, DIV | Description | PV Sts src selection |
|---|---|---|---|
| Data Type | ENUM PVSRCSELECTOR | Range | P[1] |
|  |  |  | P[2] |
|  |  |  | PV |
| Default | PV | Configuration Load | Yes |
| Access Lock | Engineer | Residence | EE |
| Related Parameters |  |  |  |

| Specific to Block(s) | ABS, SQRT | Description | PV Sts src selection |
|---|---|---|---|
| Data Type | ENUM ABSPVSRCSELECTOR | Range | P |
|  |  |  | PV |
| Default | PV | Configuration Load | Yes |
| Access Lock | Engineer | Residence | EE |
| Related Parameters |  |  |  |

## 3.15.89 PVVALSTS

This parameter indicates the structure containing the current PV value in addition to the status (PVSTS).

| Specific to Block(s) | AUXCALC, DATAACQ | Description | Process Variable (PV) Value and Status |
|---|---|---|---|
| Data Type | Structure | Range | N/A |
| Default | N/A | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | PV, | Checkpoint | Yes (for OCD) |
|  | PVSTS |  |  |

# 3.16  Q

| Specific to Block(s) | LCSSR, LCSRS | Description | The Q output value |
|---|---|---|---|
| Data Type | Boolean | Range | Off(0)<br>On(1) |
| Default | Off(0) | Configuration Load | Yes |
| Access Lock | Engineer | Residence | EE |
| Related Parameters | | | |

**Remarks**: Output value of SR or RS flip-flop.

## 3.16.1  QNTY

This parameter is used to set the maximum number of data values that can be transferred by a single PUSH or PULL operation.

| Specific to Block(s) | ASCIISETDTPTR | Description | Sets the maximum push/pull qty |
|---|---|---|---|
| Data Type | Unsigned Integer 16 | Range | 1-8 |
| Default | 8 | Configuration Load | Yes |
| Access Lock | Engineer | Residence | CEE |
| Related Parameters | | Checkpoint | Yes (for OCD). |

## 3.17  R

| Specific to Block(s) | LCSSR, LCSRS | Description | The R input value |
|---|---|---|---|
| Data Type | Boolean | Range | Off (0) On (1) |
| Default | Off (0) | Configuration Load | Yes |
| Access Lock | Engineer | Residence | EE |
| Related Parameters | | | |

### 3.17.1  R[1..2]

| Specific to Block(s) | LCSAEMAOCHANNEL | Description | Preset Value |
|---|---|---|---|
| Data Type | Float64 | Range | |
| Default | NaN | Configuration Load | Yes |
| Access Lock | Operator | Residence | EE |
| Related Parameters | | Checkpoint | No (for OCD) |

### 3.17.2  R1

| Specific to Block(s) | AEM | Description | Preset1 register |
|---|---|---|---|
| Data Type | UINT16 | Range | 0-65535 |
| Default | 0 | Configuration Load | Yes |
| Access Lock | Operator | Residence | EE |
| Related Parameters | | Checkpoint | No (for OCD) |

### 3.17.3  R2

| Specific to Block(s) | AEM | Description | Preset2 register |
|---|---|---|---|
| Data Type | UINT16 | Range | 0-65535 |
| Default | 0 | Configuration Load | Yes |
| Access Lock | Operator | Residence | EE |
| Related Parameters | | Checkpoint | No (for OCD) |

### 3.17.4  RANGEHI[1..8]

| Specific to Block(s) | RTDM | Description | Range High |
|---|---|---|---|
| Data Type | REAL | Range | Varies based on RTD Alpha and Type |
| Default | 482 | Configuration Load | Yes |
| Access Lock | Engineer | Residence | EE |

| Related Parameters | | | |
|---|---|---|---|

## 3.17.5  RANGEHI[1..16]

This parameter is used to enter the Range High value for a particular channel of UAIM.

| Specific to Block(s) | UAIM | Description | Range Hi Select |
|---|---|---|---|
| Data Type | Real | Range | Based on other selections like characterization, signal range |
| Default | 5 | Configuration Load | Yes |
| Access Lock | Engineer | Residence | EE |
| Related Parameters | | | |

**Remarks**: Optimum output signal resolution from the UAIM to the processor depends on the number of counts for each volt (or millivolt) of input. The more counts the processor can read, the better the resolution. RANGEHI can be used to change the input range by increasing the number of counts per volt (or millivolt) that the processor can read.

For a 0-5V inherent range, a range high of 4.5V causes the processor to see 4095 counts when the input is 4.5V.

For default ranges of various input type, refer UAIM User Guide.

## 3.17.6  RANGELO[1..8]

| Specific to Block(s) | RTDM | Description | Range Low |
|---|---|---|---|
| Data Type | REAL | Range | Varies based on RTD Alpha and Type |
| Default | -184 | Configuration Load | Yes |
| Access Lock | Engineer | Residence | EE |
| Related Parameters | | | |

## 3.17.7  RANGELO[1..16]

This parameter is used to enter the Range Low value.

| Specific to Block(s) | UAIM | Description | Range Lo Select |
|---|---|---|---|
| Data Type | Real | Range | Based on other selections like characterization, signal range |
| Default | 1 | Configuration Load | Yes |
| Access Lock | Engineer | Residence | EE |
| Related Parameters | | | |

**Remarks**: Optimum output signal resolution from the UAIM to the processor depends on the number of counts for each volt (or milli volt) of input. The more counts the processor can read, the better the resolution. RANGELO can be used to change the input range by decreasing the number of counts per volt (or milli volt) that the processor can read.

For a 0-5V inherent range, a range low of 0.5V causes the processor to see 0 counts when the input is 0.5V.

For default ranges of various input type, refer UAIM User Guide.

## 3.17.8  RDISPDEGIMRCONN [1..RDISPCONNMAX]

| **Specific to Block(s)** | EE | **Description** | Number of Display IMRs Degraded to Request-Response - Indicates the count of display IMRs (Interprocess Message Structure) that have degraded to Request-Response on each connection. |
|---|---|---|---|
| **Data Type** | 32-Bit Integer | **Range** | >= 0 |
| **Default** | 0 | **Configuration Load** | No |
| **Access Lock** | View Only | **Residence** | EE |
| **Related Parameters** | | | |

## 3.17.9  RDNCHASSISID

| **Specific to Block(s)** | LIOM | **Description** | Redundancy Physical Chassis ID - Identifies a specific physical chassis in a redundant chassis pair without regard to chassis redundancy state. |
|---|---|---|---|
| **Data Type** | Enumeration RDNCHASSISID | **Range** | ChassisUndef (0)<br><br>ChassisA (1)<br><br>ChassisB (2) |
| **Default** | ChassisUndef (0) | **Configuration Load** | No |
| **Access Lock** | View Only | **Residence** | EE |
| **Related Parameters** | | | |

**Remarks:** This is a non-configurable attribute of the Redundancy Module (RM), which the RM distributes to all chassis resident redundancy compliant modules.

## 3.17.10  RDNCMPT

| **Specific to Block(s)** | LIOM | **Description** | Redundancy Partner Compatibility - Indicates whether the modules residing in the same slot of a redundant chassis pair are compatible. If modules are not compatible, a reason is provided. |
|---|---|---|---|
| **Data Type** | Enumeration | **Range** | See Range list |
| **Default** | NoPartner (0) | **Configuration Load** | No |
| **Access Lock** | View Only | **Residence** | LIOM |
| **Related Parameters** | | | |

**Range:**

| NoPartner (0) | Partner module is absent. |
|---|---|
| QueryInProg (1) | Transient state indicating that the redundancy partners are negotiating their compatibility. |
| Compatible (2) | Partner module is present and compatible. |
| DirectCmpt (3) | LIOM Partner module is present, compatible, and has identical firmware. |
| IndirectCmpt (4) | LIOM Partner module is present, compatible, but supports only indirect synchronization due to different firmware revisions. |
| MessageSize (5) | Incompatible - Unexpected compatibility message size. |
| Honeywellid (6) | Incompatible - Different vendor IDs. |
| ProductType (7) | Incompatible - Different product types. |
| ProductCode (8) | Incompatible - Different product codes. |
| MajRevision (9) | Incompatible - Major revision not supported. |
| MinRevision (10) | Incompatible - Minor revision not supported. |
| Platform (11) | Incompatible - Different firmware and/or hardware type. |
| OPMNotlmpl (12) | Incompatible - On-Process support not implemented. |
| OPMSequence (13) | Incompatible - Attempting On-Process Migration across more than one major release. |

## 3.17.11 RDNLOS

| **Specific to Block(s)** | Primary /Secondary LIOM | **Description** | Redundancy - Loss of Synchronization |
|---|---|---|---|
| **Data Type** | Enumeration | **Range** | None (0) <br><br> ClnPointBluff(1) <br><br> ClnPointFifo(2) <br><br> ClnPointTmo(3) |
| **Default** | None(0) | **Configuration Load** | No |
| **Access Lock** | View Only | **Residence** | LIOM |
| **Related Parameters** | | | |

## 3.17.12 RDNSYNCSTATE

| **Specific to Block(s)** | Primary /Secondary LIOM | **Description** | Redundant Synchronization State. Shows the current synchronization state of the module. | |
|---|---|---|---|---|
| **Data Type** | Enum | **Range** | NOTINSYNC (0): | Not synchronized, Partner absent. |
| | | | PARTNERVISBL (1): | Not synchronized, Partner is visible. |
| | | | SYNCINPROG (2): | Synchronization is in progress. |
| | | | SYNCMAINT (3): | Synchronized. |
| **Default** | NOTINSYNC (0) | **Configuration Load** | No | |
| **Access Lock** | View Only | **Residence** | LIOM | |

| Related Parameters | | | |
|---|---|---|---|

**Remarks:** Indicates level of module synchronization with redundancy partner module.

## 3.17.13  RDNCTLABILITY

| Specific to Block(s) | Primary/Secondary LIOM | Description | Redundancy Controllability shows whether the current controller is Better, Equal, or Worse to be the primary controller (as compared to the partner controller). |
|---|---|---|---|
| Data Type | ENUM | Range | ---<br><br>Evaluating<br><br>Better<br><br>Equal<br><br>Worse |
| Default | --- | Configuration Load | NOLOAD |
| Access Lock | View Only | Residence | EE |
| Related Parameters | | Checkpoint | No |

## 3.17.14  RDNHISTTIME

| Specific to Block(s) | Primary /Secondary LIOM | Description | Redundancy History Time. The system time captured at the time the entry was added to the table. |
|---|---|---|---|
| Data Type | TIME | Range | >= 0 |
| Default | 0 | Configuration Load | NOLOAD |
| Access Lock | View Only | Residence | EE |
| Related Parameters | | Checkpoint | No |

## 3.17.15  RDNHISTSTATE

| Specific to Block(s) | Primary /Secondary LIOM | Description | Redundancy History State. Indicates milestones with respect to redundancy-related activities like redundancy role states, compatibility states, synchronization states, user commands, sync abort indication, and role change indication. Set to dashes '- - -' when entry not yet initialized. |
|---|---|---|---|
| Data Type | ENUM | Range | See Table under **Remarks** |
| Default | --- (0) | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | | Checkpoint | No |

**Remarks:** The following table lists the Range for the **RDNHISTSTATE** parameter:

| (0) | - - - |
|---|---|
| (1) | Startup |
| (2) | NonRedun |
| (3) | Primary |
| (4) | Secondary |
| (5) | NoPartner |
| (6) | Incompatible |
| (7) | PartnerVisbl |
| (8) | SyncInProg |
| (9) | SyncMaint |
| (10) | Standby |
| (11) | AutoSyncDsbl |
| (12) | AutoSyncEnbl |
| (13) | AltSyncCmd |
| (14) | BecmPriCmd |
| (15) | DsblSyncCmd |
| (16) | EnblSyncCmd |
| (17) | EnblStbyCmd |
| (18) | SyncAbort |
| (19) | RoleChng |

## 3.17.16  RDNHISTREASON

| **Specific to Block(s)** | Primary /Secondary LIOM | **Description** | Redundancy History Reason. Optionally indicates rationale for the occurrence of the associated RDNHISTSTATE entries. Includes rationale for loss-of-sync, redundancy role change, commencing initial sync, and partner incompatibility. Set to dashes '- - -' when entry not applicable (or entry not yet initialized). |
|---|---|---|---|
| **Data Type** | ENUM | **Range** | See Table under **Remarks** |
| **Default** | --- (0) | **Configuration Load** | No |
| **Access Lock** | View Only | **Residence** | EE |
| **Related Parameters** | | **Checkpoint** | No |

**Remarks:** The following table lists the range values for the **RDNHISTREASON** parameter:

| 0 | --- | 66 | OpmWaitSyncCommand |
|---|---|---|---|
| 1 | PreviouslyPrimary | 67 | OpmAbortCommand |
| 2 | PreviouslySynchronizedSecondary | 68 | OpmRestoreTimeout |
| 3 | PreviouslyStandbySecondary | 69 | OpmTimeout |

| 4 | PreviouslyUnsynchronizedSecondary | 70 | OpmInitialSyncTimeout |
|---|---|---|---|
| 5 | PreviouslyNonRedundant | 71 | OpmIoConnectionsTimeout |
| 6 | PrimaryIpOccupied | 72 | OpmIoDataFailure |
| 7 | SecondaryIpOccupied | 73 | OpmPeerReferencesMismatch |
| 8 | HardwareLimitation | 74 | OpmPeerReferencesFailure |
| 9 | OddDeviceIndex | 75 | OpmBlockDataTimeout |
| 10 | EvenDeviceIndex | 76 | OpmBlockDataFailure |
| 11 | PartnerIsPrimary | 77 | OpmFormatError |
| 12 | PartnerIsSecondary | 78 | StartupInProgress |
| 13 | PartnerIsNonRedundant | 79 | PlatformFunctionBlockLoadState |
| 14 | PartnerIsNoDb | 80 | RedundancyConfigurationState |
| 15 | PartnerRunningInBootFirmware | 81 | Link1PartnerTimeout |
| 16 | LaterWallClockTime | 82 | Link2PartnerTimeout |
| 17 | Compatible | 83 | Link1PartnerNotVisible |
| 18 | DirectCompatible | 84 | Link2PartnerNotVisible |
| 19 | MigrateCompatible | 85 | Link1PartnerMismatch |
| 20 | HardwareType | 86 | Link2PartnerMismatch |
| 21 | FirmwareType | 87 | StateUnexpected |
| 22 | DeviceIndex | 88 | InitialSyncDelay |
| 23 | OpmNotImplemented | 89 | InitialSyncFail |
| 24 | OpmSequence | 90 | DroppingSync |
| 25 | InitiateSwitchoverCommand | 91 | CclBinaryLoad |
| 26 | InitiateSwapCommand | 92 | CeeLoadOrDelete |
| 27 | PrimaryLonelyOnFte | 93 | UnsupportedHardwareVersion |
| 28 | Migration | 94 | BothRunningInBootFirmware |
| 29 | AlternateSync | 95 | ThisRunningInBootFirmware |
| 30 | DiagnosticFailure | 96 | RedundancyCommOutOfBuffersError |
| 31 | FatalError | 97 | RedundancyCommTransmitError |
| 32 | FteDeafMute | 98 | RedundancyCommReceiveError |
| 33 | IolLoopback | 99 | RedundancyCommDeviceReset |
| 34 | PartnerRequest | 100 | RedundancyCommBadBufferIndex |
| 35 | PartnerBetterPrimary | 101 | BecomePrimaryCommand |
| 36 | DisableSyncCommand | 102 | LowerSerialNumber |
| 37 | PartnerAbsent | 103 | HigherSerialNumber |
| 38 | PartnerNotCompatible | 104 | BetterControlAbility |
| 39 | PartnerPrivatePathDisconnected | 105 | WorseControlAbility |
| 40 | RedundancyCommOutOfSequenceError | 106 | PartnerFaultDetected |
| 41 | DataFormatError | 107 | Link1LoadState |
| 42 | DataChecksumError | 108 | Link2LoadState |
| 43 | SyncHardwareError | 109 | Link3LoadState |
| 44 | CleanPointTimeout | 110 | Link4LoadState |
| 45 | PrimaryUnknownError | 111 | Link5LoadState |

| 46 | SecondaryUnknownError | 112 | Link6LoadState |
|----|----------------------|-----|----------------|
| 47 | AlternateSyncCommand | 113 | Link7LoadState |
| 48 | EnableSyncCommand | 114 | Link8LoadState |
| 49 | MigrationCommand | 115 | UnexpectedPdTagSetOnLink |
| 50 | PartnerReady | 116 | UnexpectedPdTagClearOnLink |
| 51 | PartnerPrivatePathConnected | 117 | UnexpectedNodeAddrSetOnLink |
| 52 | PartnerPrivatePathCommunicationError | 118 | UnexpectedNodeAddrClearOnLink |
| 53 | DataMessageSizeError | 119 | DupeNodeAddrDetectedOnLink |
| 54 | AutoSyncState | 120 | UnknownSmEventIndicationOnLink |
| 55 | NoFbStart | 121 | OnProcessMigrationDSDThrottling |
| 56 | SyncDataReceiveError | 122 | RedundancyCommBufferOverflow |
| 57 | OutOfSyncBuffers | 123 | RedundancyDataOverrun |
| 58 | OutOfIMRs | 124 | RedundancyResourceLocked |
| 59 | LiveListMismatch | 125 | OpenIoConnectionsTimeout |
| 60 | LinkStatus | 126 | RedundancyModuleRemoval |
| 61 | RtpAttendance | 127 | OpenSyncDataConnectionError |
| 62 | FteCableStatus | 128 | OpenTrackDataConnectionError |
| 63 | NvsCommands | 129 | InitialSyncTimeout |
| 64 | OpmRequired | 130 | EnableStandbyCommand |
| 65 | OpmWaitRestore | | |

## 3.17.17  RDNINHIBITSYNC

| Specific to Block(s) | LIOM | Description | Shows the reasons for inhibiting initial-sync. |
|----------------------|------|-------------|------------------------------------------------|
| Data Type | ENUM | Range | See the table under **Remarks** |
| Default | --- (0) | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | | Checkpoint | No |

**Remarks:** The following table lists the range for RDNINHIBITSYNC

| 0 | --- |
|---|-----|
| 1 | PreviouslyPrimary |
| 2 | PreviouslySynchronizedSecondary |
| 3 | PreviouslyStandbySecondary |
| 4 | PreviouslyUnsynchronizedSecondary |
| 5 | PreviouslyNonRedundant |
| 6 | PrimaryIpOccupied |
| 7 | SecondaryIpOccupied |
| 8 | HardwareLimitation |
| 9 | OddDeviceIndex |

| 10 | EvenDeviceIndex |
|----|-----------------|
| 11 | PartnerIsPrimary |
| 12 | PartnerIsSecondary |
| 13 | PartnerIsNonRedundant |
| 14 | PartnerIsNoDb |
| 15 | PartnerRunningInBootFirmware |
| 16 | LaterWallClockTime |
| 17 | Compatible |
| 18 | DirectCompatible |
| 19 | MigrateCompatible |
| 20 | HardwareType |
| 21 | FirmwareType |
| 22 | DeviceIndex |
| 23 | OpmNotImplemented |
| 24 | OpmSequence |
| 25 | InitiateSwitchoverCommand |
| 26 | InitiateSwapCommand |
| 27 | PrimaryLonelyOnFte |
| 28 | Migration |
| 29 | AlternateSync |
| 30 | DiagnosticFailure |
| 31 | FatalError |
| 32 | FteDeafMute |
| 33 | IolLoopback |
| 34 | PartnerRequest |
| 35 | PartnerBetterPrimary |
| 36 | DisableSyncCommand |
| 37 | PartnerAbsent |
| 38 | PartnerNotCompatible |
| 39 | PartnerPrivatePathDisconnected |
| 40 | RedundancyCommOutOfSequenceError |
| 41 | DataFormatError |
| 42 | DataChecksumError |
| 43 | SyncHardwareError |
| 44 | CleanPointTimeout |
| 45 | PrimaryUnknownError |
| 46 | SecondaryUnknownError |
| 47 | AlternateSyncCommand |
| 48 | EnableSyncCommand |
| 49 | MigrationCommand |
| 50 | PartnerReady |
| 51 | PartnerPrivatePathConnected |

| 52 | PartnerPrivatePathCommunicationError |
|----|--------------------------------------|
| 53 | DataMessageSizeError |
| 54 | AutoSyncState |
| 55 | NoFbStart |
| 56 | SyncDataReceiveError |
| 57 | OutOfSyncBuffers |
| 58 | OutOfIMRs |
| 59 | LiveListMismatch |
| 60 | LinkStatus |
| 61 | RtpAttendance |
| 62 | FteCableStatus |
| 63 | NvsCommands |
| 64 | OpmRequired |
| 65 | OpmWaitRestore |
| 66 | OpmWaitSyncCommand |
| 67 | OpmAbortCommand |
| 68 | OpmRestoreTimeout |
| 69 | OpmTimeout |
| 70 | OpmInitialSyncTimeout |
| 71 | OpmIoConnectionsTimeout |
| 72 | OpmIoDataFailure |
| 73 | OpmPeerReferencesMismatch |
| 74 | OpmPeerReferencesFailure |
| 75 | OpmBlockDataTimeout |
| 76 | OpmBlockDataFailure |
| 77 | OpmFormatError |
| 78 | StartupInProgress |
| 79 | PlatformFunctionBlockLoadState |
| 80 | RedundancyConfigurationState |
| 81 | Link1PartnerTimeout |
| 82 | Link2PartnerTimeout |
| 83 | Link1PartnerNotVisible |
| 84 | Link2PartnerNotVisible |
| 85 | Link1PartnerMismatch |
| 86 | Link2PartnerMismatch |
| 87 | StateUnexpected |
| 88 | InitialSyncDelay |
| 89 | InitialSyncFail |
| 90 | DroppingSync |
| 91 | CclBinaryLoad |
| 92 | CeeLoadOrDelete |
| 93 | UnsupportedHardwareVersion |

| 94 | BothRunningInBootFirmware |
|-----|---------------------------|
| 95 | ThisRunningInBootFirmware |
| 96 | RedundancyCommOutOfBuffersError |
| 97 | RedundancyCommTransmitError |
| 98 | RedundancyCommReceiveError |
| 99 | RedundancyCommDeviceReset |
| 100 | RedundancyCommBadBufferIndex |
| 101 | BecomePrimaryCommand |
| 102 | LowerSerialNumber |
| 103 | HigherSerialNumber |
| 104 | BetterControlAbility |
| 105 | WorseControlAbility |
| 106 | PartnerFaultDetected |
| 107 | Link1LoadState |
| 108 | Link2LoadState |
| 109 | Link3LoadState |
| 110 | Link4LoadState |
| 111 | Link5LoadState |
| 112 | Link6LoadState |
| 113 | Link7LoadState |
| 114 | Link8LoadState |
| 115 | UnexpectedPdTagSetOnLink |
| 116 | UnexpectedPdTagClearOnLink |
| 117 | UnexpectedNodeAddrSetOnLink |
| 118 | UnexpectedNodeAddrClearOnLink |
| 119 | DupeNodeAddrDetectedOnLink |
| 120 | UnknownSmEventIndicationOnLink |
| 121 | OnProcessMigrationDSDThrottling |
| 122 | RedundancyCommBufferOverflow |
| 123 | RedundancyDataOverrun |
| 124 | RedundancyResourceLocked |
| 125 | OpenIoConnectionsTimeout |
| 126 | RedundancyModuleRemoval |
| 127 | OpenSyncDataConnectionError |
| 128 | OpenTrackDataConnectionError |
| 129 | InitialSyncTimeout |
| 130 | EnableStandbyCommand |

## 3.17.18  RDNISTIMEMAX

| Specific to Block(s) | Primary/Secondary LIOM | Description | Max Initial Sync Time (in secs). Indicates the high-water mark with regard to redundancy initial synchronization time, in seconds. |
|---|---|---|---|
| Data Type | UINT32 | Range | Greater than or equal to 0 |
| Default | 0 | Configuration Load | No |
| Access Lock | View Only | Residence | LIOM |
| Related Parameters | | Checkpoint | No |

## 3.17.19  RDNROLESTATE

| Specific to Block(s) | Primary/Secondary LIOM | Description | Redundancy Role - Indicates whether the module is operating as a Primary, Secondary, or is logically Non-Redundant. |
|---|---|---|---|
| Data Type | ENUM | Range | Undefined (0): Initial redundancy role not yet determined. NonRedun (1): Module configured as non-redundant. Primary (2):Primary redundancy role. Secondary (3): Secondary redundancy role. |
| Default | Undefined | Configuration Load | No |
| Access Lock | View Only | Residence | LIOM |
| Related Parameters | RDNSYCSTATE | Checkpoint | No |

**Remarks:** When a module is configured as redundant, primary always reports itself as Primary and secondary always reports itself as Secondary irrespective of whether or not the redundant module pair is synchronized.

## 3.17.20  RDNOPMFRZTIME

| Specific to Block(s) | Primary/Secondary LIOM | Description | OPM Freeze Ctrl Time (in msecs). Indicates the control freeze time during the indirect synch phase of OPM. |
|---|---|---|---|
| Data Type | | Range | |
| Default | --- (0) | Configuration Load | NOLOAD |
| Access Lock | ViewOnly | Residence | EE |

| Related Parameters | | Checkpoint | No |
|---|---|---|---|

## 3.17.21  RDNOPMSTATUS

| Specific to Block(s) | Primary/Secondary LIOM | Description | Status parameter indicating the notifications generated by the primary controller during an On-Process Migration session. |
|---|---|---|---|
| Data Type | ENUM | Range | See table under **Remarks** |
| Default | --- (0) | Configuration Load | NOLOAD |
| Access Lock | ViewOnly | Residence | EE |
| Related Parameters | | Checkpoint | No |

Remarks: The following table lists the range for the RDNOPMSTATUS parameter:

| 1 | Enabled |
|---|---|
| 2 | BlocksCreated |
| 3 | InitialSync |
| 4 | OpenIoConns |
| 5 | MatchPeerRefs |
| 6 | TransferData |
| 7 | SessionComplete |
| 8 | PartialColdInit |
| 9 | CommandedAbort |
| 10 | CreateBlockTimeout |
| 11 | InitialSyncTimeout |
| 12 | IoConnsTimeout |
| 13 | IoDataFailure |
| 14 | PeerRefsMismatch |
| 15 | PeerRefsFailure |
| 16 | BlockDataFailure |
| 17 | SessionTimeout |

## 3.17.22  RDNSOTIMEMAX

| Specific to Block(s) | Primary/ Secondary LIOM | Description | Maximum Switchover Time (in msecs) - Indicates the high-water mark with regard to redundancy switchover time, in milli-seconds. |
|---|---|---|---|
| Data Type | UINT32 | Range | Greater than or equal to 0 |
| Default | 0 | Configuration Load | No |
| Access Lock | View Only | Residence | LIOM |

| Related Parameters | | Checkpoint | No |
|---|---|---|---|

## 3.17.23  RDNSYNCPROG

| Specific to Block(s) | Primary/Secondary LIOM. | Description | Initial Sync Progress - Indicates the initial synchronization progress in terms of percent complete. |
|---|---|---|---|
| Data Type | UINT32 | Range | 0 to 100 |
| Default | N/A | Configuration Load | No |
| Access Lock | View Only | Residence | LIOM |
| Related Parameters | | Checkpoint | No |

## 3.17.24  RDNXFERAVG

| Specific to Block(s) | Primary/Secondary LIOM | Description | Average Redundancy Traffic (Bytes/Sec) |
|---|---|---|---|
| Data Type | FLOAT64 | Range | Greater than or equal to 0. |
| Default | N/A | Configuration Load | No |
| Access Lock | View Only | Residence | LIOM |
| Related Parameters | RDNXFERMAX | Checkpoint | No |

## 3.17.25  RDNXFERMAX

| Specific to Block(s) | Primary/Secondary LIOM | Description | Maximum Redundancy Traffic (Bytes/Sec) |
|---|---|---|---|
| Data Type | FLOAT64 | Range | Greater than or equal to 0. |
| Default | N/A | Configuration Load | No |
| Access Lock | | Residence | |
| Related Parameters | | Checkpoint | |

**Remarks:** Historical maximum of module generated redundancy private path throughput since last store to STATSRESET.

## 3.17.26  RDNDELAYAVG

| Specific to Block(s) | Primary/Secondary LIOM | Description | Redundancy Delay Average (%) |
|---|---|---|---|
| Data Type | FLOAT64 | Range | 0.0 to 100.0 |
| Default | N/A | Configuration Load | No |
| Access Lock | View Only | Residence | LIOM |
| Related Parameters | RDNDELAYMAX, STATSRESET | Checkpoint | No |

**Remarks:** Gives rolling average of redundancy delay CPU in percent. Redundancy delay CPU is that processing stolen' from any of the tasks currently active to delay until redundancy resources are freed. The

average is computed by a 1 minute, first order lag filter. Triggering the STATSRESET parameter can restart averaging.

## 3.17.27  RDNDELAYMAX

| Specific to Block(s) | Primary/Secondary LIOM | Description | Max Redundancy Delay (%) |
|---|---|---|---|
| Data Type | FLOAT64 | Range | 0.0 to 100.0 |
| Default | N/A | Configuration Load | No |
| Access Lock | View Only | Residence | LIOM |
| Related Parameters | RDNDELAYAVG, STATSRESET | Checkpoint | No |

Remarks: Historical maximum redundancy delay CPU value observed since last store to STATSRESET

## 3.17.28  READCOMMAND

This parameter is used to send a read command to both UAIM and RTDM for the selected channel. This command can be issued only when the IOM is in an INACTIVE state.

| Specific to Block(s) | UAIM, RTDM | Description | Read Configuration. |
|---|---|---|---|
| Data Type | Boolean | Range | True<br>False |
| Default | False | Configuration Load | No |
| Access Lock | Engineer | Residence | EE |
| Related Parameters | ISSELECTED |  |  |

## 3.17.29  READMESSAGE

This parameter is a static message to inform you that the present tab will not show the actual configuration residing on the UAIM/RTDM until a **Read Configuration** is performed.

| Specific to Block(s) | UAIM, RTDM | Description | Static message for read configuration. |
|---|---|---|---|
| Data Type | String | Range | NA |
| Default | NA | Configuration Load | No |
| Access Lock | View Only | Residence | SR |
| Related Parameters |  |  |  |

## 3.17.30  REASONSET

| Specific to Block(s) | Most function blocks | Description | Reason Set - Lets you specify the valid number of the reason set you want to apply to the signature. |
|---|---|---|---|
| Data Type | INT16 | Range | 0-100 |

| Default | 0 = Not Required | Configuration Load | Yes |
|---|---|---|---|
| Access Lock | Application Developer | Residence | SR |
| Related Parameters | | | |

You configure the reason sets through the System configuration for Operator Security/Electronic Signatures in Station. Refer to the *Server and Client Configuration Guide* for more information.

## 3.17.31 REDTAG

| Specific to Block(s) | DEVCTL, | Description | Red Tag - Allows the user to set the FB as being 'out-of-service'; this indicates that the FB or the associated control strategy needs repair, or is being repaired. |
|---|---|---|---|
| Data Type | Boolean | Range | Off (0): Block operates normally<br><br>On (1): Operator cannot make changes to the block |
| Default | Off | Configuration Load | No |
| Access Lock | Engineer | Residence | EE |
| Related Parameters | DEVCTL only:<br><br>MODEATTR<br><br>NUMDOUTS | Checkpoint | Yes (for OCD). |

**Remarks:** DEVCTL:

Illegal if NUMDOUTS = 0.

Illegal if MODEATTR is not Operator.

Illegal if present state is Momentary.

RegCtl MODE must be Manual before REDTAG can be turned ON.

## 3.17.32 RESETFL

When this control output is set to ON, it resets the specified counter to zero and inhibits further counting until it is turned on. The Reset control output does not work with the marker pulse input (signal M) and therefore resets the counter immediately upon turning it ON.

| Specific to Block(s) | LCSPQICHANNEL | Description | Reset Command Flag |
|---|---|---|---|
| Data Type | Boolean | Range | Off (0)<br>On (1) |
| Default | Off (0) | Configuration Load | Yes |
| Access Lock | Engineer | Residence | EE |
| Related Parameters | | | |

## 3.17.33 RESETFLLO

| Specific to Block(s) | LCSTIMER | Description | Reset Command Flag. |
|---|---|---|---|

| Data Type | Boolean | Range | Off (0) |
| | | | On (1) |
| Default | Off (0) | Configuration Load | No |
| Access Lock | Program | Residence | EE |
| Related Parameters | | | |

**Remarks**: An ON to OFF transition of RESETFLLO causes the time to be reset.

## 3.17.34  RESETSLINKS

This parameter is a command used to reset the serial links. The command takes all the SIOMs offline, and then brings them online.

---

❗ **Attention**

It is recommended that this command be executed when EE is in an **IDLE** state.

---

| Specific to Block(s) | LIOM | Description | Reset Serial Links |
| Data Type | BOOLEAN | Range | TRUE |
| | | | FALSE |
| Default | FALSE | Configuration Load | No |
| Access Lock | Engineer, Manager | Residence | EE |
| Related Parameters | | | |

## 3.17.35  RESETLO

| Specific to Block(s) | LCSCOUNTER | Description | Resets the input value. |
| Data Type | Boolean | Range | Off |
| | | | On |
| Default | On | Configuration Load | No |
| Access Lock | Program | Residence | EE |
| Related Parameters | DNIN, UPIN, K | Checkpoint | Yes (for OCD) |

**Remarks**: When the input transitions from ON to OFF, then the Counter is reset to the value connected to K.

When the RESETLO is true, the Counter counts up or down as per the inputs DNIN or UPIN.

## 3.17.36  RESTARTFL

| Specific to Block(s) | LCSTIMER | Description | Restart Command Flag - Provides ability to issue Restart command to the LCSTIMER function block. |
| Data Type | Boolean | Range | Off (0) |
| | | | On (1) |
| Default | Off (0) | Configuration Load | No |
| Access Lock | Other Function Block | Residence | EE |

| Related Parameters | COMMAND, | | |
|---|---|---|---|
| | RESETFLLO, | | |
| | STARTFL, | | |
| | STOPFL. | | |

**Remarks**: An OFF to ON transition of RESTARTFL causes the timer to restart.

## 3.17.37 RESTARTSLINKS

This command is used for detecting new SIOMs that are online on an active serial link. It does not affect the SIOMs that are already online. If issued when the link is IDLE, the online SIOMs are detected and the Analog and Digital output data is read back from the SIOM and updated in the LIOM memory.

| **Specific to Block(s)** | LIOM | **Description** | Restart Slinks |
|---|---|---|---|
| **Data Type** | BOOLEAN | **Range** | TRUE |
| | | | FALSE |
| **Default** | FALSE | **Configuration Load** | No Load |
| **Access Lock** | Operator | **Residence** | EE |
| **Related Parameters** | | | |

## 3.17.38 RESTARTOPT

| **Specific to Block(s)** | DEVCTL | **Description** | Sequential Control Module (SCM) Restart Option - Indicates activity for device when ControlModule.SCMSTATE returns to Restarting or Running. |
|---|---|---|---|
| **Data Type** | Enumeration RESTARTOPT | **Range** | None (0) |
| | | | LastReq (1) |
| **Default** | None (0) | **Configuration Load** | Yes |
| **Access Lock** | Engineer | **Residence** | EE |
| **Related Parameters** | HOLDOPT | **Checkpoint** | Yes (for OCD). |
| | LASTOPMNAME | | |
| | LASTOPREQ | | |
| | LASTOPTYPE | | |
| | LASTSTEP | | |
| | OPREQ | | |
| | OPTYPE | | |
| | SAFEOP | | |
| | SCMASTER [1..10] | | |
| | SCMOPT | | |
| | SCMSTATE | | |
| | STARTOPT | | |
| | STOPOPT | | |

**Remarks**: Illegal if ControlModule.SCMOPT = None.

## 3.17.39 RETENTIVE

| Specific to Block(s) | DOCHANNEL, LCSTIMER, LCSCOUNTER, LCSSR, LCSRS, LCSFLAG, LCSNUMERIC, LCSNUMERIC16 | Description | If Retentive parameter is ON, then the PV/Value of these blocks is retained after a power recycle. |
|---|---|---|---|
| Data Type | BOOLEAN | Range | Off<br>On |
| Default | Off | Configuration Load | Yes |
| Access Lock | Application Developer | Residence | EE |
| Related Parameters | | | |

> **!** **Attention**
> For LCSFLAG, this parameter is not displayed in the **Main**tab of the configuration form. It is displayed only in the **Configuration Parameters**and the **Monitoring Parameters**tabs.

## 3.17.40 RETINDEX

This parameter is enabled when the parameter 'RETENTIVE' is set to 'ON.' For every retentive timer/counter, a unique Retentive Index is required.

| Specific to Block(s) | LCSTIMER, LCSCOUNTER, LCSSR, LCSRS, LCSFLAG, LCSNUMERIC, LCSNUMERIC16 | Description | Retentive Index |
|---|---|---|---|
| Data Type | Int 8 | Range | LCSNUMERIC - 1 to 128<br>LCSNUMERIC16 - 1 to 128<br>LCS FLAG - 1 to 1016<br>LCSRS - 1 to 1024<br>LCSSR - 1 to 1024<br>LCSCOUNTER - 1 to 255<br>LCSTIMER - 1 to 255 |
| Default | 1 | Configuration Load | Yes |
| Access Lock | Application Developer Only. | Residence | EE |
| Related Parameters | | | |

> **!** **Attention**
> For LCSFLAG, this parameter is not displayed in the **Main**tab of the configuration form. It is displayed only in the **Configuration Parameters**and the**Monitoring Parameters**tabs.

## 3.17.41 RETSTARTUP

This parameter indicates if the retentive startup option has been selected while configuring/monitoring LIOM.

| Specific to Block(s) | LIOM FB | Description | Retention Startup |
|---|---|---|---|
| Data Type | Boolean | Range | Off (0) |
| | | | On (1) |
| Default | Off (0) | Configuration Load | Yes |
| Access Lock | Engineer | Residence | LIOM (Primary, in case of a redundant configuration). |
| Related Parameters | | | |

## 3.17.42 RFINAL

| Specific to Block(s) | LCSAEMAOCHANNEL | Description | Final Preset Value |
|---|---|---|---|
| Data Type | Float64 | Range | |
| Default | NaN | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | | | |

## 3.17.43 RHENABLE[1..8]

This parameter is used to configure two consecutive channels of RTDM for RH value calculation. The odd channel is used as dry bulb input and the even channel is configured as wet bulb input. Even number channels return the relative humidity value.

| Specific to Block(s) | RTDM | Description | RH Enable |
|---|---|---|---|
| Data Type | BOOLEAN | Range | TRUE |
| | | | FALSE |
| Default | FALSE | Configuration Load | Yes |
| Access Lock | Engineer | Residence | EE |
| Related Parameters | | | |

## 3.17.44 ROCNEGALM.FL

This parameter indicates if a negative rate-of-change alarm has been issued.

| Specific to Block(s) | DATAACQ | Description | Negative Rate-of-Change Alarm Flag |
|---|---|---|---|
| Data Type | Boolean | Range | Off (0): Negative rate-of-change alarm does not exist. |
| | | | On (1): Negative rate-of-change alarm present. |
| Default | Off (0) | Configuration Load | No |
| Access Lock | View only | Residence | EE |

| Related Parameters | PV,<br><br>ROCNEGALM.PR,<br><br>ROCNEGALM.SV,<br><br>ROCNEGALM.TP | Checkpoint | Yes (for OCD) |
|---|---|---|---|

## 3.17.45 ROCNEGALM.PR

| Specific to Block(s) | DATAACQ | Description | Negative Rate-of-Change Alarm Priority |
|---|---|---|---|
| Data Type | Enumeration ALPRIOR | Range | None (0)<br><br>Journal (1)<br><br>Low (2)<br><br>High (3)<br><br>Urgent (4) |
| Default | Low (2) | Configuration Load | Yes |
| Access Lock | Engineer | Residence | EE |
| Related Parameters | PV,<br><br>ROCNEGALM.FL,<br><br>ROCNEGALM.SV,<br><br>ROCNEGALM.TP | Checkpoint | Yes (for OCD) |

## 3.17.46 ROCNEGALM.SV

| Specific to Block(s) | DATAACQ | Description | Negative Rate-of-Change Alarm Severity |
|---|---|---|---|
| Data Type | 16-Bit Integer | Range | 0 to 15 |
| Default | 0 | Configuration Load | Yes |
| Access Lock | Engineer | Residence | EE |
| Related Parameters | PV,<br><br>ROCNEGALM.FL,<br><br>ROCNEGALM.PR,<br><br>ROCNEGALM.TP | Checkpoint | Yes (for OCD) |

## 3.17.47 ROCNEGALM.TP

This parameter indicates the maximum change in the Process Variable (PV) in the negative direction, before a negative rate-of-change alarm is issued.

| Specific to Block(s) | DATAACQ | Description | Negative Rate-of-Change Alarm Trip Point (in Engineering Units per minute) |
|---|---|---|---|
| Data Type | 64-Bit Real Number | Range | NaN, or greater-than or equal-to 0.0. |
| Default | NaN | Configuration Load | Yes |

| Access Lock | Engineer | Residence | EE |
|---|---|---|---|
| Related Parameters | PV, ROCNEGALM.FL, ROCNEGALM.PR, ROCNEGALM.SV | Checkpoint | Yes (for OCD) |

## 3.17.48 ROCPOSALM.FL

This parameter indicates if a positive rate-of-change alarm has been issued.

| Specific to Block(s) | DATAACQ | Description | Positive Rate-of-Change Alarm Flag |
|---|---|---|---|
| Data Type | Boolean | Range | Off (0): Positive rate-of-change alarm does not exist. On (1): Positive rate-of-change alarm present. |
| Default | Off (0) | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | PV, ROCPOSALM.PR, ROCPOSALM.SV, ROCPOSALM.TP | Checkpoint | Yes (for OCD) |

## 3.17.49 ROCPOSALM.PR

| Specific to Block(s) | DATAACQ | Description | Positive Rate-of-Change Alarm Priority |
|---|---|---|---|
| Data Type | Enumeration ALPRIOR | Range | None (0) Journal (1) Low (2) High (3) Urgent (4) |
| Default | Low (2) | Configuration Load | Yes |
| Access Lock | Engineer | Residence | EE |
| Related Parameters | PV, ROCPOSALM.FL, ROCPOSALM.SV, ROCPOSALM.TP | Checkpoint | Yes (for OCD) |

## 3.17.50 ROCPOSALM.SV

| Specific to Block(s) | DATAACQ | Description | Positive Rate-of-Change Alarm Severity |
|---|---|---|---|
| Data Type | 16-Bit Integer | Range | 0 to 15 |

| Default | 0 | Configuration Load | Yes |
|---|---|---|---|
| Access Lock | Engineer | Residence | EE |
| Related Parameters | PV,<br><br>ROCPOSALM.FL,<br><br>ROCPOSALM.PR,<br><br>ROCPOSALM.TP | Checkpoint | Yes (for OCD) |

## 3.17.51  ROCPOSALM.TP

This parameter indicates the maximum change in the Process Variable (PV), in the positive direction, before a positive rate-of-change alarm is issued.

| Specific to Block(s) | DATAACQ | Description | Positive Rate-of-Change Alarm Trip Point (in Engineering Units per minute) |
|---|---|---|---|
| Data Type | 64-Bit Real Number | Range | NaN, or greater-than or equal-to 0.0. |
| Default | NaN | Configuration Load | Yes |
| Access Lock | Engineer | Residence | EE |
| Related Parameters | PV,<br><br>ROCPOSALM.FL,<br><br>ROCPOSALM.PR,<br><br>ROCPOSALM.SV. | Checkpoint | Yes (for OCD) |

## 3.17.52  RPEERNAME [1..RPEERCONNMAX]

| Specific to Block(s) | EE | Description | Originator's Peer Name - The name of the CPM, ACE, FIM, or IOLIM peer originator block. |
|---|---|---|---|
| Data Type | EntityID | Range | 16 characters |
| Default | Null | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | | | |

## 3.17.53  RSTCNTR

This parameter is used to reset the value of the counter. Energizing this output resets the corresponding counter value to 0.

| Specific to Block(s) | LCSPICHANNEL | Description | Overflow Status |
|---|---|---|---|
| Data Type | Boolean | Range | Off (0)<br><br>On (1) |
| Default | Off (0)<br><br>1 | Configuration Load | Yes |

| Access Lock | Engineer | Residence | LIOM |
|---|---|---|---|
| Related Parameters | | | |

## 3.17.54  RSTDTPTR

This parameter is used in the ASCIIPULL/ ASCIIPUSH function blocks to determine the location of the data table pointer after the data transfer is complete. If the Control Bit that operates this function is disabled, the pointer does not move or reset after a data transfer.

| Specific to Block(s) | ASCIIPULL  ASCIIPUSH | Description | Reset Data Table Pointer. |
|---|---|---|---|
| Data Type | Boolean | Range | ON / OFF |
| Default | OFF | Configuration Load | Yes |
| Access Lock | Engineer | Residence | CEE |
| Related Parameters | Pull Data [1..8]  Push Data [1…8]  PTRDIRCTN  FBEnable  CHNLCOMSTAT  ModLatch  CHNLCOMFAIL | Checkpoint | Yes (for OCD) |

## 3.17.55  RTDALPHA[1..8]

| Specific to Block(s) | RTDM | Description | Alpha |
|---|---|---|---|
| Data Type | Enum RTDM_ALPHA | Range | European 0.00385 ohm/ohm/ degC  American 0.003902 ohm/ohm/degC  Japanese 0.003916 ohm/ohm/degC  Copper 0.003856 ohm/ohm/ degC |
| Default | European 0.00385 ohm/ohm/ degc | Configuration Load | Yes |
| Access Lock | Engineer | Residence | EE |
| Related Parameters | | | |

## 3.17.56  RTDTYPE[1..8]

| Specific to Block(s) | RTDM | Description | RTD Probe Types |
|---|---|---|---|
| Data Type | Enum RTDM_RTDYPE | Range | Platinum 100 ohm  Platinum 200 ohm  Platinum 500 ohm  Copper 10 ohm |

| Default | Platinum 100 ohm | Configuration Load | Yes |
|---|---|---|---|
| Access Lock | Engineer | Residence | EE |
| Related Parameters | | | |

## 3.17.57  RV

This parameter indicates the current remaining time until the LCSTIMER function block times out.

| Specific to Block(s) | LCSTIMER | Description | Remaining time |
|---|---|---|---|
| Data Type | Integer | Range | 0 to 2,147,483,647 (2^31-1) |
| Default | 0 | Configuration Load | No |
| Access Lock | View only | Residence | EE |
| Related Parameters | PV,<br><br>SO,<br><br>SP,<br><br>TIMEBASE | | |

**Remarks**: RV is equal to the difference between the Set Point and Process Variable (SP - PV). Units are set by TIMEBASE.

# 3.18  S

| Specific to Block(s) | LCSSR, LCSRS | Description | The S input value |
|---|---|---|---|
| Data Type | Boolean | Range | Off (0)<br><br>On (1) |
| Default | Off (0) | Configuration Load | Yes |
| Access Lock | Engineer | Residence | EE |
| Related Parameters | | | |

## 3.18.1  SAFEOP

| Specific to Block(s) | DEVCTL | Description | Safe Output State |
|---|---|---|---|
| Data Type | Enumeration GENSTATE | Range | S0(4): State0, State1, State2<br><br>S1(5): State1, State0, State2<br><br>S2(6): State2, State0, State1 |
| Default | S0(4) | Configuration Load | Yes |
| Access Lock | Engineer | Residence | EE |
| Related Parameters | DIPVMAP[0..15], GOP, GPV, GOPREQ, HOLDOPT, NUMDOUTS, NUMSTATES, OI[0..2], OP, OPCMD[0..2], OPREQ, RESTARTOPT, SEALOPT, SI, STARTOPT, STOPOPT. | Checkpoint | Yes (for OCD). |

## 3.18.2  SAVETOFLASH

This command saves the contents of the RAM to Flash.

| Specific to Block(s) | LIOM FB | Description | Save to Flash |
|---|---|---|---|
| Data Type | Boolean | Range | True/ False |
| Default | False | Configuration Load | No |
| Access Lock | Engineer | Residence | LIOM (Primary, in case of a redundant configuration). |
| Related Parameters | | | |

### 3.18.3  SCANCONFIG

| Specific to Block(s) | LIOM | Description | Scan configuration |
|---|---|---|---|
| Data Type | ENUM LIOM_SCAN_CONFIG | Range | All Analog Values Per Scan |
|  |  |  | One Analog Value Per Scan |
| Default | All Analog Values Per Scan | Configuration Load | Yes |
| Access Lock | Application Developer | Residence | EE |
| Related Parameters |  |  |  |

**Remarks**: When migrating from LCS620 to LIOM, use the following table to configure the scan option appropriately.

| SLM Dipswitch Settings | | |
|---|---|---|
| Selectors | Status | Description |
| 5 | ON | Service one PUSH/PULL card per I/O rack in each scan. |
|  | OFF | Service all PUSH/PULL cards per I/O rack in each scan. |

### 3.18.4  SCANRATE[1..16]

If you want the UAIM to scan a con.. input faster than the other, you can give that particular input scanning priority.

| Specific to Block(s) | UAIM | Description | Scan Rate |
|---|---|---|---|
| Data Type | Enum UAIM_SCANRATETYPE | Range | OFF |
|  |  |  | 0.1 |
|  |  |  | 0.2 |
|  |  |  | 0.5 |
|  |  |  | 0.8 |
|  |  |  | 1 |
|  |  |  | 2 |
|  |  |  | 5 |
|  |  |  | 10 |
|  |  |  | 20 |
|  |  |  | 60 |
| Default | OFF | Configuration Load | Yes |
| Access Lock | Engineer | Residence | EE |
| Related Parameters |  |  |  |

**Remarks**: This parameter is used for configuring the scan time for each input. The scan time indicates how fast each input channel should be updated.

The following indicates the permissible scan time:

- 0.1 (100ms) = 10 scans/sec
- 0.2 (200ms) = 5 scans/sec
- 0.5 (500ms) = 2 scans/sec

- 0.8 (800ms) = 1.25 scans/sec
- 1 = 1 scan/sec
- 2 = 0.5 scans/sec
- 5 = 0.2 scans/sec
- 10 = 0.1 scans/sec
- 20 = 0.05 scans/sec
- 60 = 0.017 scans/sec

If you want the UAIM to scan a certain input, say input 14, faster than any other input, you can give input 14 scanning priority. For example, you can specify a 10-second scan time for input 1 and 0.1 second scan time for input 14.

The number of scans per second for all 16 inputs cannot exceed 20 scans at 60 Hz or 16.7 scans at 50 Hz. You must divide the scans among the 16 inputs.

## 3.18.5  SCANLED

| Specific to Block(s) | EDM | Description | This represents the status of the scan LED on the physical EDM module. |
|---|---|---|---|
| Data Type | Boolean | Range | Off<br>On |
| Default | Off | Configuration Load | No |
| Access Lock | View Only | Residence | SR |
| Related Parameters | | | |

## 3.18.6  SCANTIME[1..8]

| Specific to Block(s) | RTDM | Description | Scan Time |
|---|---|---|---|
| Data Type | Enum<br>RTDM_SCANRATETYPE | Range | OFF<br>0.1<br>0.2<br>0.4<br>0.5<br>0.8<br>1<br>2<br>5<br>10<br>20<br>60 |
| Default | 0.4 | Configuration Load | Yes |
| Access Lock | Engineer | Residence | EE |
| Related Parameters | | | |

**Remarks**: This parameter is used for configuring the scan time for each input. The scan time indicates how fast each input channel should be updated.

The following indicates the permissible scan times:

- 0.1 (100ms) = 10 scans/sec
- 0.2 (200ms) = 5 scans/sec
- 0.5 (500ms) = 2 scans/sec
- 0.8 (800ms) = 1.25 scans/sec
- 1 = 1 scan/sec
- 2 = 0.5 scans/sec
- 5 = 0.2 scans/sec
- 10 = 0.1 scans/sec
- 20 = 0.05 scans/sec
- 60 = 0.017 scans/sec

If you want the RTDM to scan a certain input, say input 14, faster than any other input, you can give input 14 scanning priority. For example, you can specify a 10-second scan time for input 1 and 0.1 second scan time for input 14.

The number of scans per second for all 16 inputs cannot exceed 20 scans at 60 Hz or 16.7 scans at 50 Hz. You must divide the scans among the 16 inputs.

## 3.18.7 SDENUMTEXT[0..63]

| **Specific to Block(s)** | PUSH, LCSTYPECONVERT | **Description** | Enumeration Text |
|---|---|---|---|
| **Data Type** | String | **Range** | Maximum 12 characters |
| **Default** | SDENUM0 to SDENUM63 | **Configuration Load** | Yes |
| **Access Lock** | Engineer | **Residence** | SR |
| **Related Parameters** | | | |

## 3.18.8 SEALOPT

| **Specific to Block(s)** | DEVCTL | **Description** | Seal-in Option. |
|---|---|---|---|
| **Data Type** | Enumeration ENABLE | **Range** | Disable (0) Enable (1) |
| **Default** | Disable (0) | **Configuration Load** | Yes |
| **Access Lock** | Engineer | **Residence** | EE |
| **Related Parameters** | GOP GOPFINAL MOMSTATE NUMDOUTS NUMDINPTS OP OPFINAL SAFEOP | **Checkpoint** | Yes (for OCD). |

**Remarks:** Illegal if NUMDOUTS = 0 or NUMDINPTS = 0.

Function block must be INACTIVE to change SEALOPT.

Illegal if MOMSTATE is not NONE.

Illegal if Command Disagree is not configured [All CMDDISALM.TM[x] = 0].

## 3.18.9  SECMODNAME

| Specific to Block(s) | LIOM | Description | The name of the secondary LIOM. |
|---|---|---|---|
| Data Type | String | Range | |
| Default | Primary name appended with SEC | Configuration Load | Yes |
| Access Lock | Engineer | Residence | SR |
| Related Parameters | | | |

## 3.18.10  SECOND

Realtime clock data can be pulled using the ASCIIREADCLOCK function block. The SECOND parameter fetches the value of the Second from the clock time.

| Specific to Block(s) | ASCIIREADCLOCK | Description | Fetches the value of the second (HH:MM:$SS$) from the ASCII Control Module's real-time flow. |
|---|---|---|---|
| Data Type | Unsigned Integer -16 bits | Range | 0-65535 |
| Default | 0 | Configuration Load | No |
| Access Lock | View Only | Residence | LIOM |
| Related Parameters | | Checkpoint | Yes (for OCD). |

Realtime clock data can be pushed to the ASCII Control Module using the ASCIISETDTPTR function block. The SECOND parameter sets the value of the Second to the clock time.

| Specific to Block(s) | ASCIISETDTPTR | Description | Sets the value of the second (HH:MM:$SS$) to the ASCII Control Module's real-time flow. |
|---|---|---|---|
| Data Type | Unsigned Integer -16 bits | Range | 10000-10059 |
| Default | 10000 | Configuration Load | Yes |
| Access Lock | Engineer | Residence | CEE |
| Related Parameters | | | |

## 3.18.11  SECONDARYSIG

| Specific to Block(s) | Most Function Blocks | Description | Secondary Signature - Lets you specify the meaning associated with entering the secondary signature. |
|---|---|---|---|
| Data Type | String | Range | 24 characters maximum |
| Default | None | Configuration Load | Yes |
| Access Lock | Engineer | Residence | SR |

| Related Parameters | | | |
|---|---|---|---|

## 3.18.12  SECSIGSECLVL

| Specific to Block(s) | Most Function Blocks | Description | Secondary Signer Security Level - Lets you select the minimum security level of the second signature when required. |
|---|---|---|---|
| Data Type | Enumeration | Range | VIEWONLY (0) <br><br> ACKONLY (1) <br><br> OPER (2) <br><br> SUPR (3) <br><br> ENGR (4) <br><br> MNGR (5) |
| Default | VIEWONLY (0) | Configuration Load | Yes |
| Access Lock | Application Developer | Residence | SR |
| Related Parameters | | | |

## 3.18.13  SECSLINKAFC

This parameter is used to set the SLINKA Fault Configuration for a Secondary LIOM, in a redundant configuration.

| Specific to Block(s) | LIOM | Description | SLINKA Fault Configuration |
|---|---|---|---|
| Data Type | ENUM LIOM_FAULT_CONFIG | Range | 1. Link Continues To Operate. <br> 2. Link Ceases Operation. <br> 3. Both Links Cease Operation. |
| Default | Link Continues To Operate | Configuration Load | Yes |
| Access Lock | Application Developer | Residence | EE |
| Related Parameters | | | |

**Remarks**: When migrating from LCS620 to LIOM, use the following table to configure SLINKA appropriately.

| SLM Dipswitch Settings | | |
|---|---|---|
| Selectors | | Description |
| 1 | 2 | |
| OFF | OFF | The channel 1 continues to operate if a channel fault occurs. |
| ON | ON | The channel 1 ceases operation if a channel fault occurs. |
| OFF | ON | Both channels on LIOM cease operation if a channel fault occurs. |
| ON | OFF | Not applicable |

## 3.18.14 SECSLINKBFC

This parameter is used to set the SLINKB Fault Configuration for a Secondary LIOM, in a redundant configuration.

| Specific to Block(s) | LIOM | Description | SLINKB Fault Configuration |
|---|---|---|---|
| Data Type | ENUM LIOM_FAULT_CONFIG | Range | 1. Link Continues To Operate. 2. Link Ceases Operation. 3. Both Links Cease Operation. |
| Default | Link Continues To Operate | Configuration Load | Yes |
| Access Lock | Application Developer | Residence | EE |
| Related Parameters | | | |

**Remarks**: When migrating from LCS620 to LIOM, use the following table to configure SLINKB appropriately.

| SLM Dipswitch Settings | | |
|---|---|---|
| Selectors | | Description |
| 3 | 4 | |
| OFF | OFF | The channel 2 continues to operate if a channel fault occurs. |
| ON | ON | The channel 2 ceases operation if a channel fault occurs. |
| OFF | ON | Both channels on LIOM cease operation if a channel fault occurs. |
| ON | OFF | Not applicable |

## 3.18.15 SELECTALLCHANNELS

This parameter is used to select all the channels for a read operation or configuration.

| Specific to Block(s) | UAIM, RTDM | Description | Select all the channels. |
|---|---|---|---|
| Data Type | Boolean | Range | TRUE FALSE |
| Default | FALSE | Configuration Load | Yes |
| Access Lock | Engineer | Residence | EE |
| Related Parameters | | | |

## 3.18.16 SELECTEDSIOM

This parameter is used to select SIOMs for which the configuration details are to be viewed. This configuration is done on the SIOM modules using DIP switches.

| Specific to Block(s) | SLINK | Description | Select SIOM |
|---|---|---|---|
| Data Type | ENUM SLINK_SIOMS | Range | 01-16 |
| Default | 01 | Configuration Load | No Load |

| Access Lock | Engineer | Residence | EE |
|---|---|---|---|
| Related Parameters | | Checkpoint | No (for OCD) |

## 3.18.17  SHUTDOWN

This parameter is a command used to shutdown the LIOM. The command can be issued irrespective of the EE state. Once the command is issued, the LIOM re-boots and comes to RDY state.

| Specific to Block(s) | LIOM | Description | Shutdown LIOM |
|---|---|---|---|
| Data Type | BOOLEAN | Range | TRUE |
| | | | FALSE |
| Default | FALSE | Configuration Load | No |
| Access Lock | Engineer, Manager | Residence | EE |
| Related Parameters | | | |

## 3.18.18  SI

| Specific to Block(s) | DEVCTL | Description | Safety Override Interlock |
|---|---|---|---|
| Data Type | Boolean | Range | Off (0) |
| | | | On (1) |
| Default | Off (0) | Configuration Load | No |
| Access Lock | Engineer, Other Function Block, (see Remarks) | Residence | EE |
| Related Parameters | GOP | Checkpoint | Yes (for OCD). |
| | NUMDOUTS | | |
| | OI | | |
| | OP | | |
| | SAFEOP | | |
| | SIALM.FL | | |
| | SIALM.OPT | | |
| | SIALM.PR | | |
| | SIALM.SV | | |

**Remarks:** Engineer can change only when function block is INACTIVE or EE is IDLE.

Illegal if NUMDOUTS = 0

## 3.18.19  SIALM.FL

| Specific to Block(s) | DEVCTL | Description | Safety Override Alarm |
|---|---|---|---|
| Data Type | Boolean | Range | Off (0): Is not in Safety Interlock alarm. |
| | | | On (1): Is in Safety Interlock alarm condition. |
| Default | Off (0) | Configuration Load | No |

| Access Lock | View Only | Residence | EE |
|---|---|---|---|
| Related Parameters | SIFL<br><br>SIALM.OPT<br><br>SIALM.PR<br><br>SIALM.SV<br><br>DevCtl Only:<br><br>HIALM<br><br>INALM<br><br>NUMDOUTS<br><br>SI | Checkpoint | Yes (for OCD). |

**Remarks**: DEVCTL Only: Illegal if NUMDOUTS = 0.

## 3.18.20 SIALM.OPT

| Specific to Block(s) | DEVCTL | Description | Safety Interlock Alarm Option |
|---|---|---|---|
| Data Type | Enumeration OVRDALOP | Range | No<br>Yes |
| Default | N/A | Configuration Load | Yes |
| Access Lock | Engineer | Residence | EE |
| Related Parameters | SIFL,<br><br>SIALM.FL,<br><br>SIALM.PR,<br><br>SIALM.SV. | Checkpoint | Yes (for OCD). |

**Remarks**: The value of this parameter is illegal if NUMDOUTS = 0. To change, function block must be INACTIVE.

## 3.18.21 SIALM.PR

| Specific to Block(s) | DEVCTL | Description | Safety Interlock Alarm Priority |
|---|---|---|---|
| Data Type | Enumeration ALPRIOR | Range | None (0)<br>Journal (1)<br>Low (2)<br>High (3)<br>Urgent (4) |
| Default | Low (2) | Configuration Load | Yes |
| Access Lock | Engineer | Residence | EE |

| Related Parameters | SIFL | Checkpoint | Yes (for OCD). |
|---|---|---|---|
| | SIALM.FL | | |
| | SIALM.OPT | | |
| | SIALM.SV | | |
| | DevCtl Only: | | |
| | NUMDOUTS | | |
| | SI | | |

**Remarks**: DEVCTL Only: Illegal if NUMDOUTS = 0.

## 3.18.22  SIALM.SV

| Specific to Block(s) | DEVCTL | Description | Safety Interlock Alarm Severity |
|---|---|---|---|
| Data Type | 16-Bit Integer | Range | 0 to 15 |
| Default | 0 | Configuration Load | Yes |
| Access Lock | Engineer | Residence | EE |
| Related Parameters | SIFL | Checkpoint | Yes (for OCD). |
| | SIALM.FL | | |
| | SIALM.OPT | | |
| | SIALM.PR | | |
| | DevCtl Only: | | |
| | NUMDOUTS | | |
| | SI | | |

**Remarks**: DEVCTL Only: Illegal if NUMDOUTS = 0.

## 3.18.23  SIGNLRANG[1..16]

This parameter is used to select the Signal Range for the respective slot

| Specific to Block(s) | UAIM | Description | Signal Range Select | |
|---|---|---|---|---|
| Data Type | Enum UAIM_SIGNALRANGETYPE | Range | 1-5V | Direct |
| 0-5V | 0-100Mv | | | |
| 0-10mV | 0-1V | | | |
| 10-50mV | | | | |
| Default | 1-5V | Configuration Load | Yes | |
| Access Lock | Engineer | Residence | EE | |
| Related Parameters | | | | |

## 3.18.24  SIOMADS

This parameter is used to show the selected SIOM's Starting Address configured using DIP switches.

| Specific to Block(s) | SLINK | Description | SIOM Starting Address |
|---|---|---|---|
| Data Type | 16-Bit Integer | Range | 0-2032 |
| Default | N/A | Configuration Load | No Load |
| Access Lock | View Only | Residence | EE |
| Related Parameters | | | |

## 3.18.25  SIOMOFFADS

This parameter indicates the address of the SIOM that has gone offline.

| Specific to Block(s) | SLINKs | Description | SIOM Offline Address |
|---|---|---|---|
| Data Type | UINT16 | Range | 0 to 2032 |
| Default | 0 | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | | | |

## 3.18.26  SIOMSRDYONBKUP

This parameter indicates if all SIOMs on the backup link are ready for switchover. If the SIOMs are ready for switchover, then the parameter is set to ON, else it is set to OFF.

| Specific to Block(s) | SLINKs | Description | SIOMs Ready for Switchover |
|---|---|---|---|
| Data Type | Boolean | Range | Off<br>On |
| Default | Off | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | | | |

## 3.18.27  SIOMSTARTADDR

This parameter is used to enter SIOM starting Address, which should match the starting address configured in the SIOM using DIP switches.

| Specific to Block(s) | LIOM IOM | Description | SIOM starting Address |
|---|---|---|---|
| Data Type | 16-Bit Unsigned Integer | Range | 0 - 2032<br>Value should be 0 or in multiples of 8 |
| Default | 0 | Configuration Load | Yes |
| Access Lock | Application Developer | Residence | EE |
| Related Parameters | | | |

## 3.18.28  SLINKAFC

This parameter is used to set the SLINKA Fault Configuration.

| **Specific to Block(s)** | LIOM | **Description** | SLINKA Fault Configuration |
|---|---|---|---|
| **Data Type** | ENUM LIOM_FAULT_CONFIG | **Range** | 1. Link Continues To Operate. <br> 2. Link Ceases Operation. <br> 3. Both Links Cease Operation. |
| **Default** | Link Continues To Operate | **Configuration Load** | Yes |
| **Access Lock** | Application Developer | **Residence** | EE |
| **Related Parameters** | | | |

**Remarks**: When migrating from LCS620 to LIOM, use the following table to configure SLINKA appropriately.

| **SLM Dipswitch Settings** | | |
|---|---|---|
| **Selectors** | **Description** | |
| 1 | | 2 |
| OFF | OFF | The channel 1 continues to operate if a channel fault occurs. |
| ON | ON | The channel 1 ceases operation if a channel fault occurs. |
| OFF | ON | Both channels on LIOM cease operation if a channel fault occurs. |
| ON | OFF | Not applicable |

## 3.18.29  SLINKBFC

This parameter is used to set the SLINKB Fault Configuration

| **Specific to Block(s)** | LIOM | **Description** | SLINKB Fault Configuration |
|---|---|---|---|
| **Data Type** | ENUM LIOM_FAULT_CONFIG | **Range** | 1. Link Continues To Operate. <br> 2. Link Ceases Operation. <br> 3. Both Links Cease Operation. |
| **Default** | Link Continues To Operate | **Configuration Load** | Yes |
| **Access Lock** | Application Developer | **Residence** | EE |
| **Related Parameters** | | | |

**Remarks**: When migrating from LCS620 to LIOM, use the following table to configure SLINKB appropriately.

| **SLM Dipswitch Settings** | | |
|---|---|---|
| **Selectors** | **Description** | |
| 3 | | 4 |
| OFF | OFF | The channel 2 continues to operate if a channel fault occurs. |
| ON | ON | The channel 2 ceases operation if a channel fault occurs. |
| OFF | ON | Both channels on LIOM cease operation if a channel fault occurs. |
| ON | OFF | Not applicable |

## 3.18.30 SLOT

This parameter is used to enter the Module's slot in the rack. The IOM type and number of channels should match the values set on the SIOM using DIP switches.

| Specific to Block(s) | LIOM IOM | Description | Module's slot in the rack |
|---|---|---|---|
| Data Type | Enum IOM_SLOT | Range | A<br>B<br>C<br>D - L |
| Default | A | Configuration Load | Yes |
| Access Lock | Application Developer | Residence | EE |
| Related Parameters | | | |

## 3.18.31 SLOTA

This parameter is used to show the LCS slot names A - L of the LCS rack in which the selected SIOM resides.

| Specific to Block(s) | SLINK | Description | Slot |
|---|---|---|---|
| Data Type | STRING | Range | A - L |
| Default | NONE | Configuration Load | No |
| Access Lock | View Only | Residence | SR |
| Related Parameters | | | |

## 3.18.32 SLOTNUMBER

| Specific to Block(s) | LIOM | Description | Slot Number - Represents the number of the slot in the chassis where the module is installed. |
|---|---|---|---|
| Data Type | 32-Bit Integer | Range | 0 to 16 |
| Default | None | Configuration Load | Yes |
| Access Lock | Application Developer | Residence | SR |
| Related Parameters | | | |

**Remark:** Chassis slot numbering is zero based, starting from the leftmost slot.

## 3.18.33 SO

| Specific to Block(s) | LCSCOUNTER<br>LCSTIMER | Description | Status Output |
|---|---|---|---|
| Data Type | BOOLEAN | Range | Off<br>On |
| Default | Off | Configuration Load | No |

| Access Lock | View Only | Residence | EE |
|---|---|---|---|
| Related Parameters | | Checkpoint | No (for OCD) |

**Remarks**: For LCSTIMER, this output is ON when the time expires (PV=SP). SO is returned to OFF when the timer is reset.

For LCSCOUNTER, this value is set to ON when the accumulated count is equal to the preset value.

| Specific to Block(s) | DOC | Description | Status Output |
|---|---|---|---|
| Data Type | Boolean | Range | Off (0)<br>On (1) |
| Default | Off (0) | Configuration Load | No |
| Access Lock | Operator | Residence | IOP |
| Related Parameters | DOMSO [0..numChans-1] | | |

## 3.18.34  SO[1..8]

| Specific to Block(s) | LCSAEMAOCHANNEL | Description | Status Output |
|---|---|---|---|
| Data Type | Boolean | Range | OFF<br>ON |
| Default | OFF | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | | | |

## 3.18.35  SOFTFILTER[1..8]

| Specific to Block(s) | RTDM | Description | Software Filter | |
|---|---|---|---|---|
| Data Type | Enum RTDM_SOFTFILTERTYPE | Range | OFF | 10 Second |
| | | | 1 Second | 20 Second |
| | | | 2 Second | 60 Second |
| | | | 5 Second | 600 Second |
| Default | OFF | Configuration Load | Yes | |
| Access Lock | Engineer | Residence | EE | |
| Related Parameters | | | | |

**Remarks**: The RTDM includes a configurable software noise filter for each input. Without the filter, the signal from the field device to the RTDM may become noisy. This parameter is used for configuring the permissible time constants that can be added to the scan time to activate the filter.

## 3.18.36  SOFTFILTER[1..16]

This parameter is used to select the Software Filter for the respective slot.

| Specific to Block(s) | UAIM | Description | Software Filter | |
|---|---|---|---|---|

| Data Type | Enum UAIM_SOFTFILTERTYPE | Range | OFF | 10 Second |
|---|---|---|---|---|
| | | | 1 Second | 20 Second |
| | | | 2 Second | 60 Second |
| | | | 5 Second | 600 Second |
| **Default** | OFF | **Configuration Load** | Yes | |
| **Access Lock** | Engineer | **Residence** | EE | |
| **Related Parameters** | | | | |

**Remarks**: The UAIM includes a configurable software noise filter for each input. Without the filter, the signal from the field device to the UAIM may become noisy. This parameter is used for configuring the permissible time constants that can be added to the scan time to activate the filter.

## 3.18.37  SP

| **Specific to Block(s)** | LCSTIMER | **Description** | Timer Value |
|---|---|---|---|
| **Data Type** | Integer | **Range** | 0 to 2147483647 |
| **Default** | 0 | **Configuration Load** | Yes |
| **Access Lock** | Engineer | **Residence** | EE |
| **Related Parameters** | | **Checkpoint** | Yes (for OCD) |

| **Specific to Block(s)** | LCSCOUNTER | **Description** | Preset count Value |
|---|---|---|---|
| **Data Type** | Signed 32-Bit Integer | **Range** | -2147483648 to 2147483648 |
| **Default** | 0 | **Configuration Load** | Yes |
| **Access Lock** | Engineer | **Residence** | EE |
| **Related Parameters** | | | |

## 3.18.38  SOSTS

| **Specific to Block(s)** | LCSAEMAOCHANNEL | **Description** | SO Status |
|---|---|---|---|
| **Data Type** | Boolean | **Range** | OFF |
| | | | ON |
| **Default** | OFF | **Configuration Load** | No |
| **Access Lock** | View Only | **Residence** | EE |
| **Related Parameters** | | | |

## 3.18.39  STARTFL

This parameter provides the ability to issue the Start command to LCSTIMER function block.

| **Specific to Block(s)** | LCSTIMER | **Description** | Start Command Flag |
|---|---|---|---|
| **Data Type** | Boolean | **Range** | Off (0) |
| | | | On (1) |
| **Default** | Off (0) | **Configuration Load** | No |
| **Access Lock** | Other Function Block | **Residence** | EE |

| Related Parameters | COMMAND, RESETFLLO, RESTARTFL, STOPFL | | |
|---|---|---|---|

**Remarks**: An OFF to ON transition of STARTFL starts the timer.

## 3.18.40  STARTOPT

| Specific to Block(s) | DEVCTL | Description | Starting State Option - A configurable parameter that specifies the action the control device takes, when SCMSTATE is Checking, Idle, or Complete. |
|---|---|---|---|
| Data Type | Enumeration REGEXCOPT | Range | Refer Range list |
| Default | None (0) | Configuration Load | Yes |
| Access Lock | Engineer | Residence | EE |
| Related Parameters | STARTRATE STARTVAL | Checkpoint | Yes (for OCD). |

**Range**:

| None (0): | No changes |
|---|---|
| Man (1): | Set MODEREQ = Manual |
| Auto (2): | Set MODEREQ = Auto |
| Cas (3): | Set MODEREQ = Cas |
| FixedOP (4): | Set OPREQ = STARTVAL |
| HoldPV (5): | Set SPREQ = PV |
| FixedSP (6): | Set SPREQ = STARTVAL, and SPRATEREQ = NaN |
| RampedSP (7): | Set SPTVREQ = STARTVAL, and SPRATEREQ = STARTRATE |

**Remarks**: Defines values for SPREQ, SPRATEREQ, OPREQ, and MODEREQ when MONSCOSTATE = Ready, Checking, or End.

Illegal if SCMOPT = None.

## 3.18.41  STATE

| Specific to Block(s) | SLINK | Description | SLINK State |
|---|---|---|---|
| Data Type | ENUM SLINK_state | Range | FAULT(0) IDLE(1) ONLINE(2) NOTLOADED(3) |
| Default | NOTLOADED | Configuration Load | No |
| Access Lock | View Only | Residence | EE |

| Related Parameters | | | |
|---|---|---|---|

**Remarks**: It indicates the status of the SLINK. Once the SLINK is loaded and at least one SIOM is detected, the parameter changes to ONLINK. If no SIOM is detected the state goes to IDLE.

| Specific to Block(s) | LCSTIMER | Description | Timer State |
|---|---|---|---|
| Data Type | Enumeration TIMERSTATE | Range | Stopped (0) Running (1) |
| Default | Stopped (0) | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | COMMAND | | |

**Remarks:** It indicates the current state of the LCSTIMER function block.

## 3.18.42 STATE0

| Specific to Block(s) | LCSFLAG, PUSH | Description | State 0 Indicator |
|---|---|---|---|
| Data Type | Boolean | Range | Off (0) On (1) |
| Default | Off (0) | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | PV PVFL STATE | | |

**Remarks**: Value is ON, when LCSFLAG function block is in State 1 (Process Variable (PV) shows STATETEXT[0] and PVFL is OFF).

## 3.18.43 STATE1

| Specific to Block(s) | LCSFLAG, PUSH | Description | State 1 Indicator |
|---|---|---|---|
| Data Type | Boolean | Range | Off (0) On (1) |
| Default | Off (0) | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | PV PVFL STATE0 | | |

**Remarks**: Value is ON, when LCSFLAG function block is in State 1 (Process Variable (PV) shows STATETEXT[1] and PVFL is ON).

## 3.18.44  STATETEXT[0..1]

This parameter defines text for the two states of the LCSFLAG FB; STATETEXT[0] corresponds to the Boolean state of OFF for the LCSFLAG, while STATETEXT[1] corresponds to ON.

| Specific to Block(s) | LCSFLAG, PUSH | Description | State Descriptor Text |
|---|---|---|---|
| Data Type | String | Range | Length: 12 characters |
| Default | 'Off', 'On' | Configuration Load | Yes |
| Access Lock | Engineer | Residence | EE |
| Related Parameters | NORMAL, PV | | |

## 3.18.45  STATETEXT [0..6]

| Specific to Block(s) | DEVCTL | Description | Text for Defined States |
|---|---|---|---|
| Data Type | String | Range | Length: 12 characters |
| Default | Null String | Configuration Load | Yes |
| Access Lock | Engineer | Residence | EE |
| Related Parameters | LASTOPMNAME, LASTOPREQ, NUMDINPTS, NUMDOUTS, PV, PVAUTO, OP, OPFINAL, OPREQ. | Checkpoint | Yes (for OCD). |

**Remarks**: Access is illegal if NUMDINPTS = 0, and NUMDOUTS = 0.

## 3.18.46  STATETIME [0..2]

This parameter indicates the amount of time (in hours) that the device has spent in any of the states.

| Specific to Block(s) | DEVCTL | Description | Accumulated State Time |
|---|---|---|---|
| Data Type | DeltaTime | Range | 0 to 4000 days |
| Default | 0 | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | GPV, MAINTOPT. NUMSTATES, PV, RESETFLLO | | |

**Remarks**:

- The value is defaulted to '0' if MAINTOPT is not set.
- The value is reset to '0' whenever RESETFLLO is set from Off.
- STATETIME[2] is illegal if NUMSTATES = 2.

## 3.18.47  STATSRESET

| Specific to Block(s) | EE FB | Description | Reset initialize timing statistics |
|---|---|---|---|
| Data Type | Boolean | Range | On (0) <br> Off (1) |
| Default | Off (0) | Configuration Load | No |
| Access Lock | Operator | Residence | EE |
| Related Parameters | CPUCYCLEAVG <br> CPUCYCLEMAX <br> CPUFREEAVG <br> CPUFREEMIN <br> NUMPARRSPAVG <br> NUMPARRSPMAX <br> NUMNTFRQUAVG <br> NUMNTFRQUMAX <br> NUMACCRQUAVG <br> NUMACCRQUMAX <br> RDNCMPT <br> RDNDELAYAVG <br> RDNDELAYMAX <br> RDNXFERAVG <br> RDNXFERMAX | | |

**Remarks**: Store to this parameter causes initialization of all statistics parameters maintained within the CPM and EE (listed above). An attempt to read this parameter returns Off(1).

## 3.18.48  STATUS

This parameter is used to show the Status of IOM in the respective slot of the LCS rack for the selected SIOM.

| Specific to Block(s) | SLINK | Description | Status of IOM |
|---|---|---|---|
| Data Type | Enum SLINK_IOMSTATUS | Range | OK <br> FAIL <br> NA |
| Default | OK | Configuration Load | No Load |
| Access Lock | View Only | Residence | EE |
| Related Parameters | | | |

## 3.18.49  STOPFL

This parameter provides the ability to issue the STOP command to the LCSTIMER function block.

| Specific to Block(s) | LCSTIMER | Description | Stop Command Flag |
|---|---|---|---|
| Data Type | Boolean | Range | Off (0) |
| | | | On (1) |
| Default | Off (0) | Configuration Load | No |
| Access Lock | Other Function Block | Residence | EE |
| Related Parameters | COMMAND, RESETFLLO, RESTARTFL, STARTFL | | |

**Remarks**: An OFF to ON transition of STOPFL stops the timer.

## 3.18.50  STOPOPT

| Specific to Block(s) | DEVCTL | Description | Fail state option |
|---|---|---|---|
| Data Type | Enumeration DDOPTIONS | Range | None (0) |
| | | | SafeOp (1) |
| Default | None (0) | Configuration Load | Yes |
| Access Lock | Engineer | Residence | EE |
| Related Parameters | HOLDOPT, OPREQ, OPTYPE, RESTARTOPT, SAFEOP, SCMASTEP[1..10], SCMOPT, SCMSTATE, STARTOPT | Checkpoint | Yes (for OCD). |

**Remarks**: This value of the parameter is illegal if ControlModule.SCMOPT = None.

## 3.18.51  STOREENB

| Specific to Block(s) | PUSH | Description | Output store enable. |
|---|---|---|---|
| Data Type | Boolean | Range | Off(0) |
| | | | On(1) |
| Default | Off(0) | Configuration Load | Yes |
| Access Lock | Engineer | Residence | EE |
| Related Parameters | STORONCHGENB | Checkpoint | Yes (for OCD). |

**Remarks**: This value must be set to ON for continuous storing to destination. If the value is OFF, only the first store would be made to destination after inactivation of CM and CEE state change.

## 3.18.52 STORESTS

This parameter describes the status of the store request.

| Specific to Block(s) | PUSH | Description | Store Status. |
|---|---|---|---|
| Data Type | Enumeration TCStoreSts | Range | STOREOK |
| | | | STOREFAIL |
| | | | STOREPENDING |
| Default | STOREOK | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | | | |

## 3.18.53 STORONCHGENB

| Specific to Block(s) | PUSH | Description | Store on change Enable. |
|---|---|---|---|
| Data Type | Boolean | Range | Off(0) |
| | | | On(1) |
| Default | Off(0) | Configuration Load | Yes |
| Access Lock | Engineer | Residence | EE |
| Related Parameters | STOREENB | Checkpoint | Yes (for OCD) |

**Remarks**: Setting this flag ensures that input value is stored to the destination only when it changes. The STOREENB flag has to be set though for store to take place.

## 3.18.54 STRRESP

| Specific to Block(s) | EE | Description | Store Response - Specifies the default store response expiration time to be used for all peer environments in seconds. |
|---|---|---|---|
| Data Type | FLOAT64 | Range | N/A |
| Default | 15.0 | Configuration Load | Yes |
| Access Lock | Engineer | Residence | EE |
| Related Parameters | NUMPEERENV [} PEERENV[] PEERSTRRESP[] | Checkpoint | Yes (for OCD) |

**Remarks**: If a store response is not received within the configured expiration time, the store is marked failed.

## 3.18.55 SUBSCPERIOD

| Specific to Block(s) | EE | Description | Peer Update Rate for Peer-to-Peer communications between two or more EE's ( |
|---|---|---|---|
| Data Type | Enumeration | Range | Default, 500 ms 1 s |
| Default | DEFAULT (0) DEFAULT is converted to an actual value upon load: Converted to 500 ms for the 50 ms EE | Configuration Load | Yes |
| Access Lock | Engineer | Residence | EE |
| Related Parameters | BASEPERIOD | Checkpoint | Yes (for OCD) |

**Remarks:** The Peer Update Rate (SUBSCPERIOD parameter is the rate at which the EE subscribes to data from other CEEs through peer-to-peer communications. In the event of a peer-to-peer communications problem such as a broken cable, the connection times out, returning an error.

**50 ms EE:**

Valid Range: DEFAULT, 100, 200, 500, 1000 ms

DEFAULT value is converted to 500 ms upon load to a 50 ms **EE**.

Connection timeout time is approximately 5.2 seconds.

## 3.18.56 SYNCTIMEBEG

| Specific to Block(s) | Primary/ Secondary LIOM FBs | Description | Last Synchronization Time. System-time that module completed initial synchronization. |
|---|---|---|---|
| Data Type | TIME | Range | N/A |
| Default | 0 | Configuration Load | No |
| Access Lock | View Only | Residence | LIOM |
| Related Parameters | SYNCTIMEND | Checkpoint | No |

## 3.18.57 SYNCTIMEEND

| Specific to Block(s) | Primary/ Secondary LIOM FBs | Description | Last Sync Lost Time. System-time that module last lost synchronization. |
|---|---|---|---|
| Data Type | TIME | Range | N/A |
| Default | 0 | Configuration Load | No |
| Access Lock | View Only | Residence | LIOM |
| Related Parameters | SYNCTIMEBEG | Checkpoint | No |

# 3.19  -T-

## 3.19.1  TEMPSCALE[1..16]

This parameter is used to select the Temperature Scale for each slot.

| Specific to Block(s) | UAIM | Description | Temperature Scale |
|---|---|---|---|
| Data Type | Enum UAIM_TEMPSCALETYPE | Range | Deg C Deg F |
| Default | Deg C | Configuration Load | Yes |
| Access Lock | Engineer | Residence | **EE** |
| Related Parameters | | | |

## 3.19.2  THRESHOLD

| Specific to Block(s) | LCSTYPECONVERT | Description | Threshold for converting floating point values to boolean values |
|---|---|---|---|
| Data Type | 64-bit floating point number | Range | N/A |
| Default | 0.001 | Configuration Load | Yes |
| Access Lock | Engineer | Residence | EE |
| Related Parameters | IN.FLOAT32, IN.FLOAT64, OUT.BOOLEAN. | Checkpoint | Yes (for OCD) |

| Specific to Block(s) | PUSH | Description | Threshold for converting floating point values to boolean values |
|---|---|---|---|
| Data Type | Real | Range | N/A |
| Default | 0.001 | Configuration Load | Yes |
| Access Lock | Engineer | Residence | EE |
| Related Parameters | IN.FLOAT32, IN.FLOAT64, OUT.BOOLEAN. | Checkpoint | Yes (for OCD) |

**Remarks**: This parameter is applicable for conversion between floating point and boolean values.

If the input value is larger-than or equal-to THRESHOLD, then the OUT is TRUE. Otherwise, it is FALSE.

If the THRESHOLD = NaN, for any nonzero input value, OUT is TRUE. Otherwise, it is FALSE.

## 3.19.3  TIMEBASE

This parameter sets the units that are used in the LCSTIMER function block.

| Specific to Block(s) | LCSTIMER | Description | Time base |
|---|---|---|---|

| Data Type | Enumeration TIMEBASE | Range | Seconds (0) |
| --- | --- | --- | --- |
| | | | Minutes (1) |
| | | | Cycles (2) |
| Default | Seconds (0) | Configuration Load | Yes |
| Access Lock | Engineer | Residence | EE |
| Related Parameters | PV, | Checkpoint | Yes (for OCD) |
| | RV, | | |
| | SP | | |

**Remarks**:

- Start - Timer is started; PV starts incrementing.
- Stop - Timer is stopped; PV freezes.
- Reset - Timer is reset; PV is set to 0, and RV is set to SP.
- Restart - Timer continues from the point it last stopped.

## 3.19.4  TP

This parameter is used to compare against constant values, when only one input is configured.

| Specific to Block(s) | EQ, GE, GT, LE, LT, NE | Description | Trip Point Value |
| --- | --- | --- | --- |
| Data Type | 64-Bit Real Number | Range | N/A |
| Default | 0.5 | Configuration Load | Yes |
| Access Lock | Engineer/Program | Residence | EE |
| Related Parameters | | Checkpoint | Yes (for OCD) for EQ, GT, TP, NE, GE, LE |

## 3.19.5  TRNSFRCOIL

| Specific to Block(s) | LCSAEMAOCHANNEL | Description | Transfer Coil |
| --- | --- | --- | --- |
| Data Type | Boolean | Range | OFF |
| | | | ON |
| Default | OFF | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | | | |

## 3.19.6  TRUNCATEOPT

| Specific to Block(s) | LCSTYPECONVERT, | Description | Choice for truncating or rounding integers. |
| --- | --- | --- | --- |
| | PUSH | | |
| Data Type | Enumeration TCTRUNCATETYPE | Range | Truncate (0) |
| | | | Round (1) |
| Default | Truncate (0) | Configuration Load | Yes |
| Access Lock | Engineer | Residence | EE |

| Related Parameters | IN.FLOAT32, | Checkpoint | Yes (for OCD) |
|---|---|---|---|
| | IN.FLOAT64, | | |
| | OUT.INT16, | | |
| | OUT.INT32, | | |
| | OUT.UINT16, | | |
| | OUT.UINT32. | | |

**Remarks:** Selecting truncate truncates the numbers, in case of data type conversion from floating point to integer. Otherwise, the block rounds-off the numbers during type conversion.

# 3.20  -U-

## 3.20.1  ULCNBMAC

| Specific to Block(s) | LIOM | Description | MAC address of the supervisory CNI. |
|---|---|---|---|
| Data Type | 32-Bit Integer | Range | 1 to 99 |
| Default | 0 | Configuration Load | Yes |
| Access Lock | Application Developer | Residence | SR |
| Related Parameters | | | |

## 3.20.2  UMCMDALM.SV

| Specific to Block(s) | DEVCTL | Description | Uncommanded Change Alarm Severity |
|---|---|---|---|
| Data Type | 16-Bit Integer | Range | 0 to 255 |
| Default | 0.0 | Configuration Load | Yes |
| Access Lock | Engineer | Residence | EE |
| Related Parameters | | Checkpoint | Yes (for OCD). |

## 3.20.3  UNCMDALM.FL

| Specific to Block(s) | DEVCTL | Description | Uncommanded Change Alarm Flag |
|---|---|---|---|
| Data Type | Boolean | Range | Off (0)<br>On (1) |
| Default | Off (0) | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | CMDDISALM.FL<br><br>CMDDISALM.PR<br><br>CMDDISALM.SV<br><br>CMDDISALM.TM<br><br>GOP<br><br>GPV<br><br>NUMDINTPTS<br><br>OP<br><br>PV | Checkpoint | Yes (for OCD). |

**Remarks:** Illegal if NUMDINPTS = 0, or if NUMDOUTS = 0.

UNCMDALM.FL is always enabled, when CMDDISALM.xx is enabled.

## 3.20.4  UNCMDALM.PR

| Specific to Block(s) | DEVCTL | Description | Uncommanded Change Alarm Priority |
|---|---|---|---|
| Data Type | Enumeration ALPRIOR | Range | None (0) |
| | | | Journal (1) |
| | | | Low (2) |
| | | | High (3) |
| | | | Urgent (4) |
| Default | Low (2) | Configuration Load | Yes |
| Access Lock | Engineer | Residence | EE |
| Related Parameters | | Checkpoint | Yes (for OCD). |

## 3.20.5  UNDERFLOW

When this status bit is set to ON, it indicates that the value in the counter has decremented through zero. This bit is automatically turned OFF when the counter is reset by the Reset control output, when the marker pulse resets the counter, or when a channel is disabled by the DIP switch.

| Specific to Block(s) | LSCPQICHANNEL | Description | Underflow |
|---|---|---|---|
| Data Type | Boolean | Range | True/False |
| Default | False | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | | | |

## 3.20.6  UNDERFLOW[1..3]

When this parameter's value is ON, it indicates that the value in the counter has decremented through zero. This bit is automatically turned OFF when the counter is reset by the Reset control output, when the marker pulse resets the counter, or when a channel is disabled by the DIP switch.

| Specific to Block(s) | Pulse Quadrature Input Module | Description | Underflow Flag |
|---|---|---|---|
| Data Type | Boolean | Range | True/ False |
| Default | False | Configuration Load | No |
| Access Lock | View Only | Residence | EE |
| Related Parameters | | | |

## 3.20.7  UNITS[1..8]

| Specific to Block(s) | RTDM | Description | Processing Units |
|---|---|---|---|
| Data Type | ENUM RTDM_PUNITS | Range | Deg C |
| | | | Deg F |
| | | | Percentage % |

| Default | Deg C | Configuration Load | Yes |
|---|---|---|---|
| Access Lock | Engineer | Residence | EE |
| Related Parameters | | | |

## 3.20.8 UPIN

| Specific to Block(s) | LCSCOUNTER | Description | Count Up Input |
|---|---|---|---|
| Data Type | BOOLEAN | Range | Off On |
| Default | Off | Configuration Load | No Load |
| Access Lock | Engineer | Residence | EE |
| Related Parameters | | Checkpoint | Yes (for OCD) |

**Remarks**: When the input transitions from OFF to ON and RESET is true, the counter counts UP.

# 3.21  -V-

## 3.21.1  VELOCITY

| Specific to Block(s) | AEM | Description | Indicates velocity in terms of counts. |
|---|---|---|---|
| **Data Type** | UINT16 | **Range** | 0-65535 |
| **Default** | 0 | **Configuration Load** | No |
| **Access Lock** | View Only | **Residence** | EE |
| **Related Parameters** | | | |

# 3.22  -Y-

## 3.22.1  YEAR

Realtime clock data can be pulled using the ASCIIREADCLOCK function block. The YEAR parameter fetches the value of the Year from the clock time.

| Specific to Block(s) | ASCIIREADCLOCK | Description | Fetches the value of the year (Example: 2005) from the ASCII Control Module's real-time flow data. |
|---|---|---|---|
| Data Type | Unsigned Integer - 16 bits | Range | 0-65535 |
| Default | 0 | Configuration Load | No |
| Access Lock | View Only | Residence | LIOM |
| Related Parameters | | Checkpoint | Yes (for OCD). |

Realtime clock data can be pushed to the ACM using the ACIISETDTPTR function block. The YEAR parameter sets the value of the Year to the clock time.

| Specific to Block(s) | ACIISETDTPTR | Description | Sets the value of the year (Example: 2005) to the ASCII Control Module's real-time flow data. |
|---|---|---|---|
| Data Type | Unsigned Integer - 16 bits | Range | 0 to 99 |
| Default | 0 | Configuration Load | Yes |
| Access Lock | Engineer | Residence | CEE |
| Related Parameters | | Checkpoint | Yes (for OCD). |